INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

Path 46 Transmission Line Clearance Project

PREPARED BY

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Environmental Affairs

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TABLE OF CONTENTS

SECTION PAGE

1 INTRODUCTION 1
1.1 Project Overview 1
1.2 California Environmental Quality Act 2
1.3 Project Location 5
1.5 References 6
2 PROJECT DESCRIPTION 7
2.1 Proposed Project 7
2.2 Construction 10
2.3 Approvals Required for the Project 14
3 INITIAL STUDY CHECKLIST 15
3.1 Aesthetics 20
3.2 Agriculture and Forestry Resources 25
3.3 Air Quality 30
3.4 Biological Resources 38
3.5 Cultural Resources 66
3.6 Geology and Soils 90
3.7 Greenhouse Gas Emissions 95
3.8 Hazards and Hazardous Materials 101
3.9 Hydrology and Water Quality 107
3.10 Land Use and Planning 114
3.11 Mineral Resources 118
3.12 Noise 120
3.13 Population and Housing 126
3.14 Public Services 127
3.15 Recreation 129
3.16 Transportation and Traffic 130
3.17 Tribal Cultural Resources 135
3.18 Utilities and Service Systems 136
3.19 Mandatory Findings of Significance 140
4 REPORT PREPARERS 143

APPENDICES

A General Order 95 Clearance Requirements
B Legal Land Description
C Engineering Drawings
D1 Biological Resources Report
D2 Jurisdictional Delineation Report
D3 Ground Disturbance Mitigation Plan
E Air Quality and Greenhouse Gas Emissions Data
F Archeology Resource Inventory
G Historic Resource Assessment Report
H Paleontological Resources Survey Report

TABLES

1-1 USGS Quadrangles 5
2-1 Summary of Proposed project 7
2-2 Estimated Limits of Grading (Work Areas) 8
3.1-1 VRM Objectives 21
3.3-1 Project Area Attainment Status 31
3.3-2 Summary of MDAQMD Air Quality Plans 32
3.3-3 MDAQMD Air Quality Significance Thresholds 33
3.3-4 Anticipated Construction Equipment 34
3.3-5 Estimated Construction Emissions 35
3.4-1 Land Designations 64
3.4-2 Land Designations and Impacts 64
3.5-1 Previously Recorded Built Environment Resources Within 1 Mile of APE 77
3.5-2 Archaeological Resources Recorded or Updated During Survey 79
3.5-3 Geology, Excavation Depths, or Work Areas with PFYC Classes 3 and Greater 86
3.7-1 Estimated Annual Construction Greenhouse Gas Emissions 99
3.12-1 Construction Equipment Noise Emission Levels 121
3.12-2 County of San Bernardino Noise Standards for Stationary Noise Sources 122
3.12-3 Vibration Velocities for Construction Equipment 123

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AB	Assembly Bill
ACEC	Area of Critical Environmental Concern
AGL	above ground level
APE	area of potential effects
BLM	Bureau of Land Management
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CMP	congestion management program
CNDDB	California Natural Diversity Database
CNRA	California Natural Resource Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2E	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
dBA	A-weighted decibel
DRECP	Desert Renewable Energy Conservation Plan
EPA	U.S. Environmental Protection Agency
ESA	Environmental Science Associates
FAA	Federal Aviation Administration
FLPMA	Federal Land Policy and Management Act
GHG	greenhouse gas
GWP	global warming potential
I	Interstate
kV	kilovolt
LADWP	Los Angeles Department of Water and Power
MCV1	McCullough-Victorville Line 1
MCV2	McCullough-Victorville Line 2
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District

Acronym/Abbreviation	Definition
MM	mitigation measure
MND	mitigated negative declaration
MNP	Mohave National Preserve
MT	metric ton
MUC	Multiple Use Classification
MVL1	Mead-Victorville Line 1
mya	million years ago
N_2O	nitrous oxide
NCL	California Desert National Conservation Land
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NO_x	oxides of nitrogen
NRHP	National Register of Historic Places
O_3	ozone
OHV	off-highway vehicle
PFYC	Potential Fossil Yield Classification
PM_{10}	particulate matter with a diameter less than or equal to 10 microns (coarse particulate matter)
$PM_{2.5}$	particulate matter with a diameter less than or equal to 2.5 microns (fine particulate matter)
QSD	Qualified Storm Water Developer
QSP	Qualified Storm Water Practitioner
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SBAIC	San Bernardino Archaeological Information Center
SO_x	oxides of sulfur
SR	State Route
SWRCB	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound
VRM	visual resource management

1 INTRODUCTION

1.1 Project Overview

The Los Angeles Department of Water and Power (LADWP) is proposing the Path 46 Transmission Line Clearance Project (proposed project) to restore ground-to-conductor clearances that are out of compliance with transmission line safety and reliability standards. The location of the proposed project is along three existing overhead transmission lines located in San Bernardino County near Victorville, Barstow, and Baker, California: the 500 kilovolt (kV) McCullough-Victorville Lines 1 and 2 (MCV1 and MCV2) and the 287 kV Mead-Victorville Line 1 (MVL1). These transmission lines were installed in the 1930s to transmit power from Hoover Dam to Los Angeles.

The proposed project would be undertaken to comply with the California Public Utilities Commission's (CPUC) General Order 95 Clearance Code Requirements as mandated by the North American Electric Reliability Corporation (NERC). The specific clearance requirements set by General Order 95 are included in Appendix A. Achieving this height consistency is necessary to ensure the distance between the transmission line conductors and the ground or road surface below is sufficient to meet code requirements guiding the safe and reliable operation of transmission lines. LADWP proposes to comply with the code clearances by grading the ground surface of the area underneath the transmission lines at 68 work areas to achieve height consistency per NERC requirements. Additionally, LADWP has identified two locations where grading is infeasible due to topography. In these locations, LADWP proposes to raise existing transmission line towers to achieve height consistency. Two additional locations will involve the installation of compacted soil barricades or other similar barrier system to eliminate vehicle access to areas underneath a conductor where a clearance issue exists. Total acreage of grading would be approximately 7.8 acres, and total acreage of tower raising activities would be approximately 3.7 acres. The project, as proposed, would also involve improvements to portions of existing access roads to be used for site access, equipment staging and storage, and distribution of excavated soils. The project would primarily be located on federal land, but some work sites would be located within LADWP property or on private property. Figure 1 shows an overview of the project location, and Figures 2 through 8 show the proposed work areas divided into seven segments.

LADWP has submitted an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) to the Bureau of Land Management (BLM) to amend its existing right-of-way (ROW) grants for the MCV1, MCV2, and MVL1 transmission lines in order to accommodate the clearance remediation work. These transmission lines were constructed under ROW grant CALA-052174, originally granted to the City of Los Angeles on September 20, 1935. The application to amend this ROW has been assigned BLM serial number CACA-055592. An Environmental Assessment is being prepared by BLM to comply with the National Environmental Policy Act (NEPA). Upon completion of the NEPA process, the BLM will decide whether to authorize a ROW grant amendment to allow LADWP to conduct clearance work along the MCV1, MCV2, and MVL1 ROWs on public lands.

1.2 California Environmental Quality Act

As the lead local agency for the proposed project under CEQA, LADWP must complete an environmental review in accordance with CEQA to determine if implementation of the proposed project would result in significant adverse environmental impacts. (CEQA applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed project constitutes a project as defined by CEQA. CEQA Guidelines Section 15367 states that a "Lead Agency" is "the public agency which has the principal responsibility for carrying out or approving a project." Therefore, the LADWP is the lead agency responsible for compliance with CEQA for the proposed project.) To fulfill the purpose of CEQA, an Initial Study has been prepared to assist in making that determination.

An Initial Study has been prepared by LADWP as the lead agency in accordance with the CEQA Guidelines to evaluate potential environmental impacts and to determine whether an Environmental Impact Report (EIR) or a Negative Declaration or Mitigated Negative Declaration (MND) should be prepared for the proposed project. The Initial Study has also been prepared to satisfy CEQA requirements of agencies that would provide sources of funding for the proposed project or that would otherwise have discretionary approval authority over the project. An MND is prepared for a project when an Initial Study has identified potentially significant impacts on the environment, but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed Negative Declaration and Initial Study are released for public review would avoid the impacts or mitigate the impacts to a point where clearly no significant effect on the environment would occur; and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment.

The Initial Study (IS) determined that the implementation of the proposed project could cause some potentially significant impacts on the environment but, as shown in the environmental analysis contained in this IS/MND, all of the project's potentially significant impacts would be reduced to less than significant levels through the implementation of mitigation measures. Consequently, the analysis contained herein concludes that an MND shall be prepared for the proposed project.

Revisions to the CEQA Guidelines

The state has recently adopted updates to the CEQA Guidelines to add efficiency and clarity to aspects of the guidelines and to incorporate recent case law and legislation that had not yet been reflected in the text of the guidelines. The recently adopted updates also include revisions to Appendix G of the CEQA Guidelines, which consists of environmental checklist questions that are used by many lead agencies as the framework for environmental documents prepared pursuant to CEQA.

Section 15007(d) of the CEQA Guidelines specifies that new requirements shall be in effect 120 days after the effective date of the Guideline amendments. Because the Guideline amendments were adopted on December 28, 2018, the revised guidelines are now in effect. Per Section 15007(c), draft documents issued for public review after that date shall comply with new content requirements. The legislation and court decisions that are reflected in the updates were already in effect during the preparation of this IS/MND. As such, this IS/MND is in compliance with the content requirements

of the 2018 CEQA Guidelines revisions. Notably, new CEQA Guidelines Section 15064.3, which requires the use of vehicle miles traveled to assess the significance of transportation impacts, does not go into effect until July 1, 2020, well after the anticipated adopted of this IS/MND.

As further discussed below, the environmental checklist questions used in this IS/MND have not been revised to reflect the format of the 2018 CEQA Guidelines revisions. As Appendix G is a recommended checklist, such conformance is not required to comply with the requirements of the CEQA statute and Guidelines. Furthermore, use of the updated environmental checklist would not change the environmental conclusions in this IS/MND or the content of the analysis, and use of the threshold questions in Appendix G is not a CEQA requirement. (Rather, Appendix G contains sample questions that can help guide a lead agency in the environmental analysis process.)

The recent updates to Appendix G can be summarized as follows: narrowing the scope of aesthetic impacts; moving the topic of paleontology from the cultural resources section to the geology section; adding threshold questions to address the topic of energy; expanding wildfire issues; combining airport safety and noise into one threshold question; deleting the reference to private airstrips; incorporating Vehicle Miles Traveled analysis into the transportation section; making the hydrology and utilities questions more concise and applicable to modern issues; clarifying that land use conflicts must relate to a physical impact; and adding "unplanned" to the population growth question, so that the question now focuses only on unplanned growth. While this EIR does not follow the new organization of the updated Appendix G, the necessary and applicable information is presented throughout Chapter 3 of this IS/MND, with the exception of energy and the expanded wildfire thresholds, which are discussed below. The topic of paleontology is addressed in Section 3.5; the topic of wildfires is addressed in Section 3.8 of this IS/MND; both airport safety and noise have been addressed (see Section 3.8 and Section 3.12), and impacts were determined to be below a level of significance; and, the topics of hydrology, utilities, land use, and population growth were all addressed, and impacts were determined to be below a level of significance (with the exception of land use, where mitigation measures are required to reduce effects to applicable conservation plans to below a level of significance).

A discussion of energy impacts and the expanded wildfire threshold questions are included below, to ensure that this IS/MND discloses and addresses all impacts covered in the updated Appendix G checklist.

Energy

The energy threshold questions that are included in the updated Appendix G checklist ask whether a project would "result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation" and whether a project would "conflict with or obstruct a state or local plan for renewable energy or energy efficiency."

The proposed project would involve construction activities only, which would last for approximately 18 months. Construction would involve grading underneath sagging power lines at 72 work areas situated along approximately 120 miles of transmission lines. The project would also involve raising two transmission towers. The total amount of grading

required would be approximately 11.5 acres. As such, activities at each individual work area would be minimal. During construction, energy would be primarily used in the form of petroleum, which would be used by construction equipment and construction worker vehicle trips. Use of natural gas is not expected, since fuels would consist primarily of diesel and gasoline. Use of electricity would be limited to electrically powered hand tools. Petroleum use required for construction and vehicle trips would be minor and temporary relative to regional demands. The number of workers required would be minimal (approximately 6 to 24 workers), and the amount of equipment and duration of use would also be minimal (approximately 6 pieces of equipment per work area).

The proposed project would not change the routine inspection and maintenance of the existing transmission lines or result in increased energy use during operation. The proposed project would have no change in the amount of energy that is transmitted along the power lines. Rather, the project is being undertaken due to code compliance issues and safety concerns associated with sagging power lines. As such, the proposed project would consume increased energy during the 18-month construction period only. Once construction activities cease, the additional petroleum use associated with the proposed project would cease. Due to the short-term nature of construction and relevantly small scale of the project, impacts would be less than significant.

The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The project's energy use would be limited to the construction period only and would be minimal to negligible relative to regional demands. Furthermore, the project would be required to follow applicable energy standards and regulations during construction. No long-term changes in energy use would occur as a result of the project. Impacts related to the project's potential to conflict with plans for renewable energy and energy efficiency would be less than significant. As such, while there are new guidelines for the evaluation of energy impacts, the proposed project would not result in significant effects under the new guidelines.

Wildfire

Wildland fire hazards are discussed in Section 3.8 of this IS/MND. As stated in that section, the project is located in primarily undeveloped areas of the Mojave Desert, and desert vegetation is typically characterized by low fire frequency. Due to the project location and the fact that the project does not proposed habitable structures, the analysis concluded that effects involving wildland fires would be less than significant. The updated Appendix G checklist involves a more extensive wildfire analysis for projects located in or near state responsibility areas for firefighting or lands classified as very high fire hazard severity zones. The project is not located in a state responsibility area or in a very high fire hazard severity zone. The nearest state responsibility areas and very high fire hazard severity zones are located at the base of the San Gabriel Mountains and San Bernardino Mountains, approximately 20 miles south of the western terminus of the project alignment (CAL FIRE 2019). Furthermore, as described in Section 3.8, the project is not located within a San Bernardino County–designated fire safety area. As such, while there are new guidelines for the evaluation of wildfire risk, the proposed project would not result in significant effects under the new guidelines, as it is not located within or near a very high fire hazard severity zone or state responsibility area. Impacts would be less than significant.

As such, all required environmental topics and issues have been addressed in this IS/MND. While the organization of this IS/MND does not reflect the updated Appendix G checklist, these updates have not affected the analysis or substantive information in this IS/MND.

Organization of the IS/MND

This document consists of both the Initial Study for the project and the MND (IS/MND). This IS/MND is composed of four sections. Section 1 provides the introduction for the proposed project, general information about the contents of the IS/MND, information about the lead agency, the project location, and the environmental setting. Section 2 provides a description of the proposed project components and information about their construction and operation. Section 3 consists of the CEQA Initial Study checklist, which provides the assessment of potential environmental impacts and the applicability of mitigation measures to reduce potentially significant impacts to less than significant. Section 4 provides a list of the lead agency staff and consultants involved in preparing the environmental review documents for the proposed project. This document also includes several appendices that contain technical resource reports related to air quality and greenhouse gas (GHG) emissions, biological resources, cultural resources, and noise.

1.3 Project Location

The project includes grading areas of various sizes that would be located underneath sagging power lines, as well as improvements to portions of Powerline Road and existing spur roads that will be used for site access, equipment staging and storage, and distribution of excavated soils. The 72 work areas have been grouped into seven segments, which contain similar physical and biological characteristics (Figures 2 through 8). The sites are all located along the MCV1, MCV2, and MVL1 transmission line corridor, which extends in a southwest to northeast direction parallel to Interstate (I) 15 through the Mojave Desert. The southwestern end of the corridor begins in Stoddard Valley (just northeast of Victorville) and extends east through Daggett (east of Barstow) and northeast into the Mojave Valley to the edge of the California–Nevada border. The project would be located primarily on land administered by the BLM, although some work sites would be located within LADWP property or on private property. The project area extends through the following sixteen 7.5-minute U.S. Geological Survey (USGS) topographic quadrangles: Alvord Mountain East, Bitter Spring, Clark Mountain, Cronese Lakes, Daggett, Dunn, East of Kingston Spring, Harvard Hill, Kingston Spring, Minneola, North of Baker, Turquoise Mountain, Turtle Valley, Red Pass Lake, Stoddard Well, and West of Baker. Table 1-1 lists the seven segments and the USGS quadrangle(s) traversed by each segment.

Table 1-1
USGS Quadrangles

Segment	Quadrangle(s)
1	Turtle Valley; Stoddard Well
2	Daggett; Minneola
3	Minneola; Harvard Hill
4	Alvord Mountain East; Dunn; Bitter Spring; Cronese Lakes
5	Red Pass Lake; West of Baker; North of Baker

Table 1-1
USGS Quadrangles

Segment	Quadrangle(s)
6	Turquoise Mountain; Kingston Spring; East of Kingston Spring
7	Clark Mountain

Right of Way

Grading activities would be carried out within the existing ROWs granted to LADWP by BLM. The ROW width of the transmission corridor containing MCV1, MCV2, and MVL1 is approximately 800 feet. The legal description for the locations of each of the work areas are provided in Appendix B.

Surrounding Land Uses

The land surrounding the proposed work areas consists primarily of undeveloped open space areas in the Mojave Desert. Some development occurs within the vicinity, generally consisting of small sections of I-15 and I-40, scattered rural residences, and agricultural land. The alignment of the work areas approximately follows the alignment of I-15, with Segments 1, 2, and 3 located south of I-15 and Segments 4, 5, 6, and 7 located north of I-15. I-40 crosses the alignment between Segment 2 and Segment 3. The overall topography of the area is composed of relatively flat valleys bounded by sloping hills ranging in elevation from 1,280 feet above mean sea level (valleys) to 3,670 feet above mean sea level (foothills). Mountains within the vicinity include Bell Mountain, Turtle Mountain, Stoddard Mountain, Stoddard Ridge, Quartzite Mountain, and Silver Mountain, as well as several unnamed rolling hills. Segments 1, 2, 3, 4, and part of Segment 5 are located within the West Mojave Recovery Plan Area, one of several desert tortoise recovery areas established by the U.S. Fish and Wildlife Service (USFWS). Segments 4 and 5 extend along the southeastern boundary of the Fort Irwin Military Reservation. The Mojave National Preserve is located generally to the south and east of Segments 5, 6, and 7. A portion of Segment 7 extends through the Clark Mountain Allotment, which is an active ephemeral/perennial allotment approved for yearlong cattle grazing.

Land Ownership

The land ownership details for each of the 72 work areas are provided in Table 2-2. A total of 60 work areas are proposed on public land administered by the BLM; 6 work areas are proposed on land owned by LADWP; 1 work area is proposed on land (or an easement) owned by Southern California Edison; 2 work areas are proposed on lands that are privately owned, through which LADWP has an easement; 2 work areas occupy land owned by LADWP and public lands administered by the BLM; and 1 work area is proposed on land owned by LADWP and private landholders.

1.5 References

CAL FIRE (California Department of Forestry and Fire Protection). 2019. Fire Hazard Severity Zone Viewer. Accessed July 18, 2019. http://egis.fire.ca.gov/FHSZ/.

2 PROJECT DESCRIPTION

LADWP is proposing the Path 46 Transmission Line Clearance Project (proposed project) to restore ground-to-conductor clearances that are out of compliance with transmission line safety and reliability standards. The location of the proposed project is along three existing overhead transmission lines located in San Bernardino County near Victorville, Barstow, and Baker, California: MCV1, MCV2, and MVL1. These transmission lines were installed in the 1930s to transmit power from Hoover Dam to Los Angeles. The proposed project would be undertaken to comply with the CPUC General Order 95 Clearance Code Requirements as mandated by the NERC. The specific clearance requirements set by General Order 95 are included in Appendix A. Achieving this height consistency is necessary to ensure the distance between the transmission line conductors and the ground or road surface below is sufficient to meet code requirements guiding the safe and reliable operation of transmission lines.

2.1 Proposed Project

The proposed project involves grading activities at 72 work areas, barricade installation activities at two work areas, and tower raising activities at two work areas along the existing MCV1, MCV2, and MVL1 transmission lines (for a total of 72 work areas). The proposed project also entails improvements to portions of existing access roads to be used for site access, equipment staging and storage, and distribution of excavated soils. Access to MCV2 and MVL1 would be provided via the existing Powerline Road and associated spur roads, and access to MCV1 would be provided via an existing unnamed access road that runs parallel to the lines. Table 2-1 summarizes the activities involved with the proposed project, and Table 2-2 details the amount of grading that would occur at each work area. The work areas are categorized in Table 2-2 based on the number of the nearest transmission tower located to the northeast of the work area along the transmission line where the clearance issue exists.

An overview of the project location is shown in Figure 1. Construction would occur sequentially along the transmission line corridor and is anticipated to take up to 18 months, depending on weather conditions, site access, and the availability of personnel and equipment. Once construction is complete, operation activities would be minimal.

Table 2-1
Summary of Proposed project

Lines Affected	McCullough-Victorville 1, McCullough-Victorville 2, Mead-Victorville 1
Number of Work Areas	10 areas: Mead-Victorville 1 54 areas: McCullough-Victorville 1 8 areas: McCullough-Victorville 2 **Total: 72 areas**
Total Acres of Grading	approximately 7.8 acres
Total Acres of Tower Raising Work Areas	approximately 3.7 acres
Average Depth of Excavation	2.18 feet
Total Volume of Excavated Soils	10,838 cubic yards

Table 2-2
Estimated Limits of Grading (Work Areas)

Tower Number	BLM Field Office	Max. Width (ft.)	Max. Length (ft.)	Max. Depth (ft.)	Area (sq. ft.)	Cubic Yards	Land Ownership
MCV2 152-1	Barstow	35	70	3.25	1,685	91	BLM/P6483
MCV1 151-4	Barstow	25	60	2.8	1,525	77	LADWP/P28329
MCV1 149-2	Barstow	90	115	9	7,060	1080	LADWP/P29813-Xuong Chang/P9735/P9736
MVL1 168-3	Barstow	216	66	3	4,840	253	BLM/P6483
MCV1 145-3	Barstow	70	160	2.5	4,236	201	BLM/P6483
MVL1 159-1	Barstow	42	62	2.3	1,490	68	LADWP/P28187/P28345
MVL1 158-6	Barstow	76	247	3.8	5,155	280	LADWP/P28187
MVL1 155-5	Barstow	114	247	5.4	7,987	731	LADWP/P27361
MCV1 138-1	Barstow	30	440	1	11,530	41	LADWP/P28137
MVL1 150-4	Barstow	90	59	2	3,081	121	BLM/P6483
MVL1 150-3	Barstow	27	240	3	5,240	242	BLM/P6483
MVL1 147-4	Barstow	(Barricade installation)	-	-	-	9	SCE
MCV1 129-1	Barstow	38	420	3.7	10,641	580	BLM/P6483
MCV1 125-5	Barstow (Tower raising)	400	200	-	80,000	-	Van Dam Donald D Trust/P9173-P9175/P11138-P11140
MCV1 125-6	Barstow (Tower raising)	400	200	-	80,000	-	Van Dam Donald D Trust/P9173-P9175/P11138-P11140
MCV1 120-1	Barstow	(Barricade installation)	-	-	0	-	BLM/P6483
MVL1 129-4	Barstow	32	90	2.5	445	15	BLM/P6483
MCV2 104-5	Barstow	12	21	3	210	8	BLM/P6483
MCV2 103-3	Barstow	55	316	3.2	8,030	271	BLM/P6483
MCV2 100-5	Barstow	20	77	1.75	1,125	27	BLM/P6483
MCV2 97-5	Barstow	26	181	1.7	2,674	82	LADWP/P28535
MCV2 97-1	Barstow	25	200	2.25	1,522	73	BLM/P6483
MCV2 93-4	Barstow	89	162	4.8	5,877	456	BLM/P6483
MCV1 92-4	Barstow	18	120	2	1,840	62	BLM/P6483
MCV2 90-4	Barstow	45	365	4	11,900	320	BLM/P6483

Table 2-2
Estimated Limits of Grading (Work Areas)

Tower Number	BLM Field Office	Max. Width (ft.)	Max. Length (ft.)	Max. Depth (ft.)	Area (sq. ft.)	Cubic Yards	Land Ownership
MVL1 111-1	Barstow	115	270	3.5	9,000	314	BLM/P6483
MVL1 110-5	Barstow	19	140	2	2,300	71	BLM/P6483
MCV1 88-5	Barstow	16.4/17/24	154/156/281	1.5/1/2.2	2,188/ 2,301/ 5,440	285	BLM/P6483
MCV1 88-3	Barstow	40	428	1.1	6,903	34	BLM/P6483
MCV1 88-2	Barstow	33/35	213/382	1.9/0.65	4,843/ 7,150	147/57.5	BLM/P6483
MCV1 88-1	Barstow	28.3	216	1.6	4,800	120	BLM/P6483
MCV1 87-5	Barstow	20/15	275/202	3/2	3,940/ 2,260	204/71	BLM/P6483
MCV1 87-4	Barstow	30	450	1.1	5,870	58.3	BLM/P6483
MCV1 87-3	Barstow	25	408	1	5,470	52.1	BLM/P6483
MCV1 87-2	Barstow	15/9	190/160	2.3/1	2,060/1,161	68.9/17.1	BLM/P6483
MCV1 87-1	Barstow	31	385	0.6	4,770	51.9	BLM/P6483
MCV1 86-5	Barstow	15/10	236.3/190	2.4/1.5	2,755/1,580	97.4/34.8	BLM/P6483
MCV1 86-4	Barstow	30	350	2	7,708	96	BLM/P6483
MCV1 86-3	Barstow	15	420	1.3	4,425	15	BLM/P6483
MCV1 86-2	Barstow	15	320	1.3	3,511	14	BLM/P6483
MCV1 86-1	Barstow	15	285	1.3	3,222	18	BLM/P6483
MCV1 85-5	Barstow	15	310	1.3	3,300	19	BLM/P6483
MCV1 85-4	Barstow	15	240	1.5	2,740	25	BLM/P6483
MCV1 85-3	Barstow	15	310	1.3	3,322	14	LADWP/P9357/P29688-BLM/P6483
MCV1 85-2	Barstow	57	85	7	3,356	382	LADWP/P9357/P29688-BLM/P6483
MCV1 84-5	Barstow	36	107	4	2,736	230	BLM/P6483
MCV1 82-1	Barstow	16.5	147	1.3	1,996	40	BLM/P6483
MCV1 78-4	Barstow	22	141	1.6	1,976	34	BLM/P6483
MCV1 77-6	Barstow	50	560	1	17,000	10	BLM/P6483
MCV1 77-5	Barstow	50	900	1	21,000	10	BLM/P6483
MCV1 77-4	Barstow	40	340	1	6,300	10	BLM/P6483
MCV1 77-1	Barstow	15	300	1.3	3,436	29	BLM/P6483-Eastment/P6790/P9356

Table 2-2
Estimated Limits of Grading (Work Areas)

Tower Number	BLM Field Office	Max. Width (ft.)	Max. Length (ft.)	Max. Depth (ft.)	Area (sq. ft.)	Cubic Yards	Land Ownership
MCV1 76-5	Barstow	13	300	1.3	3,300	16	BLM/P6483
MCV1 76-4	Barstow	15	300	1.3	3,300	21	BLM/P6483
MCV1 75-3	Barstow	29	240	2.3	3,617	102	BLM/P6483
MCV1 73-6	Barstow	25	190	2	5,000	79	BLM/P6483
MCV1 66-5	Barstow	25	275	3.5	9,025	179	BLM/P6483
MCV1 62-3	Barstow	60	93	3.5	4,740	295	BLM/P6483
MCV1 61-2	Barstow	23/32	70/95	2.2/0.8	3,160	63	BLM/P6483
MCV1 61-1	Needles	160.2	76	1.1	5,973	63	BLM/P6483
MCV1 60-5	Needles	40	46	5	290	207	BLM/P6483
MCV1 59-4	Needles	25	280	3	8,700	446	BLM/P6483
MCV1 57-5	Needles	20	160	2.5	3,000	116	BLM/P6483
MCV1 56-4	Needles	35	170	5.2	4,300	420	BLM/P6483
MCV1 55-2	Needles	45	151	1.9	4,620	76	BLM/P6483
MCV1 38-5	Needles	13	130	1.5	1,398	31	BLM/P6483
MCV1 38-3	Needles	35	85	1.5	1,948	48	BLM/P6483
MCV1 37-6	Needles	40	100	4	3,246	240	BLM/P6483
MCV1 37-2	Needles	25	130	3	2,514	150	BLM/P6483
MCV1 36-6	Needles	27	75	3.1	1,528	59	BLM/P6483
MCV1 36-4	Needles	30	123	2.7	2,577	107	BLM/P6483
MCV1 36-2	Needles	32	175	2	3,653	115	BLM/P6483

Facility Design Factors

All grading areas would occur within the existing ROW grants for MCV1, MCV2, and MVL1 and all excavated soils generated from grading activities would be disbursed on existing access roads. Access to the proposed work areas will be limited to the existing main Powerline Road and associated spur roads to the extent feasible. Additional construction details related to access roads, grading, disposal of excavated soils, and tower raising are discussed below. Detailed engineering drawings for the grading sites are provided in Appendix C.

2.2 Construction

Construction activities would occur sequentially along the transmission line corridor and would take up to 18 months to complete. Assuming 23 to 25 workdays per month, construction at each individual site would last an average of 1.5 to 3 workdays, with some sites requiring less than 1 day and some sites requiring up to 9 days, depending on the amount of grading and the conditions at the site. The estimated work force for grading operations is between 6 to 10 workers

per day. When feasible, this work force would be split into two crews of 3 to 5 workers each to allow for work to occur on two grading sites simultaneously. Tower raising activities are expected to require a larger workforce, which is estimated at 12 to 24 workers per site. Tower raising activities would take approximately 45 days per tower, for a total of 90 days of tower raising activities.

Details regarding the access roads, grading process, tower raising process, and work force requirements are provided below. BMPs would be used to minimize the risk of potential impacts during construction and would be communicated to employees prior to the start of work. Safety requirements and procedures to be followed during construction are provided in the LADWP Power Distribution safety rulebook.

Access Roads

Access to the proposed work areas for the MVL1 and MCV2 lines would be limited to Powerline Road and associated spur roads to the extent feasible. For the MCV1 lines, access would be limited to the existing unnamed access road that runs parallel to the lines. Where access to the proposed work areas is not possible via the existing roads, overland travel would be limited to areas within the defined project limits as well as in select previously disturbed areas identified as non-sensitive by LADWP's biological and cultural resources specialists. Overland travel would be required on approximately 30 of the 72 work sites and would total approximately 5,000 linear feet. Where appropriate, access to the ROW would be controlled through the use of proper signage and flagging.

Grading Process

Grading activities would be carried out within the LADWP ROW to achieve height consistency and would include the staking of grading limits, grading, and site restoration. As an example of this process, Figure 9 shows existing conditions, a post-construction simulation, and a post-restoration simulation for proposed grading activities near MVL1_150-3. Prior to the start of grading, each site would have cut and fill stakes and construction perimeter stakes set. Construction equipment to be used for grading would include motor graders, bulldozers, excavators, compact skid-steer loaders, dump trucks, water trucks, wheel/track loaders, backhoe loaders, jackhammers, and various small utility vehicles. The construction equipment would be staged within the confines of existing roadways and turnouts. Temporary storage of excavated soils would occur within the project limits in select previously disturbed areas identified in coordination amongst LADWP and its Qualified Storm Water Developer (QSD), Qualified Storm Water Practitioner (QSP), and biological and cultural resources specialists and in accordance with any Storm Water Pollution Prevention Plan (SWPPP) requirements and NEPA/CEQA mitigation requirements. Excavated soils accumulated during grading activities would then be spread within the existing access road for the MVL1 and MCV2 lines known as Powerline Road. For the MCV1 lines, which are not located adjacent to Powerline Road, the excavated soils would be spread within the unnamed access road that runs parallel to the lines. The excavated soils would be spread along the access roads at a maximum depth of 8 inches and would be spread along areas of the road that are within 500 feet to either side of the work area. The excavated soils would be used to repair ruts and potholes and to improve the overall state of the access roads. Spreading activities for excavated soils occurring outside of existing roads or work areas would occur in previously disturbed areas to the extent feasible and

would be implemented in accordance with all relevant SWPPP requirements and NEPA/CEQA mitigation requirements for biological and archaeological resources. It is not anticipated that any excavated soils would be hauled offsite. For grading areas located within the Clark Mountain Allotment, LADWP in coordination with BLM would notify lessees of temporary construction activities prior to start of construction within the allotments.

Tower Raising Process

Tower raising would be carried out at two locations where grading is infeasible due to topographic limitations. The towers that are proposed for raising are labeled MCV1_125-5 and MCV1_125-6 and are located approximately 4 miles east of Daggett, within an agricultural field. To achieve the required conductor-to-ground clearances, the existing free-standing lattice steel towers would be reinstalled in a manner that increases clearance distances. The existing towers are 110 feet tall, as measured from the ground wire peaks to grade. Figure 10 shows the existing MCV1_125-6 tower and a simulation of the raised tower.

Tower raising activities would consist of preparing pads for construction equipment, conductor offset adjustments, and site cleanup and restoration. Tower raising activities would begin with the establishment of construction pads of approximately 80,000 square feet at each of the two sites, which would accommodate the cranes, forklifts, and man lifts needed to raise the towers. Other equipment involved would include backhoe loaders, water trucks, and various small utility vehicles. The total area of disturbance for tower raising would therefore be approximately 3.7 acres. Because the transmission towers proposed for raising are located on agricultural land, LADWP would salvage any topsoil that would be removed for the construction pads. This soil would be replaced upon completion of construction, in coordination with the property owner. LADWP would also notify the property owner of temporary construction activities prior to the start of the tower raising processes.

The tower raising would be accomplished by repositioning towers onto new footings that are necessary to accommodate the tower extension and by inserting vertical extensions at the base of the towers and/or within the body of the towers. Four new tower footings would be installed at each tower raising site. Standard footings are 4 feet in diameter and 30 feet in depth, for a total of approximately 50 square feet of footing area per tower site. Towers and tower footings would be installed on or slightly offset from the existing footprint of the tower prior to tower raising activities and would be on the centerline of the existing conductors. The actual tower raising would begin with the removal of conductors and ground wires, followed by the lifting of the tower body, which would be held in place by a large crane while vertical extensions are inserted. The raised towers would be approximately 128 feet to 130 feet tall. After the tower has been raised, conductor offset adjustments may be required and would entail small adjustments to the conductor lengths which would be carried out by technicians in large man lifts. Cleanup would include the chipping of the old concrete footings 1 foot below the topsoil and the cutting of stub angles using a cutting torch. The construction pads would also be returned to the sites' original condition to the extent feasible. This process would take approximately 45 days per site and would require approximately 12 to 24 workers.

Post-Construction Activities

Stabilization, Rehabilitation, and Restoration

Site restoration activities would be undertaken to return the construction areas to their original condition. A restoration plan would be prepared by a qualified restoration ecologist with experience restoring California desert ecosystems. Restoration efforts would be performed by LADWP and/or its contractors with guidance from a qualified desert restoration specialist and would be monitored by a qualified biologist. The final grading plan would be prepared by the QSD. Prior to grading or site disturbance, vegetation and topsoil (including desert crust/varnish) within the impact areas would be salvaged. The upper layer of desert varnish (cobble and soil crust), consisting of approximately 2–6 inches, would be stockpiled. Any excavated soils that would be stored in excess of 48 hours would be covered by an anchored tarp and/or watered down until the site is ready for the soil to be replaced. Native vegetation would be salvaged and stored. To minimize mortality, native plants would be stored by burying the root and lower stems of the salvaged plants in native soil and watering once per week, if feasible (e.g., by water truck). Following construction, the desert varnish material and salvaged plant materials would be replanted within the impact areas. Prior to installing the top layer of desert crust, a commercially obtained native seed mix adapted to local site conditions may be applied using the imprinting method. Only native plant materials and a native seed mix approved by BLM would be used. Soil dominated by non-native plants would not be salvaged or re-applied. Water would be supplied as necessary for plant establishment only. Desert vegetation would not require long-term irrigation. Note that initial restoration efforts, such as replacing the top layer of desert crust, would occur as part of the construction periods identified above at each work site. However, follow-up work may occur at each site after construction to complete any necessary restoration work.

Operations and Maintenance

MCV1, MCV2, and MVL1 are regularly inspected via helicopter and by ground using existing access roads. These inspections provide an opportunity to assess the state of the transmission line conductors, towers, and access roads. Occasionally, severe weather events such as flash flooding caused by heavy rains will prompt an inspection of sections of the transmission line that may have been impacted.

Termination and Restoration

Certain portions of existing spur roads that directly conflict with clearance requirements would be demolished. This work would involve either scarifying the road surface or constructing compacted soil barricades to eliminate vehicle access to the road section in question. Following the removal of these road sections, access to each transmission line tower would not be interrupted and would be possible through other existing spur roads or through deviated road segments constructed immediately adjacent to the demolished road. These road segments would not establish new access routes, but would instead replace the road segments where clearance issues currently exist.

2.3 Approvals Required for the Project

As previously stated, the proposed project would be undertaken to comply with CPUC General Order 95 Clearance Code Requirements as mandated by the NERC. The following federal, state, and local permits are anticipated to be required for the project:

- Bureau of Land Management: FLPMA Title V Right-of-Way Grant (Amendment)
- California Department of Fish and Wildlife Streambed Alteration Agreement
- San Bernardino County Grading Permit (where applicable)
- State Water Resources Control Board Section 402 Storm Water Permit Associated with Construction Activities
- Regional Water Quality Control Board Section 401 Water Quality Certification and Waste Discharge Requirements
- U.S. Army Corps of Engineers Section 404 Nationwide Permit

As noted above, a separate Environmental Assessment is being prepared by BLM to comply with NEPA.

3 INITIAL STUDY CHECKLIST

The following discussion of potential environmental impacts was completed in accordance with Section 15063(d)(3) of the CEQA Guidelines (2018) to determine if the proposed project may have a significant effect on the environment.

1. Project title:

Path 46 Transmission Line Clearance Project

2. Lead agency name and address:

Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 North Hope Street, Room 1044
Los Angeles, California 90012

3. Contact person and phone number:

Brian Gonzalez
Environmental Planning and Assessment
Los Angeles Department of Water and Power
213.367.6376

4. Project location:

The project would be located within the County of San Bernardino, California, near Victorville, Barstow, and Baker. The project would be located within an existing utility corridor that extends through the Mojave Desert. The project would primarily be located on federal land that is administered by the Bureau of Land Management.

5. Project sponsor's name and address:

Los Angeles Department of Water and Power
111 North Hope Street
Los Angeles, California 90012

6. General plan designation:

Resource Conservation and Regional Industrial

7. Zoning:

Resource Conservation and Regional Industrial

8. Description of project:

The Path 46 Transmission Clearance Project would correct insufficient ground-to-conductor clearances along three existing overhead transmission lines located in San Bernardino County near Victorville, Barstow, and Baker, California: the 500 kV McCullough-Victorville Lines 1 and 2 and the 287 kV Mead-Victorville Line 1. The project is being undertaken to comply with the California Public Utilities Commission's General Order 95 Clearance Code Requirements, which set forth regulations for the amount of space that must be maintained between transmission lines and the ground. In order to correct the existing insufficient ground-to-conductor clearances, the Los Angeles Department of Water and Power would grade the ground surface of the area underneath the transmission lines at 68 work areas along the utility corridor to achieve height consistency. At two locations, existing transmission towers would be raised by approximately 20 feet. Two additional locations would involve the installation of barricades to prevent access to clearance discrepancy sites. The total amount of grading would be approximately 7 acres, and the excavated soils would be spread along existing access roads. The work sites would be primarily accessed via existing access roads.

9. Surrounding land uses and setting:

The land surrounding the proposed work areas consists primarily of undeveloped open space areas in the Mojave Desert. Some development occurs within the vicinity, generally consisting of small sections of I-15 and I-40, scattered rural residences, and agricultural land.

10. Other public agencies whose approval is required:

Responsible/Trustee Agencies:

- Bureau of Land Management (FLPMA Title V Right-of-Way Grant Amendment)

Reviewing Agencies:

- State Water Resources Control Board (Section 402 Storm Water Permit Associated with Construction Activities)
- Regional Water Quality Control Board (Section 401 Water Quality Certification and Waste Discharge Requirements)
- County of San Bernardino (grading permit, if required)
- U.S. Army Corps of Engineers (Section 404 Nationwide Permit)
- California Department of Fish and Wildlife (Streambed Alteration Agreement)

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

No consultation has been requested to date. See Section 3.7.3(e) for details.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklists on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology and Soils
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology and Water Quality
☐ Land Use and Planning	☐ Mineral Resources	☐ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☐ Transportation and Traffic	☐ Tribal Cultural Resources	☐ Utilities and Service Systems
☐ Mandatory Findings of Significance		

DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Charles C. Holloway — Signature

9/20/2019 — Date

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significance.

3.1 Aesthetics

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Existing Setting

The regional setting consists of the high desert and occasionally mountainous landscape of the western and central Mojave Desert. Within the more populated western Mojave Desert, the area to the north and south of the proposed project consists of desert valleys and mountain ranges and the proposed project would pass south of the City of Barstow and communities of Daggett and Yermo. East of Yermo, the desert and mountain landscape is generally undeveloped (with exception given to transmission lines and occasional transmission line access roads) and the proposed project passes near the southeastern boundary of Fort Irwin Military Reservation lands and the northern boundary of the Mojave National Preserve.

The project area is located along the existing MCV1, MCV2, and MVL1 transmission line corridor that extends in a southwest to northeast direction parallel to I-15 through the Mojave Desert. The corridor supports four parallel high-voltage transmission lines supported by tall steel lattice structures accessible via a network of relatively straight dirt access road and numerous spur roads. The southwestern end of the corridor begins in Stoddard Valley (just northeast of Victorville) and extends east through Daggett (east of Barstow) and northeast into the Mojave Valley, passing along the northernmost portion of the MNP (i.e., the Clark Mountain Range) to the edge of the California–Nevada border.

In addition to the existing MCV1, MCV2, and MVL1 transmission lines, portions of the surrounding viewshed have been modified by I-15, SR-247, and SR-127 infrastructure, and limited rural residential and agricultural development located near the communities of Daggett and Yermo. However, segments of the utility corridor also pass through open and sparsely developed desert valleys and the foothills of local mountains ranges including the Soda Mountains and the Clark Range.

Visual resource management (VRM) is a process established by the BLM to manage the scenic quality of public lands and minimize potential impacts resulting from development activities. Management classes are identified by the BLM and denote permissible levels of landscape alteration while protecting the overall visual quality of a public lands. VRM classes are assigned through the use of visual resource inventory during the BLM's land use process and in 2011, a visual resource inventory was conducted for the Barstow and Needles BLM districts. Within the project area, the existing MCV1, MCV2, and MVL1 transmission line corridor traverses public lands managed by the BLM and is assigned either visual resource inventory Class II, Class III, or Class IV designation. The management objectives of Class I, Class II, Class III, and Class IV designated lands are identified below in Table 3.1-1.

Table 3.1-1
VRM Objectives

VRM Class	Objective
I[1]	To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.
II	To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
III	To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.
IV	To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

1 There are no activities associated with the proposed project that would occur on VRM Class I designated lands.

a) Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact. While there are no known and designated scenic vistas in the project area, the existing MCV1, MCV2, and MVL1 transmission line corridor traverses a primarily flat desert landscape with occasional rugged, mountainous terrain. As such, the project area provides opportunities for particularly long and broad views of the western and central Mojave Desert. Primary receptors afforded views of the project area desert landscape include interstate, highway, and local roadway motorists and dispersed, trail-based recreationists on public lands managed by the BLM. Trail-based recreationists within the northernmost portion of the MNP encompassing the southern extent of the Clark Mountain Range are also afforded views of the project area landscape.

As proposed, the project involves grading activities at 68 work areas, barricade installations at two work areas, and tower raising activities at two work areas along the existing MCV1, MCV2, and MVL1 transmission line

corridor. Existing access and spur roads, transmission towers and transmission line infrastructure are visible from segments of I-40, I-15, state highways, local roadways, and from public lands manage by the BLM and the National Park Service. However, because the line and color contrast of access and spur roads are currently evident in the existing landscape, proposed grading activities within the existing LADWP ROW would not substantially effect existing views in the project area. When viewed from elevated vantage points such as hiking trails on rising terrain in the surrounding area or mountain peaks, grading activities could result in additional smooth-texture and linear bands of discoloration in the desert landscape. However, due to the existing presence of access and spur roads along the MCV1, MCV2, and MVL1 corridor and given the broad, sweeping nature of views from elevated vantage points in the desert landscape, grading activities would not have substantial adverse effect on scenic views. Furthermore, the tall, geometric form of steel lattice structures currently dots the project area landscape. Tower raising activities would entail the insertion of vertical extensions onto two existing tower bodies within the MCV1, MCV2, and MVL1 transmission line corridor. As a result of tower raising activities, the towers would be approximately 20 feet taller when compared to existing conditions. As such and following construction, views containing the slightly taller steel lattice towers (i.e., MCV1_125-5 and MCV1_125-6) would not be substantially altered. Therefore, the project would not have a substantial adverse effect on a scenic vista and impacts would be less than significant.

b) Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact. There are no formally designated state scenic highways in the project area. A segment of the Rim of the World Scenic Byway in southeastern San Bernardino County has been formally designated by the state legislature as a state scenic highway; however, the closest segment of the scenic byway is located nearly 40 miles south of Segment 1 of the proposed project. Furthermore, the Rim of the World Scenic Byway is generally lined by tall pine trees, and mountainous terrain to the north tends to limit the extent of available views to the foreground-middleground (i.e., less than 5 miles) distance zone. Therefore, due to distance and the presence of intervening vertical features between the highway and the project area, the proposed project would not damage scenic resources within a state scenic highway.

In addition to officially designated state scenic highways, the California Department of Transportation (Caltrans) identifies eligible state scenic highways. Unlike officially designate scenic highways, eligible highways have not yet been submitted to Caltrans for scenic highway approval and Corridor Protection Programs, which among other required elements, regulate land use and the density of development adjacent to the highway, have not been adopted by the local governing body. Eligible state scenic highways in San Bernardino County and in the project area include SR-247 (from SR-62 north to SR-40), I-40 (from SR-247 east to the California-Arizona state border), I-15 (from Barstow east to SR-127), and SR-127 (from SR-15 north to the San Bernardino County-Inyo County border) (Caltrans 2015). The proposed project may be briefly visible from segments of the roadways; however, given that proposed grading would be located along the MCV1, MCV2, and MVL1

transmission line corridor where access and spur roads (and their resulting line, color, and texture contrast) are relatively commonplace, grading activities would not substantially damage existing views of the high desert and mountainous landscape. Tower raising activities at MCV1_125-5 and MCV1_125-6 may be visible to I-40 and I-15 motorists near the community of Daggett; however, even with the proposed insertion of vertical extensions to the tower body that would increase the overall height of the structure by approximately 20 feet, the towers would present a similar form and line in the landscape and would display a similar steel lattice character as nearby towers within the transmission line corridor. Furthermore, the taller towers would be located within a desert landscape that has been visibly modified by the existing transmission line corridor, solar plant and agricultural development, and the Barstow-Daggett County Airport. Because tower raising activities would entail the insertion of vertical extensions onto existing towers and the MCV1_125-5 and MCV1_125-6 towers would be viewed in line with existing energy, agriculture, and transportation development that has altered the characteristic desert landscape, tower raising activities would not substantially damage existing views of the landscape. Therefore, impacts to scenic resources within the viewshed of state scenic highways would be less than significant.

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. The project area encompasses portions of western and central Mojave Desert. More specifically, proposed grading and tower raising activities would occur along the existing MCV1, MCV2, and MVL1 transmission line corridor that traverses flat and arid desert valleys and the foothills of local mountain ranges. While much of the area surrounding the transmission corridor is sparsely developed, the desert landscape has been noticeably altered by the electrical transmission infrastructure, I-15, SR-247, and SR-127 infrastructure, and limited rural residential and agricultural development located near the communities of Daggett and Yermo.

During construction activities associated with the proposed project, project activities, material deliveries, equipment, trucks, and vehicles within the MCV1, MCV2, and MVL1 transmission line corridor may be visible to motorists on I-15, I-40, SR-247, SR-127, and local roads due to the flat, relatively open viewing conditions surrounding the project area. Dispersed trail-based recreationists on public lands surrounding the transmission line corridor may also be afforded views of construction activities. However, construction activities would occur for up to 18 months along an existing utility corridor marked by tall, steel lattice transmission line towers, multiple transmission lines, and linear discoloration and disturbance associated with access and spur roads. Once construction activities cease, the visual effects of grading activities would be scattered throughout the existing high-voltage transmission line corridor and would create similar line, color, and texture contrast as nearby existing access and spur roads. For example, existing access and spur roads display relatively straight and smooth textured lines in the landscape and proposed grading activities would display similar visual characteristics. In several instances, proposed grading activities would simply expand the width of existing

access and spur roads and as a result would not be overly distinguishable from existing linear, ground level visual disturbance in the transmission line corridor. Therefore, the level of noticeable change to the corridor is anticipated to be low, and additional line and texture contrasts would not dominate the setting. Grading activities would not substantially alter the existing character of the transmission line corridor or the existing high desert landscape.

Regarding tower raising activities, the insertion of vertical extensions onto two existing tower bodies (i.e., MCV1_125-5 and MCV1_125-6) within the MCV1, MCV2, and MVL1 transmission line corridor would produce negligible visual change in the landscape. As proposed, vertical extensions would raise the two towers by approximately 20 feet; however, the towers would continue to display a tall, geometric form, angular steel lattice lines, and a greyish color. Therefore, because the visual character of the elevated towers would be similar to that of existing towers, the level of perceptible change to the landscape would be extremely low.

Indirect impacts associated with the proposed project may include temporary visual impacts associated with the generation of fugitive dust and the presence of heavy equipment. Construction activities would occur sequentially along an existing utility corridor and as such, visible dust emissions would not be produced in any one location for an extended period of time. Similarly, construction vehicles, equipment, and workers would not remain in any one location for an extended period of time. In addition, construction activities would comply with all applicable air quality regulations and may require the regular application of water or other materials to suppress fugitive dust emissions.

Overall, the proposed project would occur along an existing high-voltage transmission line corridor and the raised towers (i.e., MCV1_125-5 and MCV1_125-6) would display a scale, form, line, color, and texture similar to that of existing towers, impacts would be less than significant.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. Construction activities would occur sequentially along the transmission line corridor and would take up to 18 months to complete. Both grading and tower raising activities are anticipated to occur during daytime hours and as such, the use of temporary outdoor lighting during evening and nighttime hours to illuminate construction work areas would not be required. New lighting would not be installed along access roads or grading areas and as such, grading activities would not create a new source of substantial light during project operations. Similar to the existing steel lattice towers, the slightly taller steel lattice towers at MCV1_125-5 and MCV1_125-6 would not require the installation of FAA obstruction lighting. New tower footings would be installed at the tower raising sites and following the insertion of vertical extensions within the tower bodies, the towers would be approximately 20 taller than under existing conditions. The slightly taller structures would be approximately 130 feet AGL and would not be anticipated to exceed the 200 feet AGL height standard established by the FAA (FAA 2007) to determine whether marking and/or lighting is required

on temporary or permanent structures. Therefore, operation of slightly taller transmission line towers at MCV1_125-5 and MCV1_125-6 would not create a new source of substantial light that would adversely affect nighttime views in the area.

The temporary influx of construction vehicles and equipment to the generally flat desert and rugged mountainous landscape of the western and central Mojave Desert would not create substantial daytime glare that would affect day views. During grading operations, the estimated work force would be between 6 to 10 workers per day and would increase to 12 to 24 workers per site during tower raising activities. The relatively small construction work force necessitated by the project would not require a large fleet of construction vehicles and equipment. Furthermore, project activities would be carried out within the existing LADWP ROW and the MCV1, MCV2, and MVL1 transmission line corridor in which maintenance vehicles can occasionally be seen by passing motorists. Lastly, with the exception of glass, construction vehicles and equipment contain limited amount of potentially reflective materials capable of generating daytime glare. With regard to the tower raising activities, vertical extensions would be inserted within tower bodies and these components would be constructed of a similar material (steel) as the existing tower. Therefore, the new structures would not constitute a new source of potential glare that would adversely affect existing day views. Impacts would be less than significant.

References

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3.2 Agriculture and Forestry Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Less Than Significant Impact. The County of San Bernardino contains numerous areas that have been designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The majority of the proposed work areas would be located on BLM land. Per the California Desert Conservation Area (CDCA) Plan, agricultural uses (excluding livestock grazing) are not allowed on public land managed by the BLM (BLM 1980). However, several work areas located outside of BLM land are within or adjacent to Prime Farmland or Farmland of Statewide Importance (specifically, the work areas located near MVL1_147-4, MVL1_147-5, MCV1_125-5, and MCV1_125-6) (FMMP 2015a). The work that would be conducted near MVL1_147-4 and MVL1_147-5 consists of two compacted soil barricades that would be installed to decommission an access road extending beneath transmission lines. The installation of two compacted soil barricades to decommission an access road extending within an existing utility corridor would not convert Farmland to non-agricultural use. While Farmland is located nearby, it would not be adversely affected by minor construction activities associated with creating the compacted soil barricades, which would involve approximately 9 cubic yards of grading within the existing utility corridor.

Tower raising activities would occur at MCV1_125-5 and MCV1_125-6. The activities at MCV1_125-5 would take place within Prime Farmland, and the activities at MCV1_125-6 would take place within Farmland of

Statewide Importance. While the tower raising activities would occur within an existing utility corridor, agricultural fields surround both of these towers and pass beneath the transmission lines. Construction activities would have the potential to temporarily interrupt or preclude farming within and surrounding the construction pads for approximately 45 days, the duration of construction at each of the two sites. Construction would involve preparation of a pad for construction equipment, which would be approximately 80,000 square feet per tower raising site. Four new footings would be installed at each tower raising site. Tower footings would be installed on or slightly offset from the existing footings and would be slightly larger than the existing footings. Assuming a standard footing size of 4 feet in diameter and 30 feet in depth, these footings would result in a total permanent impact area of 100 square feet (approximately 50 square feet per work site and 13 square feet per footing). Site cleanup and restoration would occur subsequent to construction. Cleanup would include chipping the old concrete footings 1 foot below the topsoil and cutting stub angles using a cutting torch. Site restoration activities would return the sites to their original conditions.

The area of disturbance involved with the construction process for tower raising would temporarily preclude farming activities at the tower raising sites and in the 80,000–square foot construction pad. However, as described in Section 2.1, topsoil that is removed from each of the construction pads would be salvaged and replaced upon completion of construction, in coordination with the property owner. Construction at each of the two sites would only last for 45 days, and the property owner would be notified of these temporary construction activities prior to the start of construction at each site. At the end of this construction period, each site would be restored and returned to its original condition to the extent feasible. As such, agricultural activities would be precluded for a short period of time. While the new tower footings may be slightly offset from those that currently exist, the presence of these footings (totaling 15 square feet per footing, equating to 50 square feet per site) and the partially demolished existing footings would not substantially hinder agricultural activities relative to existing conditions. This is because the new footings would not occupy a substantial amount of farmland to the extent that farmland is converted to a non-agricultural uses and would not preclude farming activities. As such, no Farmland would be converted to non-agricultural uses, and impacts would be less than significant.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. Lands within Williamson Act Contracts in the County of San Bernardino are minimal, and the proposed project would not be located on any of these lands (Department of Conservation 2013). As such, the project would not conflict with a Williamson Act contract. Additionally, none of the proposed work areas would be located on agriculturally zoned land (County of San Bernardino 2015). However, as described in item (a) above, the tower raising activities would temporarily preclude agricultural activities in an approximately 80,000-square-foot area around two transmission towers (for a total temporary impact area of approximately 3.7 acres). The two raised transmission towers would be located in essentially the same location as the existing towers; therefore, conditions would not change to the extent that the agricultural use of the land would be

affected relative to existing conditions. For these reasons, impacts related to conflicts with agricultural zoning and Williamson Act contracts would be less than significant.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The project area is within land zoned for Resource Conservation by the County of San Bernardino and is located along an existing utility corridor in the arid Mojave Desert. Forest land, timberland, or Timberland Production zones do not exist in the project area. No impact would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As described under item (c) above, the project area does not include forest land. As such, no forest land would be lost or converted on a non-forest use by the proposed project.

e) Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Less Than Significant Impact. The majority of the proposed work areas are located on BLM land, in which agricultural uses (except grazing) are not allowed. Under the proposed project, no impacts would occur to grazing within the Cronese Lake Allotment because the allotment was closed under the DRECP. Five work sites within Segment 1 would occur within Stoddard Mountain Allotment, between I-15 and State Route (SR) 247. This portion of the allotment overlaps the Stoddard Valley OHV use area. However, the portion of the allotment in which the proposed project would occur was closed to ephemeral sheep grazing under the 2006 West Mojave Plan. As such, no impacts would occur to grazing within the Stoddard Mountain Allotment. Five work sites within Segment 7 would occur within the southern portion of the Clark Mountain Allotment, north of the detached portion of the MNP. While a portion of the Clark Mountain Allotment has been relinquished, the portion through which Segment 7 traverses is un-relinquished by the grazing lessee.

During times of active construction (grading) within the ROW, temporary nuisance impacts associated with the generation of fugitive dust, presence of heavy equipment, and noise would occur. Work in Segment 7 is anticipated to be phased over the course of approximately 4 weeks, assuming that work at each of the 7 grading sites within Segment 7 takes an average of 3 days. Due to short duration of construction at each site, nuisance impacts would be temporary in nature and would not preclude grazing activities. During construction activity, LADWP would implement public safety measures in work areas, such as installation of flagging around heavy equipment during operation, during which grazing could be temporarily precluded in these areas; however,

grazing access along the entirety of the ROW or proposed project area within the Clark Mountain Allotment would not be precluded all at once. LADWP, in coordination with BLM, would notify the grazing lessee of temporary construction activities prior to start of construction within the Clark Mountain Allotment.

Furthermore, construction activities would be generally confined to the 80,000-square-foot pad area around each tower raising site and such indirect impacts would not result in the conversion of agricultural uses to a non-agricultural use. As such, areas subject to indirect impacts would be limited and would not be permanently converted on a non-agricultural use. The proposed project would not result in changes to the infrastructure of the area affecting the agricultural economy and would not result in other indirect impacts leading to conversion of agricultural land uses. As such, impacts would be less than significant.

References

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BLM. 2015. *West Mojave (WEMO) Route Network Project Draft California Desert Conservation Plan Amendment and Supplemental Environmental Impact Statement for the California Desert District*. February 2015. Accessed August 13, 2015. http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html.

County of San Bernardino. 2015. "Land Use Services Zoning Look-up." Accessed August 19, 2015. http://sbcounty.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=b3a8d3286a6b41d7ad2b80e871a4e048.

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3.3 Air Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Existing Setting

The proposed project is located within the Mojave Desert Air Basin (MDAB), which includes portions of San Bernardino County, Kern County, Riverside County, and Los Angeles County. The proposed project work sites are located within the boundaries of the San Bernardino County portion of the MDAB. The Mojave Desert Air Quality Management District (MDAQMD) has jurisdiction over the desert portion of San Bernardino County and the far eastern end of Riverside County. Prevailing winds in the MDAB are out of the west and southwest, due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB.

The work sites of the proposed project are all located along the MCV1, MCV2, and MVL1 transmission line corridor, which extends in a southwest to northeast direction parallel to I-15 through the Mojave Desert. Table 3.3-1, Project Area Attainment Status, presents the attainment status of the project area with respect to the California Ambient Air Quality Standard (CAAQS).

Table 3.3-1
Project Area Attainment Status

Pollutant	Designation/Classification
	State Standards
Ozone – one hour	Nonattainment/Moderate
Ozone – eight hour – WMDONA	Nonattainment
Ozone – eight hour – Remainder of MDAB	Nonattainment
PM_{10}	Nonattainment
$PM_{2.5}$ – WMDONA	Nonattainment
$PM_{2.5}$ – Remainder of MDAB	Unclassified
Carbon Monoxide	Attainment
Nitrogen Dioxide	Attainment
Sulfur Dioxide	Attainment
Lead	Attainment
Hydrogen Sulfide	Unclassified
Sulfates	Attainment
Vinyl Chloride	No designation
Visibility Reducing Particles	Unclassified

Sources: California Air Resources Board (CARB) 2014
Notes: PM_{10} = particulate matter that is 10 microns or less in diameter; $PM_{2.5}$ = particulate matter that is 2.5 microns or less in diameter; WMDONA = Western Mojave Desert ozone nonattainment area; Attainment = meets the standards; Nonattainment = does not meet the standards; Unclassified = insufficient data to classify; Unclassified/Attainment = meets the standard or is expected to be meet the standard despite a lack of monitoring data.

In summary, the entire project area is currently in nonattainment for the state 1-hour and 8-hour ozone (O_3) standards, as well as state standards for particulate matter with a diameter less than or equal to 10 microns (PM_{10}). Portions of the project area within the Western Mojave Desert ozone nonattainment area are also designated nonattainment for particulate matter with a diameter less than or equal to 2.5 microns ($PM_{2.5}$) standards. The project area is unclassified or in attainment for the other CAAQS.

MDAQMD attains and maintains air quality conditions for the desert portion of San Bernardino County and the far eastern end of Riverside County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean-air strategy of MDAQMD includes preparing plans and programs for the attainment of ambient air-quality standards, adopting and enforcing the rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. MDAQMD also inspects stationary sources of air pollution, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations aimed at bringing the region into compliance with the CAAQS. Air quality plans applicable to the proposed project are summarized in Table 3.3-2, Summary of MDAQMD Air Quality Plans.

Table 3.3-2
Summary of MDAQMD Air Quality Plans

Pollutant	Plan Title	Date	Status
Ozone	*2004 Ozone Attainment Plan* (State and Federal)	April 26, 2004	Adopted by MDAQMD and CARB in April 26, 2004.
	Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)	June 9, 2008	Adopted by MDAQMD and CARB in June 9, 2008.
Nitrogen dioxide (NO_X) and volatile organic compounds (VOC)	*1991 Air Quality Attainment Plan*	August 26, 1991	Adopted by MDAQMD and CARB in August 26, 1991.
	Reasonable Further Progress Rate-Of-Progress Plan	October 26, 1994	Adopted by MDAQMD and CARB in October 26, 1994.
	Post 1996 Attainment Demonstration and Reasonable Further Progress Plan	October 26, 1994	Adopted by MDAQMD and CARB in October 26, 1994.
	Triennial Revision to the 1991 Air Quality Attainment Plan	January 22, 1996	Adopted by MDAQMD and CARB in January 22, 1996.
Respirable and fine particulate matter (PM_{10} and $PM_{2.5}$)	*Mojave Desert Planning Area Federal Particulate Matter Attainment Plan*	July 25, 1995	Adopted by MDAQMD and CARB in July 25, 1995.

Source: MDAQMD 2011

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. A project is non-conforming with an air quality plan if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable MDAQMD rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Zoning changes, specific plans, general plan amendments and similar land use plan changes which do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to comply with the applicable air quality plan (MDAQMD 2011).

The proposed project would comply with all applicable MDAQMD rules and regulations, such as Rule 401 (Visible Emissions) and Rule 403.2 (Fugitive Dust Control for the Mojave Desert Planning Area). The proposed project would not conflict with or propose to change existing land uses or result in population growth. In addition, the proposed project would not result in a long-term increase in the number of trips or increase the overall vehicle miles traveled in the area. Haul truck, vendor truck, and worker vehicle trips would be generated during the proposed grading and construction activities, but would cease after construction is completed. In regards to long-term operations, the proposed project would not change the routine inspection and maintenance of the existing transmission lines or result in a net increase in emissions. The proposed project would not conflict with or delay the implementation of the MDAQMD Federal 8-hour Ozone Attainment Plan. Based on these considerations, the proposed project would result in a less-than-significant impact.

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. Construction of the proposed project would result in emissions of criteria air pollutants for which the California Air Resources Board (CARB) have adopted ambient air quality standards (i.e., CAAQS, respectively). Projects that emit these pollutants have the potential to cause or contribute to violations of these standards. The MDAQMD has adopted significance thresholds, which, if exceeded, would indicate the potential to contribute to violations of the CAAQS.

The MDAQMD *CEQA Air and Federal Conformity Guidelines* (MDAQMD 2011), sets forth quantitative emission significance thresholds for criteria air pollutants below which a project would not have a significant impact on ambient air quality. Proposed project-related air quality emissions estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 3.3-3, MDAQMD Air Quality Significance Thresholds, are exceeded. The emission-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly, and the impacts of an individual project's emissions of O_3 precursors (VOC and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods. MDAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions.

Table 3.3-3
MDAQMD Air Quality Significance Thresholds

Pollutant	Annual Threshold (tons per year)	Daily Threshold (pounds per day)
VOC	25	137
NO_x	25	137
CO	100	548
SO_x	25	137
PM_{10}	15	82
$PM_{2.5}$	15	82
Hydrogen Sulfide[a]	10	54
Lead[a]	0.6	3

Source: MDAQMD 2011

[a] The proposed project includes typical construction equipment and on-road vehicles, which result in negligible (if any) emissions of hydrogen sulfide and lead. Therefore, these pollutants are not discussed in this analysis.

Construction of the proposed project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, dust emissions, and combustion pollutants from on-site construction equipment, as well as from employee vehicles and off-site trucks hauling construction materials. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and

for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

Pollutant emissions associated with temporary construction activity were quantified using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2, available online (www.caleemod.com). Construction activities, major construction equipment, and quantities of excavated soils were provided by the applicant. Default values provided by CalEEMod were used where detailed project information was not available.

It is anticipated that construction of the proposed project would commence in 2019 and would last up to 18 months, depending on weather conditions, site access, and the availability of personnel and equipment. A conservative scenario was developed whereby all construction activities would occur during the same year. The estimated annual construction emissions were based on the following assumptions (duration of phases is approximate):

- Concurrent Site Grading – 5 weeks
- Individual Site Grading – 19 weeks
- Tower Raising – 18 weeks

The construction equipment mix included in the model for the proposed project are shown in Table 3.3-4, Anticipated Construction Equipment. The equipment mix anticipated for construction activity is based on applicant input and typical construction practices. The equipment mix is meant to represent a reasonably conservative estimate of construction activity. For most of the equipment, it was assumed that a "typical" equipment fleet (such as horsepower and load factor, as implemented by CalEEMod) would be used for construction. For the analysis, it is generally assumed that heavy construction equipment would operate for approximately 8 hours per day, 5 days per week.

Table 3.3-4
Anticipated Construction Equipment

Construction Phase	Equipment	Quantity
Concurrent Site Grading	Excavators	2
	Graders	2
	Bulldozer	2
	Skid-steer loader	2
	Wheel/track loader	2
	Backhoe loader	2

Table 3.3-4
Anticipated Construction Equipment

Construction Phase	Equipment	Quantity
Individual Site Grading	Excavators	1
	Graders	1
	Bulldozer	1
	Skid-steer loader	1
	Wheel/track loader	1
	Backhoe loader	1
Tower Raising	Cranes	4
	Manlifts	3
	Wheel/track loader	1
	Backhoe loader	1
	All-terrain forklift	1
	Air compressor	1

Table 3.3-5, Estimated Construction Emissions, depicts the daily emissions for the following two worse-case construction scenarios: (1) simultaneous tower raising and grading activities; and (2) concurrent grading activities at two sites. Annual emissions are also included in Table 3.3-5 to account for all grading and tower raising activities of the proposed project.

Table 3.3-5
Estimated Construction Emissions

	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Annual Emissions (tons per year)	0.48	4.89	3.80	0.01	0.56	0.37
MDAQMD Annual Threshold	*25*	*25*	*100*	*25*	*15*	*15*
Threshold Exceeded?	No	No	No	No	No	No
Daily Emissions (pounds per day) – Tower Raising + Grading Scenario	9.28	89.28	74.68	0.10	9.84	6.40
MDAQMD Daily Threshold	*137*	*137*	*548*	*137*	*82*	*82*
Threshold Exceeded?	No	No	No	No	No	No
Daily Emissions (pounds per day) – Concurrent Grading Scenario	8.49	77.42	74.43	0.07	10.85	7.04
MDAQMD Daily Threshold	*137*	*137*	*548*	*137*	*82*	*82*
Threshold Exceeded?	No	No	No	No	No	No

NA = Not Applicable. VOC = ROG (in CalEEMod Output)
See Appendix E for detailed results. These estimates reflect control of fugitive dust required by MDAQMD Rule 403.2.

As shown in Table 3.3-5, annual and daily construction emissions would not exceed the MDAQMD significance thresholds for VOC, NO_x, carbon monoxide (CO), oxides of sulfur (SO_x), PM_{10}, or $PM_{2.5}$. Regardless, the proposed project would be required to comply with MDAQMD Rule 403.2 to control fugitive dust emissions generated during grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include the following:

- Short-term dust control by a water truck and/or available water source on or near the drilling rig;
- Minimize and cleanup trackout onto paved roads;
- Cover haul trucks;
- Stabilize (chemical or vegetation) site upon completion of grading when subsequent development is delayed;
- Rapid cleanup of project-related trackout or spills on paved roads; and
- Minimize grading and soil movement when winds exceed 30 miles per hour.

In regards to long-term operations, the proposed project would not change the routine inspection and maintenance of the existing transmission lines or result in a net increase in emissions. Overall, the proposed project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. This impact would be less than significant.

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. The MDAB is a nonattainment area for O_3, PM_{10}, and $PM_{2.5}$ under the CAAQS. The poor air quality in the MDAB is the result of cumulative emissions from motor vehicles, off-road equipment, commercial and industrial facilities, and other emission sources. Projects that emit these pollutants or their precursors (i.e., VOC and NO_x for O_3) potentially contribute to poor air quality. As indicated in Table 3.3-5, daily and annual construction emissions associated with the proposed project would not exceed the MDAQMD significance thresholds. The proposed project would not generate a long-term increase in operational emissions. Furthermore, the proposed project would not conflict with the MDAQMD 2004 or 2008 Ozone Attainment Plans, which address the cumulative emissions in the MDAB and account for emissions associated with construction activity in the MDAB. Accordingly, the proposed project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants. This impact would be less than significant.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The MDAQMD considers residences, schools, daycare centers, playgrounds and medical facilities to be sensitive receptor land uses (MDAQMD 2011). Land uses surrounding the proposed work areas consists primarily of undeveloped open space areas in the Mojave Desert. There is some development within the vicinity, generally consisting of scattered rural residences. Construction of the proposed project would result in the temporary (18 months or less) generation of emissions associated with on-site equipment operation and off-site trucks and worker vehicles; however, emissions would be below the MDAQMD thresholds and would not result in substantial criteria air pollutant emissions. In addition, the construction activities would move along the transmission line corridor and would not result in extended exposure of individual residences to criteria air pollutants or toxic air contaminants (such as diesel particulate matter). Therefore, although rural residential land uses are located in the vicinity of the project area, the proposed project would not expose residents to long-term substantial air pollutant or toxic air contaminant concentrations. Accordingly, the proposed project would result in a less than less-than-significant impact.

e) Would the project create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. Odors are a form of air pollution that is most obvious to the general public and can present problems for both the source and surrounding community. Although offensive odors seldom cause physical harm, they can be considered an annoyance and cause concern. Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the proposed project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment. Such odors are temporary and generally occur at magnitudes that would not affect substantial numbers of people. In regards to long-term operations, the proposed project would not change the routine inspection and maintenance of the existing transmission lines and would not result in any sources of substantial odors. Therefore, impacts associated with odors would be considered less than significant.

References

California Air Resources Board (CARB). 2014. *Area Designation Maps*. http://www.arb.ca.gov/desig/adm/adm.htm. Accessed November 23, 2015.

Mojave Desert Air Quality Management District (MDAQMD). 2011. *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*. August. http://www.mdaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=2910.

United States Environmental Protection Agency (EPA). 2015. *Green Book – Current Nonattainment Counties for All Criteria Pollutants*. http://www3.epa.gov/airquality/greenbook/ancl.html#CALIFORNIA. Accessed November 23, 2015.

3.4 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

Existing Setting

Area of Potential Effect for Biological Resources

For the purposes of the biological resources assessment, the area of potential effects (APE) is defined as the geographic area or areas within which the proposed project may directly or indirectly impact biological resources, consistent with the

terminology used in the Biological Resources Report. The horizontal APE includes the proposed grading areas and the existing access roads where excavated soils would be redistributed, plus a 100-foot buffer to account for any changes in the limits of disturbance (e.g., contouring of grading areas to avoid entrapment of wildlife), changes in access routes, movement/storage of equipment, and/or potential indirect impacts to biological resources that may be generated from project activities, such as dust, noise, and vibrations. The proposed grading areas and the existing access roads where excavated soils would be redistributed make up the area of direct impact for biological resources. The vertical APE includes the maximum limits of grading, which is not anticipated to exceed 9 feet in depth at any grading site (Appendix D1).

Special Designations

Portions of BLM land are often given special designations to set aside land for a special purpose, such as wilderness study and conservation. Special designations that are relevant for biological resources assessment specific to wildlife include Recovery Areas, ACECs, NCLs, and critical habitat.

Areas of Critical Environmental Concern

ACECs are special management areas established by the BLM to protect and prevent irreparable damage to important historical, cultural, and scenic values; fish or wildlife resources, or other natural systems or processes; or to protect human life and safety from natural hazards. Areas protected based on their importance for fish and wildlife resources include habitat for endangered, threatened, or sensitive species, or habitat essential for maintaining species diversity. Areas protected based on their importance for natural processes or systems may be habitat for endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features. The project area extends through six ACECs: Daggett Ridge Monkey Flower, Ivanpah, Northern Lucerne Wildlife Linkage, Ord-Rodman, Shadow Valley, and Superior-Cronese.

Critical Habitat

Section 4(a)(3) and (b)(2) of the Federal Endangered Species Act requires the designation of Critical Habitat for federally listed species to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical Habitat is defined in Section 3(5)(A) of the Federal Endangered Species Act as follows: (1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special management consideration or protection, and (2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

There is USFWS-designated Critical Habitat for desert tortoise within the project region. The majority of the APE is outside of USFWS-designated Critical Habitat; however, the following work areas, located within Segments 2, 3, and 4, occur within Critical Habitat for desert tortoise (USFWS 2014, as cited in Appendix D1):

- MVL1 159-1
- MVL1 129-4 and MVL1 129-5

- MCV1 138-1
- MVL1 158-6
- MVL1 150-5
- MVL1 150-4
- MVL1 150-3
- MCV1 129-1
- MCV2 104-5 and MCV2 105-1
- MCV2 103-3 and MCV2 103-4
- MCV2 100-5 and MCV2 101-5
- MCV2 97-5 and MCV2 98-1
- MCV2 97-1 and MCV2 98-2
- MCV2 93-4 and MCV2 93-5

No other Critical Habitat occurs within the APE. Impacts within Critical Habitat require consultation with USFWS and subsequent mitigation, such as habitat restoration and/or land acquisition/deeded easement for inclusion in a wildlife conservation area.

California Desert National Conservation Lands

Phase I of the DRECP designated 4.2 million acres as part of the California Desert National Conservation Lands. The proposed project extends through three areas of California Desert National Conservation Lands: Kingston – Amargosa, Mojave and Silurian Valley, and Pinto Lucerne Valley and Eastern Slopes.

Biological Resources by Segment

ESA conducted a literature review, a database review, and biological surveys in 2013 and 2014 to identify plant species, vegetation communities, special-status wildlife species, and other sensitive biological resources in the project area. Their results are summarized below. A full description of their results is contained in Appendix D1.

Based on the database review and habitat survey, a total of 21 special-status plant species[1] were determined to have the potential to occur within the APE. See Appendix D1 for a list of these species and for figures showing known recorded occurrences of special-status plant species in the project area and vicinity. Seventeen of these special-status plant species were determined to have a low potential to occur in the project area based on the results of the biological surveys, species distribution, and habitat types found within the APE. The remaining four species were observed on site during the biological surveys, specifically within Segments 1, 6, and 7.

Native succulents that are protected under the California Desert Native Plants Act were also observed within the project area during the biological surveys. Such species included buckhorn cholla (*Cylindropuntia acanthocarpa* var. *acanthocarpa*),

[1] For the purposes of the Biological Resources Report, the term "special-status plant species" refers to species that are protected by the Federal Endangered Species Act or the California Endangered Species Act; species that are designated as Protected or Fully Protected by the California Department of Fish and Wildlife; species that are given a California Rare Plant Rank of 1A, 1B, 2A, or 2B by the California Native Plant Society; species designated as sensitive by city, county, or regional planning documents; or species recognized as "sensitive" by the BLM, USWFS, or other regulatory agency.

silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), hedgehog cactus (*Echinocereus engelmannii*), cottontop barrel cactus (*Echinocactus polycephalus*), California barrel cactus (*Ferocactus cylindraceus),* fish hook cactus (*Mammillaria tetrancistra*), and beavertail cactus (*Opuntia basilaris*) (Appendix D1). The vegetation and plant species identified in the project area are characterized by segment in the paragraphs below.

Fifteen wildlife species were determined to have some potential to occur within the APE, including five mammal species, six bird species, three reptile species, and one fish species. Two special-status wildlife species were determined to be in the APE: desert tortoise (*Gopherus agassizii*), a federal and state threatened species, was determined to be present within the project area in Segments 2, 3, 4, and 6, and loggerhead shrike (*Toxostoma lecontei*), a California Species of Special Concern, was observed in Segment 5. One species, the golden eagle (*Aquila chrysaetos*), was determined to have a high potential to occur in Segments 1, 2, and 5, and in areas outside of the APE proper, though close enough that they may be affected by project activities. Additional details regarding presence of golden eagles in the vicinity of individual project components and potential impacts are provided in the site-specific discussions that follow. Four special-status wildlife species were determined to have a moderate potential to occur: American badger (*Taxidea taxus*), desert kit fox (*Vulpes macrotis arsipus*), pallid bat (*Antrozous pallidus*), and burrowing owl. The remaining seven special-status species were determined to have a low or negligible potential to occur based on results of biological surveys, known species distribution, and poor habitat suitability found within the APE (Appendix D1).

Segment 1

Plant Species and Vegetation Communities

The APE within Segment 1 is moderately disturbed from previous construction and development associated with installation of the existing transmission towers, Powerline Road, and associated access and spur roads. Vegetation within Segment 1 consists of a moderate quality Mojave creosote bush scrub habitat dominated by native shrubs, such as creosote (*Larrea tridentata*) and cheesebush (*Ambrosia salsola*). Other common native species observed within Segment 1 include Mohave yucca (*Yucca schidigera*), eastern Mojave buckwheat (*Eriogonum fasciculatum* var. *polifolium*), California ephedra (*Ephedra californica*), burrobush (*Ambrosia dumosa*), Acton encelia (*Encelia actoni*), sweetbush (*Bebbia juncea*), and desert trumpet (*Eriogonum inflatum*). The Mojave creosote scrub community contains a disturbed understory dominated by annual nonnative grasses such as red brome (*Bromus madritensis*) and cheat grass (*Bromus tectorum*), and forbs, such as fiddleneck (*Amsinckia tessellata*), red-stemmed filaree (*Erodium cicutarium*), Asian mustard (*Brassica tournefortii*), and short-pod mustard (*Hirschfeldia incana*) (Appendix D1).

Sensitive Resources

No sensitive vegetation communities were identified in the APE for Segment 1. One special-status plant species (Barstow woolly sunflower (*Eriophyllum mohavense*) was recorded within 1 mile of the APE. However, this single recorded occurrence was in 1914 and no additional occurrences have been recorded since. Two native succulents protected under the California Desert Native Plants Act (teddy bear chollas (*Cylindopuntia bigelovii*) and one pencil cholla) were mapped near the grading site between towers MCV1_145-3 and MCV1_145-4 (Appendix D1).

Common Wildlife

The APE within Segment 1 provides suitable habitat for a number of common wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed within this APE include Great Basin collared lizard (*Crotaphytus bicinctores*), western side-blotched lizard (*Uta stansburiana elegans*), and western whiptail (*Aspidoscelis tigris tigris*); avian species observed or detected include ash-throated flycatcher (*Myiarchus cinerascens*), loggerhead shrike (*Lanius ludovicianus*), common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), verdin (*Auriparus flaviceps*), bushtit (*Psaltriparus minimus*), rock wren (*Salpinctes obsoletus*), cactus wren (*Campylorhynchus brunneicapillus*), European starling (*Sturnus vulgaris*), lark sparrow (*Chondestes grammacus*), black-throated sparrow (*Amphispiza bilineata*), and house finch (*Haemorhous mexicanus*); and mammal species observed during the survey include desert cottontail (*Sylvilagus audubonii*),white-tailed antelope ground squirrel (*Ammospermophilus leucurus*), kangaroo rat (*Dipodomys* sp.), and desert woodrat (*Neotoma lepida*). In addition, a potentially active coyote (*Canis latrans*) den was observed near tower MVL1_147-5 but no live coyotes were observed. Avian species were observed or detected within the desert scrub habitat surrounding the work area and perched on transmission lines and towers; however, no nests or nesting behavior were observed (Appendix D1).

Sensitive Wildlife Species

The California Natural Diversity Database (CNDDB) documents the occurrence of three species within 5 miles of the APE within Segment 1: golden eagle, desert tortoise, and prairie falcon (*Falco mexicanus*). The habitat within Segment 1 provides high-quality habitat for the federal and state threatened desert tortoise. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area; however, no desert tortoise or signs of desert tortoise (e.g., burrows, scat, tracks, shell fragments) were found in the APE in Segment 1. Although no desert tortoises were observed in Segment 1 during the biological surveys, there is a moderate to high potential for the species to enter or occupy the work area prior to ground disturbance based on the presence of suitable habitat known occurrences within the region (CNDDB 2014, as cited in Appendix D1).

The habitat within Segment 1 provides moderately suitable habitat for several species that are listed as California Species of Special Concern, including burrowing mammals, such as desert kit fox and American badger. None of these species were observed within the APE during the biological surveys; however, one inactive kit fox den site was observed near tower MCV1 145-3, south of the access road.

The APE within Segment 1 provides suitable nesting habitat for a number of shrub and ground-nesting avian species, including horned lark, loggerhead shrike, and burrowing owl. This area also provides suitable foraging habitat and nesting opportunities for golden eagle and the BLM reports that there is an active golden eagle nest on a tower in this segment. In addition, there are several golden eagle nests in the vicinity of Stoddard Mountain. Additionally, although not considered natural nesting habitat, the transmission towers located within the APE provide suitable nesting habitat for larger avian species including common raven and red-tailed hawk (*Buteo jamaicensis*). The following California Species of Special Concern were observed within Segment 1: loggerhead shrike, horned lark, and lark sparrow. No other active

or inactive nests were observed within transmission towers or within the habitat throughout the Segment 1 APE; however, focused surveys were not conducted and additional nests may be present (Appendix D1).

Segment 2

Plant Species and Vegetation Communities

The APE within Segment 2 is moderately disturbed from previous construction and development associated with installation of the transmission towers, Powerline Road, and associated access and spur roads. Vegetation within Segment 2 generally consists of a moderate-quality Mojave creosote bush scrub community dominated by creosote bush. Common succulent plant species observed in Segment 2 include silver cholla, pencil cholla, cottontop barrel cactus, and Engelmann's hedgehog cactus (*Echinocereus engelmannii*). Other common native species observed within this segment include Acton encelia, burrobush, cheesebush, desert tea, and desert trumpet. The Mojave creosote scrub community contains a disturbed understory dominated by annual non-native grasses such as red brome, cheat grass, small flower melic grass, common Mediterranean grass, fiddleneck, red-stemmed filaree, Asian mustard, and short-pod mustard (Appendix D1).

Sensitive Resources

No sensitive vegetation communities were identified for the APE within Segment 2, and no special-status plant species were observed during biological surveys. The potential for occurrence of special-status plant species within the project area for this segment is low based on the level of existing disturbance/development within the limits of the majority of proposed work areas. However, seven native succulents that are protected under the California Desert Native Plants Act were observed within or immediately adjacent to the APE in Segment 2: silver cholla, pencil cholla, hedgehog cactus, cottontop barrel cactus, teddy bear cholla, beavertail, and Mohave yucca. One teddy bear cholla was mapped south of tower MVL1_158-6, and another was mapped along the edge of the access road between tower MVL1_150-4 and MVL1_150-5. One Mojave yucca was mapped near the grading site between tower MVL1_155-5 and MVL1_155-6 (see Appendix D1 for figures showing the locations of the observed species). The remaining native succulent species within the APE were observed outside the immediate vicinity of the areas where direct impacts would occur (Appendix D1).

Common Wildlife

The APE within Segment 2 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed within this APE include western whiptail, zebratail lizard (*Callisaurus draconoides*), and side-blotched lizard (*Uta stansburiana*). Common avian species observed within Segment 2 include ash-throated flycatcher and black-throated sparrow (*Amphispiza bilineata*). Mammal species observed during the survey include desert woodrat, white-tailed antelope squirrel, and black-tailed jackrabbit (*Lepus californicus*) (Appendix D1).

Sensitive Wildlife Species

The APE for Segment 2 provides high quality habitat for the federal and state threatened desert tortoise. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. During

the 2014 focused surveys, a total of 5 active burrows, 10 inactive burrows, and 4 observations of sign (scat, carcass, and pellets) were observed within Segment 2. Three of the active burrows were unoccupied during the survey and were located adjacent to the access road; one active burrow (occupied by a tortoise) was located near the excavation area between towers MCV1_129-1 and MCV1_129-2; and one occupied burrow was located north of tower MCV1_129-1 away from the impact area, but still within the APE. Of the inactive burrows, four were located adjacent to the access road, three were located within or adjacent to an excavation area, and three were located away from impact areas.

The APE also provides high-quality suitable habitat for several additional burrowing wildlife species that are listed as California Species of Special Concern or otherwise considered sensitive by CDFW. These species include burrowing owl, desert kit fox, and American badger. Several suitable burrowing owl burrows were found throughout the APE. Although these burrows were observed within the APE, none were within or near the proposed impact areas. Two potentially active kit fox dens and two burrows of unknown species were observed within the APE; however, none were observed within or near the proposed impact areas. Based on the size and shape of the unidentified burrows, there is potential for burrowing owl, desert kit fox, and American badger to use them; however, no identifying signs for these species (e.g., scat, tracks, whitewash, prey remains, burrow decoration) were observed.

The APE for work areas within Segment 2 provides suitable nesting habitat for a number of shrub and ground-nesting avian species, such as black-tailed gnatcatcher (*Polioptila melanura*) and horned lark, which were observed. Although not considered natural nesting habitat, the transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including golden eagle, common raven, and red-tailed hawk. The CNDDB identified a historical nesting record of golden eagle on the lattice tower immediately south of transmission tower MVL1_155-6. According to the BLM, this nest is known to have been consistently active in recent years. Biological surveys conducted in 2013 and 2014 confirmed the presence of this nest, although no golden eagles were observed during these surveys. Based on the confirmed recent use of this nest, there is a high potential for the species to nest on the lattice tower in the future. In 2013, two additional unidentified stick nests were observed within transmission towers in the vicinity of MVL1_155-5 and MVL1_155-6 within the APE; however, these were not observed in 2014. It is possible that these were unfinished golden eagle nests but the eagles decided to nest elsewhere. It is common for eagles to construct multiple nests but only select one for breeding.

Segment 3

Plant Species and Vegetation Communities

The APE within Segment 3 is moderately to highly disturbed from previous construction and development associated with installation of the transmission towers, agriculture, Powerline Road, and associated access and spur roads. Therefore, the native species diversity in Segment 3 is much lower than in other segments due to these disturbances. Vegetation within Segment 3 generally consists of a disturbed Mojave creosote bush scrub community dominated by creosote bush and active agriculture around MCV1_125-6. Less common native shrubs include burrobush and saltbush.

The Mojave creosote scrub community contains a disturbed understory dominated by Mediterranean grass and other non-native species (Appendix D1).

Sensitive Resources

No sensitive vegetation communities were identified for the APE within Segment 3, and no special-status plant species were observed during biological surveys. The potential for occurrence of special-status plant species within Segment 3 is low based on the level of existing disturbance/development within the limits of the majority of proposed work areas. Further, no native species protected under the California Desert Native Plants Act were observed within the APE for Segment 3 during the biological surveys (Appendix D1).

Common Wildlife

The APE within Segment 3 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed during biological surveys include western side-blotched lizard and western whiptail. Avian species observed or detected include red-tailed hawk, killdeer (*Charadrius vociferus*), common raven and turkey vulture (*Cathartes aura*). Mammal species observed during the surveys include coyote and black-tailed jackrabbit.

Sensitive Wildlife Species

The APE within Segment 3 provides moderate quality habitat for the federal and state threatened desert tortoise. Towers MCV1_120-1 and -2 in this segment occur within the Superior-Cronese Critical Habitat Unit designated by USFWS. The APE contains disturbed desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area; however, the highly disturbed nature of the surrounding areas limits the suitability of the work area for the species. Although no live desert tortoises were observed during the focused species survey, scat was observed between towers MCV1_120-1 and MCV1_120-2 and therefore, it is presumed that desert tortoise may be present in the area.

The APE also provides moderately suitable habitat for several species that are listed as California Species of Special Concern or considered sensitive by CDFW. These species include burrowing owl, desert kit fox, and American badger. No observations or sign associated with these burrowing mammal species (e.g., scat, tracks, burrows, prey remains) was observed in the APE.

The APE within Segment 3 provides suitable nesting habitat for a number of shrub and ground-nesting avian species including horned lark and killdeer, which were observed during biological surveys. The transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors including common raven, red-tailed hawk and potentially golden eagle. However, no nesting activity was observed within Segment 3 during the biological surveys, nor was any nests.

Segment 4

Plant Species and Vegetation Communities

Vegetation within the limits of the APE for Segment 4 generally consists of a disturbed Mojave creosote bush scrub community with rocky soils dominated by creosote bush and burrobush. Other common native species observed within this APE include desert tea, desert trumpet, saltbush, and cheesebush. The Mojave creosote scrub community contains a disturbed understory dominated by annual nonnative grasses such as red brome, cheat grass, common Mediterranean grass, Asian mustard, and short-pod mustard (Appendix D1).

Sensitive Resources

One sensitive plant community (Crucifixion Thorn Woodland) was identified during the database search as occurring within the Dunn USGS 7.5-minute topographic quadrangle. As shown in Table 1-1 of this IS MND, a portion of Segment 4 traverses this quadrangle. However, no sensitive plant communities were observed in the APE during the biological surveys, including Crucifixion Thorn Woodland. However, a plant species that is considered sensitive by BLM (the Death Valley sandpaper plant (*Petalonyx thurberi* ssp. *gilmanii*)) was observed within the APE for Segment 4. This plant species has a California Rare Plant Rank of 1B.3. Additionally, eight native species protected under the California Desert Native Plants Act were observed during the biological surveys for Segment 4: silver cholla, beavertail cactus, California barrel cactus, cottontop barrel cactus, teddy bear cholla, pencil cholla, fish hook cactus, and desert holly saltbush. However, only the beavertail cactus was observed in the immediate vicinity of a proposed grading site. Although the other native succulent species are located within the APE, they do not occur within or immediately adjacent to areas where direct impacts would occur (Appendix D1).

Common Wildlife

The APE within Segment 4 provides suitable habitat for a number of wildlife species known to occur within creosote scrub and other desert habitats. Reptile species observed during the survey included long-nosed leopard lizard (*Gambelia wislizenii*), western whiptail, zebratail lizard, side-blotched lizard, desert iguana (*Dipsosaurus doralis*), and desert horned lizard. Common avian species observed during the surveys include red-tailed hawk, Say's phoebe (*Sayornis saya*), ash-throated flycatcher (*Myiarchus cinerascens*), northern mockingbird (*Mimulus polyglottos*), black-throated sparrow (*Spizella brewer*i), white-crowned sparrow (*Zonotrichia leucophrys*), and common raven. Mammal species observed during the surveys include black-tailed jackrabbit, and coyote.

Sensitive Wildlife Species

The APE within Segment 4 provides moderate to high quality habitat for the federal and state threatened desert tortoise. Towers MVL1_129-5 through MCV2_93-4 within this segment occur within the Superior-Cronese Critical Habitat Unit designated by USFWS. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. A total of 18 potentially active desert tortoise burrows were observed within the APE, only one of which was located near an area of excavation. Although no desert tortoises were observed during the

focused survey in Segment 4, there is a moderate to high potential for the species to occupy the work area prior to ground disturbance based on the presence of suitable habitat and inactive burrows, as well as historical records within the vicinity (CNDDB 2014, as cited in Appendix D1).

The APE also provides moderately suitable habitat for several species that are listed as California Species of Special Concern or considered sensitive by CDFW. These species include burrowing owl, desert kit fox, and American badger. Several inactive burrowing owl burrows were found within the APE, but outside of the impact areas. Four inactive potential desert kit fox dens were observed within the APE, but not near a proposed impact area (see Appendix D1 for figures showing the locations of the inactive burrows). No signs of American badger (e.g., scat, tracks, burrows, prey remains) were observed in the APE within Segment 4.

Segment 4 provides suitable nesting habitat for a number of shrub- and ground-nesting special-status avian species. Loggerhead shrike and horned lark, both California Species of Special Concern, were observed within Segment 4. The transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including common raven and red-tailed hawk. One red-tailed hawk nest was observed in tower MCV2_93-5. In addition, the Soda Mountains in the vicinity of this segment provide nesting opportunities for golden eagle. Two dilapidated nests were detected in this area in 2012 and were determined inactive at the time (BLM 2016, as cited in Appendix D1). The current status of these nests is unknown.

Segment 5

Plant Species and Vegetation Communities

Vegetation within the limits of the APE for Segment 5 generally consists of a disturbed Mojave creosote bush scrub community with rocky soils dominated by creosote bush and burrobush. Other common native species observed within this APE include desert tea, desert trumpet, saltbush, and cheesebush. The Mojave creosote scrub community contains a disturbed understory dominated by annual nonnative grasses such as red brome, cheat grass, common Mediterranean grass, Asian mustard, and short-pod mustard (Appendix D1).

Sensitive Resources

No sensitive vegetation communities were identified within the APE for Segment 5. No special-status plant species were observed during the biological surveys. The potential for occurrence of special-status plant species within the proposed impact areas is low based on the level of existing disturbance/development within the limits of the majority of proposed work areas. Seven native succulent species protected under the California Desert Native Plants Act were observed within the APE during biological surveys: Desert holly saltbush, silver cholla, pencil cholla, cottontop barrel cactus, strawberry cactus (*Mammilaria dioica*), beavertail cactus, and Mojave yucca. Of these species, only two were in the vicinity of any grading site: one silver cholla was found near the grading area east of tower MCV1_66-6 and one beavertail cactus was found near the grading site between tower MCV1_88-5 and tower MCV1_89-1. The other native succulent species do not occur within or in the vicinity of areas where direct impacts would occur (Appendix D1).

Common Wildlife

The APE within Segment 5 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed during the survey include western whiptail, zebratail lizard, and desert iguana. Common avian species observed during the surveys include turkey vulture, rock wren, orange-crowned warbler (*Oreothlypis celata*), Townsend's warbler (*Setophaga townsendi*), and black-throated sparrow. Mammal species observed during the surveys include black-tailed jackrabbit and coyote.

Sensitive Wildlife Species

The APE within Segment 5 provides moderate to high-quality habitat for the federal and state threatened desert tortoise. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. No desert tortoise or sign were observed within the APE during the focused species survey; however, there is a moderate to high potential for the species to occupy the work area prior to ground disturbance based on the presence of suitable habitat and historical records within the vicinity (CNDDB 2014, as cited in Appendix D1).

The APE also provides moderately suitable habitat for several species that are listed as California Species of Special Concern or considered sensitive by CDFW. A total of 13 inactive kit fox dens or potential dens, and three active dens were observed during biological surveys. Two of these kit fox dens were located in the vicinity of impact areas: one active den near the excavation area between towers MCV1 87-2 and MCV1 87-3, and two inactive dens between towers MCV1 86-3 and 86-4 (see Appendix D1 for figures showing the locations of the dens). No signs of the burrowing owl or American badger (e.g., scat, tracks, burrows, prey remains) were observed in the APE within Segment 5.

Segment 5 provides suitable nesting habitat for a number of shrub- and ground-nesting special-status avian species. Loggerhead shrike and LeConte's thrasher, both California Species of Special Concern, were observed within Segment 5. The transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including common raven and red-tailed hawk; however, no nests were observed during the surveys.

Segment 6

Plant Species and Vegetation Communities

The native plant diversity within Segment 6 is higher than that of Segments 1 through 5. Vegetation within Segment 6 generally consists of a mosaic of Mojave creosote bush scrub and Joshua tree woodland communities dominated by creosote bush, cheesebush, and Joshua trees. Other common native shrubs include saltbush, desert tea, button brittlebush (*Encelia frutescens*), narrowleaf goldenbush (*Ericameria linearifolia*), and desert sunflower (*Garea canescens*). The scrub community contains an understory dominated by native and nonnative forbs and grasses (Appendix D1).

Sensitive Resources

No sensitive vegetation communities were identified within the APE for Segment 6. No special-status species were observed within the APE in Segment 6. The potential for occurrence of special-status plant species within the proposed

impact areas is low based on the level of existing disturbance/development within the limits of the majority of proposed work areas. However, 10 native succulent species protected under the California Desert Native Plants Act (desert holly saltbush, catclaw acacia (*Acacia greggii*), hedgehog cactus, silver cholla, pencil cholla, cottontop barrel cactus, fish hook cactus, beavertail cactus, Joshua tree, and Mojave yucca) were observed during the biological surveys. Of these species, the following were in the vicinity of a grading site: three Joshua trees were located between towers MCV_61-2 and MCV_61-3; one Joshua tree was located between towers MCV1_61-1 and MCV1_61-2; one cottontop barrel cactus and five Joshua trees were located west of tower MCV1_59-4; two Joshua trees and one silver cholla were located between MCV1_57-5 and MCV1_58-1; one Mojave yucca, one fish hook cactus, and two Joshua trees were located between towers MCV1_56-4 and MCV1_56-5; and two silver cholla, one fish hook cactus, and one Joshua tree were located between towers MCV1_55-2 and MCV1_55-3. Although located within the APE, the other native succulent species do not occur in the vicinity of the areas of direct impact (Appendix D1).

Common Wildlife

The APE within Segment 6 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed during the survey included red racer (*Coluber flagellum piceus*), western whiptail, and side-blotched lizard. Common avian species observed during the surveys include red-tailed hawk, northern mockingbird, black-throated sparrow, western kingbird (*Tyrannus verticalis*), and phainopepla (*Phainopepla nitens*). Mammal species observed during the survey include black-tailed jackrabbit, desert cottontail, antelope ground squirrel, desert woodrat (*Neotoma lepida*), and coyote.

Sensitive Wildlife Species

The APE within Segment 6 provides moderate to high-quality habitat for the federal and state threatened desert tortoise. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. Six inactive desert tortoise burrows were observed during focused species surveys. One burrow was near an excavation area between MCV1_60-5 and 61-1, and two burrows were near an access road between towers MCV1_60-5 and 61-2. Although located within the APE, the remaining three burrows are not in the immediate vicinity of any impact area. No desert tortoises were observed within the APE in Segment 6 during the focused species survey; however, there is a moderate to high potential for the species to occupy the work area prior to ground disturbance based on the presence of suitable habitat, signs, and historical records within the vicinity (CNDDB 2014, as cited in Appendix D1).

The APE also provides moderately suitable habitat for several species that are listed as California Species of Special Concern or considered sensitive by CDFW, including kit fox, burrowing owl, and American badger. A total of six inactive kit fox dens or potential dens were observed within Segment 6 during biological surveys, none of which were located in the vicinity of the excavation areas. One potential burrowing owl burrow was observed, but was located approximately 350 feet from the nearest impact area. No American badger or signs thereof (e.g., scat, tracks, burrows, prey remains) were observed in the APE within Segment 6.

Segment 6 provides suitable nesting habitat for a number of shrub and ground-nesting special-status avian species, such as black-tailed gnatcatcher, a California Species of Special Concern. Transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including common raven and red-tailed hawk. One unidentified potential raptor nest was observed in the tower south of tower MCV1_61-2 during the biological surveys.

There are 2 golden eagle nests located approximately 5 miles north of Segment 6, the status of which is currently unknown (BLM 2016). However, the distance to the nests is sufficient to avoid direct impacts to either nest.

Segment 7

Plant Species and Vegetation Communities

Vegetation within Segment 7 generally consists of a mosaic of black brush scrub and Joshua tree woodland communities dominated by black brush (*Coleogyne ramosissima*) and Joshua trees. Other common native shrubs include cheese bush, Acton Encelia, desert tea, ratany (*Krameria erecta*), Mexican bladder sage (*Salazaria mexicana*), desert pepperweed (*Lepidium fremontii*), and creosote bush. The scrub community contains an understory dominated by native and nonnative forbs and herbs (Appendix D1).

Sensitive Resources

No sensitive vegetation communities were identified for the APE within Segment 7. However, four special-status plant species were observed within the APE in Segment 7. One species, Parish's club cholla (*Grusonia parishii*), which has a California Rare Plant Rank of 2B.2, was not located in the immediate vicinity of any area that would be subject to direct impacts. The other three species were found throughout Segment 7 as follows:

Approximately 83 Tidestrom's milkvetch (*Astragalus tidestromii*; California Rare Plant Rank 2B.3) plants were located along access roads between towers MCV1_38-4 and MCV1_39-1.

Five desert pincushions (*Coryphantha chlorantha*; California Rare Plant Rank 2B.1) were observed along access roads, one within a grading site.

Twenty individual desert pincushions were observed away from any potential impact areas between towers MCV1_36-4 and MCV1_39-1.

Total of 276 individual Rusby's desert mallow (*Sphaeralcea rusby* var. *eremicola*; California Rare Plant Rank 1B.2; BLM sensitive) were observed along access roads, with two located in grading sites and 19 located away from areas of direct impact, between towers MSV1_36-2 and MSV1_39-1.

Six native succulent species protected under the California Desert Native Plants Act (catclaw acacia, teddy bear cholla, silver cholla, cottontop barrel cactus, fish hook cactus, and old man prickly pear cactus (*Opuntia erinacea*)) were observed during the biological surveys within the APE but were not located in the vicinity of any direct impact area. Six additional

species protected under the California Desert Native Plants Act were observed, including one beavertail cactus near the access road south of tower MCV1_39-1, one California barrel cactus near the grading site between towers MCV1_36-4 and MCV1_36-5, and the following species located within the grading sites between towers MCV1_36-2 and MCV1_39-1: 49 buckthorn cactus (*Opuntia acanthocarpa*), 15 Joshua trees, 27 Mojave yuccas, and 6 hedgehog cactus (Appendix D1).

Common Wildlife

The APE within Segment 7 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed during the survey included western whiptail, and side-blotched lizard. Common avian species observed during the surveys include Gambel's quail (*Callipepla gambelii*), red-tailed hawk, hairy woodpecker (*Picoides villosus*), ash-throated flycatcher, western kingbird, bushtit (*Psaltiparus minimus*), cactus wren, blue-gray gnatcatcher (*Polioptila caerulea*), phainopepla, MacGillivray's warbler (*Geothlypis tolmiei*), and Brewer's sparrow (*Spizella breweri*). Mammal species observed during the survey include desert cottontail, antelope ground squirrel, and desert woodrat.

Sensitive Wildlife Species

The APE within Segment 7 provides moderate to high-quality habitat for the federal and state threatened desert tortoise. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. No desert tortoise or sign of desert tortoise was observed within Segment 7 during the focused surveys; however, there is a moderate to high potential for the species to occupy the work area prior to ground disturbance based on the presence of suitable habitat, signs, and historical records within the vicinity (CNDDB 2014, as cited in Appendix D1).

The APE also provides moderately suitable habitat for several species that are listed as California Species of Special Concern or considered sensitive by CDFW, including kit fox, burrowing owl and American badger. A total of four inactive kit fox dens or potential dens were observed within Segment 7 during biological surveys. Of these, two were located in the vicinity of the access roads near towers MCV1 36-5 and MCV1 36-2, while the others were observed away from proposed impact areas. No burrowing owl or American badger or signs of them (e.g., scat, tracks, burrows, prey remains) were observed in the APE within Segment 7.

Segment 7 provides suitable nesting habitat for a number of shrub- and ground-nesting special-status avian species. No nests were observed within Segment 7; however, the transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including common raven and red-tailed hawk.

There are known golden eagle nests located approximately 6 miles south of Segment 7, the status of which is currently unknown. However, the distance to the nests is sufficient that direct impacts to nesting would not occur.

Jurisdictional Waters and Wetlands

A jurisdictional delineation was conducted for the proposed project to determine whether jurisdictional water resources are present within or adjacent to the project area. The jurisdictional delineation was conducted by Psomas in September

2016, and the results are attached to this IS MND as Appendix D2. The survey area for the jurisdictional delineation is similar to the APE for the Biological Resources Report. Jurisdictional water resources were found within the survey areas for each of the segments. The resources identified within the project area consist of non-wetland waters of the U.S., regulated by the U.S. Army Corps of Engineers (USACE); waters of the State, regulated by the Regional Water Quality Control Board (RWQCB); and the bed, bank, and channel of rivers, and/or streams (and associated riparian vegetation), as regulated by the California Department of Fish and Wildlife (CDFW). During field surveys, Psomas found jurisdictional resources within the jurisdictions of each of these agencies. As such, LADWP would be required to obtain a Streambed Alteration Agreement from CDFW, a Section 401 Water Quality Certification, Waste Discharge Requirements from the RWQCB, and a Section 404 Nationwide Permit from the USACE prior to proceeding with the proposed project. No jurisdictional wetlands as defined by the Clean Water Act Section 404 were identified within the project area.

Wildlife Movement Corridors

As determined in the Biological Resources Report, the undeveloped land within and surrounding the APE provides suitable areas for the movement of wildlife species, including desert tortoise and coyote. However, the project alignment and surrounding open space are intersected by three highways (I-15, SR-247, and I-40) that restrict wildlife land movement in the project area under existing conditions (Appendix D1).

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Special-Status Vegetation

Less Than Significant Impact with Mitigation Incorporated. The project area contains numerous special-status plant species and species that are protected under the California Desert Native Plants Act were observed within the APE or would have the potential to occur within the APE (Appendix D1). Where special-status plants, protected desert plants, or the seed banks for such plants are located within grading sites or along access roads where excavated soils would be distributed, they would be subject to direct or indirect impacts. Direct impacts would occur from vegetation removal and/or soil disturbance. Avoidance and minimization measures have been incorporated into the proposed project to minimize direct impacts to protected plant species. Specifically, the restoration phase of the proposed project would include soil salvaging and replacing the top 2 to 6 inches of soil within each of the grading sites to minimize impacts to native plants. As described in Appendix D1, the top 2 inches of soil contain the seed banks for sensitive annual species that could potentially be affected. As such, salvaging, preserving, and replacing the top 2 to 6 inches of soil would ensure that such seed banks are preserved and allowed to persist in place after construction. Restoration would also involve salvaging and storage of native vegetation. The vegetation would be replanted within the impact areas following

construction. Additionally, MM-BIO-1 has been provided to ensure implementation of the restoration phase, to ensure that construction activities remain within designated construction limits, to ensure that larger perennial plants are properly transplanted, and to ensure that overland travel is directed to avoid special-status and protected plants. Implementation of the restoration phase of the project and implementation of MM-BIO-1 would ensure that direct impacts to special-status and protected plant species are reduced to below a level of significance. As such, direct impacts would be less than significant with mitigation incorporated.

Where special-status plants or protected native succulents are located within the APE but outside the direct impact areas described above, such plants could potentially be subject to indirect impacts (e.g., increased fugitive dust, erosion). Indirect impacts would be temporary and minimal, since construction activities at each grading site would last for approximately 1.5 to 3 work days and BMPs would be employed during grading activities. For example, the General Construction Activity Stormwater Permit, issued by the State Water Resources Control Board, requires preparation of and compliance with a SWPPP to reduce stormwater runoff and erosion, thereby protecting nearby vegetation from indirect impacts related to increased runoff and/or erosion.

Compliance with regulations that limit indirect impacts and implementation of MM-BIO-1 would ensure that impacts to special-status and protected plant species are reduced to below a level of significance. Implementation of MM-BIO-1 would reduce direct impacts by requiring avoidance of special-status or otherwise protected plant species during grading activities. MM-BIO-1 requires preparation of a Translocation Plan for larger perennial plants such as Joshua tree, yucca, and cacti species. The Translocation Plan would be implemented when avoidance is not possible. Implementation of MM-BIO-1 would minimize potential indirect impacts to special- status plants, other protected plant species, and jurisdictional water features by ensuring that construction activities would be confined to the areas within construction perimeter stakes. This would ensure that plants and jurisdictional water features located outside of the areas of direct impact would not be trampled by construction workers or vehicles. Additionally, implementation of MM-BIO-1 would ensure that any overland travel that may be required during construction is directed to avoid sensitive biological resources, such as special-status plants, other protected plant species, and jurisdictional water features. As such, impacts to special-status and protected plant species would be less than significant with mitigation incorporated.

MM-BIO-1 The Los Angeles Department of Water and Power and/or its construction contractor shall retain a qualified biologist who shall perform the activities listed below. For the purposes of this measure, the term "protected plant(s)" shall mean the following: special-status plant species as defined in Section 3.4.1 of the Environmental Assessment/Initial Study – Mitigated Negative Declaration (IS MND) and native plants and succulents protected by the Native Plant Protection Act, California Desert Native Plants Act, and San Bernardino County Development Code Section 88.01.060(c).

- The qualified biological monitor will oversee restoration efforts, which shall be performed as specified in the project description (Section 2.1 of the IS MND) and in accordance with

the Land Use Plan Amendment (LUPA)-wide Conservation Management Action (CMA) measure for restoration of areas disturbed by construction activities (LUPA-BIO-7).

- The qualified biological monitor will coordinate with the construction team to ensure that construction activities are confined to the areas within construction perimeter stakes and that protected plants are avoided to the maximum extent feasible.
- The qualified biological monitor will define any areas of overland travel such that overland travel is confined to the project limits and/or to previously disturbed areas identified as non-sensitive by the biologist.
- The qualified biological monitor will oversee implementation of a Translocation Plan and transplanting of larger perennial protected plants. The Translocation Plan shall be reviewed and approved by the Bureau of Land Management prior to commencement of construction activities. Plants covered in this plan shall include but are not limited to Joshua tree, yucca, and cacti species. The Translocation Plan shall be implemented when complete avoidance of the plants covered in the Translocation Plan is not possible, as determined during construction by the biologist in coordination with the construction contractor.

Special-Status Wildlife

Less Than Significant Impact with Mitigation Incorporated. The project area contains numerous special-status wildlife species and habitat for such species (Appendix D1). Where special-status wildlife species and/or their habitat are located within grading sites or along access roads where excavated soils would be distributed, they would be subject to direct impacts during the proposed project. Direct impacts would occur from vegetation removal, soil disturbance, and/or injury to an individual. Where special-status wildlife and/or suitable habitat are located near the direct impact areas described above, such wildlife and habitat could potentially be subject to indirect impacts. Indirect impacts could include increased noise, human activity, erosion, and fugitive dust. Such indirect impacts could potentially result in temporary disruption to wildlife behavior and damage to habitat.

As determined in the Biological Resources Report, all segments of the proposed project have a moderate to high potential to support desert tortoise. The proposed project would involve grading activities within land that is considered to be suitable desert tortoise habitat. Focused desert tortoise surveys were conducted within each work area in the APE. Sign of the species, including potentially active burrows and a desert tortoise carcass, was observed in Segments 2, 3, 4, and 6 within the APE. Live tortoises were observed within Segment 2 (Appendix D1).

Due to the presence of desert tortoises and suitable habitat for desert tortoises within the project area, the activities associated with the proposed project (namely, grading and soil spreading along access roads) would have the potential to result in direct impacts to desert tortoise individuals through injury or killing, in the event that individuals are present within the grading areas during construction activities. Indirect impacts could occur from behavioral disruptions, temporary increases in human activity and noise, and/or removal of habitat during grading and soils spreading along access roads. MM-BIO-3 has been developed to minimize the potential for

injury or killing of desert tortoises to the extent possible and to conform with DRECP requirements. Pursuant to the DRECP, impacts to desert tortoise critical habitat would be compensated at a 5-to-1 mitigation ratio within the same critical habitat unit. MM-BIO-3 would also minimize human contact with desert tortoises and would minimize the potential for disruptions in desert tortoise movement and behaviors. MM-BIO-1 and the restoration component of the proposed project would result in the restoration of any habitat that is disturbed during construction.

Nesting Birds

The APE provides suitable nesting and foraging habitat for a number of common migratory birds and raptor species protected under the Migratory Birds Treaty Act and the Fish and Game Code (Appendix D1). Proposed grading activities and vegetation removal in the work areas would have the potential to disrupt or harm common migratory birds and raptor species protected under the Migratory Birds Treaty Act and the Fish and Game Code, in the event that such birds or raptors were to be present during construction activities. MM-BIO-4 would ensure avoidance and protection of any nesting birds and raptors having the potential to be adversely affected by the proposed project.

Golden Eagle

Several golden eagle nests are known to occur in the project area. Some, such as those in the vicinity of Segments 6 and 7, are sufficiently distant from proposed activities that direct impacts would not occur. Indirect impacts may occur but would be negligible. In other areas, such as adjacent to work areas MVL1_155-5 and MVL1_155-6, nests are close enough to proposed activities that the proposed project may directly affect nesting golden eagles (Appendix D1). MM-BIO-4 and MM-BIO-5 are set forth to avoid nesting golden eagles and to minimize direct and indirect impacts to nesting golden eagles.

California Species of Special Concern

The proposed project has the potential to result in direct removal of suitable habitat for California Species of Special Concern, including loggerhead shrike, burrowing owl, desert kit fox, American badger, and pallid bat. These species may occur immediately adjacent to the project area and may also be indirectly impacted by noises and vibrations generated by the proposed project; however, as the project area is linear and limited in size and duration, impacts to a California Species of Special Concern are not expected, or are expected to be minimal. (Appendix D1). MM-BIO-6 is set forth to avoid and protect California Species of Special Concern.

Implementation of MM-BIO-1 and the restoration phase of the proposed project would minimize direct impacts to habitat from the proposed project. While habitat would be temporarily removed due to grading activities, it would be restored during the proposed project's restoration phase. Restoration would be overseen by a qualified biologist, in accordance with MM-BIO-1. Indirect impacts to habitat would be minimized to the extent feasible through required compliance with regulations, such as MDAQMD Rule 403.2 and the General Construction Activity Stormwater Permit (see Section 3.3(a) for details).

Implementation of MM-BIO-2, MM-BIO-3, MM-BIO-4, and MM-BIO-5, and MM-BIO-6 would result in avoidance and/or protection of sensitive wildlife species during the proposed project. Implementation of these measures would involve preconstruction surveys for sensitive wildlife species and avoidance of such species during construction. Upon implementation of MM-BIO-1 through MM-BIO-6, upon complementation of the restoration phase of the proposed project, and upon compliance with existing regulations, impacts to special-status wildlife species and their habitat would be less than significant with mitigation incorporated.

MM-BIO-2 The Los Angeles Department of Water and Power shall provide ground disturbance mitigation at a ratio of 3-to-1 for impacts within Areas of Critical Environmental Concern (ACEC) and California Desert National Conservation Lands (NCL) units that are cumulatively at or above their respective disturbance caps. Based on Table 3.4-1 in the Initial Study – Mitigated Negative Declaration for the Path 46 Transmission Line Clearance Project, a total of 2.81 acres of ground disturbance impacts would occur within units that are cumulatively over their respective disturbance caps. A portion of these impacts co-occur with impacts to desert tortoise critical habitat, which require a higher mitigation ratio (5-to-1). Where impacts requiring mitigation co-occur, the higher mitigation ratio applies and the implemented mitigation is nested. As such, mitigation for desert tortoise critical habitat, as required in MM-BIO-3, will fulfill the ground disturbance mitigation that is required for impacts in ACECs and NCLs that co-occur with impacts to desert tortoise critical habitat. The Los Angeles Department of Water and Power shall initiate and/or complete the required compensation at a time to be determined by the Bureau of Land Management (BLM) and in accordance with the Land Use Plan Amendment (LUPA) Conservation Management Action (CMA) measure for timing of compensation activities for third party actions (LUPA-COMP-1).

MM-BIO-3 The Los Angeles Department of Water and Power (LADWP) shall provide mitigation for impacts to desert tortoise critical habitat at a ratio of 5-to-1 in accordance with the requirements outlined in the Bureau of Land Management's Desert Renewable Energy Conservation Plan Land Use Plan Amendment (BLM DRECP LUPA). Where impacts to desert tortoise critical habitat co-occur within ground disturbance impacts within Areas of Critical Environmental Concern (ACEC) and California Desert National Conservation Lands (NCL) units that are cumulatively over their respective disturbance caps, the higher mitigation ratio applies (i.e., 5-to-1 for critical habitat) and the implemented mitigation is nested (mitigation for desert tortoise critical habitat fulfills the ground disturbance mitigation that is required in MM-BIO-2). As shown in Table 3.5-1 in the Environmental Assessment/Initial Study – Mitigated Negative Declaration for the Path 46 Transmission Line Clearance Project, a total of 11.19 acres of total nested mitigation is expected to be required to offset both the impacts to desert tortoise critical habitat and the ground disturbance impacts in ACEC and NCL units. Compensatory mitigation shall be implemented consistent with the BLM DRECP

LUPA. LADWP shall complete the required compensation in accordance with the Ground Disturbance Mitigation Plan for the Path 46 Transmission Line Clearance Project (Los Angeles Department of Water and Power 2018; see MND Appendix D13) and the LUPA Conservation Management Action (CMA) measure for timing of compensation activities for third party actions (LUPA-COMP-1).

In addition, as outlined in the LUPA, LUPA-wide CMA measures for desert tortoise shall be implemented (LUPA-BIO-IFS 1 through LUPA BIO-IFS-9). CMAs specific to impacts within ACEC areas shall be implemented in accordance with Section 11.4.2.3 Ecological and Cultural Conservation of the LUPA.

In addition to the measures outlined in the DRECP LUPA, the following protective measures shall also be implemented:

- LADWP shall designate a Field Contact Representative (FCR) for each active segment of the proposed project. The FCR shall be responsible for implementing the required stipulations and halting any activity that may endanger a tortoise or any other sensitive species. The FCR may be a monitor or a project foreman.
- All workers shall participate in a Worker Environmental Awareness Program. The program shall be developed by LADWP and provided to the BLM 2 weeks prior to beginning of construction. The program should include, at a minimum, the following topics: occurrences of desert tortoise, sensitivity of the species to human activities, legal protection, penalties for violations of Federal and State laws, general desert tortoise activity patterns, reporting requirements, measures for protection during construction and operation, and personal measures employees can take to promote conservation.
- LADWP shall provide a minimum of one biological monitor for each active segment of the project who is authorized by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife to handle desert tortoises.
- Preconstruction surveys for desert tortoise shall be conducted for each work area prior to any ground disturbance. All work areas shall be cleared by an authorized biologist within 48 hours of the onset of construction at any work location.
- A qualified biologist shall inspect work areas each day before work commences and shall remain on site for the entire duration of work activities.
- To prevent inadvertent entrapment of tortoise or other wildlife during construction, all excavated, steep-walled holes or trenches shall be covered with tarp, plywood or similar materials at the close of each working day to prevent animals from being trapped. Ramps

may be constructed of earth fill or wooden planks within deep walled trenches to allow for animals to escape action area, if necessary. Before such holes or trenches are backfilled, they shall be thoroughly inspected for trapped animals. Any wildlife observed shall be removed prior to backfilling.

- Tortoise handling shall be prohibited except by an authorized biologist or a biological monitor who is working under the direct supervision of an authorized biologist and only when it is necessary to do so. Should it be necessary to handle a tortoise, the authorized biologist or trainee shall do so using the techniques outlined in the most current version of the Desert Tortoise Field Manual produced by USFWS.
- All access roads not required for ground-to-conductor clearance activities shall be avoided, thereby limiting new or improved accessibility into the area.
- Vehicles shall not exceed a speed of 15 miles per hour in desert tortoise habitat.
- Overnight parking and storage of equipment and material shall be restricted to previously disturbed areas (i.e., access roads and other disturbed areas lacking vegetation). These areas shall be marked by the biological monitor and may include batch sites, pulling sites, and tower sites. If previously disturbed areas are not available, these activities shall be restricted to the right-of-way and shall be cleared of desert tortoises by the biological monitor prior to use.
- Within desert tortoise habitat, workers shall limit their activities and equipment to construction areas and routes of travel that have been flagged to eliminate adverse impacts to desert tortoises and their habitat. Cross-country travel is prohibited. All workers shall be instructed of this requirement.
- During proposed activities, construction personnel shall immediately report any sightings of desert tortoises within the construction zone to the biological monitor.
- Trash and food items shall be removed daily or placed in raven-proof containers.
- Within 30 days following completion of project activities, the FCR and authorized biologist shall prepare a report that includes the following:
    - All tortoises encountered or moved
    - Any tortoise that was injured or killed or found dead by project personnel
    - The practical application of these proposed mitigation measures and any measures that may further the protection of the tortoise during future projects
    - A total of acreage disturbed by jurisdiction
    - Site photos.

MM-BIO-4 Project activities shall avoid the avian nesting season of February 1 through August 31. If project activities must take place during the avian nesting season, a preconstruction clearance survey shall be conducted by a qualified biologist in areas of suitable nesting habitat, particularly those in which nests were observed during previous surveys to ensure direct or incidental take does not occur during the proposed project. Surveys for raptor nests shall focus on potential nesting sites (e.g., cliffs, transmission line structures) within a 0.5-mile buffer around the work areas; and surveys for nesting passerines shall be conducted within 200 feet of the work areas. The clearance survey shall take place no more than 7 days prior to the commencement of project activities, and may occur in conjunction with on-site monitoring for other sensitive wildlife species.

If a nesting bird is found during the clearance survey, an adequate buffer area will be established by a biological monitor, within which no construction will occur to protect the active nest during the duration of the project. Suitable buffers are typically up to 500 feet for common raptors and up to 200 feet for passerines, though buffer distances may be adjusted at the discretion of the biological monitor based on site conditions such as topography and vegetative cover and observed tolerance of the nesting individual(s) to disturbance. For non-listed species, project activities may encroach into the buffer area at the discretion of the biological monitor; however, for listed species, appropriate resource agencies shall be consulted prior to encroachment into an established buffer.

MM-BIO-5 Project activities that take place adjacent to areas where active or inactive golden eagle nests have been discovered shall be subject to the following:

- A qualified eagle biologist shall determine the nesting status of any golden eagle nest within 1 mile of any proposed project activities. The Los Angeles Department of Water and Power shall forward the name(s) and qualifications of each raptor biologist to the Bureau of Land Management (BLM) 2 weeks prior to project activities.
- No work shall occur within 1 mile of an active golden eagle nest during the breeding season (January 31 through August 31) unless a written determination which shows no nest activity has been forwarded to and approved by the BLM. Upon approval of a report showing an inactive nest, the BLM may approve work within one mile of an eagle nest.
- If an injured golden eagle is observed within or adjacent to an active work area, all work shall immediately stop and the U.S. Fish and Wildlife Service and BLM shall be contacted for further instructions.

MM-BIO-6 To ensure that California Species of Special Concern are not adversely impacted by the project, preconstruction clearance surveys shall be conducted by a qualified biologist within 500 feet of work areas. Surveys shall be conducted within 14 days prior to the start of construction in

a given work area. The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 23 to 66 feet apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls. (Surveys may be conducted concurrently with desert tortoise preconstruction surveys.) As each burrow is investigated, surveying biologists shall also look for signs of American badger and desert kit fox. The qualified biologist may use a variety of approaches (including but not limited to monitoring, track plates, and direct observation) and evidence (including burrow characteristics and presence of sign such as scat and tracks) to determine burrow activity. If a burrow within a proposed disturbance area is definitively determined to be inactive, it may be collapsed to prevent future occupation. For inactive burrowing owl burrows, burrow exclusion shall be conducted consistent with the Desert Renewable Energy Conservation Plan's Conservation Management Actions (DRECP CMAs). If any evidence of occupation by a California Species of Special Concern is observed, a buffer shall be established by a qualified biologist that results in sufficient avoidance, as listed below:

- Desert kit fox or American badger potential den: 50 feet
- Desert kit fox or American badger active den: 100 feet
- Desert kit fox or American badger natal den: 500 feet
- Burrowing owl active burrow during breeding season: 656 feet
- Burrowing owl active burrow during non-breeding season: 165 feet

If avoidance of the potential American badger or desert kit fox dens is not possible, the following measures are required to avoid potential adverse impacts to these species:

- If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent American badgers or desert kit foxes from re-using them during construction.
- If the qualified biologist determines that potential dens may be active, an on-site passive relocation program shall be implemented. This program shall consist of excluding American badgers or desert kit foxes from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for seven days to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the qualified biologist determines that American badgers or desert kit foxes have

stopped using the dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.

In the case of burrowing owls, if burrow avoidance is infeasible during the non-breeding season or during the breeding season (February 1 through August 31) where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with Appendix D1 (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation. If passive relocation is required, a qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and a Mitigation Land Management Plan in, accordance with the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation and in accordance with the DRECP CMAs, for review by California Department of Fish and Wildlife and Bureau of Land Management prior to passive relocation activities. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of off-site Burrowing Owl Passive Relocation Compensatory Mitigation.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact with Mitigation Incorporated. The acreage of proposed grading activities that would occur within the mapped jurisdictional waters and wetlands are as follows:

- **USACE Jurisdiction:** 0.204 acre of non-wetland waters of the U.S.
- **RWQCB Jurisdiction:** 0.794 acre of waters of the state.
- **CDFW Jurisdiction:** 0.825 acre under regulatory authority of CDFW.

The acreages listed above are for the entirety of the proposed project; as such, impacts to individual drainages within the project area are minimal (ranging from 0.001 acre to 0.1 acre). Direct impacts to jurisdictional waters and wetlands would occur in these areas, since the project would involve removal of soil and vegetation within drainages. While grading would occur within jurisdictional features, direct disturbances would be minimal, and LADWP would obtain the appropriate regulatory permits to authorize impacts to jurisdictional non-wetland waters (Streambed Alteration Agreement, Section 401 Water Quality Certification, and Section 404 Nationwide Permit). Furthermore, implementation of MM-BIO-1 would ensure that graded areas are restored. This measure would also ensure that construction activities remain within designated construction limits, thereby limiting impacts to jurisdictional drainages. The restoration efforts required by MM-BIO-1 would ensure that

impacts to jurisdictional features remain temporary and short term. Additionally, impacts to jurisdictional features in the project area would be minimized through BMPs set forth in LADWP's erosion control plan and SWPPP. As such, impacts to sensitive vegetation communities or riparian habitat would be less than significant with mitigation incorporated.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. Impacts to federally protected wetlands are not anticipated as a result of project implementation, because no jurisdictional wetlands as defined by the Clean Water Act Section 404 were identified within the project area (Appendix D2). As such, no impact would occur.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact with Mitigation Incorporated. One native species of fish was identified as having the potential to occur within the project area (the Mohave tui chub (*Gila bicolor mohavensis*)). However, as stated in the Biological Resources Report, the potential for this species to occur within the APE was determined to be low. This species requires perennial ponding water that is not present within the APE, and the species was not observed during biological surveys (Appendix D1). As such, the proposed project is not anticipated to affect native fish species.

As characterized in Section 3.5.1, the project area includes wildlife movement corridors, due to the open space areas in which the project is located (Appendix D1). However, as described in the Biological Resources Report, the proposed project would not create a significant physical alteration to the land beyond that which already exists or create a physical barrier that would restrict the movement of wildlife species across the Mojave Desert, and construction activities would be temporary. Additionally, the proposed project does not occur within an area that provides a narrow linkage between larger areas of undeveloped land that would facilitate the movement of wildlife species between two blocks of habitat. Therefore, no impacts to any proposed or established wildlife movement corridors would occur as a result of the proposed project.

The project area contains suitable nesting and foraging habitat for a number of common migratory birds and raptor species protected under the Migratory Birds Treaty Act and the Fish and Game Code (Appendix D1). As such, proposed grading activities and vegetation removal in the work areas would have the potential to disrupt or harm migratory birds and raptor species protected under the Migratory Birds Treaty Act and the Fish and Game Code, in the event that such birds or raptors were to be present during construction activities. MM-BIO-4 would ensure avoidance and protection of any nesting birds and raptors having the potential to be

affected by the proposed project. In the event that a golden eagle nest is identified during the preconstruction surveys that would be conducted in compliance with MM-BIO-4, MM-BIO-5 would be implemented to ensure avoidance and protection of golden eagles. Due to the absence of new physical alterations that would obstruct wildlife movement and implementation of MM-BIO-4 and MM-BIO-5, impacts related to nesting birds and raptors would be reduced below a level of significance. As such, impacts to migratory and nesting birds would be less than significant with mitigation incorporated.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. San Bernardino County Development Code Section 88.01.060(c), Regulated Desert Native Plants, states that specified native desert plants shall not be removed except under a Tree or Plant Removal Permit in compliance with Section 88.01.050 (Tree or Plant Removal Permits). There are two species protected under this local ordinance that are located in the project area: Joshua trees and yuccas. These species were identified during biological surveys within Segment 6 and Segment 7 and were found to be located within several of the grading sites. The grading sites within these segments are located within BLM-owned land (refer to Table 2-2). As such, activities at these sites would not be subject to the San Bernardino County Development Code. Accordingly, Tree or Plant Removal Permits from the County of San Bernardino would not be required for removal of Joshua trees and yucca from the grading sites. However, in accordance with MM-BIO-1, if complete avoidance of such plants is not possible during grading, the biological monitor shall oversee implementation of a BLM-approved Translocation Plan, which would ensure that such plants are safely removed and then reestablished. Because grading sites containing plants protected under San Bernardino County Regulated Desert Native Plants are located within BLM lands, and because such plants would be transplanted and/or avoided**, no impact** would occur relative to consistency with local ordinances protecting biological resources.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less Than Significant Impact with Mitigation Incorporated. The proposed project is located within the boundaries the DRECP. The DRECP is being developed under the California Natural Community Conservation Planning Act and the Federal Endangered Species Act, and the Federal Land Policy and Management Act. The DRECP establishes mitigation and habitat compensation ratios for project impacts that would occur within designated ACEC units (including habitat linkage ACEC's), NCL units, non-ACEC areas, and critical habitat areas.

The BLM DRECP LUPA identifies disturbance caps for each ACEC and NCL unit. Disturbance caps are a limitation on cumulative (past and present) ground disturbance activities allowable in each unit under the LUPA. Projects/activities that result in ground disturbance in units that are cumulatively below their disturbance cap require no additional disturbance mitigation, whereas projects/activities that result in ground disturbance in units that are cumulatively at or above their disturbance cap would require ground disturbance

mitigation. Ground disturbance impacts within units over the cap would require mitigation at a ratio of 3-to-1; mitigation for impacts within overlapping ACEC/NCL units are not double counted. Where ground disturbance impacts within units over the cap co-occur with impacts to other resources that require mitigation (i.e., desert tortoise critical habitat), the higher mitigation ratio applies and the mitigation is assumed to be nested (i.e., mitigation for desert tortoise critical habitat would also fulfill the ground disturbance mitigation). The status of disturbance caps in each unit and the impact acreages in each unit that would occur due to the proposed project are shown in Table 3.4-1. Table 3.4-2 provides the analysis of impacts to ACEC/NCL units and desert tortoise critical habitat.

Table 3.4-1
Land Designations

Land Designation		Designation Overlap	Status of Unit Disturbance Cap	Area to be Impacted within Designation (acres)
BLM Area of Critical Environmental Concern (ACECs)	Daggett Ridge Monkey Flower	Overlaps with the Mojave and Silurian Valley NCL	Over Cap	0.42
	Ivanpah	NA	Over Cap^	0.38
	Northern Lucerne Wildlife Linkage	NA	Over Cap	0.07
	Ord-Rodman	Overlaps with the Mojave and Silurian Valley NCL	Over Cap	0.52
	Shadow Valley	Overlaps with the Kingston-Amargosa NCL	Over Cap	0.98
	Superior-Cronese	NA	Over Cap	0.44
California Desert National Conservation Lands (NCLs)	Kingston-Amargosa	Overlaps with the Shadow Valley ACEC	Over Cap	0.98
	Mojave and Silurian Valley	Overlaps the Daggett Ridge Monkey Flower and Ord-Rodman ACECs	Under Cap	0.41
	Pinto Lucerne Valley and Eastern Slopes	NA	Under Cap	0.52

Notes: Impact acreages based on the ESA Biological Assessment (February 2017). Status of Unit Disturbance Cap based on the BLM Disturbance Cap Tracking data (February 2017).

Table 3.4-2
Land Designations and Impacts

Land Designation		Area to be Impacted within Designation (acres)	Desert Tortoise Critical Habitat	Overall Mitigation Ratio	Total Nested Mitigation Required (acres)
BLM Area of Critical Environmental	Daggett Ridge Monkey Flower*^	0.42	Yes	5-to-1	2.10

Table 3.4-2
Land Designations and Impacts

Land Designation		Area to be Impacted within Designation (acres)	Desert Tortoise Critical Habitat	Overall Mitigation Ratio	Total Nested Mitigation Required (acres)
Concern (ACEC)	Ivanpah^	0.38	No	3-to-1	1.14
	Northern Lucerne Wildlife Linkage^	0.07	No	3-to-1	0.21
	Ord-Rodman*^	0.52	Yes	5-to-1	2.60
	Shadow Valley*	0.98	No	3-to-1	2.94
	Superior-Cronese	0.44	Yes	5-to-1	2.20
California Desert National Conservation Lands	Kingston-Amargosa*	0.98	No	NA	--
	Mojave and Silurian Valley*	0.41	Yes	NA	--
	Pinto Lucerne Valley and Eastern Slopes	0.52	Yes	NA	--

Notes: Impact acreages based on the ESA Biological Assessment (February 2017). Status of Unit Disturbance Cap based on the BLM Disturbance Cap Tracking data (February 2017).

* indicates where ACEC units overlap with NCL units; see Table 3.4-1 for unit overlap details.

^ indicates units that are or are assumed to be cumulatively at or above their respective ground disturbance caps. Overall required mitigation ratio considers the overlap of units and the co-occurrence of impacts to determine the final required ratio.

The BLM has two adopted land use plans that provide specifications for biological resource protection that apply to the project area. These are the West Mojave Plan (WEMO) and the Northern and Eastern Mojave Desert Management Plan (NEMO). The WEMO Plan identifies take-avoidance measures to be implemented for protection of species and habitat within designated management areas, such as DWMAs, as well as outside designated areas. These avoidance measures apply to siting new ROWs, as well as operation and maintenance activities. Examples of avoidance measures include requiring tortoise surveys to be conducted prior to ground disturbance (intensity varying from one designated area to another), establishing criteria for environmental monitors overseeing ground-disturbing activities, limiting maintenance activities to existing access roads and months when juvenile tortoises are not present, and other BMPs to be implemented during construction. BMPs and take-avoidance measures consistent with the WEMO Plan have been integrated into the project as design features or as mitigation measures. Upon implementation of MM-BIO-1, MM-BIO-2, MM-BIO-3, MM-BIO-4, and MM-BIO-5, preconstruction surveys, take avoidance measures, biological monitoring, and habitat restoration would occur. These measures would ensure consistency with the WEMO Plan, and impacts would be less than significant with mitigation incorporated.

The NEMO plan addresses recovery of the desert tortoise and management of a few additional species of concern on public lands. The NEMO Plan states that existing utility corridors would be retained, and new utilities would be placed within them. Cumulative new surface disturbing projects on BLM lands in each tortoise DWMA would be limited to 1% of BLM lands in that area and no new access roads would be allowed in DWMAs. The size of each project would be minimized, and other standard mitigation measures would be applied to limit impacts. These measures have been integrated into project design features or as mitigation measures, as necessary. Upon implementation of MM-BIO-1, MM-BIO-2, MM-BIO-3, MM-BIO-4, and MM-BIO-5, and MM-BIO-6, the proposed project would occur in a manner consistent with the protective regulations that are set forth in the DREPC. As such, impacts would be less than significant with mitigation incorporated.

References

This section was prepared based on the results of the *Biological Resources Survey Report for the Los Angeles Department of Water and Power Path 46 Transmission Line Clearance Project*, prepared by ESA, dated May 2016 (see Appendix D1) and based on the regulations in the DRECP.

3.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Existing Setting

Archaeological Resources - Prehistoric Setting

The prehistory of the Mojave generally is described in terms of cultural "complexes." A complex is a specific archaeological manifestation of a general mode of life, characterized archaeologically by technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture. As discussed below, complexes

are typically associated with particular chronological periods. The following cultural chronology is based on Sutton et al.'s (2007) synthesis.

Paleo-Indian (10,000 to 8000 B.C.)

The Paleo-Indian period is sparsely represented in the Mojave, but is characterized primarily by large, fluted Clovis Projectile points. This limited evidence suggests that early human occupants of the Mojave probably lived in small, mobile groups in temporary camps on permanent water sources (Sutton et al. 2007).

Lake Mojave Complex (8000 to 6000 B.C.)

The name of this cultural complex was based on archaeological studies conducted along the margins of Pleistocene Lake Mojave. Lake Mojave sites have been found primarily around Fort Irwin, Lake Mojave, China Lake, Rosamond Lake, and Twentynine Palms, located near extinct water sources with the margins of pluvial lakes being the preferred settlement area. Subsistence and settlement patterns are likely to have been a direct response to climatic fluctuations occurring during the Pleistocene to Holocene transition. Lake Mojave populations were organized into relatively small, mobile groups and practiced a forager-like subsistence strategy. High mobility served to exploit ever-changing resource bases, coupled with a reliance on more permanent resources (water sources). Sites appear to have been repeatedly occupied, with artifact assemblages from both large and small sites being functionally identical (Sutton et al. 2007).

In terms of material culture, the Lake Mojave Complex is typified by stone tools such as Lake Mojave and Silver Lake projectile points, bifaces, steep-edged unifaces, crescents, and some groundstone implements. A characteristic of Lake Mojave artifact assemblages is the frequent use of fine-grained volcanic lithic material in the production of flaked stone tools, while cryptocrystalline material was preferred for use in the production of other types of implements (Giambastiani and Bullard 2007). The use of heavy projectile points, bifaces, and scrapers would suggest exploitation of large game. However, faunal assemblages and protein residue analyses from sites at Fort Irwin suggest heavy reliance on small game, such as rodents, reptiles, and lagomorphs (hares/rabbits/pikas). Ground stone wear is generally light, which suggests minor use of hard seeds. Marine shell beads and non-local lithic materials indicate trade and/or long distance resource procurement (Sutton et al. 2007).

Deadman Lake Complex (ca. 7500 to 5200 B.C.)

The Deadman Lake Complex is geographically restricted to Twentynine Palms in the southeastern Mojave Desert and appears to overlap with the Paleo-Indian and Pinto complexes (Sutton et al. 2007). Although still being fully defined, this complex is identified by artifact types including small- to medium-size contracting-stemmed or lozenge-shaped points, battered cobbles and core tools, bifaces, flaked tools, and milling equipment. Similar projectile points have been recovered from Ventana Cave in Arizona. Lithic materials include large quantities of coarse- to fine-grained igneous rock and smaller amounts of both local and exotic obsidian. Olivella shell beads are present, with both O. biplicata from the Pacific coast and O. dama from the Sea of Cortez represented.

The Pinto Complex (6000 to 3000 B.C.)

Archaeological deposits dating from this period suggest that Pinto settlement patterns consisted of seasonal occupation by small, semi-sedentary groups that were dependent upon a combination of big and small-game hunting and collection strategies, which could include the exploitation of stream or water resources. Typically, sites of this period are found along lakeshores and streams or springs, some of which are now dry, and in upland areas. Larger sites tend to be near wellwatered locations, with smaller sites in other areas. In comparison to smaller sites, larger sites exhibit substantial midden deposits and greater variation in artifact types. These larger sites were probably centralized locations from which foraging parties journeyed to seasonal resources (Sutton et al. 2007).

The extent of regional mobility at this time is uncertain. A lack of lithic material diversity might indicate that foraging activities were not as expansive as in the previous complex (Sutton et al. 2007). However, Olivella shell beads are still present, which indicates at least some degree of contact with coastal groups.

Material culture representative of this period include roughly formed projectile points, "heavykeeled" scrapers, choppers, and a greater prevalence of flat millingstones and manos (Warren 1984). Pinto series projectile points appear to have been frequently reworked, suggesting they were used primarily as spear, not dart, tips (Sutton et al. 2007).

Faunal assemblages are similar to those of the Lake Mojave Complex, with the exception of a slight increase in small fauna taxa (small animals) coupled with a decrease in artiodactyls (hoofed mammals) (Sutton et al. 2007). The rise of millingstones and manos indicates a more intensive use and processing of plant resources and site placement may have been in part based on access to plant resources. New dates indicate that intensive plant exploitation was occurring by ca. 7000 B.C. (Sutton et al. 2007).

At the end of the Middle Holocene, around 3000 B.C., environmental conditions became much drier and hotter, and few sites in the Mojave date to the period between 3000 and 2000 B.C., suggesting that the area may have been largely abandoned during this period of unfavorable climate (Sutton et al. 2007).

The Gypsum Complex (ca. 2000 B.C. to A.D. 200)

The Late Holocene was characterized by a wetter and cooler climate. Settlement patterns suggest small, temporary camps concentrated near streams. At the same time, we see more evidence of inter-tribal trade, particularly between the desert and the coast, and increasing social complexity (Sutton et al. 2007). The artifact assemblage associated with this period includes an increase in the prevalence of millingstones and manos, and it is believed that it was during this period that the pestle and mortar were introduced. These technological developments may point to the increased consumption of seeds and mesquite (Warren 1984). Other artifacts associated with the Gypsum Period include Elko corner-notched series, concave base Humboldt series, and contracting-stemmed Gypsum series projectile points. Ritual activities are indicated by the presence of quartz crystals, paint, and rock art (Sutton et al. 2007). Toward the end of the Gypsum period, there is evidence for the use of the bow and arrow (Warren 1984). Interestingly, there is a scarcity of Gypsum periods sites in the southern and eastern extent of the Mojave Desert (Sutton et al. 2007).

Rose Spring Complex (ca. A.D. 200 to 1200)

The general cultural pattern for this period is a continuation of that of the preceding Gypsum Period. The increase in cultural complexity continued into this period and the archaeological record attests to established trade routes between desert and coastal populations by way of shell beads and steatite, as well as an introduction of Anasazi influence as evidenced by the appearance of turquoise and pottery (Warren 1984).

Archaeological sites from this period are more numerous and contain more well-developed middens, indicating an increase in population and a more permanent settlement pattern (Sutton et al. 2007). Additionally, evidence of structures such as pit houses also supports more permanent settlements. Sites tend to be located near springs, washes, and lakeshores (Sutton et al. 2007). Material culture related to this period includes large quantities of obsidian artifacts, Rose Spring and Eastgate series projectile points, knives, drills, pipes, bone awls, millingstones, manos, mortars and pestles, marine shell ornaments, slate pendants, and incised stones (Sutton et al. 2007; Warren 1984). The bow and arrow continued in use.

The Late Prehistoric Period (A.D. 1100 to European Contact)

By the Late Prehistoric period, an extensive network of established trade routes wound their way through the desert, routing trade goods to populations throughout the Mojave Region. It also is believed that these trade routes encouraged or were the motivating factors for increasingly complex socioeconomic and sociopolitical organization within Late Prehistoric peoples in Southern California. Housepit village sites are prevalent during this period, as are the presence of Desert series and Cottonwood projectile points, brownware and buffware ceramics, steatite shaft straighteners, painted millingstones, and, to a lesser degree, coastal shell beads (Sutton et al. 2007; Warren 1984).

Ethnographic Setting

Mojave oral tradition, supported by archaeological evidence, suggests that the Yuman-speaking Mojave Indians were also among the earliest residents in the Mojave Desert. Their territory included a large region including the Old Woman Mountains, Paiute Springs, New York Mountains, Granite Mountains, Soda Lake, and the eastern end of the Mojave River (Earle 2005). At some point, between approximately 250 and 500 years ago, the Mojave left or were driven from this area to the Colorado River where they were documented by Father Francisco Garcés, a Spanish explorer, in 1776. Another Spanish explorer, Juan de Oñate, may have observed this group as early as 1604 based on his descriptions of the "Mojave" people along the Colorado River (Kroeber 1925).

At the time of European contact, the APE was occupied by the several groups, including the Chemehuevi and Las Vegas groups of the Southern Paiute and the Vanyume Serrano. The people generally referred to as the Southern Paiute belong to the Southern Numic branch of the Uto-Aztecan linguistic group. Historically, sixteen identifiable groups of Southern Paiute occupied a wide swath of land from southwestern Utah, northern Arizona, southern Nevada, and southeastern California (Kelly and Fowler 1986). The APE intersects with the traditional territory of the Las Vegas group.

Terrain in Southern Paiute territory varied from spruce and fir in the high country, transitioning to pine, juniper, piñon, sage, creosote, and mesquite in lower elevations. This diversified habitat led to varied subsistence patterns. Small game was the primary source of protein. Rabbits were hunted individually and in group game drives. Other small game harvested for food included wood rats, mice, gophers, squirrels, chipmunks, and birds. These were hunted with bow and arrow or nets. Large game was hunted to a lesser extent, both individually and in group hunts with bow and arrow. Large game included pronghorn, mountain sheep, and deer, and occasionally elk and bear. Another staple of the diet were chuckwalla lizards, which were harvested with hooked sticks (Kelly and Fowler 1986).

Plant foods made up the bulk of the diet, and were primarily harvested by women. On the plateaus pine nuts were harvested. In the early fall the cones were harvested and roasted to force the cones open. The nuts were dried and stored for later use. In canyon lands agave was harvested by cutting off the base of the stalk with a wooden chisel then roasting the "head" in an earthen oven. A variety of seeds were also harvested with a basketry beater, winnowed to remove the chaff, ground on a stone milling slab, and baked into bread or cooked as a soup or gruel. In the Late Prehistoric period, in areas where water was more available, limited agriculture was pursued. Crops included corn, squash, melons, beans, sunflower, and wheat. Individual gardens were up to an acre in size and larger plots tended as a group activity (Kelly and Fowler 1986).

Individual groups moved with the seasons. In the winter many occupied higher elevations subsisting on pine nuts and planting crops. In warmer months, groups moved to lower elevations to harvest seeds and berries and to hunt small game. Fall was usually a time of plenty, harvesting pine nuts and hunting large game (Kelly and Fowler 1986). Shelters varied, depending on the terrain. Caves were favored as winter dwellings. Conical brush dwellings were also constructed as were improvised structures formed by piling brush against trees (Kelly and Fowler 1986).

Clothing was a simple affair of hide or woven cloth aprons or breech clouts. In the winter twined bark leggings were worn by both sexes. Likewise, adornment was limited, but included pierced ears and septum, facial tattoos, and feathered headwear (Kelly and Fowler 1986).

Basketry was used widely among the Southern Paiute for food processing and storage, hauling materials, as cradle boards, and trade goods. Pottery was used for similar purposes among most groups, produced primarily by women using a paddle and anvil technique. Cordage and netting were also critical components of their material culture, used for a wide variety of purposes including transportation and hunting. A variety of simple and recurved bows were used for hunting and in conflict (Kelly and Fowler 1986).

Politically, individual tribes were fluid, generally closely related, with no specified head. Villages ranged from one or two households to as many as 20, moving frequently with the seasons to take advantage of resources (Kelly and Fowler 1986).

The first European contact with the Southern Paiute occurred in 1776; by the early 19th century, Southern Paiutes, whose territory was adjacent to the Old Spanish Trail, were being taken as slaves by Spanish settlers (Kelly and Fowler 1986). The 10-acre Las Vegas Colony reservation was established near Las Vegas, Nevada, in 1911; however, with no

significant land base, it was essentially an urban settlement. The Las Vegas Paiute Tribe was recognized as a sovereign nation in 1934, and the Las Vegas Paiute Tribal Constitution was approved in 1970. In 1983, the Las Vegas Paiute Tribe acquired the 4,000-acre Snow Mountain reservation, 18 miles northwest of the original reservation (Las Vegas Paiute Tribe 2014). The Chemehuevi inhabited the area between Needles, Blythe, Twentynine Palms, and the Colorado River, which contained the primary settlements. However, the APE is located in an area that may have been utilized for seasonal resource exploitation, travel, and trade (Earle 2005).

The oral tradition of the Chemehuevi suggests that they migrated from the north and engaged the Mojave group in a long war that drove the Mojave east to the Colorado River (Kroeber 1925). Archaeological evidence indicates that the war ended between 250 and 500 years ago (King and Casebier 1976). The Chemehuevi were divided into two moieties (kinship groups) represented by two songs, the Mountain Sheep Song and the Deer Song, which were associated with different hunting areas. They generally lived in bands of two or three families, each band having a leader. The harsh desert environment could support only the smallest groups comprised of nuclear families joined by kinship ties. These small hunter-gatherer groups moved in response to local food and water availability, typically seasonally or more frequently. The lack of resources of the area created a very diverse hunting economy where small game was an important protein source. Pronghorn sheep, mountain sheep, deer, rabbits, squirrels, desert chipmunks, and wood rats were important mammals in the local diet along with reptiles, such as desert tortoises, snakes, and lizards, and birds, eggs and insects. Bighorn sheep and desert tortoise have traditionally been considered important animals to the Chemehuevi, as well as neighboring Cahuilla and Mojave peoples. Agriculture was introduced to the Chemehuevi by their eastern neighbors and they cultivated crops of various types of maize and corn, squash, gourds, wheat, and potatoes along the Colorado River (Kelly and Fowler 1986).

The Chemehuevi utilized the paddle-and-anvil technique for their pottery, which included cooking pots, storage jars, spoons, scoops, and large vessels (Kelly and Fowler 1986). They also utilized twining techniques for their basketry, which were used for transporting items, winnowing and parching, seed beating, boiling water, and storage. Other artifacts associated with the Chemehuevi included the mano and millingstone (metate), mortar and pestle, digging sticks, and the sinew-backed bow with arrows of cane or willow. In addition to locally consumed trade goods, the Chemehuevi acted as "middle-men" in the long distance trade networks from groups to the west and the Pacific Coast and the Central Valley to the groups in the Southwest and along the Colorado River.

Following the Civil War, the traditional native subsistence base was threatened by the influx of settlers and accompanying livestock. With these resources unavailable, the Chemehuevi were employed on ranches, building railroads, and in the newly opened mines. The Chemehuevi were occupying the oasis of Mara (Twentynine Palms) when permanent settlement of the area by Europeans and Americans began. Livestock depleted natural resources and Euro-American settlers began to claim large pieces of land and water rights. In 1890, 160 acres were set aside for a reservation for the Chemehuevi. In 1910, 640 acres adjacent to the existing Cabazon reservation in Coachella was given jointly to the Cahuilla and the Chemehuevi, and those who remained on the Twentynine Palms reservation were encouraged to move there. Some went, some stayed, and others chose to settle elsewhere in California (Bean and Vane 2002).

The Chemehuevi Valley Reservation was established in 1907. However, tribal members were soon relocated to the Parker, Arizona area and their status as a tribe was taken away. In 1935, the United States Congress authorized as much acquisition of the reservation land as necessary for the Parker Dam Project, which resulted in the inundation of nearly 8,000 acres of reservation land (Chemehuevi Indian Tribe 2013). The tribe was reinstated and recognized as the Chemehuevi Tribe in 1970. Today, the Chemehuevi Indian reservation comprises approximately 32,000 acres of trust land, including thirty miles of Colorado River frontage, downstream of the project area. Chemehuevi descendents also reside on the Colorado River Indian Tribes Reservation and the Twentynine Palms Band of Mission Indians Reservation, as well as on several other reservations.

Serrano territory was bordered to the west roughly by the Cajon Pass in the San Bernardino Mountains, to the east by Twentynine Palms and to the south by Yucaipa Valley. Their territory extended north of the San Bernardino Mountains into the desert near Victorville, along the Mojave River. Serrano living along the Mojave River and in the desert were known as the Vanyume, and exhibited linguistic and cultural differences from the Serrano who inhabited the San Bernardino Mountains and surrounding areas (Earle 2005).

Francisco Garcés, in his diaries from his 1776 expedition along the Mojave River, noted a Vanyume Serrano occupation at a spring on the east side of Soda Lake, and that this marked the eastern limits of their territory (Earle 2005). Some Chemehuevi ethnographic sources confirm that Vanyume inhabited this area (Earle 2005). Serrano villages located at higher elevations were placed near canyons that received substantial precipitation or were adjacent to streams and springs. Villages situated at lower elevations were also located close to springs or in proximity to the termini of alluvial fans where the high water table provided abundant mesquite and shallow wells could be dug (Bean and Smith 1978; Warren 1984).

The Serrano were organized into clans, with the clan being the largest autonomous political entity. They lived in small villages where extended families lived in circular, dome-shaped structures made of willow frames covered with tule thatching. Each clan had one or more principal villages in addition to numerous smaller villages associated with the principal village (Price et al. 2008).

The Serrano subsistence strategy relied upon hunting and gathering, and occasionally fishing. Villages divided into smaller, mobile gathering groups during certain seasons to gather seasonally available foods. The division of labor was split between women gathering and men hunting and fishing (Bean and Smith 1978; Warren 1984). Mountain sheep, deer, rabbits, acorns, grass seeds, piñon nuts, bulbs, yucca roots, cacti fruit, berries, and mesquite were some of the more common resources utilized (Bean and Smith 1978; Warren 1984).

Despite early European and Spanish contact in 1771, the Serrano remained relatively autonomous until the period between 1819 and 1834 when most of the western Serrano were removed and placed into missions (Bean and Smith 1978; Warren 1984). Today, there are two sovereign nations that claim a Serrano heritage: the federally-recognized San Manuel Band of Serrano Mission Indians, and the federally-recognized Morongo Band of Mission Indians, whose members represent Serrano, Cahuilla, and Cupeño cultures.

Historic Setting

Several major trails crossed the Mojave before and at the time of Spanish contact, and continued to be used not only by the native peoples but also by Euro-American explorers. The Yuma- Needles Trail ran from south of Yuma up the western side of the Colorado River to the Needles area. The Mojave Trail ran from Needles west across the desert to the coast, following the path of the Mojave River. The Cocomaricopa Trail ran west from Arizona through the Salton Sink (Coachella Valley) and then northwest to meet the Mojave Trail near San Bernardino (Greene 1983).

The first Europeans known to have visited the Mojave were Pedro Fages in 1772 and Juan Bautista de Anza and Father Francisco Garcés in 1774 (Greene 1983). In 1775, Father Garcés separated from de Anza and crossed the Mojave along the ancient Mojave Trail from Needles west to the San Gabriel Mission, travelling past Soda Lake and resting at modern-day Afton Canyon in 1776 (Earle 2005). The Spanish missions that dotted the California coast never spread inland to the Mojave, and the desert remained relatively unexplored and unsettled by Europeans for much of the next century. The Romero-Estudillo Expedition of 1823–1824 was an attempt by the Spanish to establish a secure route between the California Coast and Tucson; however, despite two attempts, the expedition never managed to make it as far as the Colorado River (Greene 1983).

The first recorded American visitors to the Mojave were the party of Jedediah Smith, who crossed the Mojave along the Mojave Trail in 1826 (Greene 1983). Ewing Young and Kit Carson followed his route in the 1820s and 1830s. Several American and Mexican military expeditions were conducted in the 1840s and 1850s. In 1829-1830, fur trader Antonio Armijo scouted a route between Santa Fe, New Mexico, and Los Angeles. This route became a trade route known as the Old Spanish Trail, following along the same general route as the Mojave Trail (Greene 1983). After California became an American state in 1850, government-funded exploration and mapping of the region began, with the first major survey completed in 1853.

In 1848 gold was discovered by James W. Marshall at Coloma, some 400 miles to the north on the American River. The gold rush began and immigrants flooded into California, many headed to or through the Mojave Desert. By the late 1850s, the Mojave and Old Spanish trails had become major freight and mail roads. In addition, due to conflicts along the Colorado River between the federal government, Mormon settlers, and Native peoples, the U.S. Army established a series of forts along the Mojave Trail, including one at Soda Lake. The Mojave Trail became the major east-west travel route between Los Angeles and the Colorado River, and was known during this period as the Old Government Road (Greene 1983).

The discovery of the Comstock Lode in Nevada in 1859 shifted attention from gold to silver, and miners began to focus on the desert regions (Vredenburgh 2005). The 1870s and 1880s were fairly prosperous for mining in the Mojave Desert, and operations at that time were dominated by gold and silver mining. The Ord Mountain area was an early focus of gold mining in the Mojave, beginning in 1871. Gold and silver mining at the Silver Mountain District and Oro Grande began in the 1870s (Vredenburgh 2005). Mining began in the Calico Mining District near Barstow in 1881. Area mines are estimated to have produced up to $20 million in silver, making the Calico Mining District California's largest silver

producer. However, a drop in the price of silver following the Panic of 1893 contributed to the virtual cessation of silver mining in the district by the end of the 20th century (Vredenburgh 2005). Near the northern end of the APE, gold, silver, and turquoise were mined near Halloran Spring, Shadow Mountain, and the Silurian Hills (Vredenburgh 1996).

In the 20th century, mining operations shifted focus to borax, zinc, and silver. Originally mined near Searles Lake in 1863, the Pacific Coast Borax Company near Calico became the leading producer of Borax in San Bernardino County, producing over $9,000,000 between 1883 and 1907 (Cloudman et al. 1917). Mining productivity fell off in the 1920s due to increased inflation, but was revived during the Great Depression; however, gold mining virtually ceased during World War II. By 1956, the declining gold prices caused most remaining small gold operations to close (Shumway et al. 1980).

The Arrowhead Trail Highway (SR-31), one of the earliest automobile roads through the Mojave Desert, was constructed between 1917 and 1924. The road connected Los Angeles with Salt Lake City, Utah. In 1933 much of the Arrowhead Trails Highway between Barstow, California and the California-Nevada state line was incorporated into SR-91 (later I-15) (Lyman 1999).

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind, lasting for an extended period (decades or longer). Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs). The greenhouse effect traps heat in the troposphere through a threefold process: short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and back toward the Earth. This "trapping" of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

Built Environment Resources

The transmission lines known in modern times as MCV1 and MCV2 and MVL1 were known historically as part of the LADWP Boulder Dam-Los Angeles 287.5 kV Transmission Line. The line consisted of three separate lines known as LADWP Boulder Lines 1, 2, and 3. LADWP Boulder Line 1 corresponds to MVL1; LADWP Boulder Line 2 corresponds to MCV2; and LADWP Boulder Line 3 corresponds to MCV1. The following discussion is summarized from the California Department of Parks and Recreation (DPR) 523 site record for the Boulder Dam-Los Angeles 287.5 kV Transmission Line (recorded as resource CA-SBR-7694H) (Powers 1993; Van Wormer and Dolan 1999).

In April 1930, LADWP entered into a contract with the U.S. Bureau of Reclamation to purchase electrical power from the Boulder Canyon Project (currently Hoover Dam). By the terms of this contract, LADWP was required to transmit power not only for itself, but also other municipally owned utilities in the Los Angeles area. LADWP began construction of its transmission system in June 1933 with the assistance of a $22.8 million loan from the Reconstruction Finance Corporation. LADWP Boulder Lines 1 and 2 were competed in 1936 and LADWP Boulder Line 3 was completed in 1940. All three lines were originally designed to transmit 287.5 kV power from Boulder Dam (now Hoover Dam) to

Los Angeles. The 270-mile-long Boulder Dam-Los Angeles 287.5 kV Transmission Line set a new world standard for the long-distance transmission of electrical power, with the overall scale of the LADWP Boulder Lines far exceeding anything that had been tried before. The project represented investments in research and development and technological advances in the design and construction of towers, conductors, control mechanisms and auxiliary equipment.

Planning and construction of the transmission lines included selection of the ROW assisted by aerial photography and mapping, a relatively new technique which, together with field observations, facilitated the development of accurate construction plans and profiles. The transmission line project included advancements in transportation through desert areas, in concrete mixing, and in methodology for stringing the conductor.

LADWP Boulder Lines 1 and 2 ran from the Boulder Switchyard to the Century Receiving Station in the east-central part of Los Angeles, extending about 266 miles. Each circuit was suspended from parallel rows of towers with centerlines 265 feet apart. Construction began in June 1933, finishing in mid-1936 with transmission of energy beginning in October of that year. Boulder Line 3 ran from the Boulder Switchyard to the Toluca Receiving Station in the San Fernando Valley section of northwestern Los Angeles, a distance of 258 miles. It roughly paralleled the route of Lines 1 and 2 and passed through the same switching stations to Victorville, but the alignment was north of and separate from that of Lines 1 and 2, and in many locations digressed from it for several miles or more.

In his 1993 evaluation, Powers explains that "[in] addition to providing research, development and construction jobs, the project provided a sense of purpose and direction during the Great Depression. By an estimate made in 1933, the contracts for cable, towers, materials and equipment created 25,000 jobs which provided unemployment relief for over 100,000 people. By May 1934, 1,100 men were directly employed in transmission line construction."

The approximate 200-mile-long, single-lane access road (known today as Powerline Road) that runs parallel to LADWP Boulder Lines 1 and 2 was constructed as a supply road to transport men and materials through the Mojave Desert, where most of the lines were built. Due to weather impacts and wear, ongoing maintenance of the 15-foot-wide road consisting of grading has occurred since its original construction.

Between 1970 and 1973, new switching stations were constructed at McCullough Pass and Victorville, and some transmission lines were converted to transmit higher amounts of energy. This conversion included replacement of the original type HH conductor with aluminum cable steel-reinforced conductor, and rebuilding of the cross-arms to provide additional clearance and carry the additional weight. The rebuilt segments of the Boulder Line 3 were renamed McCullough-Victorville 1 and Victorville-Toluca 1. LADWP Boulder Lines 1 and 2 between the Boulder switchyard and the Century receiving station continued to transmit at 287.5 kV, but were renamed Boulder-Victorville 1, Victorville-Century 1, Boulder-Victorville 2 and Victorville- Century 2, respectively. Another major alteration occurred in 1980 when the Boulder-Victorville Line 2 between the McCullough switching station and Victorville was converted to 500 kV. This segment was renamed McCullough-Victorville Line 2.

Paleontological Resources

The Path 46 Transmission Line Clearance Project is located in the north-central portion of the Mojave Desert, which is situated within the Mojave Desert geomorphic province. The terrain in this area consists of a series of isolated mountain ranges separated by broad, shallow southeast-trending valleys with interior drainage. Closed basin sinks, or playas often occur on the valley floors (Appendix H). The elevation of the APE ranges from about 1,500 to 3,500 feet above mean sea level.

The Mojave Desert geomorphic province, a triangular-shaped fault block that is bordered on the north by the sinistral (left lateral) Garlock Fault, to the south by the dextral (right lateral) San Andreas Fault, and to the east by the Colorado River and the California-Nevada border. During the Paleozoic Era (approximately 541 to 252 million years ago), the area that is now the Mojave Desert was a passive continental margin. As the supercontinent Pangaea began to split up during the late Triassic Period (approximately 235 million years ago), tectonic plate configurations became a subduction zone on the coast of California, with the dense oceanic crust subducting under the less dense continental crust. One of the results was the intrusion of large bodies of magma into and through the continental crust, a process that created the gigantic granitic batholiths that comprise the interiors of the Sierra Nevada mountain range, the transverse ranges, and smaller mountain ranges within the Mojave Desert (Appendix H).

Beginning in the Tertiary Period, the Mojave Desert underwent a period of extensive erosion. During the early Tertiary, the Mojave block was elevated and had external drainage, as evidenced by the lack of lower Tertiary rocks within the Mojave and the presence of outcrops to the north, south, and west (Appendix H). By the middle Miocene (approximately 16 to 12 million years ago), the Mojave drainage had become internalized, and the preservation of terrestrial vertebrate fossils within the Mojave Desert Region began and continued to the late Pleistocene, 11,000 years ago. Some vertebrate animals found within Neogene (approximately 23 million to 2.5 million years ago) and Quaternary (approximately 2.5 million years ago to present) of the Mojave Desert region include proboscideans, horses, camels, Bison, saber-tooth cats, badgers, snakes, lizards, and frogs.

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Records Search

A cultural resources records search was conducted for the project on June 26-28, and November 8, 2013, by staff at the California Historic Resources Inventory System – San Bernardino Archaeological Information Center (SBAIC). In an effort to establish a general impression of the archaeological sensitivity the APE and its surrounding environment, the review included the APE as well as a 1-mile radius around the APE.

Previous surveys and studies and archaeological site records were reviewed, along with the Historic Property Data File for San Bernardino County, the National Register of Historic Places (NRHP), the California Register of

Historical Resources (CRHR), the California Inventory of Historic Resources, the California Historical Landmarks, and the California Points of Historical Interest.

Based on available information, 15 built environment resources have been previously recorded within 1 mile of the APE, which include two transmission lines, ten roads, two railroad alignments, and one airport. Table 3.5-1, below, lists the 15 built environment resources within 1 mile of the APE. Four of the 15 built environment resources have been recorded within the APE. The built environment resources consist of the LADWP Boulder Line (CA-SBR-7694H) and three roads (P-36-24000, -028051 and -023423). Resource P-36-23423 (CA-SBR-14798H) is a contributor to the LADWP Boulder Line (CA-SBR-7694H). Two of the primary numbers for previously recorded roads (P-36-24000 and P-36-28051) appear to represent the same resource, Camp Rock Road.

Table 3.5-1
Previously Recorded Built Environment Resources Within 1 Mile of APE

Primary (P-36-)	Trinomial (CA-SBR-)	Description	Within APE	Within 1 Mile
001910	1910H	Union Pacific RR alignment		X
002910	2910H	National Old Trail Hwy		X
006693	6693H	Atlantic & Pacific/ Atchison, Topeka and Santa Fe RR		X
007694	7694H	LADWP Boulder Transmission Lines	X	
009360	9360H	Stoddard Road		X
010315	10315H	Boulder-San Bernardino transmission line		X
010627	10627H	Barstow-Daggett Airport		X
012658	12357H	I-15 freeway		X
021629	-	Historic road segment		X
023423	14798H	Road support and 19 miles of Powerline Road	X	
02400 and -028051	15185	Camp Rock Road	X	
026439	16754H	Dirt access road		X
026459	-	Historic era road segment		X
026508	-	Santa Fe Street		X

Source: *Final Historic Resource Assessment Report for the Los Angeles Department of Water and Power Path 46 Transmission Line Clearance Project*, prepared by ESA (Appendix G).

Historical Documents Reviewed

Searches of the BLM General Land Office Records online database (glorecords.blm.gov) and the USGS historical topographic map online database (natinonalmap.gov) were also conducted. According to the BLM

General Land Office Records database, the majority of the APE was not patented. However, there are some exceptions, including the MVL1_147-4, MCV1_151-4, and 125-5 and -6 work areas. The MCV1 151-4 work area in Section 27 was part of a patent issued to John B. Marsten on June 8, 1922 (Doc. No. 866861) under the authority of the Desert Land act of 1877. Additionally, the MCV1 125-5 and -6 work areas in Section 19 were patented to Geraldine Swan on November 8, 1919 (Doc. No. 717766), under the authority of the Desert Land act of 1877. A portion of the APE in Section 19 encompassing the MVL1_147-4 work area was part of a patent issued to Geraldine Swan and Arthur Anderson on November 8, 1919 (Doc. No. 028018). Also, the S½ of the NE¼ of Section 24 (NW corner of the MVL1_147-4 APE) was patented to Chester Swan on June 28, 1919 (Doc. No. 03026) under the authority of the Cash-Sales Entry Act of 1820. It appears that the MCV1_85-3 work area may have been granted to the State of California as part of the California Enabling Act of 1853 (Doc. No. 1211857); however, a note on the General Land Office Records file indicates that this record has not been verified against the legal land patents. Some of the APE (MVL1_155-5, MVL1_129-4, MCV2_104-5, MCV2_100-5) may have been part of a land grant issued to the Southern Pacific Railroad Company in 1866 (Doc. No. 142), and some other parts (MCV2_97-5 APE) may have been granted to the State of California as part of the California Enabling Act of 1853 (Doc. No. 11101856); however, a note on both General Land Office Records files indicate that neither of these records has been verified against the legal land patents.

Analysis

Less Than Significant Impact. The LADWP Boulder Line linear district (CA-SBR- 7694H) including Powerline Road (CA-SBR-14798H), and Camp Rock Road (P-36-24000/- 28051), have been recorded within the project APE. Camp Rock Road is recommended not eligible for listing in the NRHP or CRHR, and therefore, construction and operation of the proposed project would result in less than significant impacts to this resource. The LADWP Boulder Line has been determined eligible for listing in the NRHP under Criteria A and C, and is listed in the CRHR, and Powerline Road is considered a contributor to the significance of the LADWP Boulder Line.

The LADWP Boulder Line (CA-SBR-7694H) would continue to convey its significance under Criteria A (i.e., associated with events that have made a significant contribution to the broad pattern of our history) and C (i.e., embody the distinct characteristics of a type, period, or method of construction/represent the work of a master/possess high artistic value) and would also continue to retain all aspects of integrity including setting, feeling, and association, after implementation of the proposed project. Project-related soil spreading, grading, and tower raising activities would not have an adverse effect on CA-SBR-7694H or its contributor CASBR-14798H. While grading and other activities would not directly affect the transmission lines, activities would alter the surface of the landforms below the lines. Because the depth of soil disturbance resulting from the grading is relatively shallow (on average 2.18 feet), and the areas subject to grading would be contoured and revegetated to blend with existing topography, the proposed project would not visually alter the integrity aspects of setting, feeling, and association as they relate to the transmission lines and therefore would also not result in

an indirect adverse effect. Also, in consideration of the scale of the transmission line, the introduction of eight new footings that are similar in appearance to the current footings and the raising of the height of two towers would not result in an adverse effect to setting, feeling, or association of the resources as a whole.

These minor, virtually imperceptible changes to the setting would not substantially alter the resource's ability to convey its historic significance under Criteria A/1 and C/3. Therefore, potential impacts to CA-SBR-7694H or its contributor CA-SBR-14798H resulting from construction and operation of the proposed project would be less than significant.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant Impact with Mitigation Incorporated. A total of 30 resources were recorded or updated during the surveys. Twenty-four are located on BLM-owned lands, five are located on land owned by the County of San Bernardino, and one is located on State-owned lands. Of the 30 resources, 20 are newly recorded and consist of three prehistoric archaeological sites (CA-SBR-29513, -29517, and -29527), nine historic-period archaeological sites (CA-SBR-29512H, -29514H, -29515H, -29516H, -29518H, -28498H, -29521H, and -29526H, and P-36-029522,), two resources of undetermined age (CA-SBR-29523/H, and P-36-029524), and six isolates (P-36-029519, -029520, -029525, -029528, -029529, and -029530). Ten previously recorded resources were updated (CA-SBR-434, -2100, -2162, -2223, -3169 -3176, -3186, -6598, -17262H, and -17264H), all of which are archaeological sites.

Of the 30 recorded resources, 22 are located within the project APE, and eight (CA-SBR-29513, -29515H, -29516H, -28498H, and P-36-029519, -029520, -029524, and -029525) are located outside of the APE due to refinements to the Project APE. The 30 recorded or updated during the surveys are listed below in Table 3.5-2.

Table 3.5-2
Archaeological Resources Recorded or Updated During Survey

Trinomial (CA-SBR-)	Primary Number (P-36-)	Description	Date	NRHP/CRHR Eligibility	BLM Concurrence	Within APE
434	000434	Quarry and lithic scatter with small historic-period component.	Prehistoric/Historic	Previously determined eligible for NRHP, listed in CRHR	Concurs (eligible)	Within
2100	002100	Large quarry site with rock cairns	Prehistoric	Previously determined eligible for NRHP, listed in CRHR	Concurs (eligible)	APE Subsequently eliminated due to Project re-design

Table 3.5-2
Archaeological Resources Recorded or Updated During Survey

Trinomial (CA-SBR-)	Primary Number (P-36-)	Description	Date	NRHP/CRHR Eligibility	BLM Concurrence	Within APE
2223	002223	Quarry and lithic scatter	Prehistoric	Recommended eligible for NRHP and CRHR	Concurs (eligible)	Within
3169	003169	Lithic scatter	Prehistoric	Recommended not eligible	NA	Within
3176	003176	Quarry and lithic scatter	Prehistoric	Previously determined eligible for NRHP, listed in CRHR	Concurs (eligible)	Within
3186	003186	Rock cairn complex with an associated lithic scatter	Prehistoric	Listed in the NRHP, listed in CRHR	Concurs (listed)	Within
2162	002162	Quarry with rock rings, cleared circles; not relocated within survey area	Prehistoric	Previously determined eligible for NRHP, listed in CRHR	Concurs (eligible)	Within
6598	006598	Sparse lithic scatter	Prehistoric	Previously determined not eligible for NRHP; not eligible for CRHR	Concurs (not eligible)	Within
17262H	027766	Historic-era rock ring	Historic	Previously evaluated as not eligible	Concurs (not eligible)	Within
17264H	027768	Historic-era refuse scatter	Historic	Previously evaluated as not Eligible	Concurs (not eligible)	Within
29512H	029512	Small refuse deposit consisting of approximately 60 artifacts, primarily cans and glass bottle fragments	mid- to late-20th century	Recommended not eligible	Concurs (not eligible)	Within
29513	029513	Single reduction loci; thirteen flakes and five tools	Prehistoric	Not evaluated	NA	Outside

Table 3.5-2
Archaeological Resources Recorded or Updated During Survey

Trinomial (CA-SBR-)	Primary Number (P-36-)	Description	Date	NRHP/CRHR Eligibility	BLM Concurrence	Within APE
29514H	029514	Large historic-era site possibly related to the Fearnot Mine. Features include a mine shaft/ prospect pit, four waste rock piles, a concrete slab, and three artifact concentrations.	Early 20th century	Recommended not eligible	Concurs (not eligible)	Within
29515H	029515	Small refuse deposit consisting of 13 artifacts, primarily cans and glass bottle fragments	Mid-20th century	Not evaluated	NA	Outside
29516H	029516	Very small refuse deposit consisting of one clear glass, oval bottle base; one clear glass, oval bottle; and a church key-opened can	20th century	Not evaluated	NA	Outside
29517	029517	Prehistoric artifact scatter with a single reduction locus consisting of two primary flakes, five secondary flakes, and 29 pieces of shatter; two flakes are located outside of the concentration	Prehistoric	Recommended not eligible	Concurs (not eligible)	Within
29518H	029518	Small refuse deposit consisting of approximately 20 artifacts, primarily cans and glass bottle fragments	Mid-20th century	Recommended not eligible	Concurs (not eligible)	Within
	029519	Two light grey rhyolite tertiary Flakes	Prehistoric	Not evaluated	NA	Outside
-	029520	One edge modified red-brown chert flake	Prehistoric	Not evaluated	NA	Outside

Table 3.5-2
Archaeological Resources Recorded or Updated During Survey

Trinomial (CA-SBR-)	Primary Number (P-36-)	Description	Date	NRHP/CRHR Eligibility	BLM Concurrence	Within APE
28498H	028498H	Small refuse deposit consisting of 22 artifacts, primarily cans and glass bottle fragments.	Mid-20th century	Not evaluated	NA	Outside
29521H	029521	Historic-period road alignment	Mid-20th century	Recommended not eligible	Concurs (not eligible)	Within
-	029522	Survey marker	Mid-20th century	Recommended not eligible	Concurs (not eligible)	Within
29523/H	029523	Rock cairn and two rock rings	Undetermined	Recommended not eligible	Concurs (not eligible)	Within
-	029524	Rock cairn	Undetermined	Not Evaluated	NA	Outside
-		Assayed cobble	Prehistoric	Not evaluated	NA	Outside
29526H	029526	Sparse refuse deposit consisting of 35 artifacts, primarily cans and glass bottle fragments	Mid-20th century	Recommended not eligible	Concurs (not eligible)	Within
29527	029527	Sparse lithic scatter	Prehistoric	Recommended not eligible	Concurs (not eligible)	Within
	029529	Isolated obsidian bifacial thinning flake	Prehistoric	Recommended not eligible	Concurs (not eligible)	Within
	029530	Isolated chert primary flake	Prehistoric	Recommended not eligible	Concurs (not eligible)	Within
-	029520	Isolated chert primary flake	Prehistoric	Recommended not eligible	Concurs (not eligible)	Within

Of the 22 resources located within the APE, five (CA-SBR-434, -2100, -2162-3176, and -3186) have been previously determined eligible for listing in the NRHP and are listed in the CRHR. One (CA-SBR-2223) is recommended eligible for listing in the NRHP and CRHR. One (CA-SBR-6598) has been previously determined ineligible for listing in the NRHP and is similarly recommended ineligible for listing in the CRHR. The remaining 15 resources (CA-SBR-3169, -17262H, -17264H, -29512H, -29514H, -29517, -29518H, -29521H, -29523/H, -29526H, -29527, and P-36-029522, -029528, -029529, and -029530) are recommended not eligible for listing in the NRHP or CRHR and are therefore not considered historic properties under Section 106 of the National Historic Preservation Act.

According to Confidential Appendix F, the six NRHP- and CRHR-eligible resources (CA-SBR-434, -2100, -2162, -2223, -3176, and -3186) would not be adversely affected by implementation of the proposed project. The portions of five of these resources (CA-SBR-434, -2162, -2223, -3176, and -3186) located within the APE have suffered disturbances and generally retain poor integrity with no diagnostic artifacts, Single Reduction Loci, or features located within the portions of the APE where project-related ground-disturbance would occur. The proposed project would not adversely affect any characteristics from which these resources derive their significance and the resources will continue to be eligible for listing in the NRHP and CRHR following implementation of the proposed project. A number of features and artifacts associated with CA-SBR-2100 were identified within the APE for MCV1 120-1. Because of the sensitivity of this resource, the proposed project has been redesigned to address the ground-to-conductor clearance requirement through the implementation of protective measures to prevent the continued incursion of OHVs by blocking access to an illegal linear disturbance which bisects the site, rather than through grading. The APE associated with MCV1 120-1 has been eliminated from the proposed project. Implementation of the protective measures would be carried out in coordination amongst LADWP, BLM, and tribal representatives in a manner that would avoid adverse impacts to CA-SBR-2100.

Although no documented resources will be adversely affected as a result of the proposed project, this does not preclude the possibility of disturbing previously undocumented subsurface resources during construction. Grading and other ground-disturbing activities associated with the proposed project could have the potential to unearth archaeological resources qualifying as historic properties. As such, grading and other ground-disturbing activities could result in potentially adverse impacts on archaeological resources. Mitigation Measures CUL-1 through CUL-3 (MM-CUL-1 through MM-CUL-3) have been provided and would mitigate this impact to less than significant.

MM-CUL-1 Prior to earth moving activities, the Los Angeles Department of Water and Power (LADWP) shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior 2008) to conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. LADWP shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

MM-CUL-2 The Los Angeles Department of Water and Power (LADWP) shall retain an archaeological monitor (working under the direct supervision of a qualified archaeologist) and a Native American monitor to be present during ground-disturbing activities at CA-SBR-434, -2223 - 3176, -3186, and -6503 that have been previously determined or recommended eligible for listing in the National Register of Historic Places. The archaeological monitor and Native

American monitor shall have the authority to re-direct construction activities to assess the significance of discoveries made during ground disturbing activities. The Native American monitor shall be selected from amongst qualified tribal monitors affiliated with the San Manuel Band of Mission Indians. If ground-disturbing activities occur simultaneously in two or more locations located more than 50 meters (150 feet) apart, additional archaeological and Native American monitors may be required. The archaeological and Native American monitors shall keep daily logs. After monitoring has been completed, a monitoring report that details the results of monitoring shall be prepared and submitted to LADWP.

MM-CUL-3 In the event of the unanticipated discovery of archaeological materials, the Los Angeles Department of Water and Power (LADWP) shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery until it can be evaluated by a qualified archaeologist. If the find is determined to be potentially significant, the archaeologist, in consultation with LADWP, the Bureau of Land Management (BLM) and appropriate Native American group(s), shall develop a treatment plan. Construction shall not resume until the treatment plan has been implemented and completed, and authorization has been granted by the BLM.

MM-CUL-4 If human remains are encountered unexpectedly during any ground-disturbing activities, all activity within a minimum of 200 feet of the remains shall halt, the area shall be secured, and no further disturbance shall occur in that area. The Los Angeles Department of Water and Power (LADWP) and the Bureau of Land Management (BLM) Barstow Field Office shall be contacted immediately and LADWP shall contact the San Bernardino County Coroner. The Coroner shall examine the remains within two days of notification. If the remains are located on private lands, the land manager or owner shall be contacted and informed of the discovery. If the remains are located on federal lands, the appropriate federal land managers, federal law enforcement, and federal archaeologists shall be informed. The Coroner shall determine whether the remains are archaeological or modern. For modern remains, the appropriate law enforcement official shall be contacted by the Coroner, and work shall not resume until law enforcement has released the area. If the remains are determined to be archaeological and are located on federally owned/managed lands, the appropriate Field Office Archaeologist shall be contacted. The archaeologist will initiate the proper procedures under the Archaeological Resources Protection Act of 1979 and/or Native American Graves Protection and Repatriation Act (NAGPRA). If the County Coroner determines that the remains are Native American, and they are not located on federally owned/managed lands, the Coroner shall contact by telephone within 24 hours the Native American Heritage Commission (NAHC). The NAHC will immediately notify the person it believes to be the most likely descendent of the remains. The most likely descendent has 48 hours to make recommendations to the

landowner for treatment or disposition of the human remains. If the descendent does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from further disturbance. If the landowner does not accept the descendant's recommendations, the owner or the descendent may request mediation by the NAHC. The activity that resulted in the discovery of human remains may resume at any time that a written, binding agreement is executed between the BLM, lineal descendants, and/or the federally recognized affiliated Indian Tribe(s) that adopts a recovery plan for the excavation or removal of the human remains, funerary objects, sacred objects, or objects of cultural patrimony following 43 CFR 10.3(b)(1) of these regulations. The disposition of all human remains and NAGPRA items shall be carried out following 43 CFR 10.6.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation Incorporated. Grading and tower raising activities associated with the proposed project have the potential to negatively impact surficial or subsurficial paleontological resources in geological units that are conducive to the preservation of fossils. These impacts vary depending upon the depth and lateral extent of ground disturbance and the density and uniformity of fossil distribution in a given rock unit. Direct impacts include destruction of paleontological resources due to breakage, fragmentation, and/or removal from the geological context in which they are contained through activities such as minor road grading or movement of heavy equipment on unpaved roads that disturb only the ground surface, which may result in impacts to surface fossils due to crushing and fragmentation. Activities such as excavation and scraping of the ground surface that impact both the surface and subsurface geology may result in damage or destruction of fossils located on the surface and preserved in subsurface sediments. Important, irretrievable scientific data of an educational and scientific resource can be lost and represents a significant adverse environmental impact.

The APE is underlain by geological units composed of igneous, metamorphic, and sedimentary rocks and sediments ranging in age from the early Precambrian (>541 million years ago (mya)) to recent. Of the 72 work areas in the APE, a total of 55 contain geologic formations with very low and low potential to yield paleontological resources (Potential Fossil Yield Classification (PFYC) Classes 1 and 2) and do not require any additional paleontological work. Fifteen work areas have moderate likelihood of encountering paleontological resources (PFYC 3). The remaining two work areas within the APE contain geologic formations with high paleontological potential (PFYC Class 4). Work areas identified as paleontologically sensitive (i.e., PFYC 3 or greater) are summarized in Table 3.5-3 below.

Table 3.5-3
Geology, Excavation Depths, or Work Areas with PFYC Classes 3 and Greater

Work Area	Mapped Surficial Geological Unit (Map Unit)	Geological Period (Approximate Age)	Excavation Depth (ft.)	PFYC Class
MVL1 158-6	Quaternary younger alluvium, elevated; Quaternary younger wash; Quaternary intermediate alluvium	Recent (<11,000 years ago)	3.8	3-Moderate
MVL1 159-1	Quaternary younger alluvium, elevated, Quaternary younger wash, Quaternary intermediate alluvium, elevated	Pleistocene (2.6 mya)- Recent (<11,000 years ago)	2.3	3-Moderate
MVL1 150-4	Quaternary younger alluvium, Quaternary intermediate alluvium, and Quaternary younger alluvium (Qia+Qya)	Pleistocene (2.6 mya) to Recent (<11,000 years ago)	2	3-Moderate
MVL1 150-3	Quaternary younger alluvium, Quaternary intermediate alluvium and Quaternary younger alluvium (Qia+Qya)	Pleistocene (2.6 mya) to Recent (<11,000 years ago)	3	3-Moderate
MVL1 155-5	Quaternary hillslope alluvium	Pleistocene to Holocene (2.6 mya- recent)	5.4	3-Moderate
MCV1 125-6	Quaternary alluvium	Recent (<11,000 years ago)	-	3b-Moderate (unknown)**
MCV1 125-5	Quaternary alluvium	Recent (<11,000 years ago)	-	3b-Moderate (unknown)**
MCV1 120-1	Quaternary older fanglomerate and gravel (Qof)	Pleistocene (2.6 mya- 11,000 years ago)	0	3b-Moderate (unknown)
MVL1 129-4	Quaternary alluvium and Plio-Pleistocene non-marine	Pliocene to Recent (5.3 mya-recent)	2.5	3-Moderate
MCV2 104-5	Barstow Formation (Ta, Tav)	Middle Miocene (13-16 mya)	3	4a-High
MCV2 103-3	Quaternary alluvium (Qal) and Plio-Pleistocene non-marine (Qp)	Holocene (<11,000 years ago) and Pliocene to Pleistocene (5.3 mya- 11,000 years ago)	3.2	3-Moderate
MCV2 100-5	Volcanic fanglomerate (QTg)	Tertiary (66.0 to 2.6 mya)	1.75	3b-Moderate (unknown)
MCV2 97-5	Gravel Fanglomerate (QTcg)	Tertiary (66- 2.6 mya)	1.7	3b-Moderate (unknown)
MCV2 97-1	Plio-Pleistocene non-marine	Pliocene to Pleistocene (5.3 mya-11,000 years ago)	2.25	3-Moderate
MCV1 92-4	Barstow Fm. (Tcl)	Middle Miocene (13-16 mya)	2	4a-High
MCV2 93-4	Quaternary alluvium (Qa), Plio-Pleistocene non-marine (QP) Tertiary non-marine (Tc)	Tertiary (66 mya)- Holocene (<11,000 years ago)	4.8	3-Moderate

Table 3.5-3
Geology, Excavation Depths, or Work Areas with PFYC Classes 3 and Greater

Work Area	Mapped Surficial Geological Unit (Map Unit)	Geological Period (Approximate Age)	Excavation Depth (ft.)	PFYC Class
MCV2 90-4	Quaternary alluvium (Qal) Quaternary colluvium (Qc) Plio-Pleistocene non-marine (QP)	Pleistocene-recent (2.6 mya-recent)	4	3- Moderate

* See Appendix H

** Due to the anticipated deep excavations for footing replacement for tower raising, the buried portion of the vertical APE is assigned a PFYC class of 3b-Moderate (Unknown), but is considered low (2) on the surface.

As a result of the paleontological resources research and surveys conducted in connection with the proposed project, it has been determined that of the 72 work areas, just over half (39; approximately 54%) of the project work areas are underlain all, or in part, by Pleistocene (approximately 2.6 mya-11,000 years ago) to Holocene (<11,000 years ago) terrestrial sedimentary units with PFYC class of 2 (low). These locations are listed in Table 5 of Appendix H. Igneous and metamorphic rocks found at 16 (approximately 22%) of the 72 work areas (MCV2 152-2; MVL1 168-3; MCV1 151-4, 149-2, and 145-3; MVL1 111-1 and 110-5; MCV1 85-2, 84-5, 73-6, 62-3, 61-2, 61-1, 60-5, 59-4, and 57-5) have no potential for yielding significant paleontological resources and are thus assigned a PFYC class of 1 (very low).

Pleistocene and older sedimentary geological units within the Mojave and northern Colorado Deserts have a history of producing significant paleontological resources including frogs, lizards, snakes, tortoises, birds, horses, camels, proboscideans, rodents, lagomorphs (rabbits), and carnivores. According to Appendix H, it is possible that some of the Pleistocene geological units mapped within the Mojave Desert contain undocumented surficial and buried paleosols that are conducive to fossil preservation. Within the project APE, 15 (approximately 21%) of the 72 work areas are composed of Quaternary older fanglomerate and gravel, Quaternary volcanic gravel, volcanic and gravel fanglomerates, Quaternary intermediate alluvium (elevated), Quaternary hillslope alluvium, Quaternary colluvium, Tertiary non-marine, and Plio-Pleistocene non-marine geological units: (MVL1 159-1, 158-6, and 155-5; MCV1 125-6, 125-5, and 120-1; MVL1 150-4, 150-3, and 129-4; MCV2 103-3, 100-5, 97-5, 97-1, 93-4, and 90-4). These units are considered to have a PFYC class of 3 (moderate) (see Appendix H, Table 5, for full list of work areas).

The Barstow Formation, for which the Barstovian Land Mammal Age is named, is a middle Miocene (approximately 13-16 mya), terrestrial deposit that is known for yielding a diverse assemblage of fossil mammals (Pagnac 2009; URS 2013b). The Barstow Formation is mapped at work areas MCV2 104-5 and MCV1 92-4 (approximately 3%) and are assigned a PFYC class of 4 (high). No paleontological resources were observed during the field surveys.

Proposed construction activities at 17 identified work areas along the Path 46 transmission line alignment (see Table 3.5-3) have a moderate to high likelihood of encountering surficial or subsurficial paleontological resources. Protective measure would be implemented at work area MCV1 120-1 and project-related ground disturbance will be minimal. As such, no paleontological monitoring is recommended for this location. At work areas MCV1 125-5 and 125-6, surficial sediments are not paleontologically sensitive however; the subsurficial geologic unit was assessed as having moderate potential for paleontological resources.

Due to the sensitivity of surficial or subsurficial paleontological resources in geological units underlying work areas identified in Table 3.5-3, proposed grading and/or tower raising activities may result in potentially significant impacts to paleontological resources. Therefore, MM-CUL-5 through MM-CUL-7 have been included and would be implemented during construction to ensure that potentially significant impacts to paleontological resources are reduced to less than significant level.

MM-CUL-5 A Qualified Principal Investigator (Qualified Professional Paleontologist or Project Paleontologist) shall be retained to oversee and direct the paleontological aspects of this project. The Bureau of Land Management (BLM) defines a Principal Investigator as the one listed on the Paleontological Resources Use Permit (BLM 2008). BLM (1998) outlines the qualifications required to obtain a Paleontological Resources Use Permit.

MM-CUL-6 Full-time paleontological monitoring shall be required in all portions of the area of potential effects (APE) containing geological formations with associated Potential Fossil Yield Classification (PFYC) Class 4a. These work areas are listed in Table 3.5-3. Full-time paleontological monitoring shall also occur during initial excavation in portions of the APE containing geological formations with associated PFYC Classes 3a and 3b (with the exception of work areas McCullough-Victorville (MCV) Line 1_120-1, 125-5, and 125-6) to determine if the subsurface geology is conducive to the preservation of fossils. Because protective measure will be implemented at work area MCV1 120-1 and project-related ground disturbance will be minimal, no paleontological monitoring is recommended for this location. At work areas MCV1 125-5 and 125-6, surficial sediments are not paleontologically sensitive however, full-time monitoring shall occur below a depth of 10 feet below surface.

For work areas with PFYC Classes 3a and 3b, after the initial monitoring is conducted, if the Principal Investigator determines the subsurface sediments to be unsuitable for the preservation of significant paleontological resources, he or she may reduce or discontinue paleontological monitoring of the work area, in consultation with the Bureau of Land Management (BLM).

If a paleontological discovery is made during project excavations, the BLM and Los Angeles Department of Water and Power shall be notified and all project ground-disturbing work shall be redirected until the find is assessed and/or salvaged. If appropriate sedimentological indicators (carbonate-rich paleosols, clay clasts, mudstones and/or, plant debris) are observed, the paleontological monitor shall test the sediment for microvertebrates using 20 or 30 mesh screens. If microvertebrate remains are found, the monitor shall be prepared with five gallon buckets to collect samples for screening on or offsite. All identifiable fossils collected during the implementation of the proposed Project shall be accessioned into the Western Science Center in Hemet, California, which is the designated BLM approved fossil repository under BLM Permit # CA-15-07P.

MM-CUL-7 In the event construction or other project personnel discover any potential fossils during construction, project operation and maintenance, or decommissioning and a paleontological monitor designated for the project is not onsite, all project ground-disturbing work shall halt, the fossils shall be left undisturbed, an exclusion zone shall be set up around the find consisting of flagging or other brightly colored tape to prevent damage, and the Bureau of Land Management (BLM) and Los Angeles Department of Water and Power (LADWP) shall be notified immediately. Further determinations of significance and procedures shall be made at that time by the BLM, in consultation with the Principal Investigator and LADWP. All fossils shall be recorded using BLM guidelines (BLM 2007, 2008).

d) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact with Mitigation Incorporated. The Class III archaeological surveys prepared in support of the proposed project (Confidential Appendix F) did not identify known cemeteries, cremation sites, or human remains within the project APE. The resulting potential for the inadvertent discovery of Native American or other human remains during subsurface construction activities is considered remote. However, any unlikely effect to unknown human remains would be potentially significant. MM-CUL-4 has been provided in the remote likelihood that unknown human remains are encountered during construction and would reduce potential impacts to a less than significant level.

References

None.

3.6 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☐
iv) Landslides?	☐	☐	☒	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Existing Setting

The proposed project is located in the Mojave Desert geomorphic province, which is characterized by isolated mountain ranges separated by expanses of desert plains. It has an interior enclosed drainage and many playas. There are two important fault trends that control topography: a prominent northwest-southeast trend and a secondary east-west trend (California Geological Survey 2002). The proposed work areas are underlain by a variety of soil types, including

Mesozoic volcanic rock, quaternary alluvium, Mesozoic granitic rocks, Plio-Pleistocene and Pliocene loosely consolidated deposits, and Precambrian rocks (U.S. Geological Survey 2015).

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. Several of the proposed work areas are located near an Alquist-Priolo Earthquake Fault Zone as shown on the most recent Alquist-Priolo Earthquake Fault Zone Maps (California Geological Survey 2015). The proposed project would not involve the construction of any habitable structures, nor would the proposed project increase the population in the project area. Construction activities would be temporary, lasting for up to 18 months and requiring approximately 12 construction personnel working sequentially along the transmission line corridor. Operational activities along the transmission lines would not change under the proposed project. The only permanent structures that would be constructed under the proposed project are the footings for the two existing transmission towers that would be raised. There are no known faults underneath these transmission towers or immediately adjacent to them (U.S. Geological Survey 2015). Furthermore, the footings and raised towers would be designed and installed pursuant to existing federal, state, and County engineering and design standards related to seismic criteria. Due to the infrequency of human presence in the proposed work areas and due to the minor and temporary nature of the construction activities, the proposed project would not substantially expose people or structures to adverse impacts related to fault rupture, and impacts would be less than significant. For these reasons, the proposed project would not increase the risk of loss, injury, or death involving fault rupture within the project area, and impacts would be less than significant.

ii) Strong seismic ground shaking?

Less Than Significant Impact. The proposed project is located within the seismically active Southern California region and, like all locations within the region, is subject to strong seismic ground shaking. While construction workers would have the potential to be exposed to seismic ground shaking during the construction processes, the risk of loss, injury, or death would not be adverse relative to other areas in Southern California. The proposed project would not involve construction of any habitable structures, nor would it change the use of any existing structures resulting in an increase of occupants who may be exposed to fault rupture. For the tower raising activities, the footings and raised towers would be designed and installed pursuant to existing federal, state, and County engineering and

design standards related to seismic criteria, which would reduce potential damage to the raised transmission towers from ground movement. For these reasons, the proposed project would not increase the risk of loss, injury, or death involving seismic activity within the project area, and impacts would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

No Impact. Liquefaction is the process in which saturated silty to cohesionless soils below the groundwater table temporarily lose strength during strong ground shaking as a consequence of increased pore pressure during conditions such as those caused by an earthquake. Earthquake waves cause water pressure to increase in the sediment and the sand grains to lose contact with each other, leading the sediment to lose strength and behave like a liquid. The proposed project consists of 70 work areas where minimal amounts of grading would occur. The average depth of excavation would be approximately 2.4 feet. Many of the work areas are located in areas that are not susceptible to liquefaction (County of San Bernardino 2007). In the event that a work area were to be located on potentially liquefiable soils, the grading activities would not expose people or structures to risk related to liquefaction. No habitable structures are proposed, and the project would not increase the population in the project area. The proposed project also includes two work areas where existing transmission towers would be raised, and new footings for the transmission towers would be installed. The footings and raised towers would be designed and installed pursuant to existing federal, state, and County engineering and design standards related to seismic criteria, which would reduce potential damage to the raised transmission towers from ground movement, including movement from liquefaction. For these reasons, the proposed grading activities and tower raising activities would not substantially increase the susceptibility of people or structures to risk of loss, injury, or death related to liquefaction. No impact would occur.

iv) Landslides?

Less Than Significant Impact. Landslides are characterized as deep-seated ground failures, in which a large section of a slope detaches and slides downhill. Many of the proposed work site are located on undeveloped flat land, which would not have the potential to be impacted by a landslide. The two tower raising locations are located on flat agricultural land that would also not be expected to experience land sliding. Although some of the work sites may be located adjacent to slopes that could become unstable during an earthquake, the amount of grading per work site would be minimal and the risk to construction workers from landslides would be negligible. Given the relatively small scale of these planned excavations (the total volume of excavated soils would be 10,811 cubic yards, which equates to an average of 160 cubic yards of material per grading area), it is unlikely that landslide movements would be generated by excavation associated with the proposed project.

Furthermore, the proposed project would not include construction of any habitable structures, nor would it increase the population in the project area. As such, the proposed project would not result in changes to structures or population levels susceptible to risk from landslide. For these reasons, impacts would be less than significant.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. The proposed project involves grading activities at 68 sites within the Mojave Desert, barricade installation at 2 locations, and tower raising activities at 2 locations. The tower raising sites are located in an agricultural field. The proposed project would result in approximately 7 acres of grading across the 68 grading sites. The grading activities would have the potential to contribute to erosion or loss of topsoil at the work sites. However, there are a variety of state and federal regulations that prevent erosion and loss of topsoil during construction that would be implemented for the proposed project. This would include preparation of and compliance with a SWPPP, which would include erosion control measures. Furthermore, in order to mitigate impacts to biological resources, LADWP's construction contractor would be required to salvage and preserve topsoil during the grading activities and then replace the topsoil once grading is completed (see Section 3.4 and 3.5). While this requirement is intended to preserve the viability of the desert topsoil for biological purposes, it would also minimize the amount of topsoil loss that would occur. During operation, no changes to maintenance or operational activities would occur relative to existing conditions; as such, once construction is complete, no change in soil erosion or loss of topsoil attributable to the proposed project would occur. Upon implementing the requirement to salvage topsoil during construction and upon compliance and with state and federal regulations involving stormwater pollution, impacts related to soil erosion and topsoil loss would be less than significant.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. The proposed project involves movement of earth materials with the potential to trigger geological instability. The project would also involve a construction crew of approximately 10 workers moving sequentially along the transmission line corridor. The construction crew would have the potential to be exposed to geologic instability during the construction process. After construction has been completed, operational and maintenance activities associated with the transmission lines would be the same as those that currently exist. As such, potential impacts would be limited to the 6- to 12-month construction period.

Refer to Section 3.6(a)(ii) and Section 3.6(a)(iv) for a discussion of impacts related to landslides and liquefaction. Lateral spreading is a type of liquefaction-induced ground failure occurring on mildly sloping ground. Lateral spreading primarily involves side-to-side movement of earth materials due to ground shaking, and is evidenced by near-vertical cracks to predominantly horizontal movement of the soil mass involved. As discussed in

Section 3.6(a)(iv), most of the work areas are not located in areas that are susceptible to liquefaction. As such, lateral spreading would be unlikely to occur in the proposed work areas. Subsidence is the lowering of surface elevation due to changes occurring underground, such as the extraction of large amounts of groundwater, oil, or gas. When groundwater is extracted from aquifers at a rate that exceeds the rate of replenishment, overdraft occurs, which can lead to subsidence. The proposed project would involve excavating approximately 10,811 cubic yards of soil across 68 work areas, raising 2 transmission towers, and installing barricades at 2 locations. These activities would not involve removal of groundwater, oil, or gas. As such, the proposed project would not result in on- or off-site subsidence. Collapsible soils consist of loose, dry materials that collapse and compact under the addition of water or excessive loading. Collapsible soils are prevalent throughout the southwestern United States, specifically in areas of young alluvial fans. Several work sites are located in areas underlain by quaternary alluvium (U.S. Geological Survey 2015). Soil collapse occurs when the land surface is saturated at depths greater than those reached by typical rain events. While collapse has the potential to occur within or near the project area, the proposed project would not be expected to exacerbate or trigger collapse, as it would involve minor grading activities and the raising of two existing transmission towers.

In the event that geologic instability were to occur in the project area, the proposed project would not significantly increase the number of people who could be affected, nor would it involve the construction of any habitable structures with the potential to be affected by geologic instability. During construction, approximately 10 workers would be present in the project area for up to 18 months, with approximately 24 workers required for the tower raising activities. The footings and raised towers would be designed and installed pursuant to existing federal, state, and County engineering and design standards related to seismic criteria, which would minimize the potential for the raised transmission towers to be damaged by geologic instability. Because operational activities would remain the same as those that currently occur in the project area, the proposed project would not expose additional people or structures to hazards related to geologic instability. For these reasons, impacts would be less than significant.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less Than Significant Impact. Expansive soils are clay-based soils that tend to expand (increase in volume) as they absorb water, and shrink (lessen in volume) as water is drawn away. If soils consist of expansive clays, foundation movement and/or damage can occur if wetting and drying of the clay does not occur uniformly across the entire area. The proposed project would involve minor grading activities at 68 work sites in undeveloped areas of the Mojave Desert, barricade installation activities at two sites, and the raising of two existing transmission towers in an agricultural field. The project area is generally underlain by quaternary alluvium, volcanic rock, granitic rock, and sandstone, shale, and gravel deposits (U.S. Geological Survey 2015). In the event that soil expansion were to occur in the project area, it would not create substantial risks to life or property. The proposed project would not involve construction of habitable structures, and the presence of

on-site workers would be temporary. The footings and raised towers for the two tower raising sites would be designed and installed pursuant to existing federal, state, and County engineering and design standards related to seismic criteria, which would reduce potential damage to the raised transmission towers from ground movement, including movement from expansive soils. Therefore, the proposed project would not create a substantial risk to life or property resulting from expansive soils, and the impact would be less than significant.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The proposed project involves minor grading activities along existing transmission lines in the Mojave Desert and raising two existing transmission towers. No septic tanks or alternative wastewater disposal systems are proposed. Therefore, no impact associated with the use of such systems would occur.

References

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3.7 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Existing Setting

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind, lasting for an extended period (decades or longer). Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs). The greenhouse effect traps heat in the troposphere through a threefold process: short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and back toward the Earth. This "trapping" of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Without it, the temperature of the Earth would be about 0°F (−18°C) instead of its current 57°F (14°C). Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect.

Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor. Some GHGs, such as CO_2, CH_4, and N_2O, can occur naturally and are emitted into to the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Human-caused GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride, which are associated with certain industrial products and processes (Climate Action Team 2006).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP). The GWP varies between GHGs; for example, the GWP of CH_4 is 21, and the GWP of N_2O is 310. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG gas emissions are typically measured in terms of pounds or tons of CO_2 equivalent (CO_2E).[2]

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project would be considered a cumulatively considerable

[2] The CO_2E for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons of CO_2E = (metric tons of a GHG) × (GWP of the GHG). CalEEMod assumes that the GWP for CH_4 is 21, which means that emissions of 1 metric ton of CH_4 are equivalent to emissions of 21 metric tons of CO_2, and the GWP for N_2O is 310, based on the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report. The IPCC has released subsequent Assessment Reports with updated GWPs, and CARB reporting and other statewide documents are beginning to transition to the use of the GWPs in the IPCC Fourth Assessment Report. Furthermore, the use of the different GWPs will not substantially change the overall project GHG emissions, which are primarily CO_2. As such, it is appropriate to use the hardwired GWP values in CalEEMod from the IPCC Second Assessment Report.

contribution to global climate change; however, Federal regulations require mandatory reporting of GHG emissions if annual emissions are greater than 25,000 metric tons CO_2E per year (MT CO_2E/year). Projects with GHG emissions greater than 100,000 MT CO_2E/year are considered a major source under the Prevention of Significant Deterioration program of the Clean Air Act.

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA 2008). This approach is consistent with that recommended by the California Natural Resource Agency, which noted in its Public Notice for the proposed CEQA amendments that evidence indicates, in most cases, that the impact of GHG emissions should be considered in the context of a cumulative impact, rather than a project-level impact (CNRA 2009a). Similarly, the *Final Statement of Reasons for Regulatory Action* for amendments to the CEQA Guidelines confirms that an environmental impact report or other environmental document must analyze the incremental contribution of a project to GHG levels and determine whether those emissions are cumulatively considerable (CNRA 2009b).

The CEQA Guidelines provide for streamlining the environmental review of project-level analysis of GHG emissions from a programmatic document, such as a GHG reduction plan, and allow for a finding of less than significant where a project is determined to be consistent with a local reduction plan (CEQA Guidelines, Title 14 California Code of Regulations Section 15183.5). The CEQA Guidelines provide that the environmental analysis of specific projects may be tiered from a programmatic GHG plan that substantially lessens the cumulative effect of GHG emissions. If a public agency adopts such a programmatic GHG Plan, the environmental review of subsequent projects may be streamlined. A specific project's incremental contribution of GHG emissions will not be considered cumulatively significant if the project complies with the adopted GHG plan.

County of San Bernardino GHG Reduction Plan

The County of San Bernardino developed and adopted a GHG Plan in September 2011, which presents a comprehensive set of actions to reduce its internal and external GHG emissions to 15% below current levels by 2020, consistent with the Assembly Bill (AB) 32 Scoping Plan. The County of San Bernardino's GHG Reduction Plan was prepared to accomplish the following specific objectives (County of San Bernardino 2011):

- Reduce emissions from activities over which the County has jurisdictional and operational control consistent with the target reductions of the AB 32 Scoping Plan;

- Provide estimated GHG reductions associated with the County of San Bernardino's existing sustainability efforts and integrate the County's sustainability efforts into the discrete actions of the GHG Plan;
- Provide a list of discrete actions that will reduce GHG emissions; and
- Approve a GHG Plan that satisfies the requirements of Section 15183.5 of the CEQA Guidelines so that compliance with the GHG Plan can be used in appropriate situations to determine the significance of a project's impacts relating to GHG emissions, thus providing streamlined CEQA analysis of future projects that are consistent with the approved GHG Plan.

As described in the GHG Plan, all development projects, including those otherwise determined to be exempt from CEQA, are subject to applicable Development Code provisions, including the GHG performance standards and state requirements. With the application of the GHG performance standards, projects that are exempt from CEQA and small projects that do not exceed 3,000 MT CO2e/year are considered to be consistent with the GHG Reduction Plan and determined to have a less–than-significant individual and cumulative impact for GHG emissions (County of San Bernardino 2011). The development of this threshold implies that it should be applied to the total of a project's annual operational emissions plus its construction emissions annualized over the project life.

The GHG Reduction Plan includes goals and objectives aimed to reduce emissions generated during construction of projects. With respect to the proposed project, the GHG Reduction Plan specifies the following:

- GHG Goal TL 4: Reduce GHG emissions by regulating the idling of diesel-fueled vehicles and equipment and encouraging the use of alternative fuels and transportation technologies.
- Objective GHG TL 4.1: Reduce the exhaust emissions of diesel-fueled vehicles and equipment.

Other reduction strategies include an anti-idling enforcement policy, whereby the County of San Bernardino requires that diesel-fueled vehicles and off-road equipment shall not be left idling on site for periods in excess of 5 minutes. The County of San Bernardino will also continue to implement its diesel exhaust emissions control measures, which extend beyond the idling restriction described above in the anti-idling enforcement policy. The County of San Bernardino's diesel exhaust control measures described in Development Code (County of San Bernardino 2015) Section 83.01.040 apply to all discretionary land use projects approved by the County of San Bernardino on or after January 15, 2009. These measures include, but are not limited to:

Off-Road Diesel Vehicle/Equipment Operations. All business establishments and contractors that use off-road diesel vehicle/equipment as part of their normal business operations shall adhere to the following measures during their operations in order to reduce diesel particulate matter emissions from diesel-fueled engines:

- Use reformulated ultra-low-sulfur diesel fuel in equipment and use equipment certified by the EPA or that pre-dates EPA regulations.

- Maintain engines in good working order to reduce emissions.
- Signs shall be posted requiring vehicle drivers to turn off engines when parked.
- Any requirements or standards subsequently adopted by the South Coast Air Quality Management District, the Mojave Desert Air Quality Management District or CARB.
- Provide temporary traffic control during all phases of construction.
- On-site electrical power connections shall be provided for electric construction tools to eliminate the need for diesel-powered electric generators, where feasible.
- Maintain construction equipment engines in good working order to reduce emissions. The developer shall have each contractor certify that all construction equipment is properly serviced and maintained in good operating condition.
- Contractors shall use ultra-low sulfur diesel fuel for stationary construction equipment as required by Air Quality Management District Rules 431.1 and 431.2 to reduce the release of undesirable emissions.
- Substitute electric and gasoline-powered equipment for diesel-powered equipment, where feasible.

Proposed project GHG Emissions. CalEEMod Version 2013.2.2 was used to calculate the annual GHG emissions based on the construction scenario described in Section 3.2, Air Quality. On-site sources of GHG emissions include off-road equipment and off-site sources include on-road vehicles (haul trucks, vendor trucks, and worker vehicles). Table 3.7-1, Estimated Annual Construction Greenhouse Gas Emissions, presents construction emissions for the proposed project from on-site and off-site emission sources.

Table 3.7-1
Estimated Annual Construction Greenhouse Gas Emissions

	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Estimated Annual GHG Emissions	461.29	0.11	0.00	463.58
Annualized Emissions over 30 Years	—	—	—	15.45

Notes: See Appendix D1 for detailed results.
MT CO_2 = metric tons carbon dioxide; MT CH_4 – metric tons methane; MT N2O – metric tons nitrous oxide; MT CO2E – metric tons carbon dioxide equivalent

As shown in Table 3.7-1, the estimated total GHG emissions during construction of the proposed project would be approximately 464 MT CO_2E. Total emissions annualized over 30 years—the estimated lifespan for a public infrastructure project—would be approximately 16 MT CO_2E/year. In addition, GHG emissions generated during construction of the proposed project would be short-term in nature, lasting only for the duration of the construction period, and they would not represent a long-term source of GHG emissions. In regards to long-term operations, the proposed project would not change the routine inspection and maintenance of the existing transmission lines or result in a net increase in GHG emissions. As shown, the

total annual emissions would not exceed the GHG significance threshold of 3,000 MT CO_2E/year. Because the proposed project's GHG emissions would not result in a cumulatively considerable contribution, the project would result in a cumulative impact in terms of climate change that is less than significant.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. As discussed in response 3.7(a) and as stated in the San Bernardino County Final GHG Reduction Plan (2011), with the application of the GHG performance standards, small projects that do not exceed 3,000 MT CO_2E/year are considered to be consistent with the GHG Plan and determined to have a less-than-significant individual and cumulative impact for GHG emissions.

As depicted in Table 3.7-1, construction of the proposed project would not exceed the 3,000 MT CO_2E/year threshold adopted by San Bernardino County. Based on the guidance presented in the County of San Bernardino's GHG Reduction Plan, the proposed project would be consistent with the applicable plan adopted to reduce GHG emissions; therefore, the project would result in a less-than-significant cumulative impact to GHG emissions and climate change.

References

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3.8 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Existing Setting

Project Site Conditions

The proposed project would be located within an existing utility corridor extending through primarily vacant areas of the Mojave Desert. As such, existing hazards are limited to natural hazards typical of the desert environment, such as flooding. Typical operation and maintenance practices of transmission lines may result in the release of small amounts of solvents, pesticides, paint products, motor and lubricating oils, and cleaners in the corridor. However, substantial quantities of hazardous materials and wastes are not currently generated, used, or transported as part of existing operations.

Regulatory Database

A regulatory database search was conducted of the project vicinity and included a review of databases on the following websites: California Department of Toxic Substances Control's EnviroStor (DTSC 2015) and the State Water Resources Control Board's (SWRCB) Geotracker (SWRCB 2015). The review examined the affected portions of the utility corridor and immediately surrounding areas. Several properties within the project vicinity are listed on these hazardous waste sites lists. However, all of the work areas appear to fall outside of any listed hazardous waste sites.

Schools

The majority of the proposed work areas are located in vacant areas of the Mojave Desert and on BLM land. The nearest school to the project area is the Silver Valley Unified School District Alternative Education Center, located approximately 2 miles northwest of the grading sites near MVL1_150-3, MVL1_150-4, and MCV1_129-1 (California Department of Education 2014).

Airports

The closest public airport is the Barstow-Daggett Airport, located within 2 miles of work sites MVL1_147-4, MVL1_147-5, MCV1_125-6, and MCV1_125-5 (Caltrans 2012). These four work sites are just outside the planning area boundaries of the Airport Comprehensive Land Use Plan for the Barstow-Daggett Airport (Barstow-Daggett ACLUP) (County of San Bernardino 1992). A helicopter landing strip within the Fort Irwin Military Reservation is located approximately 2 miles from work sites MCV1_88-1, MCV1_88-2, and MCV1_87-5. Portions of the project area are within Airport Safety Review Area 4 (AR4). AR4 includes low-altitude/high speed corridors designated for military aircraft use (County of San Bernardino 2014).

Emergency Evacuation

The work areas are located in relatively remote locations that would be primarily accessed by existing access roads, which are not major evacuation or emergency routes. I-15 serves as a major east-west transportation corridor for the region and is critical to emergency operations.

Wildland Fires

Wildland fire is not likely to occur in the project area, as desert vegetation is typically characterized by low fire frequency (BLM 1980).

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. Implementation of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Construction activities would be temporary in nature and would involve the limited transportation, storage, usage, and disposal of hazardous materials. Such hazardous materials could include on-site fueling/servicing of construction equipment, and the transport of fuels, lubricating fluids, and solvents. These types of materials are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated by the California Department of Toxic Substances Control, the U.S. EPA, the Occupational Safety & Health Administration, and the San Bernardino County Fire Department. The transport, use, and disposal of construction-related hazardous materials would occur in conformance with applicable federal, state, and local regulations governing such activities. Therefore, the short-term construction impact would be less than significant.

Once construction is complete, the operational activities along the transmission lines would not change upon implementation of the proposed project. As such, no operational impact related to the routine use or transport of hazardous materials would occur as a result of the proposed project.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. The proposed project construction would not create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As discussed in Section 3.9(a), construction activities for both phases of the proposed project may involve limited transport, storage, use, or disposal of some hazardous materials, such as on-site fueling/servicing of construction equipment, and the transport of fuels, lubricating fluids, and solvents. There is also the potential that areas used for agriculture or areas that have been used for agriculture in past would contain residual pesticides in the soil that is being excavated. However, there are only two work areas currently being used for agriculture (MCV1_125-5 and MCV1_125-6). The majority of the project area is located in undeveloped areas of the Mojave Desert. As such, the potential for encountering pesticides of high concentration is low. Furthermore, these types of materials that would be used or that would have the potential to be encountered (i.e., pesticides) are not acutely hazardous.

The heavy equipment used for grading would be operated using oil, fuel, lubricating grease, coolants and hydraulic fluids. In the event that hazardous or regulated materials were spilled, direct impacts could occur related to the release of hazardous materials into the environment, resulting in the exposure of workers to the materials. Such impacts would generally be temporary, due to the short-term nature of construction. Any hazardous substance spills would be cleaned immediately and any resulting waste would be transferred off site in accordance with all applicable local, state, and federal regulations. Contractors would maintain spill kits on site for use in case of a spill. Measures would be taken to control the spill, and the BLM would be notified as required. As such, in the unlikely event that hazardous materials are spilled during construction, impacts would be temporary, minor, and localized, because such spills would be required to be properly controlled and safety removed in accordance with existing regulations.

Compliance with existing federal, state, and local regulations would ensure that construction impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials would be less than significant.

Once construction is complete, the operational activities along the transmission lines would not change upon implementation of the proposed project. As such, no operational impact related to the release of hazardous materials would occur as a result of the proposed project.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. There are no schools within 0.25 mile of the proposed work areas (California Department of Education 2014). The majority of the proposed work areas are located in undeveloped areas of the Mojave Desert and on BLM land, so it is unlikely that a school would be proposed near the project area in the future. The proposed project would not alter any land uses or introduce any new sources of hazardous materials. Furthermore, the activities associated with the proposed ground-to-conductor activities would involve hazardous materials typical of construction processes and therefore would not introduce acutely hazardous materials into the project area. As such, no impact would occur as a result of the proposed project.

d) Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less Than Significant Impact. Several properties within the project vicinity are listed on hazardous waste sites lists compiled pursuant to Government Code Section 65962.5, such as the RWQCB GeoTracker site and the Department of Toxic Substances Control's EnviroStor site. Furthermore, all of the proposed sites are located within an existing utility corridor that is primarily within BLM land. As such, typical hazardous waste generating uses such as gas stations and manufacturing would not occur within the project area. Additionally,

construction activities would not require deep excavations. This would further decrease the likelihood for hazardous materials sites, such as underground storage tanks, to be encountered during ground-to-conductor clearance activities. Furthermore, construction activities would occur primarily in areas that are naturally vegetated, with prior on-site activities limited to those required to construct and maintain the transmission infrastructure. For these reasons, it is not anticipated that any hazardous materials sites would be encountered or disturbed during the proposed ground-to-conductor clearance activities. In the unlikely event that hazardous wastes are uncovered, workers would be required to adhere to existing state and federal requirements pertaining to safe handling and proper disposal of such wastes. As such, impacts would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Less Than Significant Impact. The Barstow-Daggett Airport is within 2 miles of work sites MVL1_147-4, MVL1_147-5, MCV1_125-6, and MCV1_125-5 (Caltrans 2012). These four work sites are just outside the planning area boundaries of the Barstow-Daggett ACLUP (County of San Bernardino 1992). A helicopter landing strip within the Fort Irwin Military Reservation is located approximately 2 miles from work sites MCV1_88-1, MCV1_88-2, and MCV1_87-5. Portions of the project area are within Airport Safety Review Area 4 (AR4). AR4 includes low-altitude/high speed corridors designated for military aircraft use (County of San Bernardino 2014).

At all work sites except MCV1_125-6 and MCV1_125-5, the proposed project would involve grading activities within an existing utility corridor. Such activities would not affect aircraft, as they would take place beneath and adjacent to existing transmission lines and would therefore not interfere with flight paths.

The proposed work at MCV1_125-6 and MCV1_125-5 would involve raising two existing transmission towers by approximately 20 feet. These two towers are located just north of the planning boundary of the Barstow-Daggett ACLUP (County of San Bernardino 1992). As such, the raised towers would be located outside of the Airport Safety Review Areas designated in the Barstow-Daggett ACLUP. Existing towers are 110 feet in height, and the raised towers would be a maximum of 130 feet in height above ground level (AGL). The slightly taller structures would not be anticipated to exceed the 200 feet AGL height standard established by the FAA (FAA 2007) to determine whether marking and/or lighting is required on temporary or permanent structures. As such, an airport safety hazard related to the slightly taller structures would not be anticipated.

The tower raising process would involve approximately 24 construction workers, and the grading activities would involve approximately 10 construction workers. The work crew(s) would be present on each work site for a limited period of time. While the number of workers near the Barstow-Daggett Airport or the Fort Irwin Military Reservation would temporarily increase during the proposed construction activities, the number of workers and the amount of time that they would be present on each work site would be limited. Furthermore,

the proposed project would not permanently increase the number of people who reside or work near the Barstow-Daggett Airport or the Fort Irwin Military Reservation, nor would the proposed project introduce new habitable structures or noise sensitive uses to the project area. For these reasons, the proposed project would not substantially alter airport safety hazards in the project area and impacts would be less than significant.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The proposed work sites are located within undeveloped areas of the Mojave Desert, with most work sites located on BLM land. No private airstrips are located in the vicinity of the work sites. As described under Section 3.8(e), the proposed project would not substantially alter airport safety hazards in the project area. No impact would occur.

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The proposed project would be located primarily in undeveloped areas of the Mojave Desert within an existing utility corridor. While existing unpaved access roads would be used to complete the proposed project, these access roads are located within the existing utility corridor and are not identified as emergency evacuation routes. Temporary use of these access roads would not hinder emergency response or evacuation. In the event of an accident within one of the work areas, emergency vehicles would be able to use I-15 to access the work area. As such, no impact would occur.

h) Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact. The proposed project would be located in primarily undeveloped areas of the Mojave Desert. The Vegetation Element in the CDCA Plan notes that desert vegetation is typically characterized by low fire frequency (BLM 1980). The County maps fire safety areas within the County; however, the project area is not located in a fire safety area (County of San Bernardino 2007). The proposed project would involve the temporary presence of construction workers in the project area (approximately 10 construction workers for up to 18 months, with 25 workers at the tower raising sites), who would be temporarily exposed to wildland fire, in the event that one were to occur in the project area. However, the risk would not be greater than that of other areas in Southern California. Additionally, no habitable structures are proposed, and the project would not permanently increase the population in the project area resulting in an increase of people and/or structures that would be at risk of loss, injury, or death involving wildland fire. As such, impacts would be less than significant.

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3.9 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the	☐	☐	☒	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

Existing Setting

Surface Water

The project area is within the Mojave Desert, an arid area with high summer temperatures and low humidity. Annual average precipitation is approximately 5 inches per year (Western Regional Climate Center 2015). The proposed project is located within the South Lahontan RWQCB Hydrologic Basin (Region 6). According to the 2010 EPA approved 303(d) List, there are no impaired waterbodies in the vicinity of the project area (State Water Resources Control Board 2011). Surface flow in the project area comes primarily from stormwater runoff from precipitation. Numerous drainage features such as ephemeral washes and swales traverse the project area. The majority of features that appear to convey flows in the project area are eroded rills and gullies that formed as a result of lack of activity on the access roads and large, sudden rain events that acted on the friable soils (ESA 2015). The majority of these washes, swales, and other drainages are unnamed. Nearby named waterbodies include the Mojave River, located near Segment 2 and Segment 3; Red Pass Lake, located approximately 800 feet north of the grading site near MCV1_88-5 within Segment 5; and Riggs Wash, located adjacent to Segment 6 (USGS 2015).

Ground Water

The project area is underlain by multiple groundwater basins, including the Middle Mojave River Valley (Basin 6-41), Lower Mojave River Valley (Basin 6-40), and Cronise Valley (6-35) groundwater basins (Mojave Water Agency 2015). Beneficial uses for these basins include municipal, agricultural, industrial, freshwater replenishment, and aquaculture (Lahontan RWQCB 2005).

Floodplains

Several work sites, particularly those near Barstow and Baker, may be located within or adjacent to an area potentially subject to a 100-year flood. Additionally, the ephemeral washes in the project area represent potential hazard areas for flooding. However, the ground-to-conductor clearance activities would not adversely affect floodplains or expose substantial numbers of people to flood hazards.

a) Would the project violate any water quality standards or waste discharge requirements?

Less Than Significant Impact. The proposed project involves grading activities at 68 sites within the Mojave Desert, barricade installations at 2 sites, and tower raising activities at 2 locations. The proposed project would result in a total of approximately 7 acres of grading across the 68 grading sites, and the tower raising activities would result in 3.7 acres of temporary disturbance. Barricade installation would involve minimal grading. In the event that stormwater were to be generated during construction activities, sediment runoff or runoff containing pollutants from construction equipment present on site would have the potential to occur. As such, water quality standards and waste discharge requirements related to stormwater runoff would apply to the proposed project.

Prior to the start of construction, LADWP would be required to obtain a General Storm Water Permit Associated with Construction Activity, issued by the State Water Resources Control Board. One of the conditions of the General Permit is the development and the implementation of a SWPPP by a QSD, which would identify structural and nonstructural BMPs to be implemented by the QSP during the construction phase. LADWP would also develop and implement an erosion control plan for the proposed project. These BMPs would minimize direct impacts to surface water quality and would also minimize the potential for indirect impacts to occur such as increases in sediment loads in surface waters. With implementation of BMPs as outlined in the SWPPP and erosion control plan, the proposed project would not violate any water quality standards or waste discharge requirements. Therefore, impacts on water quality from construction activities would be less than significant. Operational conditions and activities would not be altered by the proposed project such that water quality standards or waste discharge requirements would be violated. Impacts would therefore be less than significant.

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. The proposed project would correct insufficient ground-to-conductor clearances along three existing overhead transmission lines. This would involve grading at 68 work sites, installing barricades at 2 work sites, and raising transmission towers at 2 locations. Water associated with the proposed project would consist of water used for dust control during construction activities. This water would be transported to the work sites in a water truck and would not increase water use in the project area to the extent that groundwater supplies would become substantially depleted. Furthermore, the only impervious surfaces that would be installed in association with proposed project are the new footings associated with the tower raising activities. These footings would be 13 square feet each, for a total permanent impact area of approximately 100 square feet.

Groundwater can potentially be encountered during construction activities when deep excavations are involved and/or when groundwater levels are high. However, the proposed grading activities would have an average depth of 2.4 feet. As such, it is not anticipated that groundwater would be encountered or affected during the proposed grading activities. During the tower raising activities, new footings would be placed in the ground at a depth of approximately 30 feet. Impacts would be less than significant.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. Numerous drainage features such as ephemeral washes and swales traverse the project area; however, the proposed ground-to-conductor clearance activities are not anticipated to impact any drainage feature or alter the stream course of any feature. Furthermore, no proposed ground-to-conductor clearance activities are anticipated to result in temporary or permanent fill of any stream or river. The majority of features that appear to convey flows in the project area are eroded rills and gullies that formed as a result of lack of activity on the access roads and large, sudden rain events that acted on the friable soils (ESA 2015). The proposed ground-to-conductor clearance activities may alter some of these rills and gullies. The alternation of rills and gullies within an existing utility corridor would not result in substantial erosion or siltation on or off site. However, storm events occurring during the construction phase would have the potential to carry disturbed sediments off site. Compliance with the stormwater runoff regulations described under Section 3.9(a) would ensure that impacts related to erosion and siltation during construction activities would remain less than significant. It is anticipated that during operation, any rills or gullies within the project area that were altered by

the ground-to-conductor clearance activities would be reestablished and that drainage patterns would not be substantially altered during operation. Impacts would be less than significant.

d) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact. As described in Section 3.9(c), the proposed project would not alter the course of a stream or river. Furthermore, as described in Section 3.9(b), the proposed project would not increase the amount of impervious surfaces in the project area, with the exception of the new footings for the two transmission towers that would be raised, which would total 100 square feet of new impervious surfaces. Because the proposed project would not introduce substantial amounts of new impervious surfaces, the rate or amount of surface runoff would not be substantially increased to the extent that flooding is caused on or off site.

As explained in Section 3.9(c), the proposed ground-to-conductor clearance activities may result in minor alternations to the drainage patterns within the project area. This is because existing rills or gullies formed by water flow may be altered, and the shape and slope of the grading sites may be slightly altered as areas underneath the power lines are graded and excavated soils are spread along access roads. However, these minor alternations in drainage would not substantially alter the extent to which flooding occurs in the project area or vicinity, as flooding would not be impeded or substantially redirected. It is anticipated that once construction activities at each site are complete, any rills or gullies that were altered by the ground-to-conductor clearance activities would be naturally reestablished and that drainage patterns would not be substantially altered during operation. Impacts would therefore be less than significant.

e) Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. As described under Section 3.9(d), the proposed project would not increase the amount of runoff from the project area. As such, the proposed project would not affect the capacity of stormwater drainage systems. However, storm events occurring during the construction phase would have the potential to carry disturbed sediments and spilled substances from construction activities, thereby creating a temporary source of polluted runoff. Compliance with the water quality regulations described under Section 3.9(a) would ensure that impacts related to polluted runoff during construction activities would remain less than significant. Operation conditions and activities would not be altered by the proposed project such that a new source of polluted runoff would be created. Impacts would therefore be less than significant.

f) Would the project otherwise substantially degrade water quality?

No Impact. Other than the sources described for construction activities (i.e., potential soil erosion and fuels for construction equipment), the proposed project does not include other potential sources of contaminants that could potentially degrade water quality. Additionally, as discussed in Section 3.9(a) above, a SWPPP and an erosion control plan would be developed and implemented to prevent the degradation of water quality. Compliance with existing regulations would ensure a less than significant impact related to water quality.

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The proposed project would not involve construction of housing. As such, no impact would occur.

h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. There are several 100-year flood hazard areas near Barstow and Baker (DWR 2015b). While some of the proposed work sites may be located within or near a 100-year flood hazard area, the proposed ground-to-conductor clearance activities do not involve installation of new permanent or habitable structures. As such, no impact would occur.

i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less Than Significant Impact. There are several levees located near Barstow and Baker (DWR 2015b). While the proposed project would result in the temporary presence of construction workers within the project area who would have the potential to be exposed to flooding, this would be unlikely due to the short-term nature of construction and the absence of flood hazard areas throughout much of the project area (DWR 2015b). Furthermore, the risk would not be substantial relative to other areas throughout Southern California. Operational conditions and activities would not introduce additional people or structures to the project area; as such, the project would not expose additional people or structures to risk involving flooding during operation. Impacts would therefore be less than significant.

j) Inundation by seiche, tsunami, or mudflow?

Less Than Significant Impact. Seiches are oscillations generated in enclosed bodies of water, usually as a result of earthquake-related ground shaking. A seiche wave has the potential to overflow the sides of a containing basin to inundate adjacent or downstream areas. There are no large enclosed bodies of water directly upstream from the project area. As such, the project area would not be subject to inundation by seiche.

Tsunamis are large ocean waves caused by the sudden water displacement that results from an underwater earthquake, landslide, or volcanic eruption. Tsunamis affect low-lying areas along the coastline. The project area is located over 80 miles northeast of the Pacific Ocean. As such, the project area would not be susceptible to inundation by tsunami.

Several of the work sites are located adjacent to slopes that would have the potential to be impacted by landslides or mudflows. While construction workers would have the potential to be exposed to mudflow during the construction processes, the risk of loss, injury, or death would not be adverse relative to many other areas across Southern California. Furthermore, the proposed project would not include construction of any habitable structures, nor would it increase the population in the project area. As such, the proposed project would not result in changes to structures or population levels susceptible to risk from mudflow. For these reasons, impacts would be less than significant.

References

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DWR). 2015b. *Best Available Maps*. Accessed September 3, 2015. http://gis.bam.water.ca.gov/bam/.

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3.10 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☒	☐	☐

Existing Setting

The proposed project is located within an existing ROW within Utility Corridor D (the Boulder Corridor), which is delineated in the CDCA Plan. Corridor D originates at the border of Nevada and California, traverses the CDCA Planning Area in a southwest direction, and extends past the town of Victorville, California in a southerly direction, terminating at the border of San Bernardino County (edge of CDCA Planning Area). The corridor measures approximately 2 miles in width. Several major utilities and affiliated ROWs are authorized in this corridor and include MCV1, MCV2, MVL1; a 500 KV direct current transmission line, one sub-surface 40-inch gas pipeline, and two fiber optic lines owned by WorldCom Network Inc. (BLM 2015).

a) Would the project physically divide an established community?

No Impact. The proposed work sites are located in undeveloped areas of the Mojave Desert, with the exception of several work sites within Segment 3 that are within or near agricultural fields. Because the project area is not within an established community, it would not have the potential to divide such a community. No impact would occur.

b) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. Numerous land use plans apply to the project area. Consistency with applicable land use plans is addressed below.

BLM Land Use Plans

The proposed project would be within the jurisdictional boundaries of the CDCA Plan, as amended, and the boundaries of the DRECP BLM Land Use Plan Amendment. The consistency of the proposed project with these plans is addressed below.

- **1980 California Desert Conservation Area Plan, as amended.** On BLM-administered lands, the proposed action is subject to the 1980 CDCA Plan, as amended. As part of the FLPMA, the CDCA Plan was developed to guide land use management of BLM lands within this portion of California. The proposed action is located in Corridor D (Boulder Corridor), a designated 2-mile-wide planning corridor in the CDCA Plan (BLM 1980). The CDCA Plan identifies one 287 kV power line and two 500 kV power lines (the subject transmission lines of this EA) as pre-existing lines. Per the CDCA Plan, existing facilities within designated corridors may be maintained and upgraded or improved in accordance with existing ROW grants or by amendments to ROW grants. Existing facilities outside designated corridors may only be maintained but not upgraded or improved (BLM 1980).
- **2016 Desert Renewable Energy Conservation Plan**. Phase I of the Desert Renewable Energy Conservation Plan (DRECP) was approved on September 14, 2016, by the BLM. This phase of the BLM DRECP is a Land Use Plan Amendment (LUPA) to the CDCA Plan and identifies priority areas for renewable energy development while setting aside areas for conservation and recreation. The BLM DRECP LUPA establishes mitigation and habitat compensation ratios for project impacts that would occur within designated Areas of Critical Environmental Concern (ACECs), including habitat linkage ACECs; California Desert National Conservation Lands (NCLs); and non-ACEC areas. The proposed action extends through the areas covered by the DRECP.
- **California Desert National Conservation Lands**. In 1976, Congress designated a 25-million acre expanse of resource-rich desert lands in southern California as the CDCA through the Federal Land Policy and Management Act. In 2009, Congress passed the Omnibus Public Land Management Act, which directed the BLM to include lands managed for conservation purposes within the CDCA as part of the NCLs. Phase I of the DRECP designated 4.2 million acres as part of the NCLs. Much of this land was already a part of the NCLs (in particular, large portions of the Mojave Trails and Sand to Snow National Monuments), but 2.89 million acres were a new addition to the system. NCLs are closed to all energy development. Phase II of the DRECP will focus on better aligning local, state, and federal renewable energy development and conservation plans, policies, and goals.

County of San Bernardino 2007 General Plan

The project area is within the boundaries of the County of San Bernardino 2007 General Plan (General Plan). The land use and zoning designations for all of the work sites is Resource Conservation, with the exception of MVL1_147-4 and MVL1_147-5, which are located in an area zoned as Regional Industrial (County of San

Bernardino 2015). The purpose of the Resource Conservation land use and zoning designation is set forth in the General Plan, as follows (County of San Bernardino 2014):

- To encourage limited rural development that maximizes preservation of open space, watershed and wildlife habitat areas.
- To identify areas where rural residences may be established on lands with limited grazing potential but which have significant open space values.
- To prevent inappropriate urban population densities in remote and/or hazardous areas of the County.
- To establish areas where open space and non-agricultural activities are the primary use of the land, but where agriculture and compatible uses may co-exist.

The proposed project would not involve an increase in residential development, would not result in population growth, and would not preclude the establishment of open space areas. As such, the proposed project would be consistent with the above four purposes of the Resource Conservation land use and zoning designation.

The purpose of the Regional Industrial land use and zoning designation is set forth in the General Plan, as follows (County of San Bernardino 2014):

- To identify and establish areas suitable for major industrial centers or a single large industrial plant having 200,000 or more square feet of floor area, or more than 500 employees on any shift.
- To provide sites for industrial uses which have severe potential for negative impacts on any uses that would locate relatively close to them.
- To identify areas intended eventually to be utilized for industrial purposes to support the public need for manufacturing uses and employment opportunities.

Within the Regional Industrial zone and land use designation, the proposed project would be located within an existing utility corridor. As such, the proposed project would not preclude the development of industrial uses within this zone and would therefore not conflict with the above purposes for the Regional Industrial zone.

For the reasons listed above, the proposed project would be consistent with the land use designations for the project area set forth in the General Plan.

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

Less Than Significant Impact with Mitigation Incorporated. As previously discussed in Section 3.4(f), the proposed project is located within the boundaries the DRECP. The DRECP is being developed under the California Natural Community Conservation Planning Act and the Federal Endangered Species Act, and the

Federal Land Policy and Management Act. The DRECP establishes mitigation and habitat compensation ratios for project impacts that would occur within designated ACEC units (including habitat linkage ACEC's), NCL units, non-ACEC areas, and critical habitat areas. The BLM has two adopted land use plans that provide specifications for biological resource protection that apply to the project area. These are the WEMO Plan and the NEMO Plan, which are both described in Section 2 of this IS MND. As described in Section 2, the WEMO Plan identifies take-avoidance measures to be implemented for protection of species and habitat within designated management areas, such as DWMAs, as well as outside designated areas. These avoidance measures apply to siting new ROWs, as well as operation and maintenance activities. Examples of avoidance measures include requiring tortoise surveys to be conducted prior to ground disturbance (intensity varying from one designated area to another), establishing criteria for environmental monitors overseeing ground-disturbing activities, limiting maintenance activities to existing access roads and months when juvenile tortoises are not present, and other BMPs to be implemented during construction. BMPs and take-avoidance measures consistent with the WEMO Plan have been integrated into the project as design features or as mitigation measures. Upon implementation of MM-BIO-1, MM-BIO-2, MM-BIO-3, MM-BIO-4, and MM-BIO-5, preconstruction surveys, take avoidance measures, biological monitoring, and habitat restoration would occur. These measures would ensure consistency with the WEMO Plan, and impacts would be less than significant with mitigation incorporated.

The NEMO plan addresses recovery of the desert tortoise and management of a few additional species of concern on public lands. The NEMO Plan states that existing utility corridors would be retained, and new utilities would be placed within them. Cumulative new surface disturbing projects on BLM lands in each tortoise DWMA would be limited to 1% of BLM lands in that area and no new access roads would be allowed in DWMAs. The size of each project would be minimized, and other standard mitigation measures would be applied to limit impacts. These measures have been integrated into project design features or as mitigation measures, as necessary. Upon implementation of MM-BIO-1, MM-BIO-2, MM-BIO-3, MM-BIO-4, and MM-BIO-5, and MM-BIO-6, the proposed project would occur in a manner consistent with the protective regulations that are set forth in the DREPC. As such, impacts would be less than significant with mitigation incorporated.

References

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3.11 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Existing Setting

Minerals are typically grouped into four categories including metallic minerals, industrial/ nonmetallic minerals, energy minerals, and construction materials. On public lands, mineral resources are categorized by the disposal categories of locatable, leasable, and saleable. Leasable minerals include energy-related mineral resources such as oil, natural gas, coal, and geothermal, and some non-energy minerals, such as potash, salt, phosphate, and sulfur. Saleable minerals, or mineral materials, are common varieties of minerals and building materials such as sand, gravel, stone, aggregate, silica, clay, and volcanic rock products. Locatable minerals are those that are not leasable or saleable, and include minerals such as gold, silver, copper, lead, zinc, barite, gypsum, molybdenum, gemstones, and certain varieties of high calcium limestone. The CDCA, within which the project area would be located, is an important area in the state for mineral production. At the time of the CDCA Plan adoption, the CDCA produced 50% of the state's revenue from mineral resources, and 46 mineral commodities are known to exist in the CDCA (BLM 1980). As such, mineral resources are prevalent in the vicinity of the project area. As indicated in Section 3.11(a) below, the project area includes areas designated by the state as having the potential to contain mineral deposits. However, the project area does not include any oil wells or oil fields.

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The proposed project consists of 72 individual work sites located along an approximately 115-mile alignment in the Mojave Desert. Portions of the project area pass through Mineral Resource Zone 3a and Mineral Resource Zone 4, as designated by the Department of Conservation (DOC 2008). A designation of

Mineral Resource Zone 3a is given to areas containing known mineral deposits that may qualify as mineral resources. These areas are considered to have moderate potential for the discovery of economic mineral deposits. A designation of Mineral Resource Zone 4 is given to areas where geologic information does not rule out either the presence or absence of mineral resources (DOC 2000). As such, there is the potential that mineral resources of value to the region and residents of the state exist within the project area.

Because the proposed project would occur within a CDCA-designated utility corridor primarily used for linear utility ROWs the proposed project would not affect extraction of leasable minerals, as no operations are currently present within the corridor. However, the project area could potentially include other mineral resources of value. The proposed project would involve shallow grading activities within an existing utility corridor. In the event that mineral resources are present at the work sites, extraction of the resource would be temporarily precluded during the limited construction period. Such impacts are unlikely because the proposed project is located within an existed utility corridor, and there are no known mineral extraction sites in operation at any of the proposed work sites. Furthermore, once construction has been completed, mineral resource extraction would not be precluded in the event that mineral resources were to be discovered at any of the work sites. As such, no long-term direct impacts would occur to mineral resources. Indirect impacts would not occur because any mineral extraction operations located in the vicinity of the project area would not be hindered by the minor and temporary ground-to-conductor clearance activities.

Therefore, the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Additionally, according to the State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, no oil wells or oil fields are known to exist in the project area (DOGGR 2015). As such, the proposed project would have no potential to interfere with the extraction of oil. No impact would occur.

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. See Section 3.11(a). No impacts to locally important mineral resources would occur.

References

BLM (Bureau of Land Management). 1980. *The California Desert Conservation Area Plan 1980*, as amended.

County of San Bernardino. 2014. *County of San Bernardino 2007 General Plan.* Prepared by URS Corporation. San Bernardino, California: County of San Bernardino Land Use Services Division. Adopted March 13, 2007. Last amended April 24, 2014. Accessed August 19, 2015. http://cms.sbcounty.gov/lus/planning/generalplan.aspx.

DOC (California Department of Conservation). 2000. *Guidelines for Classification and Designation of Mineral Lands*.

DOC. 2008. GIS Data.

DOGGR (California Department of Conservation, Division of Oil, Gas, and Geothermal Resources). 2015. DOGGR Well Finder. Accessed August 20, 2015. http://maps.conservation.ca.gov/doggr/index.html#close.

3.12 Noise

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Existing Setting

The majority of the proposed work areas are located in vacant portions of the Mojave Desert. Nearby sensitive receptors are limited to several rural residences. The grading site near MCV1_151-4 is located approximately 350 feet southwest of a rural residence. The grading sites near MVL1_158-6, MVL1_159-1, and MCV1_138-1 are located approximately 1.5 miles northeast of several residences that are adjacent to SR-247. The tower raising sites at MCV1_125-5 and

MCV1_125-6 are located approximately 500 feet south and southeast of structures associated with the farmland on which the tower raising sites are located. While other work sites may be located near residential property lines, the majority are not located in the vicinity of habitable structures. Ambient noise levels at rural residences are typically 50 A-weighted decibels (dBA) L_{eq} (FTA 2006).

a) Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. Implementation of the proposed project would result in two primary types of potential noise impacts: short-term (i.e., temporary) noise during construction, and long-term noise during operation.

Construction

Implementation of the proposed project would result in short-term (i.e., temporary) noise during construction. Table 3.12-1 shows the sound levels typically produced by the construction equipment that would be used for the proposed project. The proposed grading and barricade installation activities, which would occur at 70 work sites, would involve the following types of construction equipment: motor graders, bulldozers, excavators, compact skid-steer loaders, dump trucks, water trucks, wheel/track loaders, backhoe loaders, jackhammers, and various small utility vehicles. The proposed tower raising activities, which would occur at two work sites, would involve the following types of construction equipment: cranes, manlifts, wheel/track loaders, backhoe loaders, all-terrain forklifts, water trucks, diesel air compressors, and small utility vehicles.

Table 3.12-1
Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Backhoe	80
Crane, mobile	83
Air compressor	81
Dozer	85
Grader	85
Loader	85
Jackhammer	88
Truck	88

Source: FTA 2006

The County's Development Code establishes standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses. It also defines noise-sensitive land uses and limits the amount of noise that can be received at a noise- sensitive land use. The standards established in the

Development Code for emanations from a stationary noise source as it affects adjacent properties are listed in Table 3.12-2.

Table 3.12-2
County of San Bernardino Noise Standards for Stationary Noise Sources

Affected Land Use (Receiving Noise)	7:00 a.m to 10:00 p.m. Leq	10:00 p.m. to 7:00 a.m. Leq
Residential	55 dB(A)	45 dB(A)
Professional Services	55 dB(A)	55 dB(A)
Other Commercial	60 dB(A)	60 dB(A)
Industrial	70 dB(A)	70 dB(A)

Source: County of San Bernardino 2014a
Notes: Leq = Equivalent Energy Level. The sound level corresponding to a steady-state sound level containing the same total energy as a time varying signal over a given sample period, typically 1, 8 or 24 hours.
dB(A) = A-weighted Sound Pressure Level. The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.

As shown in Table 3.12-1, some of the construction equipment involved with the proposed project would have the potential to exceed the noise standards shown in Table 3.12-2. However, the proposed project is located within an existing utility corridor that is surrounded primarily by undeveloped land. Because noise attenuates with distance and because the project area primarily consists of undeveloped land, it is unlikely that the project would result in exceedances of the standards listed in the Development Code, as most work sites are not located in the vicinity of residential, professional, commercial, or industrial uses. The majority of the project area is zoned for Resource Conservation, which accommodates limited rural residential development and is primarily intended for open space and non-agricultural uses (County of San Bernardino 2014b). Exceptions are MVL1_147-4 and MVL1_147-5, which are located on land zoned as Regional Industrial and are situated just south of a solar energy facility. MCV1_125-6 and MCV1_125-5, the tower raising sites, are located within the Resource Conservation zone but are within an agricultural field, just north of the Barstow-Daggett Airport. One grading site is located relatively near a residential use: MCV1_151-4 is approximately 350 feet southwest of a rural residence. While other work sites may be located near residential property lines, the majority are not located in the vicinity of habitable structures. Noise-sensitive land uses are defined in the Development Code as follows: "residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses." Because the project area is primarily undeveloped, there are few noise-sensitive land uses in the project area. Furthermore, construction activities at each work site would be temporary, lasting approximately 1.5 to 3 days per site. Tower raising would take longer (approximately 45 days for each of the two tower raising sites). However, this duration is still limited, and the tower raising sites are located within agricultural fields that are situated just north of an airport.

For the reasons described above, the temporary construction noise that would be generated by the proposed project would comply with local standards, and impacts would be less than significant.

Operation

During operation, noise levels in the project area would not be affected by the proposed project, because operational conditions would not change under the proposed project. No operational impacts would occur.

b) Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Implementation of the proposed project would result in short-term (i.e., temporary) groundborne vibration during construction. Operation of construction equipment causes vibrations that spread through the ground and diminish in strength with distance. The primary source of operational vibration would include on-site haul trucks. Standard construction equipment (e.g., a large bulldozer) generates vibration levels of approximately 0.089 inches per second at 25 feet. Table 3.12-3 presents typical vibration levels for such equipment at 12 to 150 feet. Other equipment used during construction such as jackhammers would generate less vibration than presented in Table 3.12-3.

Table 3.12-3
Vibration Velocities for Construction Equipment

Distance from Equipment	Peak Particle Velocity (inches/second)
12	0.268
15	0.191
20	0.124
25	0.089
50	0.031
75	0.017
100	0.011
125	0.008
150	0.006

Source: FTA 2006

The Development Code states that no ground vibration shall be allowed that can be felt without the aid of instruments at or beyond a lot line, and vibration shall not be allowed if it produces a particle velocity greater than or equal to 0.2 inches per second measured at or beyond the lot line. As shown in Table 3.12-3, construction equipment would have to be within approximately 12 feet of a lot line in order to exceed this threshold. As stated in Section 3.12(a), one of the proposed work sites is located within approximately 350 feet of a residence. As shown in Table 3.12-3, vibration experienced at this residence would be well below

the threshold of 0.2 inches per second established in the Development Code and would likely be imperceptible. Ground-borne vibration information related to construction activities collected by the California Department of Transportation (Caltrans 2004) indicates that continuous vibrations with a peak particle velocity of approximately 0.1 inch/second begin to annoy people. Because the proposed project involves construction work within an existing utility corridor that is approximately 800 feet wide, it is unlikely that vibration resulting from the proposed project would be perceptible at any habitable structures, including the residence mentioned above. Furthermore, construction activities at each work site would be temporary, lasting approximately 1.5 to 3 days per site, with the exception of tower raising, which would take approximately 45 days per site. For the reasons described above, impacts related to exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels would be less than significant.

c) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact. Upon completion of construction activities, operational activities would remain the same as existing conditions. Because no change in operational activities would occur as a result of the proposed project, a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project would not occur. No impact would occur.

d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. Implementation of the proposed project would result in short-term (i.e., temporary) noise during construction. However, as described in Section 3.12.3(a), there are few noise-sensitive uses in the vicinity of the project and no noise sensitive uses in the project area itself because the project area is within an existing utility corridor. The areas surrounding the proposed project are primarily undeveloped and are mostly zoned for Resource Conservation. Furthermore, while construction may cause a temporary increase in ambient noise levels, this increase would only last for an average of 1.5 to 3 days per work site. (Tower raising would take 45 days for each of two sites.) The proposed project involves grading at 68 locations, installing barricades at 2 locations, and tower raising activities at 2 locations. Grading an average of 160 cubic yards of material for each of the 68 grading locations would not be anticipated to produce substantial amounts of temporary noise, nor would raising two transmission towers or installing the proposed barricades. While ambient noise levels would be temporarily raised within the project area as the construction crew moves down the utility corridor, noise would be produced at each work site for a limited amount of time and would not be produced adjacent to sensitive receptors. For these reasons, impacts involving substantial temporary increases or periodic increases in ambient noise levels would be less than significant.

e) Would the project be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact. The Barstow-Daggett Airport is within two miles of work sites MVL1_147-4, MVL1_147-5, MCV1_125-6, and MCV1_125-5 (Caltrans 2012). These four work sites are just outside the planning area boundaries of the Barstow-Daggett ACLUP (County of San Bernardino 1992). Additionally, a helicopter landing strip within the Fort Irwin Military Reservation is located approximately 2 miles from work sites MCV1_88-1, MCV1_88-2, and MCV1_87-5. The proposed project would temporarily expose construction workers to noise levels from the Barstow-Daggett Airport and any air traffic associated with the Fort Irwin Military Reservation. However, this exposure would be temporary, as construction at each work site would last for approximately 1.5 to 3 days at each work site, with the exception of tower raising, which would take approximately 45 days at each of the 2 tower raising sites.

f) Would the project be within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The proposed work sites are located within undeveloped areas of the Mojave Desert, with most work sites located on BLM land. No private airstrips are located in the vicinity of the work sites. Furthermore, the project would include no occupied facilities that would expose people to excessive noise levels related to aircraft use. For these reasons, no impact related to exposing people residing or working in the project area to excessive noise levels from a private airstrip would occur.

References

Caltrans (California Department of Transportation). 2004. *Transportation- and Construction-Induced Vibration Guidance Manual.* June 2004.

Caltrans. 2012. Caltrans Earth Layers - Airports. 2012. Accessed February 17, 2015. www.dot.ca.gov/hq/tsip/gis/caltrans_earth/globe_content.php.

County of San Bernardino. 1992. *Airport Comprehensive Land Use Plan – Barstow-Daggett Airport.* May 1992. Accessed August 19, 2015. cms.sbcounty.gov/lus/Planning/AirportLandUse.aspx.

County of San Bernardino. 2014a. *County of San Bernardino 2007 Development Code.* Adopted March 13, 2007. Last amended January 16, 2014. Accessed August 19, 2015. http://cms.sbcounty.gov/lus/planning/zoningoverlaymaps/hazardmaps.aspx.

County of San Bernardino. 2014b. *County of San Bernardino 2007 General Plan.* Prepared by URS Corporation. San Bernardino, California: County of San Bernardino Land Use Services Division. Adopted March 13, 2007. Last amended April 24, 2014. Accessed August 19, 2015. http://cms.sbcounty.gov/lus/planning/generalplan.aspx.

FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment*. May 2006. Accessed February 12, 2015. http://www.ontarioplan.org/index.cfm/33710/33960.

3.13 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed project would correct insufficient ground-to-conductor clearances along three existing overhead transmission lines. No new homes, businesses, or infrastructure would result and the project would not enable any new development to occur. Therefore, the proposed project would not result in direct or indirect population growth. No impact to population growth would occur.

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project area consists of an existing transmission line corridor, and the proposed project would correct insufficient ground-to-conductor clearances within this corridor. No housing would be removed necessitating the construction of replacement housing elsewhere. No impact would occur.

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. As described above, the proposed project would not remove any housing. As such, no persons would be displaced as a result of the proposed project. Construction of replacement housing would not be necessary, and no impact would occur.

References

None.

3.14 Public Services

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire Protection

Less Than Significant Impact. The need for new or altered fire facilities is typically associated with an increase in population. As described under Section 3.13, the proposed project would not alter population in the project area. As such, the proposed project would not substantially alter service ratios, response times, or other performance objectives to the extent that new or expanded fire protection facilities, equipment, or staff would be required. Impacts to fire protection would be less than significant.

Police Protection

Less Than Significant Impact. The need for new or altered police facilities is typically associated with an increase in population. As described under Section 3.13, the proposed project would not alter population in the project area. As such, the proposed project would not substantially alter service ratios, response times, or other performance objectives to the extent that new or expanded police protection facilities, equipment, or staff would be required. Impacts to police protection would be less than significant.

Schools

Less Than Significant Impact. The need for new or altered schools is typically associated with an increase in population. As described under Section 3.13, the proposed project would not alter population in the project area. As such, the proposed project would not substantially alter the ability of existing schools to accommodate students to the extent that new or expanded school facilities, materials, or staff would be required. Impacts to schools would be less than significant.

Parks

Less Than Significant Impact. The need for new or altered parks is typically associated with an increase in population. As described under Section 3.13, the proposed project would not alter population in the project area. As such, the proposed project would not substantially alter the ability of parks to serve the region to the extent that new or expanded parks would be required. Impacts to parks would be less than significant.

Other Public Facilities

Less Than Significant Impact. Other public facilities include libraries and government administrative services. The need for new or altered libraries or administrative services is typically associated with an increase in population. As described under Section 3.13, the proposed project would not result in the need for libraries or other government administrative services to the extent that new or expanded facilities would be required Impacts to other public facilities would be less than significant.

References

None.

3.15 Recreation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Existing Setting

Lands administered by the BLM are open to a variety of recreational uses. OHV Areas consist of designated areas where OHVs are allowed to tour and race. The proposed project includes work areas within the BLM Stoddard Valley OHV Open Area, which is within the BLM Stoddard Valley Subregional plan area (BLM 2015a). The open riding area is formed by I-15 and SR-247 (Barstow Road), immediately south of Barstow. Most visitors access the area to the east, off I-15 at the Outlet Center Drive Exit (Sidewinder Road) or at the Hodge Road Exit, to the south on I-15. Most area visitors ride motorcycles or all-terrain vehicles, or tour the area in four-wheel drive vehicles. The areas off Sidewinder Road (Outlet Center Drive exit on I-15) are used extensively for OHV "free play." This area is used extensively for competitive racing events by permit (BLM 2015b).

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. During times of active construction (grading) within the ROW, public access to the portion of the ROW in which construction is taking place would be precluded. However, construction at each site would last approximately 1.5 to 3 days, and construction would occur at one to two sites at a time. As such, interruptions in OHV access to the project area would be temporary and intermittent, and thus, would not result in increased use of other neighborhood and regional parks. Therefore physical deterioration of facilities would not occur or be accelerated as a result of the proposed project. As discussed in Section 3.13, the proposed project would not result in population increases resulting in an increased need for park facilities. For these reasons, no impact would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No Impact. The proposed project does not include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse impact on the environment. As such, no impact would occur.

References

BLM (Bureau of Land Management). 2015a. "Stoddard Valley Subregion." Accessed August 21, 2015. http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo/wemo_maps.html.

BLM. 2015b. "Stoddard Valley Off-Highway Vehicle Area." Accessed August 19, 2015. http://www.blm.gov/ca/st/en/fo/barstow/stoddard.html.

3.16 Transportation and Traffic

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☒	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous	☐	☐	☒	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
intersections) or incompatible uses (e.g., farm equipment)?				
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Existing Setting

The transportation network within the project area is composed of a mix of interstate, county highways, and local roadways. The circulation system plays a major role in the movement of goods originating from both interstate and international sources. The agricultural and mining communities in San Bernardino County rely on the state and county roadways for access as well as recreational and tourist-oriented trips on public land. This trend and use of the transportation network will continue as new developments occur within San Bernardino County as well as the surrounding communities.

Several regionally and locally significant roadways are within the vicinity of the project area. The existing utility corridor in which the proposed work sites are located is generally parallel to I-15, a five-lane interstate freeway that provides north-south regional access between San Bernardino, Riverside, and San Diego counties. I-40 extends generally east-west across the County. SR-247 and SR-127 are north-south, two-lane highways that traverse the project area near Segment 2 and Segment 5, respectively. The proposed work areas would be primarily accessed via the existing access roads that parallel the transmission lines. Access to sites along MCV2 and MVL1 would be provided via the existing Powerline Road and associated spur roads, and access to sites along MCV1 would be provided via an existing unnamed access road that runs parallel to the lines. Construction trucks and equipment may use roadways such as I-15, I-40, SR-247, and SR-127 to access that existing roads when traveling to the proposed grading sites.

The Barstow-Daggett Airport is within two miles of work sites MVL1_147-4, MVL1_147-5, MCV1_125-6, and MCV1_125-5 (Caltrans 2012). A helicopter landing strip within the Fort Irwin Military Reservation is located approximately 2 miles from work sites MCV1_88-1, MCV1_88-2, and MCV1_87-5. The Baker Airport is located approximately 7 miles southeast of Segment 7. Due to the proximity of MCV1_125-6 and MCV1_125-5 to the Barstow-Daggett Airport, LADWP will be required to file a Notice of Proposed Construction or Alteration (FAA Form 7460-1) either 45 days prior to construction or 45 days prior to obtaining a construction permit for the project, whichever is earliest (14 CFR Part 77.9).

Due to the remoteness of the project area, bicycle routes and pedestrian facilities (sidewalks) are nonexistent.

Transportation and Traffic Analysis

a) Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less Than Significant Impact. The County General Plan sets forth goals and policies regarding transportation in the Circulation and Infrastructure Element. These goals and policies include providing a safe, functional, and convenient transportation system including: public transit; balancing different types of transportation modes; coordinating land use and transportation planning to ensure adequate transportation facilities to support planned land uses and ease congestion; and, encouraging and promoting greater use of non-motorized means of personal transportation.

Construction. Construction would occur for up to 18 months during which 6 to 10 construction workers would be sequentially accessing 70 individual sites located across the Mojave Desert. Several construction trucks would also be required at each site (motor graders, bulldozers, excavators, compact skid-steer loaders, dump trucks, water trucks, wheel/track loaders, backhoe loaders, and various small utility vehicles). It is assumed that 10 construction workers would travel to and from the site(s) each day. It is assumed that once the construction equipment is delivered to the first grading location, it would be transported from site to site within the existing utility corridor. However, due to the distance between grading sites, the construction trucks and equipment would occasionally use highways such as I-15 to access the next grading site. Assuming that two of each construction truck and six small utility vehicles would be required for the project, an additional 32 one-way trips would occur when roadways or highways are used to access the next grading site. As such, a worst-case-scenario of trips attributable to the proposed grading activities would be approximately 30 one-way trips per day (equipment trips plus construction worker trips). For the two tower raising sites, 12 to 24 construction workers would be required. Assuming that the maximum number of construction workers would be required at each tower raising site, the approximate number of one-way trips per day per site would be 24 trips. The tower raising process would require backhoe loaders, water trucks, large and midsize cranes, all terrain forklifts, man lifts, wheel/track loaders, and various small utility vehicles. The construction equipment required for tower raising would remain in the construction staging area throughout the tower raising process; however, one-way trips would increase to approximately 47 one-way trips during the equipment delivery and removal days.

Increases in construction traffic in the vicinity of the project area would be temporary and dispersed. The project area is generally undeveloped, and the surrounding land uses primarily consist of vacant land, with some agricultural and industrial land uses. As such, the addition of approximately 30 to 50 one-way daily trips would

not adversely affect roadways in the project vicinity. Effects would be short-term, minor, and localized. For these reasons, the proposed project would not conflict with policies establishing measures of effectiveness for the performance of the circulation system, and impacts would be less than significant.

Operation. During operation, traffic in the project area would not be affected by the proposed project. Operational conditions would not change under the proposed project. Transmission lines would continue to be inspected regularly via helicopter and by ground using existing access roads. No operational impacts would occur.

b) Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. Implementation of the proposed project would result in a short-term (i.e., temporary) increase in the number of trips in the project area during construction, as described in Section 3.17.3(a). During operation, traffic levels in the project area would not be affected by the proposed project.

Construction. The project area does not include any roadways that are part of the congestion management program (CMP) road system identified in the County of San Bernardino's 2007 CMP Update, as the project area is located within an existing utility corridor (County of San Bernardino 2007). Construction workers, equipment, and trucks associated with the proposed project may use highways such as I-15, I-40, SR-247, or SR-127 to access work sites. These roadways are part of the CMP road system. However, traffic attributable to the proposed project would not conflict with goals and policies established in the CMP, as trips associated with the proposed project would be negligible when viewed in a regional context. Additionally, these trips would be distributed across the 115-mile project area throughout the 6- to 18-month long construction period. As such, potential increases in construction traffic in the vicinity of the work sites would be minor, temporary, and dispersed. For these reasons, the proposed project would not conflict with standards and policies established in the CMP, and impacts would be less than significant.

Operation. Operational conditions would not be changed by implementation of the proposed project. Transmission lines would continue to be inspected regularly via helicopter and by ground using existing access roads. The proposed project would not involve any changes in land use within the project area requiring analysis of impacts to the CMP system. As such, no operational impacts would occur related to standards and policies established in the CMP.

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Less Than Significant Impact. An increase in air traffic levels is generally caused by residential development that creates population growth to the extent that use of airports increases. The proposed project would not involve residential development; therefore, an increase in air traffic levels would not occur.

Air traffic safety risks are generally associated with increased heights in the vicinity of airports, to the extent that air traffic patterns would need to change or to the extent that a hazard is created. The proposed tower raising sites are located within approximately one mile of the Barstow-Daggett County Airport. The raised towers would be approximately 130 feet AGL and are not anticipated to exceed the 200 feet AGL height standard established by the FAA (FAA 2007) to determine whether marking and/or lighting is required on temporary or permanent structures. As such, an airport safety hazard related to the slightly taller structures would not be anticipated. Impacts would be less than significant.

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. The proposed project would not alter or introduce any design features or existing roadways. Construction trucks and equipment may use roadways such as I-15 to access existing dirt roads and access roads when traveling to the proposed grading sites. As construction trucks and equipment enter and exit roadways and highways, these maneuvering activities could potentially result in safety impacts as construction vehicles, and slowly accelerating trucks in particular, would be entering and existing highways. However, where appropriate, access to the ROW would be controlled through the use of proper signage and flagging. This would warn oncoming traffic that trucks may be entering or existing the highway. As such, while temporary and intermittent safety hazards may be created along highways near the project area, impacts would be less than significant because standard construction safety measures would be put in place.

e) Would the project result in inadequate emergency access?

No Impact. The proposed project would be located primarily in undeveloped areas of the Mojave Desert within an existing utility corridor. While existing unpaved access roads would be used throughout the 6- to 18-month construction period, these access roads are located within the existing utility corridor. Temporary use of these access roads would not hinder emergency access. As such, no impact would occur.

f) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. The proposed project would be located in generally undeveloped areas of the Mojave Desert within an existing utility corridor. As such, transit, bicycle, and pedestrian facilities would not be affected. No impact would occur.

References

Caltrans (California Department of Transportation). 2012. Caltrans Earth Layers - Airports. 2012. Accessed February 17, 2015. www.dot.ca.gov/hq/tsip/gis/caltrans_earth/globe_content.php.

County of San Bernardino. 2007. *Congestion Management Program for San Bernardino County*. 2007 Update. Prepared by the San Bernardino Associated Governments in cooperation with the Comprehensive Transportation Plan Technical Advisory Committee. December 2007. Accessed August 25, 2015. http://www.sanbag.ca.gov/planning2/congestion-mgmt.html.

FAA (Federal Aviation Administration). 2007. Advisory Circular AC 70/7460-1K Obstruction Marking and Lighting. Effective February 1, 2007.

3.17 Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

Less Than Significant Impact with Mitigation Incorporated. The proposed project is subject to compliance with Assembly Bill (AB) 52 which requires consideration of impacts to tribal cultural resources (TCRs) as defined in California Public Resources Code 21074 as part of the CEQA process, and requires LADWP to notify any groups who have requested notification of the proposed action who are traditionally or culturally affiliated with the geographic area of the project. LADWP notified eleven Native American individuals/organizations of the proposed action under AB 52. To date, no responses to these notifications have been received. Because AB 52 is a government-to-government process, all records of correspondence related to AB 52 notification and any subsequent consultation are on file with LADWP. Implementation of MM-CUL-1 through MM-CUL-4 would ensure that impacts to TCRs are less than significant.

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? (In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.)

Less Than Significant Impact with Mitigation Incorporated. See discussion under Section 3.7.3(e)(i).

References

None.

3.18 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of	☐	☐	☐	☒

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
existing facilities, the construction of which could cause significant environmental effects?				
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less Than Significant Impact. The proposed project involves grading activities at 68 sites within the Mojave Desert, barricade installation activities at two sites, and tower raising activities at two sites. The proposed project would result in a total of approximately 7 acres of grading across 68 grading sites and 3.7 acres of disturbance at the tower raising sites. Minimal to no disturbance would occur at the two barricade installation sites. In the event that stormwater were to be generated during construction activities, sediment runoff or runoff containing pollutants from construction equipment present on site would have the potential to occur. As such, wastewater treatment requirements related to stormwater runoff would apply to the proposed project. This would include preparation and implementation of a SWPPP and erosion control plan, which would be prepared for the proposed project and would specify appropriate BMPs to control runoff from the work sites. Additionally, any wastewater discharged by the proposed project must comply with National Pollutant Discharge Elimination System requirements. Construction activities would be required to comply with all applicable wastewater treatment requirements of the RWQCB. Furthermore, given the isolated location of the temporary work sites in undeveloped desert areas, impacts to stormwater facilities are not anticipated. Operation conditions and activities would not be altered by the proposed project such that wastewater treatment requirements would be violated. For these reasons and upon compliance with the applicable permit requirements during construction,

the impact to the wastewater treatment requirements of the applicable Regional Water Quality Control Board would be less than significant.

b) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed project would correct insufficient ground-to-conductor clearances along three existing overhead transmission lines. This would involve grading at 68 works sites, barricade installation at 2 work sites, and raising transmission towers at 2 locations. These activities would not increase the amount of water used or wastewater generated at the work sites. Any water associated with the proposed project would consist of water used for dust control during construction activities. This water would be transported to the work sites with a water truck. Thus, no new or expanded water or wastewater treatment facilities would be required due to implementation of the proposed project. No impact would occur.

c) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed project would correct insufficient ground-to-conductor clearances along three existing overhead transmission lines. This would involve grading at 68 works sites, raising transmission towers at 2 locations, and installing barricades at 2 locations. The majority of work sites are located within undeveloped portions of the Mojave Desert. Raising two transmission towers and grading within an existing utility corridor would not lead to increased stormwater flows from any of the work sites during either construction or operation. As such, the proposed project would not require the construction of new storm water drainage facilities or expansion of existing facilities. No impact would occur.

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. High water demand is typically associated with residential developments, hotels, and large offices. The proposed project would involve temporary grading activities at 68 work sites, barricade installations at 2 sites, and transmission tower raising activities at 2 work sites within the Mojave Desert. The water needs of the proposed project would be limited to water required for dust control during construction activities, which would be delivered to the project area by water trucks. New or expanded water entitlements would not be required, as water to supply the water trucks would be minor relative to the total water service provided by regional purveyors. Impacts would be less than significant.

e) Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The proposed project would correct insufficient ground-to-conductor clearances along three existing overhead transmission lines. This would involve grading at 68 works sites, barricade installations at 2 sites, and raising transmission towers at 2 locations. These activities would not increase the amount of wastewater produced in the project area. No impact would occur.

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. The proposed project would correct insufficient ground-to-conductor clearances along three existing overhead transmission lines. This would involve grading at 68 works sites, barricade installations at 2 sites, and raising transmission towers at 2 locations. The grading activities would involve removal of earth materials and placement of excavated soils along existing access roads. The transmission tower raising activities may produce minimal amounts of construction debris, such as concrete associated with the demolished footings at two sites. Construction waste would be disposed of at a landfill approved to accept such materials and would be recycled when feasible. Due to the minimal amount of waste that would be produced during construction, area landfills would be able to accommodate any solid waste disposal needs associated with the proposed project. Operational conditions would not change under the proposed project; as such, no solid waste would be produced during operation that would be attributable to the proposed project. Impacts would be less than significant.

g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact. The proposed project would comply with federal, state, and local statutes and regulations related to solid waste. As discussed in Section 3.18.3(f), construction debris generated by the proposed project would be minimal. Any construction debris that are produced would be recycled or disposed of according to local and regional standards. All materials would be handled and disposed of in accordance with existing local, state, and federal regulations. Compliance with existing regulations would ensure a less than significant impact.

References

None.

3.19 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact with Mitigation Incorporated. The proposed project is located within an existing utility corridor, along existing transmission lines that cross a generally undeveloped portion of the Mojave Desert. As explained in Section 3.4, Biological Resources and Section 3.5, Cultural Resources, the proposed project has the potential to significantly affect biological and cultural resources, including special-status wildlife and plant species and examples of periods of California history and prehistory. However, mitigation measures have been set forth to reduce the impacts of the proposed project on wildlife species, plant and animal communities, and cultural resources. Biological mitigation would ensure avoidance of protected plant species to the extent feasible, proper translocation of larger perennial protected plants if avoidance is not feasible, and implementation of a restoration plan to return the construction areas to their original condition. Biological mitigation would also entail protection measures for desert tortoise, nesting birds, golden eagles, burrowing owl, American badger, and desert kit fox, including preconstruction surveys,

avoidance, and construction monitoring. Cultural resources mitigation would include archaeological monitoring, Native American monitoring, and implementation of treatment plans, if significant resources are encountered during construction. Upon implementation of the mitigation measures identified in Section 3.4 and 3.5, the proposed project would not have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. Upon implementation of the mitigation measures identified in Section 3.5, Cultural Resources, impacts of the proposed project to California history or prehistory would be less than significant. As such, impacts to biological and cultural resources would be less than significant with mitigation incorporated.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less Than Significant Impact with Mitigation Incorporated. The proposed project would occur within an existing utility corridor. As shown in Sections 3.3, Air Quality; 3.12, Noise; and 3.16, Transportation and Traffic, the temporary construction activities of the proposed project would not generate substantial air emissions, noise, or traffic. As such, project construction would not combine with other nearby construction projects in the Mojave Desert to produce cumulatively considerable impacts in those categories. Due to the temporary nature of the proposed project and the proposed restoration efforts, adverse impacts in the categories of aesthetics, agricultural resources, and recreation are not anticipated. As such, the proposed project would not combine with other projects in the Mojave Desert to produce a cumulative effect on aesthetics, agricultural resources, or recreation, since the impacts of the proposed project would be limited in duration and the construction sites would be returned to their original state once construction is completed. Implementation of mitigation measures for biological, cultural, and paleontological resources would ensure that the proposed project would not contribute to cumulative impacts on special-status species, nesting birds, and archaeological resources. As explained in Section 3.13, Population and Housing, the proposed project would not result in a population change in the project area. As such, resources that can be affected by population growth, such as public services and recreational facilities, would not be substantially affected by the proposed project.

The proposed project would not alter operational conditions. As such, the proposed project would not contribute any operational noise impacts, air emissions, or traffic to the project area with the potential to combine with related projects. As such, the cumulative impacts of the proposed project would be less than significant.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact. Implementation of the proposed project would not result in any impacts that are significant and unavoidable or cumulatively considerable. The analysis presented in this document does not identify significant adverse impacts on human beings. The impacts were characterized as absent or less than significant. Therefore, the proposed project would not have environmental impacts that would cause substantial adverse impacts on human beings, either directly or indirectly.

References

None.

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APPENDIX A

General Order 95 Clearance Requirements

37 Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc.

Clearances between overhead conductors, guys, messengers or trolley span wires and tops of rails, surfaces of thoroughfares or other generally accessible areas across, along or above which any of the former pass; also the clearances between conductors, guys, messengers or trolley span wires and buildings, poles, structures, or other objects, shall not be less than those set forth in Table 1, at a temperature of 60° F. and no wind.

The clearances specified in Table 1, Case 1, Columns A, B, D, E and F, shall in no case be reduced more than 5% below the tabular values because of temperature and loading as specified in Rule 43, or other conditions. The clearances specified in Table 1, Cases 2 to 6 inclusive, shall in no case be reduced more than 10% below the tabular values because of temperature and loading as specified in Rule 43, or other conditions.

The clearance specified in Table 1, Case 1, Column C (22.5 feet), shall in no case be reduced below the tabular value because of temperature and loading as specified in Rule 43.

The clearances specified in Table 1, Cases 11, 12 and 13, shall in no case be reduced below the tabular values because of temperatures and loading as specified in Rule 43.

Where supply conductors are supported by suspension insulators at crossings over railroads which transport freight cars, the initial clearances shall be sufficient to prevent reduction to clearances less than 95% of the clearances specified in Table 1, Case 1, through the breaking of a conductor in either of the adjoining spans.

Where conductors, dead ends, and metal pins are concerned in any clearance specified in these rules, all clearances of less than 5 inches shall be applicable from surface of conductors (not including tie wires), dead ends, and metal pins, except clearances between surface of crossarm and conductors supported on pins and insulators (referred to in Table 1, Case 9) in which case the minimum clearance specified shall apply between center line of conductor and surface of crossarm or other line structure on which the conductor is supported.

All clearances of 5 inches or more shall be applicable from the center lines of conductors concerned.

When measuring the minimum allowable vertical conductor clearances in a span, the minimum clearance applies to the specific location under the span being measured and not for the entire span.

Note: Modified January 8, 1980 by Decision No. 91186, March 9, 1988 by Resolution E–3076; and November 6, 1992 by Resolution SU–15, September 20, 1996 by Decision 96–09–097, January 23, 1997 by Decision 97–01–044 and January 13, 2005 by Decision No. 0501030.

Table 1: Basic Minimum Allowable Vertical Clearance of Wires above Railroads, Thoroughfares, Ground or Water Surfaces; Also Clearances from Poles, Buildings, Structures or Other Objects (nn) (Letter References Denote Modifications of Minimum Clearances as Referred to in Notes Following This Table)

Case No.	Nature of Clearance	Wire or Conductor Concerned						
		A Span Wires (Other than Trolley Span Wires) Overhead Guys and Messengers	B Communication Conductors (Including Open Wire, Cables and Service Drops), Supply Service Drops of 0 - 750 Volts	C Trolley Contact, Feeder and Span Wires, 0 - 5,000 Volts	D Supply Conductors of 0 - 750 Volts and Supply Cables Treated as in Rule 57.8	E Supply Conductors and Supply Cables, 750 - 22,500 Volts	F Supply Conductors and Supply Cables, 22.5 - 300 kV	G Supply Conductors and Supply Cables, 300 - 550 kV (mm)
1	Crossing above tracks of railroads which transport or propose to transport freight cars (maximum height 15 feet, 6 inches) where not operated by overhead contact wires. (a) (b) (c) (d)	25 Feet	25 Feet	22.5 Feet	25 Feet	28 Feet	34 Feet	34 Feet (kk)
2	Crossing or paralleling above tracks of railroads operated by overhead trolleys. (b) (c) (d)	26 Feet (e)	26 Feet (e) (f) (g)	22.5 Feet (h) (i) (eee)	27 Feet (e) (g)	30 Feet (g)	34 Feet (g)	34 Feet (g) (kk)
3	Crossing or along thoroughfares in urban districts or crossing thoroughfares in rural districts. (c) (d)	18 Feet (j) (k) (ii)	18 Feet (j) (l) (m) (ii) (kkk)	19 Feet (hh) (eee)	20 Feet (ii)	25 Feet (o) (ii)	30 Feet (o) (ii)	30 Feet (o) (ii) (kk)
4	Above ground along thoroughfares in rural districts or across other areas capable of being traversed by vehicles or agricultural equipment.	15 Feet (k)	15 Feet (m) (n) (p)	19 Feet (eee)	19 Feet	25 Feet (o)	30 Feet (o) (p)	30 Feet (o) (kk)
5	Above ground in areas accessible to pedestrians only	8 Feet	10 Feet (m) (q)	19 Feet (eee)	12 Feet	17 Feet	25 Feet (o)	25 Feet (o) (kk)
6	Vertical clearance above walkable surfaces on buildings, (except generating plants or substations) bridges or other structures which do not ordinarily support conductors, whether attached or unattached.	8 Feet (r)	8 Feet (r)	8 Feet	8 Feet	12 Feet	12 Feet	20 Feet (ll)
6a	Vertical clearance above non–walkable surfaces on buildings, (except generating plants or substations) bridges or other structures, which do not ordinarily support conductors, whether attached or unattached	2 Feet	8 Feet (yy)	8 Feet	8 Feet (zz)	8 Feet	8 Feet	20 Feet
7	Horizontal clearance of conductor at rest from buildings (except generating plants and substations), bridges or other structures (upon which men may work) where such conductor is not attached thereto (s) (t)	-	3 Feet (u)	3 Feet	3 Feet (u) (v)	6 Feet (v)	6 Feet (v)	15 Feet (v)
8	Distance of conductor from center line of pole, whether attached or unattached (w) (x) (y)	-	15 inches (s) (aa)	15 inches (aa) (bb) (cc)	15 inches (o) (aa) (dd)	15 or 18 inches (o) (dd) (ee) (jj)	18 inches (dd) (ee)	Not Applicable
9	Distance of conductor from surface of pole, crossarm or other overhead line structure upon which it is supported, providing it complies with case 8 above (x)	-	3 inches (aa) (ff)	3 inches (aa) (cc) (gg)	3 inches (aa) (dd) (gg)	3 inches (dd) (gg) (jj)	1/4 Pin Spacing Shown in Table 2 Case 15 (dd)	1/2 Pin Spacing Shown in Table 2 Case 15 (dd)

Table 1 (Continued)

Case No.	Nature of Clearance	Wire or Conductor Concerned						
		A Span Wires (Other than Trolley Span Wires) Overhead Guys and Messengers	B Communication Conductors (Including Open Wire, Cables and Service Drops), Supply Service Drops of 0 - 750 Volts	C Trolley Contact, Feeder and Span Wires, 0 - 5,000 Volts	D Supply Conductors of 0 - 750 Volts and Supply Cables Treated as in Rule 57.8	E Supply Conductors and Supply Cables, 750 - 22,500 Volts	F Supply Conductors and Supply Cables, 22.5 - 300 kV	G Supply Conductors and Supply Cables, 300 - 550 kV (mm)
10	Radial centerline clearance of conductor or cable (unattached) from non-climbable street lighting or traffic signal poles or standards, including mastarms, brackets and lighting fixtures, and from antennas that are not part of the overhead line system.	-	1 Foot (u) (rr) (ss)	15 inches (bb) (cc)	3 Feet (oo)	6 Feet (pp)	10 Feet (qq)	10 Feet (ll)
11	Water areas not suitable for sailboating (tt) (uu) (ww) (xx)	15 Feet	15 Feet	-	15 Feet	17 Feet	25 Feet	25 Feet (kk)
12	Water areas suitable for sailboating, surface area of: (tt) (vv) (ww) (xx)							
	(A) Less than 20 acres	18 Feet	18 Feet	-	18 Feet	20 Feet	27 Feet	27 Feet (kk)
	(B) 20 to 200 acres	26 Feet	26 Feet	-	26 Feet	28 Feet	35 Feet	35 Feet (kk)
	(C) Over 200 to 2,000 acres	32 Feet	32 Feet	-	32 Feet	34 Feet	41 Feet	41 Feet (kk)
	(D) Over 2,000 acres	38 Feet	38 Feet		38 Feet	40 Feet	47 Feet	47 Feet (kk)
13	Radial clearance of bare line conductors from tree branches or foliage (aaa) (ddd)	-	-	18 inches (bbb)	-	18 inches (bbb)	1/4 pin spacing shown in table 2, Case 15 (bbb) (ccc)	1/2 pin spacing shown in table 2, Case 15
14	Radial clearance of bare line conductors from vegetation in Extreme and VeryHigh Fire Threat Zones in Southern California (aaa) (ddd) (hhh)(jjj)			18 inches (bbb)		48 inches (bbb) (iii)	48 inches (fff)	120 inches (ggg)

References to Rules Modifying Minimum Clearances in Table 1

	Rule
(a) Shall not be reduced more than 5% because of temperature or loading	37
1 Supply lines	54.4–B1
2 Communication lines	84.4–B1
(b) Shall be increased for supply conductors on suspension insulators, under certain conditions	37
(c) Special clearances are provided for traffic signal equipment	58.4–C
(d) Special clearances are provided for street lighting equipment	58.5–B
(e) Based on trolley pole throw of 26 feet. may be reduced where suitably protected	56.4–B2
1 Supply guys	56.4–B2
2 Supply cables and messengers	57.4–B2
3 Communication guys	86.4–B2
4 Communication cables and messengers	87.4–B2
(f) May be reduced depending on height of trolley contact conductors	
1 Supply service drops	54.8–C5
2 Communication service drops	84.8–D5
(g) May be reduced and shall be increased depending on trolley throw	
1 Supply conductors (except service drops)	54.4–B2
2 Communication conductors (except service drops)	84.4–B2
(h) May be decreased where freight cars are not transported.	
1. Trolley contact and feeder conductors.	74.4-B1
2. Trolley span wires	77.4-A
(i) May be reduced for trolley contact and span wires in subways, tunnels, under bridges and in fenced areas	
1 Trolley contact conductors	74.4–E
2 Trolley span wires	77.4–B
(j) May be reduced at crossings over private thoroughfares and entrances to private property and over private property	
1 Supply service drops	54.8–B2
2 Supply guys	56.4–A
3 Communication service drops	84.8–C2
4 Communication guys	86.4–A
(k) May be reduced along thoroughfares where not normally accessible to vehicles	
1 Supply guys	56.4–A1
2 Communication guys	86.4–A1
(l) May be reduced where within 12 feet of curb line of public thoroughfares	
1 Supply service drops	54.8–B1
2 Communication service drops	84.8–C1
(m) May be reduced for railway signal cables under special conditions	84.4–A4

References to Rules Modifying Minimum Clearances in Table 1

		Rule
(n)	May be reduced in rural districts	
1	Intentionally left blank	
2	Intentionally left blank	
3	Communication conductors along roads	84.4–A2
(o)	May be reduced for transformer, regulator or capacitor leads	
1	Transformer leads	58.1–B
2	Regulator or capacitor leads	58.1–B
(p)	May be reduced across arid or mountainous areas	
1	Supply conductors of more than 22,500 volts	54.4–A1
2	Communications conductors	84.4–A1
(q)	Shall be increased or may be reduced under special conditions	
1	Supply service drops	54.8–B3
2	Intentionally left blank	
3	Communications conductors	84.4–A3
4	Increased for communication service drops on industrial or commercial premises	84.8–C3a
5	Communication service drops on residential premises	84.8–C3b
(r)	May be reduced above roofs of buildings under special conditions	
1	Supply overhead guys	56.4–G
2	Supply service drops	54.8–B4
3	Communication overhead guys	86.4–F
4	Communication conductors and cables	84.4–E
5	Communication service drops	84.8–C4
(s)	Also applies at fire escapes, etc.	
1	Supply conductors	54.4–H1
2	Vertical clearances	54.8B4a
3	Horizontal clearance	54.8–B4b
4	Communication conductors	84.4–E
1	Supply conductors of 750 - 22,500 volts	54.4–H2
2	Trolley contact conductors	74.4–E
3	Communication conductors	84.4–F
(u)	Reduced clearances permitted under special conditions	
1	Supply service drops on industrial or commercial premises	54.8–B4a
2	Supply cables, grounded	57.4–G
3	Communication cables beside buildings, etc.	84.4–E
4	Communication conductors under bridges, etc.	84.4–F
5	Communication service drops	84.8–C4
6	Communication cables passing nonclimbable street light poles, etc.	84.4–D4a
(v)	May be reduced under special conditions	
1	Supply conductors of 750 - 7,500 volts	54.4–H1
2	Supply transformer lead and bus wires, where guarded	58.1
(w)	May be reduced at angles in lines and transposition points	
1	Supply conductors	54.4–D1
2	Communication conductors	84.4–D5
(x)	May be reduced for suitably protected lateral or vertical runs	
1	Supply bond wires	53.4
2	Supply ground wires	54.6–B
3	Supply lateral conductors	54.6–C
4	Supply vertical runs	54.6–D
5	Supply risers	54.6–E
6	Communication ground wires	84.6–B
7	Communication lateral conductors	84.6–C
8	Communication vertical runs	84.6–D
9	Communication risers	84.6–E
(y)	Increased clearances required for certain conductors	
1	Unattached conductors on colinear and crossing lines	32.3
2	Unattached supply conductors	54.4–D3
3	Supply service drops on clearance crossarms	54.8–C2
4	Supply service drops on pole top extensions	54.8–C3
5	Unattached supply service drops	54.8–D
6	Communication lines, colinear, conflicting or crossing	84.4–D3
7	Communication conductors passing supply poles and unattached thereto	84.4–D4
8	Communication service drops on clearance crossarms	84.8–D2
9	Communication service drops on pole top extensions	84.8–D3
10	Unattached communication service drops	84.8–E
(z)	Special provisions for police and fire alarm conductors require increased clearances	92.2
(aa)	May be reduced under special provisions	
1	Supply conductors of 0 - 750 volts in rack configuration	54.4–D5
2	Service supply drops from racks	54.8–F
3	Supply cables and messengers attached to poles	57.4–F
4	Communication conductors on communication poles	84.4–D
5	Communication conductors on crossarms	84.4–D1
6	Communication conductors attached to poles	84.4–D2
7	Communication service drops attached to poles	84.8–B
8	Communication cables and messengers	87.4–D
9	Supply or communication cables and messengers on jointly used poles	92.1–B
10	Communication open wire on jointly used poles	92.1–C
11	Multiconductor cable with bare neutral	54.10–B1
(bb)	May be reduced for class t conductors of not more than 750 volts and of the same potential and polarity	74.4–D
(cc)	Not applicable to trolley span wires	77.4–E
(dd)	Special clearances for pole–top and deadend construction	
1	Conductors deadended in vertical configuration on poles	54.4–C4
2	Conductors deadended in horizontal configuration	54.4–D8
(ee)	Clearance requirements for certain voltage classifications	54.4–D2
(ff)	Not applicable to communication conductors	84.4–D
(gg)	Clearance from crossarms may be reduced for certain conductors	
1	Suitable insulated leads to protect runs	54.4–E
2	Leads of 0 - 5,000 volts to equipment	54.4–E
3	Leads of 0 - 5,000 volts to cutouts or switches	58.3–A2
(hh)	Reduced clearance permitted from temporary fixtures and lighting circuits 0 - 300 volts	78.3–A1
(ii)	Special Clearances Required Above Public and Private Swimming Pools	
1	Supply line conductors	54.4–A3
2	Supply service drops	54.8–B5
3	Communication line conductors	84.4–A5
4	Communication service drops	84.8–C5
5	Supply guys, span wires	56.4–A3
6	Communication guys	86.4–A3
(jj)	May be decreased in partial underground distribution	54.4–D2

References to Rules Modifying Minimum Clearances in Table 1 Rule

(kk) Shall be increased by 0.025 feet per kV in excess of 300 kV

(ll) Shall be increased by 0.04 feet per KV in excess of 300 kV

(mm) Proposed clearances to be submitted to the cpuc prior to construction for circuits in excess of 550 kV.

(nn) Voltage shown in the table shall mean line–to–ground voltage for direct current (DC) systems

(oo) May Be reduced for grounded or multi–conductor cables

1 Grounded cables 57.4–H

2 Multi–Conductor cables 54.10–B2

(pp) May be reduced to 4 feet for voltages below 7,500 volts 54.4–D3

(qq) May be reduced to 6 feet for voltages below 75 kV

(rr) May be reduced for supply service drops 54.8–D1

(ss) May be reduced for communications service drops 84.8–E1

(tt) Where a federal agency or surrogate thereof has issued a crossing permit, clearances of that permit shall govern.

(uu) Or where sailboating is prohibited and where other boating activities are allowed

(vv) Clearance above contiguous ground shall be 5 feet greater than in cases 11 or 12 for the type of water area served for boat launch facilities and for area contiguous thereto, that are posted, designated or specifically prepared for rigging of sailboats or other watercraft.

(ww) For controlled impoundments, the surface areas and corresponding clearances shall be based upon the high water level. for other waters, the surface area shall be that enclosed by its annual flood level. the clearance over rivers, streams and canals shall be based upon the largest surface areas of any one–mile long segment which includes the crossing. The clearance over a canal, river or stream normally used to provide access for sailboats to a larger body of water shall be the same as that required for the larger body of water.

(xx) Water areas are lakes, ponds, reservoirs, tidal waters, rivers, streams and canals without surface obstructions.

(yy) May be reduced over non–walkable structures 54.8 (Table 10)

(zz) May be reduced to 2 feet for conductors insulated in accordance with 20.9–G

(aaa) Special requirements for communication and supply circuits energized at 0 - 750 volts 35

(bbb) May be reduced for conductor of less than 60,000 volts when protected from abrasion and grounding by contact with tree 35

(ccc) For 22.5 kV to 105 kV, minimum clearance shall be 18 inches.

(ddd) Clearances in this case shall be maintained for normal annual weather variations, rather than at 60 degrees, no wind.

Rule

(eee) May be reduced to 18 feet if the voltage does not exceed 1000 volts and the clearance is not reduced to more than 5% below the reduced value of 18 feet because of temperature and loading as specified in Rules 37 and 43.

(fff) Clearances in this case shall be increased for conductors operating above 72 kV, to the following:

1 Conductors operating between 72kV and a 110 kV shall maintain a 72 inch clearance

2 Conductors operating above 110 kV shall maintain a 120 inch clearance

(ggg) Shall be increased by 0.40 inch per kV in excess of 500 kV

(hhh) Extreme and Very High Fire Threat Zones are defined by California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) Fire Threat Map. The FRAP Fire Threat Map is to be used to establish approximate boundaries for purposes of this rule. The boundaries of the map are to be broadly construed, and utilities should use their own expertise and judgment to determine if local conditions require them to adjust the boundaries of the map. Southern California shall be defined as the following: Imperial, Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura Counties.

(iii) May be reduced to 18 inches for conductors operating less than 2.4 kV.

(jjj) Clearances in this case shall not apply to orchards of fruit, nut or citrus trees that are plowed or cultivated. In those areas Case 13 clearances shall apply.

(kkk) For communication conductors across or along public thoroughfares see 84.4–A(6).

Note: Revised February 1, 1948 by Supplement No. 1 (Decision No. 41134, Case No. 4324); January 2, 1962 by Resolution E–1109; February 7, 1964 by Decision No. 66707; March 29, 1966 by Decision No. 70489; August 9, 1966 by Decision No. 71094; September 18, 1967 by Decision No. 72984; March 30, 1968 by Decision No. 73813; January 8, 1980 by Decision No. 91186; March 9, 1988 by Resolution E–3076; November 21, 1990 by Resolution SU–6; January 21, 1992 by Resolution SU–10; and November 6, 1992 by Resolution SU–15, September 20, 1996 by Decision 96–09–097, October 9, 1996 by Resolution SU–40, January 23, 1997 by Decision 97–01–044, January 13, 2005 by Decision No. 0501030, January 12, 2012 by Decision No. 1201032, and January 21, 2015 by Decision 1501005.

38 Minimum Clearances of Wires from Other Wires

The minimum vertical, horizontal or radial clearances of wires from other wires shall not be less than the values given in Table 2 and are based on a temperature of 60° F. and no wind. Conductors may be deadended at the crossarm or have reduced clearances at points of transposition, and shall not be held in violation of Table 2, Cases 8–15, inclusive.

The clearances in Table 2 shall in no case be reduced more than 10 percent because of temperature and loading as specified in Rule 43 or because of a difference in size or design of the supporting pins, hardware or insulators. All clearances of less than 5 inches shall be applied between surfaces, and clearances of 5 inches or more shall be applied to the center lines of such items.

Note: Revised May 22, 1990 by Resolution No. SU–5.

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Table 2: Basic Minimum Allowable Clearance of Wires from Other Wires at Crossings, in Midspans and at Supports (Letter References Denote Modifications of Minimum Clearances as Referred to in Notes Following This Table) All Clearances are in Inches

Case No.	Nature of Clearance and Class and Voltage of Wire, Cable or Conductor Concerned	Other Wire, Cable or Conductor Concerned										
					Supply Conductors (Including Supply Cables)							
		A Span Wires, Guys and Messengers	B Trolley Contact Conductors 0 – 750 Volts	C Communication Conductors (Including Open Wire, Cables and Service Drops)	D 0 – 750 Volts (Including Service Drops) and Trolley Feeders (a)	E 750 - 7,500 Volts	F 7,500 - 20,000 Volts	G 20,000 - 35,000 Volts	H 35,000 - 75,000 Volts	I 75,000 - 150,000 Volts	J 150,000 - 300,000 Volts	K (kk) 300,000 - 550,000 Volts
	Clearance between wires, cables and conductors not supported on the same poles, vertically at crossings in spans and radially where colinear or approaching crossings											
1	Span wires, guys and messengers (b)	18 (c)	48 (d, e)	24 (e)	24 (e)	36 (f)	36	72	72	78	78 (gg)	138 (hh)
2	Trolley contact conductors, 0 - 750 volts	48 (d, e)	-	48 (d)	48 (d, h)	48	72	96	96	96	96 (gg)	156 (hh)
3	Communication conductors	24 (e)	48 (d)	24	48 (i)	48 (dd)	72	96	96	96	96 (gg)	156 (hh)
4	Supply conductors, service drops and trolley feeders, 0 - 750 volts (qq)	24 (e)	48 (d, h)	48 (i)	24	48	48	96 (oo)	96	96	96(gg)	156 (hh)
5	Supply conductors, 750 - 7,500 volts (qq)	36 (f)	48	48 (dd)	48	48 (h)	72	96 (oo)	96	96	96(gg)	156 (hh)
6	Supply conductors, 7,500 - 20,000 volts (qq)	36	72	72	48	72	72	96 (oo)	96	96	96 (gg)	156 (hh)
7	Supply conductors, more than 20,000 volts (qq)	72 (g)	96 (g)	96 (g)	96 (g, oo)	96 (g, oo)	96 (g, oo)	96 (g, oo)	96 (g)	96	96 (gg)	156 (hh)
	Vertical separation between conductors and/or cables, on separate crossarms or other supports at different levels (excepting on related line and buck arms) on the same pole and in adjoining midspans											
8	Communication Conductors and Service Drops	-	-	12 (j, rr)	48 (k, l, m, n, pp)	48 (k)	72 (m n)	72 (m)	72	78	87 (gg)	147 (hh)
9	Supply Conductors Service Drops and Trolley Feeders, 0 - 750 Volts	-	-	48 (k, l, m, n, pp)	24 (h, k, m, o)	48 (k, m, p)	48 (k, m, p)	72 (m, nn)	72	78	87 (gg)	147 (hh)

Table 2 (Continued)

		Other Wire, Cable or Conductor Concerned										
					Supply Conductors (Including Supply Cables)							
Case No.	Nature of Clearance and Class and Voltage of Wire, Cable or Conductor Concerned	A Span Wires, Guys and Messengers	B Trolley Contact Conductors 0 – 750 Volts	C Communication Conductors (Including Open Wire, Cables and Service Drops)	D 0 – 750 Volts (Including Service Drops) and Trolley Feeders (a)	E 750 - 7,500 Volts	F 7,500 - 20,000 Volts	G 20,000 - 35,000 Volts	H 35,000 - 75,000 Volts	I 75,000 - 150,000 Volts	J 150,000 - 300,000 Volts	K (kk) 300,000 - 550,000 Volts
10	Supply conductors, 750 – 7,500 volts	-	-	48 (k)	48 (k, m, p)	48 (m, o, r, ee)	48 (m, q)	48 (m, q)	48 (q)	60 (ff)	90 (gg)	150 (hh)
11	Supply conductors, 7,500 – 20,000 volts	-	-	72 (m, n)	48 (k, m, p)	48 (m, q)	48 (m, o, q, r, ee)	48 (m, q)	48 (q)	60 (ff)	90 (gg)	150 (hh)
12	Supply conductors, 20,000 – 75,000 volts	-	-	72 (m)	72 (m, nn)	48 (m, q)	48 (m, q)	48 (o, q)	48 (o, q)	60 (ff)	90 (gg)	150 (hh)
13	Supply conductors, more than 75,000 volts	-	-	72	72	60 (q)	60 (q)	60 (q)	60 (q)	60 (ff)	90 (gg)	150 (hh)
	Vertical clearance between conductors on related line arms and buck arms											
14	Line arms above or below related buck arms (s, t)	-	-	6	12 (u)	18 (u)	18 (u)	24	48	60 (ff)	90 (gg)	150(hh)
	Horizontal separation of conductors on same crossarm											
15	Pin spacing of longitudinal conductors vertical conductors and service drops (v, w, zz)	-	-	3 (x)	11–1/2 (h, x)	11 1/2 (x)	17–1/2 (x)	24 (x)	48	60 (ff)	90 (gg)	150 (hh)
	Radial separation of conductors on same crossarm, pole or structure—incidental pole wiring											
16	Conductors, taps or lead wires of different circuits (v, y, s, zz)	-	-	3 (x)	11–1/2 (h, x)	11 1/2 (x)	17–1/2 (x)	24 (x)	48	60 (ff)	90 (gg)	150 (hh)
16a	Uncovered, grounded, non-dielectric fiber optic cables on metallic structures, in transition (ss)	-	15	15	15	18	18	18	18	24	36	120
17	Conductors, taps or lead wires of the same circuit (v, s, aa, zz)	-	-	3	3	6	6	12	24	60 (ff)	90 (gg)	150 (hh)
	Radial separation between guys and conductors											
18	Guys passing conductors supported on other poles, or guys approximately parallel to conductors supported on the same poles	-	-	3	11–1/2	11–1/2	17–1/2	24	36	36 (ff)	78 (gg)	138 (hh)

Table 2 (Continued)

		Other Wire, Cable or Conductor Concerned										
					Supply Conductors (Including Supply Cables)							
Case No.	Nature of Clearance and Class and Voltage of Wire, Cable or Conductor Concerned	A Span Wires, Guys and Messengers	B Trolley Contact Conductors 0 – 750 Volts	C Communication Conductors (Including Open Wire, Cables and Service Drops)	D 0 – 750 Volts (Including Service Drops) and Trolley Feeders (a)	E 750 - 7,500 Volts	F 7,500 - 20,000 Volts	G 20,000 - 35,000 Volts	H 35,000 - 75,000 Volts	I 75,000 - 150,000 Volts	J 150,000 - 300,000 Volts	K (kk) 300,000 - 550,000 Volts
19	Guys and span wires passing conductors supported on the same poles	(cc)	-	3 (bb)	3	6	9	12	18	24	48 (ii)	86 (jj)
	Vertical and horizontal insulators clearances between conductors											
20	Vertical clearance between conductors of the same circuit on horizontal insulators	-	-	-	-	24	24	24	36 or 48 (ll, mm)	48 (mm)	48 (mm)	48 (mm)
	Vertical clearance above supply and/or communication lines											
21	Antennas and associated elements on the same support structure. (tt, uu)	24 (vv)	48 (vv)	24(ww)	48(vv, xx)	72	72	72	120 (vv, yy)	-	-	-

References to Rules Modifying Minimum Clearances in Table 2

		Rule
(a)	The clearances in column D are also applicable to supply cables of any voltage under certain conditions	57.4
(b)	Clearances for guys and span wires apply vertically at crossings (see case 18 for radial clearances from conductors)	
1	Supply guys and span wires from conductors	56.4–C
2	Supply guys and span wires from guys and span wires	56.4–D1
3	Communication guys and span wires from conductors	86.4–C
4	Communication guys and span wires from guys and span wires	86.4–D1
(c)	Not applicable between messengers or span wires of the same system	
1	Supply messengers	57.4–E
2	Trolley span wires	77.4–D
3	Communication messengers	87.4–G
(d)	Protection Required on guys, span wires, messengers and cables where within trolley throw	
1	Supply guys and span wires	56.4–B2
2	Supply messengers and cables	57.4-B2
3	Communication guys and span wires	86.4–B2
4	Communication messengers	87.4–B2
(e)	Not applicable to certain conductors supported on trolley span wires	
1	Trolley contact and feeder conductors	74.4–G2
2	Trolley feeder conductors	78.1
3	Trolley system communication conductors	78.2
4	Foreign conductors	78.3
(f)	Increased clearance required over trolley contact conductors 750 - 7,500 volts	74.4–G2
(g)	Shall be increased for voltages above 75,000 as required by Table 2, Columns I, J and K	N/A
(h)	May be reduced for certain conductors of Class T Circuits of the same system	74.4–C
(i)	May be reduced for service drops under special conditions	
1	Supply service drops and communication line conductors	54.8–C1a
2	Supply service drops and communication service drops	54.8–C4
3	Communication service drops and supply line conductors	84.8–D1a
4	Communication service drops and supply service drops	84.8–D4
(j)	May be reduced or shall be increased for certain communication conductors or cables	
1	Open wire conductors, attached to poles, within 3 feet of topmost conductor	84.4C1c
2	Line conductors of police or fire–alarm circuits and service drops from other communication circuits	84.8–D1b
3	Cables and messengers attached to poles	87.4–C3
(k)	Special clearances for 0 - 750 volts in rack configuration and messengers and cables attached to poles	
1	Supply conductors of 0 - 750 volts in rack configuration	54.9
2	Supply cables and messengers attached to poles	57.4–F
3	Communication cables and messengers attached to poles	87.4–C3
4	On jointly used poles	92.1

References to Rules Modifying Minimum Clearances in Table 2

		Rule
(l)	May be reduced for service drops and police and fire–alarm conductors, under special conditions	
1	Supply service drops and communication line conductors	54.8–C1b
2	Supply service drops on clearance arms	54.8–C2
3	Supply service drops on pole–top extensions	54.8–C3
4	Supply service drops and communication service drops	54.8–C4
5	Communication service drops and police, fire–alarm or supply line conductors	84.8–D1b
6	Communication service drops on clearance arms	84.8–D2
7	Communication service drops on pole–top extensions	84.8–D3
8	Communication service drops and supply service drops	84.8–D4
9	Police or fire–alarm conductors	92
(m)	May be reduced for lead wires	
1	Supply lead wires above supply conductors	54.4–C6
2	Supply drip loops above communication conductors	92.1–F3
(n)	May be reduced for supply conductors and private communication conductors of the same ownership	89.2–B
(o)	May be reduced or shall be increased for triangular or vertical configuration or for pole–top construction	
1	Triangular or vertical configuration on crossarms	54.4–C1c
2	deadended on pole in vertical configuration	54.4–C4
(p)	May be reduced for supply service drops of 0 - 750 volts	54.8–C6
(q)	Shall be increased between circuits where conductors are at pole top	54.4–D8
(r)	May be reduced under special conditions	
1	Supply conductors of 750 - 7,500 volts	54.4–C1a
2	Supply conductors of 7,500 - 20,000 volts	54.4C1b
(s)	Does not apply where conductors do not cross	
1	Supply conductors of different phase or polarity	54.4–C2a
2	Communication conductors	84.4–C1a
(t)	Shall not be applied consecutively both above and below the same supply conductors	54.4–C2a
(u)	Shall be increased where conductors of different classification are supported on the same crossarm	
1	Supply conductors of 0 - 750 volts and conductors of 7,500 - 22,500 volts	32.4–A2
2	Supply conductors of 0 - 750 volts and conductors of 750 - 7,500 volts	32.4–A3
(v)	Not applicable to certain kinds of conductors	
1	Supply conductors of same phase or polarity	54.4–C3c
2	Insulated supply conductors in multiple–conductor cables	57.4–C
3	Communication insulated conductors or multiple–conductor cables	87.4–C1
(w)	Shall apply radially to conductors on brackets attached to crossarms	
1	Supply conductors	54.4–C3b
2	Communication conductors	84.4–C1b
(x)	Shall be increased between conductors of different classification supported on the same crossarm	
1	Supply conductors of different voltage classification	32.4–A
2	Supply circuits of 0 - 750 volts and communication circuits	32.4–B
3	Supply circuits and private communications circuits	89.2–A
(y)	Special clearances for unprotected supply conductors from one level to another level	54.6–A 58.5–B3 92.1–F5
(z)	Not applicable to the following:	
1	Clearances between conductors at different levels specified in cases 8 to 13 inclusive	N/A
2	Supply lateral conductors, suitably protected	54.6–C
3	Supply vertical runs, suitably protected	54.6–D
4	Supply risers, suitably protected	54.6–E
5	Communication conductor	87.4–C1
(aa)	Not applicable between cables and their supporting messengers	
1	Supply	57.4–D
2	Communication	87.4–F
(bb)	May be reduced for guys and communication conductors supported on the same pole	
1	Supply	56.4–C4
2	Communication	86.4–C
(cc)	Clearance required between guys	
1	Supply guys, crossing	56.4–D2
2	Supply guys, approximately parallel	56.4–D3
3	Communication guys, crossing	86.4–D2
4	Communication guys, approximately parallel	86.4–D3
(dd)	Shall be increased where within 6 feet of a pole	103.5
(ee)	May be decreased in partial underground distribution	54.4–C4c
(ff)	Shall be increased by 0.40 inch per kV in excess of 75 kV	
(gg)	Shall be increased by 0.40 inch per kV in excess of 150 kV	
(hh)	Shall be increased by 0.40 inch per kV in excess of 300 kV	
(ii)	Shall be increased by 0.25 inch per kV in excess of 150 kV	
(jj)	Shall be increased by 0.25 inch per kV in excess of 300 kV	
(kk)	Proposed clearances to be submitted to the CPUC prior to construction for circuits in excess of 550 kV	
(ll)	36–inch clearance applies 35 kV to 68 kV. 42–inch clearance applies over 68 kV.	
(mm)	Vertical clearances shall be increased by 1/2 inch for each kV over 68 kV	
(nn)	The vertical separation between supply conductors and service drops of 0 - 750 volts and supply conductors of 20,000 - 22,500 volts may be reduced to 48 inches	
(oo)	May be reduced to 72inches for conductors of 20,000 - 22,500 volts	
(pp)	May be reduced to 36 inches vertically at midspan only when the supply conductors consist of abrasion resistant cable with a grounded metallic sheath or neutral–supported cable as specified in Rules 57 and 54.10.	
(qq)	Vertical clearances may be reduced between supply conductors of the same circuit at crossings in spans54.4–C7	
(rr)	Can be less than 12” for strand mounted terminals, splice cases and other equipment located 8” or more from centerline of pole but not less than 1” with mutual agreement between affected owners.	
(ss)	Requirements for transition of Fiber optic cable facilities	87.10
(tt)	For Antennas utilized by utilities for the sole purpose of operating and monitoring their supply system see Rules 54.4-G and 58.6.	
(uu)	For clearances below supply and communication lines see Rules 94.4-A and 94.4-B	
(vv)	Clearances for exposed associated cables may be reduced by 12 inches.	
(ww)	May be reduced to 10 inches for cables installed by Antenna owner/operator.	
(xx)	Clearance from service drop point of attachment on structure to Antenna(s) and associated supporting elements may be reduced to 10 inches.	
(yy)	Up to 50 kV.	
(zz)	In areas that are subjected to high winds, a utility may need to take extra measures to maintain all required separations. Measures may include but are not limited to, spacer bars and increased pin spacing	

Note: Revised February 7, 1964 by Decision No. 66707; September 18, 1967 by Decision No. 72984; March 30, 1968 by Decision No. 73813; July 22, 1968 by Decision No. 74342; September 11, 1974 by Decision No. 83420; March 9, 1988 by Resolution E–3076; November 6, 1992 by Resolution No. SU–15, January 19, 1994 by Resolution SU–25, October 9, 1996 by Resolution SU–40, January 13, 2005 by Decision No. 0501030 and October 2, 2008 by Decision No. 0810017.

APPENDIX B

Legal Land Description

Legal Land Description
City of Los Angeles, Department of Water and Power
Right -of-Way Application
CACA-055592

San Bernardino Meridian, California

T. 7 N.,R. 2 W.,
sec. 4, SW¼;
sec. 7, lot 1.
T. 7 N., R. 3 W.,
sec. 28, SW¼.
T. 8 N., R. 1 W.,
sec. 12, NW¼.
T. 9 N., R. 1 E.,
sec. 26, NW¼;
sec. 27, SE¼.
T. 10 N., R. 2 E.,
sec. 26, NE¼.
T. 11 N., R. 4 E.,
sec. 2, lot 2;
sec. 10, NW¼NE¼ and NE¼NW¼;
sec. 20, NW¼.
T. 12 N., R. 5 E.,
sec. 9, NE¼;
sec. 30, lot 2.
T. 13 N., R. 5.,
sec. 24, NE¼;
sec. 26, SE¼.
T. 13 N., R. 6 E.,
sec. 4, lot 2;
sec. 5, lot 2;
sec. 8, NW¼;
sec. 18, lot 1.
T. 14 N., R. 6 E.,
sec. 25, SE¼ and SW¼;
sec. 33, SW¼ and SE¼;
sec. 34, NE¼, SW¼, and SE¼;
sec. 35, NE¼ and NW¼.
T. 14 N., R. 7 E.,
sec. 17, SW¼ and SE¼.
T. 15 N., R. 7 E.,
sec. 25, SW¼;
sec. 34, S½SE¼;
sec. 35, NE¼, NW¼, and SW¼.
T. 15 N., R. 8 E.,
sec. 20, S½NE¼;
sec. 30, lot 1.
T. 15 N., R. 9 E.,
sec. 4; (partially surveyed)
sec. 5. (partially surveyed)

T. 16 N., R. 9 E.,
sec. 23; (partially surveyed)
sec. 24. (partially surveyed)
T. 16 N., R. 10 E.,
sec. 2; (partially surveyed)
sec. 3; (partially surveyed)
sec. 9; (partially surveyed)
sec. 17; (partially surveyed)
sec. 18. (partially surveyed)
T. 17 N., R. 13 E.,
sec. 2, lots 5 and 12;
sec. 3, lots 5-12, inclusive;
sec. 4, lot 11;
sec. 5, lot 9-11, inclusive.

10.7 total acres, approximately.

APPENDIX C

Engineering Drawings

Appendix C.1

McCullough-Victorville Line 1 Drawings

GENERAL NOTES:

1. ADD 2410000 TO NORTHINGS AND 7280000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

CURVE DATA					PI		
	R	L	T	Δ	N.	E.	EL.
①	496'	43.28'	21.66'	5°	2217.46	8794.67	4487.92
②	31'	34.89'	19.55'	64°28'51.85"	2121.77	8891.00	4491.26

ESTIMATED EARTHWORK QUANTITIES:

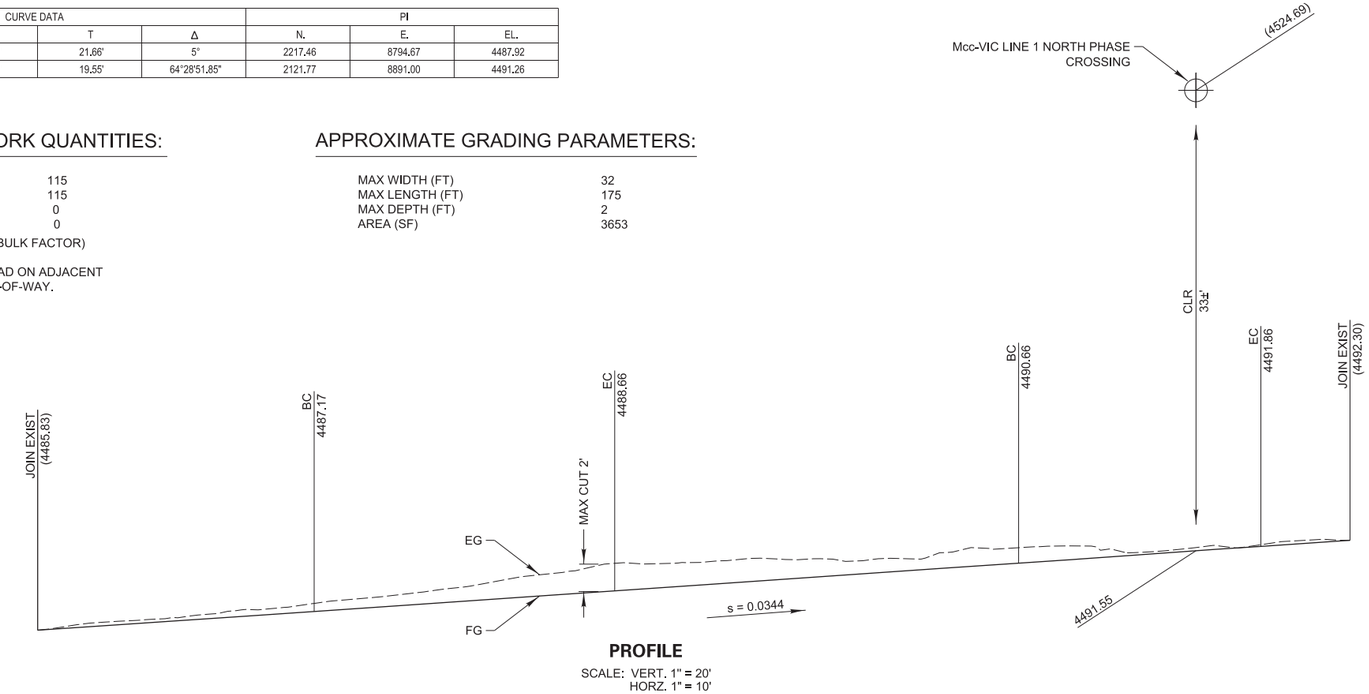
CUT (CY)	115
FILL (CY)	115
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)

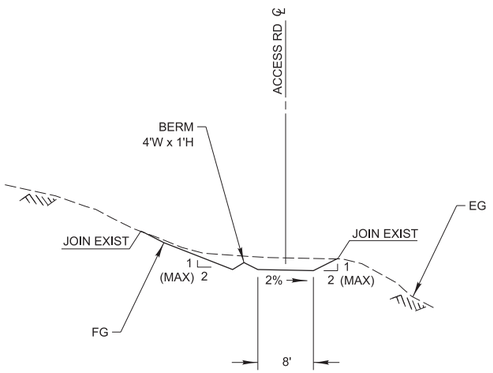
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

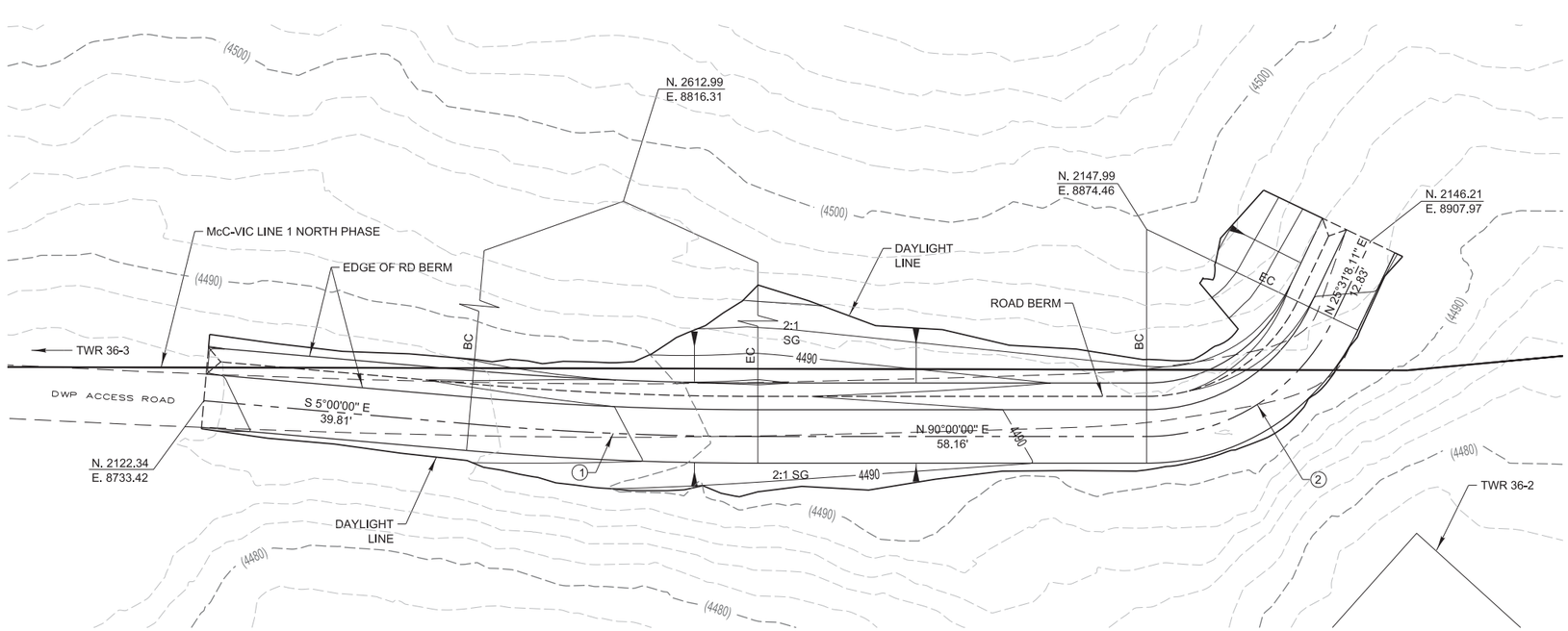
MAX WIDTH (FT)	32
MAX LENGTH (FT)	175
MAX DEPTH (FT)	2
AREA (SF)	3653



PROFILE
SCALE: VERT. 1" = 20'
HORZ. 1" = 10'



TYPICAL ROAD SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

* DWP PL 150' NORTH AND SOUTH FROM CL OF TL TWR

DES. ENGR. J. FANG
SUP. ENGR. E. MALACON

REVISIONS

NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J Fang CE 65962

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, SECTION AND PROFILE GRADING McCULLOUGH–VICTORVILLE LINE 1 TWR 36–2

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER **MV1-36-2-CA01** REV. 1

09-28-12

DRA

mv36-2.dgn

GENERAL NOTES:

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6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	107
FILL (CY)	107
IMPORT (CY)	0
EXPORT (CY)	0

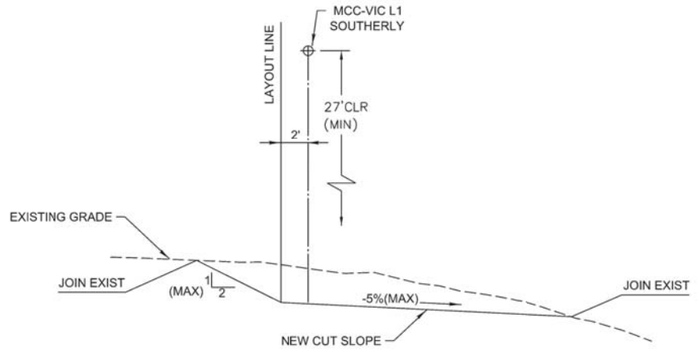
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

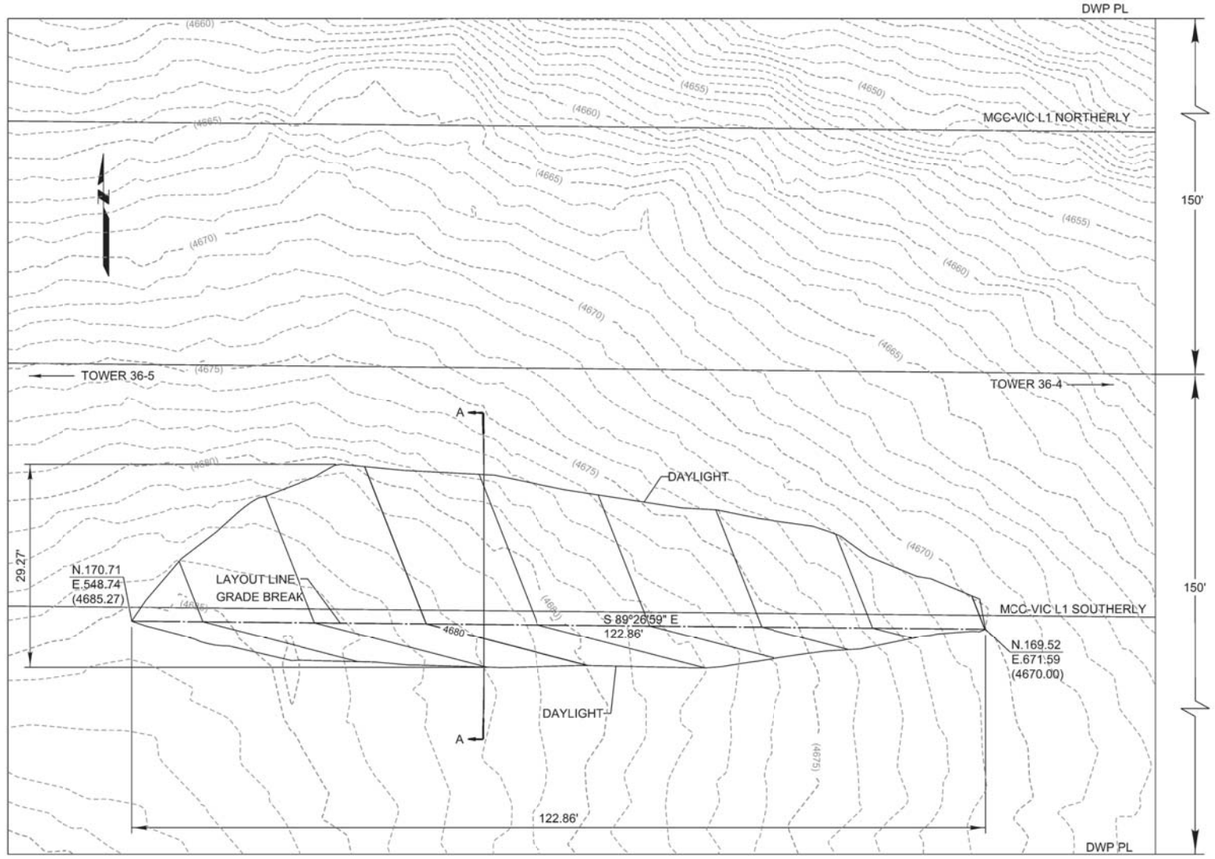
MAX WIDTH (FT)	30
MAX LENGTH (FT)	123
MAX DEPTH (FT)	2.7
AREA (SF)	2577

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

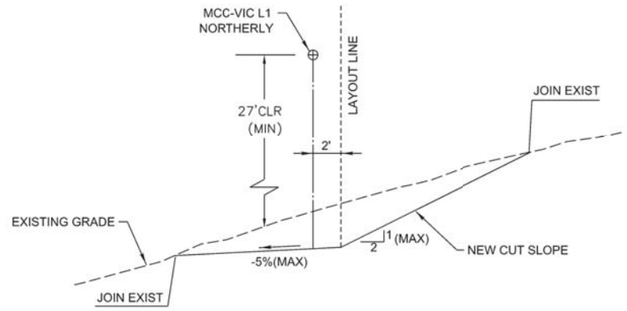
REVISIONS						
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 36–4, 36–5
		DRAFTING RELEASE		DRAFTING RELEASE		
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL	POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES
		CHECKED BY		CHECKED BY		DRAWING NUMBER MV1-36-4-CA01 REV.
		ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE	ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE	
				T. Alcocer CE 70713		

DRA

MV1-36-4-CA01.dgn

GENERAL NOTES:

1. ADD 2412000 TO NORTHINGS AND 7285000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.



SECTION A-A
TYPICAL SECTION
NO SCALE

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	59
FILL (CY)	59
IMPORT (CY)	0
EXPORT (CY)	0

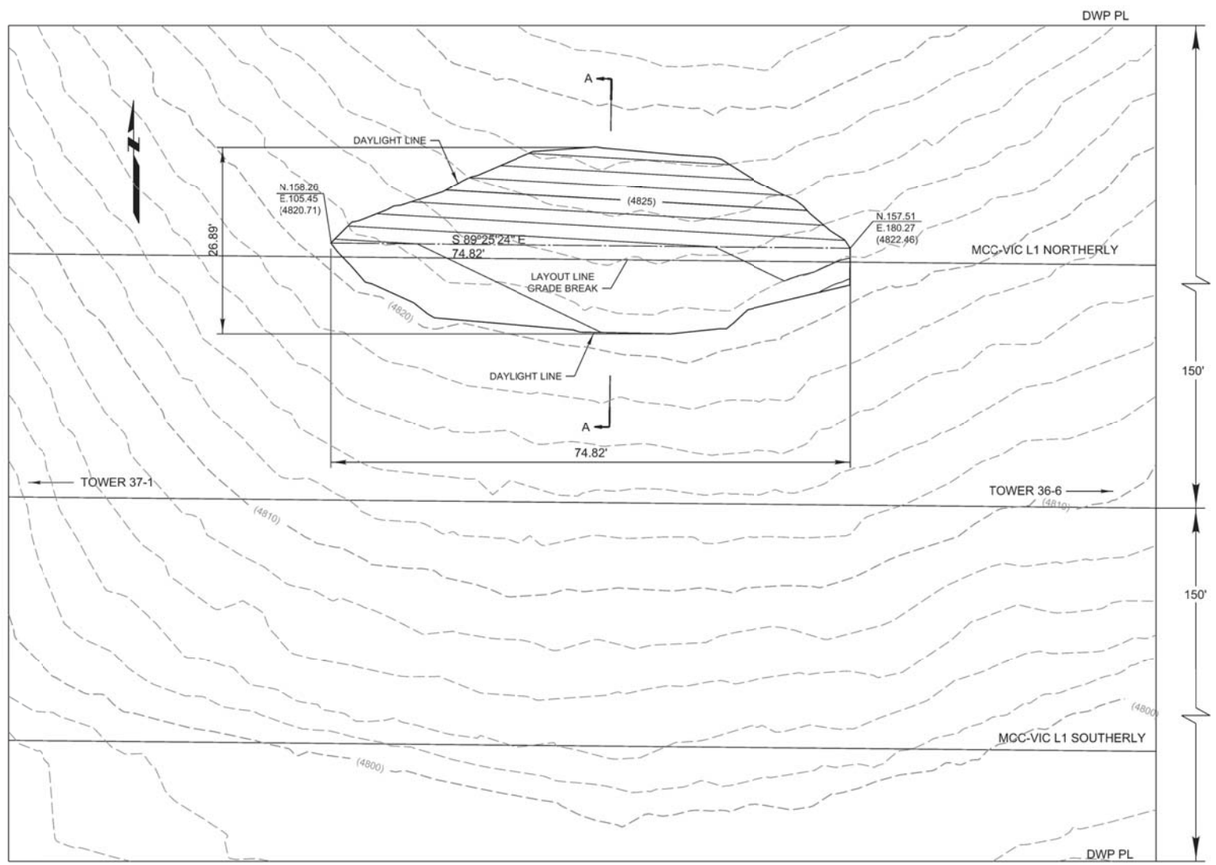
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	27
MAX LENGTH (FT)	75
MAX DEPTH (FT)	3.1
AREA (SF)	1528

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



PLAN
SCALE: 1" = 10'

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS
NO. | DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
T. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 36–6, 37–1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-36-6-CA01
REV.

MV1-36-6-CA01.dgn

GENERAL NOTES:

1. ADD 2412000 TO NORTHINGS AND 7283000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	150
FILL (CY)	150
IMPORT (CY)	0
EXPORT (CY)	0

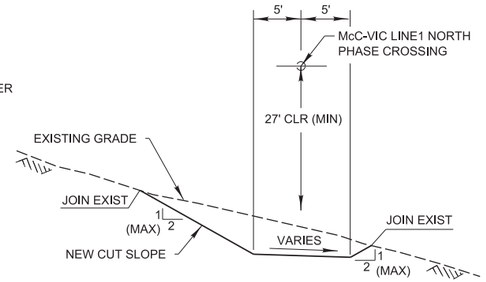
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

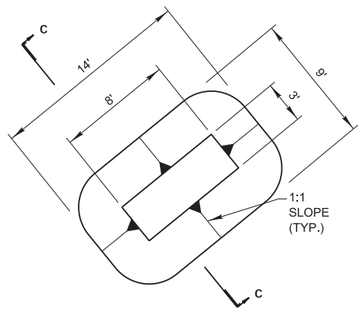
MAX WIDTH (FT)	25
MAX LENGTH (FT)	130
MAX DEPTH (FT)	3
AREA (SF)	2514

ABBREVIATIONS:

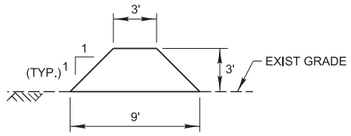
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



SECTION B-B
NO SCALE



COMPACTED SOIL BARRICADE
DETAIL 1
NO SCALE



SECTION C-C
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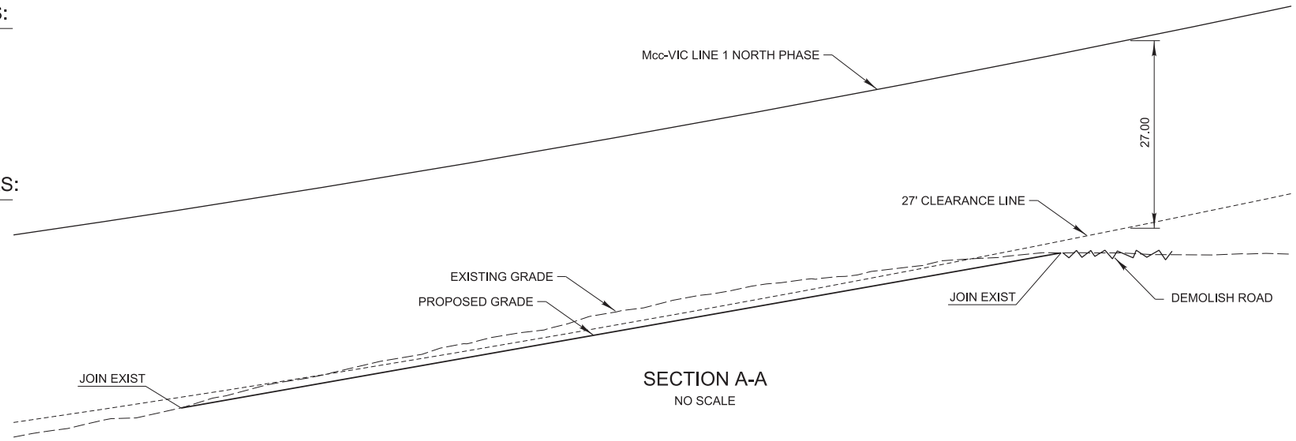

SECTION A-A
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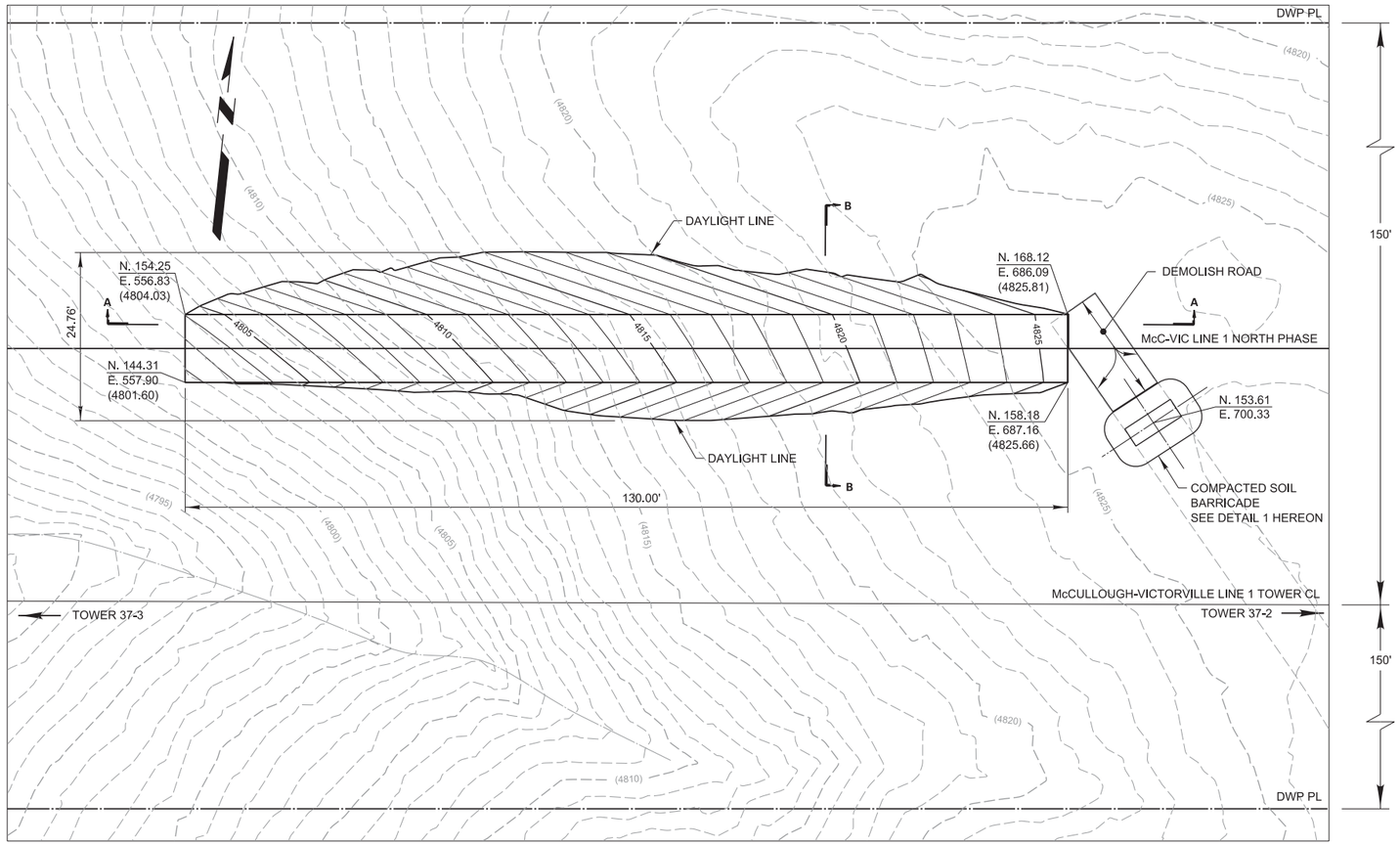


PLAN
SCALE: 1" = 10'

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

DES. ENGR. J. JONG
SUP. ENGR. J. PANG

REVISIONS

NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Jong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, DETAIL, AND SECTIONS GRADING McCULLOUGH–VICTORVILLE LINE 1 TWR 37–2

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-37-2-CA01
REV. 1

01-07-13

mv1-37-2.dgn

GENERAL NOTES:

1. ADD 2410000 TO NORTHINGS AND 7270000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	240
FILL (CY)	240
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)

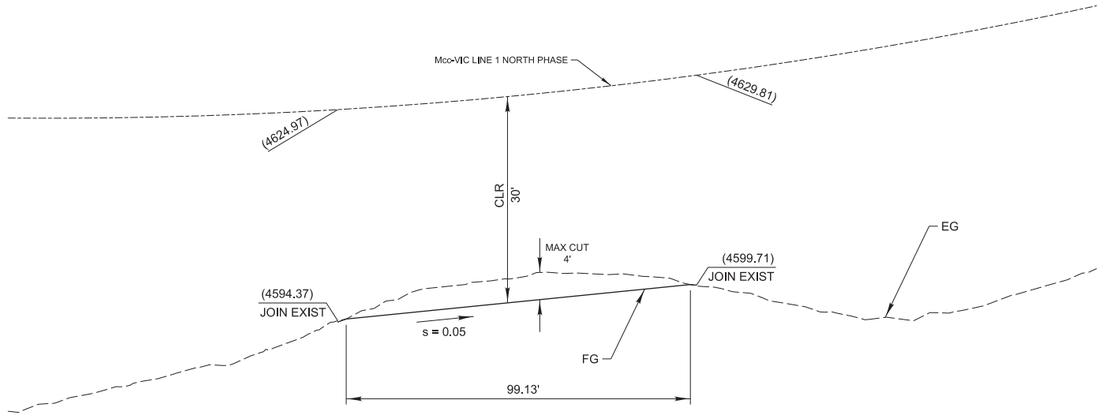
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

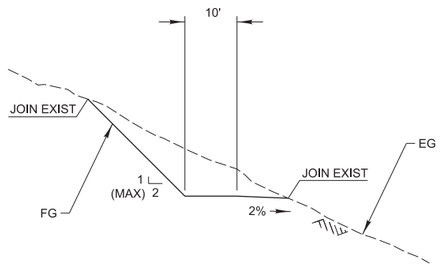
MAX WIDTH (FT)	40
MAX LENGTH (FT)	100
MAX DEPTH (FT)	4
AREA (SF)	3246

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



PROFILE
NO SCALE



SECTION A–A
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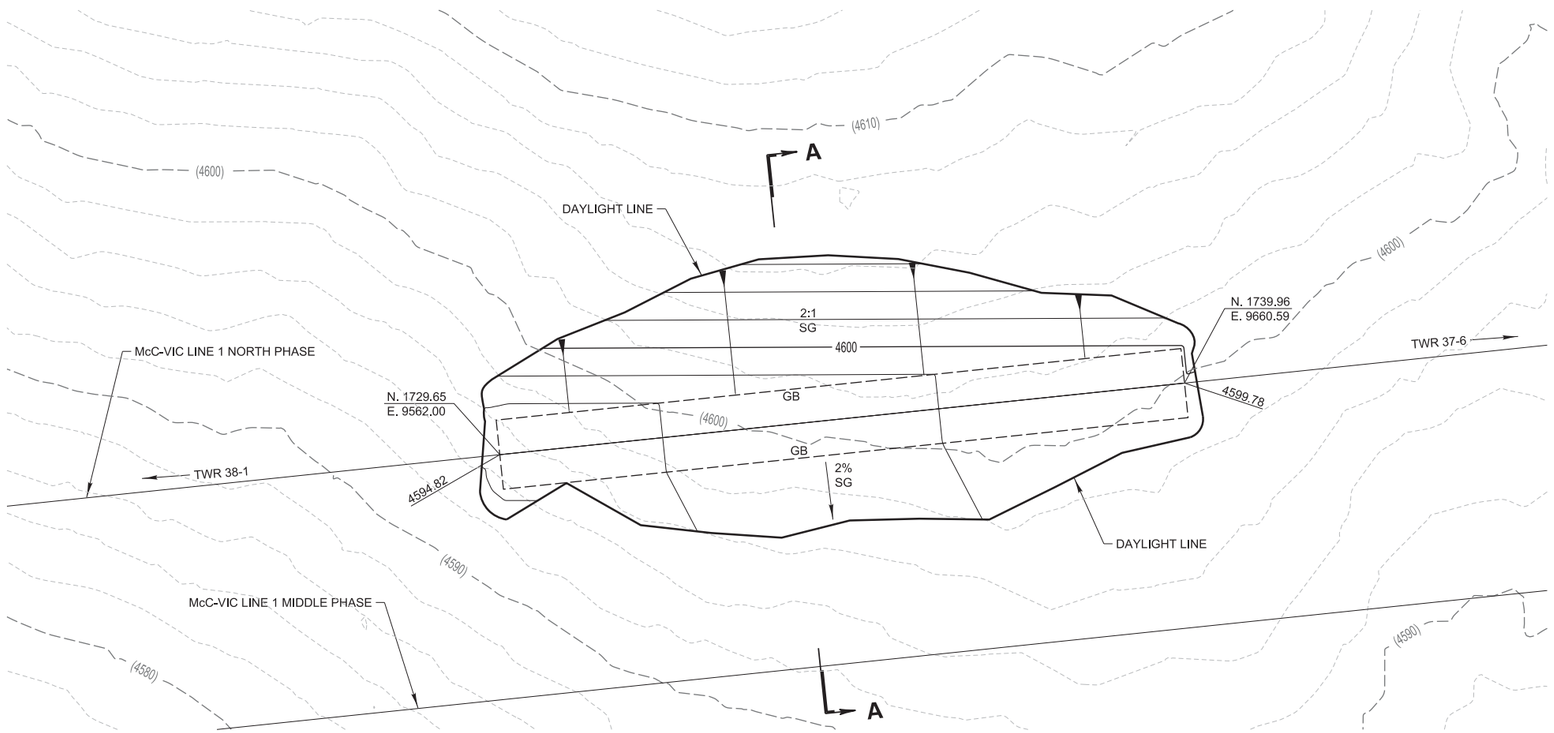


PLAN
SCALE: 1" = 10'

* DWP PL 150' NORTH AND SOUTH FROM CL OF TL TWR

DES. ENGR. J. PANG
SUP. ENGR. E. MALACON

REVISIONS						
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, SECTION AND PROFILE GRADING McCULLOUGH–VICTORVILLE LINE 1 TWR 37–6
		DRAFTING RELEASE		DRAFTING RELEASE		
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL	POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES
		CHECKED BY		CHECKED BY		DRAWING NUMBER MV1-37-6-CA01 REV. 1
		ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE	ENGINEERING APPROVAL J Pang CE 65962	FINAL APPROVAL RELEASE SIGNATURE DATE	

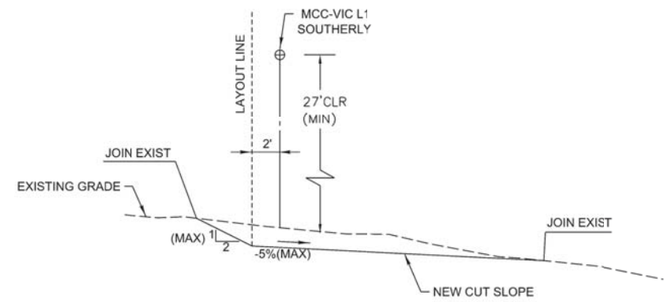
DRA

mv37-6.dgn

10-01-12

GENERAL NOTES:

1. ADD 2411000 TO NORTHINGS AND 7276000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.



SECTION A-A
TYPICAL SECTION
NO SCALE

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	48
FILL (CY)	48
IMPORT (CY)	0
EXPORT (CY)	0

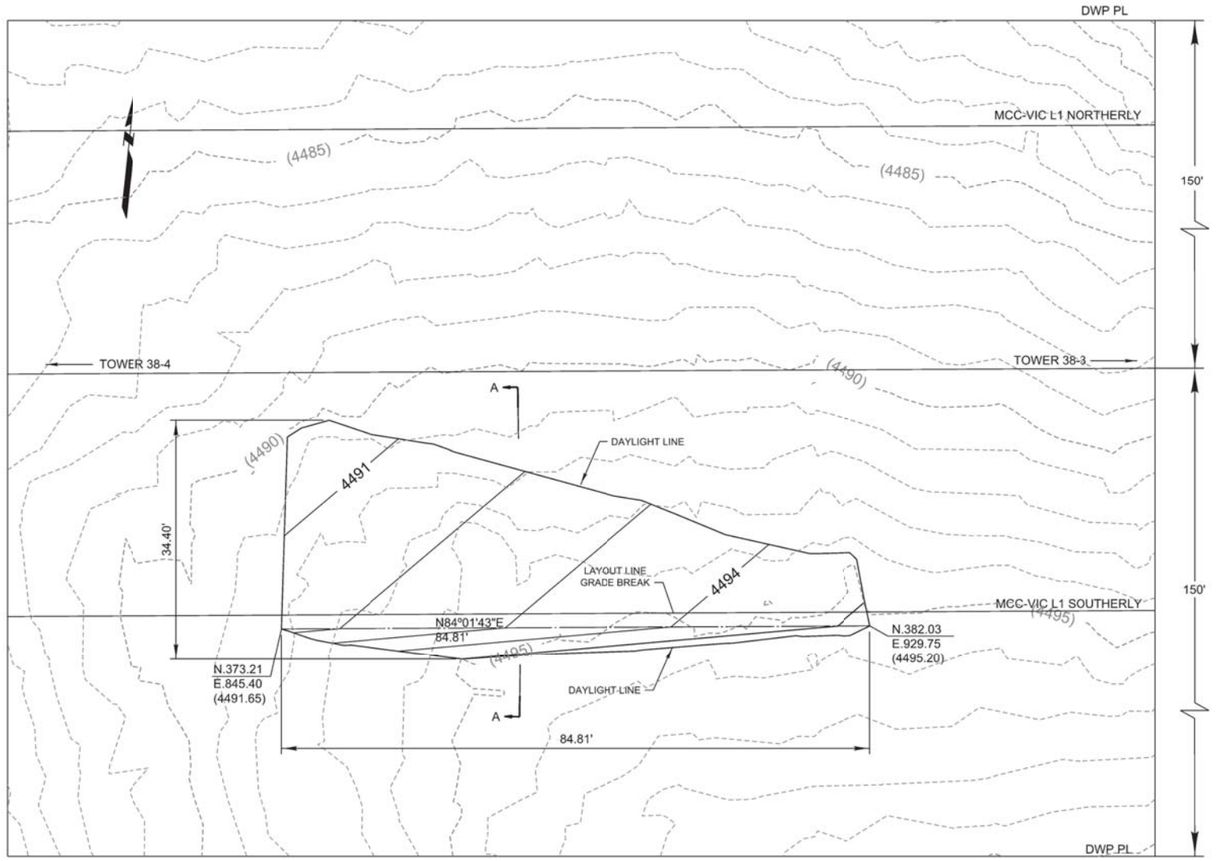
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	35
MAX LENGTH (FT)	85
MAX DEPTH (FT)	1.5
AREA (SF)	1948

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



PLAN
SCALE: 1" = 10'

DES. ENGR. F.ALCOCER SUP. ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL T. Mercer CE 70713	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE

PLAN, PROFILE, AND SECTIONS
GRADING
MCCULLOUGH–VICTORVILLE LINE 1 TWR 38–4, 38–3

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER **MV1-38-3-CA01** REV.

MV1-38-3-CA01.dgn

GENERAL NOTES:

1. ADD 2410000 TO NORTHINGS AND 7270000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

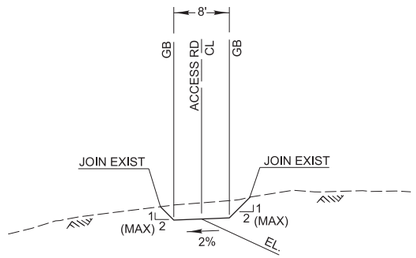
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES:

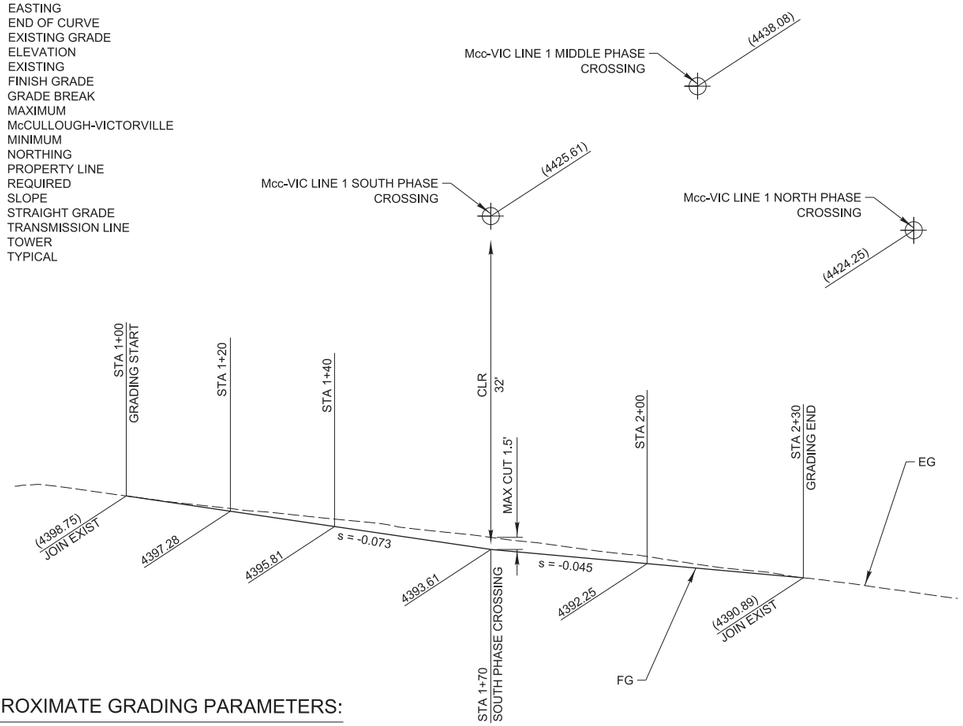
CUT (CY)	31
FILL (CY)	31
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)

* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.



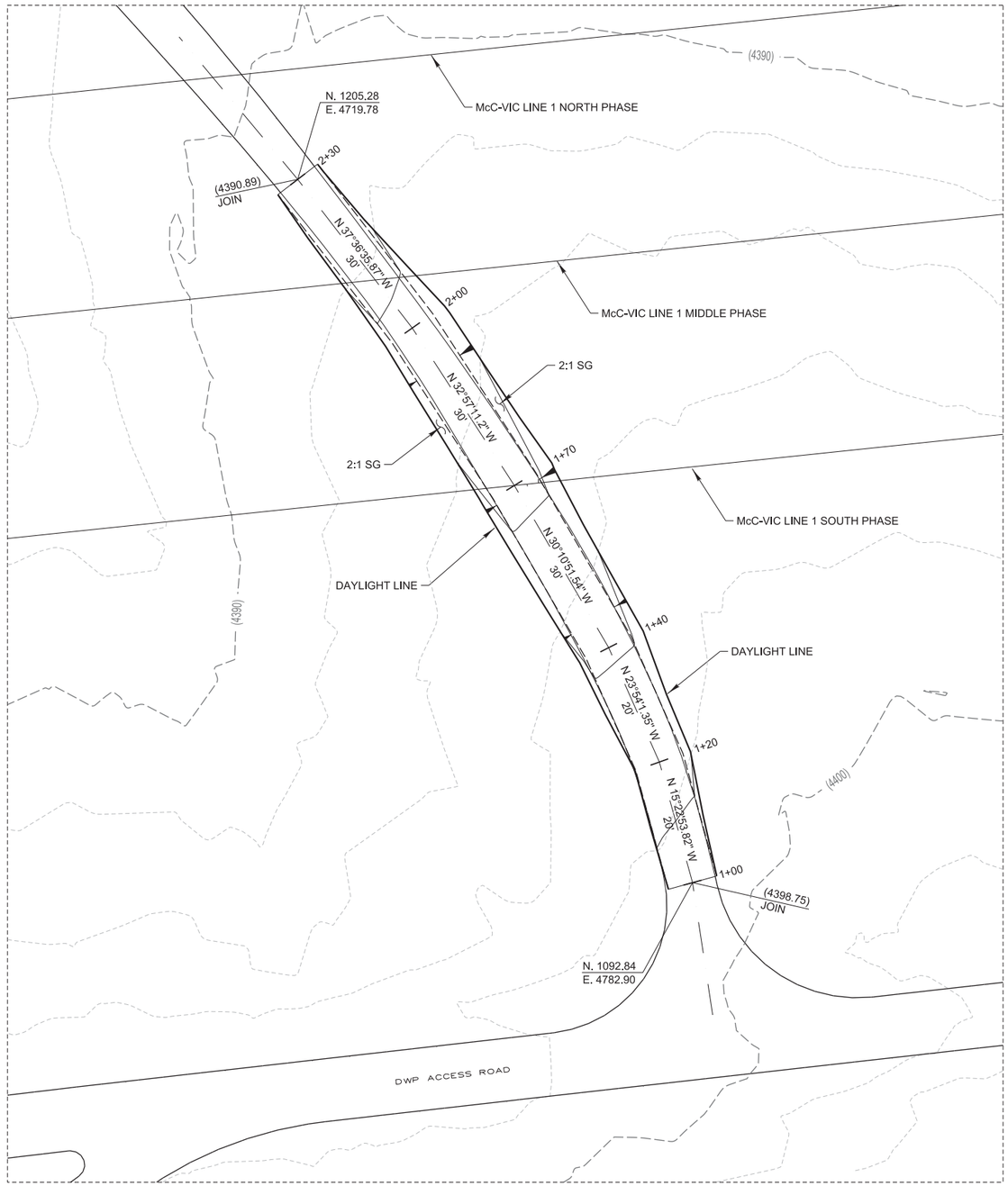
TYPICAL CROSS SECTION
NO SCALE



APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	13
MAX LENGTH (FT)	130
MAX DEPTH (FT)	1.5
AREA (SF)	1398

PROFILE
NO SCALE



PLAN
SCALE: 1" = 10'

* DWP PL 150' NORTH AND SOUTH FROM CL OF TL TWR

DES. ENGR. J. PANG
SUP. ENGR. E. MALACON

REVISIONS		
NO.	DESCRIPTION	

Revision Number _____

DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL

DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE — DATE

SCALE: (UNLESS NOTED) AS NOTED

DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J Pang CE 65962

OWNER/AGENT APPROVAL

DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE — DATE

PLAN, SECTION AND PROFILE GRADING McCULLOUGH–VICTORVILLE LINE 1 TWR 38–5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-38-5-CA01
REV. 1

10-02-12

DRA

mv38-5.dgn

GENERAL NOTES:

1. ADD 2378900 TO NORTHINGS AND 7194900 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	76
FILL (CY)	2
IMPORT (CY)	0
EXPORT (CY)	0

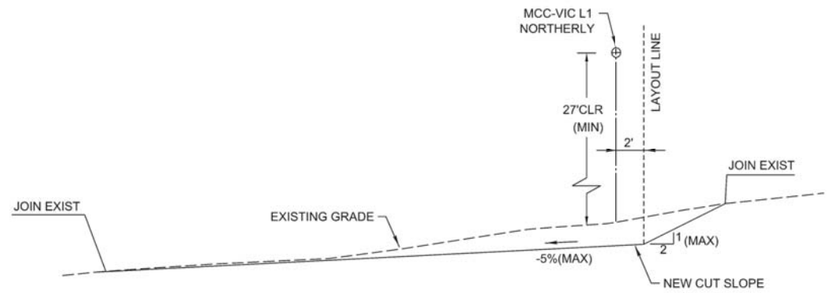
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

ABBREVIATIONS:

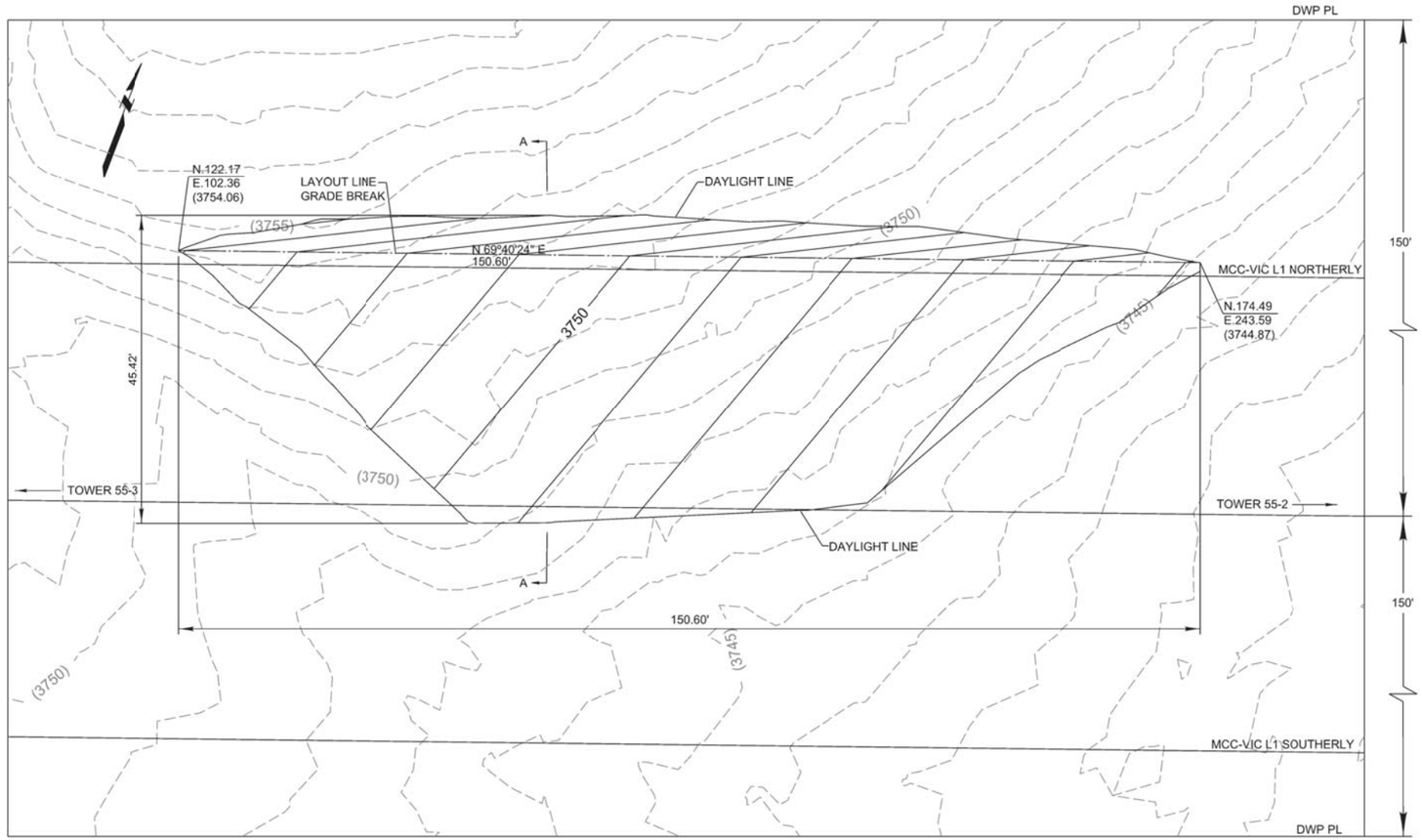
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	45
MAX LENGTH (FT)	151
MAX DEPTH (FT)	1.9
AREA (SF)	4620



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

| | | |

GENERAL NOTES:

1. ADD 2376000 TO NORTHINGS AND 7187000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

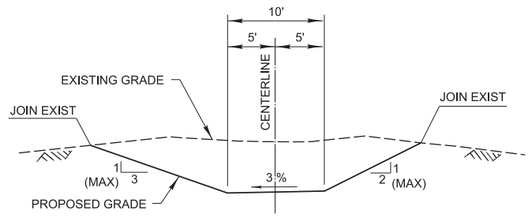
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	420
FILL (CY)	420
IMPORT (CY)	0
EXPORT (CY)	0

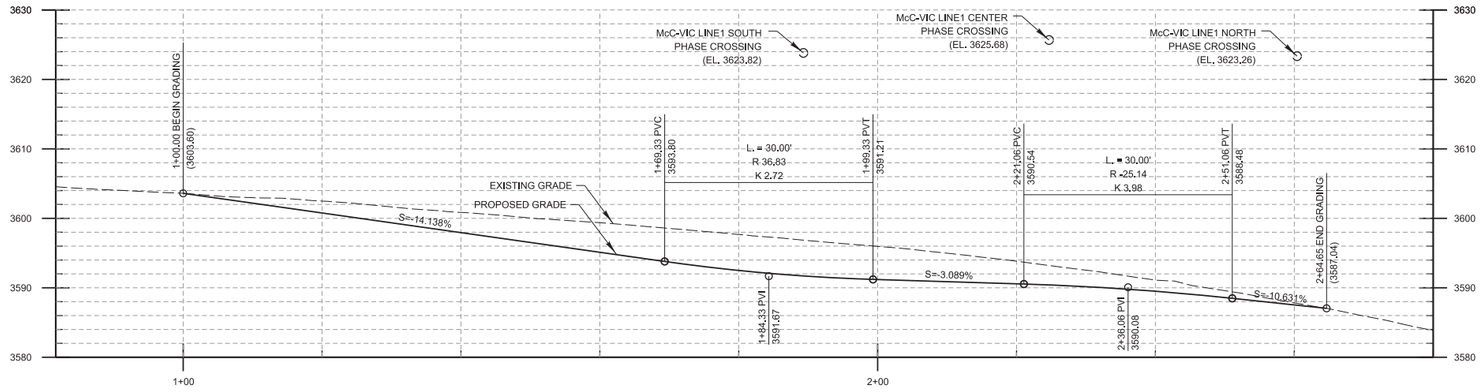
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

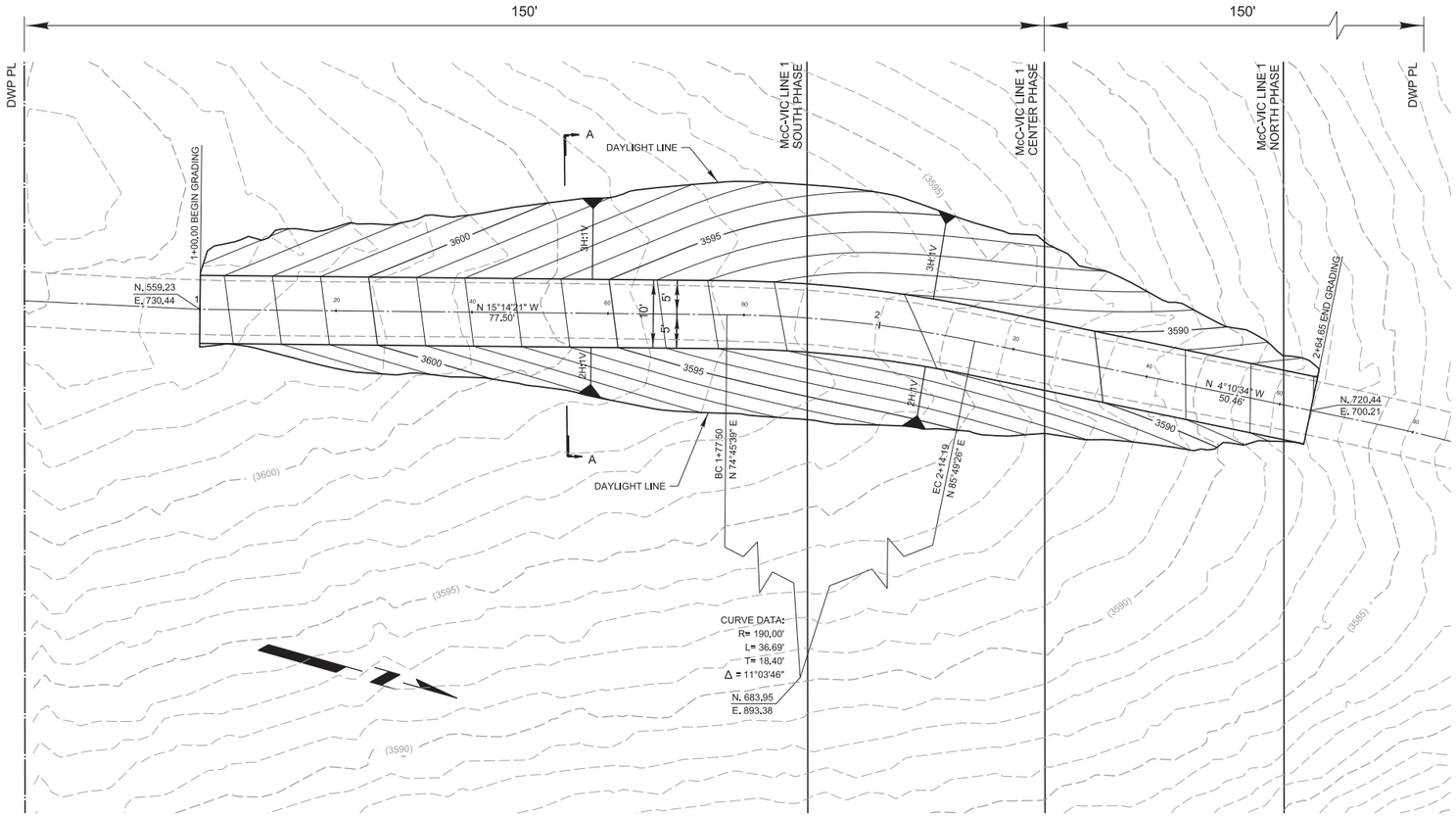
MAX WIDTH (FT)	35
MAX LENGTH (FT)	170
MAX DEPTH (FT)	5.2
AREA (SF)	4300



SECTION A-A
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

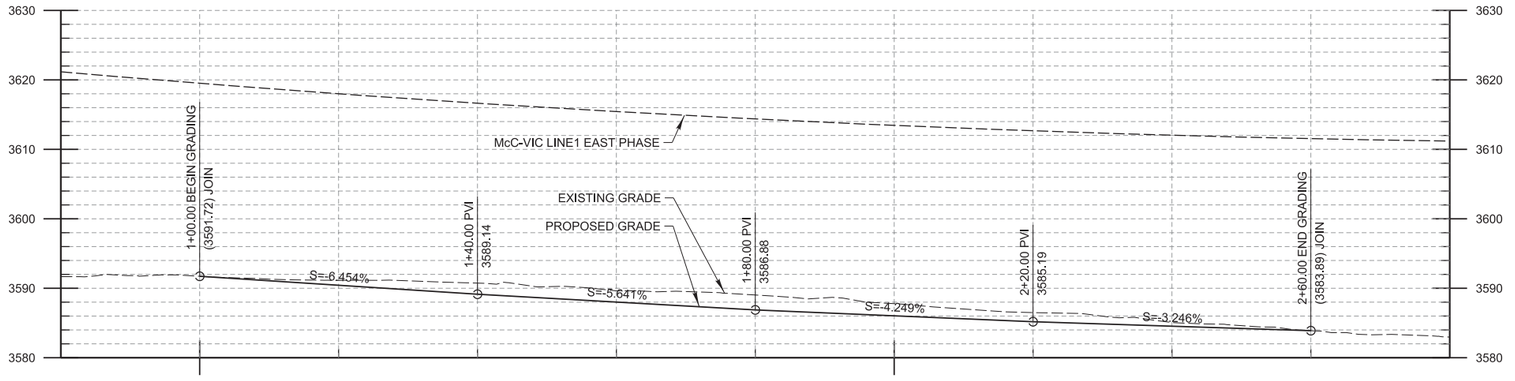


PLAN
SCALE: 1" = 10'

| | | |

GENERAL NOTES:

1. ADD 2370000 TO NORTHINGS AND 7180000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.



GRADING PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	116
FILL (CY)	116
IMPORT (CY)	0
EXPORT (CY)	0

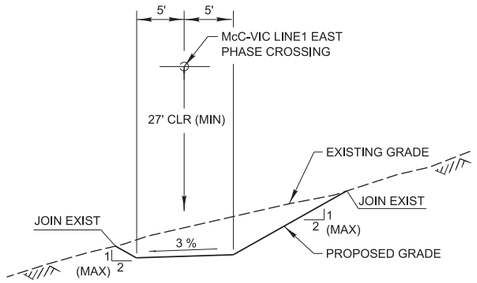
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

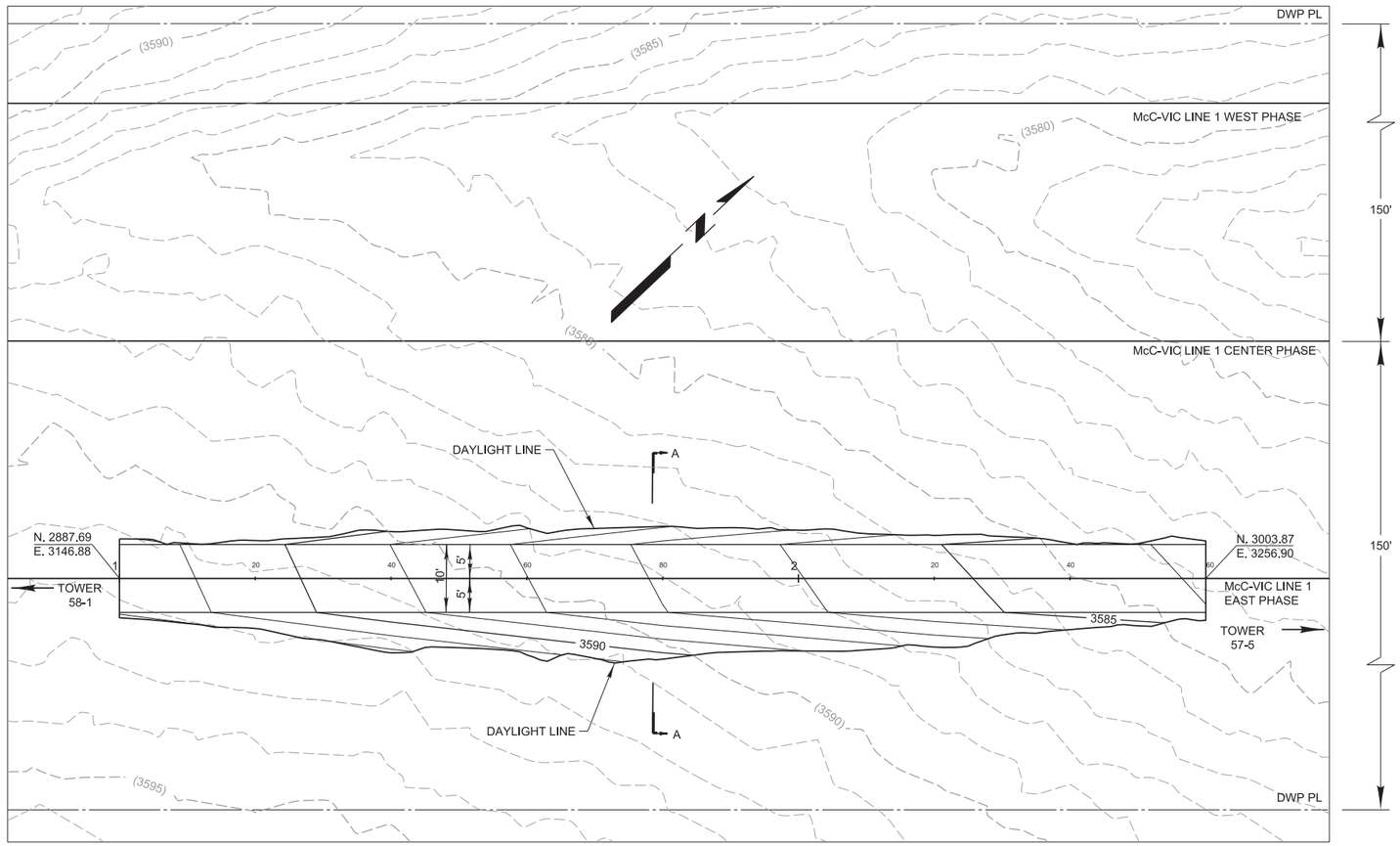
MAX WIDTH (FT)	20
MAX LENGTH (FT)	160
MAX DEPTH (FT)	2.5
AREA (SF)	3000

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL



SECTION A-A
NO SCALE



PLAN
SCALE: 1" = 10'

REVISIONS							
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, PROFILE, AND SECTION GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 57-5	
		DRAFTING RELEASE		DRAFTING RELEASE			
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL		
		CHECKED BY		CHECKED BY			
		ENGINEERING APPROVAL		ENGINEERING APPROVAL			
			FINAL APPROVAL RELEASE SIGNATURE DATE	J. Fong CE 69632	FINAL APPROVAL RELEASE SIGNATURE DATE		

DES. ENGR. J. FONG
ENGR. ENGR. J. PANG

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER: MV1-57-5-CA01 REV. 1

01-07-13

mv1-57-5.dgn

GENERAL NOTES:

1. ADD 2366000 TO NORTHINGS AND 7175000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. SEE MV1-59-4-CA02 FOR PROFILES.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL

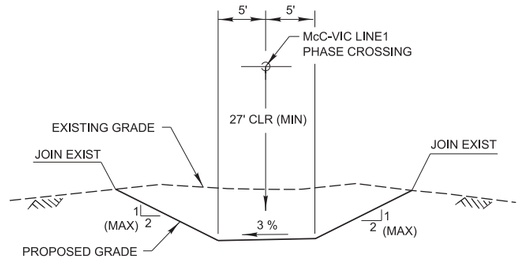
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	446
FILL (CY)	446
IMPORT (CY)	0
EXPORT (CY)	0

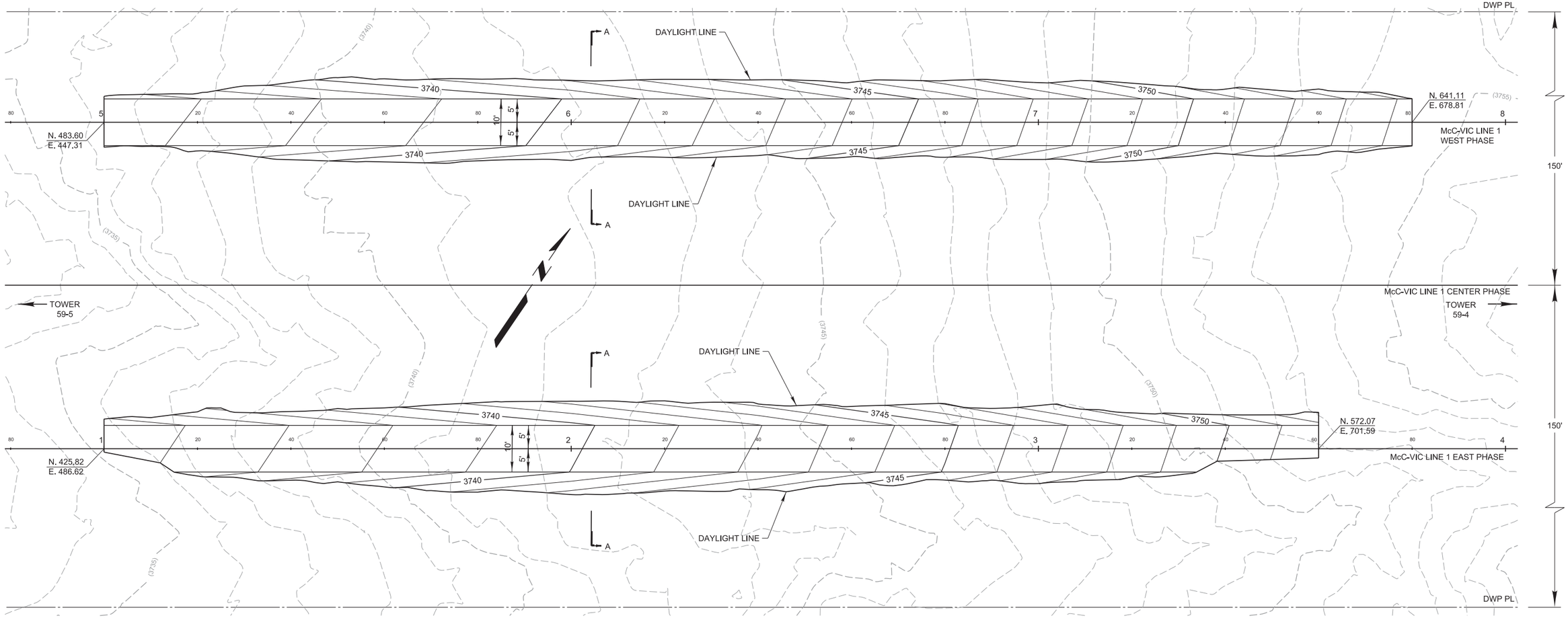
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	25
MAX LENGTH (FT)	280
MAX DEPTH (FT)	3
AREA (SF)	8700



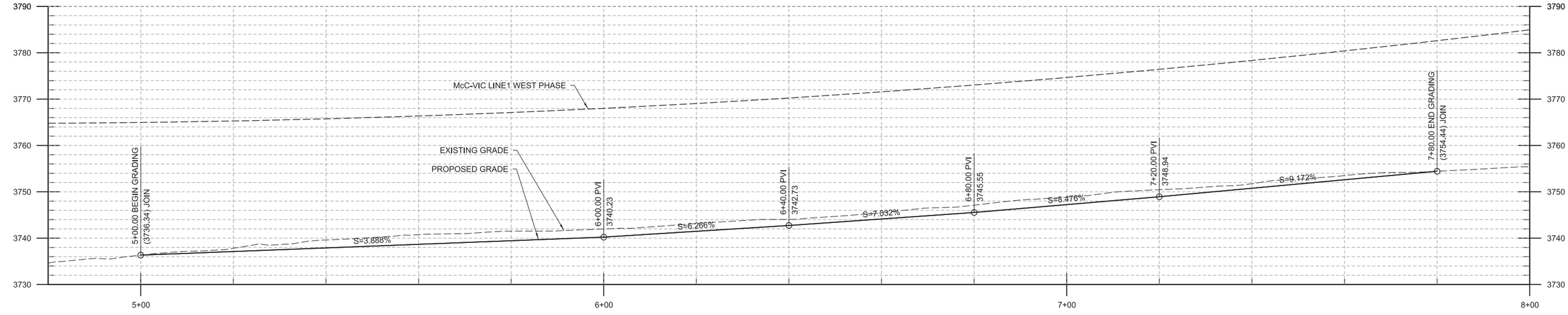
SECTION A-A
NO SCALE



PLAN
SCALE: 1" = 10'

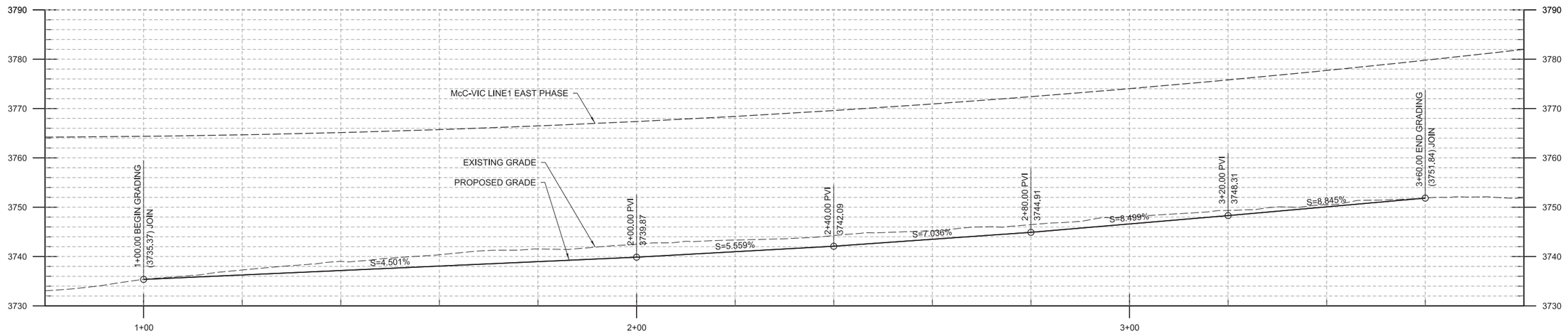
DES. ENGR. J. FONG	REVISIONS NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, SECTION, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 59-4								
SUPV. ENGR. J. PANG			DRAFTING RELEASE		DRAFTING RELEASE										
			DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL									
			CHECKED BY		CHECKED BY										
			ENGINEERING APPROVAL		ENGINEERING APPROVAL										
				FINAL APPROVAL RELEASE SIGNATURE DATE	J. Fong CE 69632	FINAL APPROVAL RELEASE SIGNATURE DATE	DWP POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES	DRAWING NUMBER MV1-59-4-CA01	REV. 1	01-07-13					

mv1-59-4.dgn



WEST PHASE PROFILE

SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



EAST PHASE PROFILE

SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

NOTE: SEE MV1-59-4-CA01 FOR PLAN, SECTION, AND NOTES.

DES. ENGR. J. FONG
SUP. ENGR. J. PANG

REVISIONS

NO.	DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
J. Fong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PROFILES
GRADING
McCULLOUGH-VICTORVILLE LINE 1 TWR 59-4

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-59-4-CA02
REV.

11-15-12

mv1-59-4.dgn

GENERAL NOTES:

1. ADD 2360000 TO NORTHINGS AND 7170000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS NOTED OTHERWISE .
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	207
FILL (CY)	207
IMPORT (CY)	0
EXPORT (CY)	0

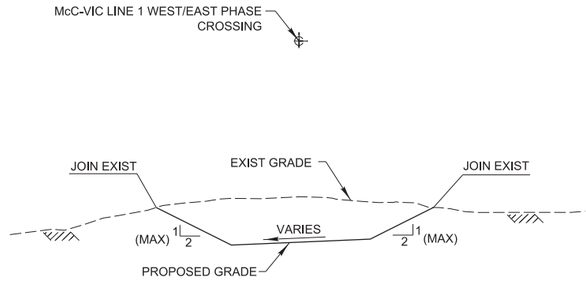
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

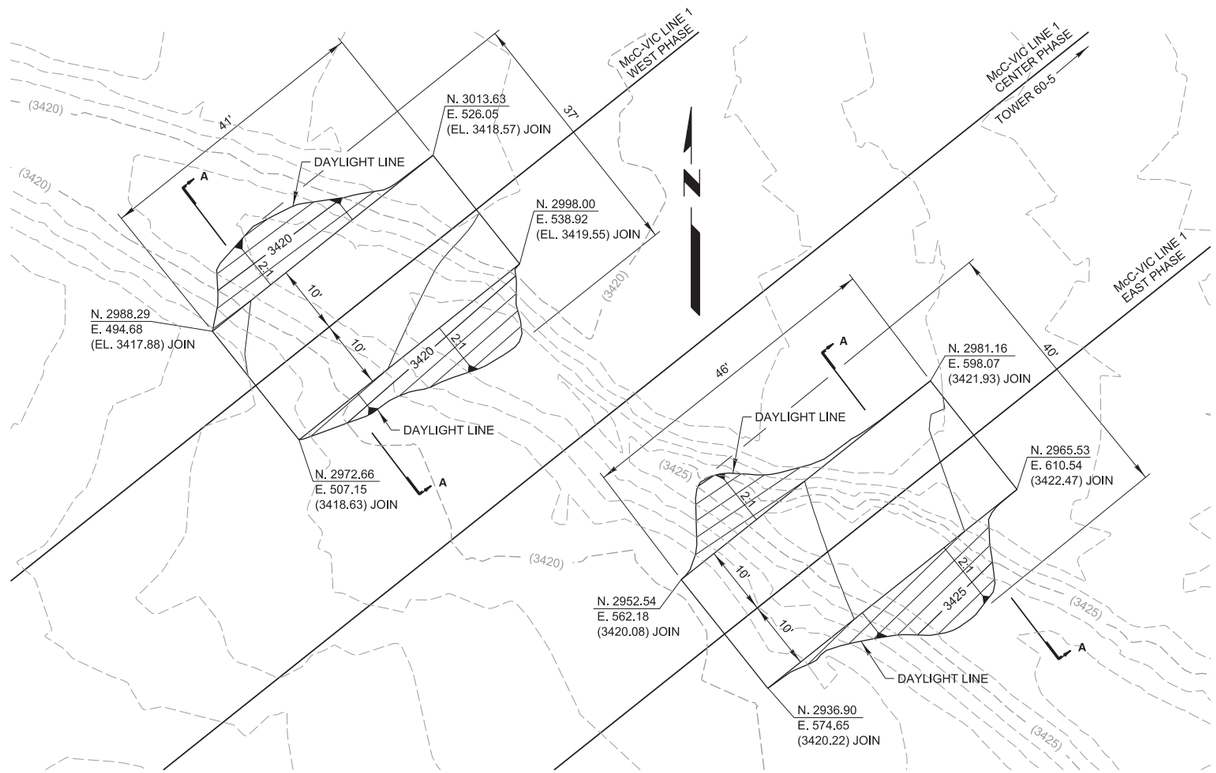
WEST:	
MAX WIDTH (FT)	37
MAX LENGTH (FT)	41
MAX DEPTH (FT)	4
AREA (SF)	140
EAST:	
MAX WIDTH (FT)	40
MAX LENGTH (FT)	46
MAX DEPTH (FT)	5
AREA (SF)	150

ABBREVIATIONS:

CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
S	SLOPE
SG	STRAIGHT GRADE
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

REVISIONS						
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, SECTION, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 60-5
		DRAFTING RELEASE		DRAFTING RELEASE		
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL	
		CHECKED BY		CHECKED BY		
		ENGINEERING APPROVAL		ENGINEERING APPROVAL		
			FINAL APPROVAL RELEASE SIGNATURE DATE	J. Tong CE 69632	FINAL APPROVAL RELEASE SIGNATURE DATE	

DES. ENGR. J. TONG
ASST. ENGR. J. PANG

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER: MV1-60-5-CA01
REV.

01-22-13

mv1-60-5.dgn

GENERAL NOTES:

1. ADD 2362000 TO NORTHINGS AND 7169000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	63
FILL (CY)	63
IMPORT (CY)	0
EXPORT (CY)	0

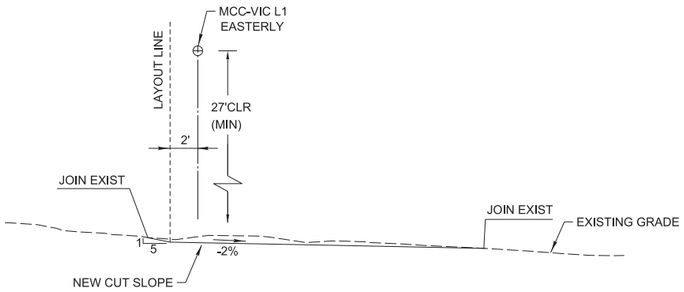
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

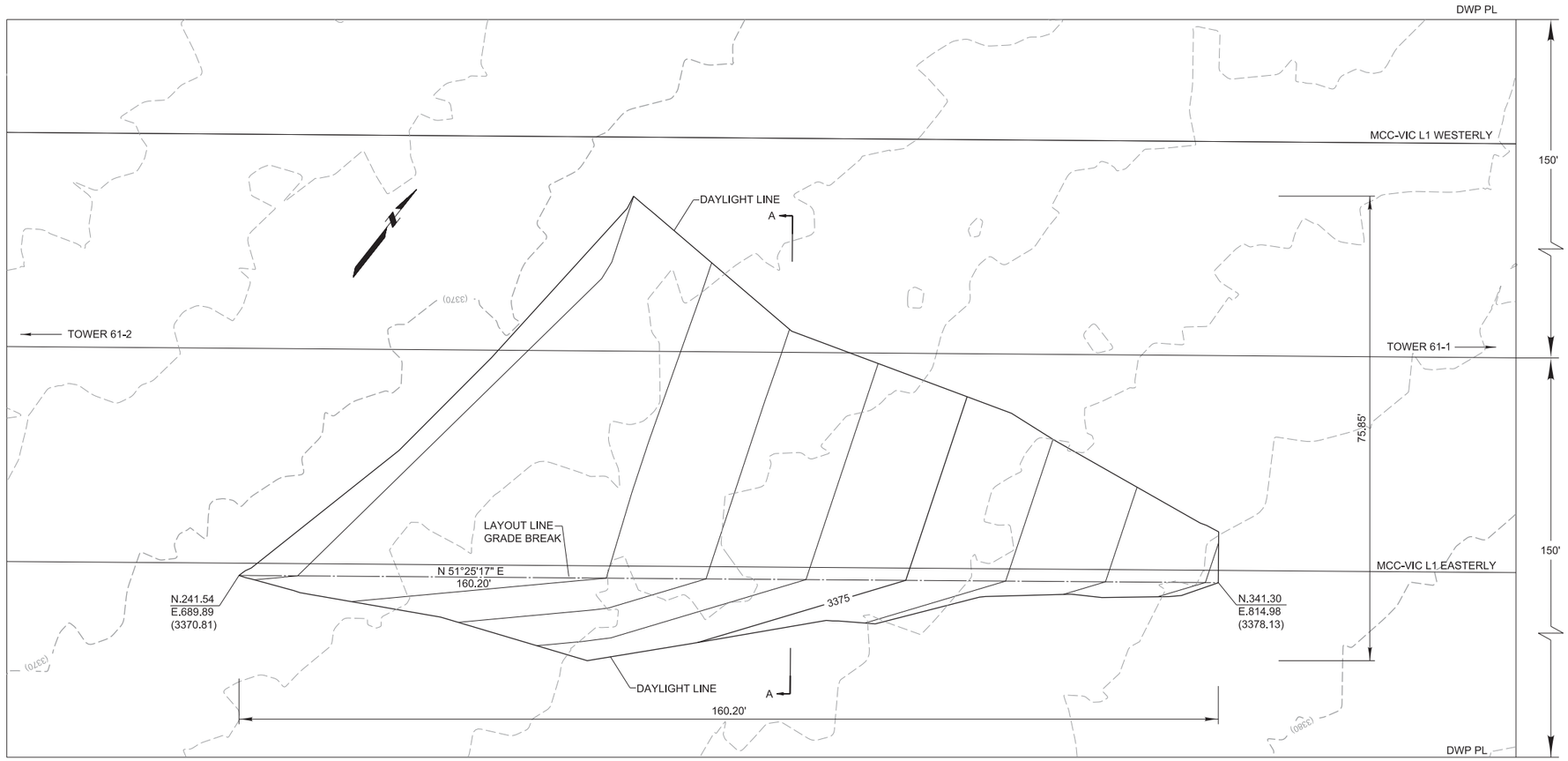
MAX WIDTH (FT)	160.2
MAX LENGTH (FT)	76.0
MAX DEPTH (FT)	1.11
AREA (SF)	5,973

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
T. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 61–2, 61–3

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-61-1-CA01
REV.

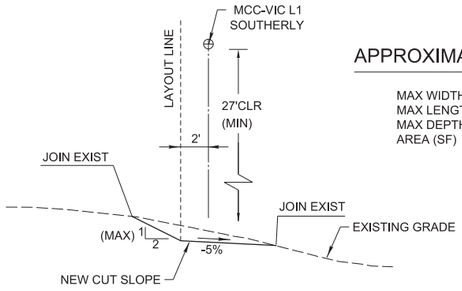
12-04-12

DRA

MV1-61-1-CA01.dgn

GENERAL NOTES:

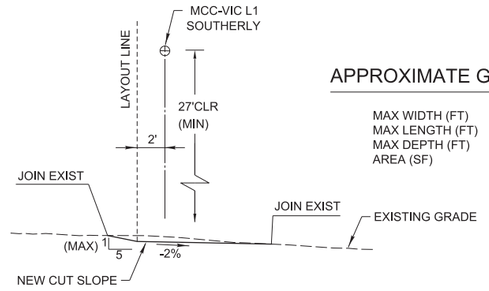
1. ADD 2361000 TO NORTHINGS AND 7168000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.



APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	23
MAX LENGTH (FT)	70
MAX DEPTH (FT)	2.2
AREA (SF)	1200

SECTION A-A
TYPICAL SECTION
NO SCALE



APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	32
MAX LENGTH (FT)	95
MAX DEPTH (FT)	0.8
AREA (SF)	1960

SECTION B-B
TYPICAL SECTION
NO SCALE

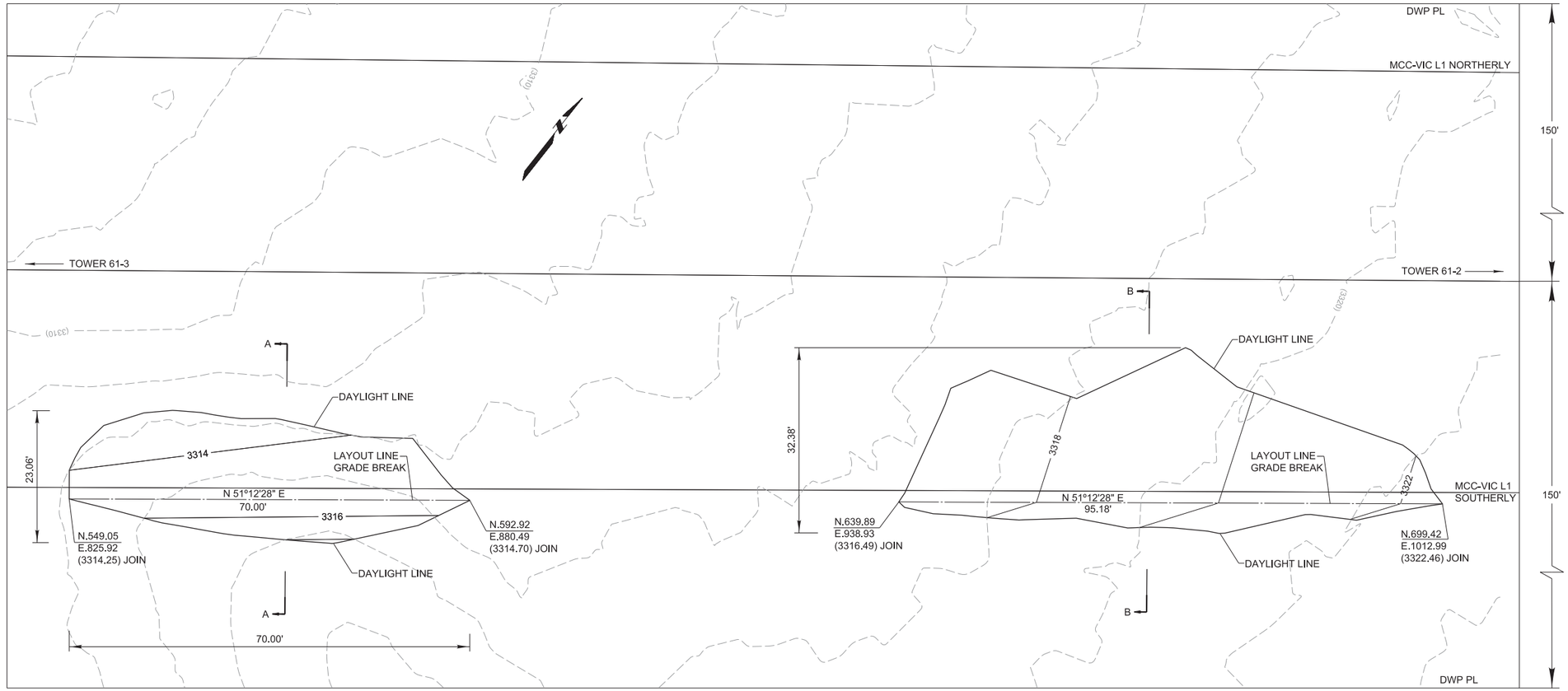
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	63
FILL (CY)	63
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



PLAN
SCALE: 1" = 10'

DES. ENGR. F.ALCOCER SUP. ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL J. Alcocer CE 70713	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	**PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 61–2, 61–3** POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES	DRAWING NUMBER **MV1-61-2-CA01** REV.

12-04-12

DRA

MV1-61-2-CA01.dgn

GENERAL NOTES:

1. ADD 2350000 TO NORTHINGS AND 7160000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO NON DRIVING SURFACE OF ANY CUT OR FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES:

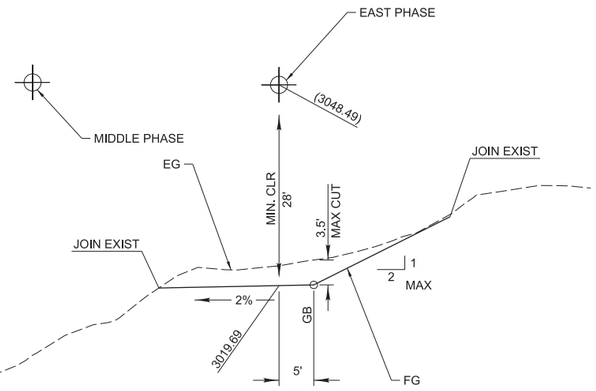
CUT (CY)	295
FILL (CY)	0
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK AND SHRINKAGE FACTORS)

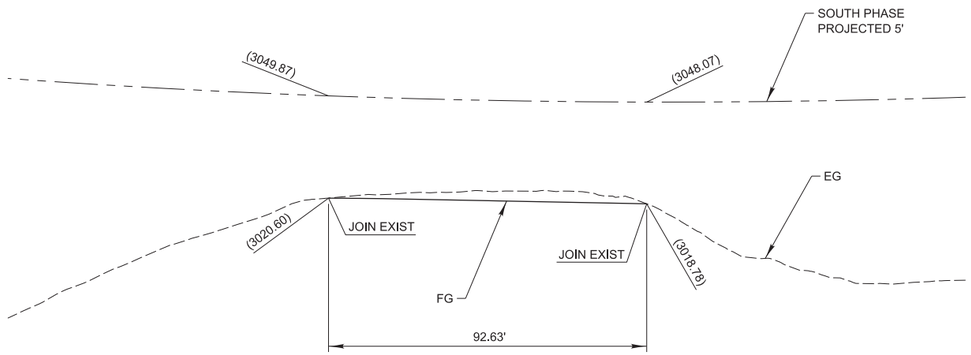
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

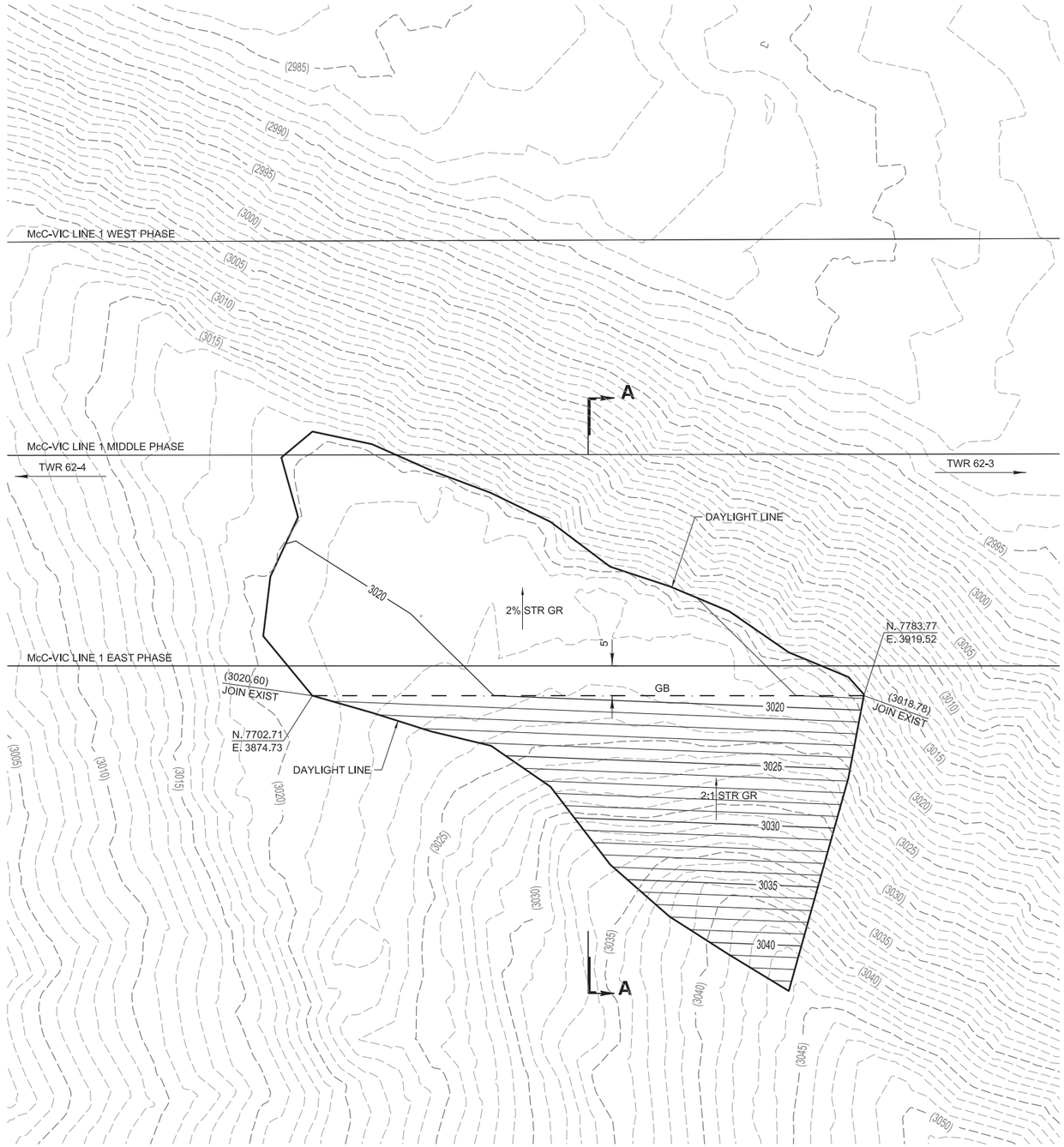
MAX WIDTH (FT)	60
MAX LENGTH (FT)	93
MAX DEPTH (FT)	3.5
AREA (SF)	4740



SECTION A–A
SCALE: 1" = 10'



PROFILE – GB
NO SCALE



PLAN
SCALE: 1" = 10'

* DWP PL 150' EAST AND WEST FROM CL OF TL TWR

DES. ENGR. J. PANG SUP. ENGR. E. MALACON	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL J. Pang CE 65962	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	**PLAN, SECTION AND PROFILE GRADING McCULLOUGH–VICTORVILLE LINE 1 TWR 62–3** POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES DRAWING NUMBER **MV1-62-3-CA01** REV. 1

11-30-12

DRA

mcv1_62-3.dgn

GENERAL NOTES:

1. ADD 2340000 TO NORTHINGS AND 7140000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. SEE MV1-66-5-CA02 FOR PLAN.
13. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	179
FILL (CY)	179
IMPORT (CY)	0
EXPORT (CY)	0

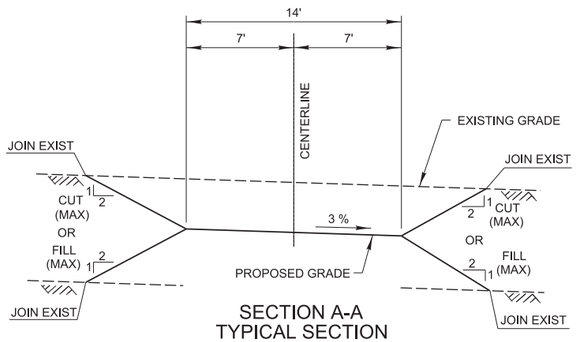
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

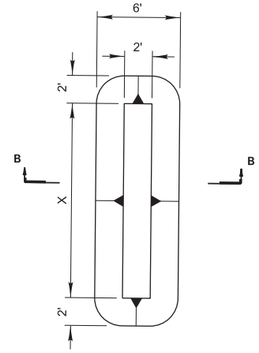
MAX WIDTH (FT)	25
MAX LENGTH (FT)	275
MAX DEPTH (FT)	3.5
AREA (SF)	9025

ABBREVIATIONS:

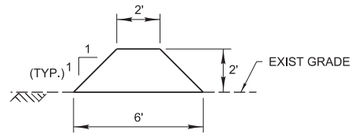
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL



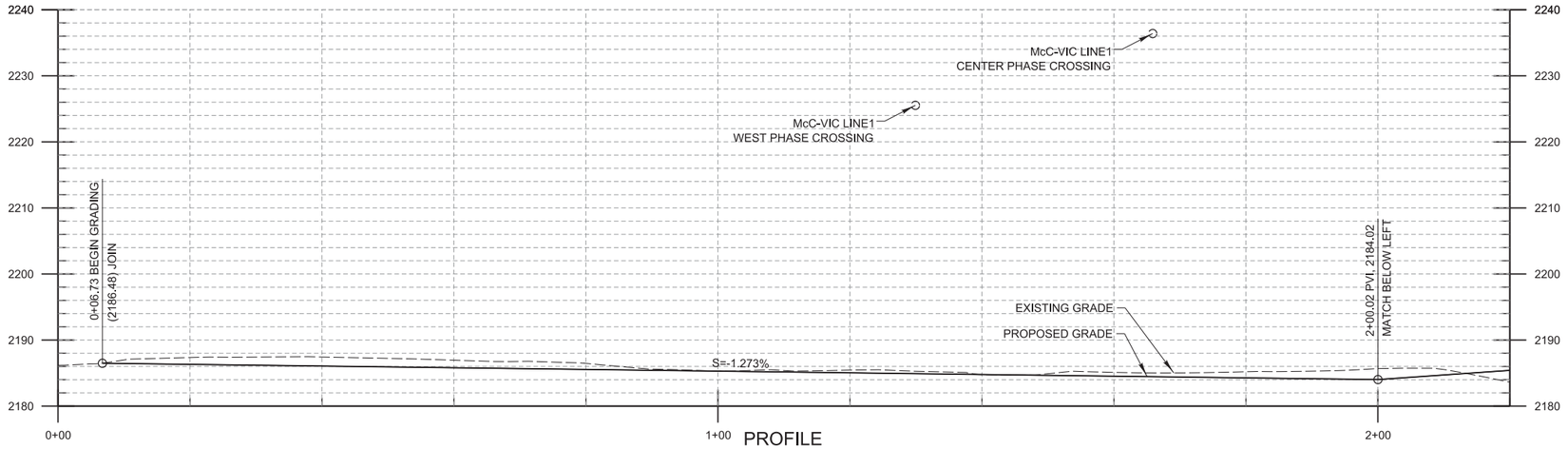
SECTION A-A
TYPICAL SECTION
NO SCALE



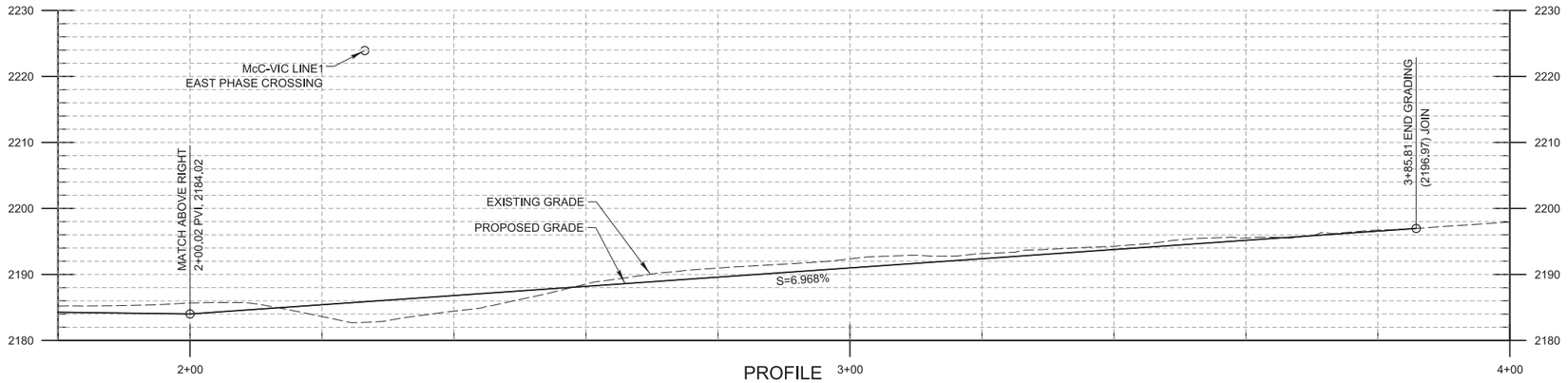
COMPACTED SOIL BARRICADE
DETAIL 1
NO SCALE



SECTION B-B
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

DES. ENGR. J. TONG
SUPV. ENGR. J. PANG
PROJ. ENGR. J. PANG

REVISIONS NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Tong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

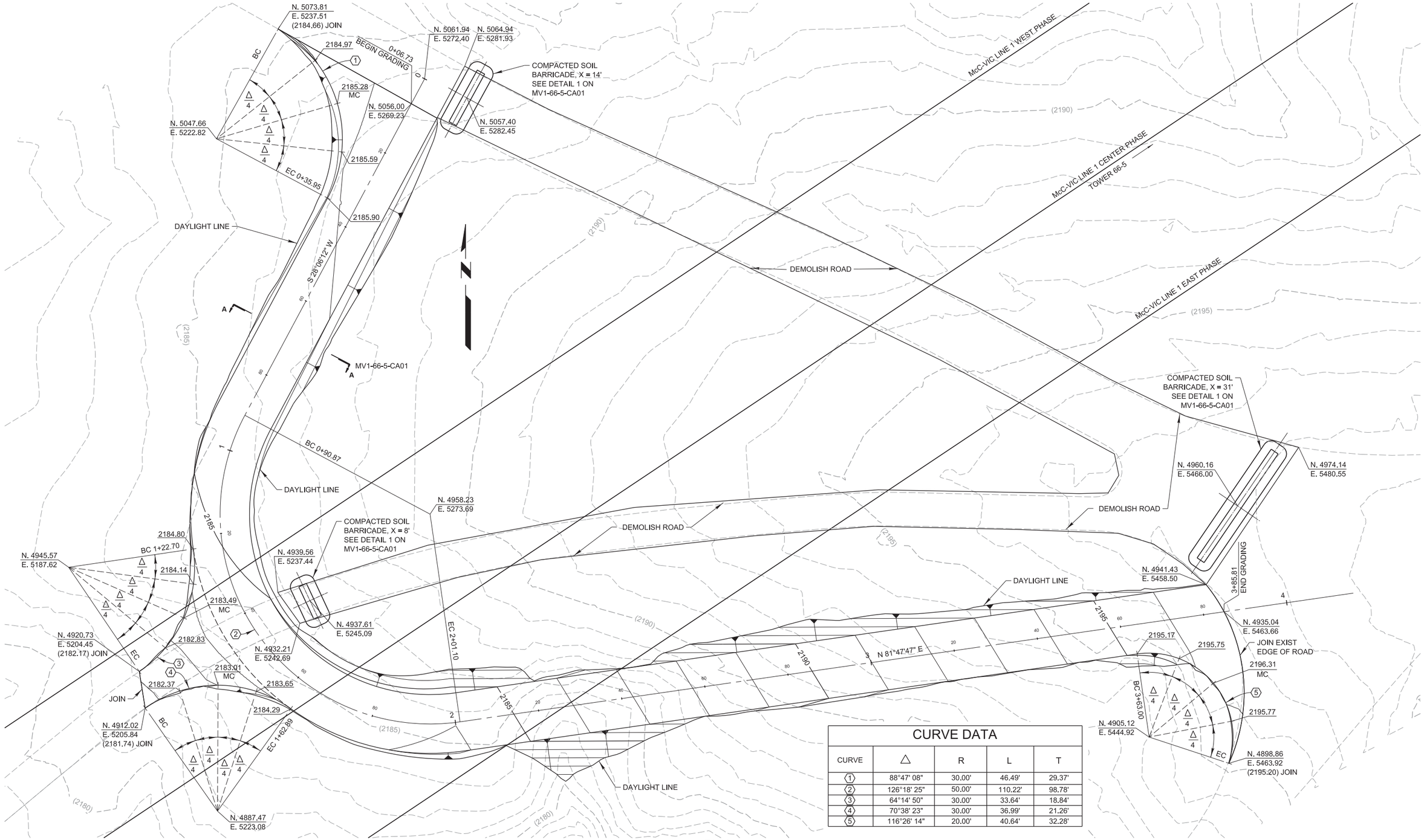
PROFILES, SECTIONS, DETAIL, AND NOTES GRADING
McCULLOUGH-VICTORVILLE LINE 1 TWR 66-5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER: MV1-66-5-CA01
REV. 1

01-07-13

mv1-66-5.dgn



CURVE DATA

CURVE	△	R	L	T
1	88°47' 08"	30.00'	46.49'	29.37'
2	126°18' 25"	50.00'	110.22'	98.78'
3	64°14' 50"	30.00'	33.64'	18.84'
4	70°38' 23"	30.00'	36.99'	21.26'
5	116°26' 14"	20.00'	40.64'	32.28'

PLAN
SCALE: 1" = 10'

NOTE: SEE MV1-66-5-CA01 FOR PROFILES, GENERAL NOTES, ABBREVIATIONS, DETAIL, AND SECTIONS.

DES. ENGR. J. FONG
SUP. ENGR. J. PANG

REVISIONS

NO.	DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
J. Fong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN
GRADING
McCULLOUGH-VICTORVILLE LINE 1 TWR 66-5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

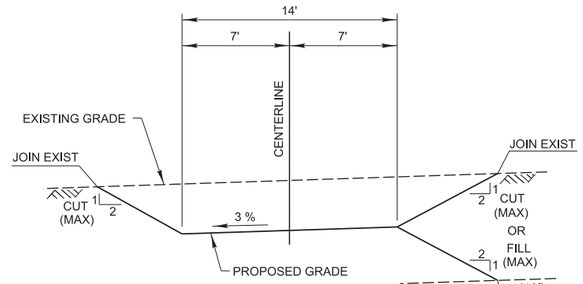
DRAWING NUMBER
MV1-66-5-CA02
REV.

12-10-12

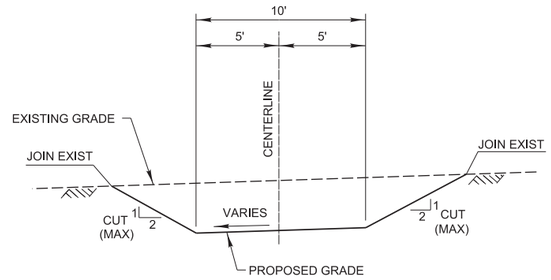
mv1-65-5.dgn

GENERAL NOTES:

1. ADD 2327000 TO NORTHINGS AND 7113000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. SEE MV1-73-6-CA02 FOR PLAN.
13. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.



SECTION A-A
MV1-73-6-CA02
NO SCALE



SECTION B-B
MV1-73-6-CA02
NO SCALE

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	79
FILL (CY)	79
IMPORT (CY)	0
EXPORT (CY)	0

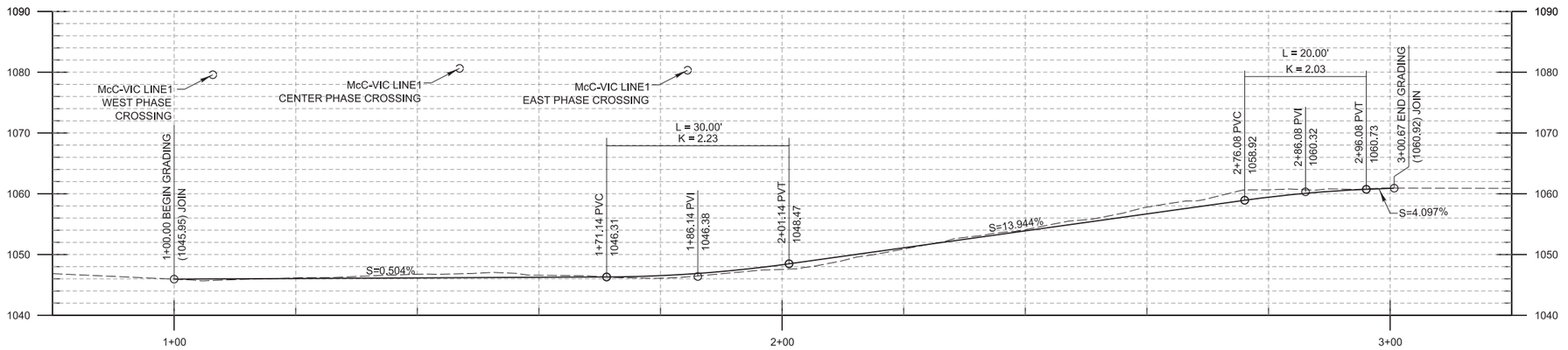
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	25
MAX LENGTH (FT)	190
MAX DEPTH (FT)	2
AREA (SF)	5000

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
K	RATE OF VERTICAL CURVATURE
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL

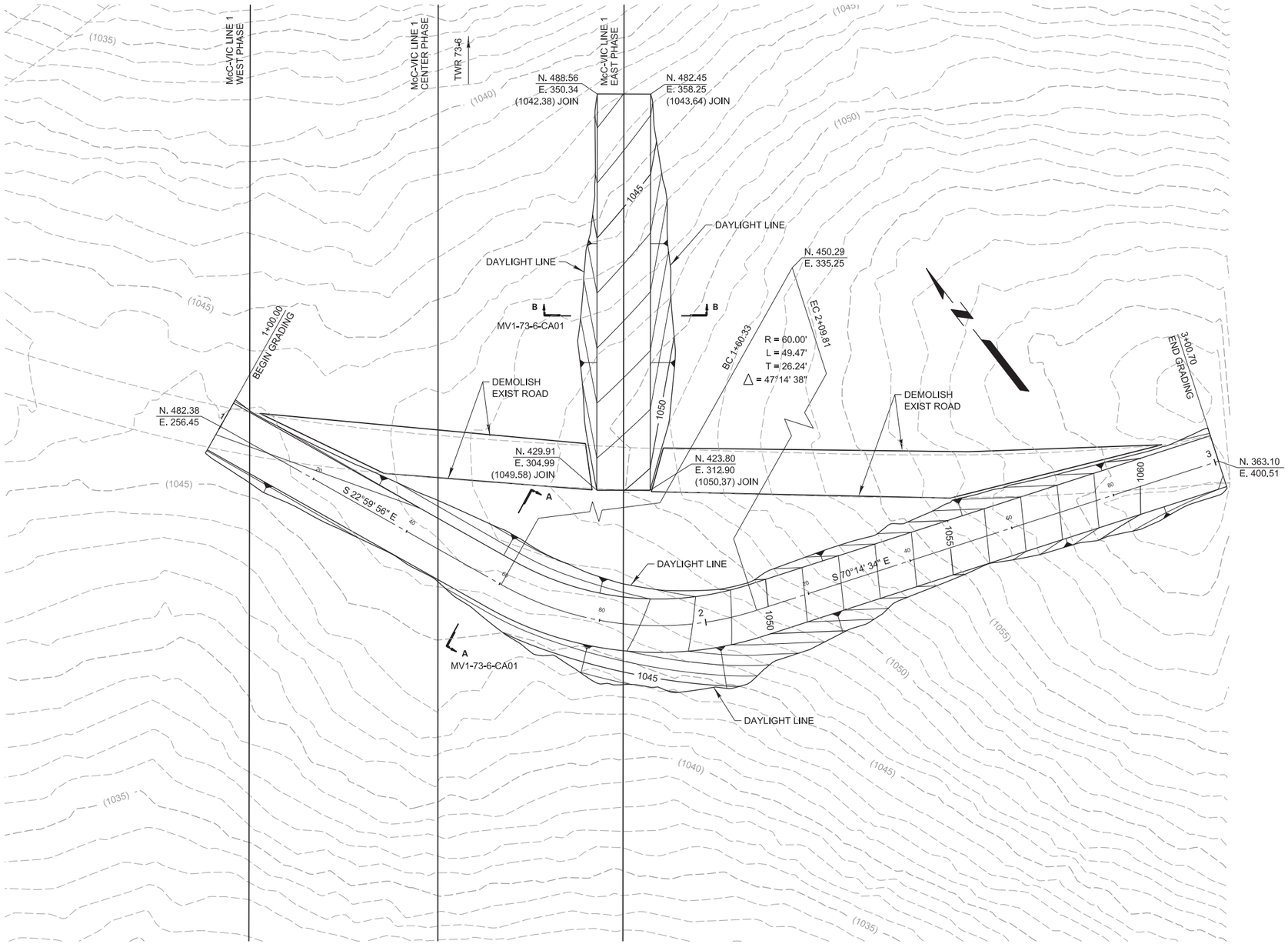


PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

DES. ENGR. J. FONG DRAFT. ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL J. Fong CE 69632	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	PROFILES, SECTIONS, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 73-6 POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES DRAWING NUMBER MV1-73-6-CA01 REV. 1

01-07-13

mv1-73-6.dgn



PLAN
SCALE: 1" = 10'

NOTE: SEE MV1-73-6-CA01 FOR PROFILES, GENERAL NOTES, ABBREVIATIONS, AND SECTIONS.

DES. ENGR. J. FONG
SUP. ENGR. J. PANG

REVISIONS

NO.	DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
J. Fong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN
GRADING
McCULLOUGH-VICTORVILLE LINE 1 TWR 73-6

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-73-6-CA02
REV.

12-17-12

mv1-73-6.dgn

GENERAL NOTES:

1. ADD 2323000 TO NORTHINGS AND 7105000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	102
FILL (CY)	102
IMPORT (CY)	0
EXPORT (CY)	0

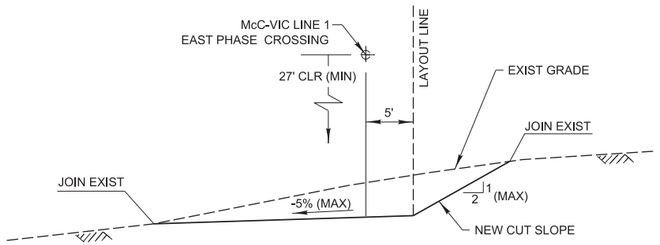
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

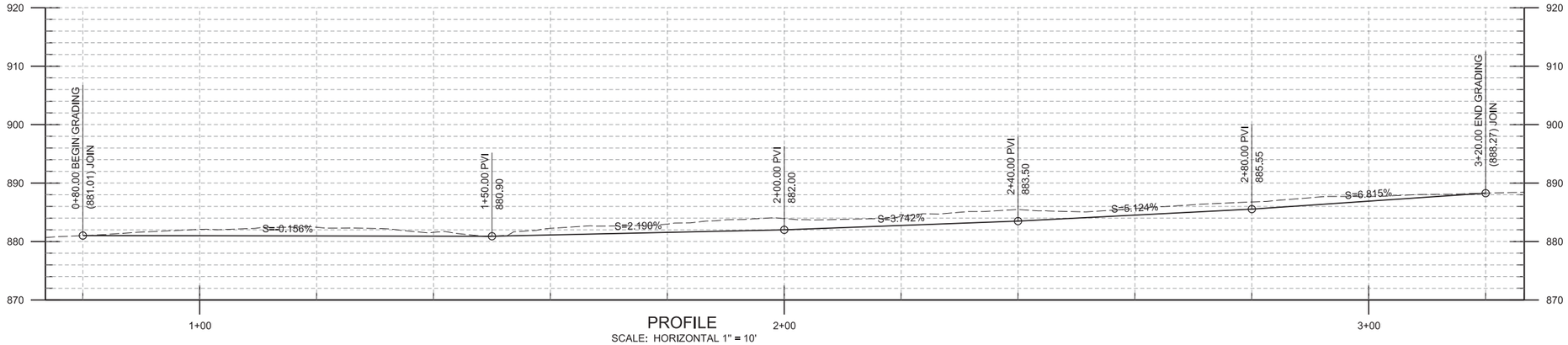
MAX WIDTH (FT)	29
MAX LENGTH (FT)	240
MAX DEPTH (FT)	2.25
AREA (SF)	3617

ABBREVIATIONS:

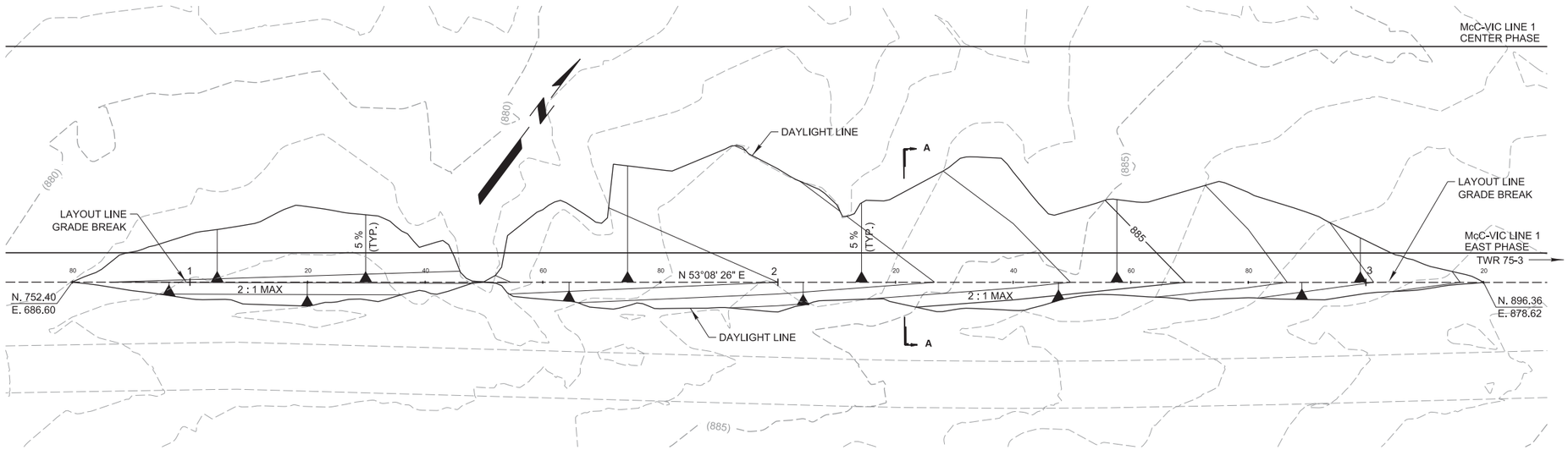
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
K	RATE OF VERTICAL CURVATURE
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL
TWR	TOWER



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PLAN
SCALE: 1" = 10'

| | | |

GENERAL NOTES:

1. ADD 2320000 TO NORTHINGS AND 7100000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	21
FILL (CY)	21
IMPORT (CY)	0
EXPORT (CY)	0

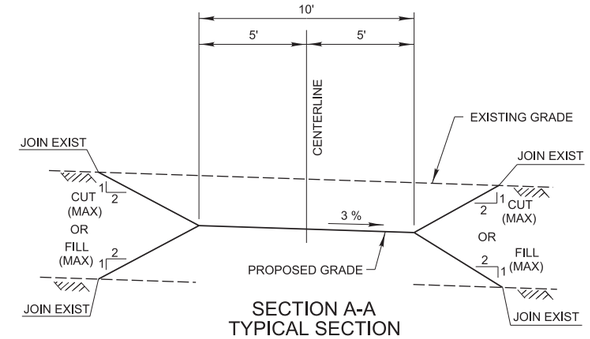
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

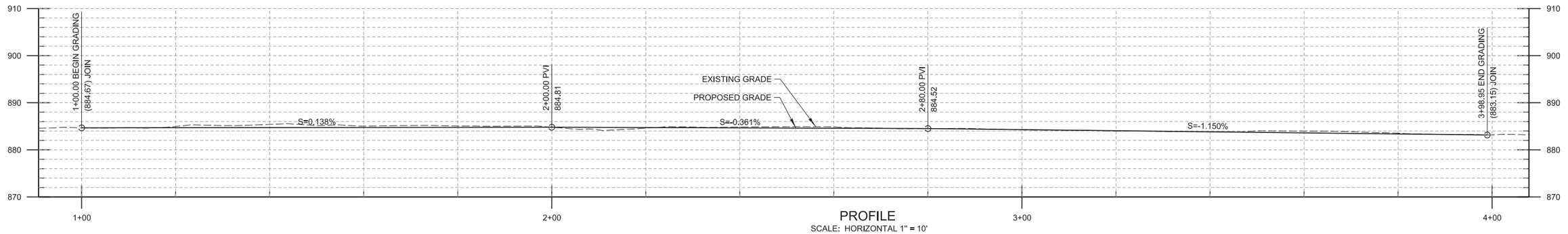
MAX WIDTH (FT)	15
MAX LENGTH (FT)	300
MAX DEPTH (FT)	1.25
AREA (SF)	3300

ABBREVIATIONS:

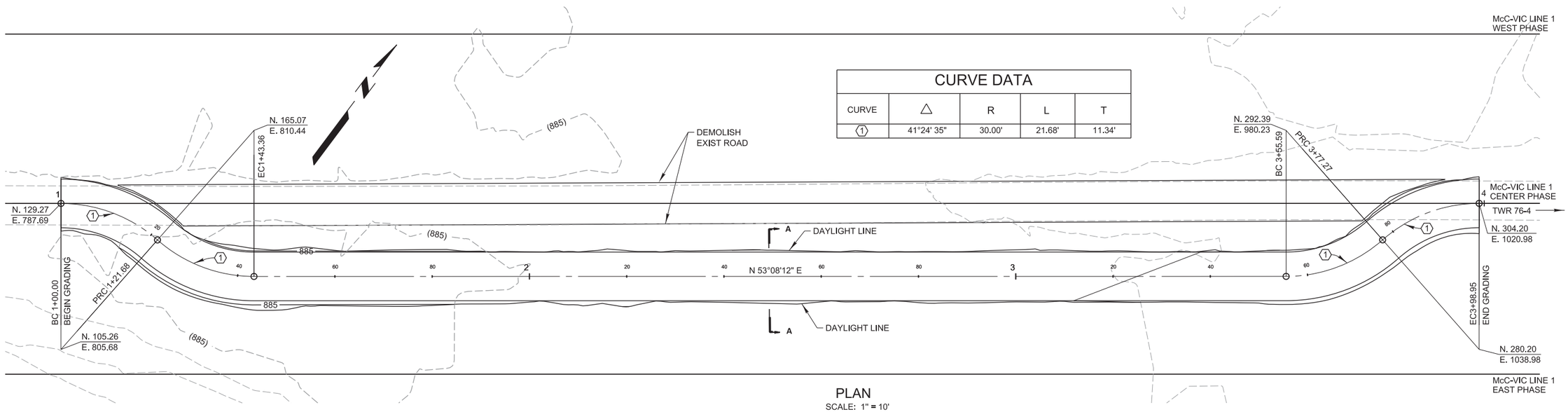
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
S	SLOPE
T	TANGENT
TYP.	TYPICAL
TWR	TOWER



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



CURVE DATA				
CURVE	△	R	L	T
①	41°24' 35"	30.00'	21.68'	11.34'

PLAN
SCALE: 1" = 10'

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

DES. ENGR. J. TONG
DFT. ENGR. J. PANG
SUP. ENGR. J. PANG

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Tong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILES, SECTIONS, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 76-4

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER MV1-76-4-CA01 REV. 1

01-07-13

mv1-76-4.dgn

GENERAL NOTES:

1. ADD 2000000 TO NORTHINGS AND 7000000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.
13. BLOCK OFF ROAD WITH EARTHEN BERM OF THE FOLLOWING DIMENSIONS: 12" HIGH, 48" WIDE BASE, AND 2:1 SIDE SLOPES.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	16
FILL (CY)	16
IMPORT (CY)	0
EXPORT (CY)	0

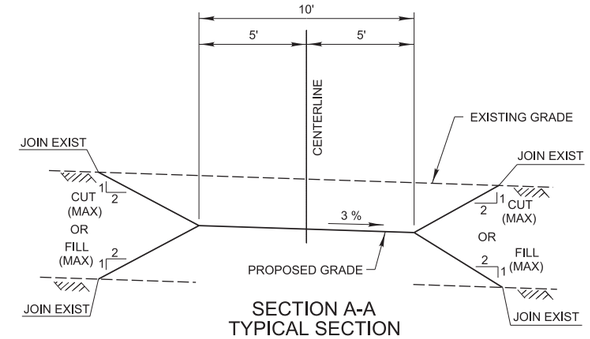
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

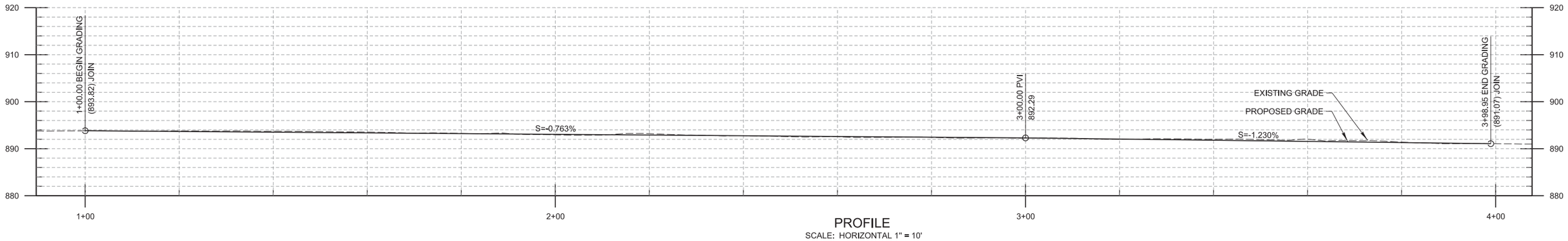
MAX WIDTH (FT)	13
MAX LENGTH (FT)	300
MAX DEPTH (FT)	1.25
AREA (SF)	3300

ABBREVIATIONS:

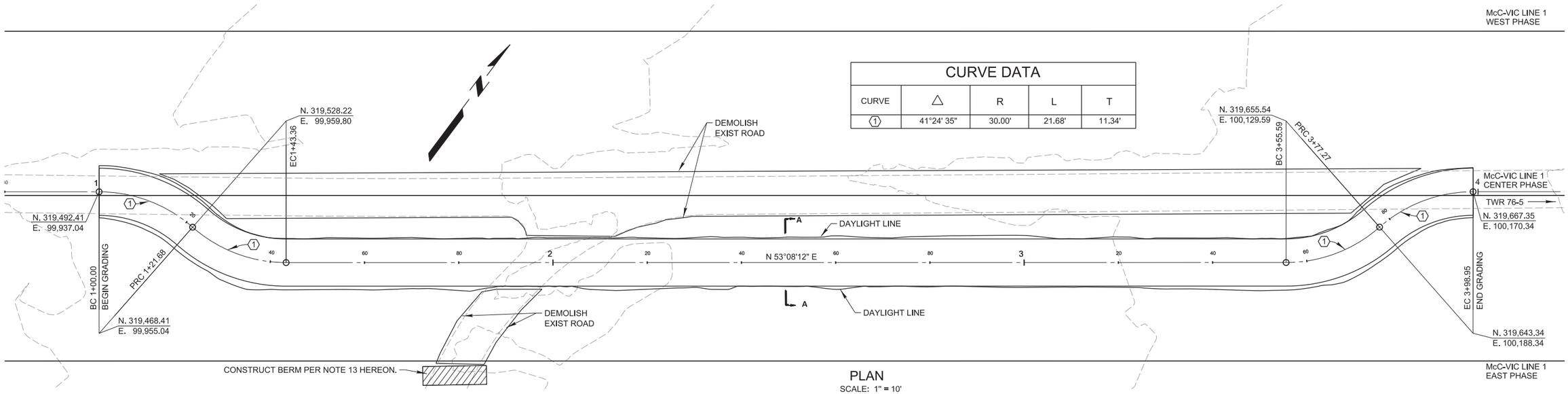
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
S	SLOPE
T	TANGENT
TYP.	TYPICAL
TWR	TOWER



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



CURVE DATA				
CURVE	△	R	L	T
①	41°24' 35"	30.00'	21.68'	11.34'

PLAN
SCALE: 1" = 10'

DES. ENGR. J. TONG
DFT. SUPERVISOR J. PANG

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Tong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILES, SECTIONS, AND NOTES GRADING
McCULLOUGH-VICTORVILLE LINE 1 TWR 76-5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-76-5-CA01
REV.

01-08-13

mv1-76-5.dgn

GENERAL NOTES:

1. ADD 2310000 TO NORTHINGS AND 7090000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	29
FILL (CY)	29
IMPORT (CY)	0
EXPORT (CY)	0

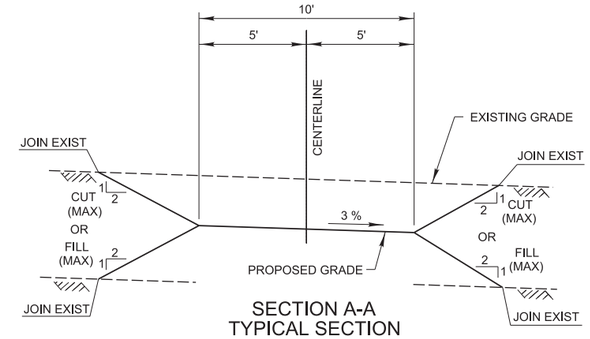
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

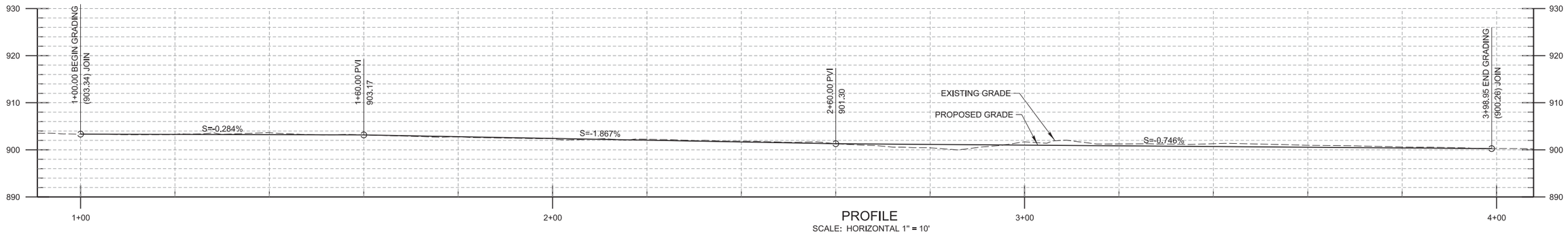
MAX WIDTH (FT)	15
MAX LENGTH (FT)	300
MAX DEPTH (FT)	1.25
AREA (SF)	3436

ABBREVIATIONS:

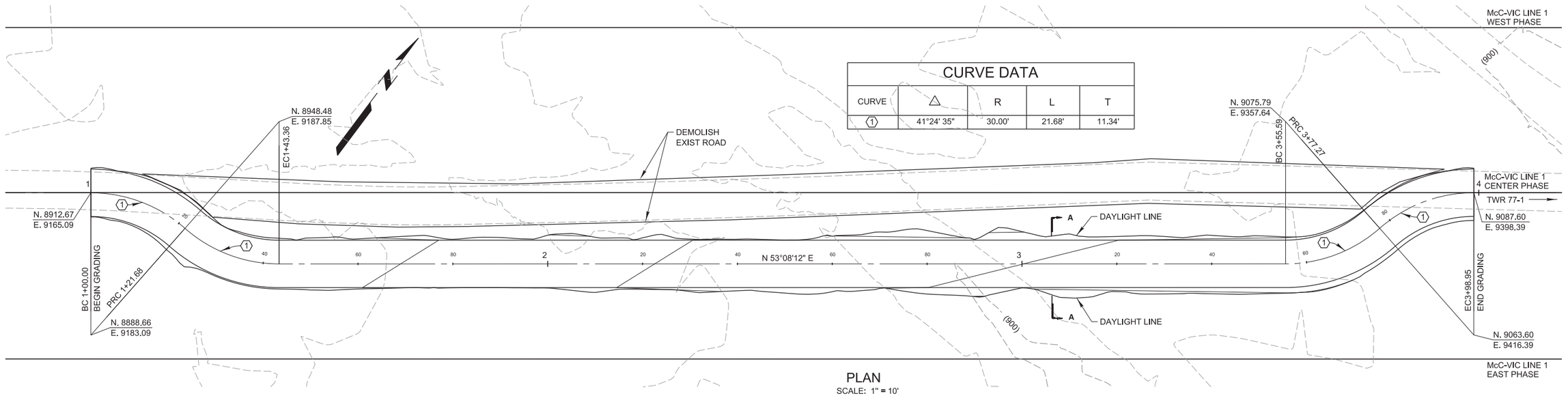
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
S	SLOPE
T	TANGENT
TYP.	TYPICAL
TWR	TOWER



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



CURVE DATA				
CURVE	△	R	L	T
1	41°24' 35"	30.00'	21.68'	11.34'

PLAN
SCALE: 1" = 10'

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Fong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

DES. ENGR. J. FONG
SUPV. ENGR. J. PANG

PLAN, PROFILE, SECTION, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 77-1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER: MV1-77-1-CA01
REV.: 1
01-07-13

mv1-77-1.dgn

GENERAL NOTES:

1. ADD 2310000 TO NORTHINGS AND 7090000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO NON DRIVING SURFACE OF ANY CUT OR FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. BLOCK OFF ABANDONED SECTION OF ROAD BY PLACING 1'-HIGH EARTHEN BERM, 4'-WIDE BASE, 2:1 SIDE SLOPES.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CONST	CONSTRUCTION
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES:

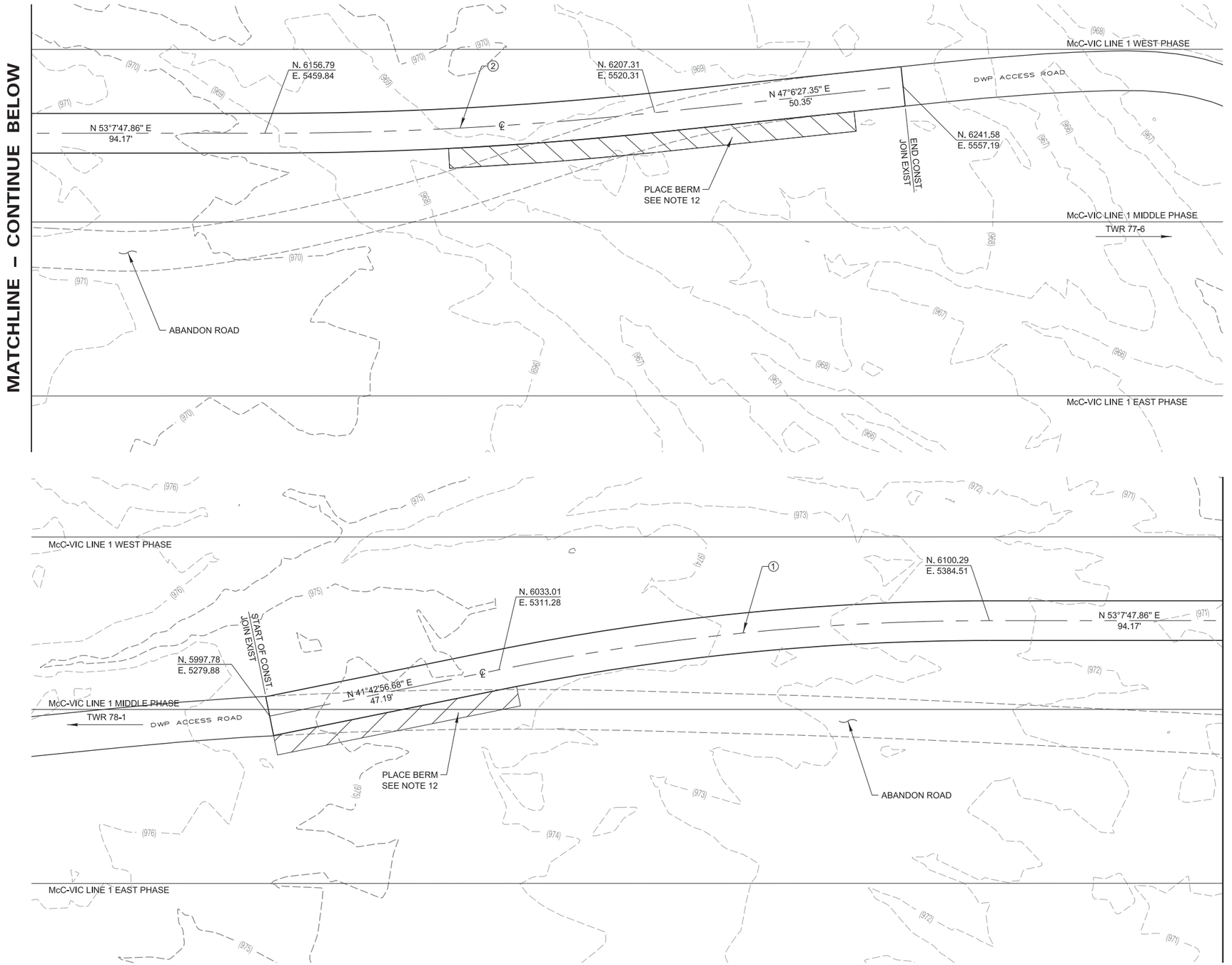
CUT (CY)	10
FILL (CY)	10
IMPORT (CY)	0
EXPORT (CY)	0

* PROFILE OF NEW ROAD TO FOLLOW EXISTING TOPOGRAPHY. CUT AND FILL QUANTITIES ARE NEGLIGIBLE.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	30
MAX LENGTH (FT)	330
MAX DEPTH (FT)	1
AREA (SF)	5000

	CURVE DATA				PI	
	R	L	T	Δ	N.	E.
①	500'	99.61'	49.97'	11°24'51.18"	6070.31	5344.53
②	750'	78.83'	39.45'	6°1'20.51"	6180.46	5491.40



PLAN
SCALE: 1" = 10'

* DWP PL 150' EAST AND WEST FROM CL OF TL TWR

REVISIONS						
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN GRADING McCULLOUGH–VICTORVILLE LINE 1 TWR 77–4
		DRAFTING RELEASE		DRAFTING RELEASE		
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL	POWER SYSTEM
		CHECKED BY		CHECKED BY		DEPARTMENT OF WATER AND POWER
		ENGINEERING APPROVAL		ENGINEERING APPROVAL		CITY OF LOS ANGELES
			FINAL APPROVAL RELEASE SIGNATURE DATE	CE 65962	FINAL APPROVAL RELEASE SIGNATURE DATE	DRAWING NUMBER MV1-77-4-CA01 REV. 1

DES. ENGR. J. PANG
SUP. ENGR. E. MALACON

12-28-12

DRA

mv1_77-4_78-1.dgn

GENERAL NOTES:

1. ADD 2310000 TO NORTHINGS AND 7090000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO NON DRIVING SURFACE OF ANY CUT OR FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. BLOCK OFF ABANDONED SECTION OF ROAD BY PLACING 1'-HIGH EARTHEN BERM, 4'-WIDE BASE, 2:1 SIDE SLOPES.
13. PLACE TOPSOIL FROM BLADED NEW ACCESS ROAD ONTO SURFACE OF ABANDONED ROAD TO ENCOURAGE RE-VEGETATION.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CONST	CONSTRUCTION
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	10
FILL (CY)	10
IMPORT (CY)	0
EXPORT (CY)	0

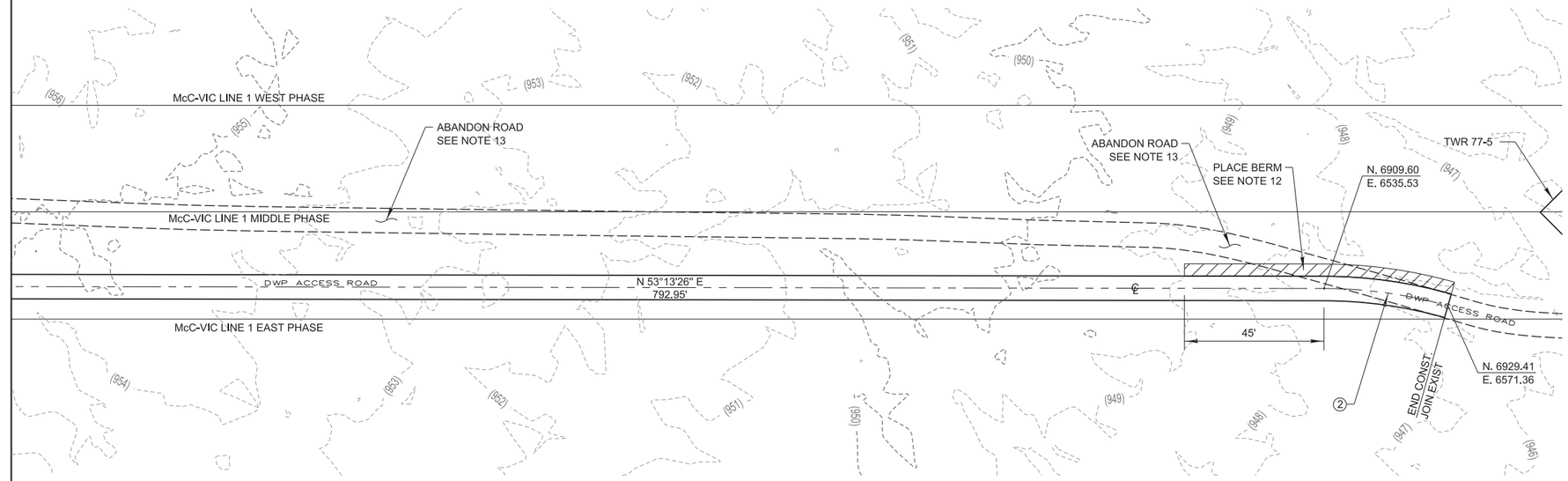
* PROFILE OF NEW ROAD TO FOLLOW EXISTING TOPOGRAPHY. CUT AND FILL QUANTITIES ARE NEGLIGIBLE.

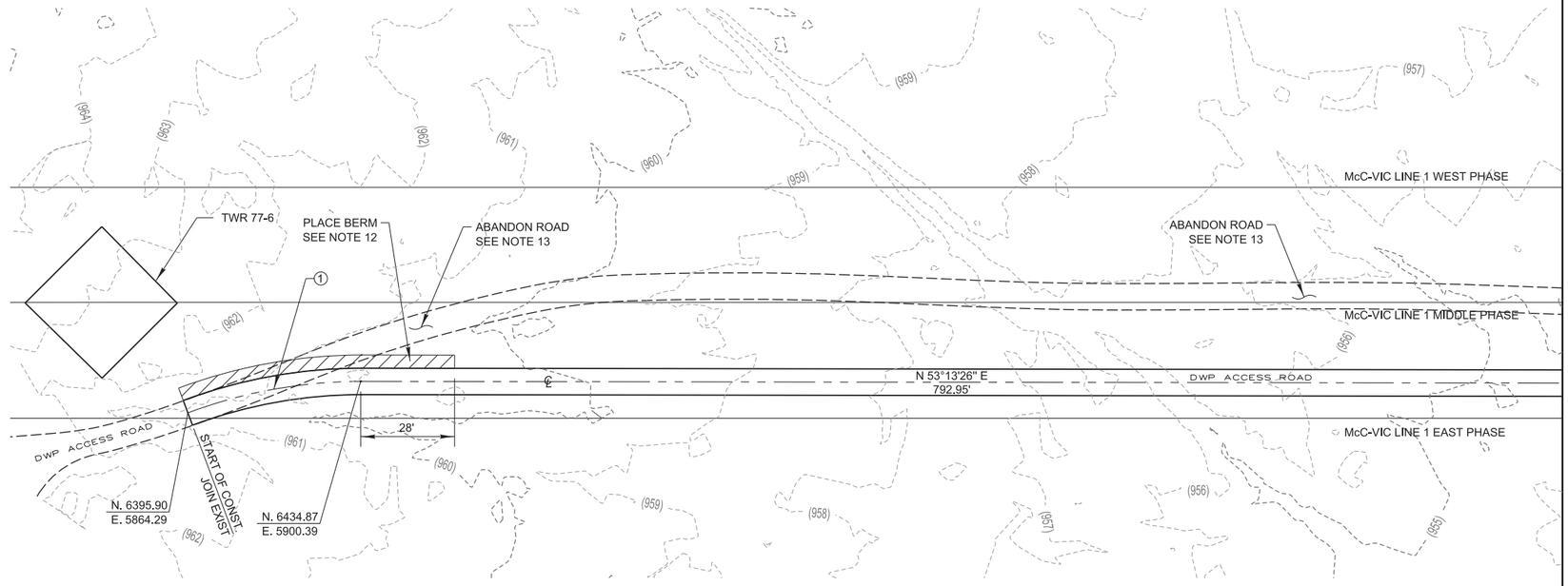
APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	50
MAX LENGTH (FT)	900
MAX DEPTH (FT)	1
AREA (SF)	21000

	CURVE DATA				PI	
	R	L	T	Δ	N.	E.
①	150'	53.95'	27.27'	20°36'31.52"	6418.87	5878.98
②	150'	41.07'	20.67'	15°41'17.40"	6921.97	6552.08

MATCHLINE – CONTINUE BELOW





MATCHLINE – CONTINUE ABOVE

PLAN
SCALE: 1" = 20'

* DWP PL 150' EAST AND WEST FROM CL OF TL TWR

DES. ENGR. J. PANG
SUP. ENGR. E. MALACON

REVISIONS NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J Pang CE 65962

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN GRADING McCULLOUGH–VICTORVILLE LINE 1 TWR 77–5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER **MV1-77-5-CA01** REV. 0

02-22-13

DRA

mv1_77-5_ca01.dgn

GENERAL NOTES:

1. ADD 2310000 TO NORTHINGS AND 7090000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO NON DRIVING SURFACE OF ANY CUT OR FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. BLOCK OFF ABANDONED SECTION OF ROAD BY PLACING 1'-HIGH EARTHEN BERM, 4'-WIDE BASE, 2:1 SIDE SLOPES.
13. PLACE TOPSOIL FROM BLADED NEW ACCESS ROAD ONTO SURFACE OF ABANDONED ROAD TO ENCOURAGE RE-VEGETATION.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CONST	CONSTRUCTION
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES:

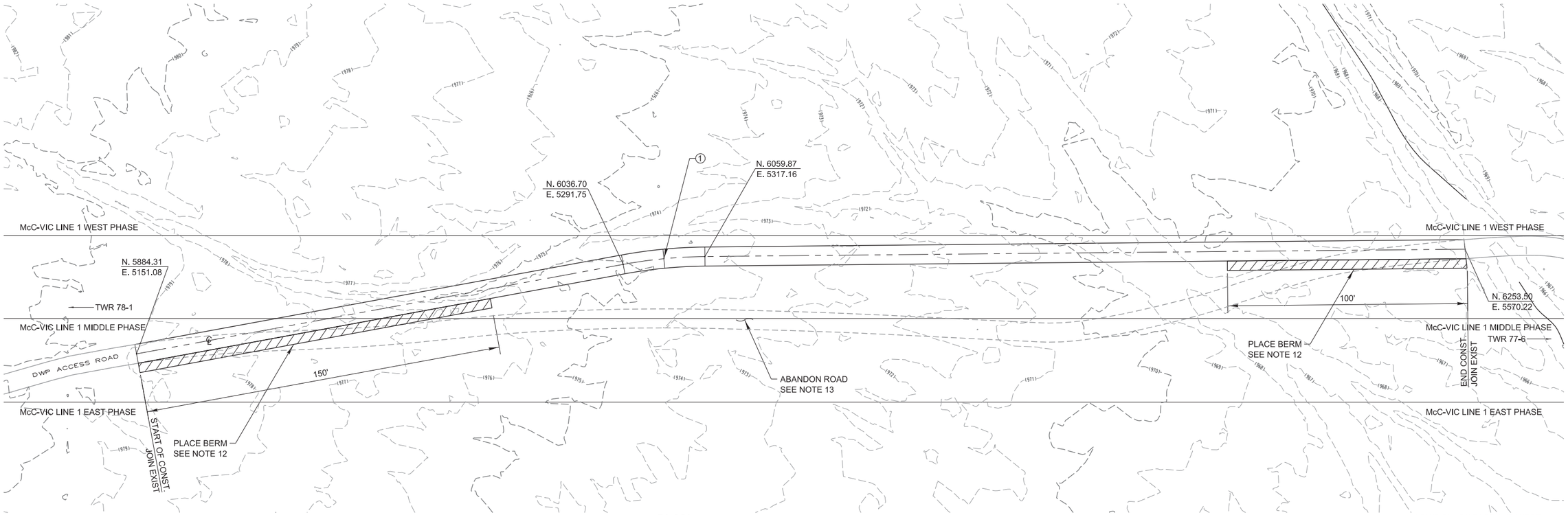
CUT (CY)	10
FILL (CY)	10
IMPORT (CY)	0
EXPORT (CY)	0

* PROFILE OF NEW ROAD TO FOLLOW EXISTING TOPOGRAPHY. CUT AND FILL QUANTITIES ARE NEGLIGIBLE.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	50
MAX LENGTH (FT)	560
MAX DEPTH (FT)	1
AREA (SF)	17000

CURVE DATA					PI	
	R	L	T	Δ	N.	E.
①	200'	34.44'	17.26'	9°51'58.07"	6049.38	5303.45



PLAN
SCALE: 1" = 20'

* DWP PL 150' EAST AND WEST FROM CL OF TL TWR

DES. ENGR. J. PANG
SUP. ENGR. E. MALACON

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Pang CE 65962

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN
GRADING
McCULLOUGH–VICTORVILLE LINE 1 TWR 77–6

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-77-6-CA01
REV. 0

03-26-13

DRA

mv1_77-6_ca01.dgn

GENERAL NOTES:

1. ADD 2313000 TO NORTHINGS AND 7092000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	34
FILL (CY)	34
IMPORT (CY)	0
EXPORT (CY)	0

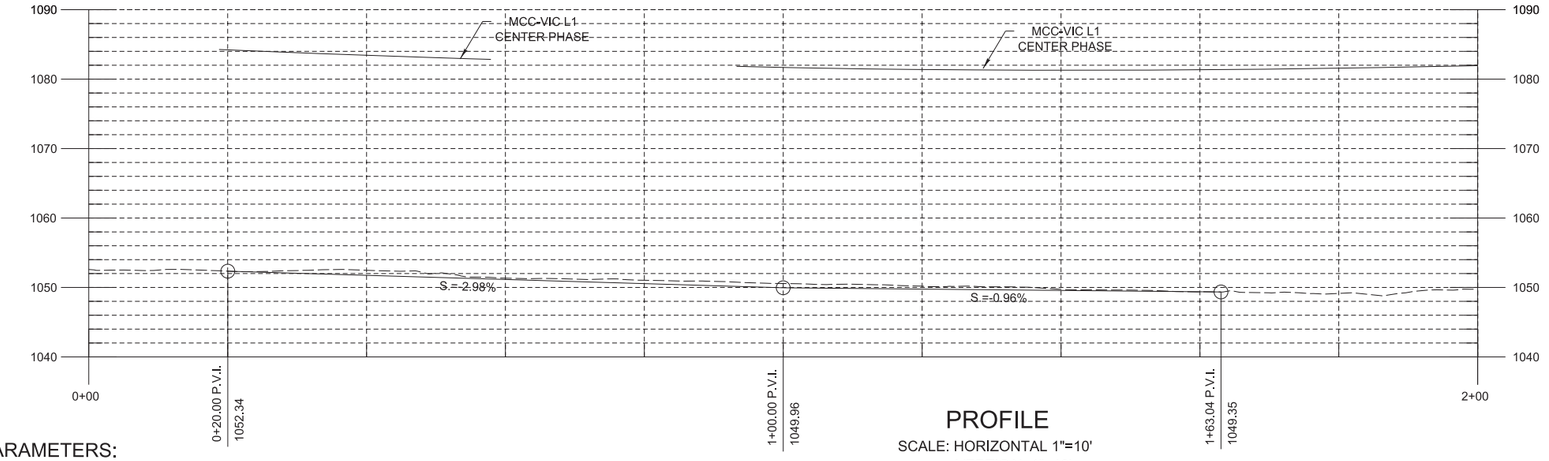
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

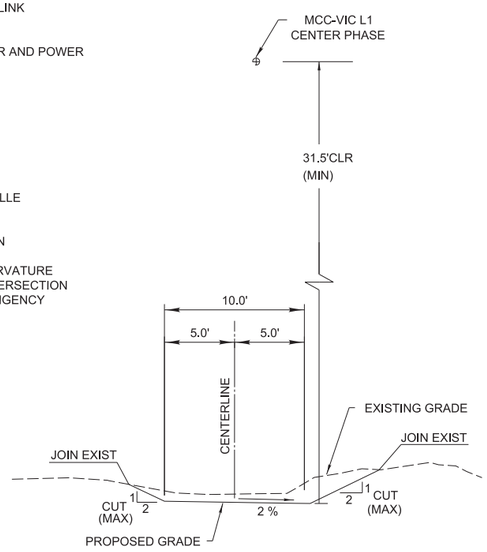
MAX WIDTH (FT)	22
MAX LENGTH (FT)	141
MAX DEPTH (FT)	1.6
AREA (SF)	1976

ABBREVIATIONS:

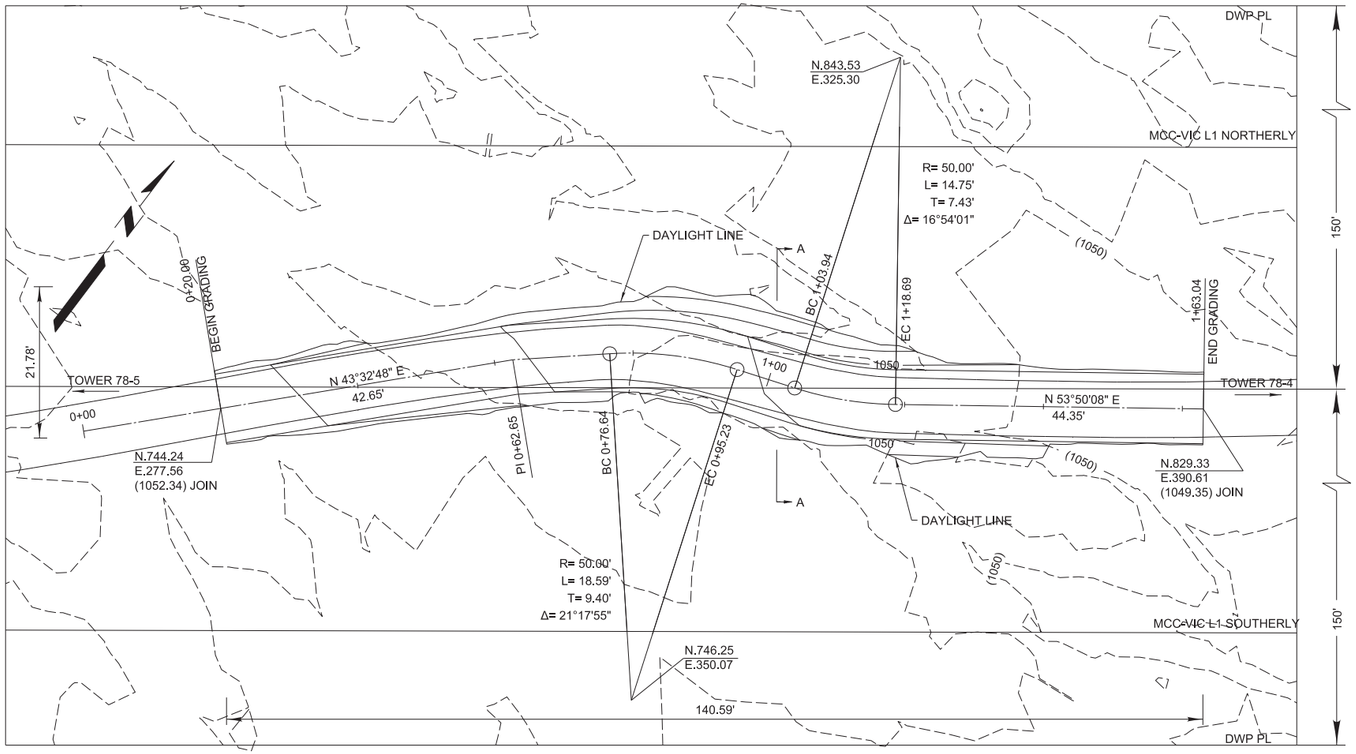
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
MCC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1"=10'

REVISIONS NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
T. Mercer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

DES. ENGR. T. MERCER
PROJECT ENGR. J. PANG

PLAN, PROFILE, AND SECTIONS GRADING MCC-VICTORVILLE LINE 1 TWR 78-4, 78-5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

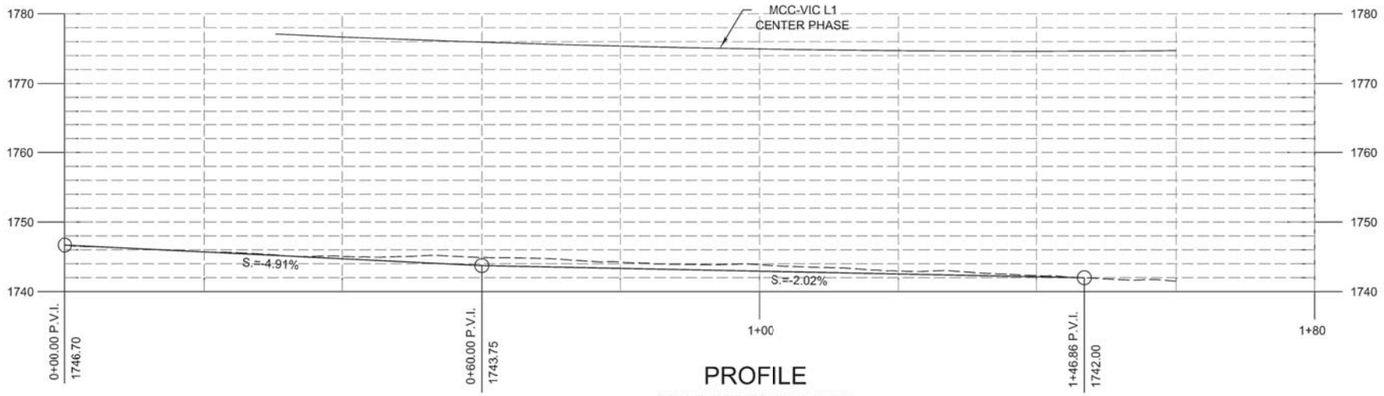
DRAWING NUMBER
MV1-78-4-CA01
REV.

12-03-12

MVL1-78-4.dgn

GENERAL NOTES:

1. ADD 2081000 TO NORTHINGS AND 6823000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NC MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.



PROFILE

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	40
FILL (CY)	40
IMPORT (CY)	0
EXPORT (CY)	0

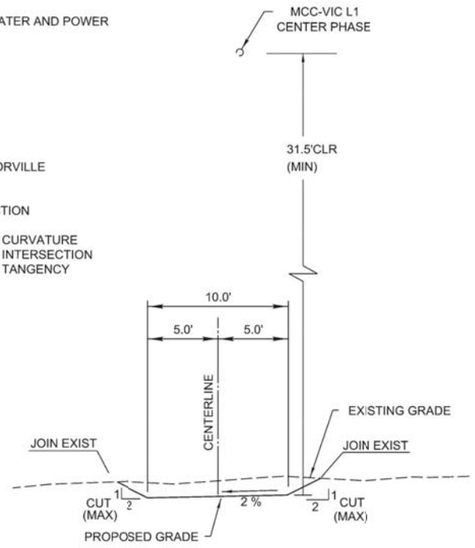
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	16.5
MAX LENGTH (FT)	147
MAX DEPTH (FT)	1.3
AREA (SF)	1996

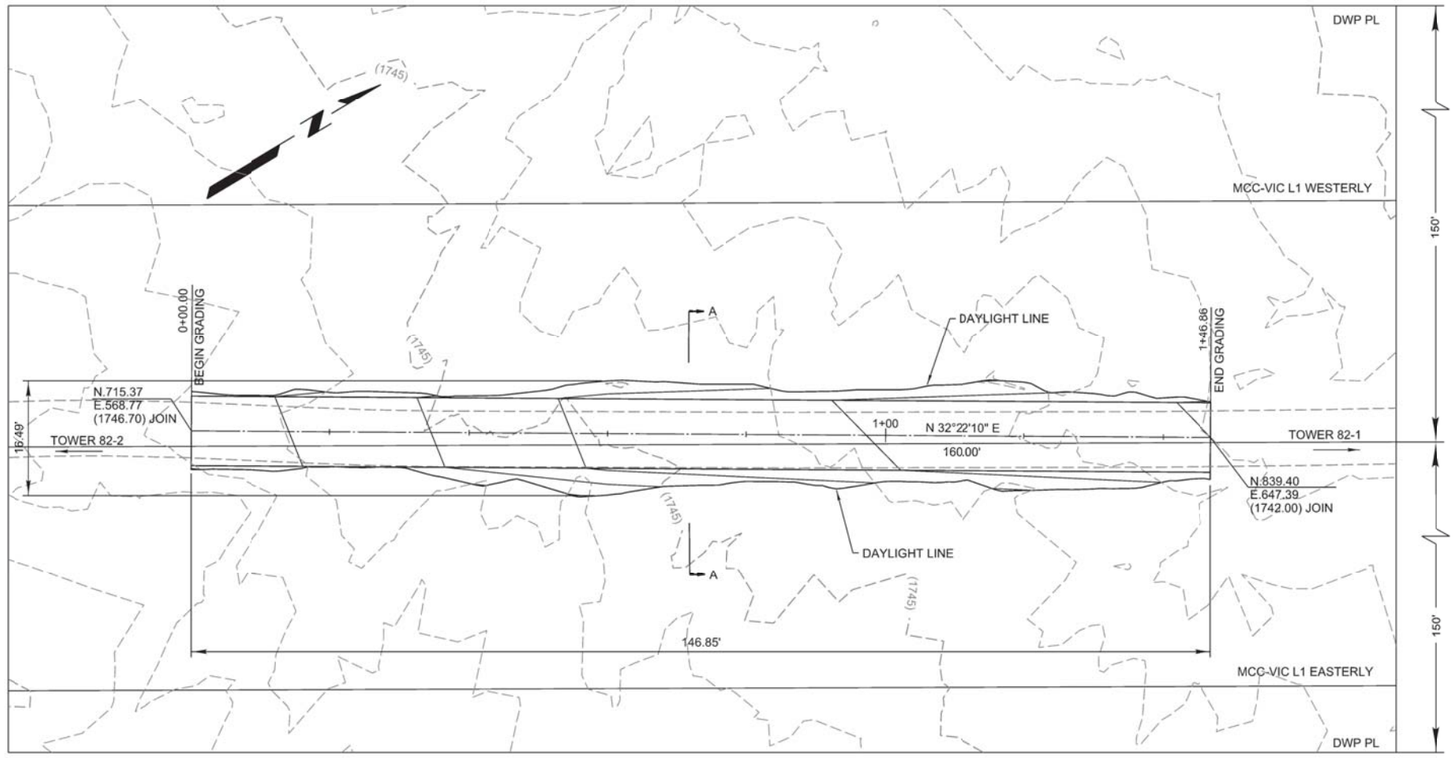
ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
MCC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION

NO SCALE



PLAN

SCALE: 1"=10'

DES. ENGR. E.J. LOCKER SUP. DESIGN. J. PANG	REVISIONS NO. DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL T. Mercer CE 70713	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE DATE	PLAN, PROFILE, AND SECTIONS GRADING MCC-VICTORVILLE LINE 1 TWR 82-1, 82-2 POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES	DRAWING NUMBER MV1-82-1-CA01 REV.

11-30-12

MVL1-82-1.dgn

GENERAL NOTES:

1. ADD 2290000 TO NORTHINGS AND 7071000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL, UNLESS NOTED OTHERWISE .
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. EXISTING TERRAIN CONTAINS NUMEROUS ROCK OUTCROPPING WHICH REQUIRE REMOVAL WITHIN THE GRADING AREA LIMITS.
13. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	230
FILL (CY)	230
IMPORT (CY)	0
EXPORT (CY)	0

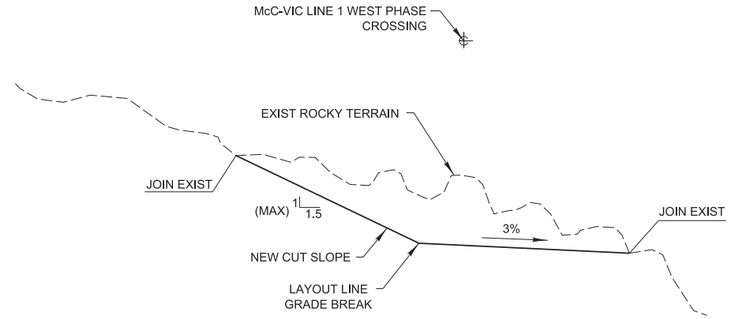
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

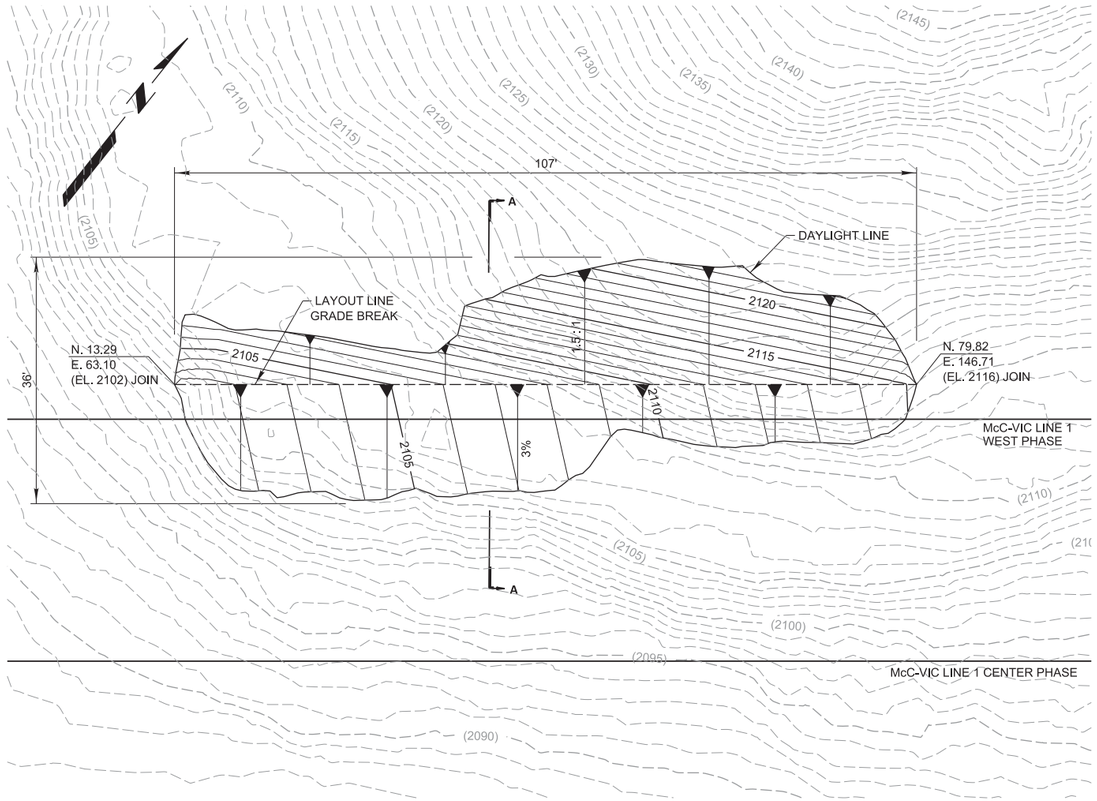
MAX WIDTH (FT)	36
MAX LENGTH (FT)	107
MAX DEPTH (FT)	4
AREA (SF)	2736

ABBREVIATIONS:

CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
S	SLOPE
SG	STRAIGHT GRADE
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

DES. ENGR. J. TONG DFT. SUPV. ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number ____ DRAFTING RELEASE DRAWN BY ____ CHECKED BY ____ ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY ____ CHECKED BY ____ ENGINEERING APPROVAL J. Tong CE 69632	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	PLAN, SECTION, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 84-5	01-17-13

DWP POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER MV1-84-5-CA01 REV.

mv1-84-5.dgn

GENERAL NOTES:

1. ADD 2288000 TO NORTHINGS AND 7068000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	382
FILL (CY)	382
IMPORT (CY)	0
EXPORT (CY)	0

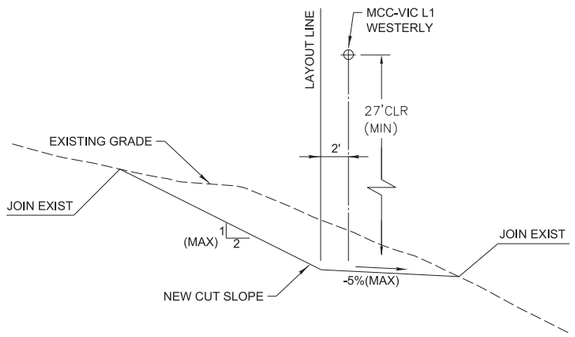
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

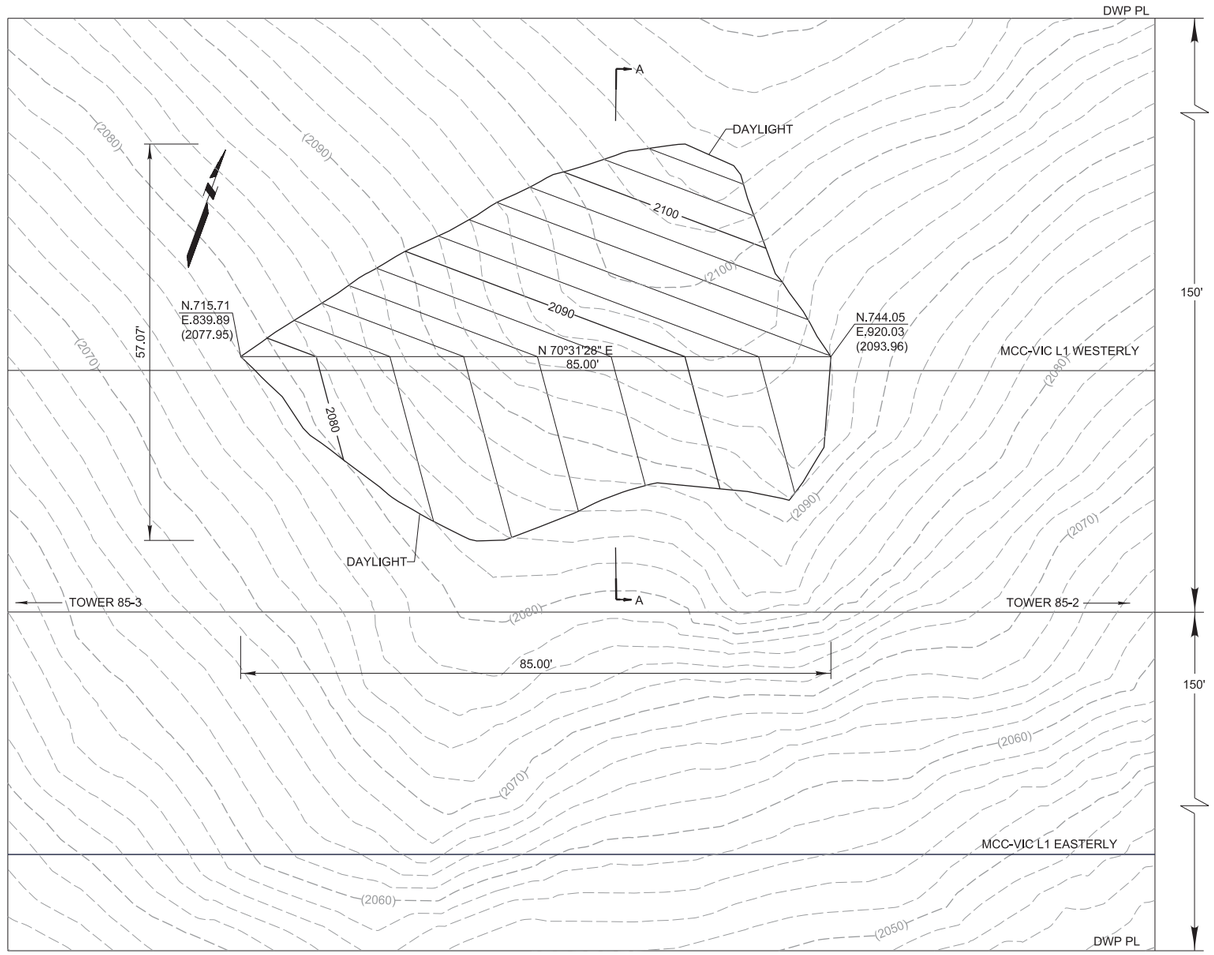
MAX WIDTH (FT)	57
MAX LENGTH (FT)	85
MAX DEPTH (FT)	7.0
AREA (SF)	3356

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS

NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
T. Alcocer CE 7073
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 85–2, 85–3

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-85-2-CA01
REV.

DRA

MV1-85-2-CA01.dgn

GENERAL NOTES:

1. ADD 2288000 TO NORTHINGS AND 7067000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	14
FILL (CY)	14
IMPORT (CY)	0
EXPORT (CY)	0

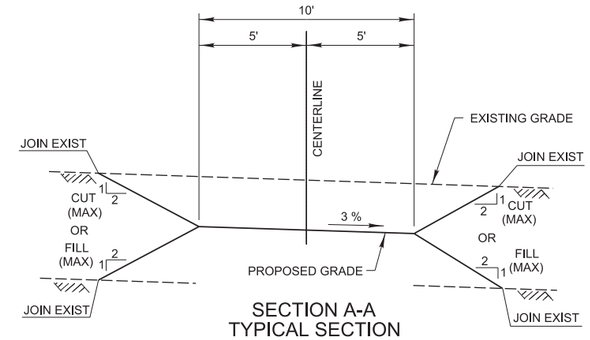
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

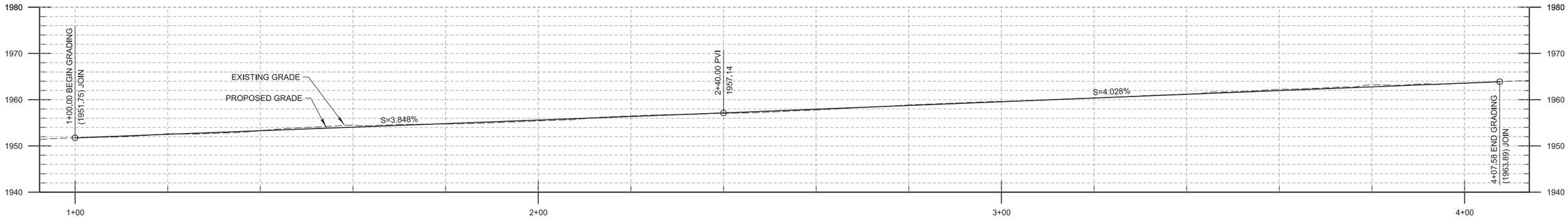
MAX WIDTH (FT)	15
MAX LENGTH (FT)	310
MAX DEPTH (FT)	1.25
AREA (SF)	3322

ABBREVIATIONS:

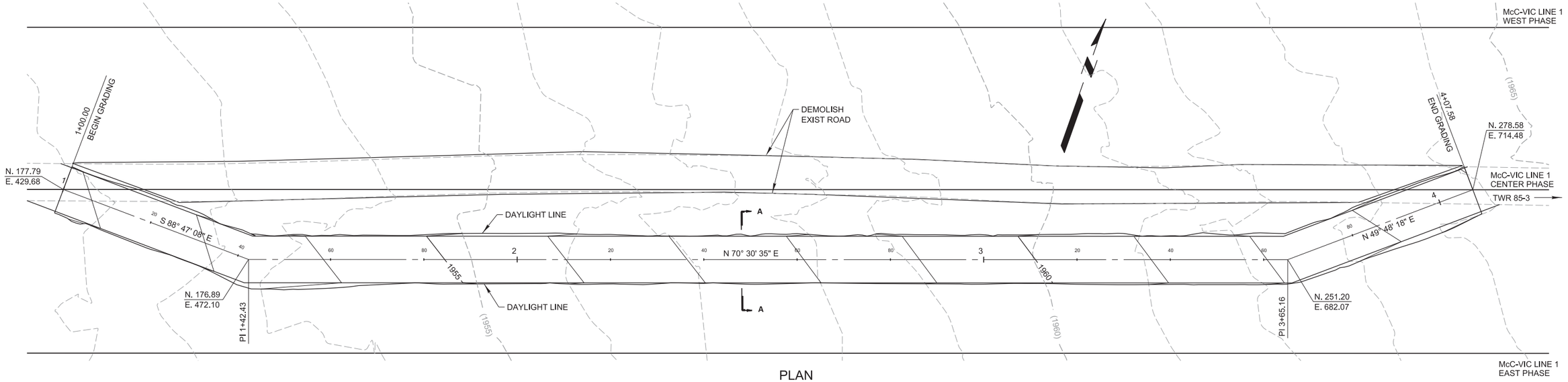
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
S	SLOPE
TYP.	TYPICAL
TWR	TOWER



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PLAN
SCALE: 1" = 10'

DES. ENGR. J. TONG
SUP. ENGR. J. PANG
ENGR. J. PANG

REVISIONS NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Tong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, SECTION, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 85-3

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-85-3-CA01

REV.

01-23-13

mv1-85-3.dgn

GENERAL NOTES:

1. ADD 2287000 TO NORTHINGS AND 7065000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	19
FILL (CY)	19
IMPORT (CY)	0
EXPORT (CY)	0

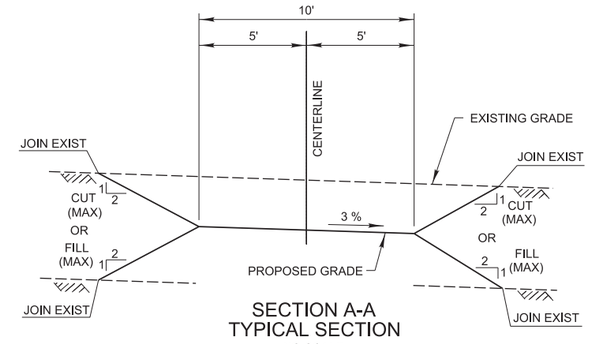
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

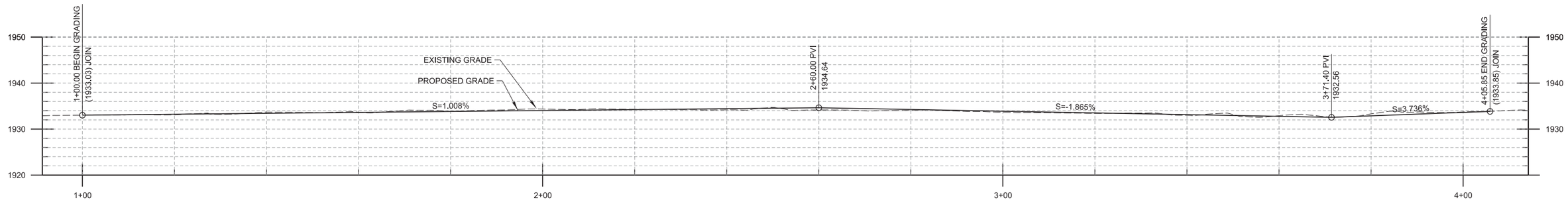
MAX WIDTH (FT)	15
MAX LENGTH (FT)	310
MAX DEPTH (FT)	1.25
AREA (SF)	3300

ABBREVIATIONS:

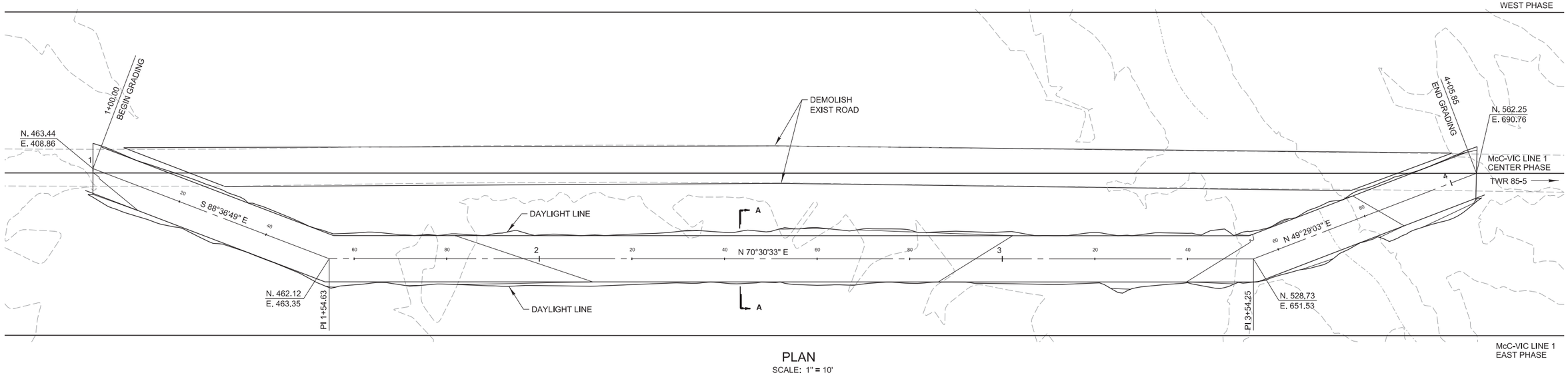
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
S	SLOPE
TYP.	TYPICAL
TWR	TOWER



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PLAN
SCALE: 1" = 10'

REVISIONS NO.	DESCRIPTION

DES. ENGR. J. TONG
DFT. SUPERVISOR J. PANG

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Tong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, SECTION, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 85-5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-85-5-CA01
REV.

01-24-13

mv1-85-5.dgn

GENERAL NOTES:

1. ADD 2287000 TO NORTHINGS AND 7064000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	18
FILL (CY)	18
IMPORT (CY)	0
EXPORT (CY)	0

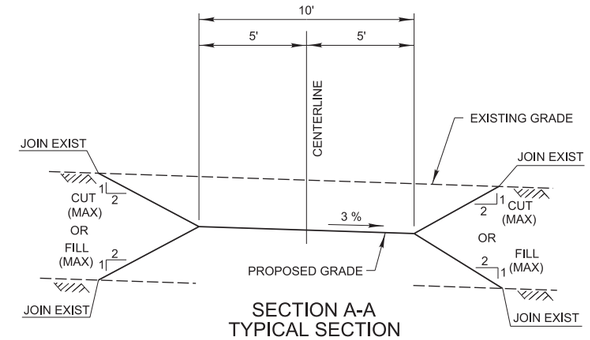
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

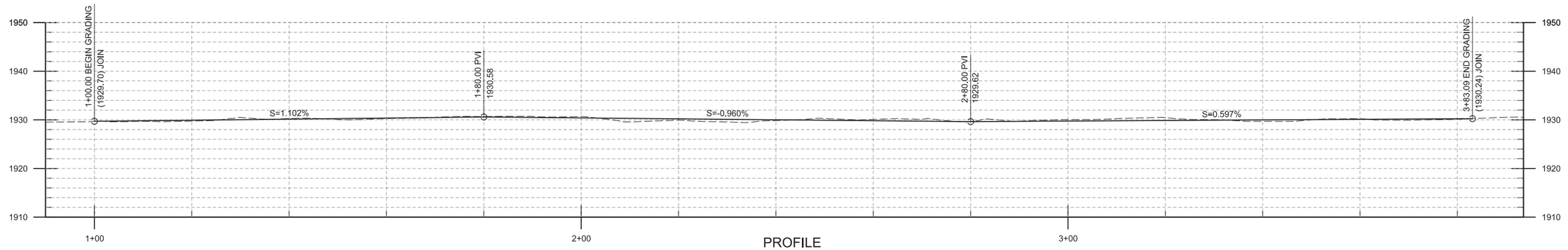
MAX WIDTH (FT)	15
MAX LENGTH (FT)	285
MAX DEPTH (FT)	1.25
AREA (SF)	3222

ABBREVIATIONS:

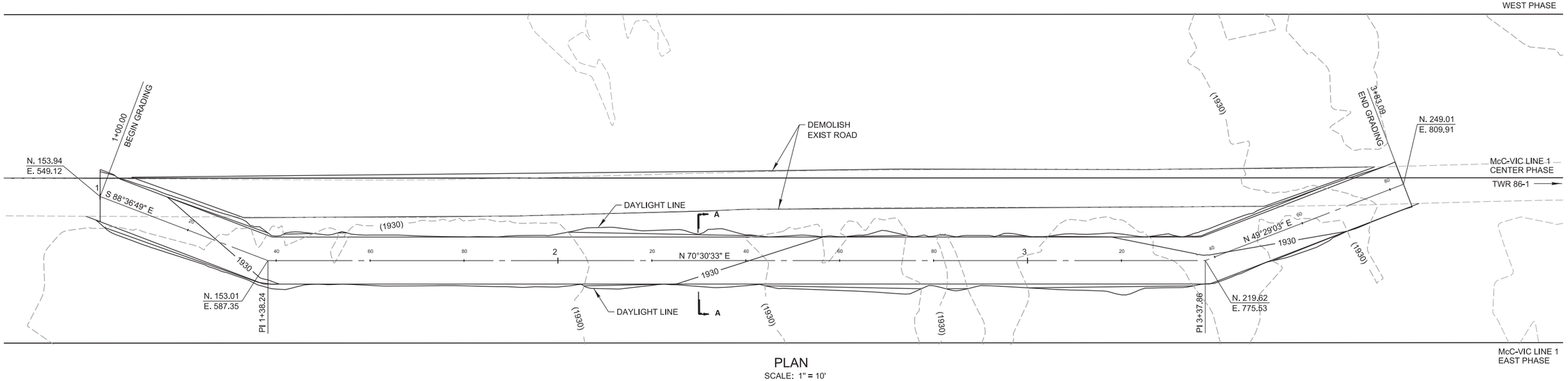
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
S	SLOPE
TYP.	TYPICAL
TWR	TOWER



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PLAN
SCALE: 1" = 10'

DES. ENGR. J. TONG
DRFT. ENGR. J. PANG

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Tong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, SECTION, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 86-1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-86-1-CA01
REV.

01-28-13

mv1-86-1.dgn

GENERAL NOTES:

1. ADD 2286000 TO NORTHINGS AND 7063000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	14
FILL (CY)	14
IMPORT (CY)	0
EXPORT (CY)	0

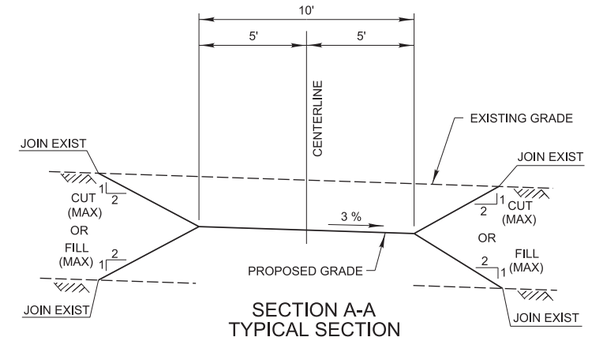
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

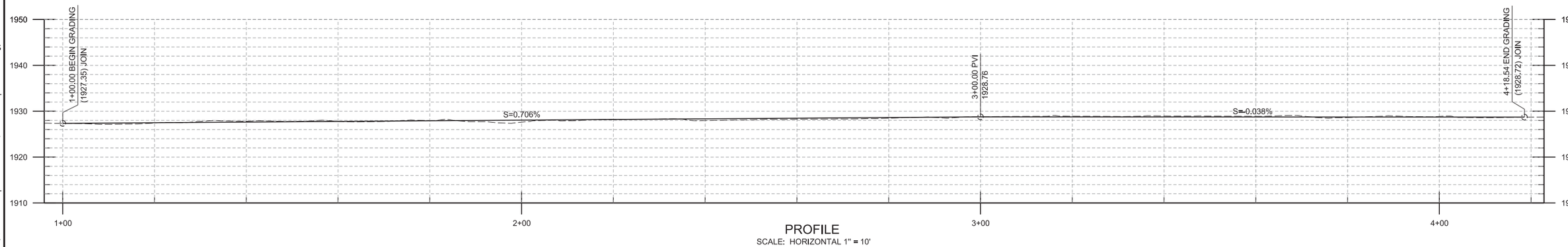
MAX WIDTH (FT)	15
MAX LENGTH (FT)	320
MAX DEPTH (FT)	1.25
AREA (SF)	3511

ABBREVIATIONS:

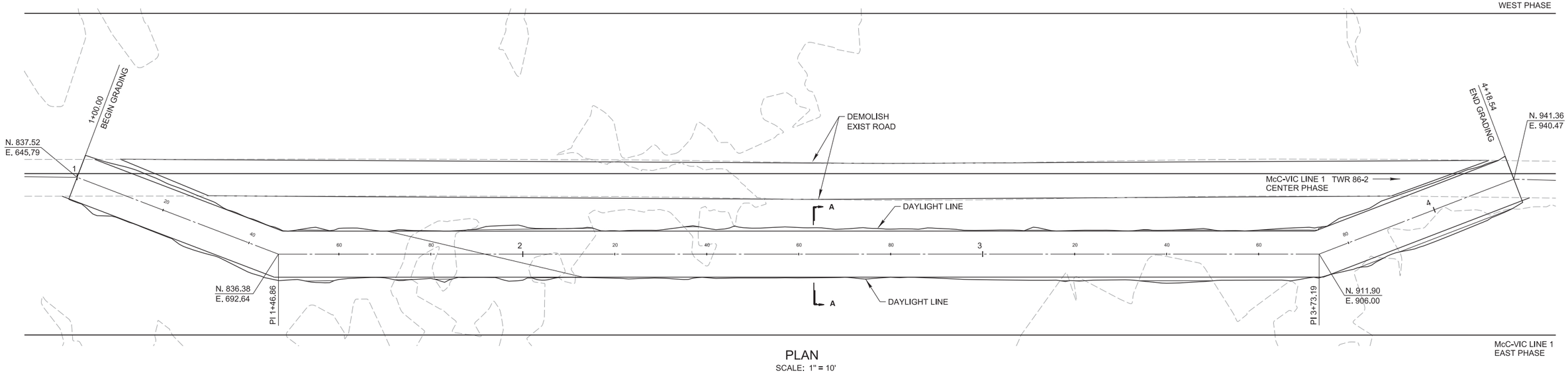
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
S	SLOPE
TYP.	TYPICAL
TWR	TOWER



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PLAN
SCALE: 1" = 10'

DES. ENGR. J. TONG DFT. ENGR. J. PANG CHK. ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL J. Tong CE 69632	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	PLAN, PROFILE, SECTION, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 86-2 POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES DRAWING NUMBER MV1-86-2-CA01 REV.

02-05-13

mv1-86-2.dgn

GENERAL NOTES:

1. ADD 2280000 TO NORTHINGS AND 7060000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	15
FILL (CY)	15
IMPORT (CY)	0
EXPORT (CY)	0

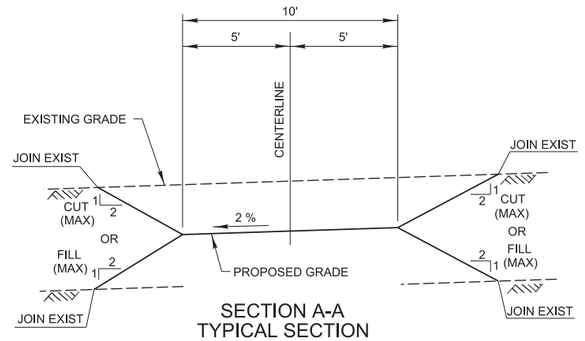
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

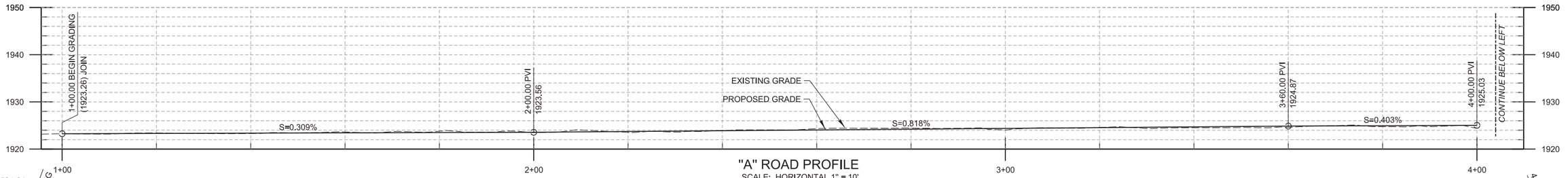
MAX WIDTH (FT)	15
MAX LENGTH (FT)	420
MAX DEPTH (FT)	1.25
AREA (SF)	4425

ABBREVIATIONS:

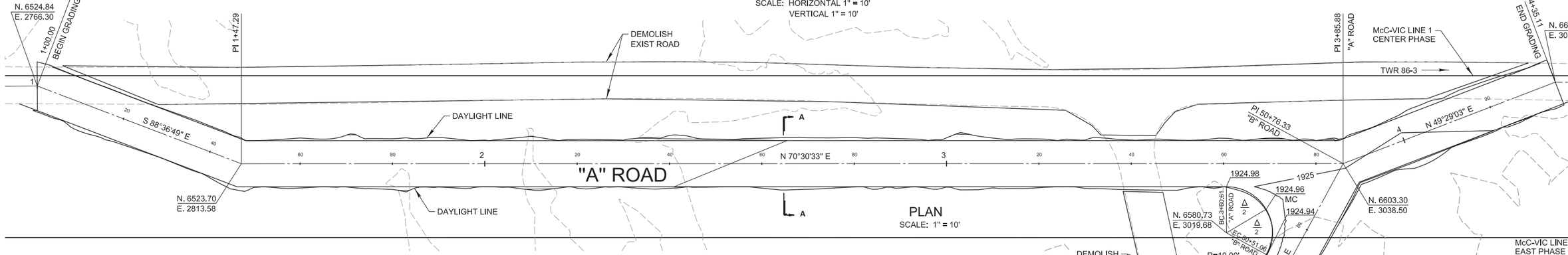
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
R	RADIUS
S	SLOPE
T	TANGENT
TYP.	TYPICAL
TWR	TOWER



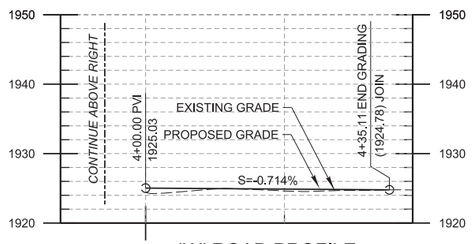
SECTION A-A
TYPICAL SECTION
NO SCALE



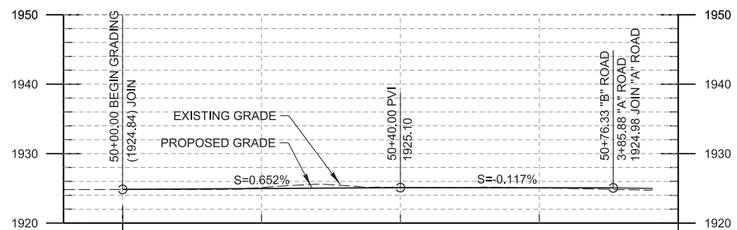
"A" ROAD PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PLAN
SCALE: 1" = 10'



"A" ROAD PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



"B" ROAD PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

DES. ENGR. J. TONG DRFT. ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL J. Tong CE 69632	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	PLAN, PROFILES, SECTION, AND NOTES GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 86-3 POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES	DRAWING NUMBER MV1-86-3-CA01	REV.

02-11-13

mv1-86-3.dgn

GENERAL NOTES:

1. ADD 2280000 TO NORTHINGS AND 7060000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. DWP RIGHT-OF-WAY LIMITS ARE 150 FEET EAST AND WEST OF CENTER PHASE ALIGNMENT.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	96
FILL (CY)	96
IMPORT (CY)	0
EXPORT (CY)	0

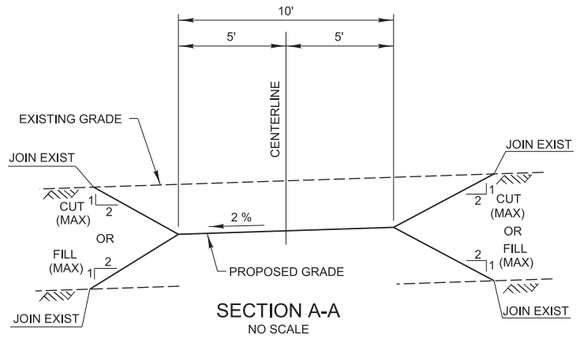
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

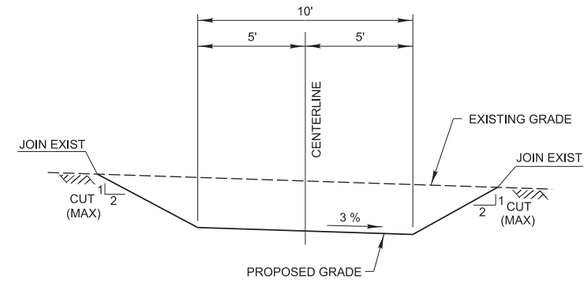
MAX WIDTH (FT)	30
MAX LENGTH (FT)	350
MAX DEPTH (FT)	2
AREA (SF)	7708

ABBREVIATIONS:

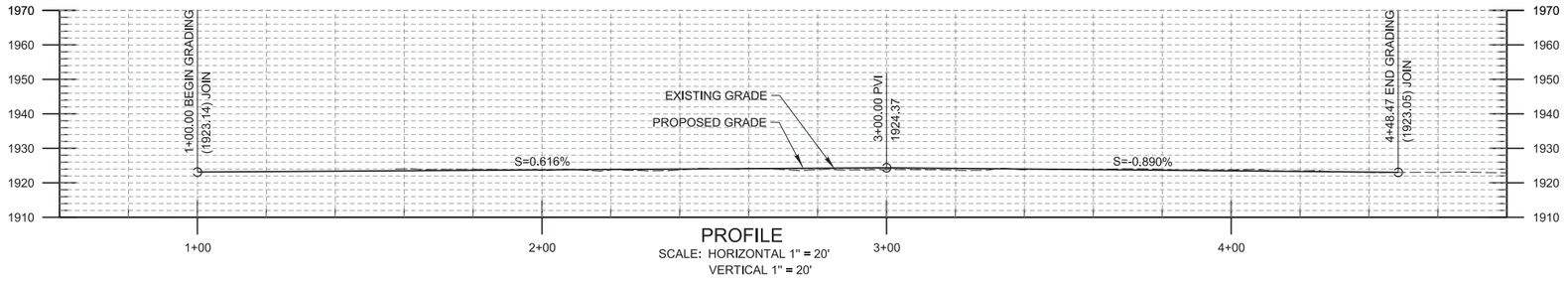
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
S	SLOPE
TYP.	TYPICAL
TWR	TOWER



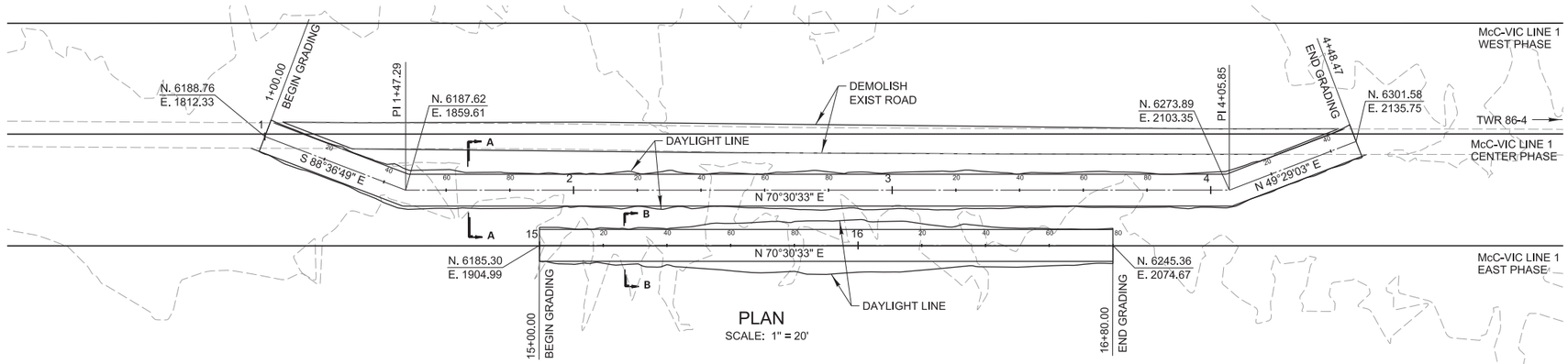
SECTION A-A
NO SCALE



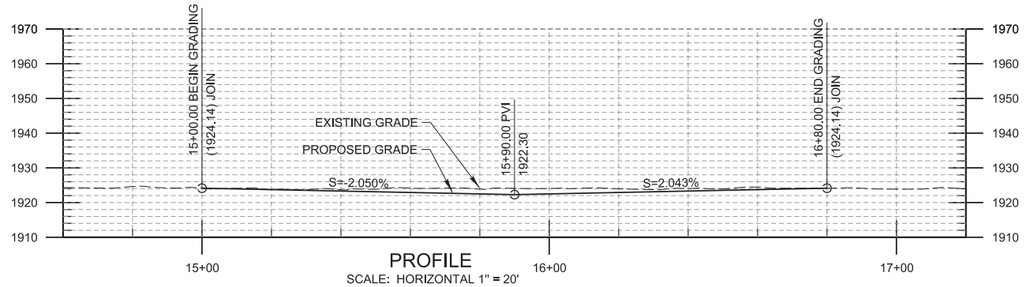
SECTION B-B
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 20'



PLAN
SCALE: 1" = 20'



PROFILE
SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 20'

DES. ENGR. J. TONG	REVISIONS NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	OWNER/AGENT APPROVAL
DRFT. ENGR. J. FANG			DRAFTING RELEASE		SCALE: (UNLESS NOTED) AS NOTED
			DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAFTING RELEASE
			CHECKED BY		DRAWN BY
			ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE	CHECKED BY
					ENGINEERING APPROVAL
					CE 69632
					DRAWING RELEASE APPROVAL
					FINAL APPROVAL RELEASE SIGNATURE DATE

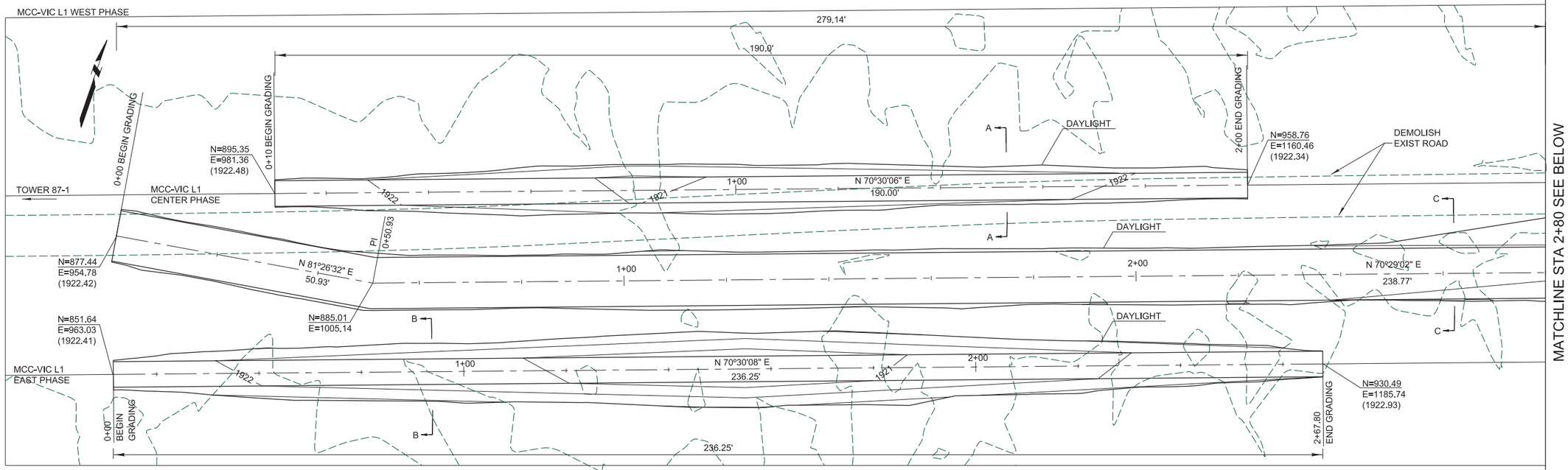
PLAN, PROFILES, SECTIONS, AND NOTES GRADING
McCULLOUGH-VICTORVILLE LINE 1 TWR 86-4

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

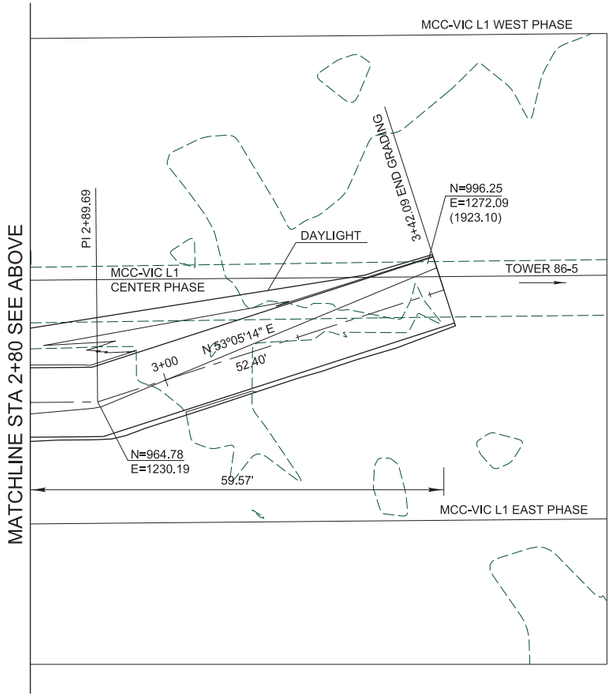
DRAWING NUMBER: MV1-86-4-CA01
REV.

03-05-13

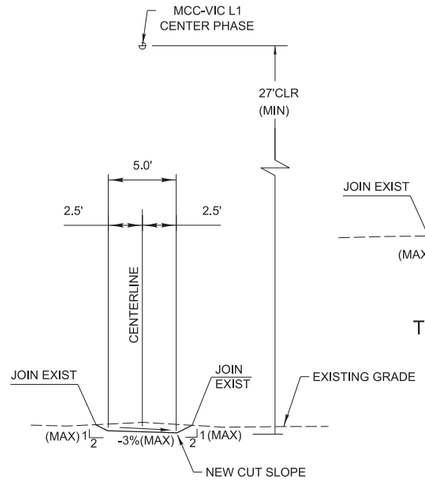
mv1-86-4.dgn



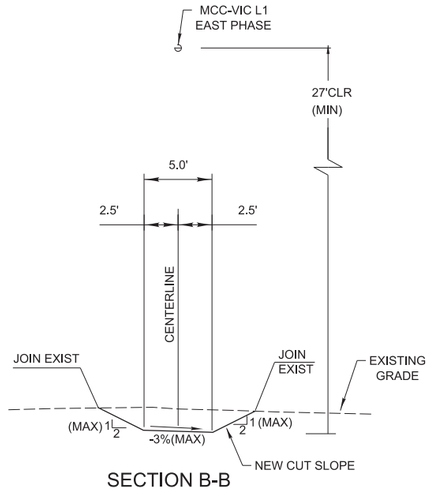
PLAN
SCALE: 1"=10'



* SEE PLAN MV1-86-5-CA02 FOR PROFILE AND CROSS SECTION.



SECTION A-A
TYPICAL SECTION
NO SCALE



SECTION B-B
TYPICAL SECTION
NO SCALE

ESTIMATED EARTHWORK
QUANTITIES: CENTER PHASE

CUT (CY)	34.8
FILL (CY)	0.2
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING
PARAMETERS: CENTER PHASE

MAX WIDTH (FT)	10
MAX LENGTH (FT)	190
MAX DEPTH (FT)	1.5
AREA (SF)	1580

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

GENERAL NOTES:

1. ADD 2285000 TO NORTHINGS AND 7060000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK
QUANTITIES: PATROL ROAD

CUT (CY)	9.7
FILL (CY)	15.9
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING
PARAMETERS: PATROL ROAD

MAX WIDTH (FT)	20
MAX LENGTH (FT)	340
MAX DEPTH (FT)	0.5
AREA (SF)	4100

ESTIMATED EARTHWORK
QUANTITIES: EAST PHASE

CUT (CY)	97.4
FILL (CY)	0.7
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING
PARAMETERS: EAST PHASE

MAX WIDTH (FT)	15
MAX LENGTH (FT)	236.25
MAX DEPTH (FT)	2.4
AREA (SF)	2755

DES. ENGR. F. ALCOCER
SUP. ENGR. J. PANG

REVISIONS NO.	DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
F. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

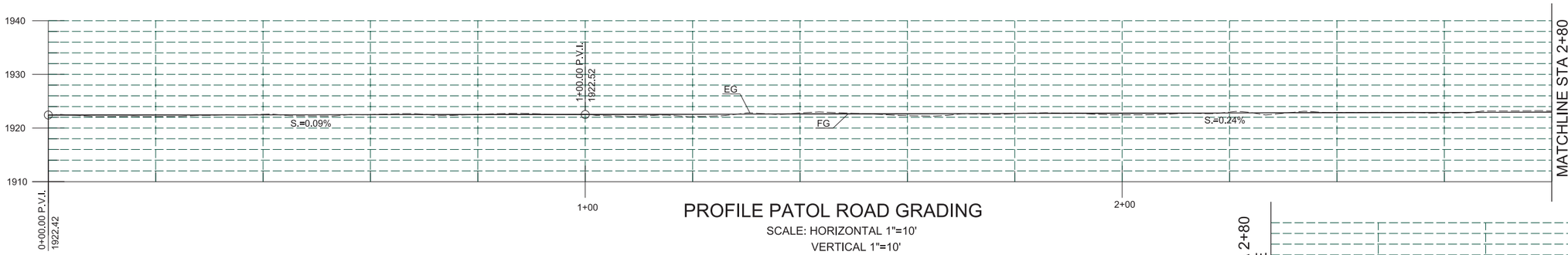
PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 86-5, 87-1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-86-5-CA01
REV.

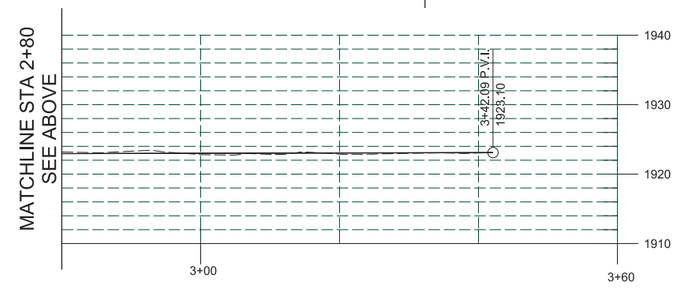
DRA

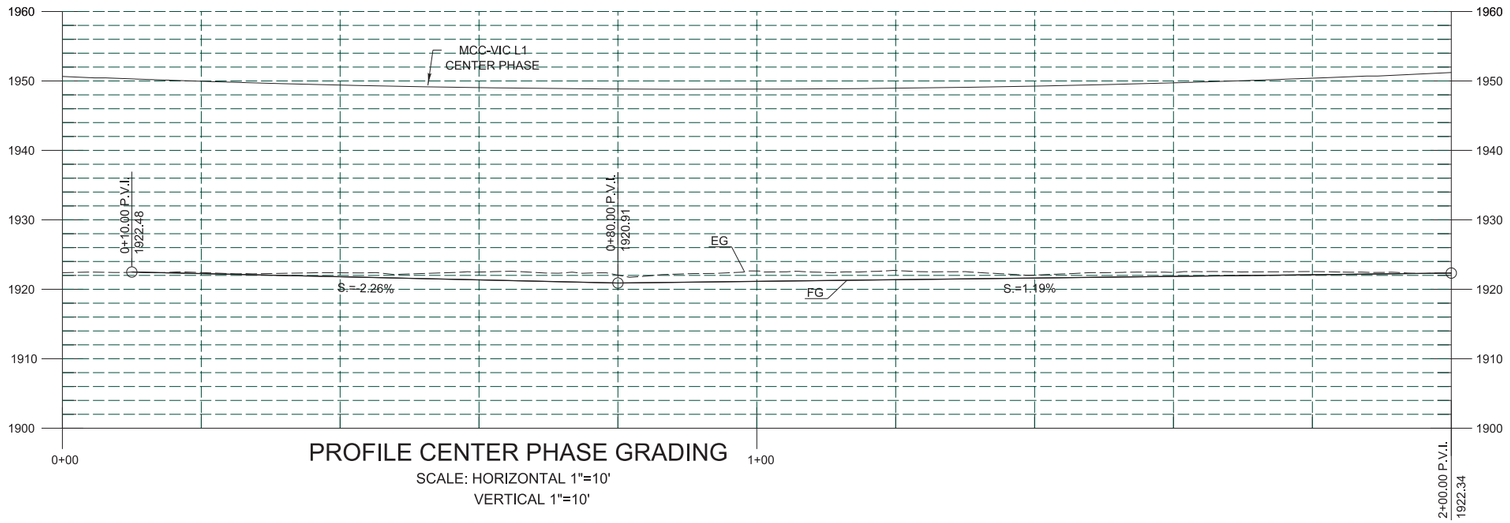
MV1-86-5-CA01.dgn



PROFILE PATOL ROAD GRADING

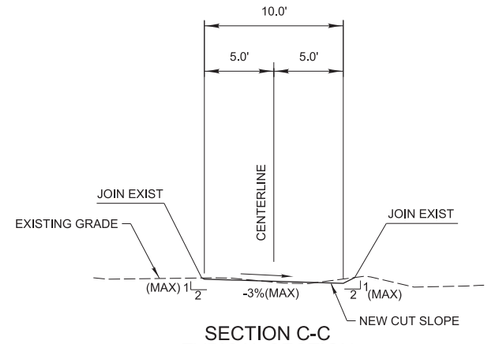
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'





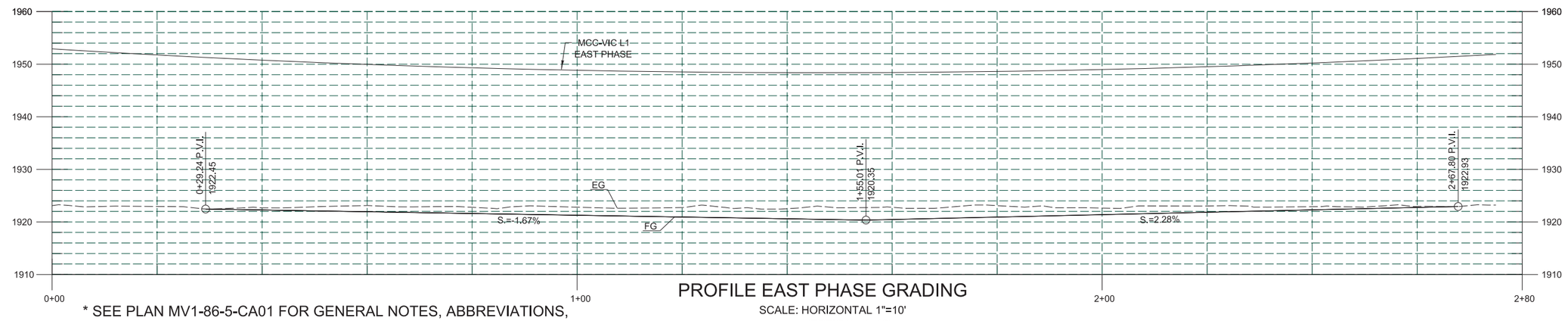
PROFILE CENTER PHASE GRADING

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



SECTION C-C
TYPICAL SECTION

NO SCALE



PROFILE EAST PHASE GRADING

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

* SEE PLAN MV1-86-5-CA01 FOR GENERAL NOTES, ABBREVIATIONS, AND SECTIONS.

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS		
NO.	DESCRIPTION	

Revision Number _____

DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
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DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
F Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

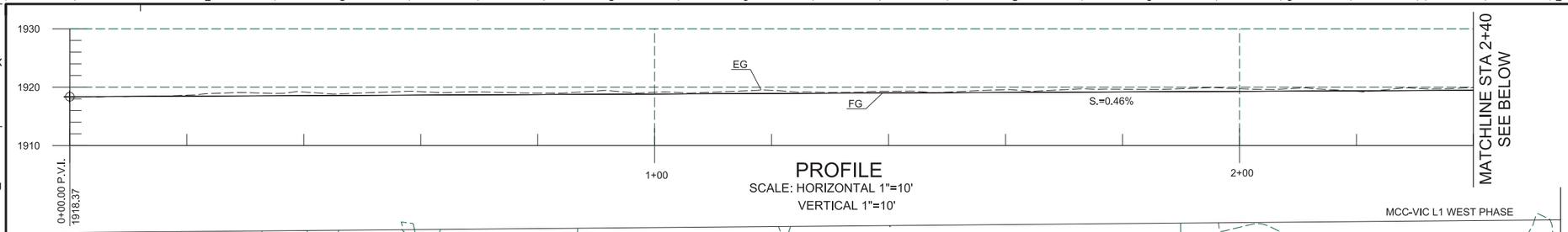
PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 86-5, 87-1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

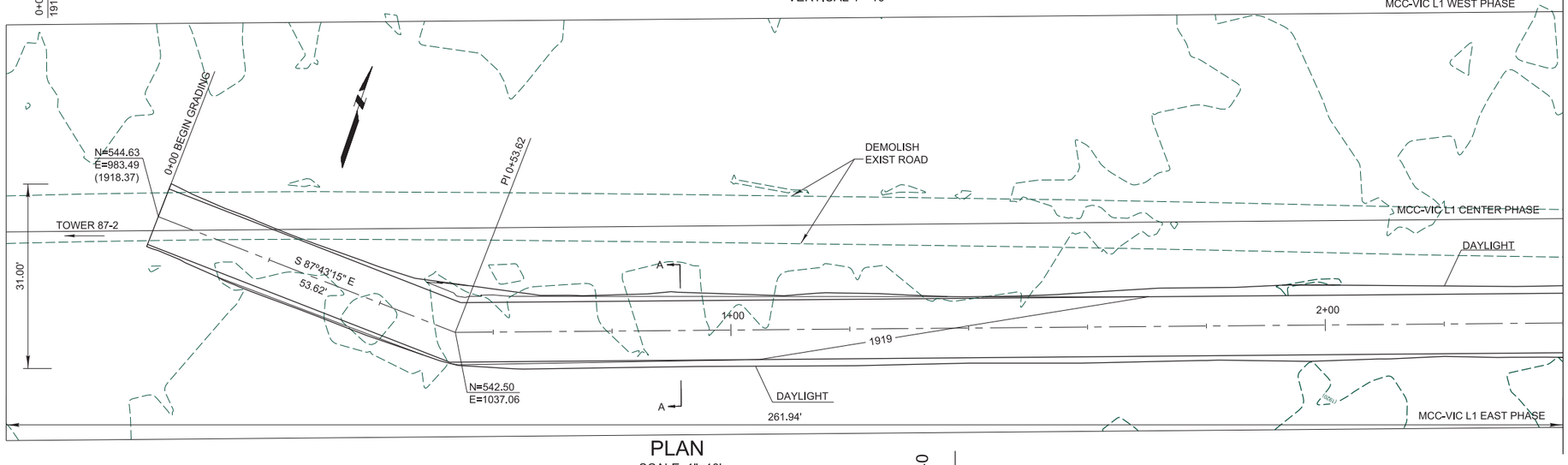
DRAWING NUMBER
MV1-86-5-CA02
REV.

DRA

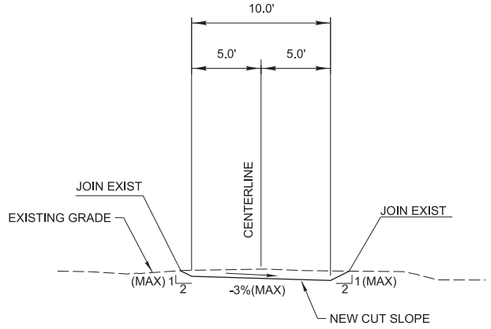
MV1-86-5-CA01.dgn



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN
SCALE: 1"=10'



SECTION A-A
TYPICAL SECTION
NO SCALE

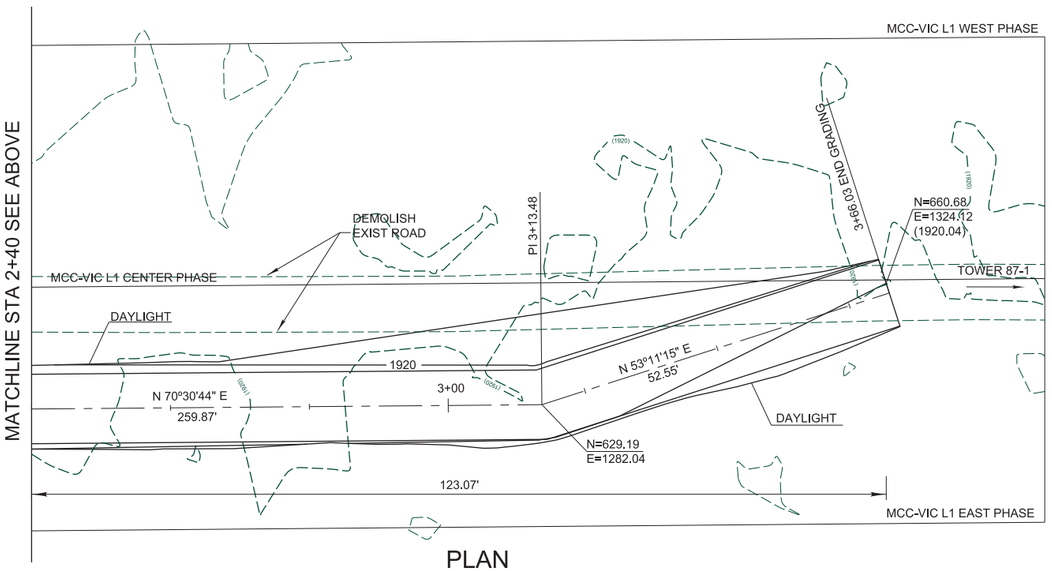
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	51.9
FILL (CY)	3.4
IMPORT (CY)	0
EXPORT (CY)	0

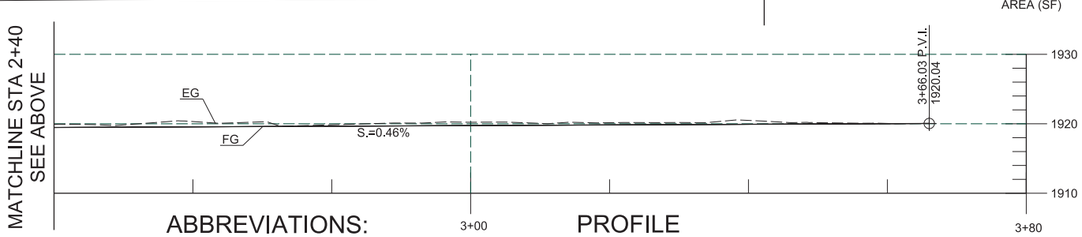
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	31
MAX LENGTH (FT)	385
MAX DEPTH (FT)	0.6
AREA (SF)	4770



PLAN
SCALE: 1"=10'



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

GENERAL NOTES:

1. ADD 2285000 TO NORTHINGS AND 7059000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS
NO. | DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

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DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

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CHECKED BY
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F Alcocer CE 70713
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

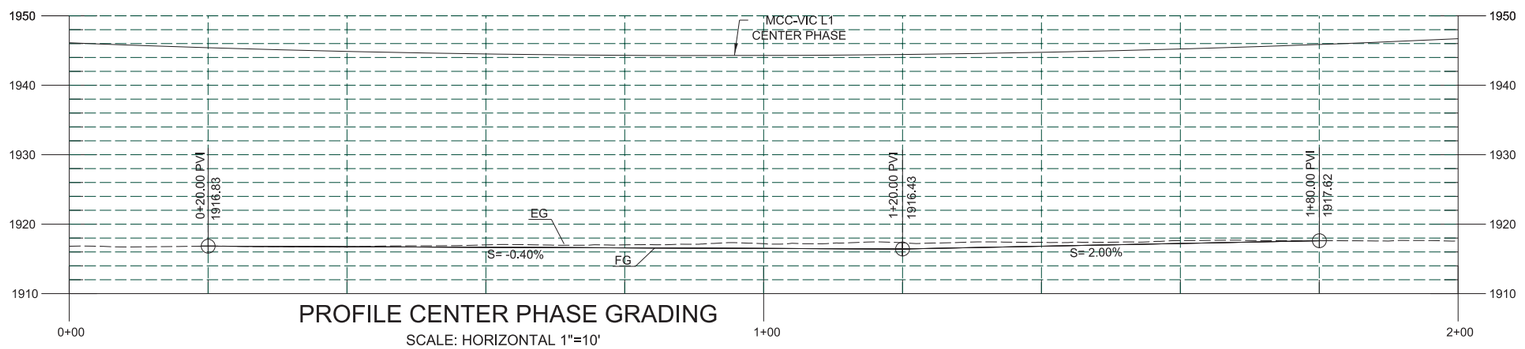
PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 87-2, 87-1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-87-1-CA01
REV.

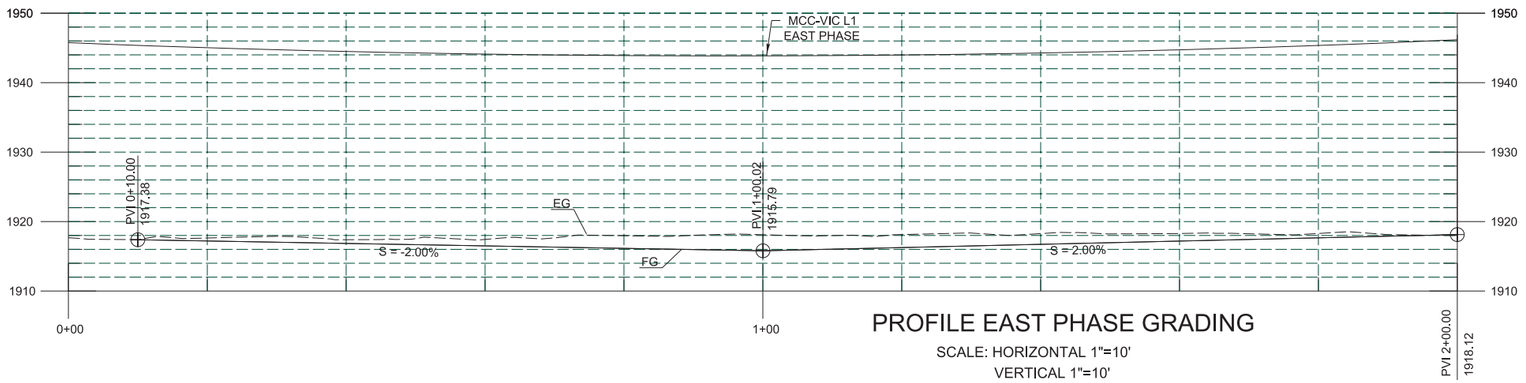
DRA

MV1-87-1-CA01.dgn



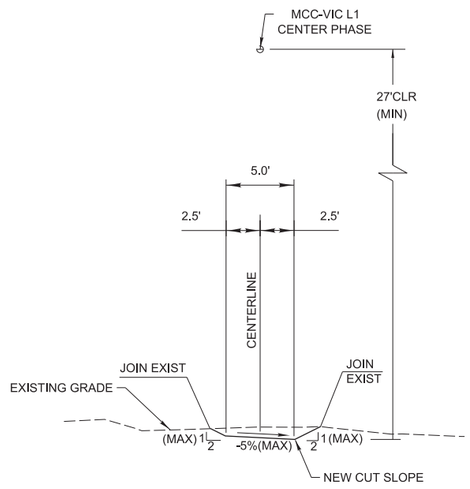
PROFILE CENTER PHASE GRADING

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



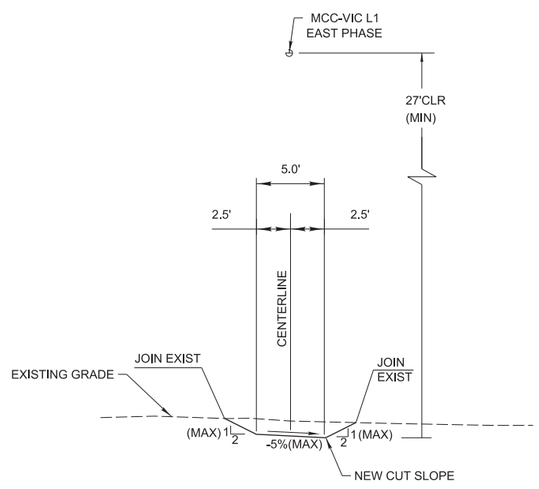
PROFILE EAST PHASE GRADING

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



SECTION B-B
TYPICAL SECTION

NO SCALE



SECTION C-C
TYPICAL SECTION

NO SCALE

ESTIMATED EARTHWORK QUANTITIES: CENTER PHASE

CUT (CY)	17.1
FILL (CY)	0.4
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS: CENTER PHASE

MAX WIDTH (FT)	9
MAX LENGTH (FT)	160
MAX DEPTH (FT)	1.0
AREA (SF)	1161

ESTIMATED EARTHWORK QUANTITIES: EAST PHASE

CUT (CY)	68.9
FILL (CY)	0.3
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS: EAST PHASE

MAX WIDTH (FT)	15
MAX LENGTH (FT)	190
MAX DEPTH (FT)	2.3
AREA (SF)	2060

ESTIMATED EARTHWORK QUANTITIES: PATROL ROAD

CUT (CY)	99
FILL (CY)	5.2
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS: PATROL ROAD

MAX WIDTH (FT)	26
MAX LENGTH (FT)	424
MAX DEPTH (FT)	1.2
AREA (SF)	5960

GENERAL NOTES:

1. ADD 2285000 TO NORTHINGS AND 7059000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
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11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
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EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

* SEE PLAN MV1-87-2-CA02 FOR PLAN, PROFILE AND SECTIONS.

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS
NO. | DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
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DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 87-3, 87-2

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-87-2-CA01
REV.

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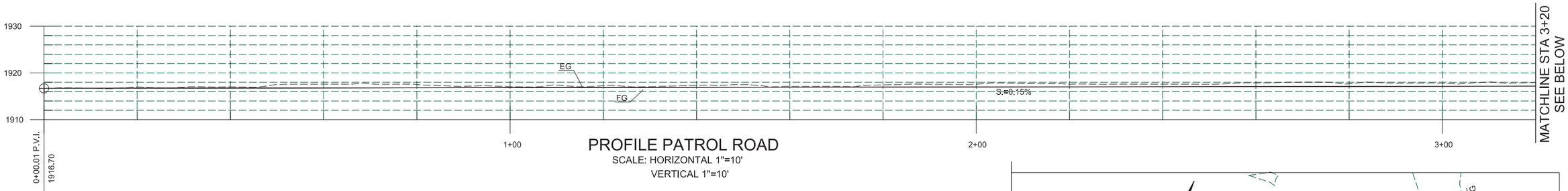
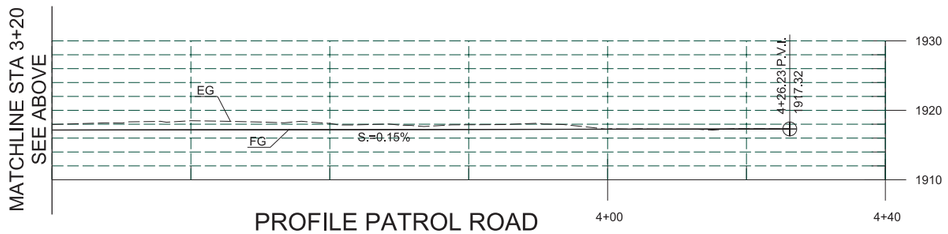
MV1-87-2-CA01.dgn

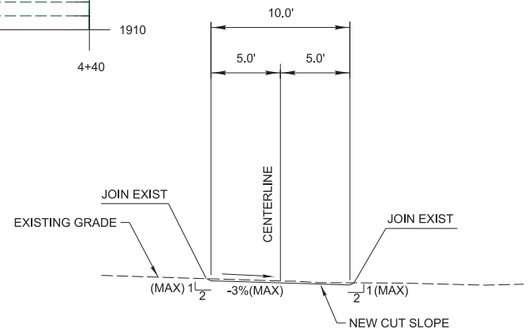


PROFILE PATROL ROAD
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

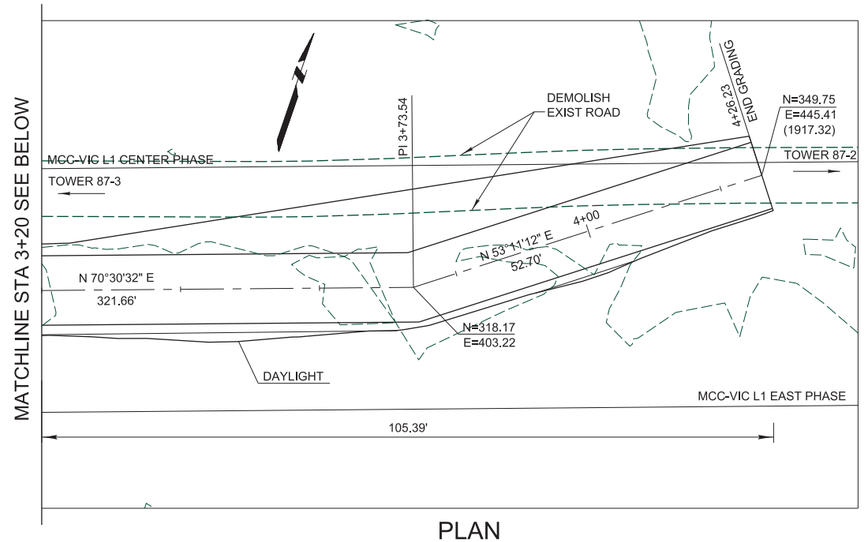


PROFILE PATROL ROAD
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

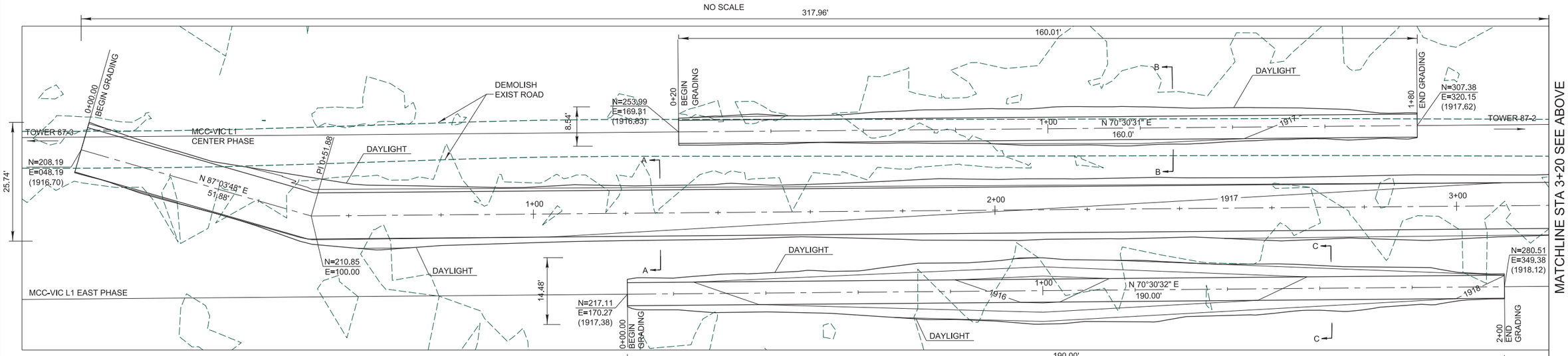
MCC-VIC L1
CENTER PHASE



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1"=10'



PLAN
SCALE: 1"=10'

* SEE PLAN MV1-87-2-CA01 FOR GENERAL NOTES, ABBREVIATIONS, PROFILE AND SECTIONS.

DES. ENGR. F. ALCOCER
SUP. ENGR. J. PANG

REVISIONS	
NO.	DESCRIPTION

Revision Number

DRAFTING RELEASE
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FINAL APPROVAL RELEASE SIGNATURE DATE

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F Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

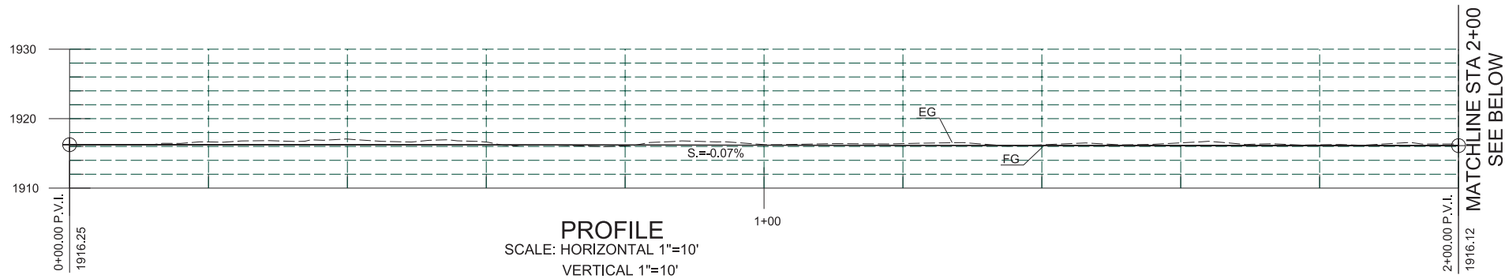
PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 87-3, 87-2

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

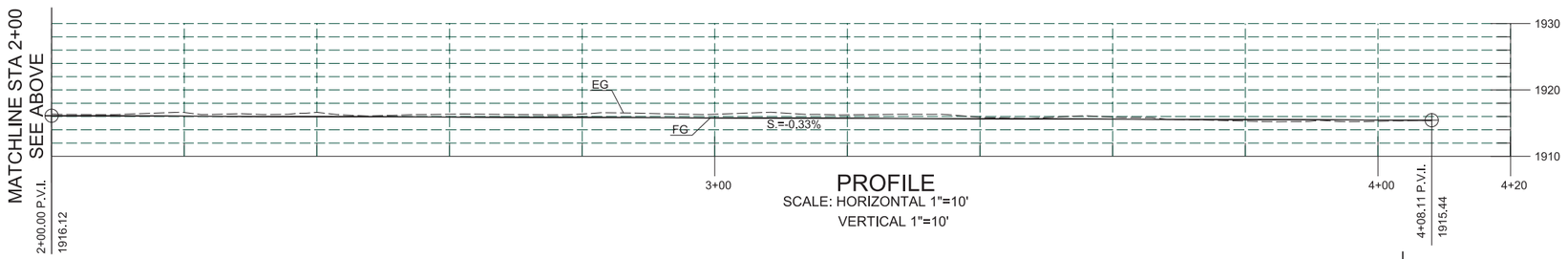
DRAWING NUMBER
MV1-87-2-CA02
REV.

DRA

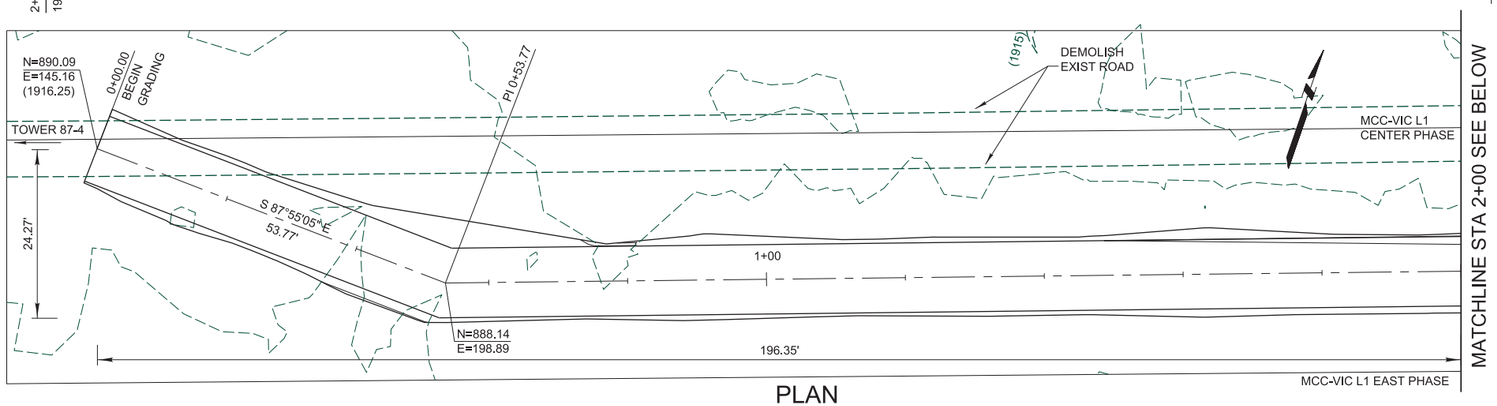
MV1-87-2-CA01.dgn



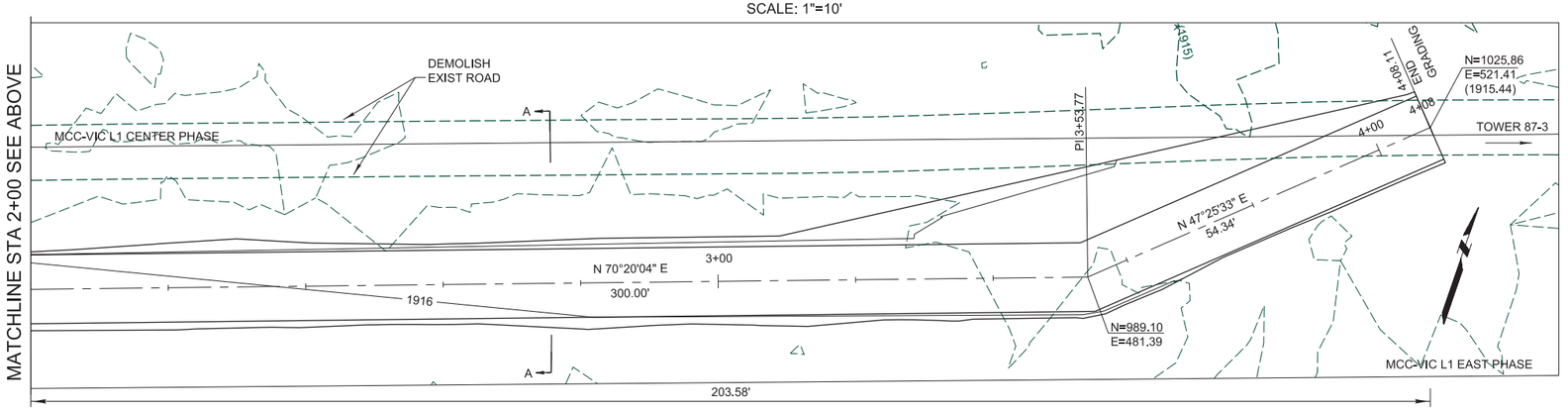
PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN
SCALE: 1"=10'



PLAN
SCALE: 1"=10'

GENERAL NOTES:

1. ADD 2284000 TO NORTHINGS AND 7058000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
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11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES: EAST PHASE

CUT (CY)	52.1
FILL (CY)	7.6
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
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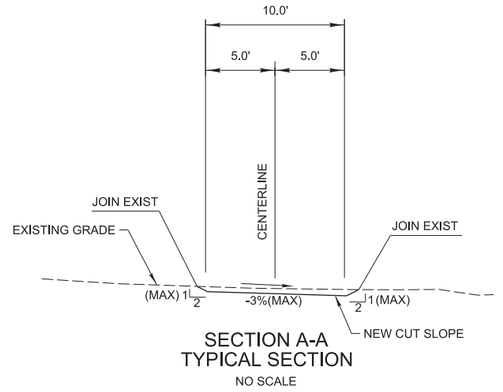
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

APPROXIMATE GRADING PARAMETERS: EAST PHASE

MAX WIDTH (FT)	25
MAX LENGTH (FT)	408
MAX DEPTH (FT)	1.0
AREA (SF)	5470

MCC-VIC L1
CENTER PHASE



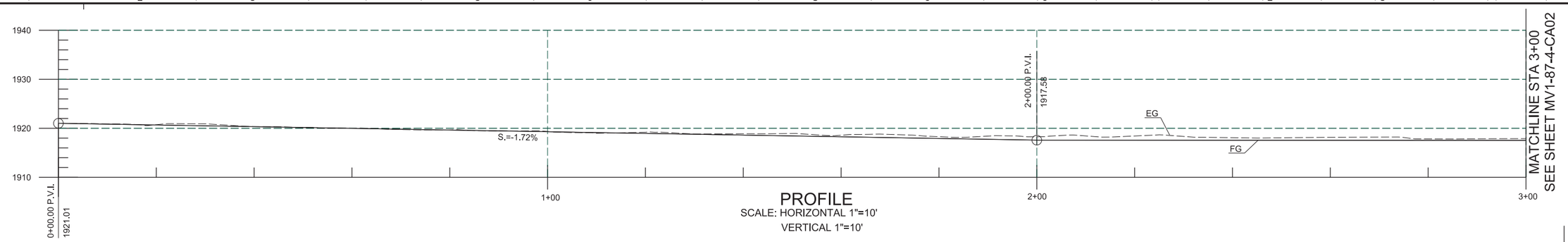
SECTION A-A
TYPICAL SECTION
NO SCALE

REVISIONS							
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 87-4, 87-3	
		DRAFTING RELEASE		DRAFTING RELEASE			
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL		
		CHECKED BY		CHECKED BY			
		ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE	ENGINEERING APPROVAL F Alcocer CE 70713	FINAL APPROVAL RELEASE SIGNATURE DATE	POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES	DRAWING NUMBER MV1-87-3-CA01 REV.

DES. ENGR. F. ALCOCER
SUP. ENGR. J. PANG

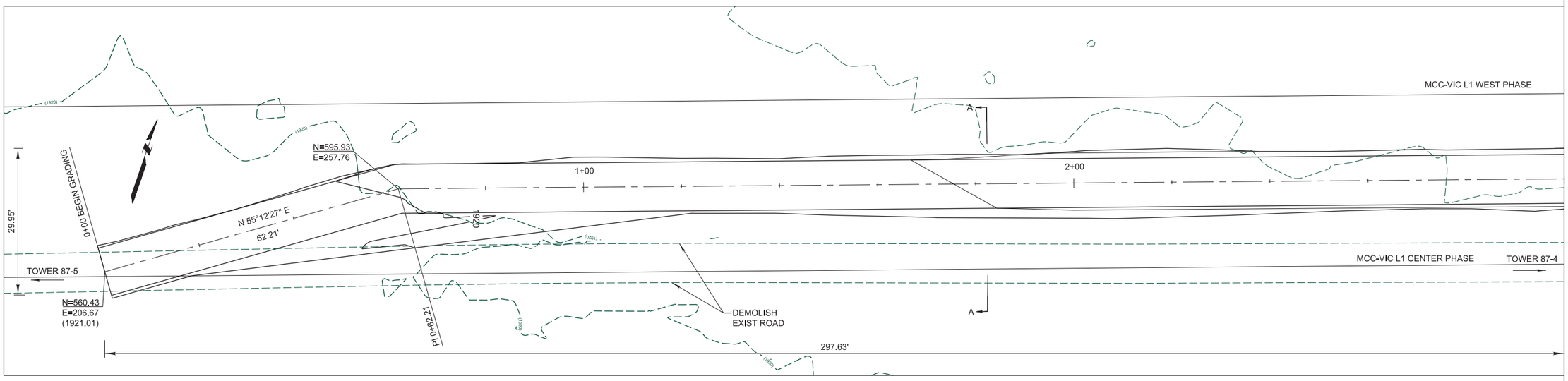
DRA

MV1-87-3-CA01.dgn



PROFILE

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN

SCALE: 1"=10'

GENERAL NOTES:

1. ADD 2284000 TO NORTHINGS AND 7057000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
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7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES: EAST PHASE

CUT (CY)	58.3
FILL (CY)	4.2
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS: EAST PHASE

MAX WIDTH (FT)	30
MAX LENGTH (FT)	450
MAX DEPTH (FT)	1.1
AREA (SF)	5870

* SEE PLAN MV1-87-4-CA02 FOR PLAN, PROFILE AND CROSS SECTION DETAIL.

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

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PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 87-4, 87-5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-87-4-CA01
REV.

DRA

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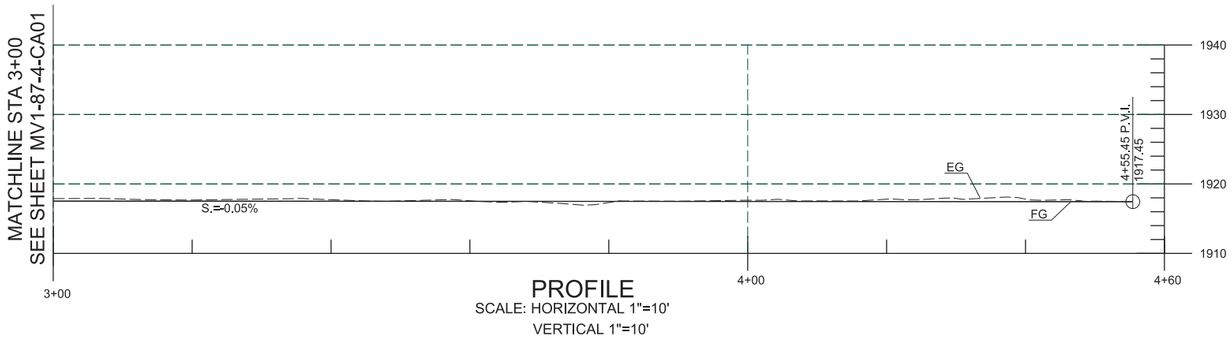
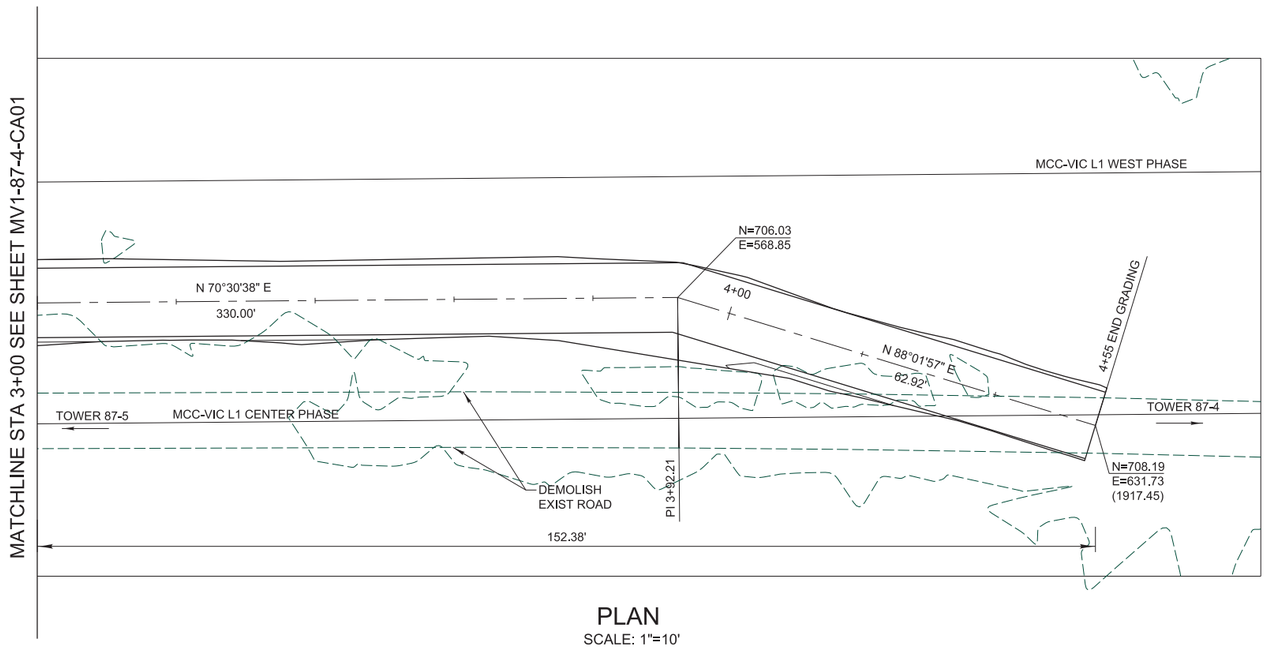
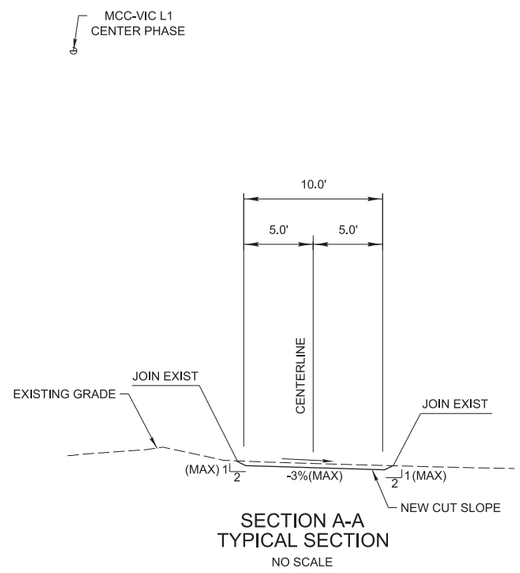


PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN
SCALE: 1"=10'



SECTION A-A
TYPICAL SECTION
NO SCALE

* SEE PLAN MV1-87-4-CA01 FOR GENERAL NOTES, AND ABBREVIATIONS.

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SUP. ENGR. J. PANG

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PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 87-4, 87-5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-87-4-CA02
REV.

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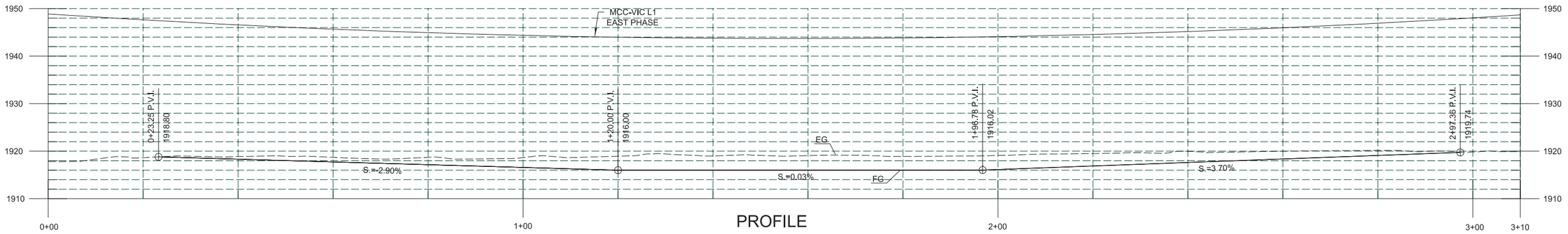
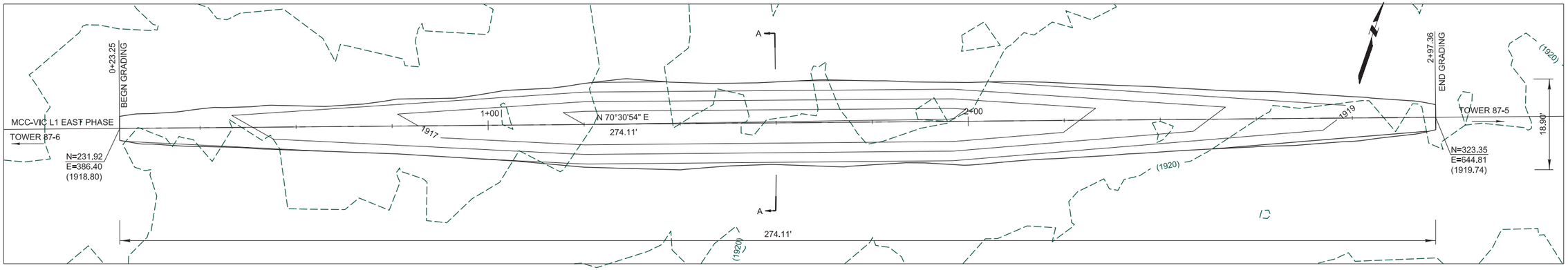


PROFILE

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN

SCALE: 1"=10'

GENERAL NOTES:

1. ADD 2284000 TO NORTHINGS AND 7056000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
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ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
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GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
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N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES: EAST PHASE

CUT (CY)	204
FILL (CY)	0.4
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS: EAST PHASE

MAX WIDTH (FT)	20
MAX LENGTH (FT)	275
MAX DEPTH (FT)	3.0
AREA (SF)	3940

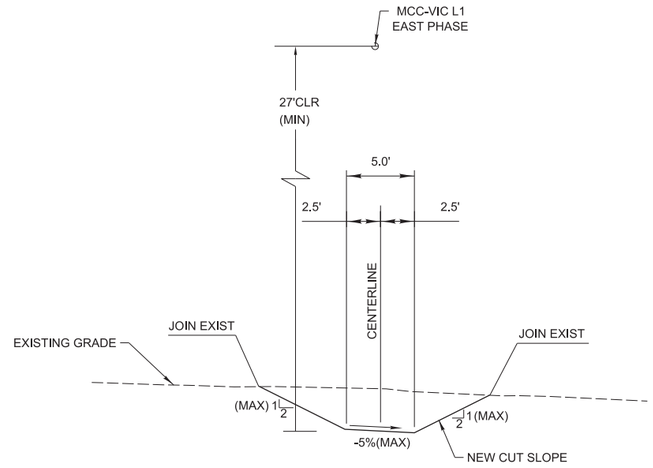
ESTIMATED EARTHWORK QUANTITIES: CENTER PHASE

CUT (CY)	71
FILL (CY)	0.3
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS: CENTER PHASE

MAX WIDTH (FT)	15
MAX LENGTH (FT)	202
MAX DEPTH (FT)	2.0
AREA (SF)	2260



SECTION A-A TYPICAL SECTION

NO SCALE

* SEE PLAN MV1-87-5-CA02 FOR PLAN, PROFILE AND SECTIONS.

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

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PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 87-5, 87-6

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-87-5-CA01
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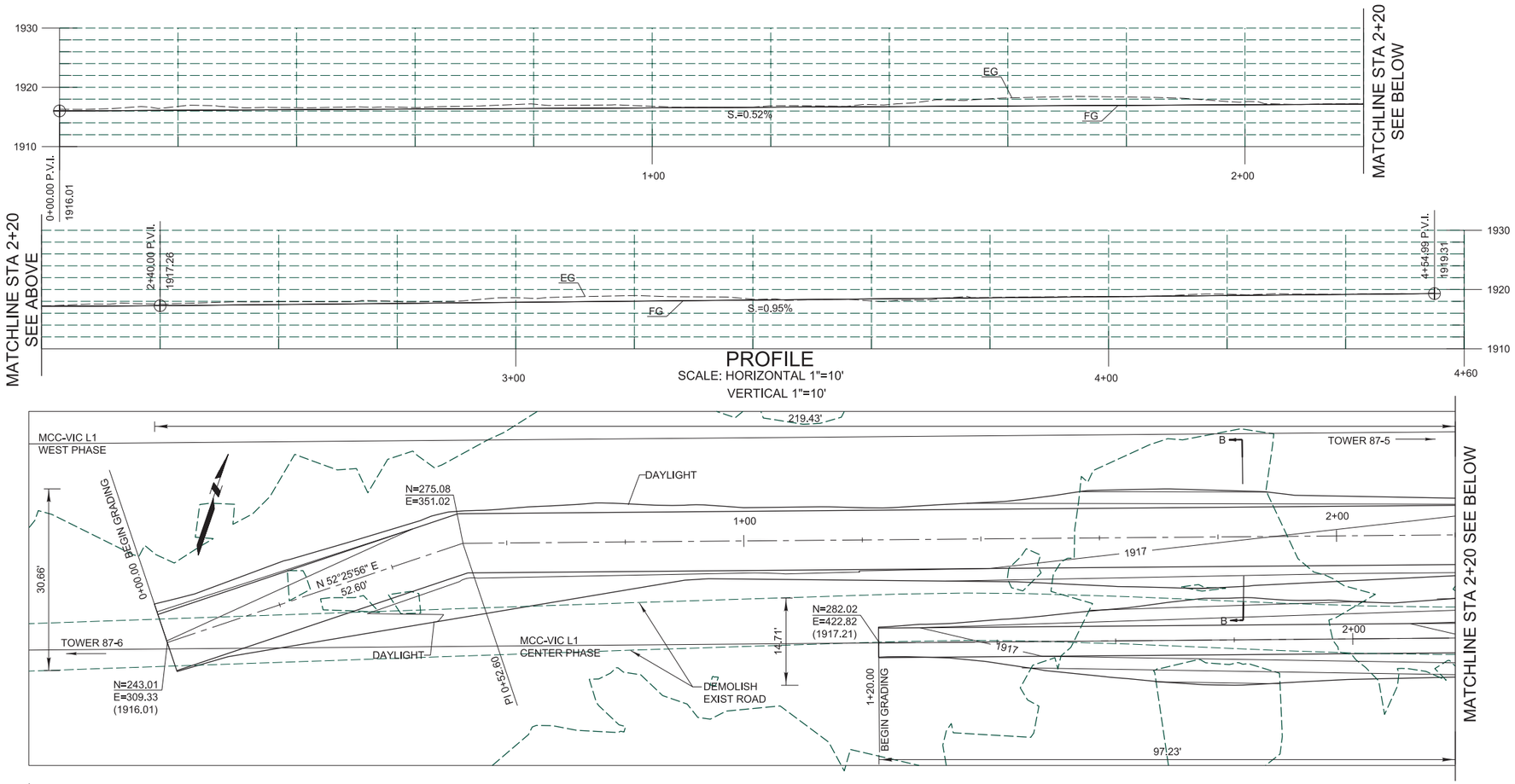


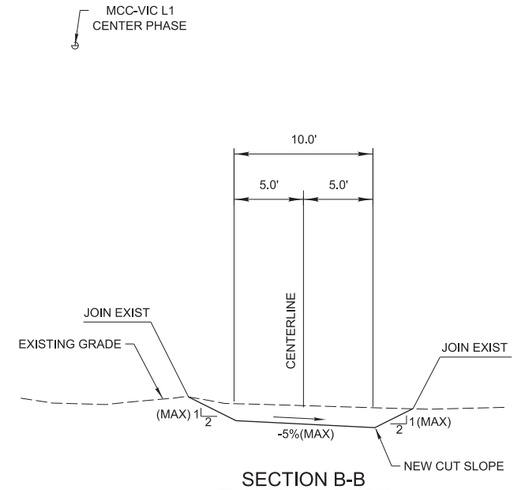
PROFILE

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

PLAN

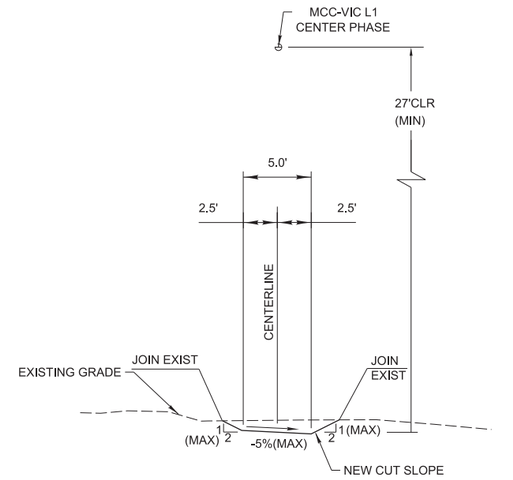
SCALE: 1"=10'

* SEE PLAN MV1-87-5-CA01 FOR GENERAL NOTES, AND ABBREVIATIONS.



SECTION B-B
TYPICAL SECTION

NO SCALE



SECTION C-C
TYPICAL SECTION

NO SCALE

ESTIMATED EARTHWORK QUANTITIES: ACCESS ROAD

CUT (CY)	88
FILL (CY)	6
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS: ACCESS ROAD

MAX WIDTH (FT)	31
MAX LENGTH (FT)	452
MAX DEPTH (FT)	1.5
AREA (SF)	6172

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

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PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LINE 1 TWR 87-5, 87-6

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-87-5-CA02 REV.

DRA

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GENERAL NOTES:

1. ADD 2283000 TO NORTHINGS AND 7054000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
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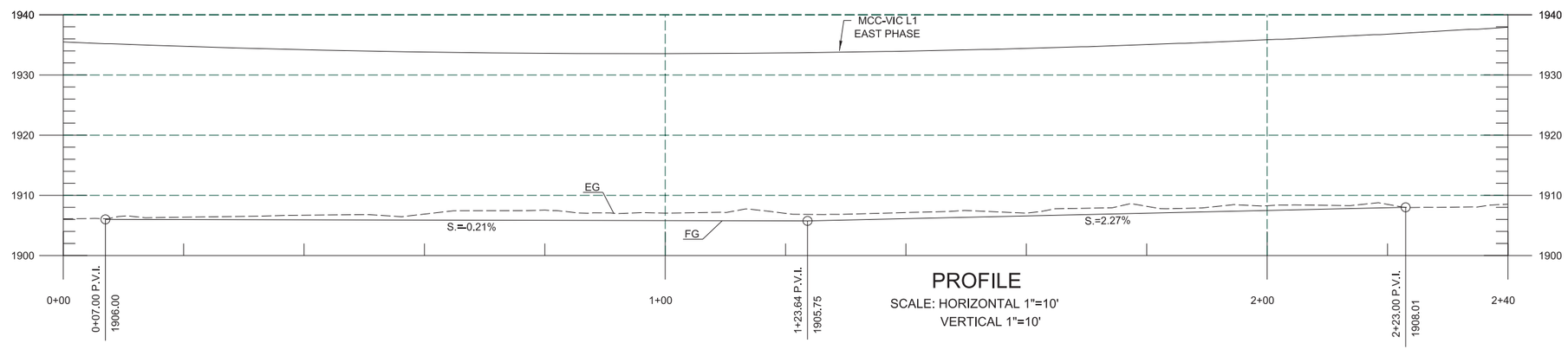

PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
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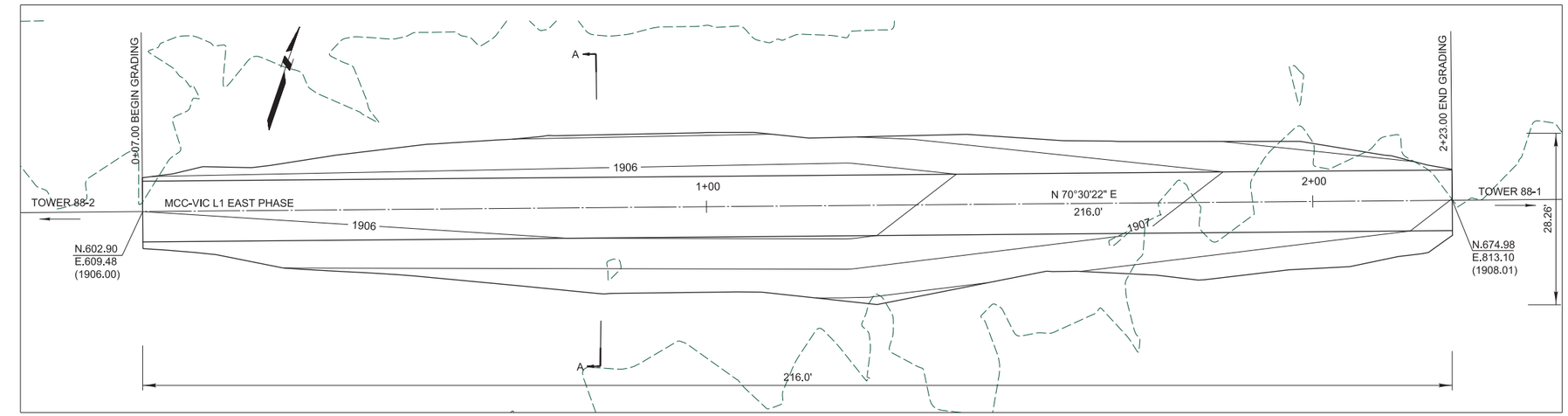
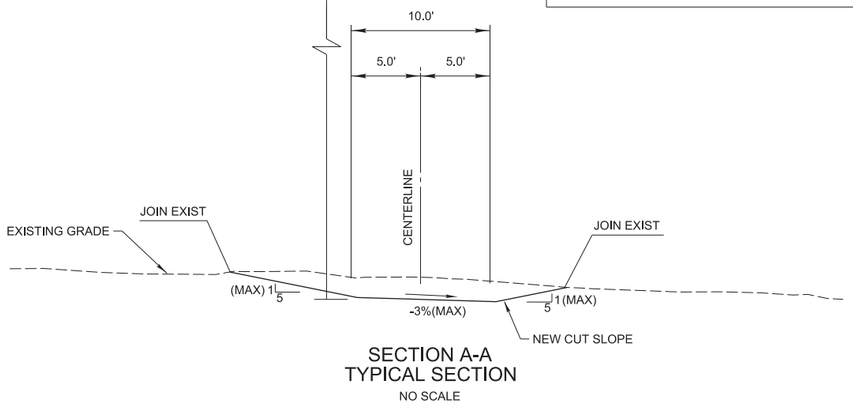


PLAN
SCALE: 1" = 10'



SECTION A-A
TYPICAL SECTION
NO SCALE

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	120
FILL (CY)	3.2
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	28.26
MAX LENGTH (FT)	216
MAX DEPTH (FT)	1.6
AREA (SF)	4800

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

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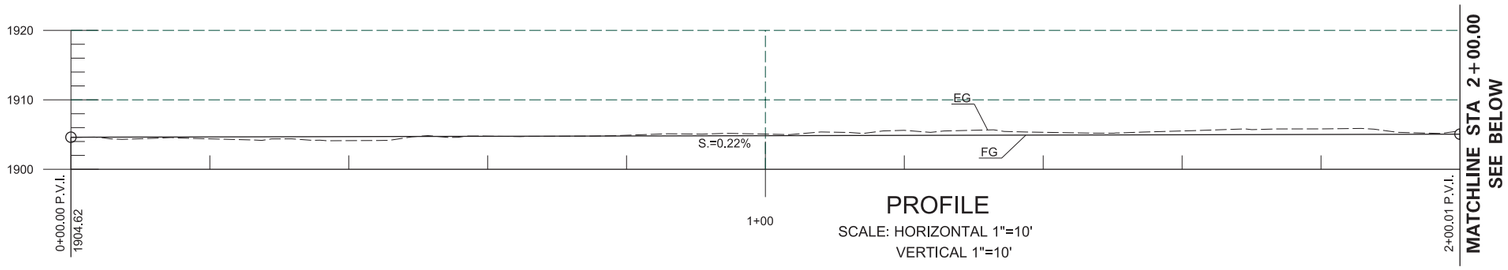
PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 88–1, 88–2

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

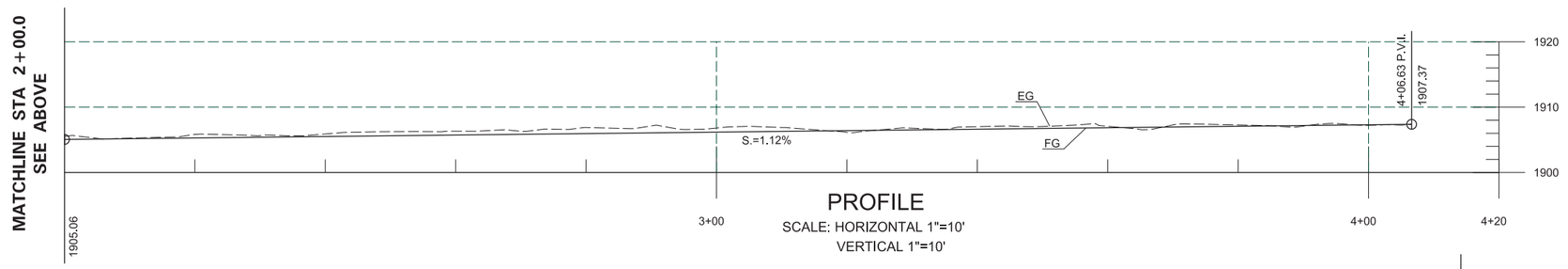
DRAWING NUMBER
MV1-88-1-CA01
REV.

DRA

MV1-88-1-CA01.dgn



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PROFILE
SCALE: HORIZONTAL 1"=10'
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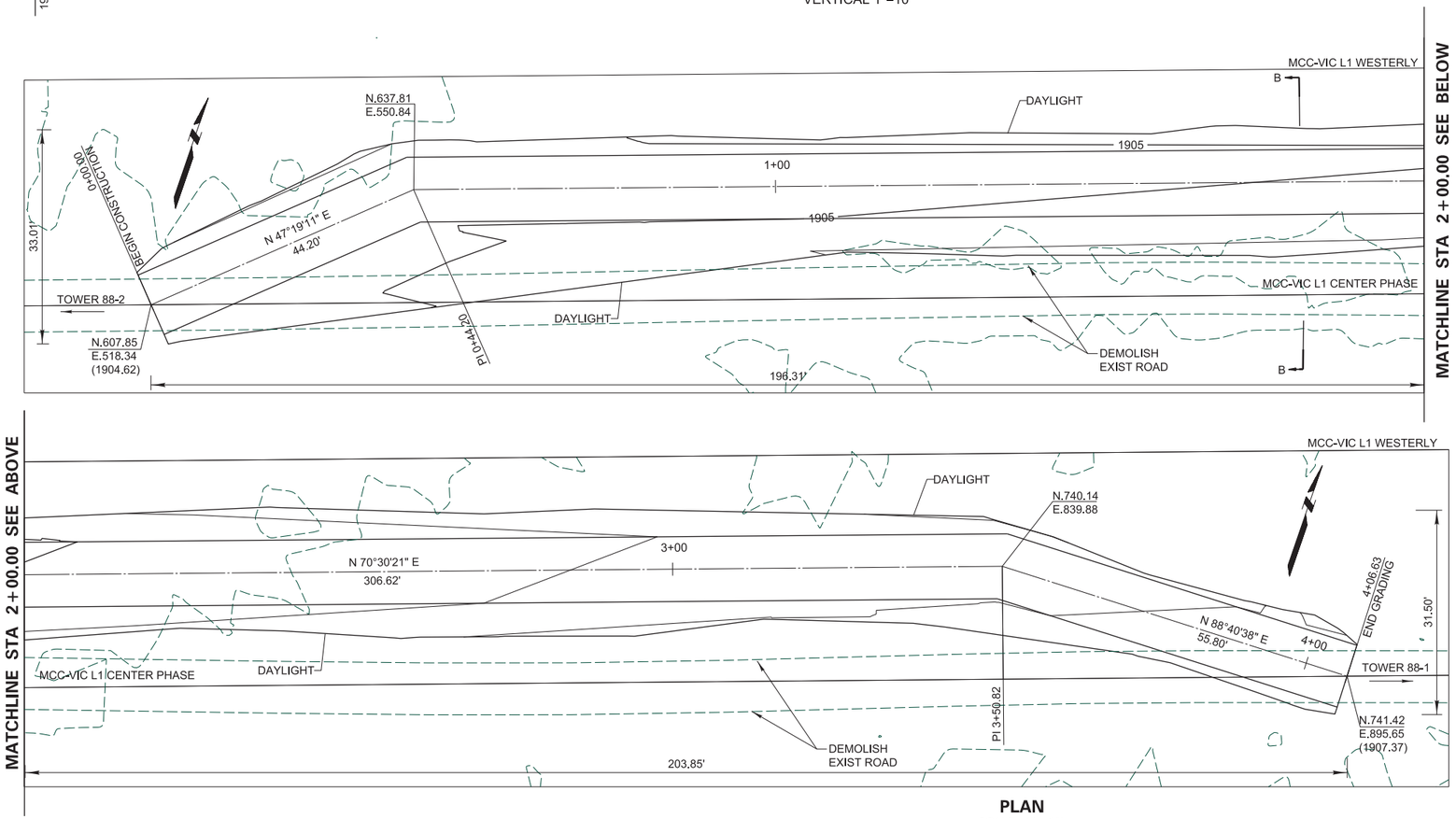


PLAN
SCALE: 1" = 10'

ESTIMATED EARTHWORK QUANTITIES:

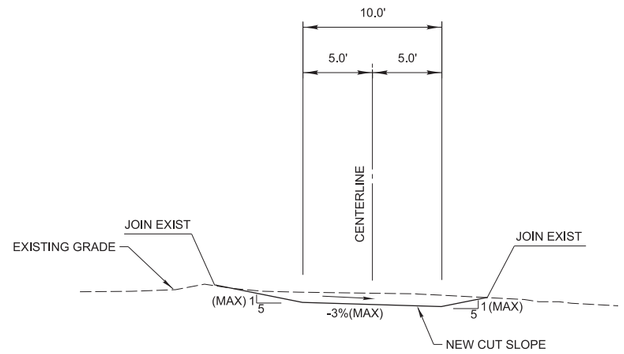
CUT (CY)	65
FILL (CY)	24
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	33
MAX LENGTH (FT)	400
MAX DEPTH (FT)	1.2
AREA (SF)	7600

MCC-VIC L1
CENTER PHASE



SECTION B-B
TYPICAL SECTION
NO SCALE

* SEE PLAN MV1-88-1-CA01 FOR GENERAL NOTES, AND ABBREVIATIONS.

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

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PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 88–1, 88–2

DWP POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-88-1-CA02
REV.

DRA

MV1-88-1-CA01.dgn

GENERAL NOTES:

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5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
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7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

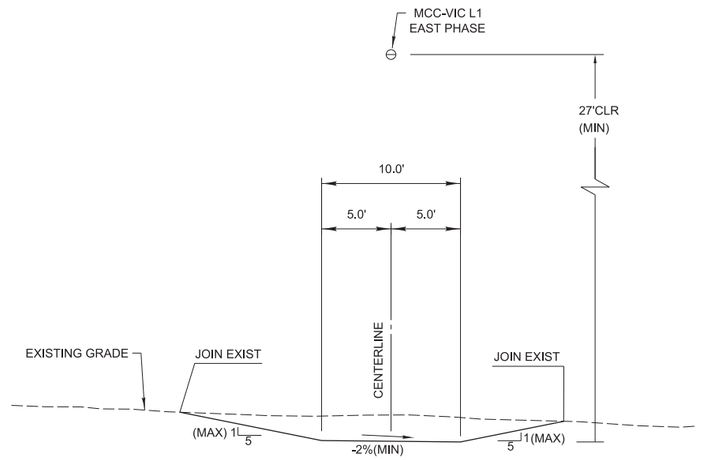
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	157/57.5
FILL (CY)	1/19.3
IMPORT (CY)	0
EXPORT (CY)	0

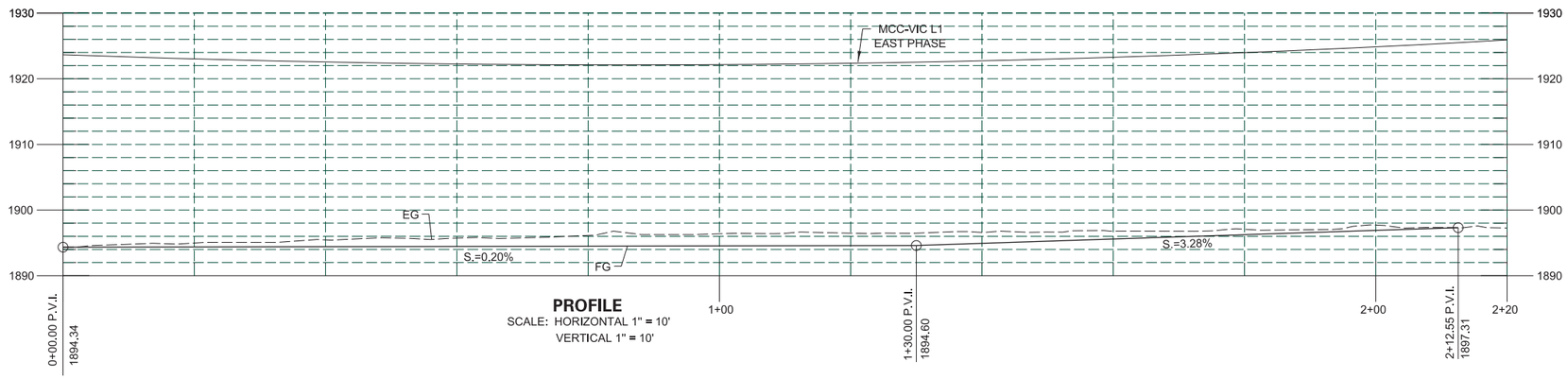
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

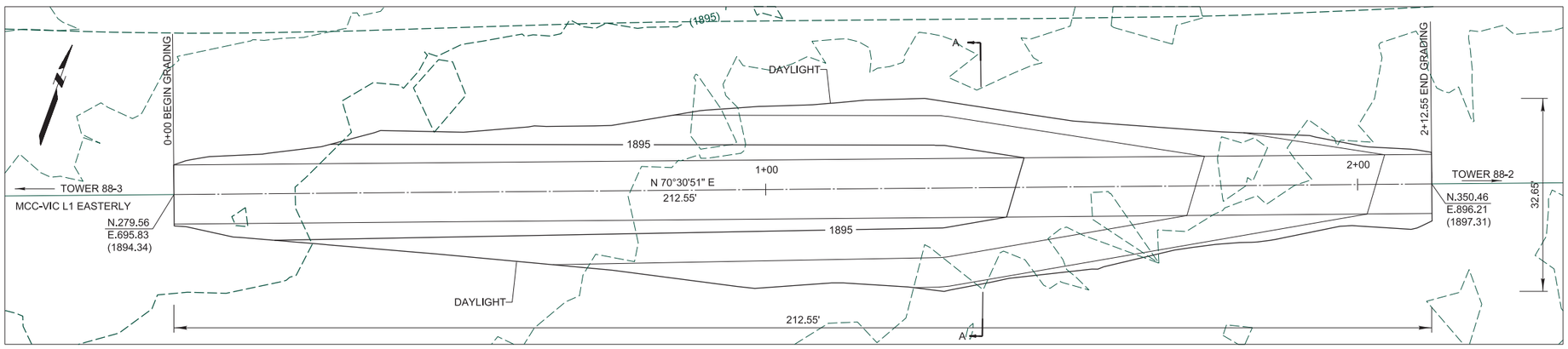
MAX WIDTH (FT)	33/35
MAX LENGTH (FT)	213/382
MAX DEPTH (FT)	1.9/0.65
AREA (SF)	4843/7150



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

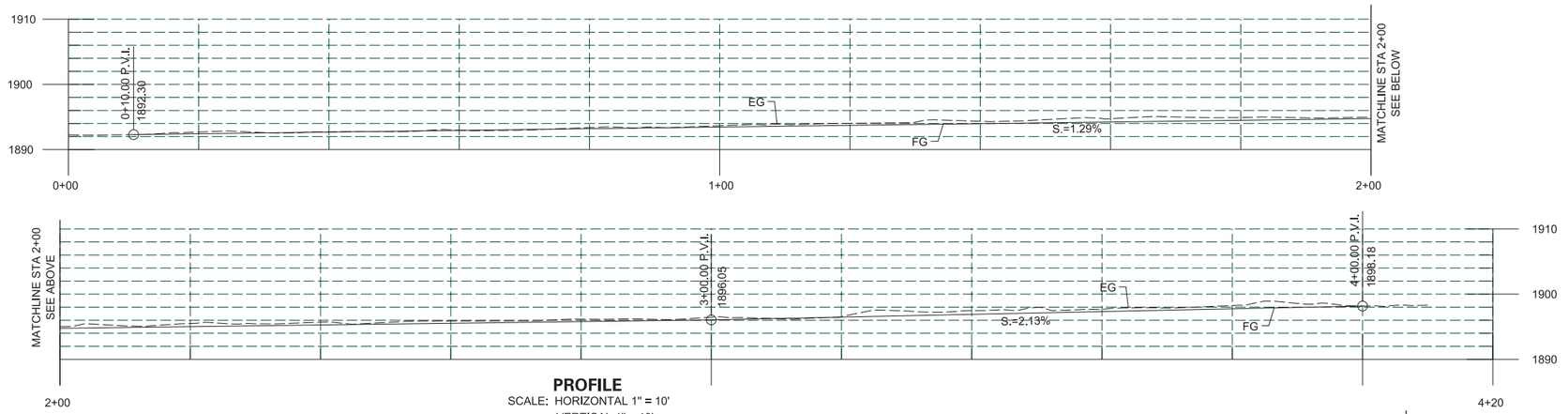


PLAN
SCALE: 1" = 10'

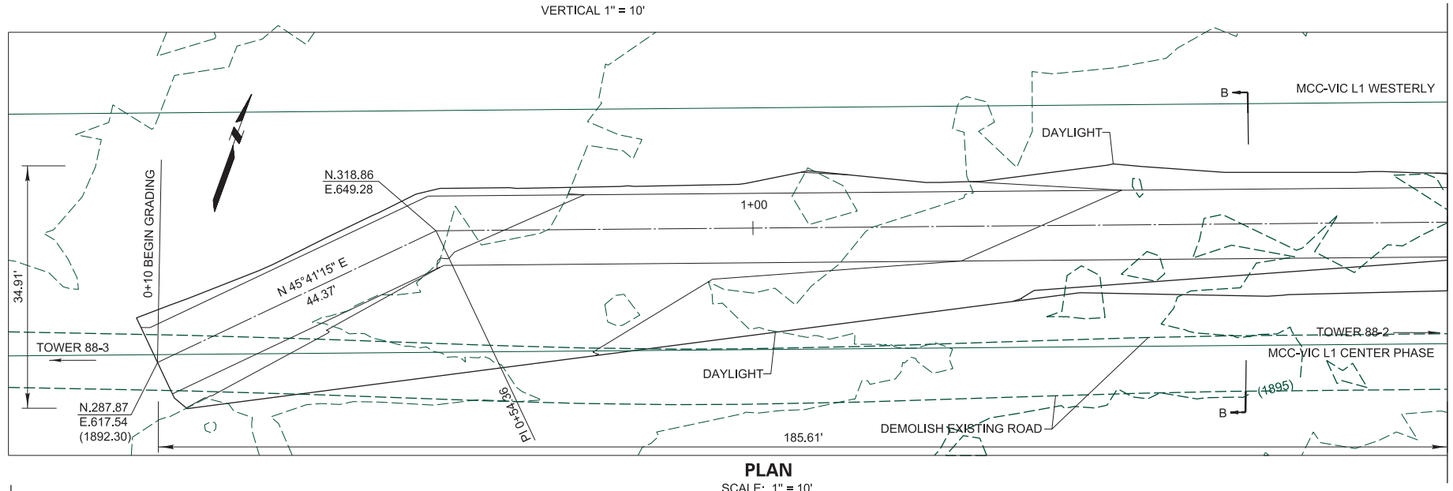
REVISIONS						
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 88–2, 88–3
		DRAFTING RELEASE		DRAFTING RELEASE		
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL	POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES
		CHECKED BY		CHECKED BY		DRAWING NUMBER MV1-88-2-CA01 REV.
		ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE	ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE	
				J. Mercer CE 70713		

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

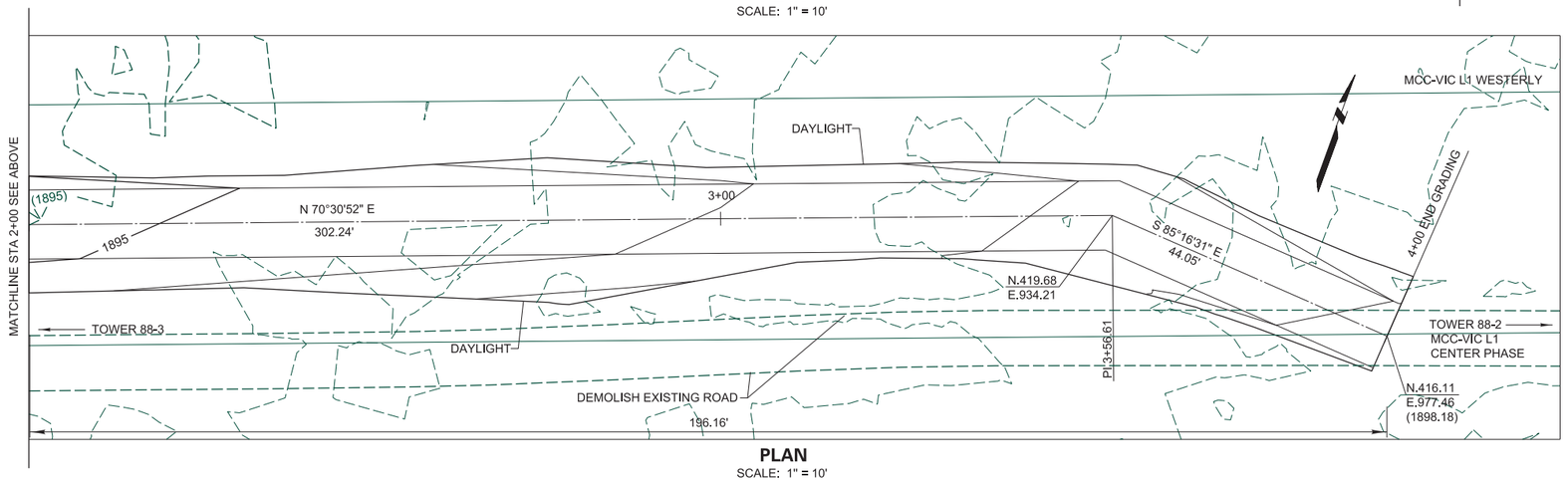
MV1-88-2-CA01.dgn



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

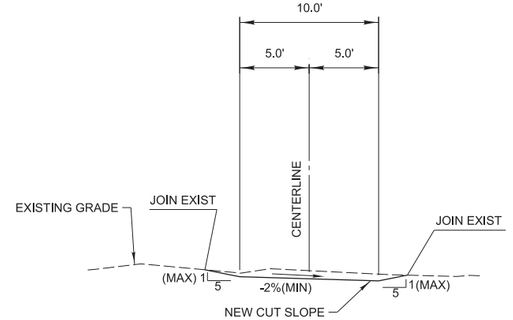


PLAN
SCALE: 1" = 10'



PLAN
SCALE: 1" = 10'

MCC-VIC L1
CENTER PHASE



SECTION B-B
TYPICAL SECTION
NO SCALE

* SEE PLAN MV1-88-2-CA01
FOR GENERAL NOTES, ABBREVIATIONS.

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS

NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
T. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 88–2, 88–3

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-88-2-CA02
REV.

DRA

MV1-88-2-CA01.dgn

GENERAL NOTES:

1. ADD 2282000 TO NORTHINGS AND 7052000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

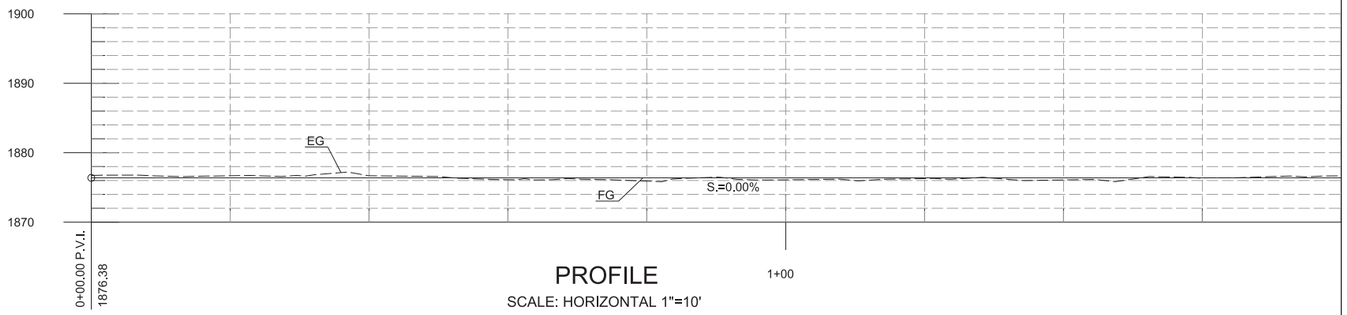
CUT (CY)	34
FILL (CY)	18
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)

* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	40
MAX LENGTH (FT)	428
MAX DEPTH (FT)	1.1
AREA (SF)	6903



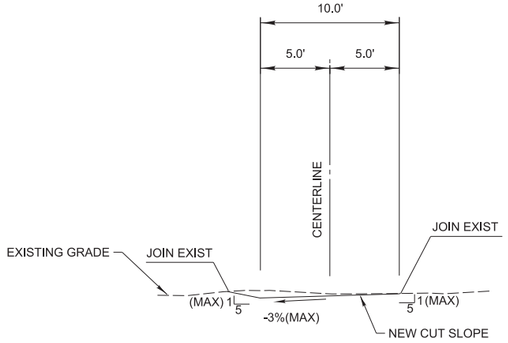
PROFILE

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

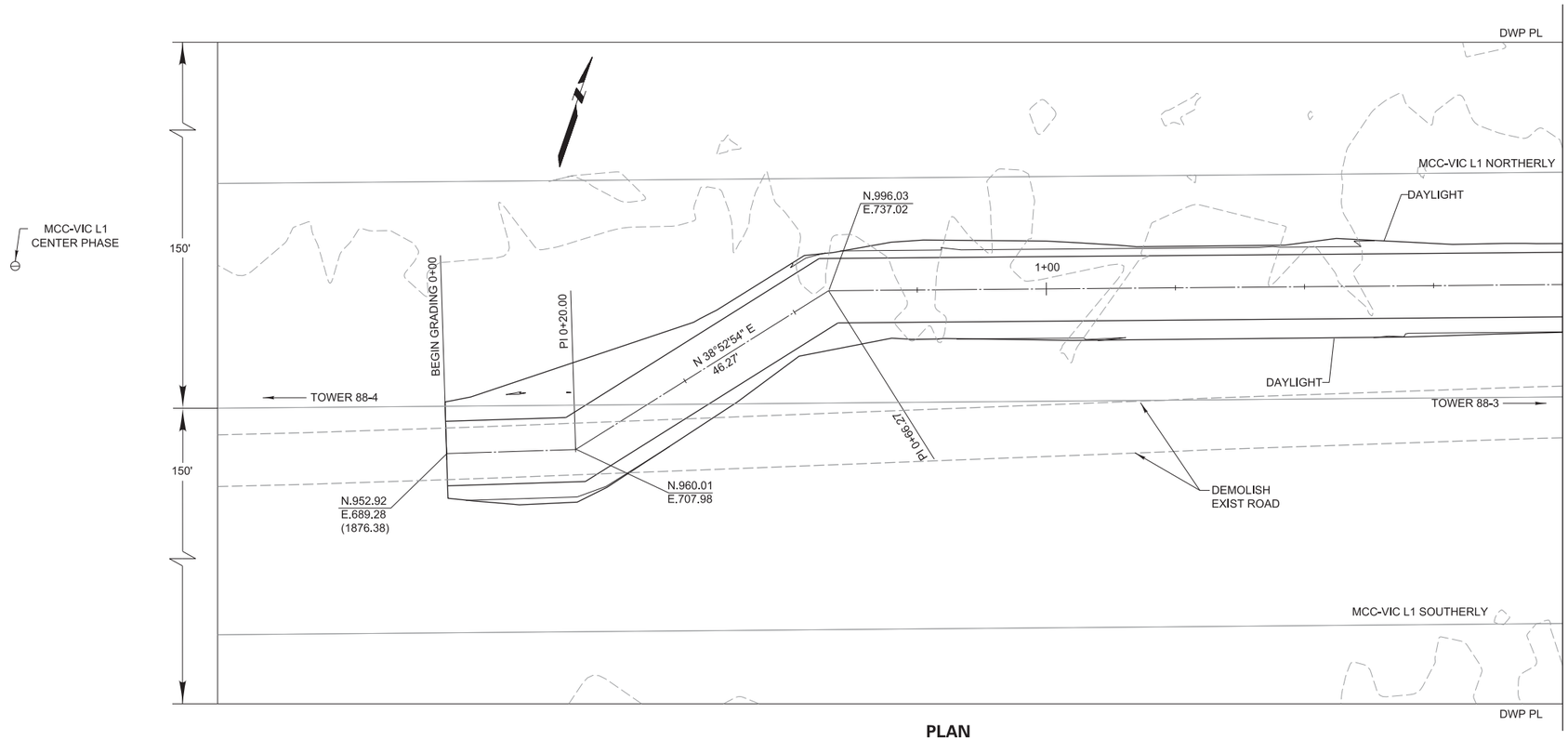
MATCHLINE STA 1+80.00 SEE SHEET MV1-88-3-CA02

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



MATCHLINE STA 1+80.00 SEE SHEET MV1-88-3-CA02

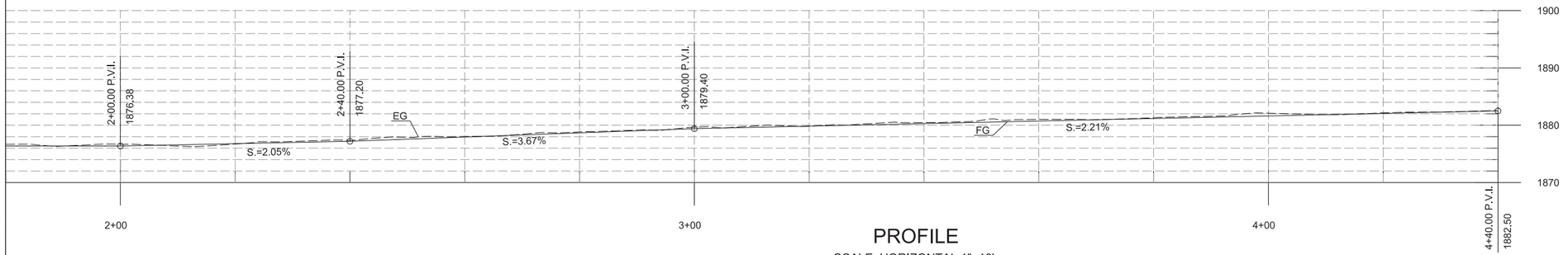
PLAN
SCALE: 1" = 10'

DES. ENGR. F.ALCOCER SUP. ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL J. Mercer CE 70713	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	**PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 88–3, 88–4** POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES	DRAWING NUMBER MV1-88-3-CA01 REV.

DRA

MV1-88-3-CA01.dgn

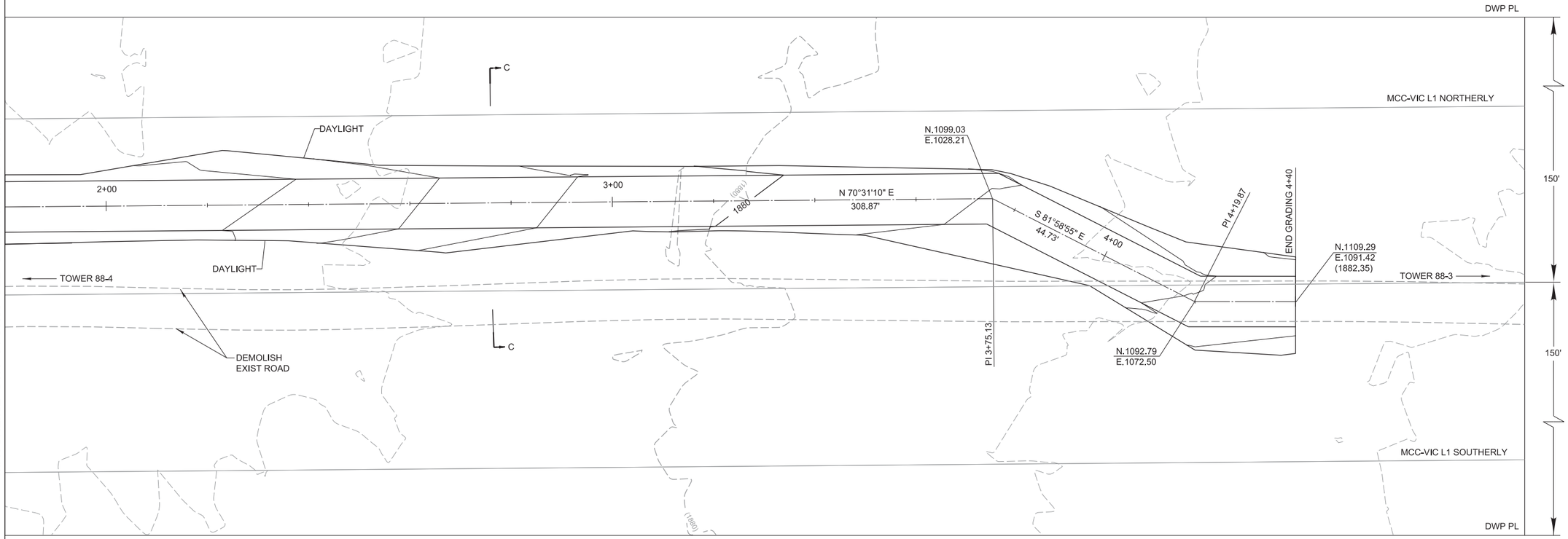
MATCHLINE STA 1+80.00 SEE SHEET MV1-88-3-CA01



PROFILE

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

MATCHLINE STA 1+80.00 SEE SHEET MV1-88-3-CA01



* SEE PLAN MV1-88-3-CA01 FOR GENERAL NOTES, ABBREVIATIONS AND TYPICAL CROSS SECTION.

PLAN

SCALE: 1" = 10'

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 88–3, 88–4

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-88-3-CA02
REV.

DRA

MV1-88-3-CA01.dgn

GENERAL NOTES:

1. ADD 2282000 TO NORTHINGS AND 7050000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
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8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
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10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

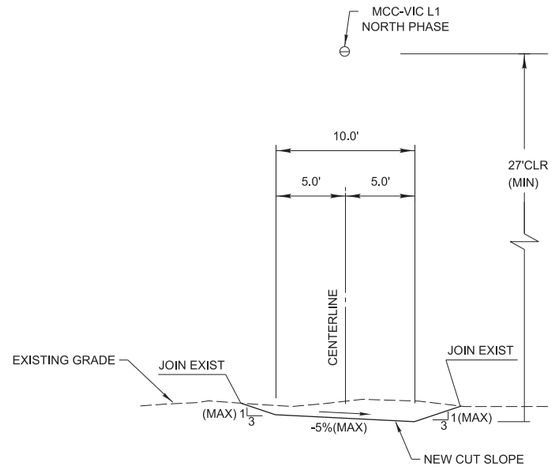
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	285
FILL (CY)	285
IMPORT (CY)	0
EXPORT (CY)	0

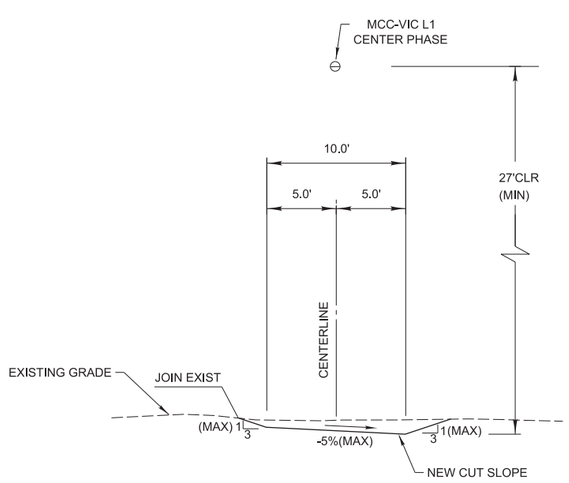
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

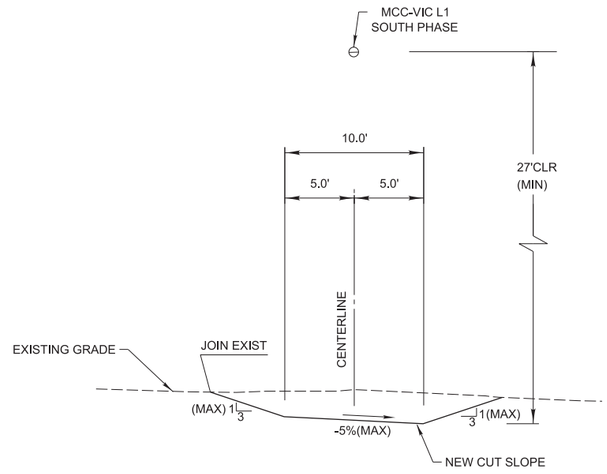
PHASE	NORTH	CENTER	SOUTH
MAX WIDTH (FT)	16.4	17	24
MAX LENGTH (FT)	154	156	281
MAX DEPTH (FT)	1.5	1.0	2.2
AREA (SF)	2188	2301	5440



SECTION A-A
TYPICAL SECTION
NO SCALE



SECTION B-B
TYPICAL SECTION
NO SCALE



SECTION C-C
TYPICAL SECTION
NO SCALE

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS
NO. | DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

SCALE: (UNLESS NOTED) AS NOTED
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DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
F. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

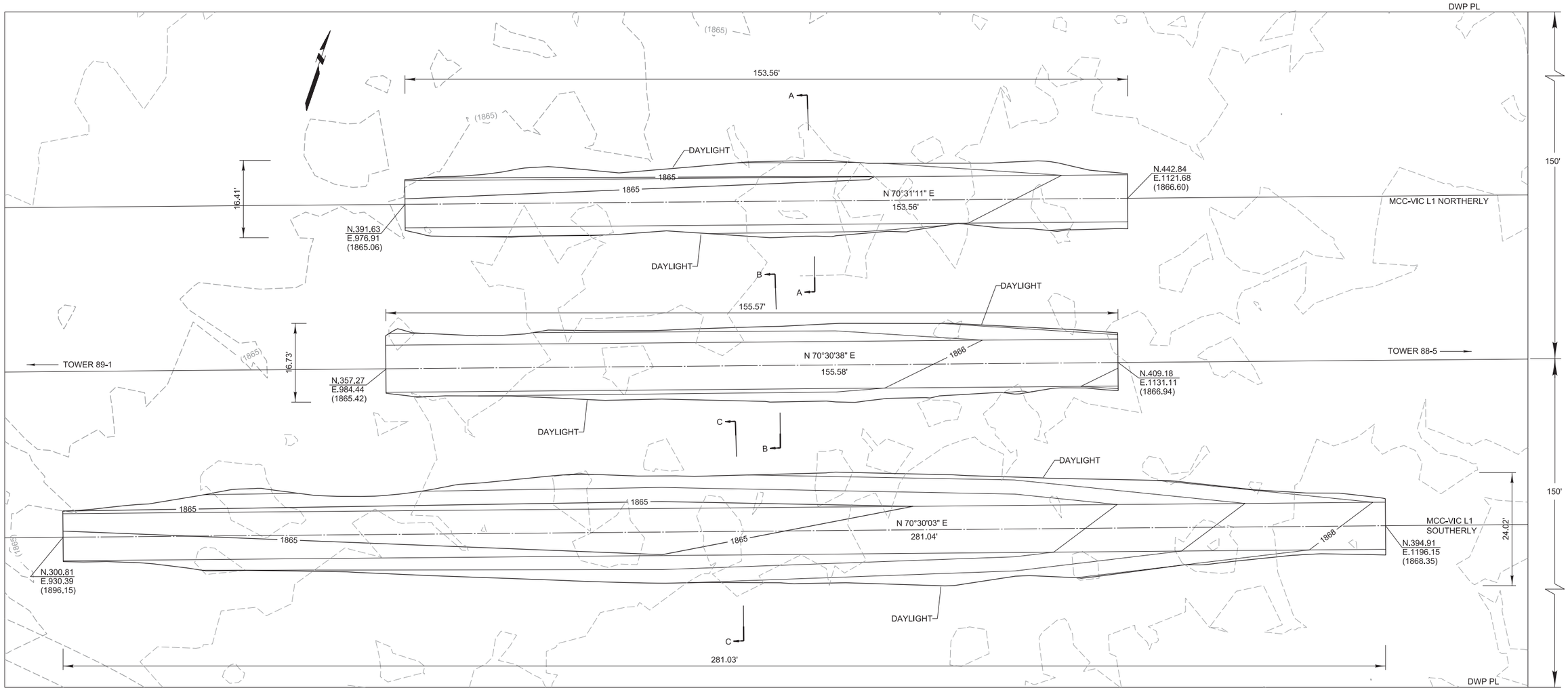
PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 88–5, 89–1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-88-5-CA01
REV.

DRA

MV1-88-5-CA01.dgn



PLAN
SCALE: 1" = 10'

* SEE PLAN MV1-88-CA01 FOR GENERAL NOTES, ABBREVIATIONS AND TYPICAL CROSS SECTION.

DES. ENGR. F. ALCOCER
SUP. ENGR. J. PANG

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
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ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
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DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
F. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

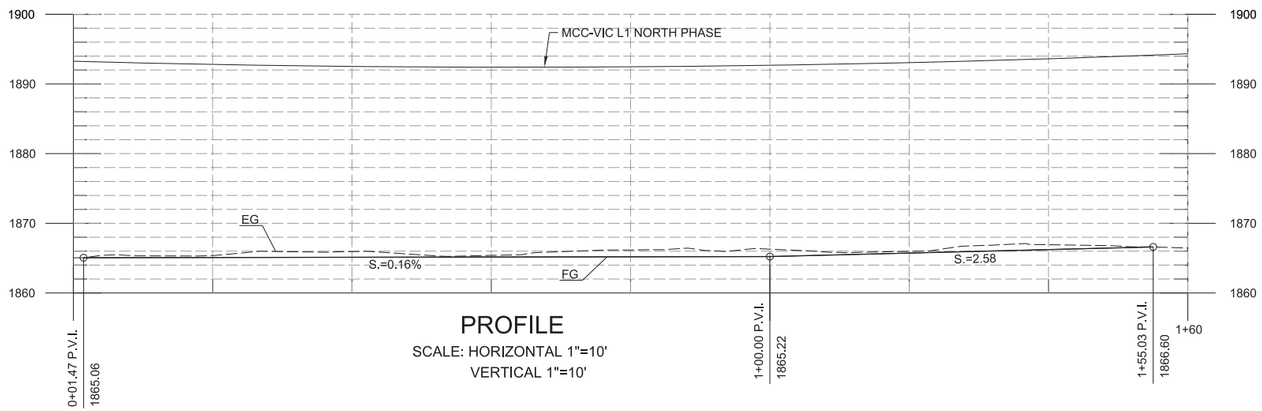
PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 88–5, 89–1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

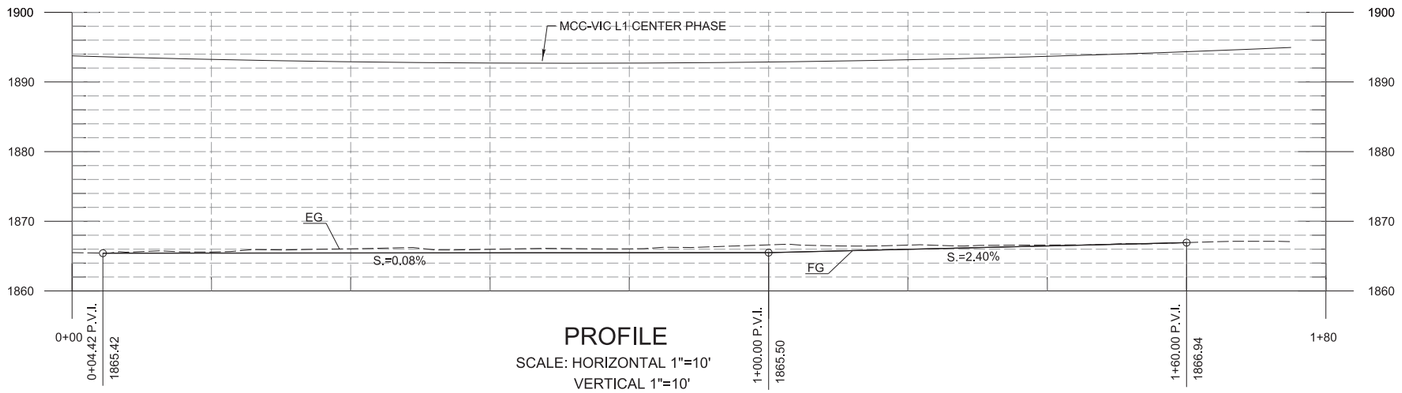
DRAWING NUMBER
MV1-88-5-CA02
REV.

DRA

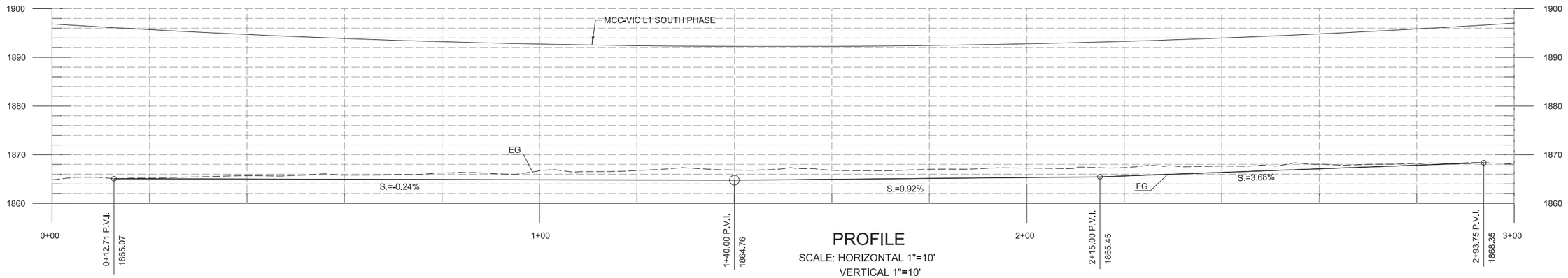
MV1-88-5-CA02.dgn



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

* SEE PLAN MV1-88-CA01 FOR GENERAL NOTES, ABBREVIATIONS.

DES. ENGR. F. ALCOCER
SUP. ENGR. J. PANG

REVISIONS
NO. | DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
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ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

PLAN, PROFILE, AND SECTIONS
GRADING
MCCULLOUGH–VICTORVILLE LINE 1 TWR 88–5, 89–1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-88-5-CA03
REV.

DRA

MV1-88-5-CA03.dgn

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
PVC	POINT OF VERTICLE CURVATURE
PVI	POINT OF VERTICLE INTERSECTION
PVT	POINT OF VERTICLE TANGENCY
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	62.0
FILL (CY)	0
IMPORT (CY)	0
EXPORT (CY)	0

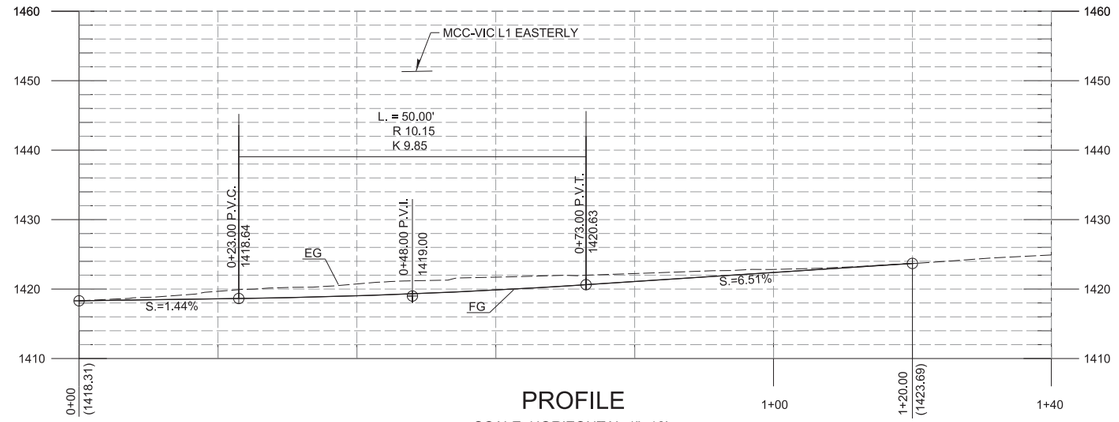
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

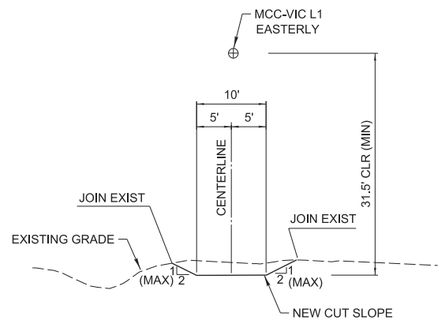
MAX WIDTH (FT)	18
MAX LENGTH (FT)	120
MAX DEPTH (FT)	2.0
AREA (SF)	1840

GENERAL NOTES:

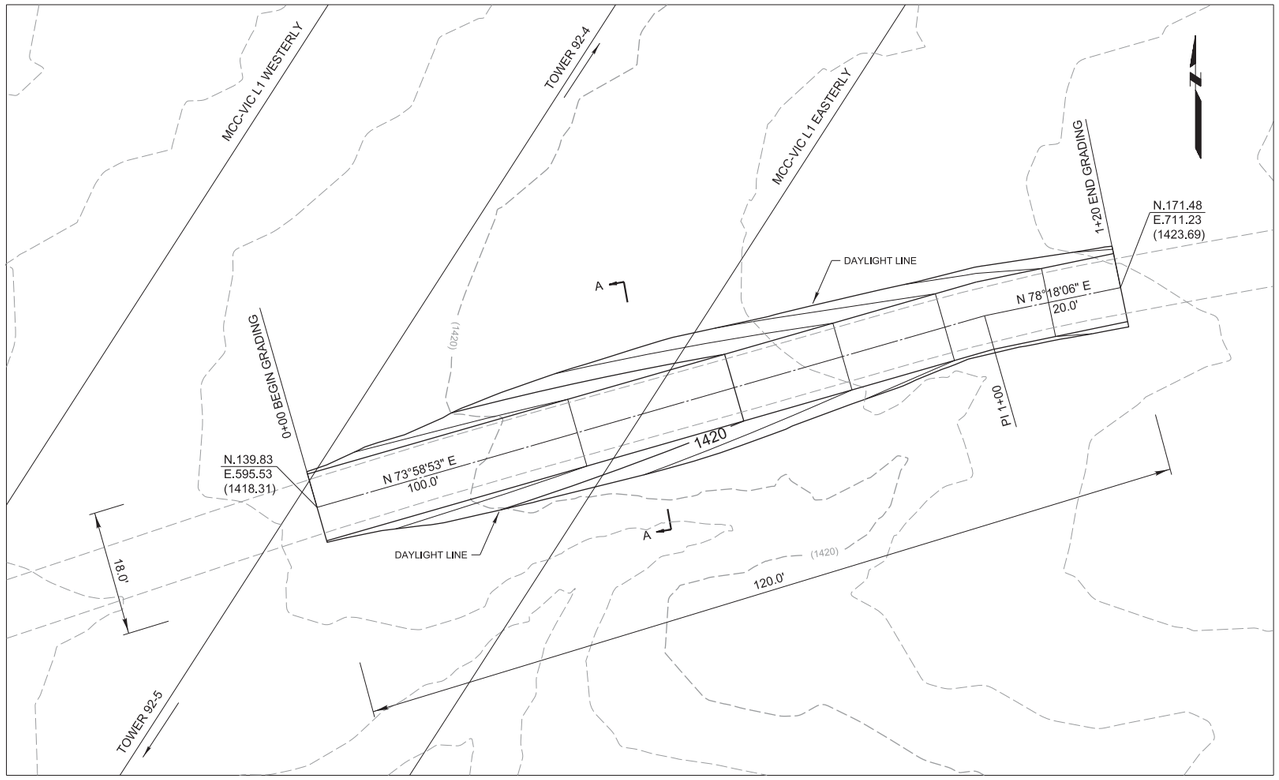
1. ADD 2266000 TO NORTHINGS AND 7039000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

| | | |

GENERAL NOTES:

1. ADD 2160000 TO NORTHINGS AND 6930000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

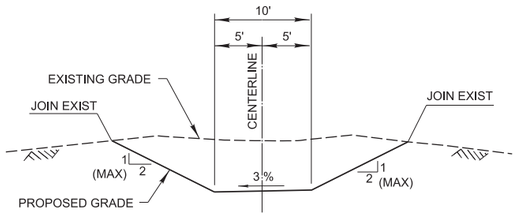
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	92
FILL (CY)	92
IMPORT (CY)	0
EXPORT (CY)	0

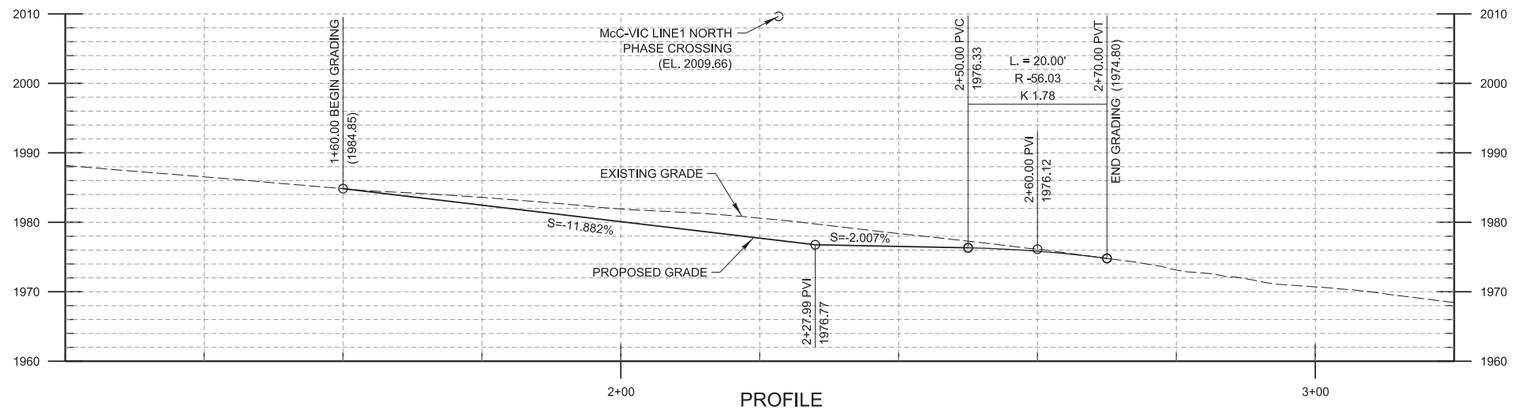
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

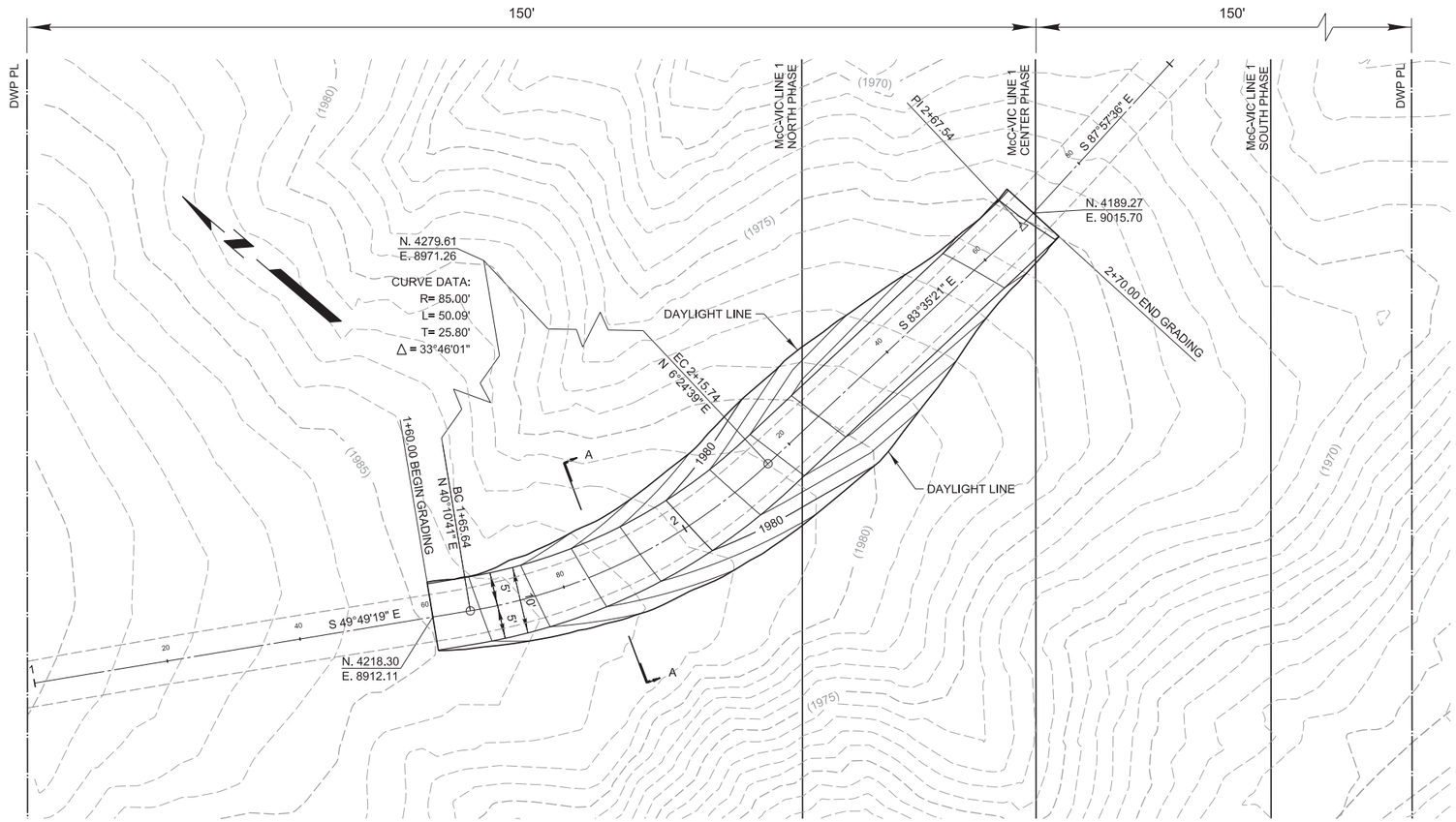
MAX WIDTH (FT)	21
MAX LENGTH (FT)	110
MAX DEPTH (FT)	3
AREA (SF)	1710



SECTION A-A
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PLAN
SCALE: 1" = 10'

REVISIONS						
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, PROFILE, AND SECTION GRADING McCULLOUGH-VICTORVILLE LINE 1 TWR 120-1
		DRAFTING RELEASE		DRAFTING RELEASE		
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL	POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES
		CHECKED BY		CHECKED BY		DRAWING NUMBER: MV1-120-1-CA01 REV.: 1
		ENGINEERING APPROVAL		ENGINEERING APPROVAL		
			FINAL APPROVAL RELEASE SIGNATURE DATE	J. Fong CE 69632	FINAL APPROVAL RELEASE SIGNATURE DATE	

DES. ENGR. J. FONG
ASS'T ENGR. J. PANG

01-07-13

mv1-120-1.dgn

GENERAL NOTES:

1. ADD 2131000 TO NORTHINGS AND 6905000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	580
FILL (CY)	0
IMPORT (CY)	0
EXPORT (CY)	0

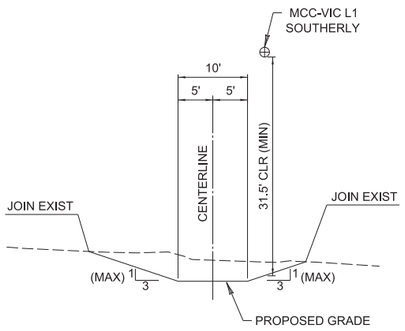
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

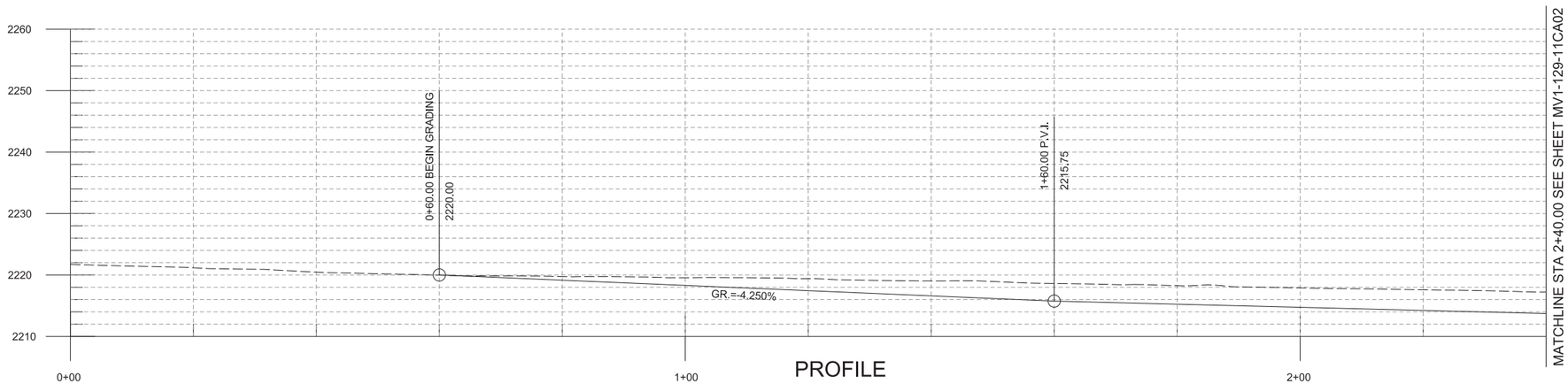
MAX WIDTH (FT)	38
MAX LENGTH (FT)	420
MAX DEPTH (FT)	3.7
AREA (SF)	10,641

ABBREVIATIONS:

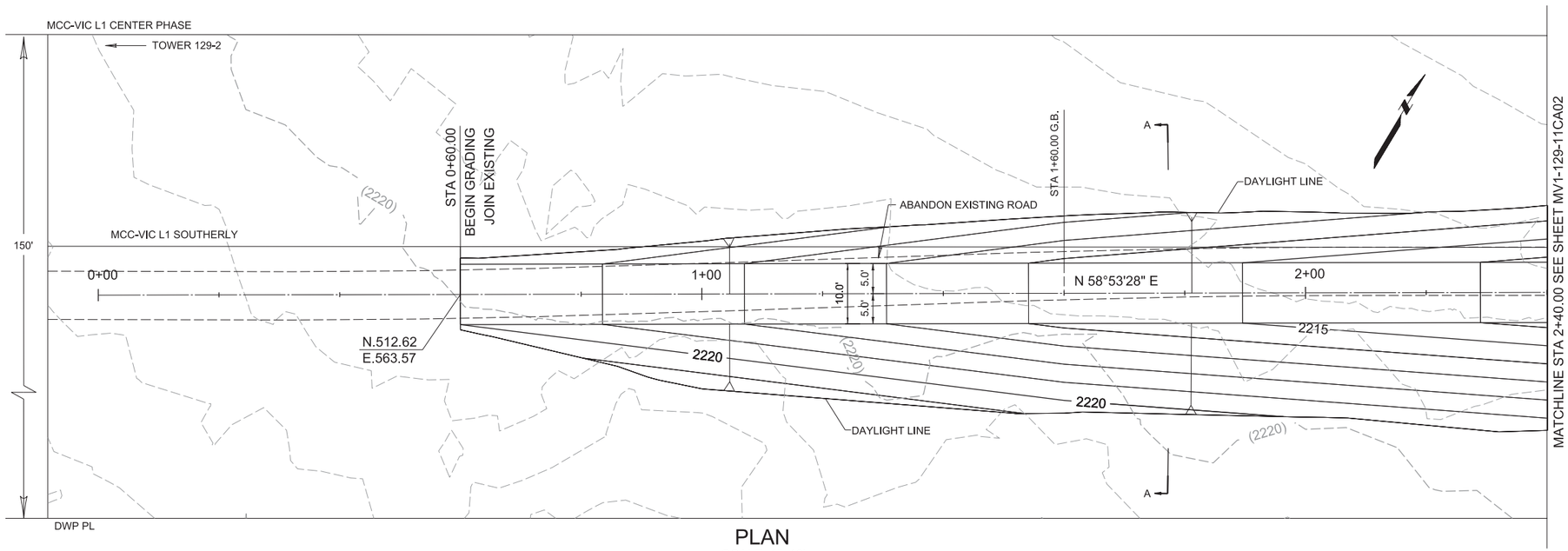
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN
SCALE: 1"=10'

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
T. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

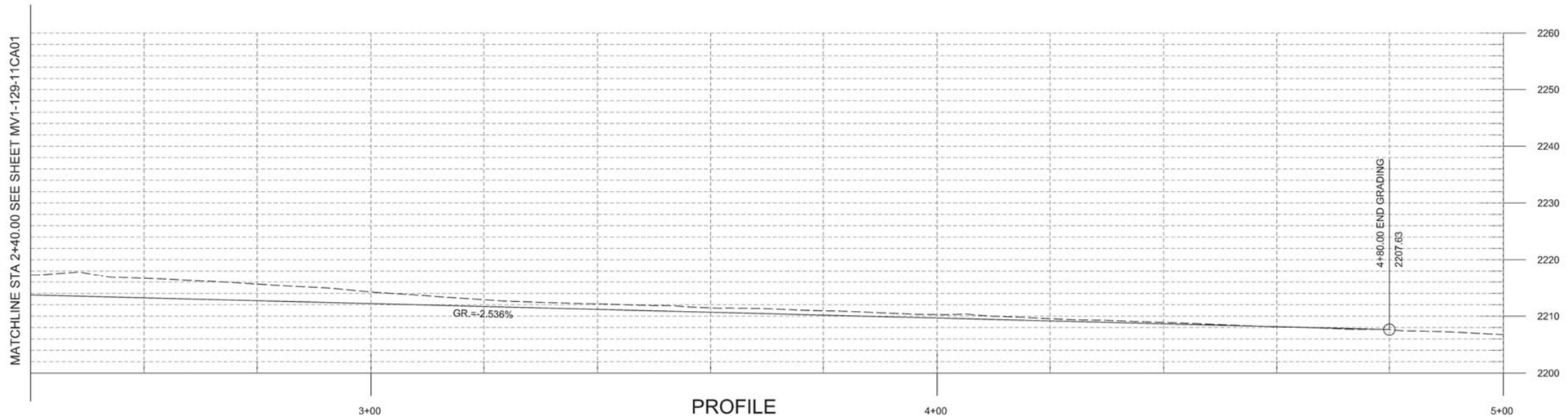
PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 1 TWR 129–1, 129–2

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

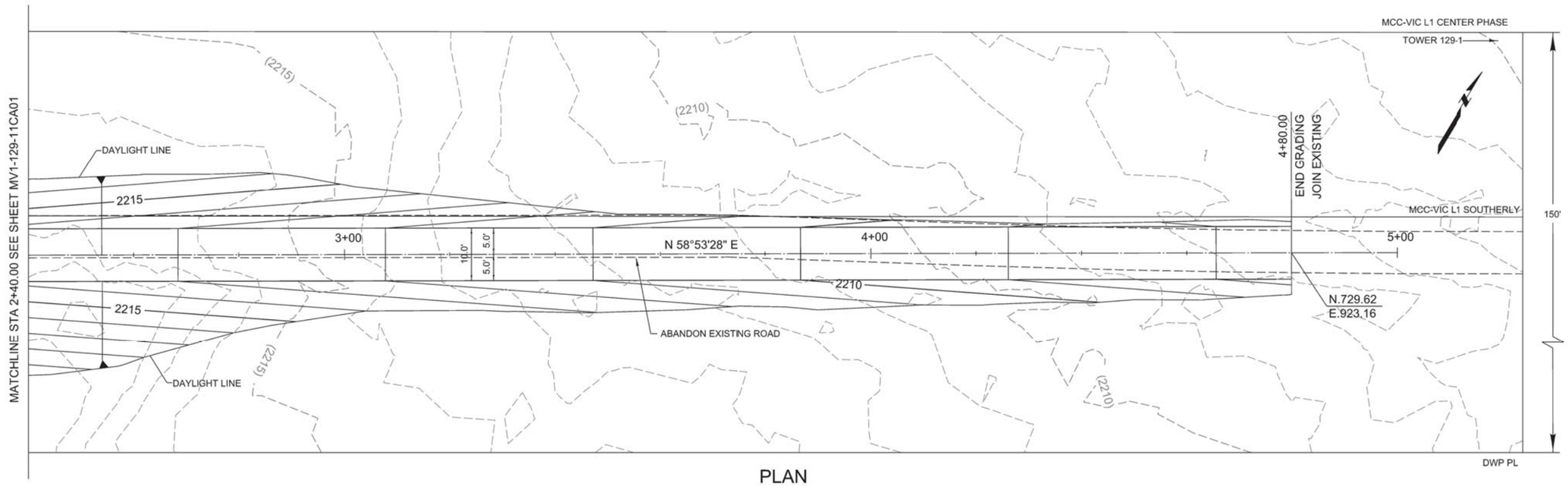
DRAWING NUMBER
MV1-129-1-CA01
REV.

DRA

MV1-129-CA01.dgn



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN
SCALE: 1"=10'

* SEE PLAN MV1-129-1-CA01 FOR GENERAL NOTES, ABBREVIATIONS AND TYPICAL CROSS SECTION.

DES. ENGR. F. ALCOCER
SUP. ENGR. J. PANG

REVISIONS
NO. | DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
F. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, AND SECTIONS
GRADING
MCCULLOUGH–VICTORVILLE LINE 1 TWR 129–1, 129–2

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-129-1-CA02
REV.

DRA
XXXX

GENERAL NOTES:

1. ADD 2410000 TO NORTHINGS AND 7270000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
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7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

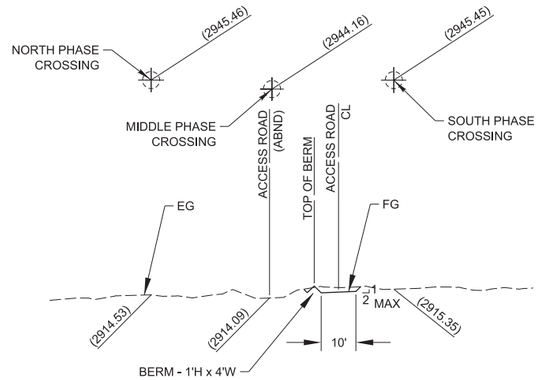
ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	41
FILL (CY)	65
IMPORT (CY)	24
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK AND SHRINKAGE FACTORS)

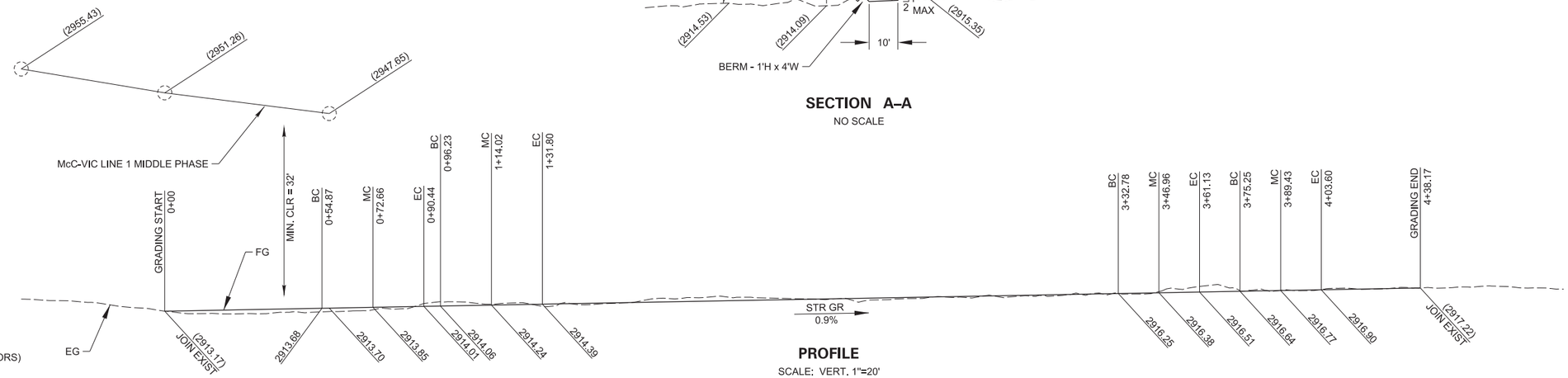


SECTION A–A
NO SCALE

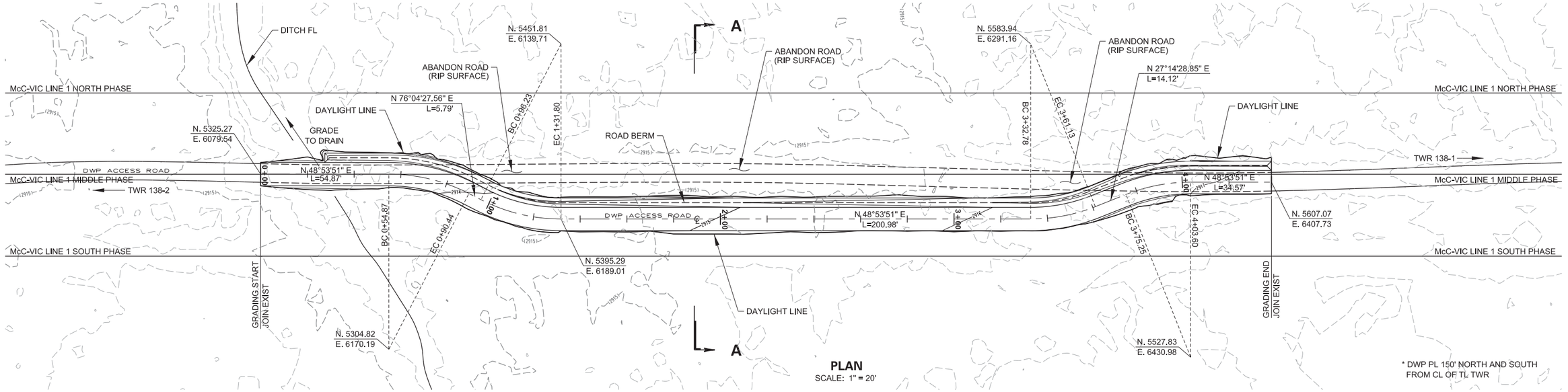
CURVE DATA					PI	
	R	L	T	Δ	N.	E.
①	75'	35.57'	18.13'	27°10'35.55"	5373.26	6134.54
②	75'	35.57'	18.13'	27°10'35.55"	5383.38	6175.35
③	75'	28.35'	14.35'	21°39'22.16"	5536.85	6351.27
④	75'	28.35'	14.35'	21°39'22.16"	5574.91	6370.87

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	30
MAX LENGTH (FT)	440
MAX DEPTH (FT)	1
AREA (SF)	11530



PROFILE
SCALE: VERT. 1"=20'
HORT. 1"=10'



PLAN
SCALE: 1" = 20'

* DWP PL 150' NORTH AND SOUTH FROM CL OF TL TWR

DES. ENGR. J. PANG
SUP. ENGR. L. MALCOM

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J Pang CE 65962

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

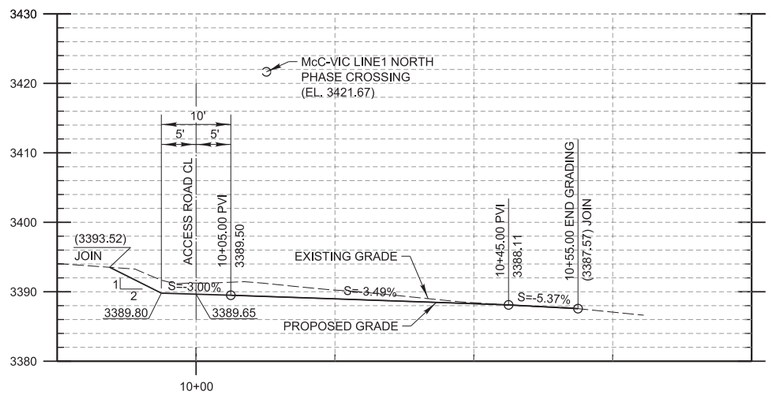
PLAN, SECTION AND PROFILE GRADING
McCULLOUGH–VICTORVILLE LINE 1 TWR 138–1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-138-1-CA01
REV. 1

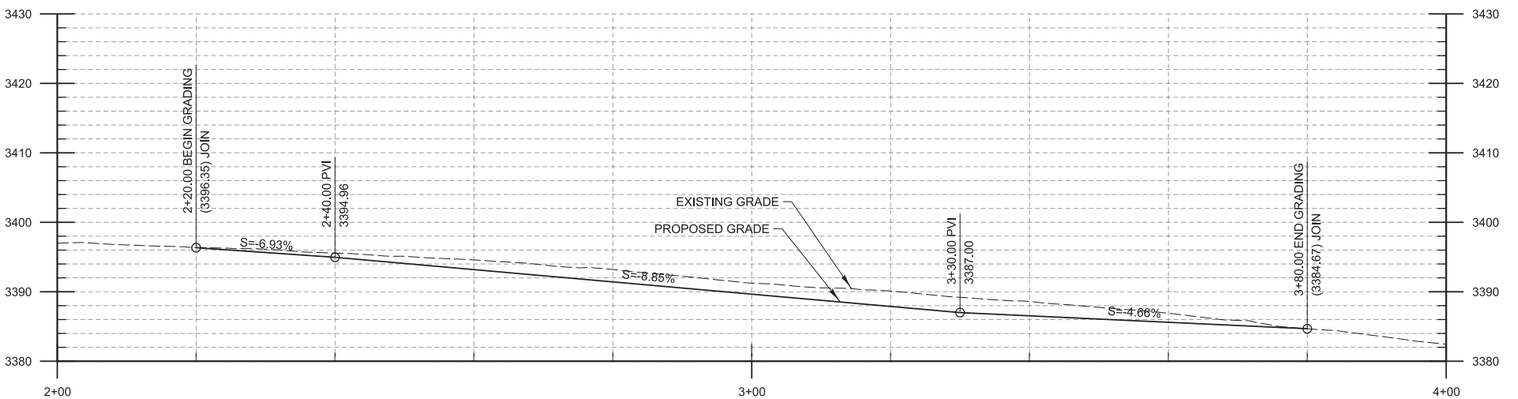
10-13-12

DRA
mv138-1.dgn



LATERAL ROAD PROFILE

SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



ACCESS ROAD PROFILE

SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

GENERAL NOTES:

1. ADD 2085000 TO NORTHINGS AND 6834000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
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7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
MC	MIDDLE OF CURVE
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
S	SLOPE
SG	STRAIGHT GRADE
TYP.	TYPICAL

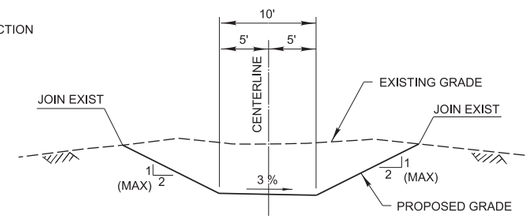
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	201
FILL (CY)	201
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

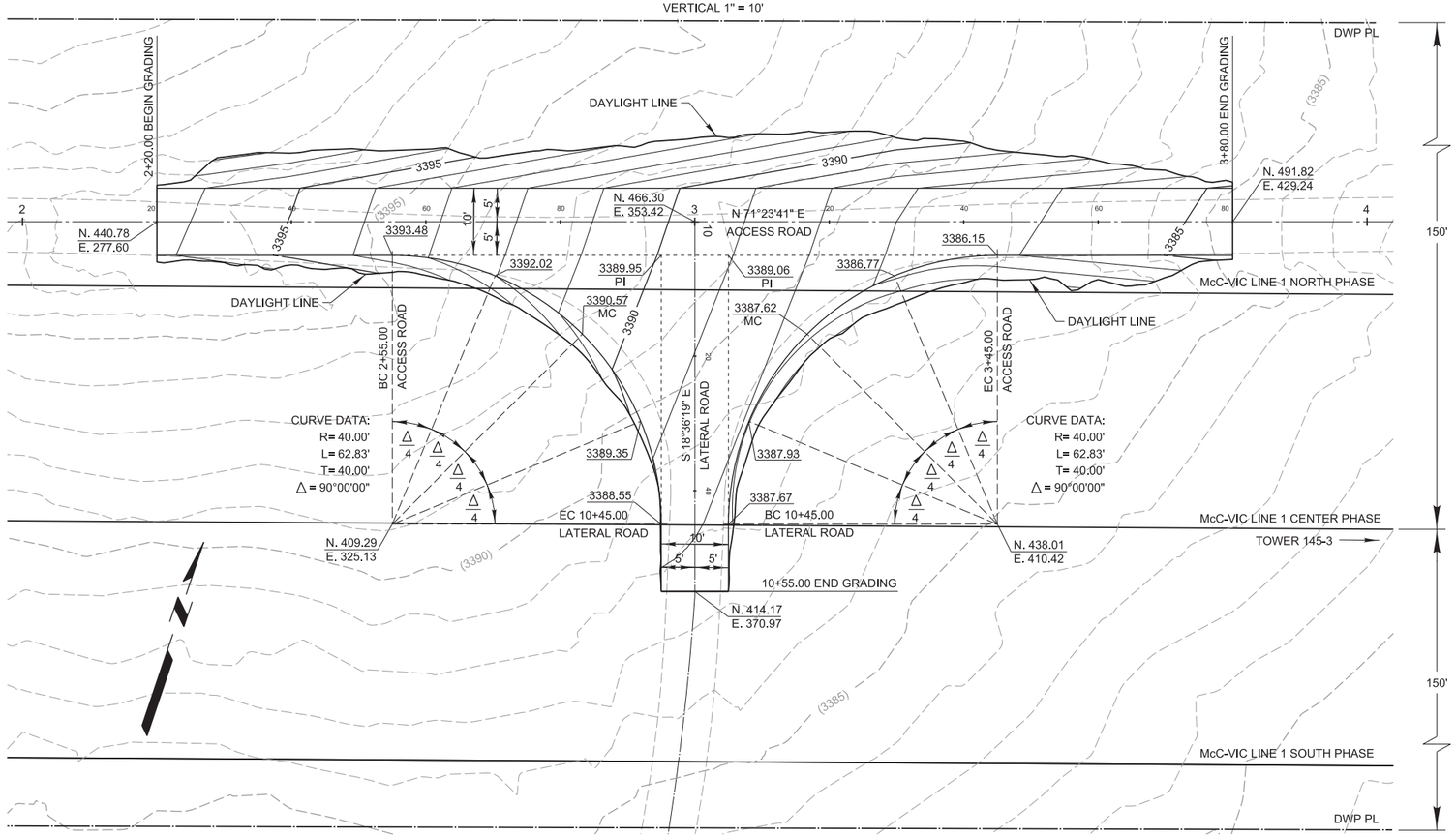
APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	70
MAX LENGTH (FT)	160
MAX DEPTH (FT)	2.5
AREA (SF)	4236



TYPICAL SECTION

NO SCALE



PLAN

SCALE: 1" = 10'

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	

DES. ENGR. J. TONG
ASS'T DES. ENGR. J. PANG

REVISIONS
NO. | DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
J. Tong CE 69632
OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

PLAN, PROFILES, AND SECTION GRADING
McCULLOUGH-VICTORVILLE LINE 1 TWR 145-3

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER: MV1-145-3-CA01 | REV. 1

01-07-13

mv1-145-3.dgn

GENERAL NOTES:

1. ADD 2070000 TO NORTHINGS AND 6810000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES:

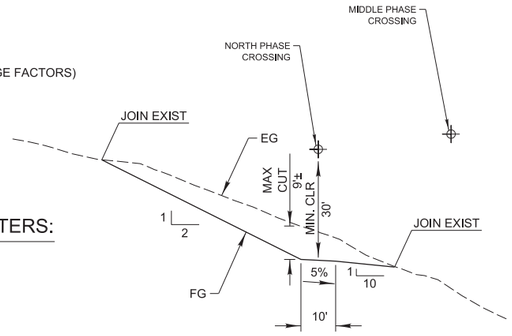
CUT (CY)	1080
FILL (CY)	0
IMPORT (CY)	0
EXPORT (CY)	1080

(ESTIMATE BASED ON 10% BULK AND SHRINKAGE FACTORS)

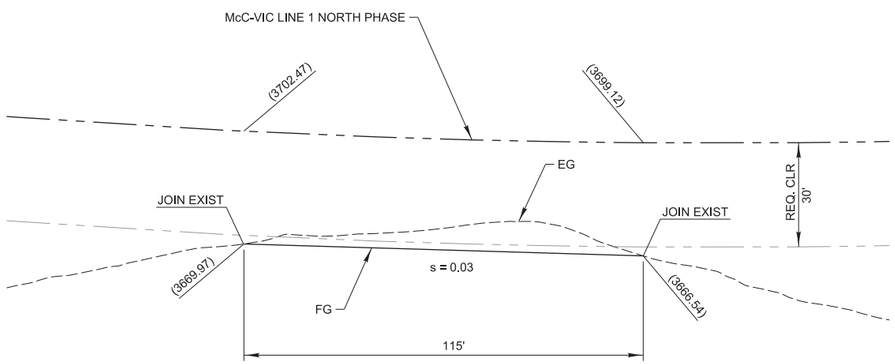
* CUT MATERIAL MAY BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

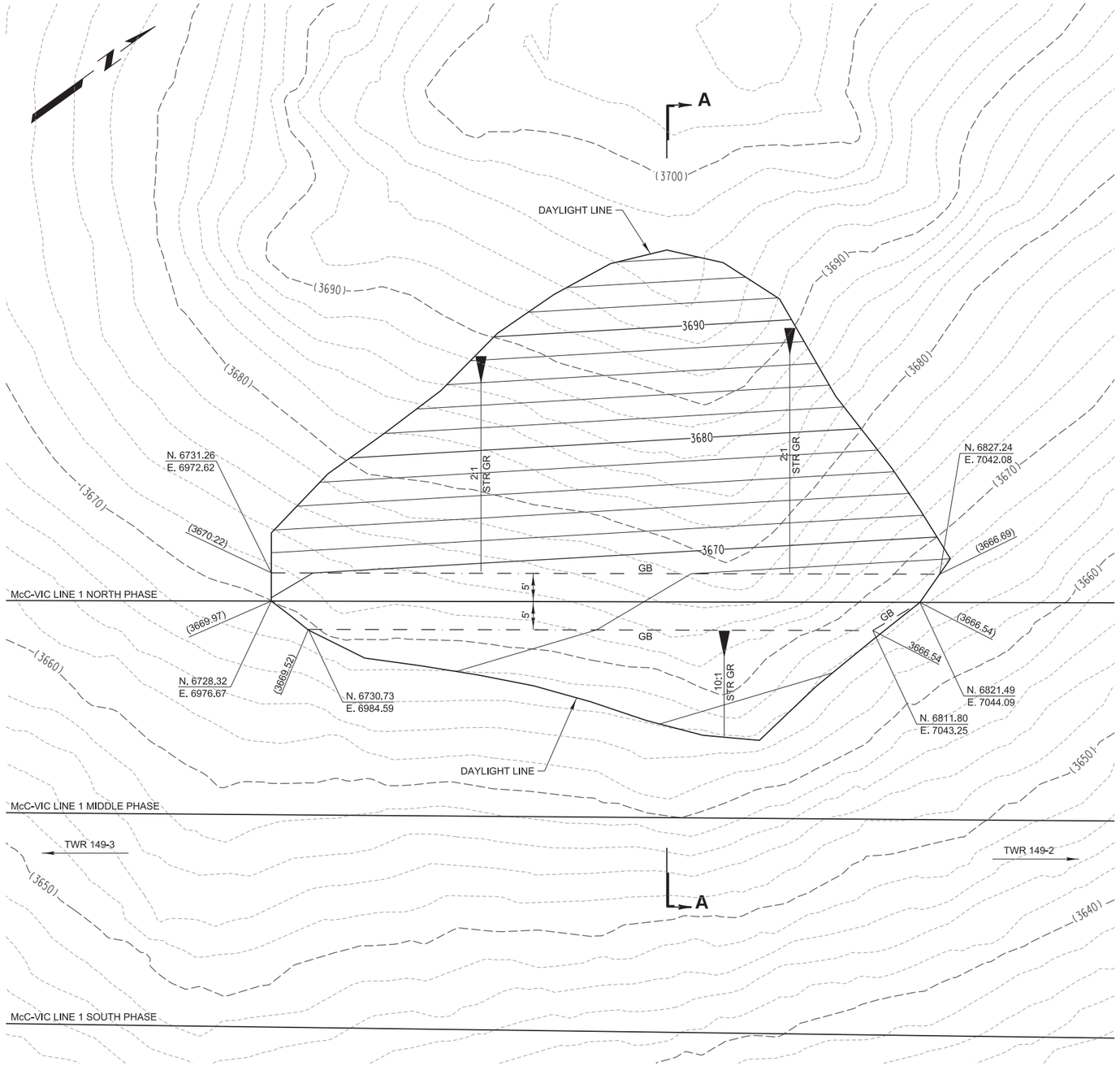
MAX WIDTH (FT)	90
MAX LENGTH (FT)	115
MAX DEPTH (FT)	9
AREA (SF)	7060



SECTION A–A
SCALE: 1" = 20'



PROFILE – NORTH PHASE
SCALE: 1"=20'



PLAN
SCALE: 1" = 10'

* DWP PL 150' NORTH AND SOUTH FROM CL OF TL TWR

DES. ENGR. J. PANG
SUP. ENGR. E. MALACON

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Pang CE 65962

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, SECTION AND PROFILE GRADING McCULLOUGH–VICTORVILLE LINE 1 TWR 149–2

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-149-2-CA01 REV. 1

10-16-12

DRA

mv149-2.dgn

GENERAL NOTES:

1. ADD 2060000 TO NORTHINGS AND 6800000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO NON DRIVING SURFACE OF ANY CUT OR FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

ESTIMATED EARTHWORK QUANTITIES:

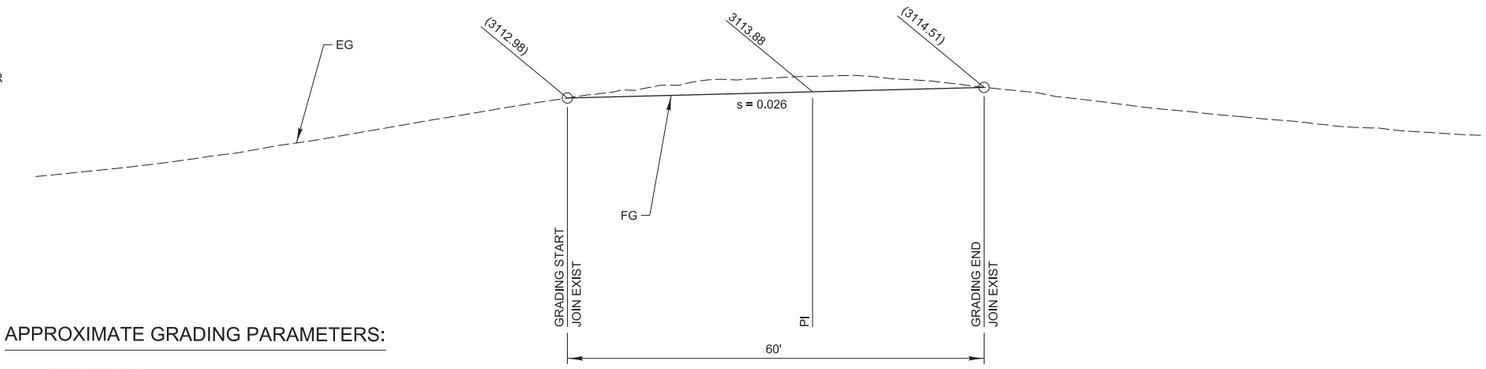
CUT (CY)	77
FILL (CY)	0
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK AND SHRINKAGE FACTORS)

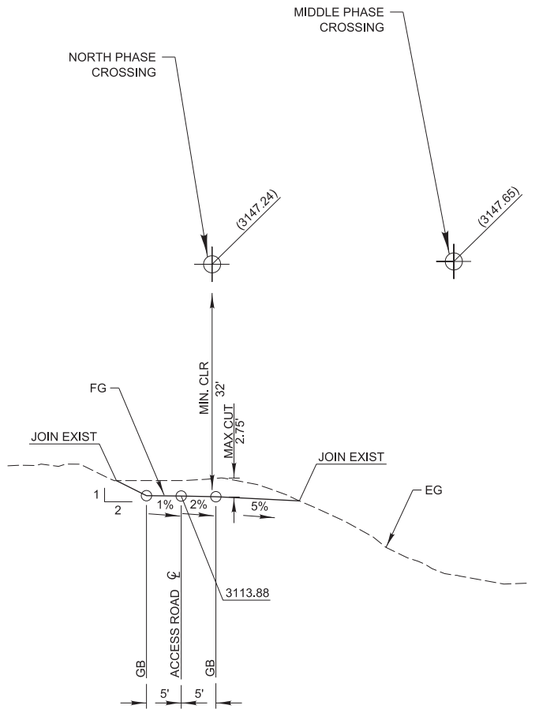
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

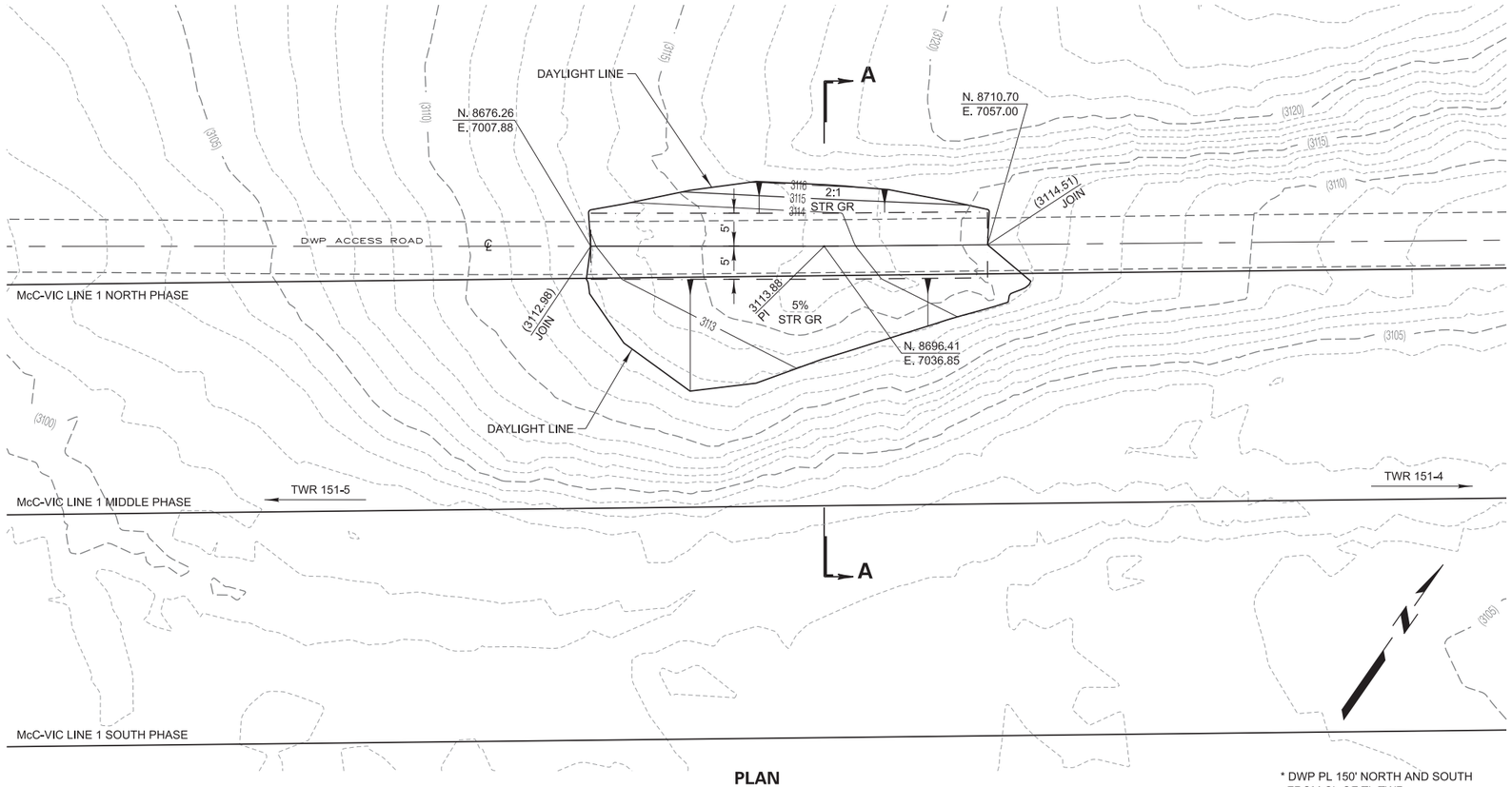
MAX WIDTH (FT)	25
MAX LENGTH (FT)	60
MAX DEPTH (FT)	2.75
AREA (SF)	1525



PROFILE – ACCESS ROAD
SCALE: 1"=10'



SECTION A–A
SCALE: 1" = 10'



PLAN
SCALE: 1" = 10'

* DWP PL 150' NORTH AND SOUTH FROM CL OF TL TWR

DES. ENGR. J. PANG
SUP. ENGR. E. MALACON

REVISIONS		
NO.	DESCRIPTION	

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Pang CE 65962
FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, SECTION AND PROFILE GRADING McCULLOUGH–VICTORVILLE LINE 1 TWR 151–4

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-151-4-CA01
REV. 1

10-19-12

DRA

mv151-4.dgn

Appendix C.2

McCullough-Victorville Line 2 Drawings

GENERAL NOTES:

1. ADD 2271000 TO NORTHINGS AND 7043000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	320
FILL (CY)	320
IMPORT (CY)	0
EXPORT (CY)	0

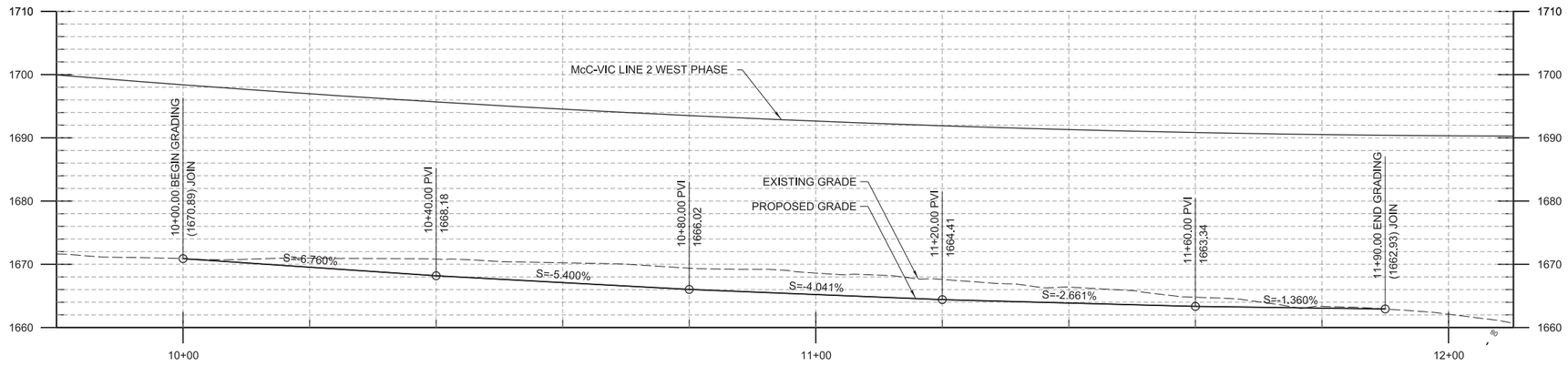
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

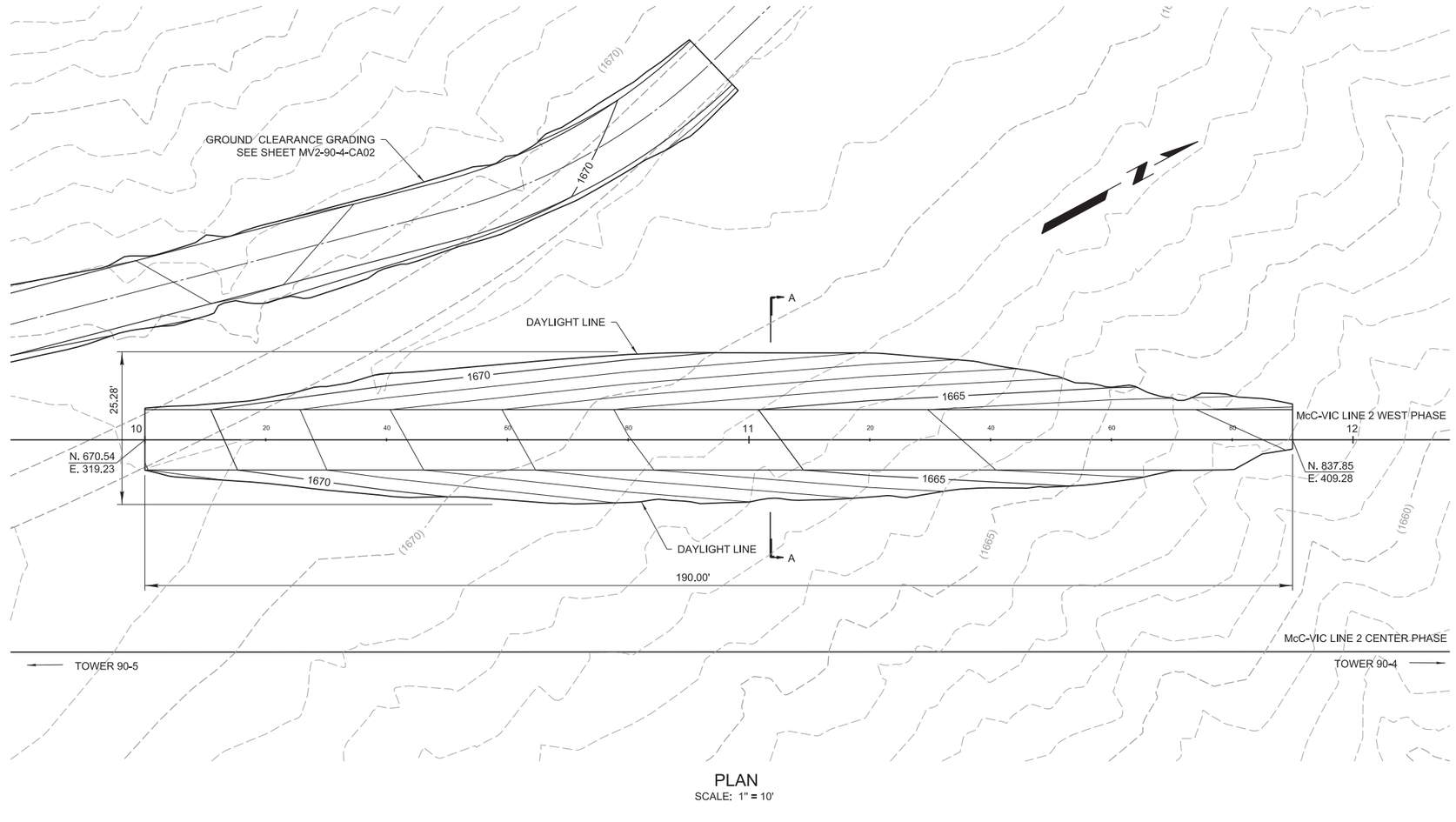
MAX WIDTH (FT)	45
MAX LENGTH (FT)	365
MAX DEPTH (FT)	4
AREA (SF)	11,900

ABBREVIATIONS:

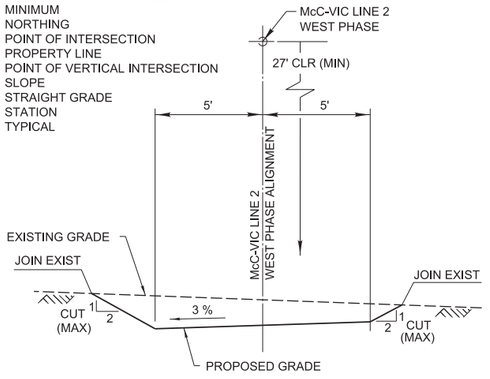
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
MC	MIDDLE OF CURVE
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
S	SLOPE
SG	STRAIGHT GRADE
STA.	STATION
TYP.	TYPICAL



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PLAN
SCALE: 1" = 10'



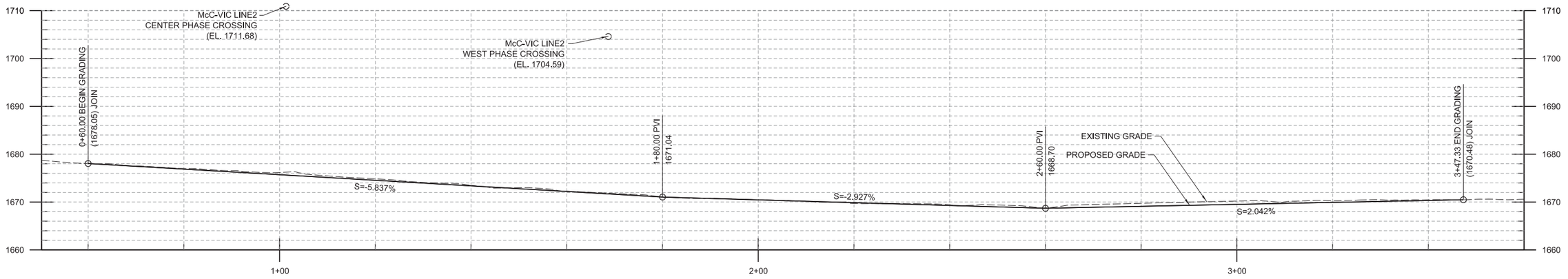
SECTION A-A
TYPICAL SECTION
NO SCALE

REVISIONS							
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, PROFILE, AND SECTION GRADING McCULLOUGH-VICTORVILLE LINE 2 TWR 90-4	
		DRAFTING RELEASE		DRAFTING RELEASE			
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL		
		CHECKED BY		CHECKED BY			
		ENGINEERING APPROVAL		ENGINEERING APPROVAL			
			FINAL APPROVAL RELEASE SIGNATURE DATE	J. Fung CE 69632	FINAL APPROVAL RELEASE SIGNATURE DATE	POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES	DRAWING NUMBER MV2-90-4-CA01 REV. 1

DES. ENGR. J. FONG
APP. ENGR. J. PANG

01-07-13

mv2-90-4.dgn

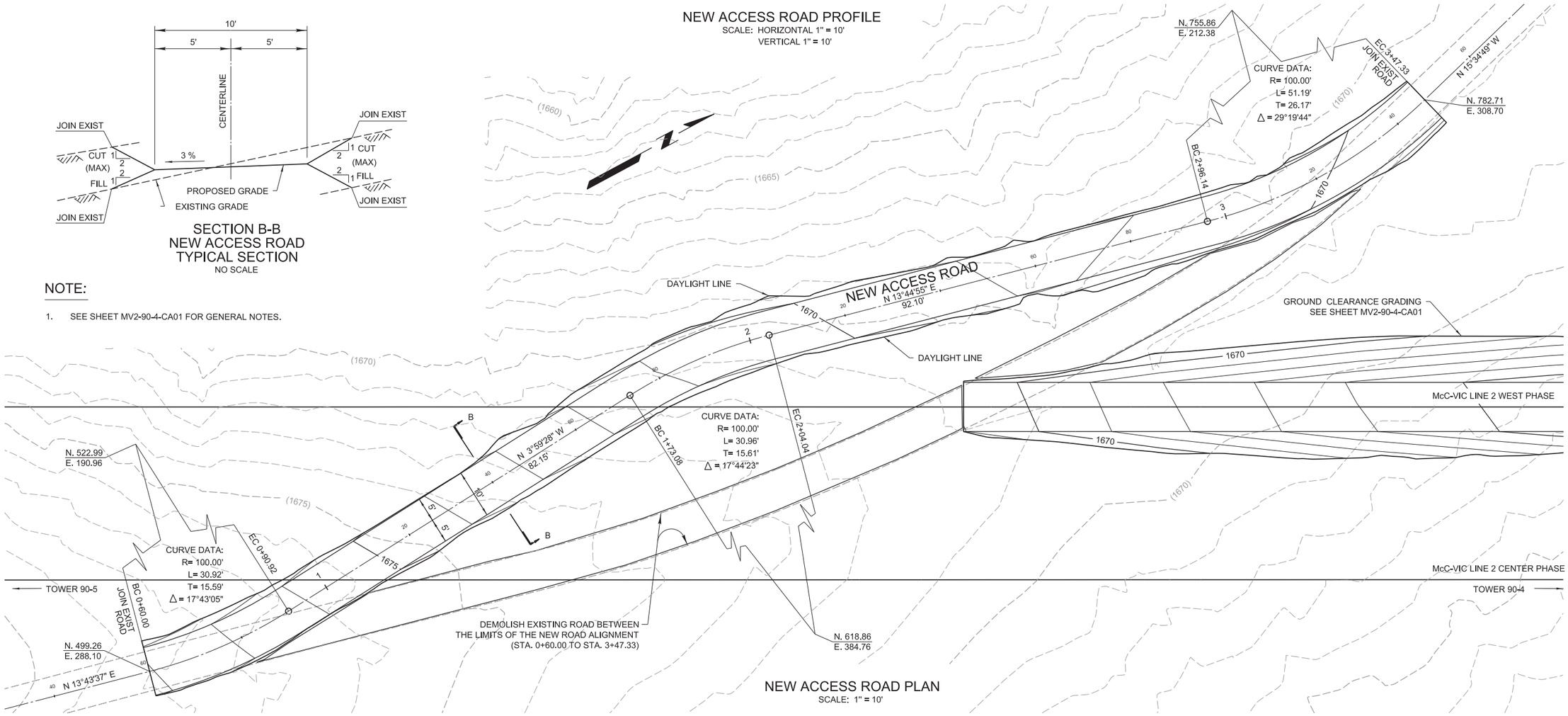


NEW ACCESS ROAD PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

SECTION B-B
NEW ACCESS ROAD
TYPICAL SECTION
NO SCALE

NOTE:

1. SEE SHEET MV2-90-4-CA01 FOR GENERAL NOTES.



NEW ACCESS ROAD PLAN
SCALE: 1" = 10'

REVISIONS	
NO.	DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
J. Fong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

DES. ENGR. J. FONG
SUP. ENGR. J. PANG

PLAN, PROFILE, AND SECTION
ACCESS ROAD GRADING
McCULLOUGH-VICTORVILLE LINE 2 TWR 90-4

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

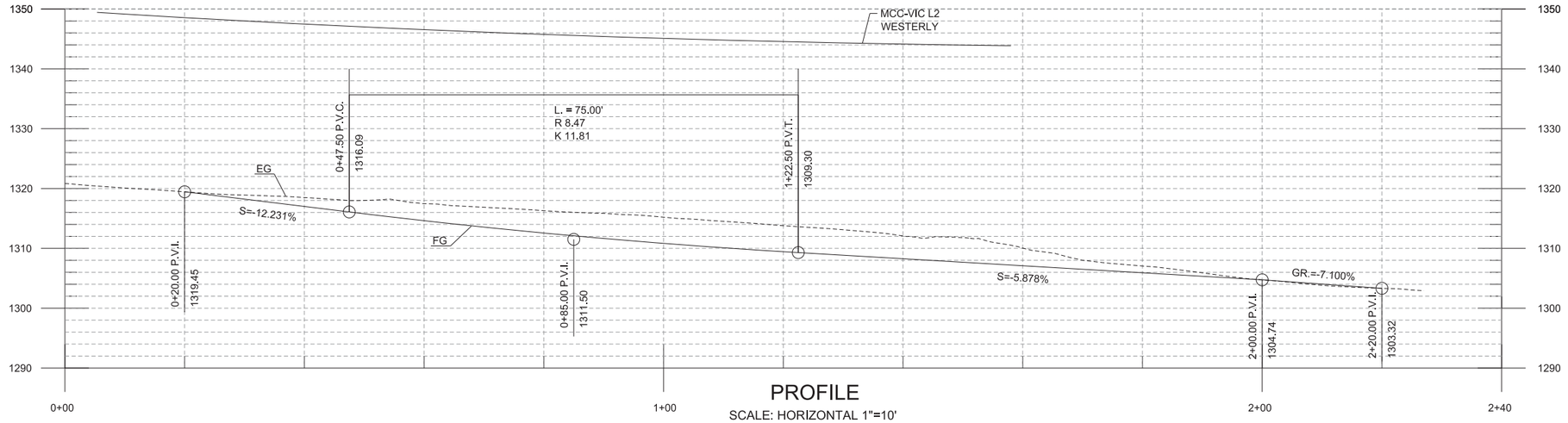
DRAWING NUMBER
MV2-90-4-CA02
REV.

10-20-12

mv2-90-4.dgn

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
PVC	POINT OF VERTICLE CURVATURE
PVI	POINT OF VERTICLE INTERSECTION
PVT	POINT OF VERTICLE TANGENCY
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

GENERAL NOTES:

1. ADD 2250000 TO NORTHINGS AND 7030000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

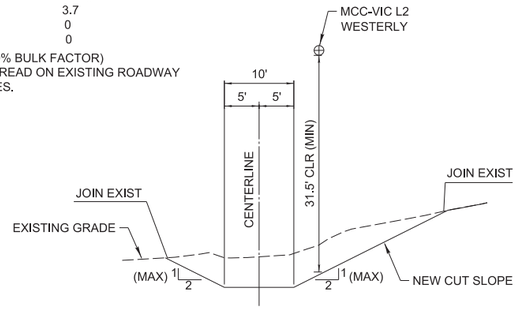
APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	89
MAX LENGTH (FT)	162
MAX DEPTH (FT)	4.8
AREA (SF)	5,877

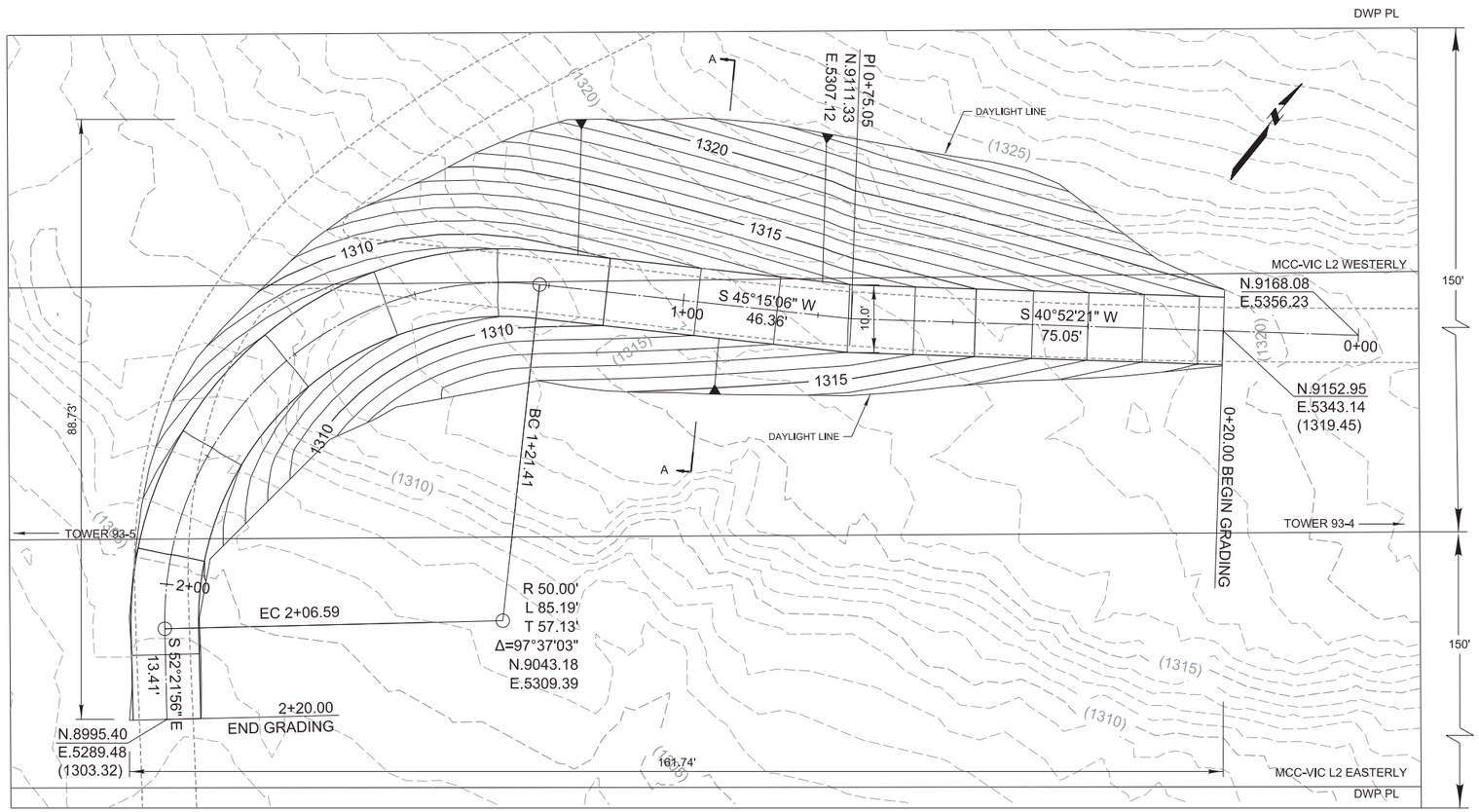
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	452.3
FILL (CY)	3.7
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

REVISIONS						
NO.	DESCRIPTION					
		Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 2 TWR 93–4, 93–5
		DRAFTING RELEASE		DRAFTING RELEASE		
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL	POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES
		CHECKED BY		CHECKED BY		DRAWING NUMBER MV2-93-4-CA01 REV.
		ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE	ENGINEERING APPROVAL T. Mercer CE 70713	FINAL APPROVAL RELEASE SIGNATURE DATE	

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

DRA

MV2-93-4-CA01.dgn

GENERAL NOTES:

1. ADD 2240000 TO NORTHINGS AND 7020000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO NON DRIVING SURFACE OF ANY CUT OR FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	73
FILL (CY)	0
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK AND SHRINKAGE FACTORS)

* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

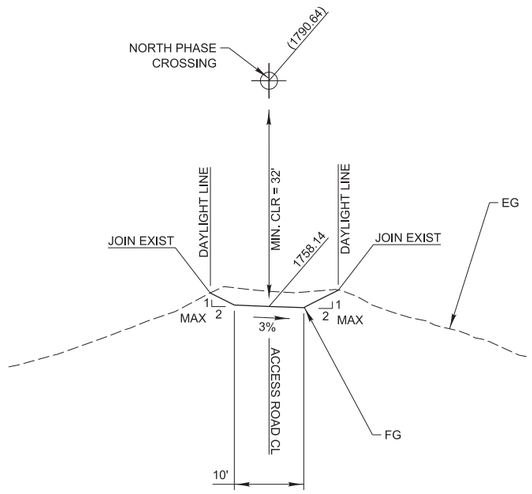
APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	25
MAX LENGTH (FT)	200
MAX DEPTH (FT)	2.25
AREA (SF)	1522

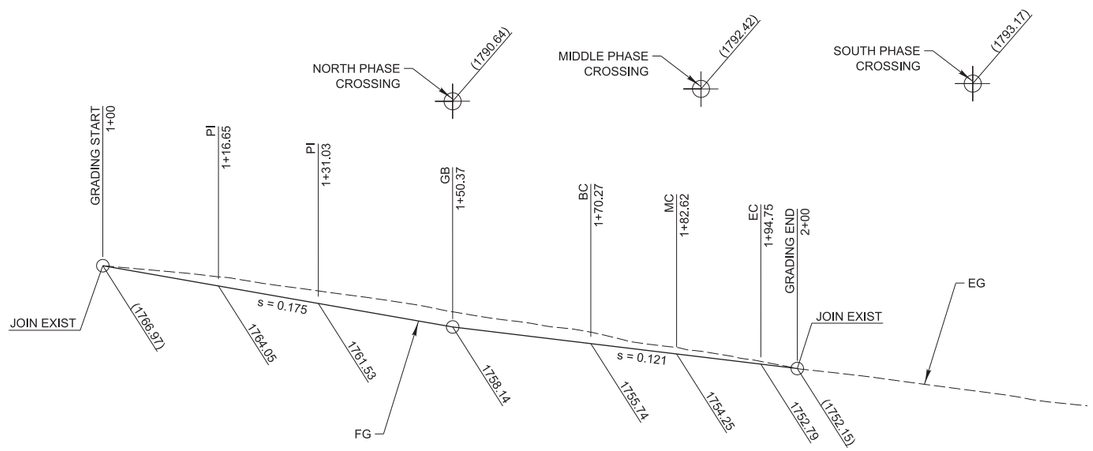
ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

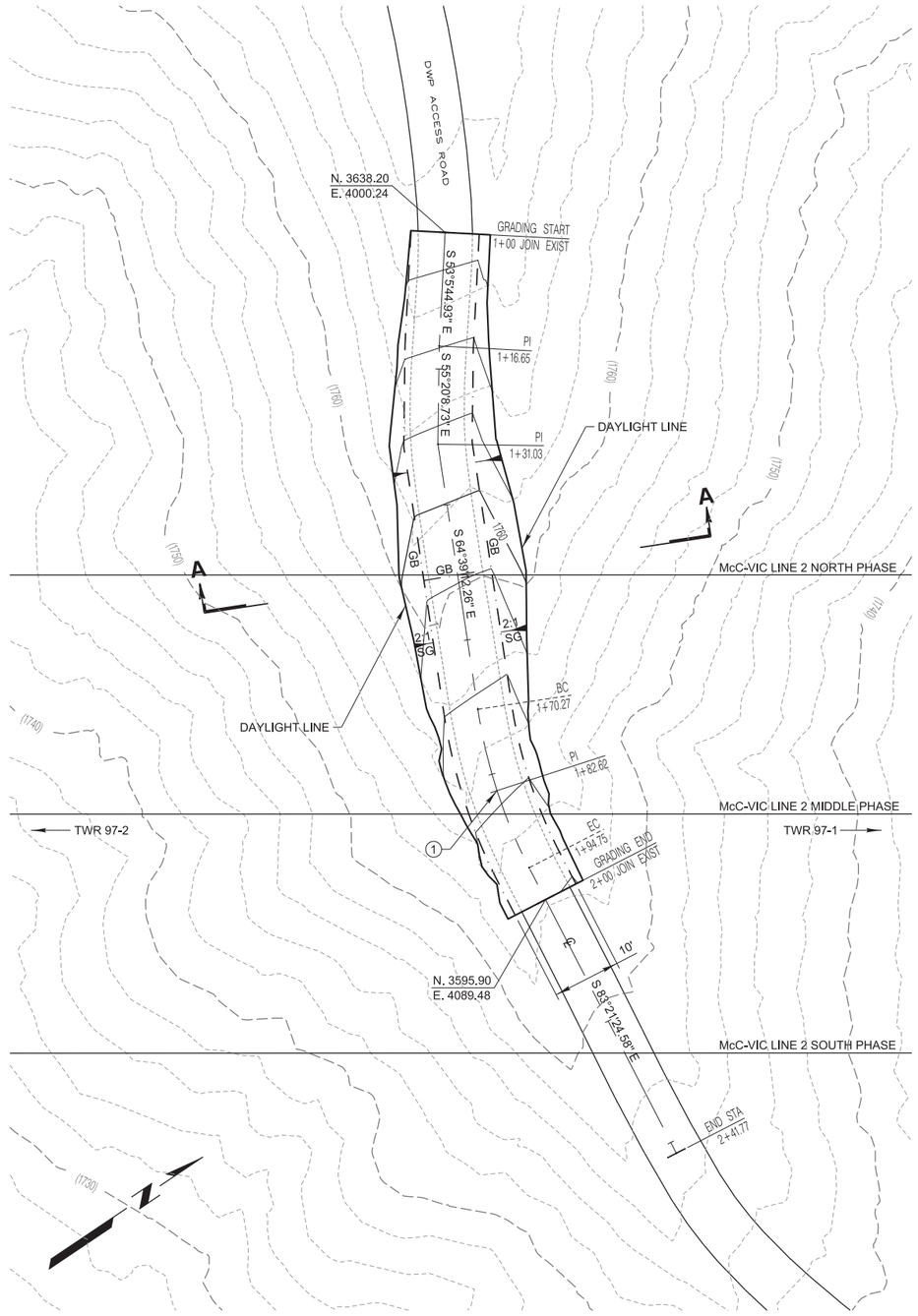
CURVE DATA					PI	
	R	L	T	Δ	N.	E.
①	75'	24.48'	12.35'	18°42'12.33"	3597.94	4072.00



SECTION A–A (GB)
SCALE: 1" = 10'



PROFILE – ACCESS ROAD
SCALE: 1"=10'



PLAN
SCALE: 1" = 10'

* DWP PL 150' NORTH AND SOUTH FROM CL OF TL TWR

DES. ENGR. J. PANG SUP. ENGR. E. MALACON	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL J Pang CE 65962	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	**PLAN, SECTION AND PROFILE GRADING McCULLOUGH–VICTORVILLE LINE 2 TWR 97–1** POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES DRAWING NUMBER **MV2-97-1-CA01** REV. 1

10-27-12

DRA

mv2_97-1.dgn

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
PVC	POINT OF VERTICLE CURVATURE
PVI	POINT OF VERTICLE INTERSECTION
PVT	POINT OF VERTICLE TANGENCY
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

GENERAL NOTES:

1. ADD 2230000 TO NORTHINGS AND 7020000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

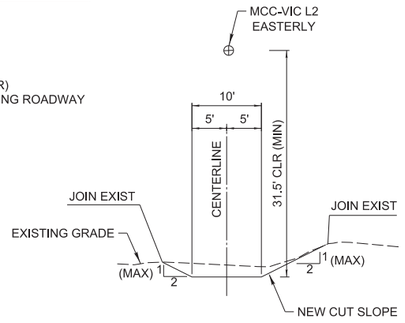
APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	26
MAX LENGTH (FT)	181
MAX DEPTH (FT)	1.7
AREA (SF)	2674

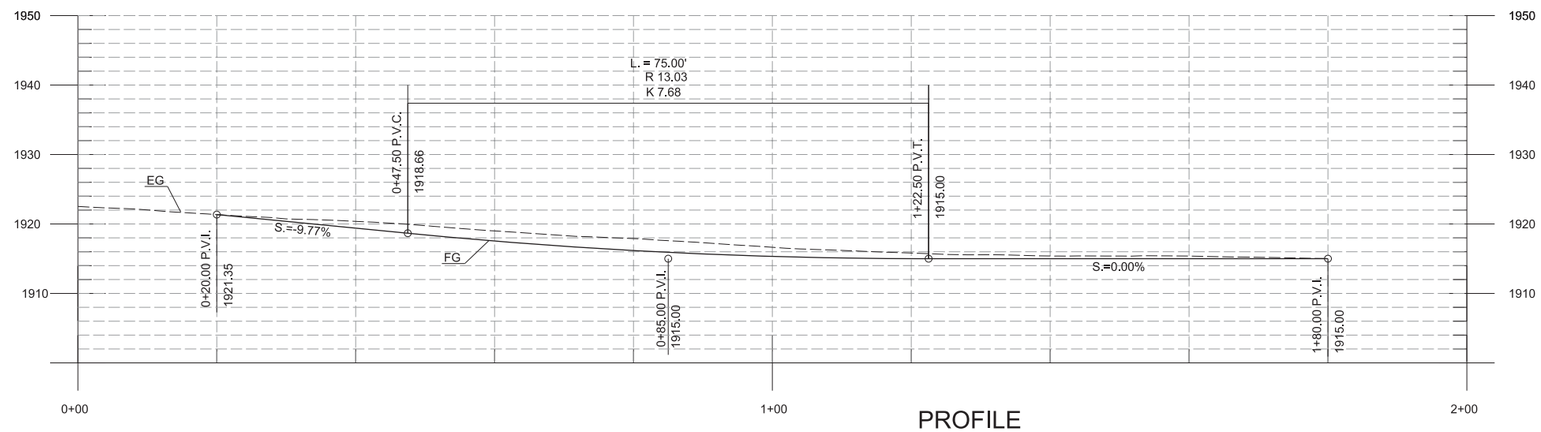
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	82.0
FILL (CY)	0
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

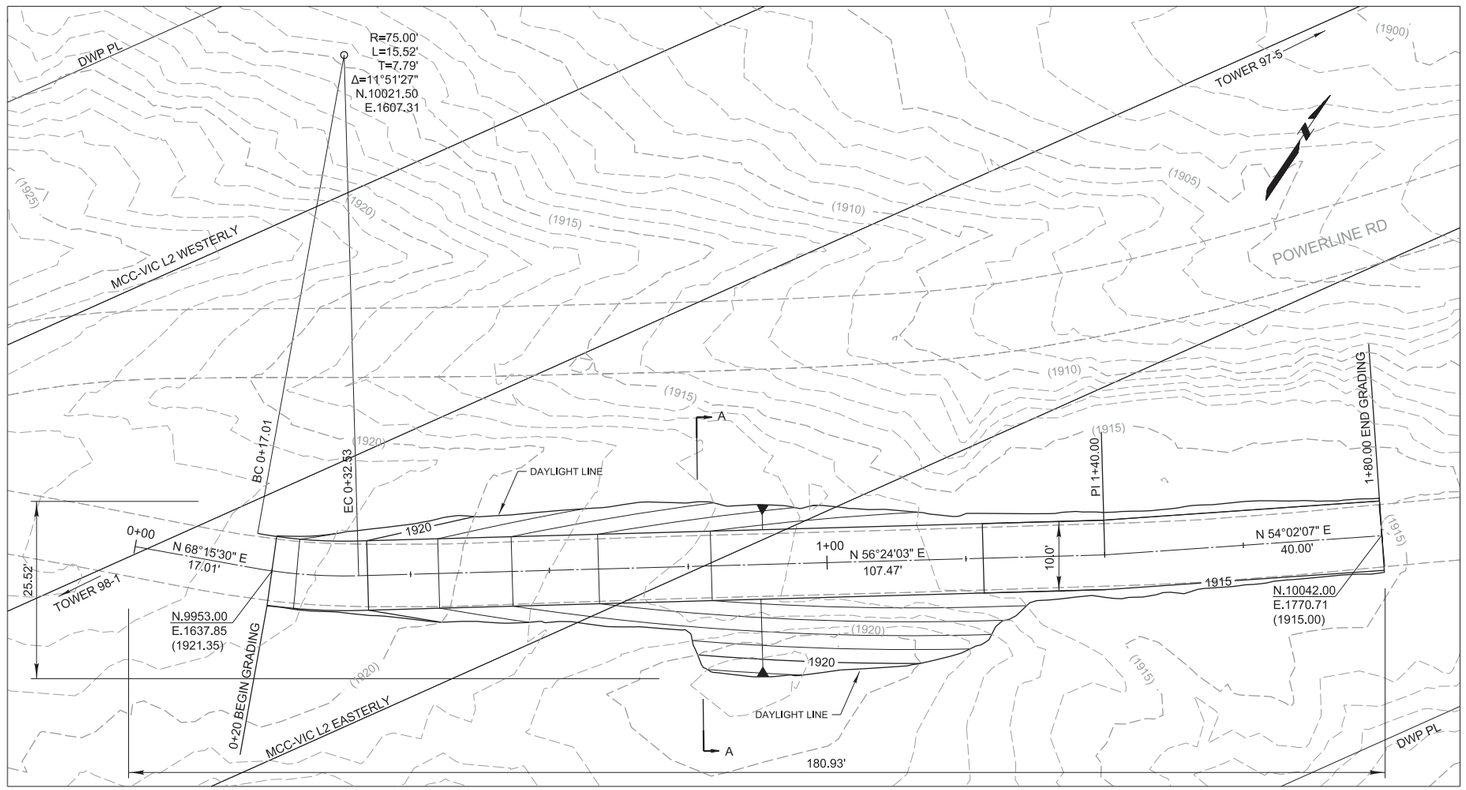


SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN

SCALE: 1" = 10'

REVISIONS							
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL	PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH–VICTORVILLE LINE 2 TWR 98–1, 97–5	
		DRAFTING RELEASE		DRAFTING RELEASE			
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL		
		CHECKED BY		CHECKED BY			
		ENGINEERING APPROVAL		ENGINEERING APPROVAL			
			FINAL APPROVAL RELEASE SIGNATURE DATE	J. Mercer CE 70713	FINAL APPROVAL RELEASE SIGNATURE DATE	POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES	DRAWING NUMBER MV2-97-5-CA01 REV.

DES. ENGR. F.ALCOCER
SUP. ENGR. J.PANG

DRA

MV2-97-2-CA01.dgn

GENERAL NOTES:

1. ADD 2220000 TO NORTHINGS AND 7010000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO NON DRIVING SURFACE OF ANY CUT OR FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	27
FILL (CY)	0
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK AND SHRINKAGE FACTORS)

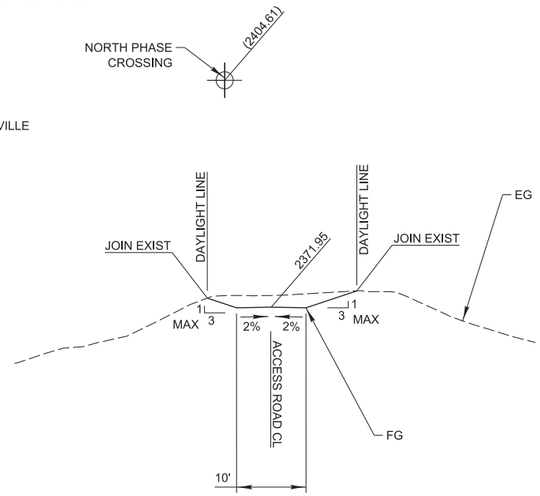
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	20
MAX LENGTH (FT)	77
MAX DEPTH (FT)	1.75
AREA (SF)	1125

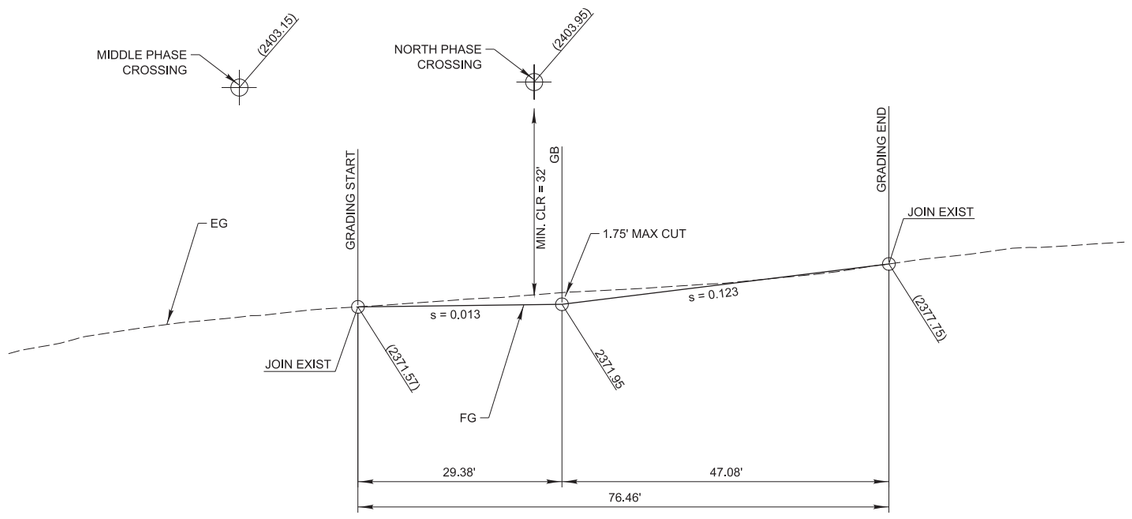
ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



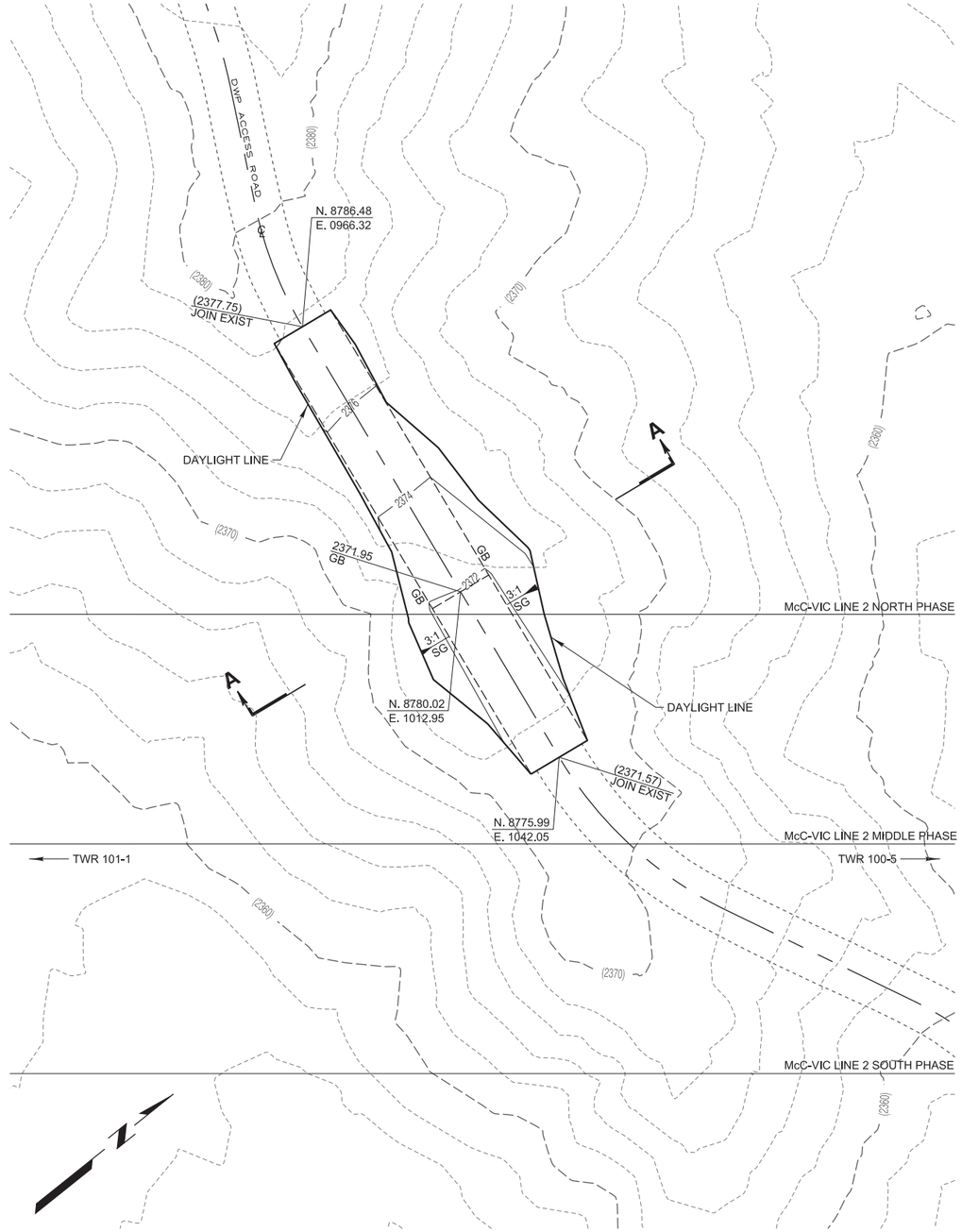
SECTION A–A (GB)

SCALE: 1" = 10'



PROFILE – ACCESS ROAD

SCALE: 1"=10'



PLAN

SCALE: 1" = 10'

* DWP PL 150' NORTH AND SOUTH FROM CL OF TL TWR

DES. ENGR. J. FANG
SURV. ENGR. E. MALLCON

REVISIONS

NO.	DESCRIPTION

Revision Number _____

DRAFTING RELEASE

DRAWN BY _____

CHECKED BY _____

ENGINEERING APPROVAL

FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL

DRAWING REVISION RELEASE APPROVAL

FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED

DRAFTING RELEASE

DRAWN BY _____

CHECKED BY _____

ENGINEERING APPROVAL

J Pang CE 65962

FINAL APPROVAL RELEASE SIGNATURE DATE

OWNER/AGENT APPROVAL

DRAWING RELEASE APPROVAL

FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, SECTION AND PROFILE GRADING McCULLOUGH–VICTORVILLE LINE 2 TWR 100–5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER **MV2-100-5-CA01** REV. 1

11-02-12

DRA

mv2_100-5.dgn

GENERAL NOTES:

1. ADD 2218000 TO NORTHINGS AND 7002000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	271
FILL (CY)	7
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)

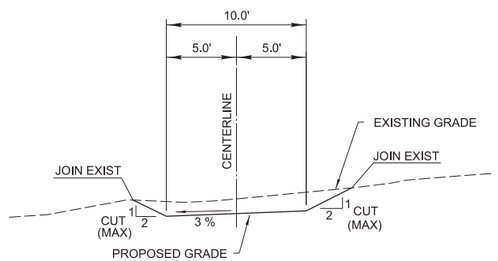
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

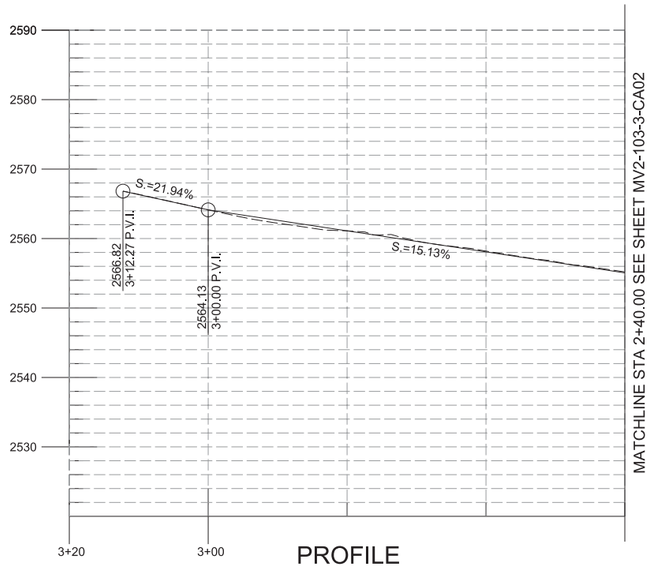
MAX WIDTH (FT)	55
MAX LENGTH (FT)	316
MAX DEPTH (FT)	3.2
AREA (SF)	8,030

ABBREVIATIONS:

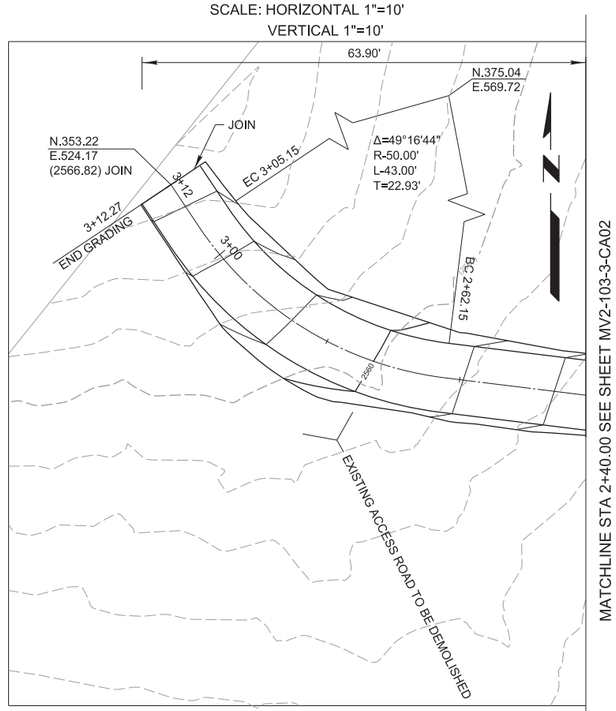
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
MCC-VIC	MCCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
SEE MV2-103-3-CA02
NO SCALE



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'

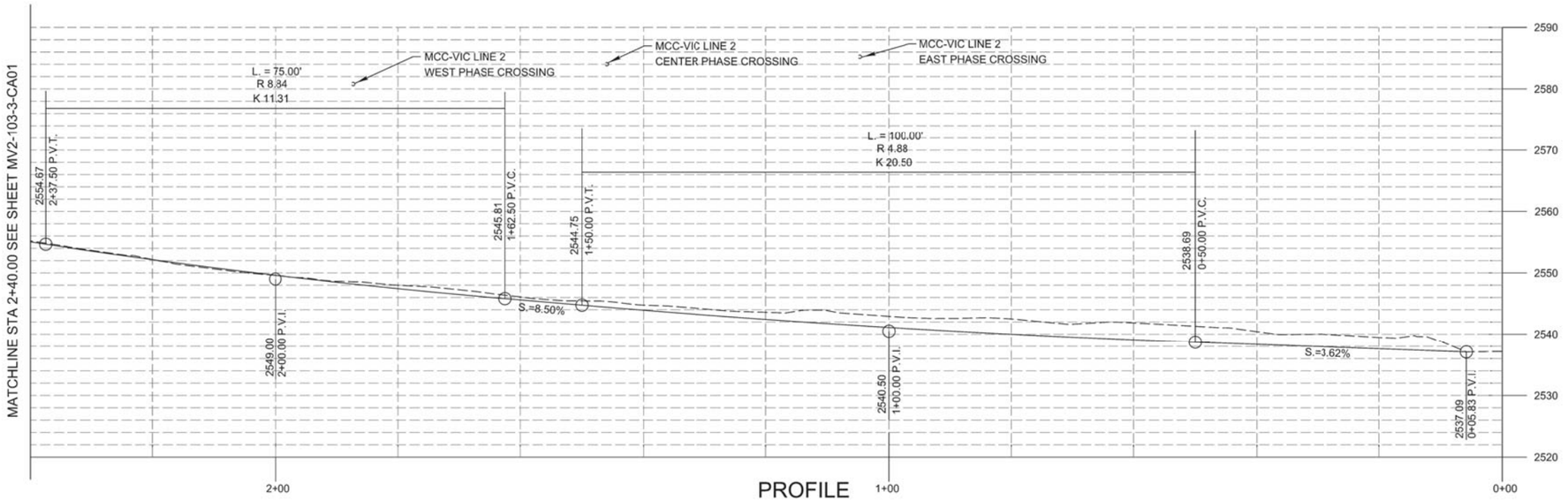


PLAN
SCALE: 1"=10'

DES. ENGR. E.M. OZER SUP. ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL T. Mercer CE 70713	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LN 2 TWR 103-3, 103-4 POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES	DRAWING NUMBER MV2-103-3-CA01 REV.

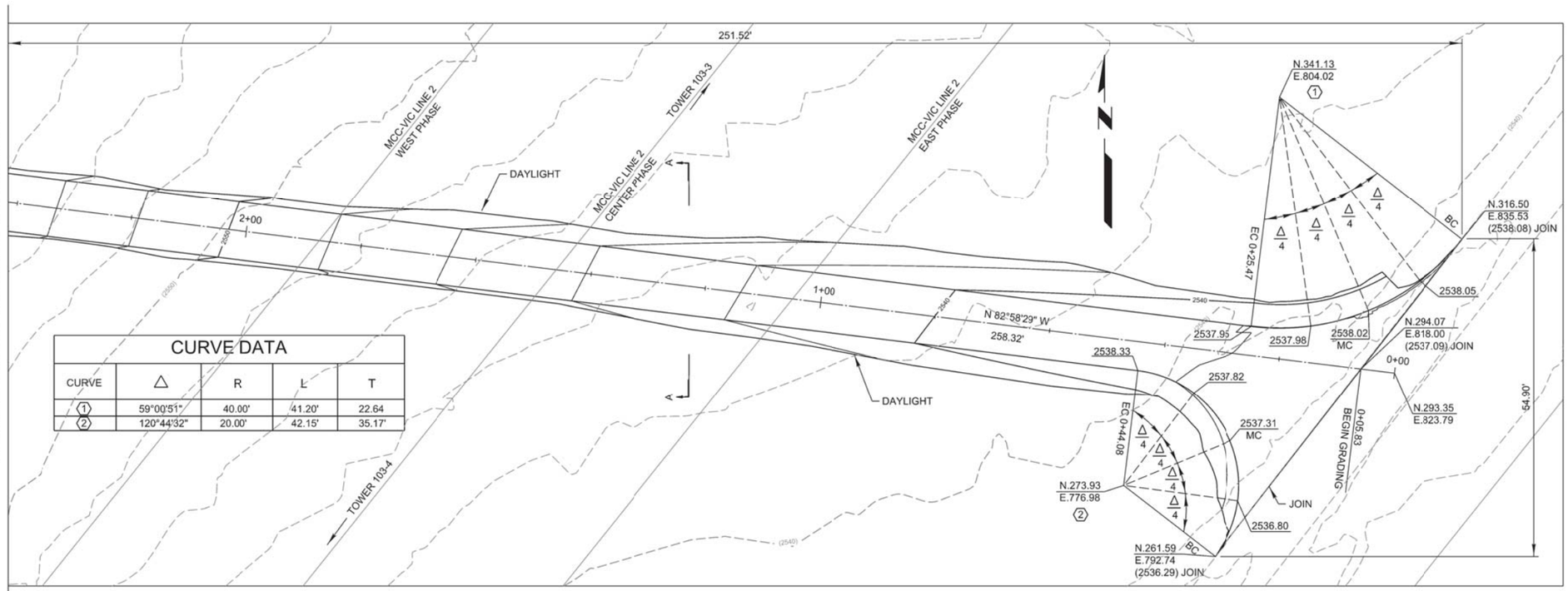
11-20-12

mv2-103-3.dgn



PROFILE

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



CURVE DATA				
CURVE	△	R	L	T
①	59°00'51"	40.00'	41.20'	22.64
②	120°44'32"	20.00'	42.15'	35.17'

PLAN

SCALE: 1"=10'

* SEE PLAN MV2-103-3-CA01 FOR GENERAL NOTES, ABBREVIATIONS AND TYPICAL CROSS SECTION.

DES. ENGR.
E.ALCOTA
SUP. ENGR.
J. PANG

REVISIONS

NO.	DESCRIPTION

Revision Number _____

DRAFTING RELEASE

DRAWN BY _____

CHECKED BY _____

ENGINEERING APPROVAL

OWNER/AGENT APPROVAL

DRAWING REVISION RELEASE APPROVAL

FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED

DRAFTING RELEASE

DRAWN BY _____

CHECKED BY _____

ENGINEERING APPROVAL

J. Mercer CE 70713

OWNER/AGENT APPROVAL

DRAWING RELEASE APPROVAL

FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, AND SECTIONS GRADING MCCULLOUGH-VICTORVILLE LN 2 TWR 103-3, 103-4

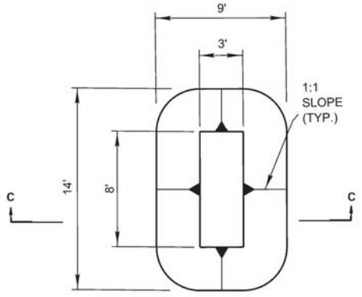
POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV2-103-3-CA02

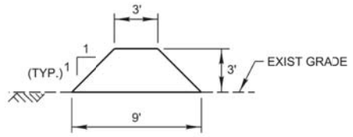
REV.

11-20-12

mv2-103-3.dgn



COMPACTED SOIL BARRICADE
DETAIL 1
NO SCALE



SECTION C-C
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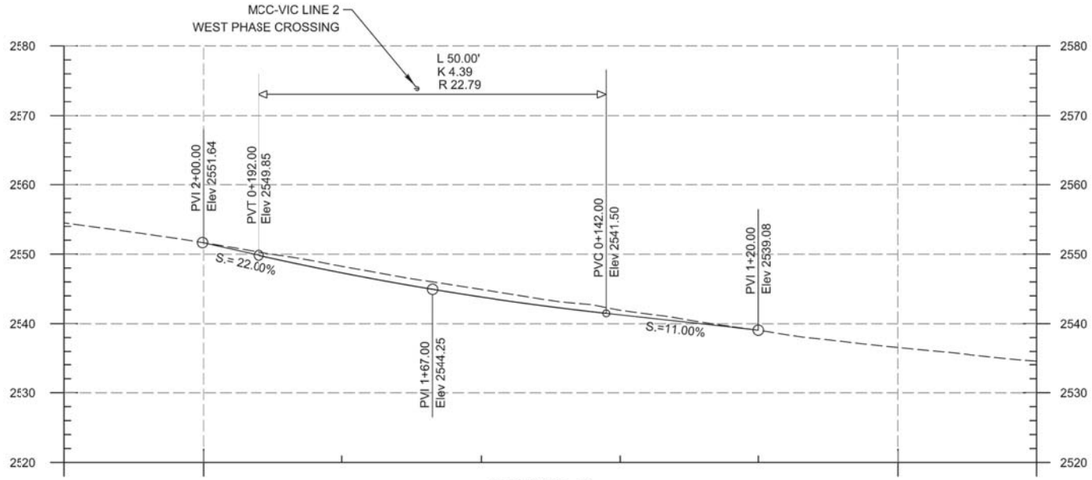
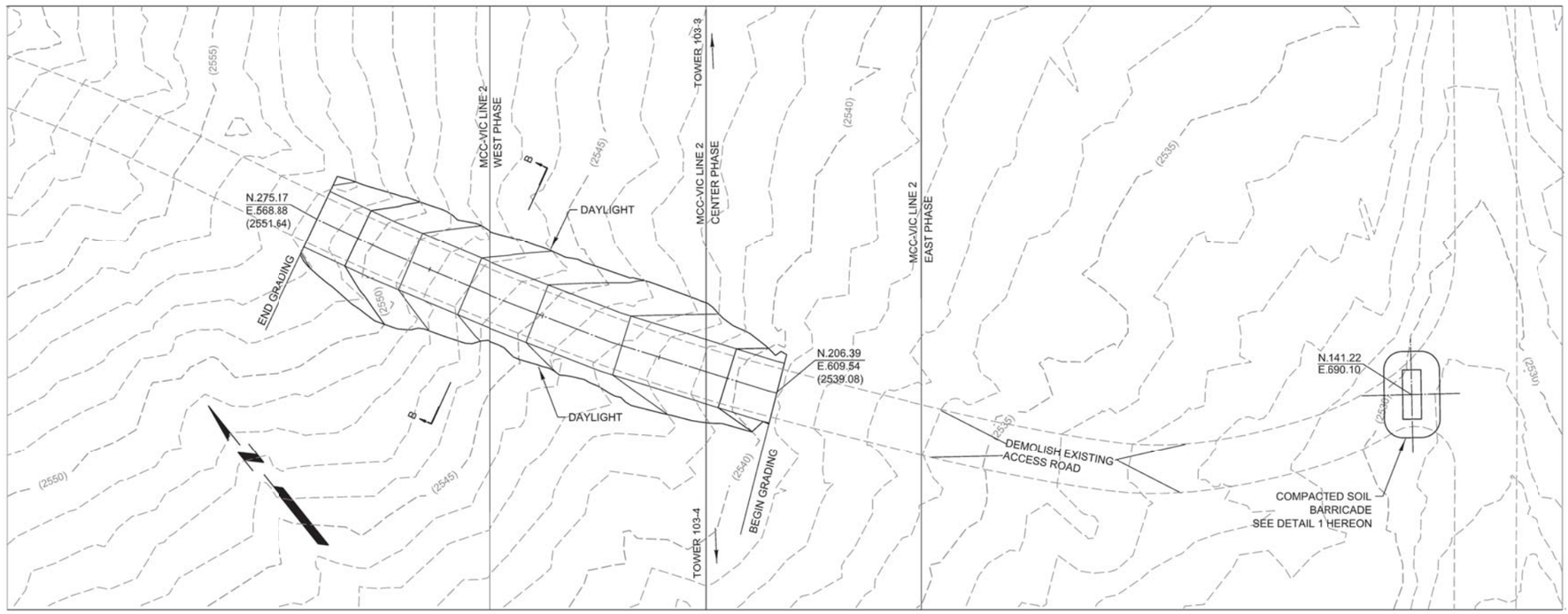
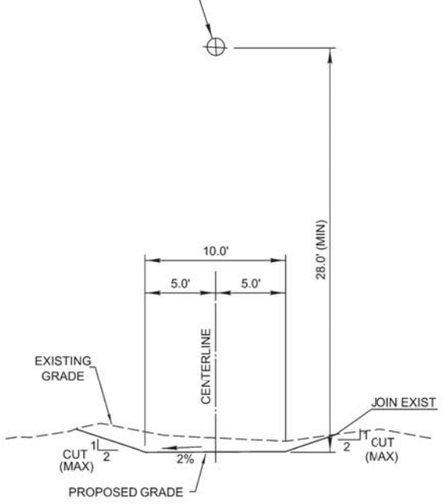


PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN
SCALE: 1"=10'



SECTION B-B
TYPICAL SECTION
NO SCALE

* SEE PLAN MV2-103-3-CA01 FOR GENERAL NOTES AND ABBREVIATIONS

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
T. Meyer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, AND SECTIONS
GRADING
MCCULLOUGH-VICTORVILLE LN 2 TWR 103-3, 103-4

DWP
POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV2-103-3-CA03
REV.

11-20-12

mv2-103-3.dgn

GENERAL NOTES:

1. ADD 2213000 TO NORTHINGS AND 6996000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	8
FILL (CY)	8
IMPORT (CY)	0
EXPORT (CY)	0

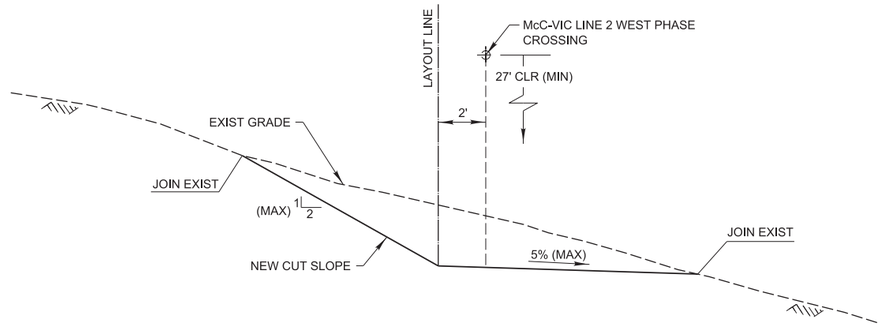
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

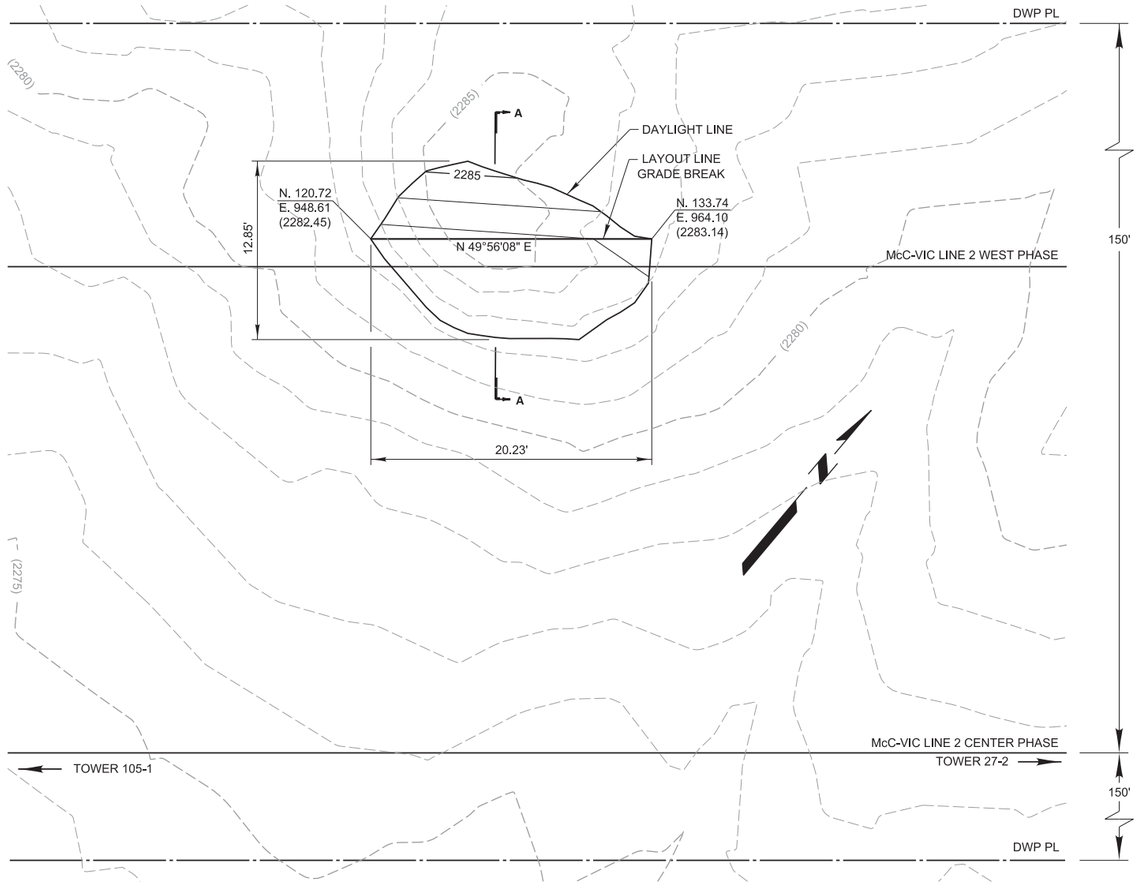
MAX WIDTH (FT)	12
MAX LENGTH (FT)	21
MAX DEPTH (FT)	3
AREA (SF)	210

ABBREVIATIONS:

CLR	Clearance
CY	Cubic Yard
DWP	Department of Water and Power
E.	Easting
EXIST	Existing
MAX	Maximum
McC-VIC	McCullough-Victorville
MIN	Minimum
N.	Northing
PL	Property Line
TL	Transmission Line
TWR	Tower



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 5'

| | | |

GENERAL NOTES:

1. ADD 2060000 TO NORTHINGS AND 6800000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO NON DRIVING SURFACE OF ANY CUT OR FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	91
FILL (CY)	0
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK AND SHRINKAGE FACTORS)

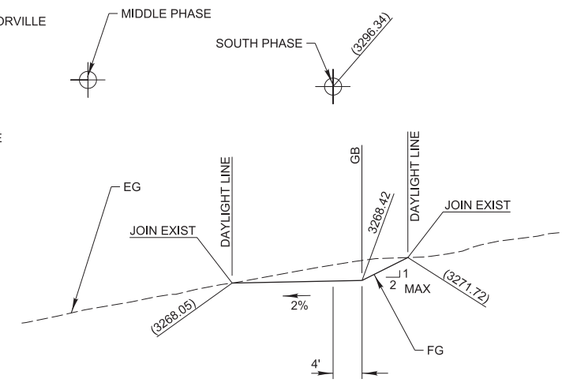
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	35
MAX LENGTH (FT)	70
MAX DEPTH (FT)	3.25
AREA (SF)	1685

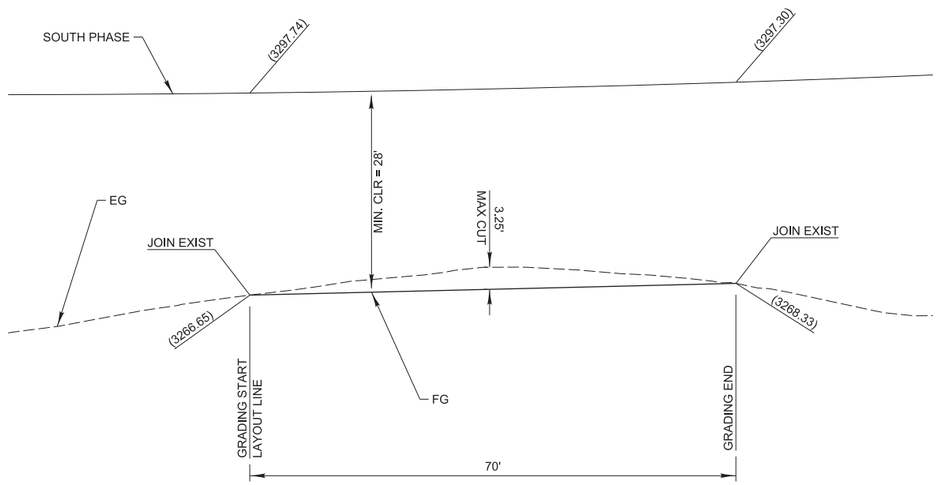
ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
McC-VIC	McCULLOUGH-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
N/O	NORTH OF
PL	PROPERTY LINE
REQ.	REQUIRED
s	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



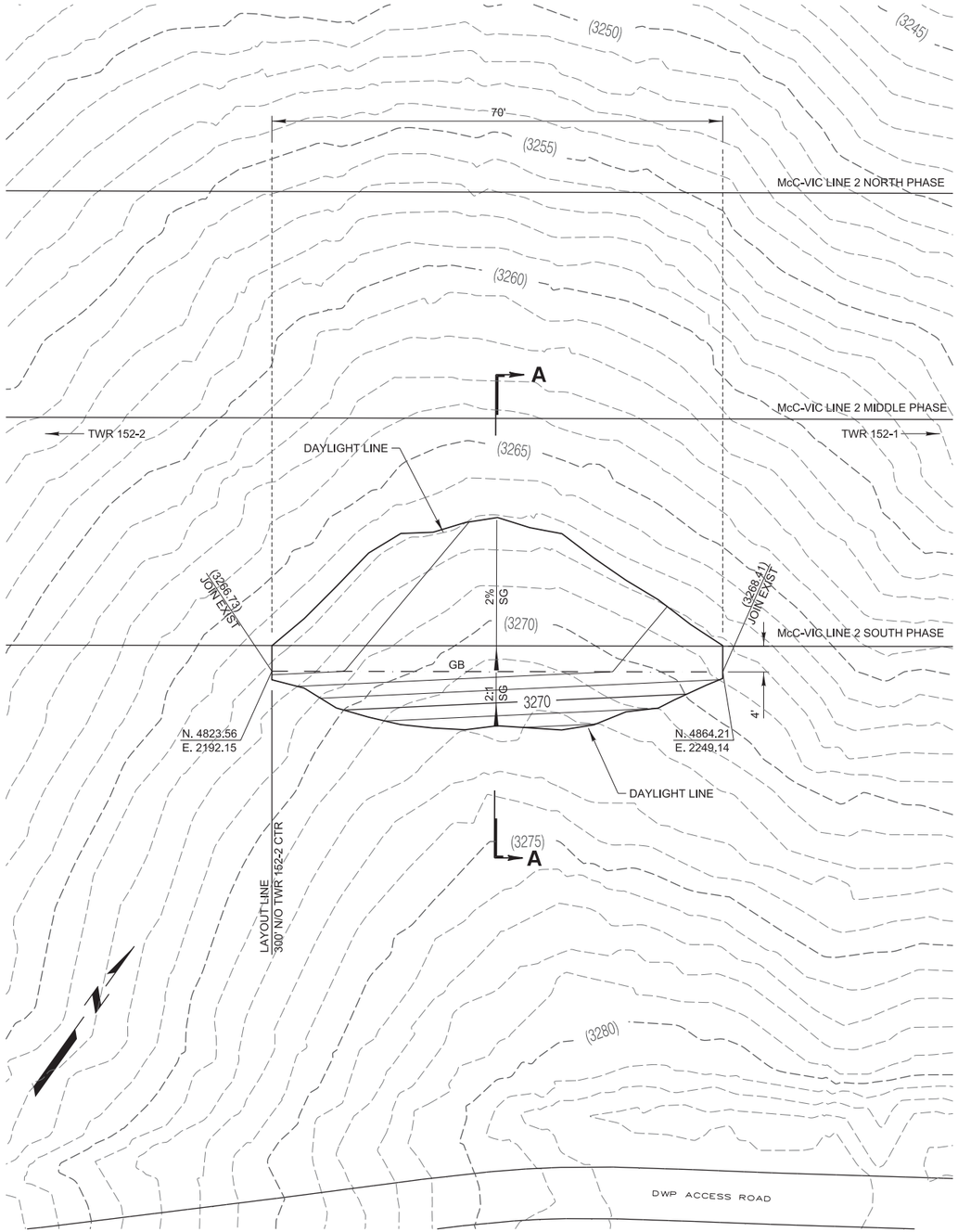
SECTION A–A
(35' N/O LAYOUT LINE)

SCALE: 1" = 10'



PROFILE – SOUTH PHASE

SCALE: 1"=10'



PLAN

SCALE: 1" = 10'

* DWP PL 150' NORTH AND SOUTH FROM CL OF TL TWR

DES. ENGR. J. FANG
SUPT. ENGR. E. MALACON

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL

DRAWING REVISION RELEASE APPROVAL

FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Fang CE 65962

OWNER/AGENT APPROVAL

DRAWING RELEASE APPROVAL

FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, SECTION AND PROFILE GRADING McCULLOUGH–VICTORVILLE LINE 2 TWR 152–1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV2-152-1-CA01
REV. 1
11-16-12

DRA

mv2_152-1.dgn

Appendix B.3

Mead-Victorville Line 1 Drawings

GENERAL NOTES:

1. ADD 2278000 TO NORTHINGS AND 7047000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	71
FILL (CY)	71
IMPORT (CY)	0
EXPORT (CY)	0

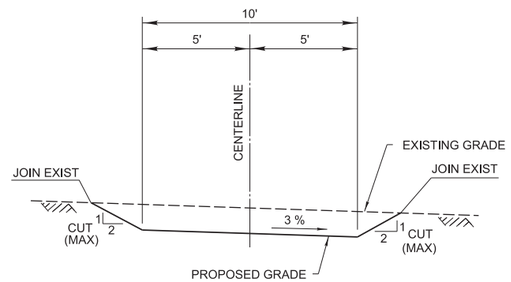
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

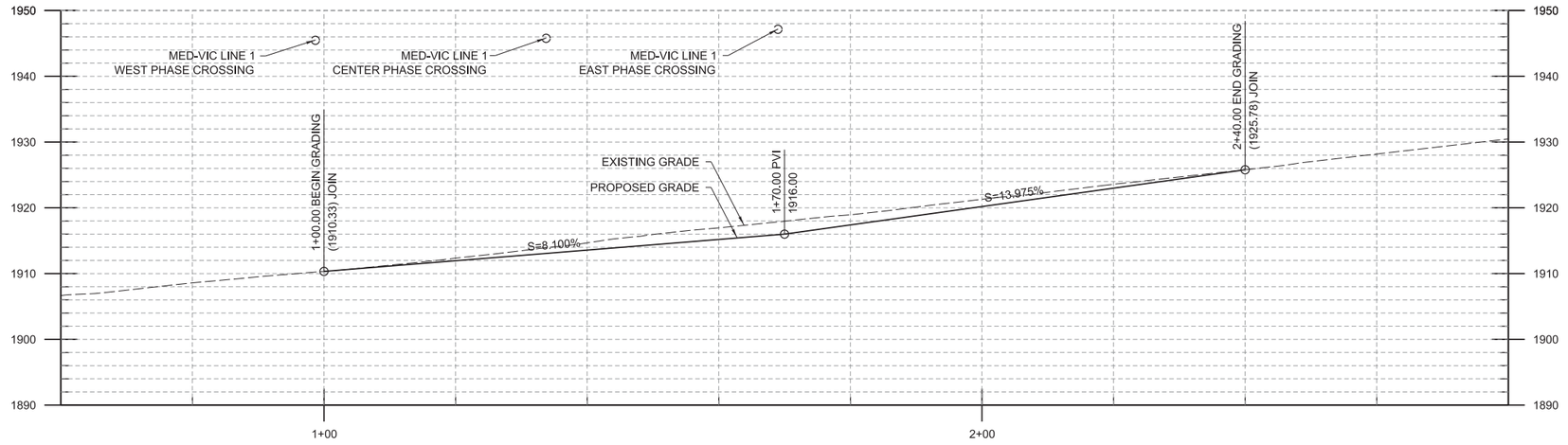
MAX WIDTH (FT)	19
MAX LENGTH (FT)	140
MAX DEPTH (FT)	2
AREA (SF)	2300

ABBREVIATIONS:

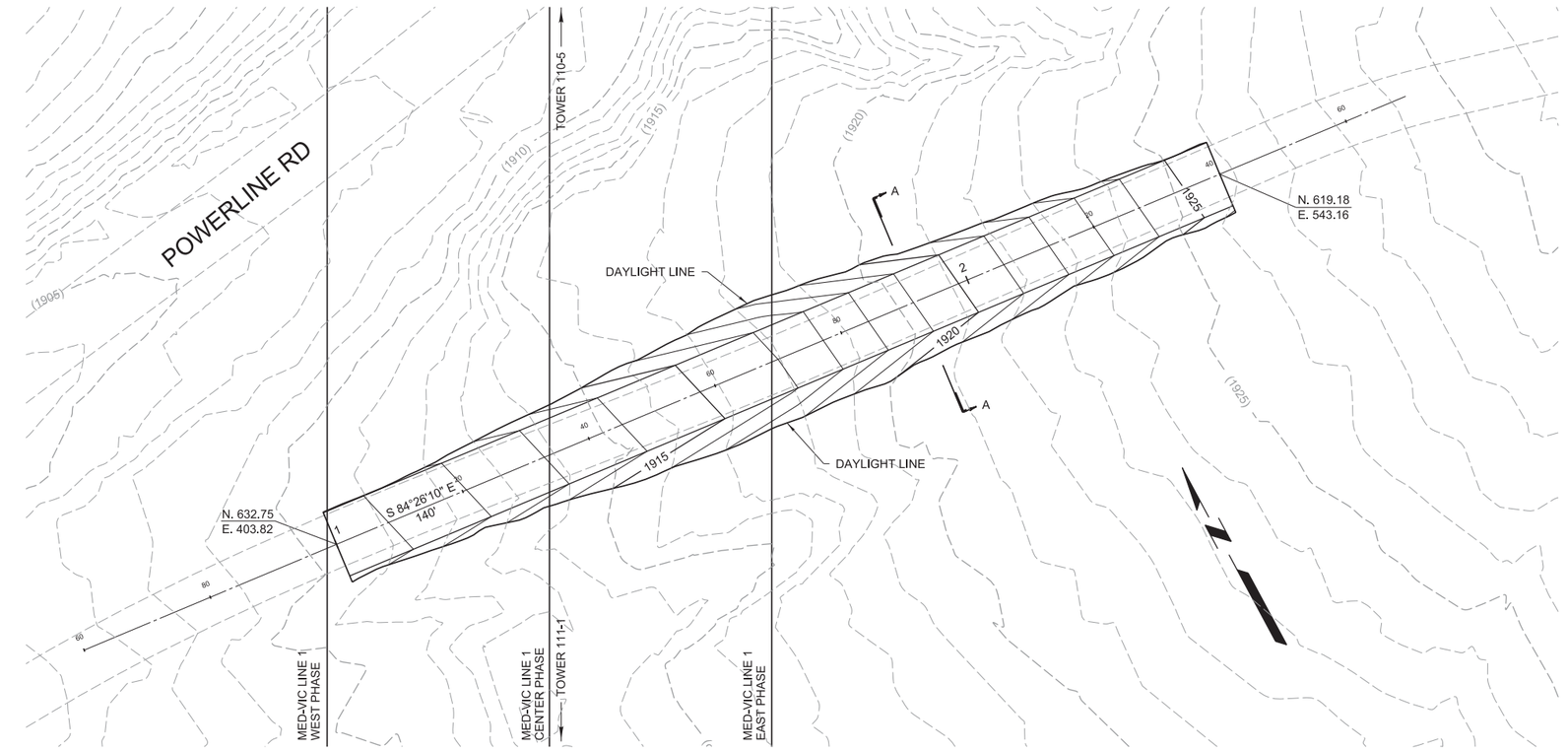
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
S	SLOPE
STA.	STATION
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

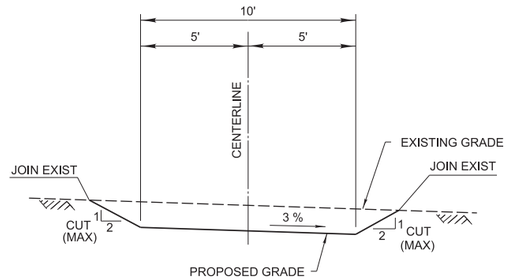


PLAN
SCALE: 1" = 10'

| | | |

GENERAL NOTES:

1. ADD 2270000 TO NORTHINGS AND 7040000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. SEE MDV1-111-1-CA02 FOR PLAN AND PROFILE.



SECTION A-A
TYPICAL SECTION
ON MDV1-111-1-CA02
NO SCALE

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	314
FILL (CY)	314
IMPORT (CY)	0
EXPORT (CY)	0

(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	115
MAX LENGTH (FT)	270
MAX DEPTH (FT)	3.5
AREA (SF)	9000

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL

DES. ENGR. J. CHONG
W.P. ENGR. J. PANG

REVISIONS
NO. | DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

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DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
J. Fong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

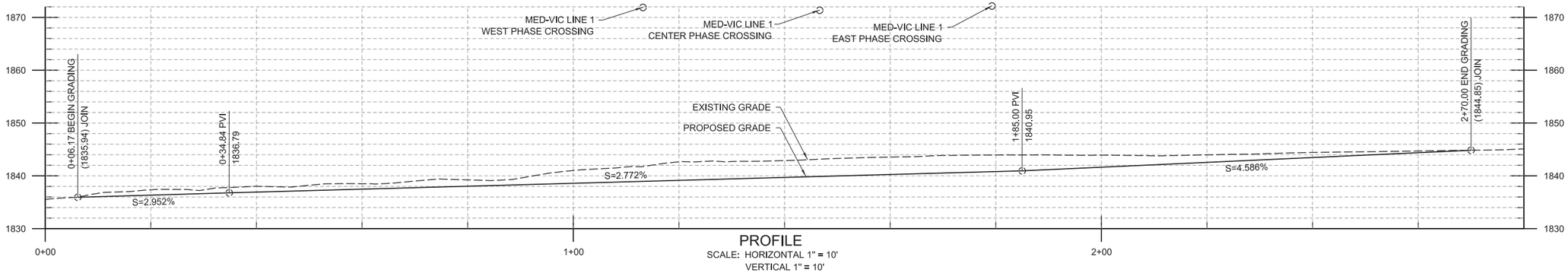
GENERAL NOTES AND SECTION GRADING MEAD-VICTORVILLE LINE 1 TWR 111-1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER MDV1-111-1-CA01 REV. 1

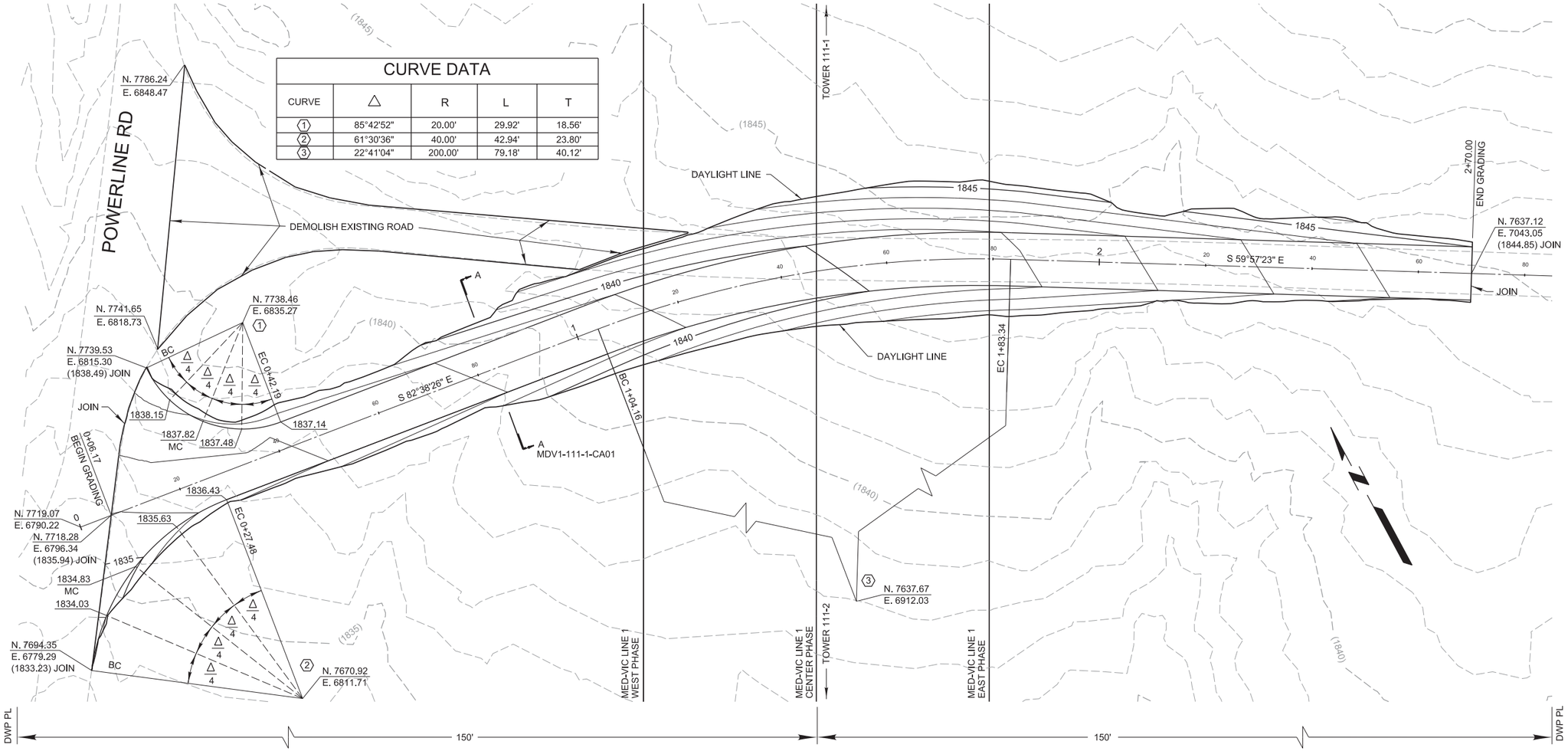
01-04-13

mdv1-111-1.dgn



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

CURVE DATA				
CURVE	△	R	L	T
1	85°42'52"	20.00'	29.92'	18.56'
2	61°30'36"	40.00'	42.94'	23.80'
3	22°41'04"	200.00'	79.18'	40.12'



PLAN
SCALE: 1" = 10'

NOTE: SEE MDV1-111-1-CA01 FOR GENERAL NOTES, ABBREVIATIONS, AND SECTION.

DES. ENGR. J. FONG
M.P. ENGR. J. PANG

REVISIONS	
NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

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ENGINEERING APPROVAL
J. Fong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN AND PROFILE GRADING MEAD-VICTORVILLE LINE 1 TWR 111-1

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

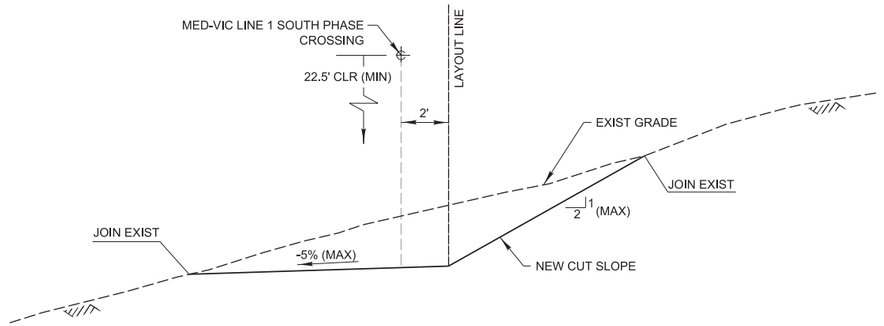
DRAWING NUMBER
MDV1-111-1-CA02
REV.

11-10-12

mdv1-111-1.dgn

GENERAL NOTES:

1. ADD 2202000 TO NORTHINGS AND 6984000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.



SECTION A-A
TYPICAL SECTION
NO SCALE

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	15
FILL (CY)	15
IMPORT (CY)	0
EXPORT (CY)	0

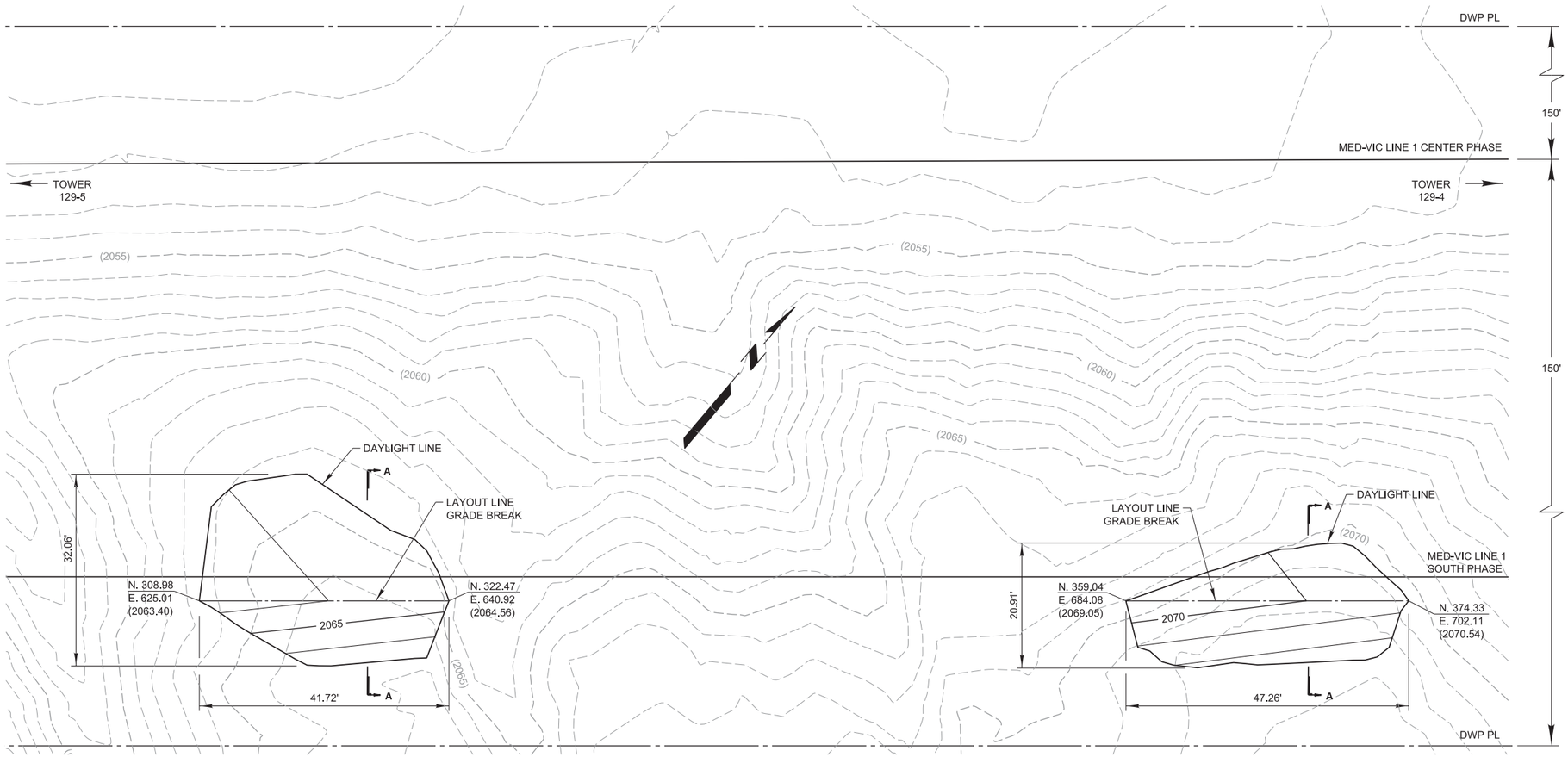
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	32
MAX LENGTH (FT)	90
MAX DEPTH (FT)	2.5
AREA (SF)	445

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL



PLAN
SCALE: 1" = 5'

REVISIONS			
NO.	DESCRIPTION		

DES. ENGR. J. JONG
ASP. ENGR. J. PANG

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
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DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Pang CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, SECTION, AND NOTES GRADING MEAD-VICTORVILLE LINE 1 TWR 129-4

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER: MDV1-129-4-CA01 REV. 1

01-04-13

mdv1-129-4.dgn

GENERAL NOTES:

1. ADD 2137000 TO NORTHINGS AND 6915000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

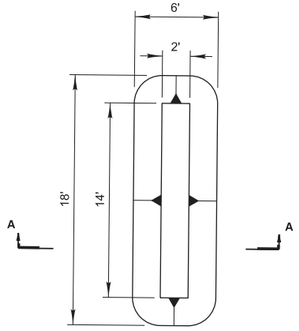
ABBREVIATIONS:

CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
MAX	MAXIMUM
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
TYP.	TYPICAL

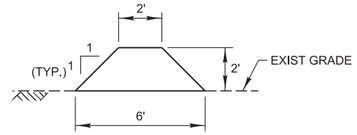
ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	9
FILL (CY)	9
IMPORT (CY)	0
EXPORT (CY)	0

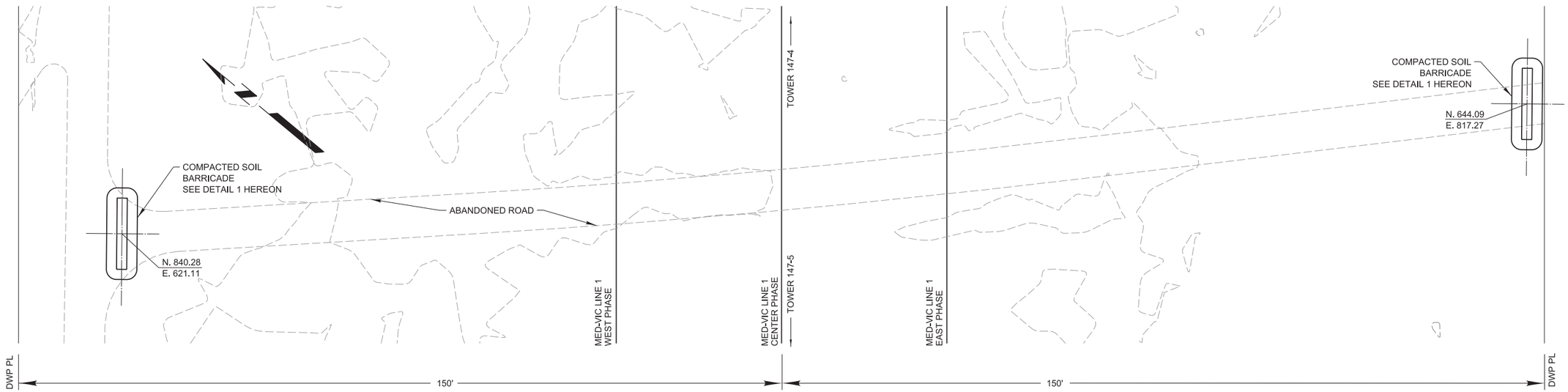
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.



COMPACTED SOIL BARRICADE
DETAIL 1
NO SCALE



SECTION A-A
NO SCALE



PLAN
SCALE: 1" = 10'

DES. ENGR. J. CHO
M.P. ENGR. J. PANG

REVISIONS NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Fong CE 69632

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, DETAIL, SECTION, AND NOTES GRADING MEAD-VICTORVILLE LINE 1 TWR 147-4

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MDV1-147-4-CA01
REV.

11-19-12

mdv1-147-4.dgn

GENERAL NOTES:

1. ADD 2129000 TO NORTHINGS AND 6903000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	242
FILL (CY)	242
IMPORT (CY)	0
EXPORT (CY)	0

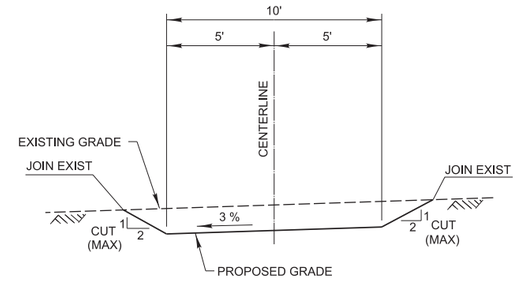
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

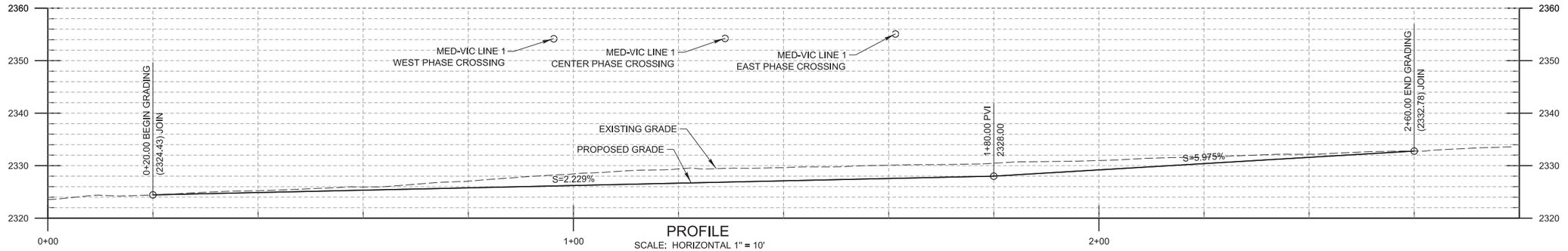
MAX WIDTH (FT)	27
MAX LENGTH (FT)	240
MAX DEPTH (FT)	3
AREA (SF)	5240

ABBREVIATIONS:

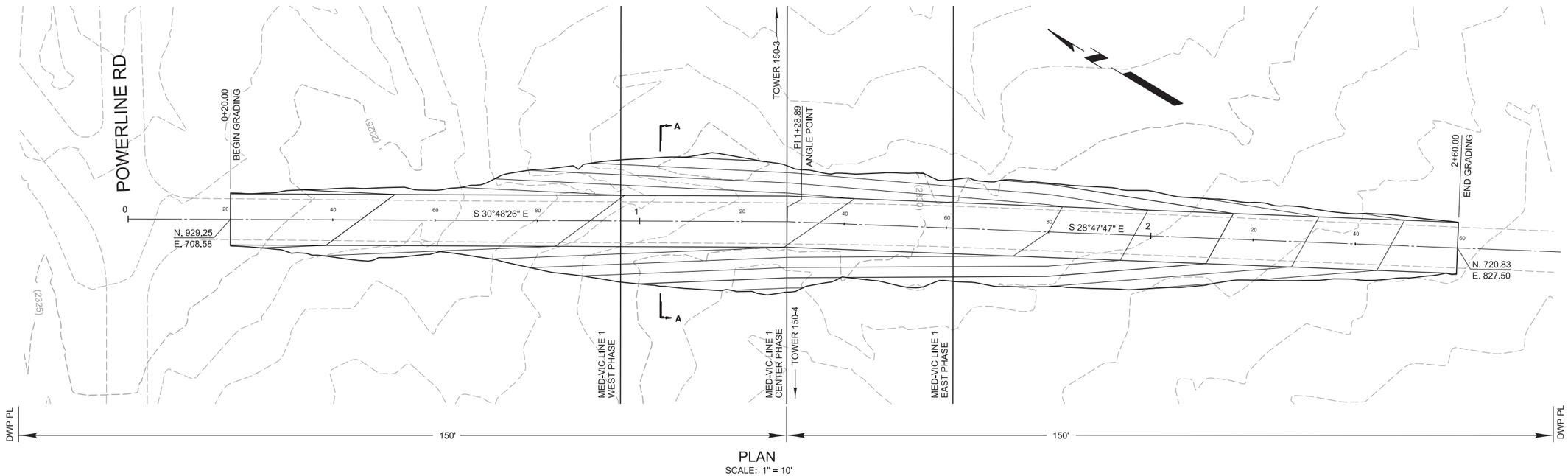
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
S	SLOPE
SG	STRAIGHT GRADE
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



PLAN
SCALE: 1" = 10'

DES. ENGR. J. FONG SUP. ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL J. Fong CE 69632	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	PLAN, DETAIL, SECTION, AND NOTES GRADING MEAD-VICTORVILLE LINE 1 TWR 150-3 POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES DRAWING NUMBER: MDV1-150-3-CA01 REV. 1

01-04-13

mdv1-150-3.dgn

GENERAL NOTES:

1. ADD 2129000 TO NORTHINGS AND 6902000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	121
FILL (CY)	121
IMPORT (CY)	0
EXPORT (CY)	0

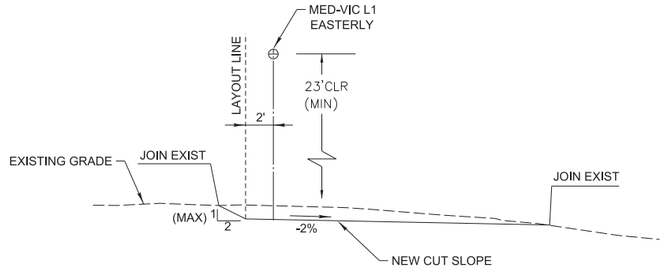
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

ABBREVIATIONS:

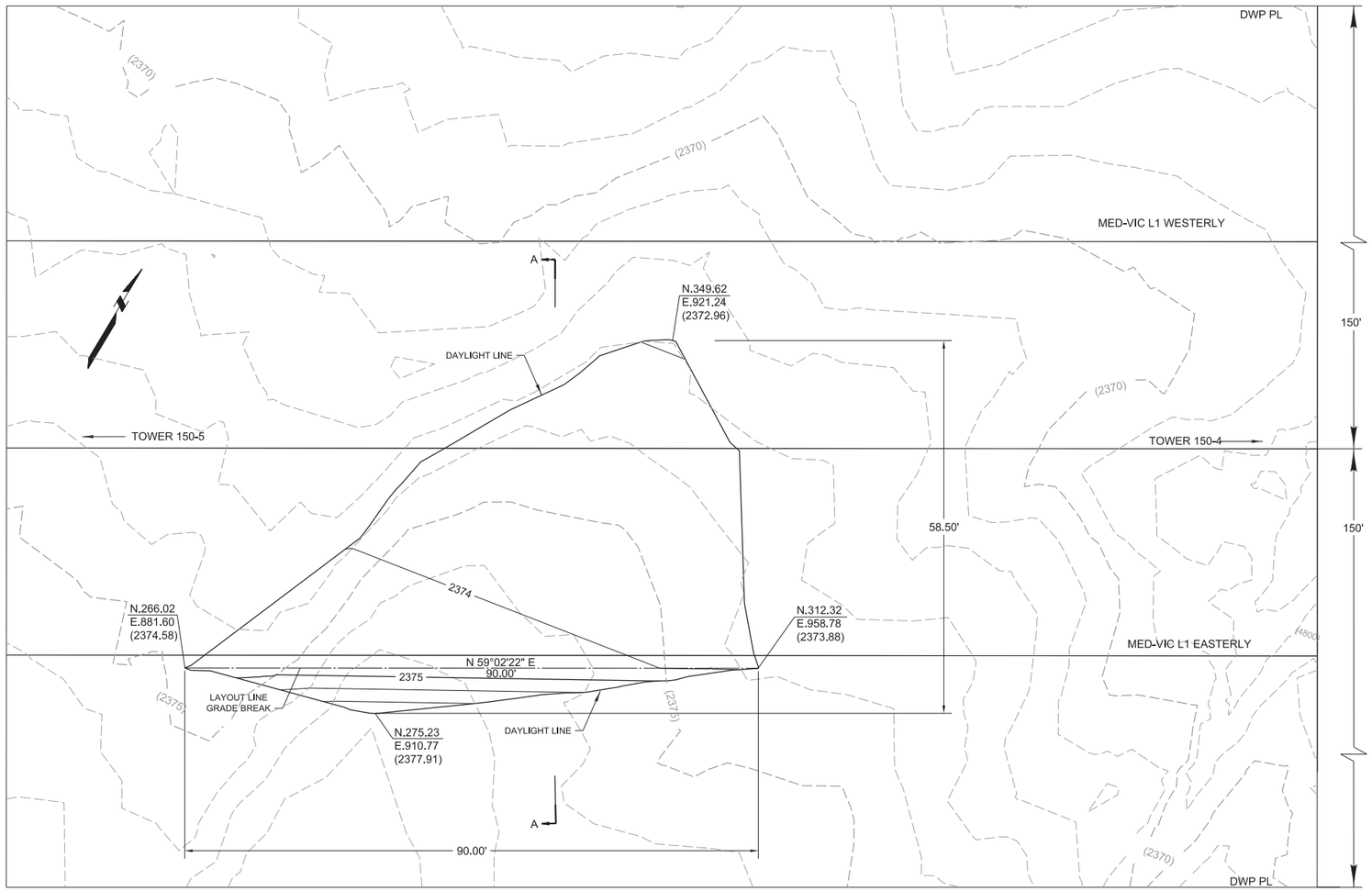
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	90
MAX LENGTH (FT)	59
MAX DEPTH (FT)	2.0
AREA (SF)	3,081



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

REVISIONS	
NO.	DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
F. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

DES. ENGR. F. ALCOCER
SUP. ENGR. J. PANG

PLAN, PROFILE, AND SECTIONS
GRADING
MEAD–VICTORVILLE LINE 1 TWR 150–4, 150–5

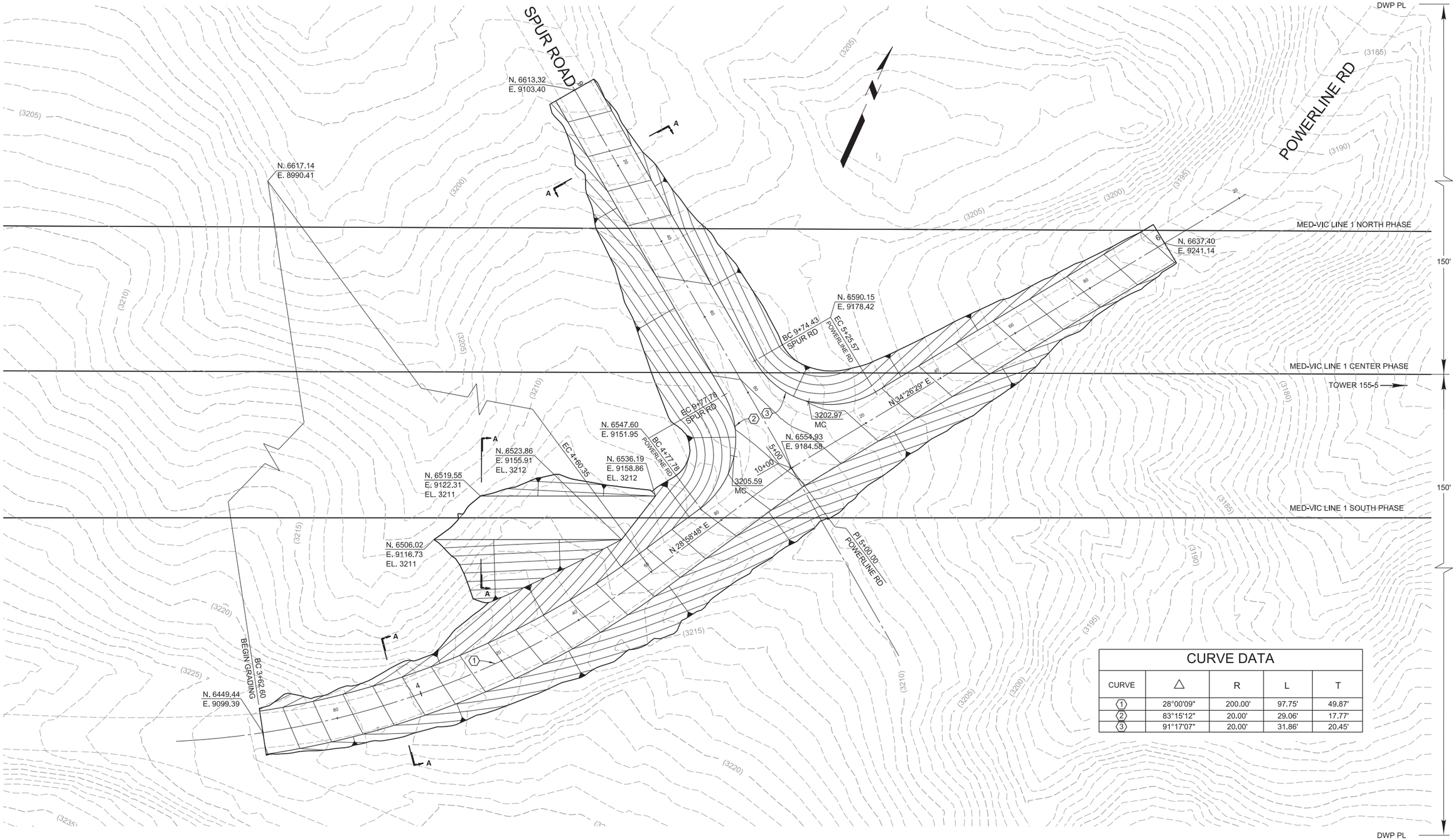
POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-150-4-CA01
REV.

11-21-12

DRA

MV1-150-4-CA01.DGN



CURVE DATA

CURVE	△	R	L	T
1	28°00'09"	200.00'	97.75'	49.87'
2	83°15'12"	20.00'	29.06'	17.77'
3	91°17'07"	20.00'	31.86'	20.45'

PLAN
SCALE: 1" = 10'

NOTE: SEE MDV1-155-5-CA02 FOR PROFILES, GENERAL NOTES, ABBREVIATIONS, AND SECTION.

DES. ENGR. J. FONG
DRAFT. ENGR. J. PANG

REVISIONS

NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY _____
CHECKED BY _____
ENGINEERING APPROVAL
J. Fong CE 69632
OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN
GRADING
MEAD-VICTORVILLE LINE 1 TWR 155-5

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

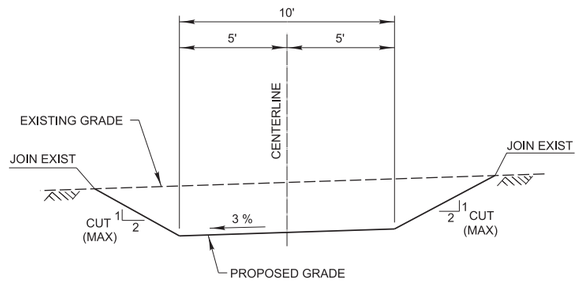
DRAWING NUMBER
MDV1-155-5-CA01
REV.

12-4-12

mdv1-155-5.dgn

GENERAL NOTES:

1. ADD 2110000 TO NORTHINGS AND 6870000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.
12. SEE MDV1-155-5-CA01 FOR PLAN.



SECTION A-A
TYPICAL SECTION
NO SCALE

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	731
FILL (CY)	731
IMPORT (CY)	0
EXPORT (CY)	0

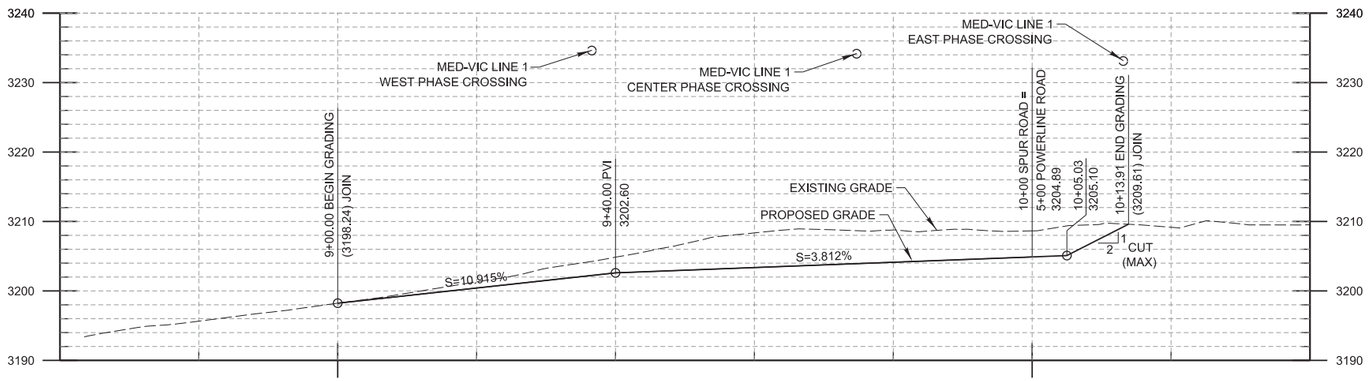
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

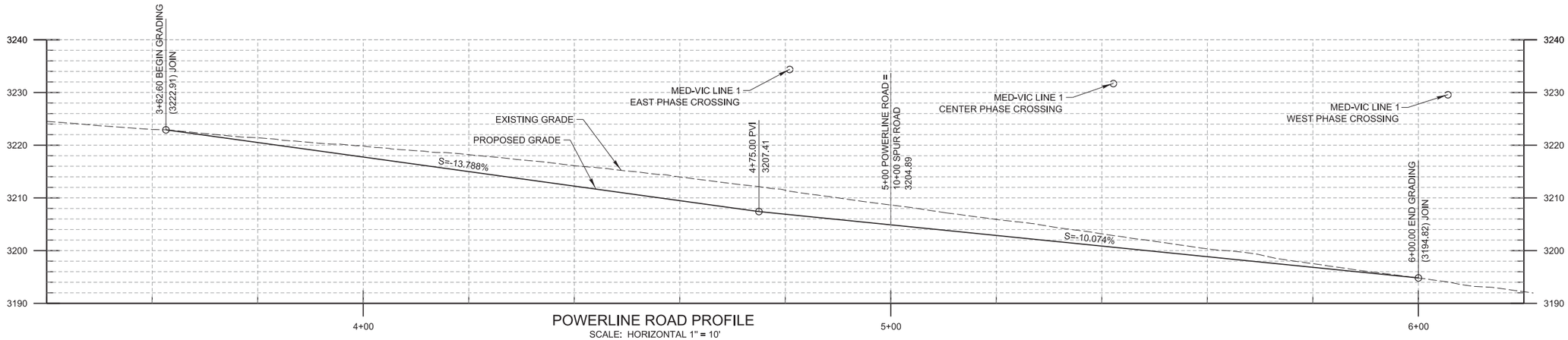
MAX WIDTH (FT)	76
MAX LENGTH (FT)	247
MAX DEPTH (FT)	3.2
AREA (SF)	7987

ABBREVIATIONS:

CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
MAX	MAXIMUM
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVI	POINT OF VERTICAL INTERSECTION
RD	ROAD
S	SLOPE
SG	STRAIGHT GRADE
TYP.	TYPICAL



SPUR ROAD PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'



POWERLINE ROAD PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 10'

DES. ENGR. J. TONG DRAFTING ENGR. J. PANG	REVISIONS NO. / DESCRIPTION	Revision Number DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL	OWNER/AGENT APPROVAL DRAWING REVISION RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	SCALE: (UNLESS NOTED) AS NOTED DRAFTING RELEASE DRAWN BY CHECKED BY ENGINEERING APPROVAL J. Tong CE 69632	OWNER/AGENT APPROVAL DRAWING RELEASE APPROVAL FINAL APPROVAL RELEASE SIGNATURE / DATE	PROFILES, SECTION, AND NOTES GRADING MEAD-VICTORVILLE LINE 1 TWR 155-5	POWER SYSTEM DEPARTMENT OF WATER AND POWER CITY OF LOS ANGELES DRAWING NUMBER MDV1-155-5-CA02 REV. 1

01-07-13

mdv1-155-5.dgn

GENERAL NOTES:

1. ADD 2105000 TO NORTHINGS AND 6866000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	280
FILL (CY)	280
IMPORT (CY)	0
EXPORT (CY)	0

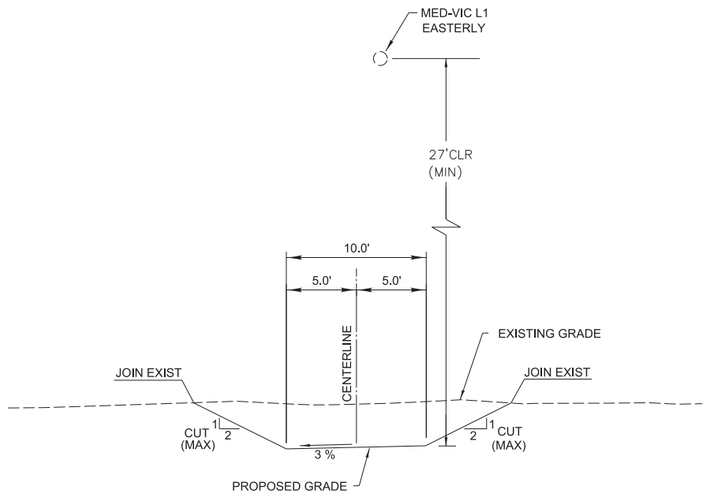
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

MAX WIDTH (FT)	76
MAX LENGTH (FT)	247
MAX DEPTH (FT)	3.2
AREA (SF)	5,155

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVC	POINT VERTICAL CURVE
PVI	POINT VERTICAL INTERSECTION
PVT	POINT VERTICAL TANGENT
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
SEE MV1-158-6-CA02
NO SCALE

DES. ENGR. F.ALCOCER
SUP. ENGR. J.PANG

REVISIONS
NO. | DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

SCALE: (UNLESS NOTED) AS NOTED
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL
T. Alcocer CE 70713

OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

PLAN, PROFILE, AND SECTIONS GRADING MEAD–VICTORVILLE LINE 1 TWR 159–1, 158–6

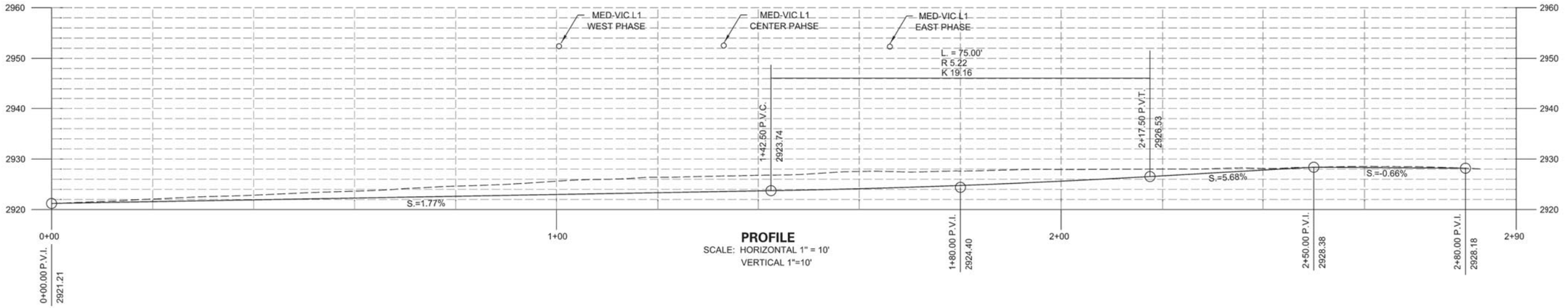
POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-158-6-CA01
REV.

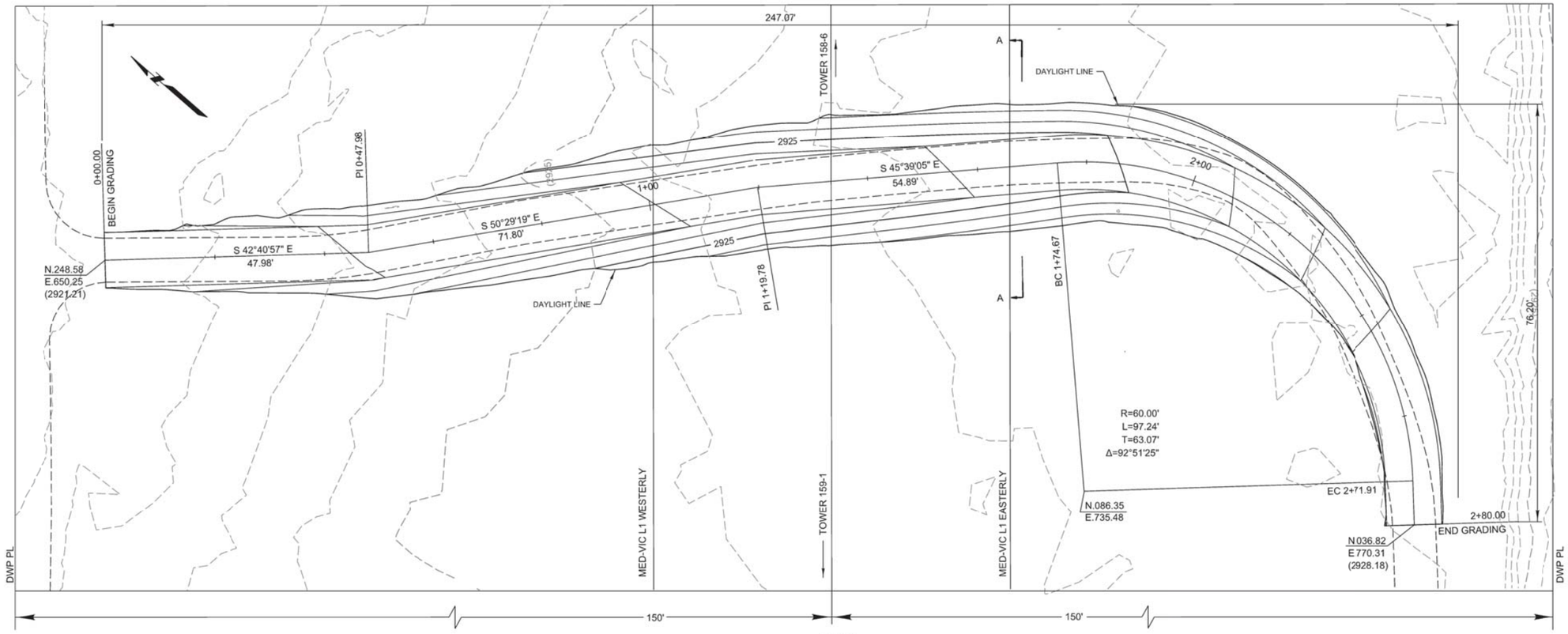
11-26-12

DRA

MV1-158-6-CA01.DGN



PROFILE
SCALE: HORIZONTAL 1" = 10'
VERTICAL 1"=10'



PLAN
SCALE: 1" = 10'

* SEE MV1-158-6-CA01 FOR GENERAL NOTES, ABBREVIATIONS AND CROSS SECTION.

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS					
NO.	DESCRIPTION	Revision Number	OWNER/AGENT APPROVAL	SCALE: (UNLESS NOTED) AS NOTED	OWNER/AGENT APPROVAL
		DRAFTING RELEASE		DRAFTING RELEASE	
		DRAWN BY	DRAWING REVISION RELEASE APPROVAL	DRAWN BY	DRAWING RELEASE APPROVAL
		CHECKED BY		CHECKED BY	
		ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE	ENGINEERING APPROVAL	FINAL APPROVAL RELEASE SIGNATURE DATE
				T. Mercer CE 70713	

PLAN, PROFILE, AND SECTIONS
GRADING
MEAD–VICTORVILLE LINE 1 TWR 159–1, 158–6

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-158-6-CA02 REV.

11-26-12

MV1-158-6-CA01.DGN

GENERAL NOTES:

1. ADD 2104000 TO NORTHINGS AND 6865000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
6. THE DEPARTMENT'S CORPORATE ENVIRONMENTAL SERVICES SECTION SHALL BE CONTACTED IMMEDIATELY AT (213) 367-0403 IF SOIL OF A QUESTIONABLE ENVIRONMENTAL QUALITY IS ENCOUNTERED DURING CONSTRUCTION.
7. ALL AREAS TO BE GRADED SHALL BE GRUBBED PRIOR TO BEGINNING OF GRADING OPERATION.
8. REMOVE AND STOCKPILE 6" OF TOPSOIL WITH EXISTING NATIVE VEGETATION PRIOR TO EXCAVATION. RE-APPLY TOPSOIL TO THE SURFACE OF THE FILL LOCATION.
9. ALL CUT OR FILL SLOPE SHALL COMPLY WITH THE DRAWINGS, NO PERMANENT SLOPE SHALL BE GREATER THAN TWO HORIZONTAL TO ONE VERTICAL.
10. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NO MORE THAN 8-INCH, TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	68
FILL (CY)	68
IMPORT (CY)	0
EXPORT (CY)	0

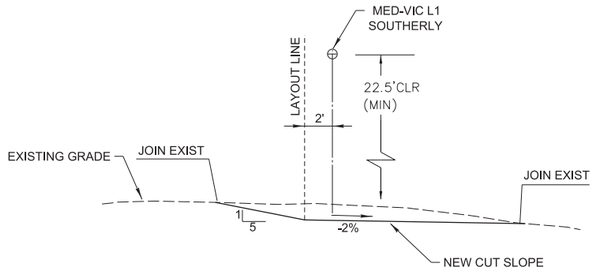
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON EXISTING ROADWAY NOT TO EXCEED 8 INCHES.

APPROXIMATE GRADING PARAMETERS:

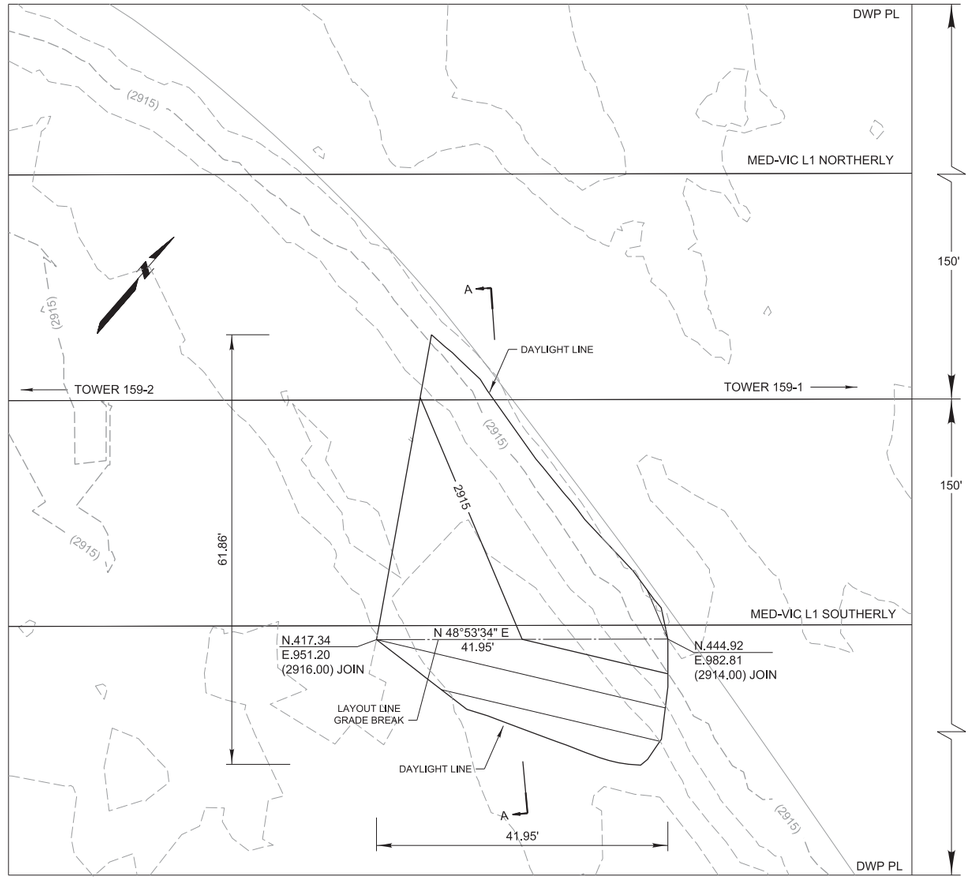
MAX WIDTH (FT)	42
MAX LENGTH (FT)	62
MAX DEPTH (FT)	2.3
AREA (SF)	1,490

ABBREVIATIONS:

BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
FG	FINISH GRADE
GB	GRADE BREAK
MAX	MAXIMUM
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PL	PROPERTY LINE
REQ.	REQUIRED
S	SLOPE
SG	STRAIGHT GRADE
TL	TRANSMISSION LINE
TWR	TOWER
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PLAN
SCALE: 1" = 10'

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	

DES. ENGR. F.ALCOCER
SUP. ENGR. J. PANG

REVISIONS
NO. | DESCRIPTION

Revision Number
DRAFTING RELEASE
DRAWN BY
CHECKED BY
ENGINEERING APPROVAL

OWNER/AGENT APPROVAL
DRAWING REVISION RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE | DATE

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PLAN, PROFILE, AND SECTIONS
GRADING
MEAD–VICTORVILLE LINE 1 TWR 159–1, 159–2

DWP
POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-159-1-CA01
REV.

DRA

11-29-12
MV1-159-1-CA01.DGN

GENERAL NOTES:

1. ADD 2081000 TO NORTHINGS AND 6823000 TO EASTINGS.
2. ELEVATIONS SHOWN IN PARENTHESIS ARE EXISTING.
3. DASHED CONTOUR LINES INDICATE EXISTING GRADE.
4. ALL WORK SHALL CONFROM TO THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION" AS LAST REVISED.
5. ALL TRENCHES AND EXCAVATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DIVISION OF INDUSTRIAL SAFETY, CONSTRUCTION SAFETY ORDERS.
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11. EMPLOY FIELD-ADJUSTED SLOPE BLENDING WHEREVER POSSIBLE TO PROVIDE A MORE NATURAL BLEND TO THE EXISING ADJACENT TOPOGRAPHY.

ESTIMATED EARTHWORK QUANTITIES:

CUT (CY)	253
FILL (CY)	253
IMPORT (CY)	0
EXPORT (CY)	0

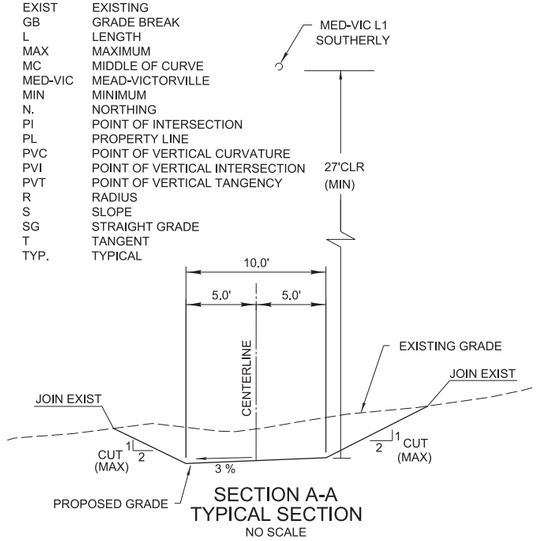
(ESTIMATE BASED ON 10% BULK FACTOR)
* CUT MATERIAL TO BE SPREAD ON ADJACENT TRANSMISSION LINE RIGHT-OF-WAY.

APPROXIMATE GRADING PARAMETERS:

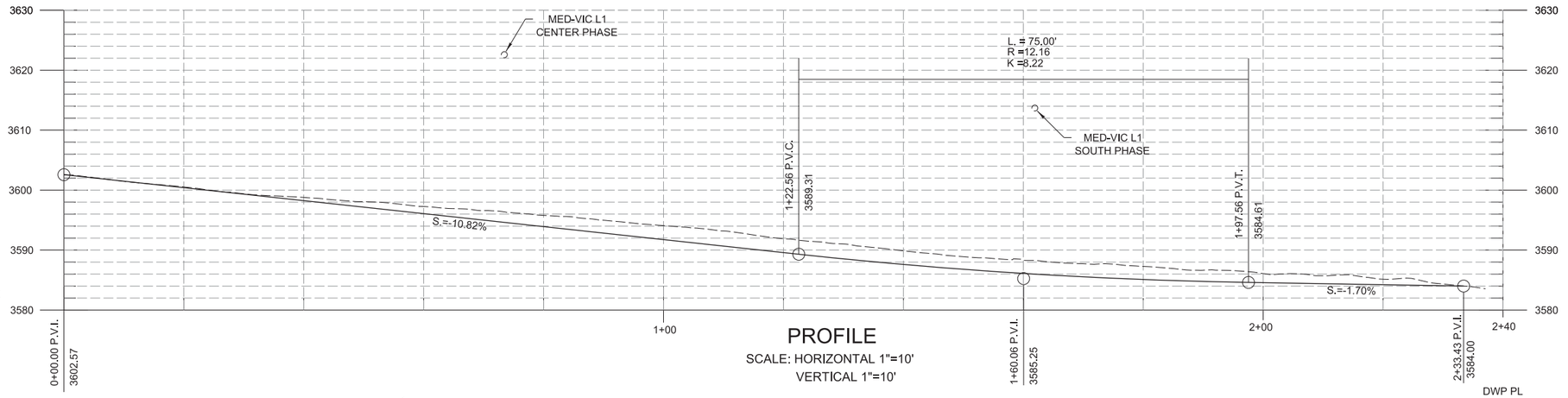
MAX WIDTH (FT)	216
MAX LENGTH (FT)	66
MAX DEPTH (FT)	3.0
AREA (SF)	4,840

ABBREVIATIONS:

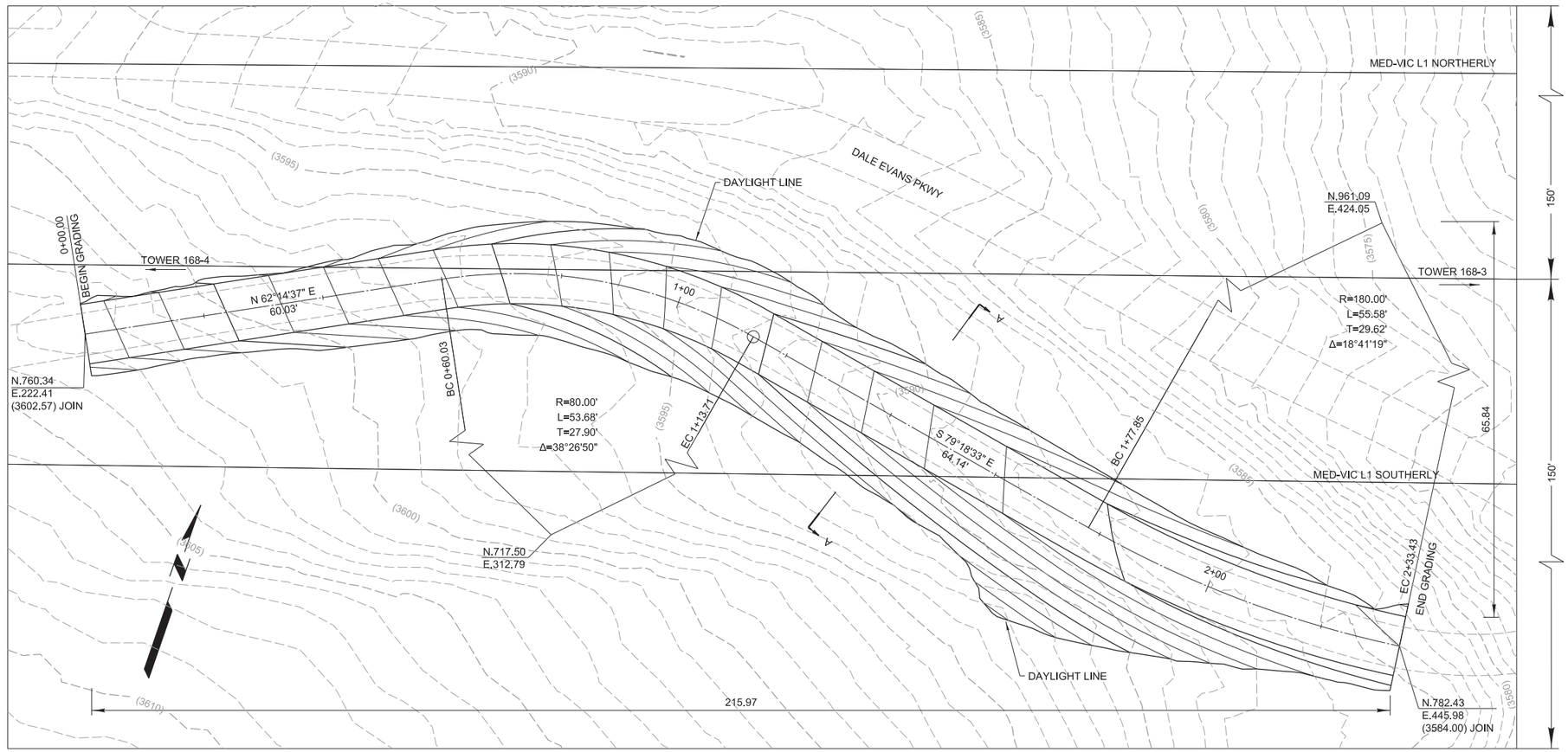
BC	BEGINNING OF CURVE
CL	CENTER LINE OR CHAINLINK
CLR	CLEARANCE
CY	CUBIC YARD
DWP	DEPARTMENT OF WATER AND POWER
E.	EASTING
EC	END OF CURVE
EG	EXISTING GRADE
EL.	ELEVATION
EXIST	EXISTING
GB	GRADE BREAK
L	LENGTH
MAX	MAXIMUM
MC	MIDDLE OF CURVE
MED-VIC	MEAD-VICTORVILLE
MIN	MINIMUM
N.	NORTHING
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
S	SLOPE
SG	STRAIGHT GRADE
T	TANGENT
TYP.	TYPICAL



SECTION A-A
TYPICAL SECTION
NO SCALE



PROFILE
SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=10'



PLAN
SCALE: 1"=10'

DES. ENGR.	E. ALCOSER
SUP. DESIGNER	
SUP. ENGR.	J. PANG

REVISIONS

NO.	DESCRIPTION

Revision Number _____
DRAFTING RELEASE
DRAWN BY _____
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OWNER/AGENT APPROVAL
DRAWING RELEASE APPROVAL
FINAL APPROVAL RELEASE SIGNATURE DATE

PLAN, PROFILE, AND SECTIONS GRADING MEAD-VICTORVILLE LINE 1 TWR 168-3, 168-4

POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

DRAWING NUMBER
MV1-168-3-CA01
REV.

11-27-12

MVL1-168-3.dgn

APPENDIX D1

Biological Resources Report

Los Angeles Department of Water and Power Path 46 Transmission Line Clearances Project California Portion

Biological Resources Survey Report

Prepared for
Los Angeles Department of Water and Power and
Bureau of Land Management Barstow Field Office

May 2016

Los Angeles Department of Water and Power Path 46 Transmission Line Clearances Project California Portion

Biological Resources Survey Report

Prepared for
Los Angeles Department of Water and Power and
Bureau of Land Management Barstow Field Office

May 2016

ESA

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Oakland
Orlando
Palm Springs
Petaluma
Portland
Sacramento
San Diego
San Francisco
Seattle
Tampa
Woodland Hills

211490.28

Table of Contents

Los Angeles Department of Water and Power
Path 46 Transmission Line Clearances Project
California Portion
Biological Resources Survey Report

Page

1. Introduction 1
- 1.1 Project Description 1
- 1.2 Project Location 3
- 1.3 Area of Potential Effects 12

2. Purpose and Setting 13
- 2.1 Environmental Setting 14
- 2.2 Regulatory Setting 14

3. Methodology 23
- 3.1 Literature Search 23
- 3.2 Biological Surveys 23

4. Results 25
- 4.1 General Biological Issues 26
- 4.2 Site-Specific Biological Issues 44

5. Summary of Findings and Recommendations 149
- 5.1 General Biological Issues 149
- 5.2 Site Specific Biological Issues 150

6. References 154

Appendices
A. Estimated Limits of Grading
B. CNDDB Results
C. Survey Dates and Weather Conditions
D. Botanical and Wildlife Species Compendiums
E. Photographic Log

Page

Figures

1 Regional Location 4
2-1 Work Area Locations – Segment 1 5
2-2 Work Area Locations – Segment 2 6
2-3 Work Area Locations – Segment 3 7
2-4 Work Area Locations – Segment 4 8
2-5 Work Area Locations – Segment 5 9
2-6 Work Area Locations – Segment 6 10
2-7 Work Area Locations – Segment 7 11
3-1 CNDDB and Critical Habitat – Segment 1 31
3-2 CNDDB and Critical Habitat – Segment 2 32
3-3 CNDDB and Critical Habitat – Segment 3 33
3-4 CNDDB and Critical Habitat – Segment 4 34
3-5 CNDDB and Critical Habitat – Segment 5 35
3-6 CNDDB and Critical Habitat – Segment 6 36
3-7 CNDDB and Critical Habitat – Segment 7 37
4-1 Biological Survey Results – Segment 1 47
4-2 Biological Survey Results – Segment 1 48
4-3 Biological Survey Results – Segment 1 49
4-4 Biological Survey Results – Segment 1 50
4-5 Biological Survey Results – Segment 1 51
4-6 Biological Survey Results – Segment 1 52
4-7 Biological Survey Results – Segment 2 57
4-8 Biological Survey Results – Segment 2 58
4-9 Biological Survey Results – Segment 2 59
4-10 Biological Survey Results – Segment 2 60
4-11 Biological Survey Results – Segment 2 61
4-12 Biological Survey Results – Segment 2 62
4-13 Biological Survey Results – Segment 2 63
4-14 Biological Survey Results – Segment 3 67
4-15 Biological Survey Results – Segment 3 68
4-16 Biological Survey Results – Segment 3 69
4-17 Biological Survey Results – Segment 3 70
4-18 Biological Survey Results – Segment 4 73
4-19 Biological Survey Results – Segment 4 74
4-20 Biological Survey Results – Segment 4 75
4-21 Biological Survey Results – Segment 4 76
4-22 Biological Survey Results – Segment 4 77
4-23 Biological Survey Results – Segment 4 78
4-24 Biological Survey Results – Segment 4 79
4-25 Biological Survey Results – Segment 4 80
4-26 Biological Survey Results – Segment 4 81
4-27 Biological Survey Results – Segment 4 82
4-28 Biological Survey Results – Segment 4 83
4-29 Biological Survey Results – Segment 4 84
4-30 Biological Survey Results – Segment 4 85
4-31 Biological Survey Results – Segment 4 86
4-32 Biological Survey Results – Segment 4 87
4-33 Biological Survey Results – Segment 4 88
4-34 Biological Survey Results – Segment 4 89
4-35 Biological Survey Results – Segment 4 90
4-36 Biological Survey Results – Segment 5 93
4-37 Biological Survey Results – Segment 5 94

Figures (cont.)

4-38 Biological Survey Results – Segment 5 95
4-39 Biological Survey Results – Segment 5 96
4-40 Biological Survey Results – Segment 5 97
4-41 Biological Survey Results – Segment 5 98
4-42 Biological Survey Results – Segment 5 99
4-43 Biological Survey Results – Segment 5 100
4-44 Biological Survey Results – Segment 5 101
4-45 Biological Survey Results – Segment 5 102
4-46 Biological Survey Results – Segment 5 103
4-47 Biological Survey Results – Segment 5 104
4-48 Biological Survey Results – Segment 5 105
4-49 Biological Survey Results – Segment 5 106
4-50 Biological Survey Results – Segment 5 107
4-51 Biological Survey Results – Segment 5 108
4-52 Biological Survey Results – Segment 5 109
4-53 Biological Survey Results – Segment 5 110
4-54 Biological Survey Results – Segment 5 111
4-55 Biological Survey Results – Segment 5 112
4-56 Biological Survey Results – Segment 5 113
4-57 Biological Survey Results – Segment 5 114
4-58 Biological Survey Results – Segment 5 115
4-59 Biological Survey Results – Segment 5 116
4-60 Biological Survey Results – Segment 5 117
4-61 Biological Survey Results – Segment 5 118
4-62 Biological Survey Results – Segment 5 119
4-63 Biological Survey Results – Segment 5 120
4-64 Biological Survey Results – Segment 5 121
4-65 Biological Survey Results – Segment 5 122
4-66 Biological Survey Results – Segment 5 123
4-67 Biological Survey Results – Segment 5 124
4-68 Biological Survey Results – Segment 5 125
4-69 Biological Survey Results – Segment 6 129
4-70 Biological Survey Results – Segment 6 130
4-71 Biological Survey Results – Segment 6 131
4-72 Biological Survey Results – Segment 6 132
4-73 Biological Survey Results – Segment 6 133
4-74 Biological Survey Results – Segment 6 134
4-75 Biological Survey Results – Segment 6 135
4-76 Biological Survey Results – Segment 6 136
4-77 Biological Survey Results – Segment 6 137
4-78 Biological Survey Results – Segment 6 138
4-79 Biological Survey Results – Segment 7 141
4-80 Biological Survey Results – Segment 7 142
4-81 Biological Survey Results – Segment 7 143
4-82 Biological Survey Results – Segment 7 144
4-83 Biological Survey Results – Segment 7 145
4-84 Biological Survey Results – Segment 7 146
4-85 Biological Survey Results – Segment 7 147

Page

Tables

1 USGS Quadrangle Maps 3
2 Land Designations and Impact Areas 25
3 Special-Status Plant Species With Potential to Occur in the APE 27
4 Special-Status Wildlife Species With Potential to Occur in The APE 40

Los Angeles Department of Water and Power Path 46 Transmission Line Clearances Project California Portion

Biological Resources Survey Report

1. Introduction

1.1 Project Description

Environmental Science Associates (ESA) has been retained by Los Angeles Department of Water and Power (LADWP) to conduct general biological surveys for the Path 46 Transmission Line Clearances Project (Project) which extends from Victorville, California, to Boulder City, Nevada (Figure 1). This report, however, covers only Segments 1 through 7 of the Project. Segment 8, which occurs in Nevada, will be discussed in a separate report. The Project's objective is to restore North American Electric Reliability Corporation (NERC) code clearances from the ground to the transmission conductors. The existing McCullough-Victorville Lines 1 and 2 (MCV1 and MCV2) and the Mead-Victorville Line 1 (MVL1) were installed in the 1930s to transmit power from Hoover Dam to Los Angeles. Since then, the transmission lines have sagged past code clearances. LADWP has identified a total of 72 locations not currently meeting NERC code requirements in California and intends to comply with the code clearances by grading the ground surface of the area underneath the transmission lines to achieve the required height consistency. In situations where grading has been determined to be infeasible due to topography, LADWP proposes the alternative of raising existing transmission line towers to achieve height consistency. Project activities are discussed in further detail below.

Access to the proposed work areas will be limited to the existing main Powerline Road and associated spur roads, to the extent feasible. Where access to the proposed work areas is not possible via the existing roads, overland travel shall be limited to those areas designated by a qualified biologist as non-sensitive. Access routes designated by the qualified biologist will follow the path of least resistance and avoid all sensitive biological resources, to the extent feasible.

1.1.1 Grading Process

Grading activities will be carried out within the LADWP right-of-way in order to achieve height consistency and will include the staking of grading limits, grading, and site restoration. Prior to the start of grading, each site will have cut and fill stakes and construction perimeter stakes set. Construction equipment to be used for grading will include water trucks, backhoe loaders, wheel

loaders, dump trucks, jack hammers, and various small utility vehicles. The construction equipment will be staged within the confines of existing roadways and turnouts.

Temporary storage of spoils will occur within the Project limits in previously-disturbed areas identified in coordination amongst LADWP and their biological and cultural resources specialists. Spoils accumulated during grading activities will then be spread within the existing access road for the MVL1 and MCV2 lines, known as Powerline Road, within 500 feet to either side of the work area to repair ruts and potholes consistent with activities associated with routine road maintenance. For the MCV1 lines, which are not located adjacent to Powerline Road, the spoils will be spread within the unnamed spur roads, within 500 feet to either side of the work area. Equipment and spoils spreading will be limited to within the confines of the existing road and is not anticipated to encroach upon adjacent habitat.

Certain portions of existing spur roads that directly conflict with clearance requirements will be decommissioned. This work will involve either scarifying the road surface or constructing compacted soil barricades or other similar barrier system to prevent vehicle access to that section of road. The spur road will be realigned around the demolished section to restore continuous access between towers. The portions of the road that are decommissioned will be restored and revegetated.

1.1.2 Tower Raising Process

Tower raising will be carried out at MCV1 125-5 and MCV1 125-6, where grading is infeasible due to topographic limitations. In order to achieve the required conductor-to-ground clearances, the existing free-standing lattice steel towers will be reinstalled in a manner that increases clearance distances. Tower raising will be accomplished by repositioning towers onto new footings that are necessary to accommodate the tower extension. Four new tower footings will be installed at each tower raising site. Standard footings are 4 feet in diameter and 30 feet in depth. Towers and tower footings would be installed on, or slightly offset from, the existing footprint of the tower prior to tower raising activities and will be on the centerline of the existing conductors. Tower raising activities will also include the preparation of pads for construction equipment, conductor offset adjustments, and site cleanup and restoration. The preparation of graded and compacted pads will be carried out as necessary to accommodate the cranes, forklifts, and man lifts required to raise the towers. The equipment to be used for tower raising activities will include backhoe loaders, rubber tire loaders, water trucks, large and small cranes, all terrain forklifts, man lifts, and various small utility vehicles.

The tower raising will begin with the removal of conductors and ground wires, followed by the lifting of the tower body which will be held in place by a large crane while a vertical extension is inserted within the tower body. After the tower has been raised, conductor offset adjustments may be required and would entail small adjustments to the conductor lengths which would be carried out by technicians in large man lifts.

Cleanup would include the chipping of the old concrete footings 1 foot below the topsoil and the cutting of stub angles using a cutting torch. Approximately 3.7 acres will experience ground disturbance as a result of tower raising activities at the two work areas.

1.2 Project Location

The California portion of the Project includes 72 proposed work areas of various sizes directly underneath sagging power lines, as well as improvements to portions of Powerline Road and existing spur roads that will be used for site access, equipment staging and storage, and spoils distribution. The 72 work areas have been grouped into seven segments which contain similar physical and biological characteristics (Figures 1 and 2). The California portion of the Project is located in San Bernardino County, northeast of Victorville, California; south and east of Barstow, California; and southwest and northeast of Baker, California. The Area of Potential Effect (APE) is located entirely on land administered by the U.S. Bureau of Land Management (BLM), with a BLM right-of-way grant issued to LADWP. The Project occurs within the Alvord Mountain East, Bitter Spring, Clarke Mountain, Cronese Lakes, Daggett, Dunn, East of Kingstone Spring, Harvard Hill, Kingstone Spring, Minneola, North of Baker, Turquoise Mountain, Turtle Valley, Red Pass Lake, Stoddard Well, and West of Baker 7.5-minute U.S. Geological Survey (USGS) topographic quadrangles (Table 1). The location of the APE within Segments 1-7 is depicted in Figure 2.

TABLE 1
USGS QUADRANGLE MAPS

Segment	Area of Potential Effect[1]	Quadrangle[2]
1	MCV2 152-1 to MCV2 152-2; MCV1 151-4 to MCV1 151-5; MCV1 149-2 to MCV1 149-3; MVL1 168-3 to MVL1 168-4; MCV1 145-3 to MCV1 145-4;	Turtle Valley, Stoddard Well
2	MVL1 158-6 to MVL1 159-2; MCV1 138-1 to MCV1 138-2; MVL1 155-5 to MVL1 155-6; MVL1 150-3 to MVL1 150-5; MCV1 129-1 to MCV1 129-2	Daggett, Minneola
3	MVL1 147-4 to MVL1 147-5; MCV1 125-6; MCV1 125-5; MCV1 120-1 to MCV1 120-2	Minneola, Harvard Hill
4	MVL1 129-4 to MVL1 129-5; MCV2 104-5 to MCV2 105-1; MCV2 103-3 to MCV2 103-4; MCV1 100-5 to MCV1 101-1; MCV2 97-5 to MCV2 98-1; MCV2 97-1 to MCV2 97-2; MCV2 93-4 to MCV2 93-5; MCV1 92-4 to MCV1 92-5; MCV2 90-4 to MCV2 90-5; MVL1 110-5 to MVL1 111-2	Alvord Mountain East, Dunn, Bitter Spring, Cronese Lakes
5	MCV1 88-5 to MCV1 89-1; MCV1 88-1 to MCV1 88-4; MCV1 85-2 to MCV1 87-6; MCV1 85-2 to MCV1 85-3; MCV1 84-6 to MCV1 84-5; MCV1 82-1 to MCV1 82-2; MCV1 78-4 to MCV1 78-5; MCV1 77-5 to MCV1 78-1; MCV1 76-4 to MCV1 77-2; MCV1 75-3 to MCV1 75-4; MCV1 73-6 to MCV1 74-1; MCV1 66-5 to MCV1 66-6	Red Pass Lake, West of Baker, North of Baker
6	MCV1 62-3 to MCV1 62-4; MCV1 60-5 to MCV1 61-3; MCV1 57-5 to MCV1 58-1; MCV1 59-3 to MCV1 59-4; MCV1 56-4 to MCV1 56-5; MCV1 55-2 to MCV1 55-3	Turquoise Mountain, Kingston Spring, East of Kingston Spring
7	MCV1 38-5 to MCV1 39-1; MCV1 38-3 to MCV1 38-4; MCV1 37-6 to MCV1 38-1; MCV1 36-6 to MCV1 37-3; MCV1 36-4 to MCV1 36-5; MCV1 36-2 to MCV1 36-3;	Clarke Mountain

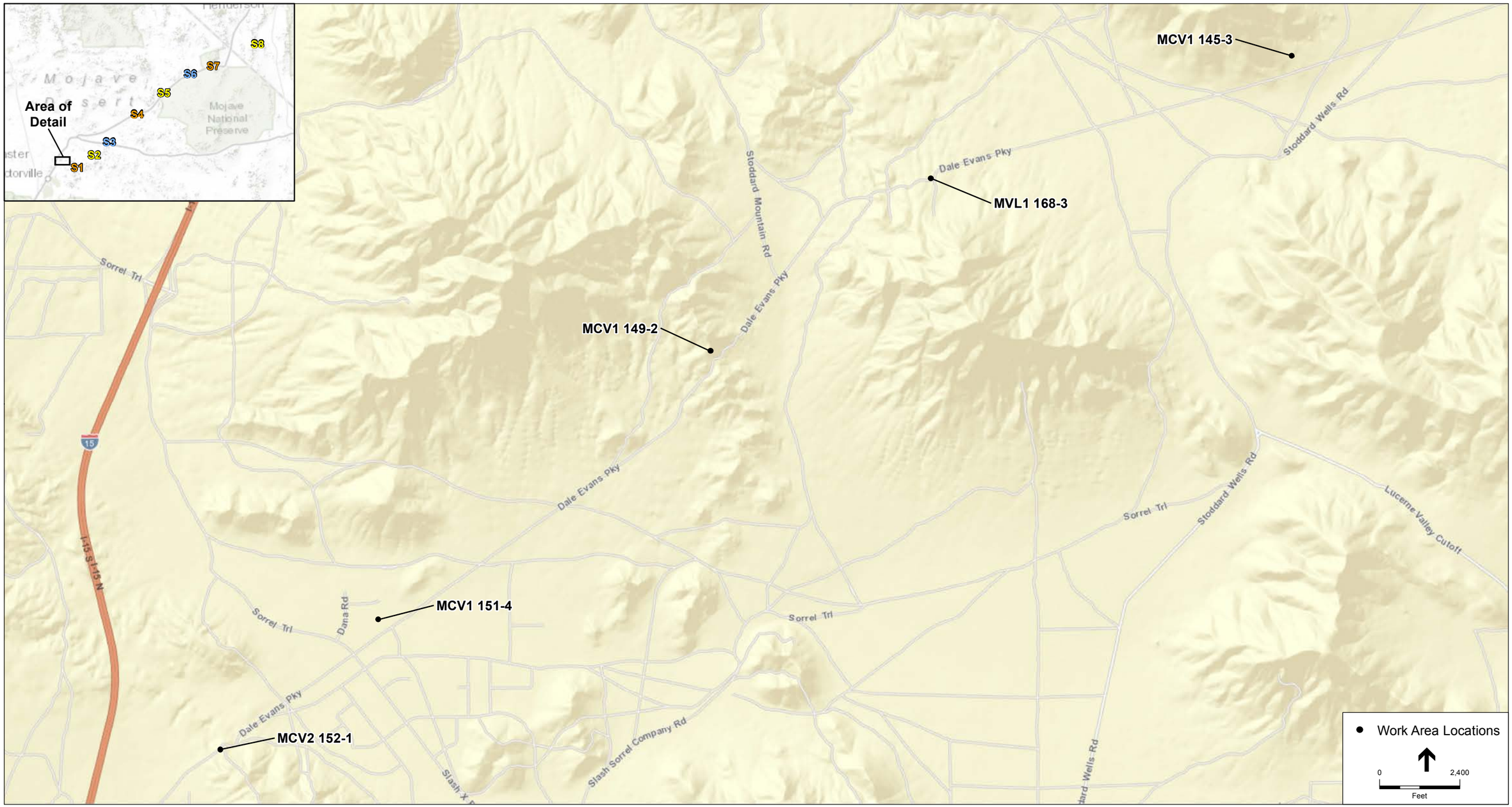
[1] The Area of Potential Effect (APE) is described using transmission tower numbers for reference (e.g., MCV2 152-1)
[2] Source: USGS, 2013.

SOURCE: ESRI

LADWP - Path 46 Transmission Line Clearance . 211490.28

Figure 1

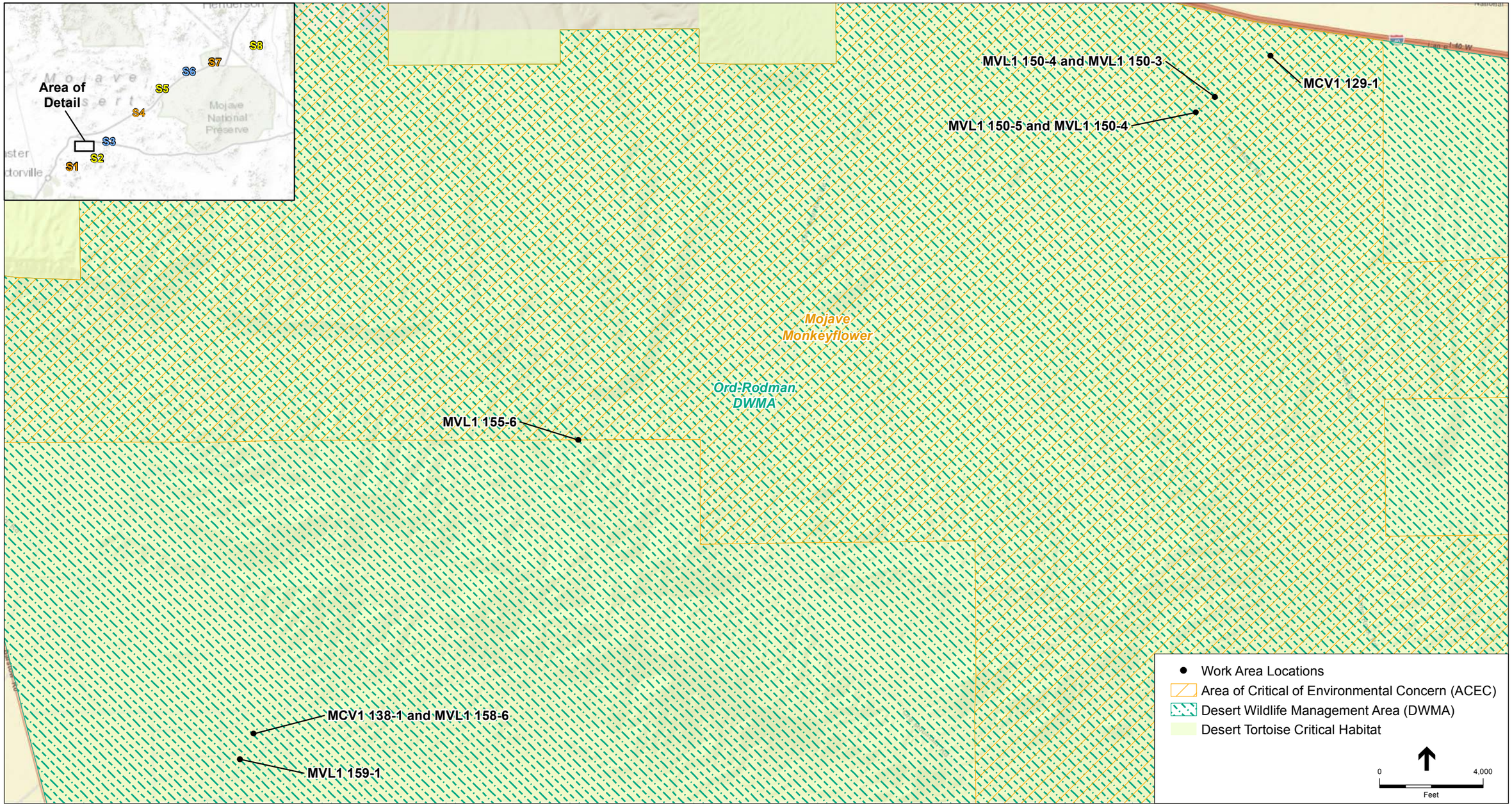
Regional Location



Source: USGS, BLM

LADWP - Path 46 Transmission Line Clearence . 211490.28

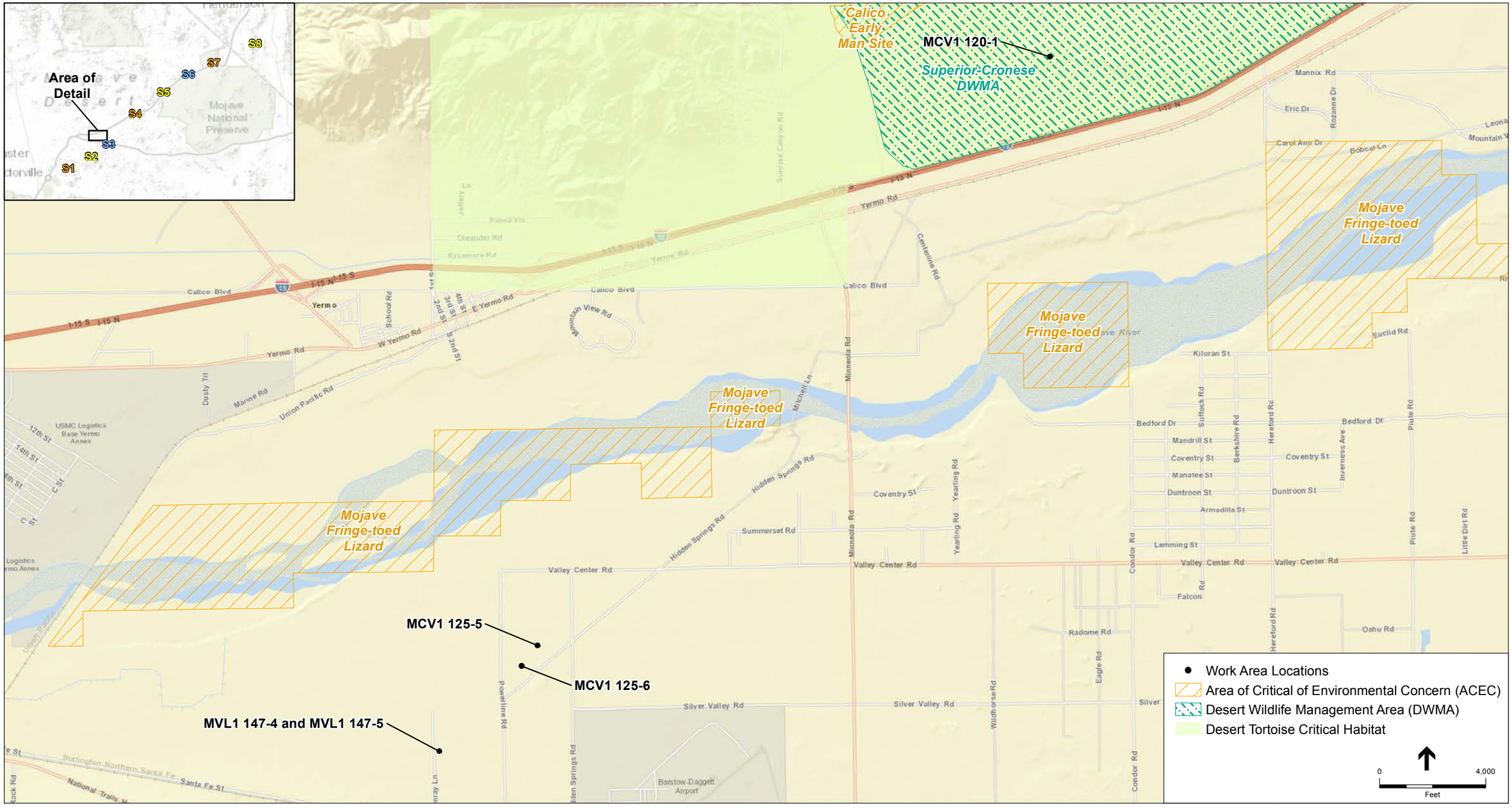
Figure 2-1
Work Area Locations
Segment 1



Source: USGS, BLM

LADWP - Path 46 Transmission Line Clearence . 211490.28

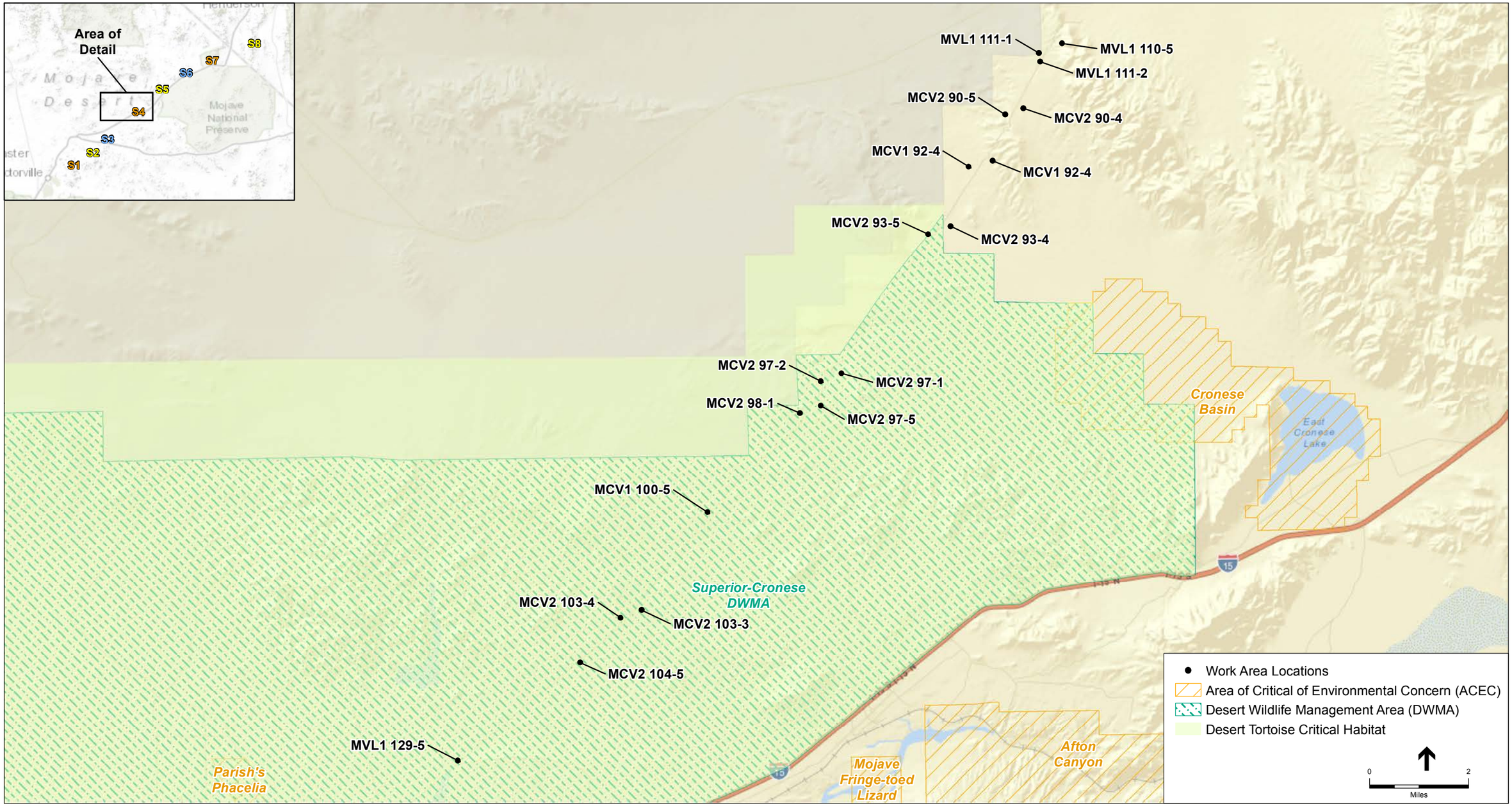
Figure 2-2
Work Area Locations
Segment 2



Source: USGS, BLM

LADWP - Path 46 Transmission Line Clearence . 211490.28

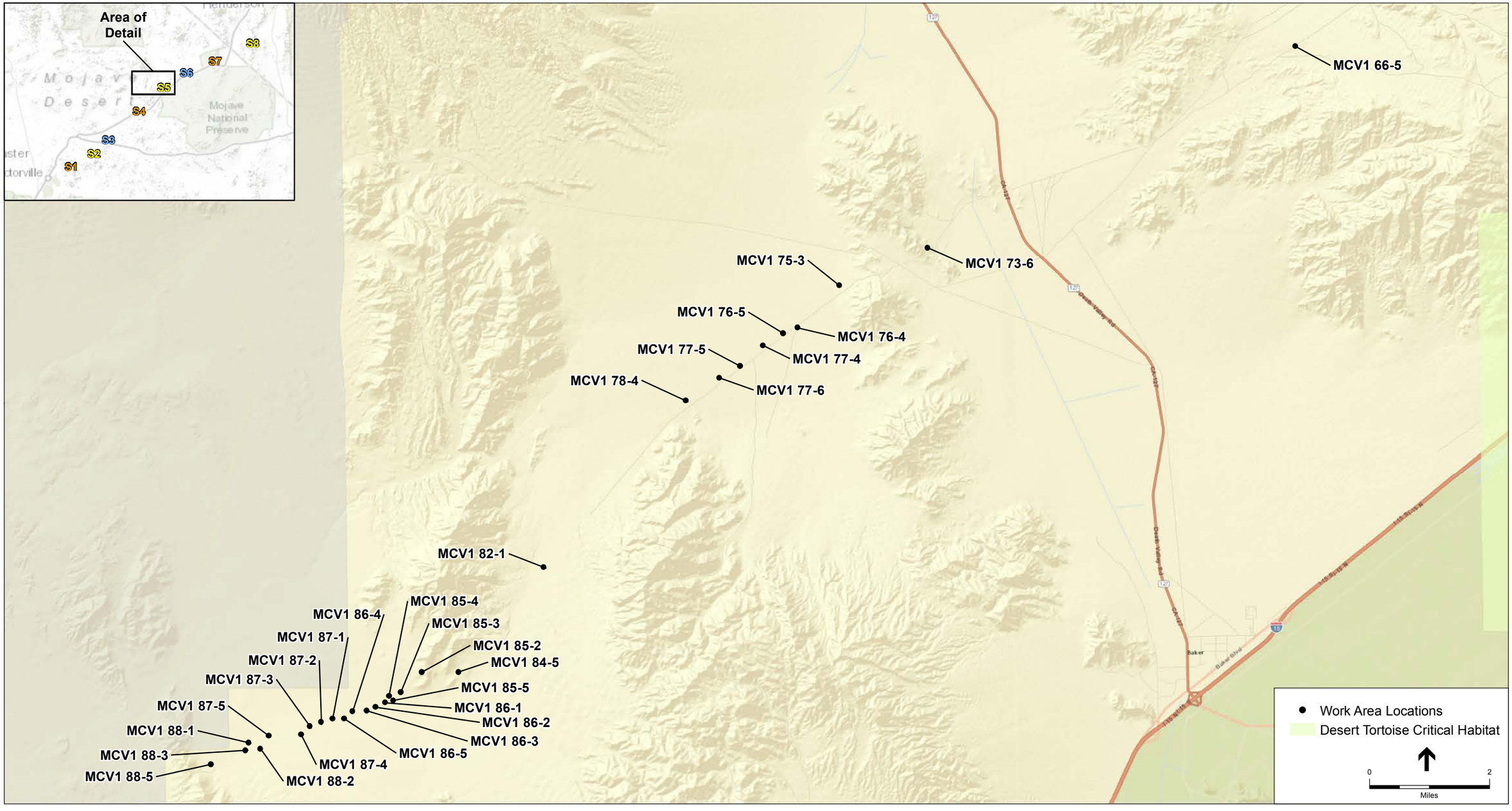
Figure 2-3
Work Area Locations
Segment 3



Source: USGS, BLM

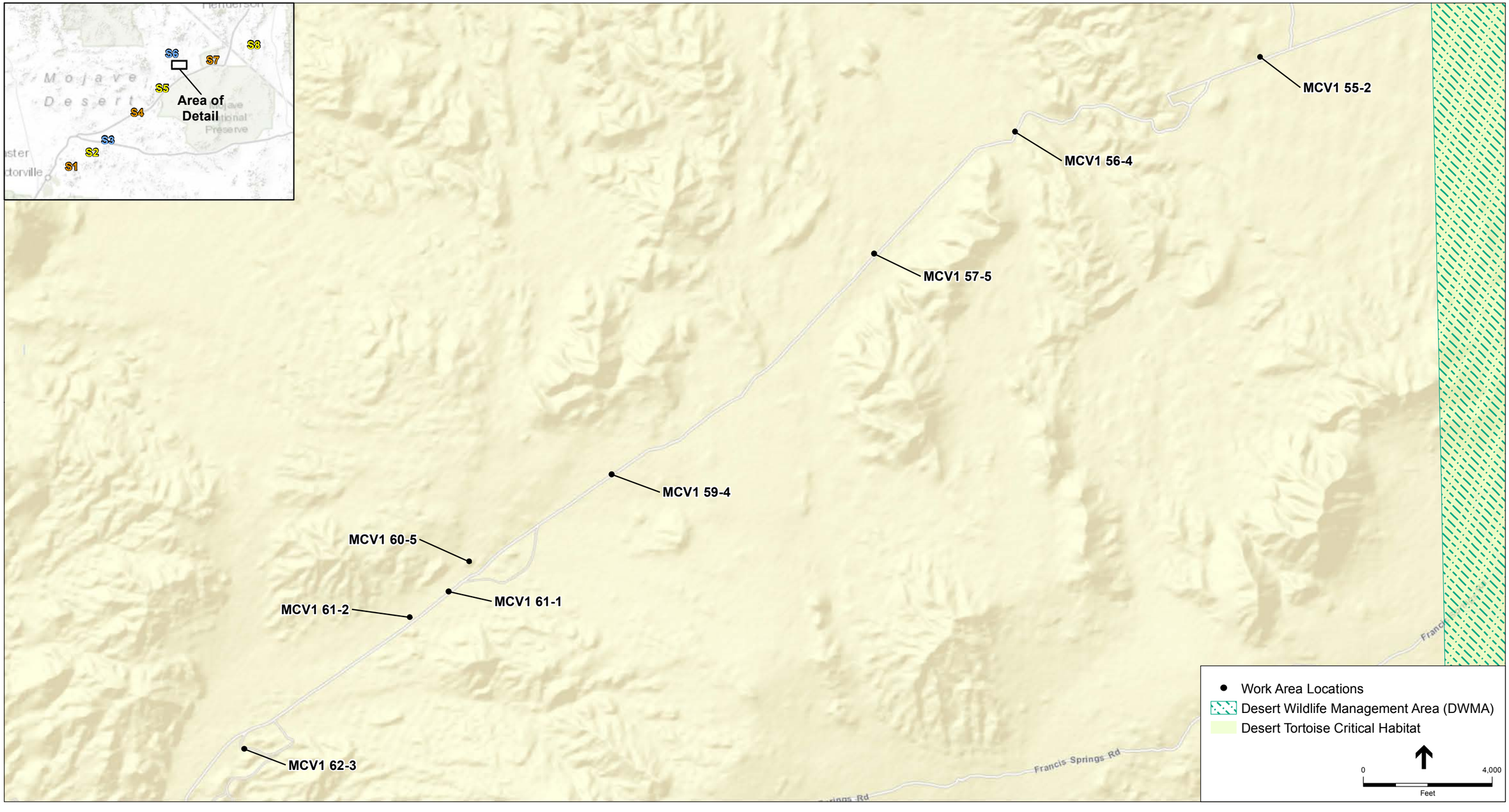
LADWP - Path 46 Transmission Line Clearence . 211490.28

Figure 2-4
Work Area Locations
Segment 4



Source: USGS, BLM

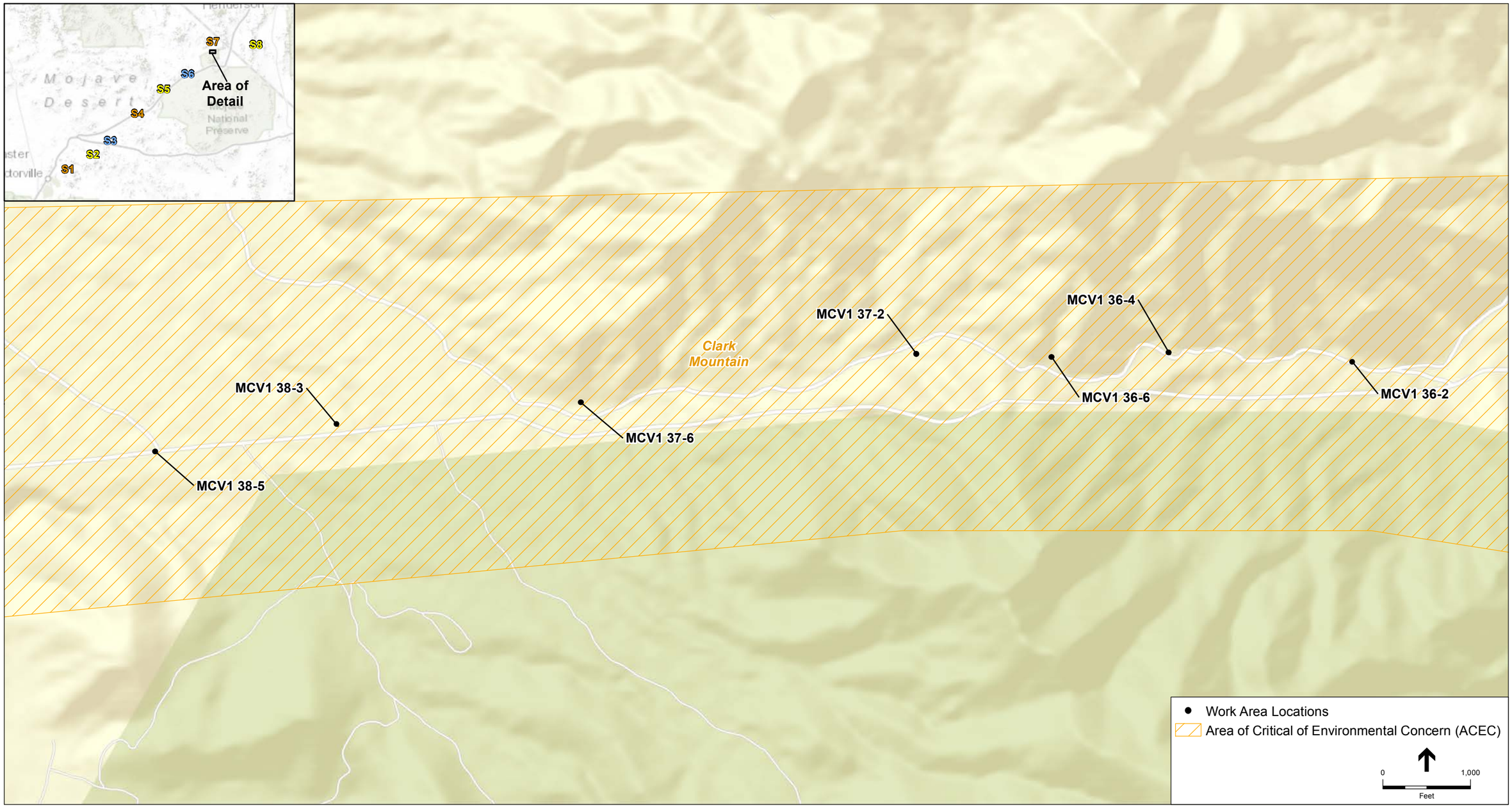
Figure 2-5
Work Area Locations
Segment 5



Source: USGS, BLM

LADWP - Path 46 Transmission Line Clearence . 211490.28

Figure 2-6
Work Area Locations
Segment 6



Source: USGS, BLM

LADWP - Path 46 Transmission Line Clearence . 211490.28

Figure 2-7
Work Area Locations
Segment 7

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1.3 Area of Potential Effects

The APE can be defined as the geographic area or areas within which the proposed Project may directly or indirectly impact biological resources. With species such as golden eagle, it is understood that potential effects from work activities may occur as distant as five miles from the sensitive resource; however, to maintain clarity, the term APE as used in this report generally refers to areas of ground disturbance and immediate surroundings in which potential effects to the bulk of biological resources may be anticipated. Potential impacts to golden eagles are also analyzed in this report, though these effects may occur outside of the APE as generally defined herein.

The APE was divided into eight Segments, because there are large gaps between work areas (Figure 1). The horizontal APE for the Project includes the proposed grading areas and the existing access roads where grading spoils will be redistributed, which together constitute the work areas, plus a 100-foot buffer to account for any changes in the limits of disturbance (e.g., contouring of grading areas to avoid entrapment of wildlife), changes in access routes, movement/storage of equipment, and/or potential indirect impacts to biological resources that may be generated from project activities, such as dust, noise, and vibrations.

The vertical APE for this Project includes the maximum limits of grading. The vertical APE varies across the Project, but it is not anticipated to exceed 9 feet. Appendix A provides the anticipated maximum limits of grading for each of the APE locations and whether they occur on land with special designations, such as within an areas designated by the U.S. Fish and Wildlife Service (USFWS) as Critical Habitat for desert tortoise (*Gopherus agassizii*); BLM-designated Areas of Critical Environmental Concern (ACECs); Desert Wildlife Management Areas (DWMAs); and/or USFWS Recovery Units for desert tortoise.

2. Purpose and Setting

The purpose of this report is to disclose the locations of sensitive biological resources within and adjacent to the proposed work areas and to assess the potential impacts to such resources, based on focused surveys and habitat assessments. Sensitive biological resources assessed within the APE include, but are not limited to, native cactus species, special-status plants[1], desert tortoise, burrowing owl (*Athene cunicularia*), nesting birds and raptors, desert kit fox (*Vulpes macrotis arsipus*), American badger (*Taxidea taxus*), and jurisdictional resources (waters). The field surveys and assessments provide for the basis to recommend measures to avoidance and/or minimize impacts to sensitive biological resources.

This section also provides a summary of the natural environment and the regulatory framework for the Project.

[1] For the purpose of this report, "sensitive species" are defined as those protected by FESA or CESA, designated as a California Species of Special Concern, designated as Protected or Fully Protected by CDFW; given a California Rare Plant Rank of 1A, 1B, 2A, or 2B by the CNPS; designated as sensitive by city, county, or regional planning documents; or recognized as "sensitive" by the BLM, USWFS, or other regulatory agency.

2.1 Environmental Setting

The Project extends in a southwest to northwest direction (Figure 1). The southwestern end of the APE generally begins in Stoddard Valley, just northeast of Victorville and east of I-15. From there it extends east through Daggett (east of Barstow) and northeast into the Mojave Valley to the edge of the California–Nevada border. The overall topography throughout the APE is composed of relatively flat valleys bounded by sloping hills ranging in elevation from 1,280 feet (approximately 390 meters) above mean sea level (amsl) (valleys) to 3,670 feet (approximately 1,119 meters) amsl (foothills). Mountains within the vicinity of the APE include Bell Mountain, Turtle Mountain, Stoddard Mountain, Stoddard Ridge, Quartzite Mountain, and Silver Mountain, with several unnamed rolling hills.

The APE is relatively disturbed from the previous installation of the transmission towers, Powerline Road, and associated access roads and spurs. The APE is subject to ongoing disturbance associated with unauthorized off-road vehicle use, motocross racing, and transmission line maintenance. Powerline Road is also used as a service road to other utilities in the area, such as Level 3 and WorldCom Fiber Optics (one on each side of the road), as well as the Marketplace-Adelanto Transmission Line 1, and the Intermountain-Adelanto Transmission Line 1 and Line 2. The vegetation within the APE consists of a moderate-quality Mojave creosote bush scrub habitat dominated by native shrubs and scattered non-native herbs and grasses. Portions of this plant community within the APE are intermixed with elements of succulent scrub. The existing developed areas within the APE consist of the transmission towers, Powerline Road, and access and spur roads. The land surrounding the APE generally consists of undeveloped open space to the north, south, east, and west. Some development occurs within the vicinity of the APE and consists of small sections of Interstate-15 (I-15) and Interstate-40 (I-40), scattered rural residences, and agricultural land (Figure 1).

2.2 Regulatory Setting

2.2.1 Federal

Federal Endangered Species Act

Under the Federal Endangered Species Act (FESA), the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 USC 1533(c)). Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed or proposed species may be present in the project region and determine whether the proposed project would have a potentially significant impact on such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536(3), (4)).Project-related impacts to these species and their habitats must be assessed in a Biological Assessment (BA) and adverse impacts would generally be considered “significant.”

Section 9 of FESA contains a “take” prohibition on threatened or endangered species. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to

engage in any such conduct. Harm is further classified as significant habitat modification or degradation that kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. This take definition does not apply to plants, though the effects of federal actions on listed plants need to be evaluated in the BA and avoided and minimized where possible.

Section 7 of FESA contains provisions to authorize the incidental take of federally-listed species, requiring federal agencies to consult with the USFWS and/or National Marine Fisheries Service, collectively referred to as the Service(s), if that agency determines that any action it funds, authorizes, or carries out may affect a listed species or its designated critical habitat. Formal consultation with the Service would result in the issuance of a Biological Opinion (BO) that includes either a jeopardy or non-jeopardy decision issued by the Service to the consulting federal agency and, if approved, an incidental take permit. This formal consultation process is required only for Federal activities and non-Federal activities that receive Federal funding or require a Federal permit.

Section 10 of the FESA provides for the issuance of incidental take permits activities that do not have a Federal nexus as described above. Under such circumstances, the Project proponent must provide the USFWS with a Habitat Conservation Plan (HCP) for the affected species and publish notification of the application for a permit in the Federal Register. The HCP is intended to ensure that the impacts of the authorized incidental take will be avoided, minimized, and mitigated to the maximum extent practicable. While these projects are not subject to the formal interagency consultation process, they are still subject to section 7 because the issuance of an incidental take permit is a Federal action. The requirements of section 7 and section 10 are generally similar; however, considerations within section 7 that are not explicitly expressed in section 10 include indirect effects, effects on federally listed plants, and effects on critical habitat.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of Critical Habitat for federally listed species to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical Habitat is defined in Section 3(5)(A) of the FESA as: (1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special management consideration or protection, and (2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird…” (USC Title 16, Section 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species

protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

Bald and Golden Eagle Protection Act

Similar to the MBTA, the federal Bald and Golden Eagle Protection Act prohibits the unauthorized take of a bald eagle (*Haliaeetus leucocephalus*) or a golden eagle (*Aquila chrysaetos*). "Take" means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb. Furthermore, "disturb" means "to agitate or bother a bald eagle or a golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Federal Regulation of Waters of the United States, Including Wetlands

Wetlands are a subset of "waters of the United States" and receive protection under Section 404 of the Clean Water Act (CWA). The term "waters of the United States" as defined in Code of Federal Regulations (CFR) (33 CFR 328.3(a); 40 CFR 230.3(s)), includes all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide. Wetlands are defined by the federal government (CFR, Section 328.3(b), 1991) as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with U.S. Environmental Protection Agency (EPA) (328.3(a)(8) added 58 FR 45035, August 25, 1993). The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into waters of the United States under Section 404 of the CWA.

Regional Water Quality Control Board

Under Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB) must certify that actions receiving authorization under Section 404 of the CWA also meet state water quality standards. The RWQCB also regulates waters of the state under the Porter-Cologne Act Water Quality Control Act (Porter-Cologne Act). The RWQCB requires Projects to avoid impacts to wetlands if feasible and requires that Projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the state. The RWQCB also has jurisdiction over waters deemed "isolated" or not subject to Section 404 jurisdiction under the Solid Waste Agency of

Northern Cook County decision[2] dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state and prospective dischargers are required obtain authorization through an Order of Waste Discharge or waiver thereof from the RWQCB and comply with other requirements of the Porter-Cologne Act.

Clean Water Act

In accordance with Section 404 of the federal CWA, USACE regulates discharge of dredged or fill material into waters of the United States and their lateral limits are defined in Title 33, Part 328.3(a) of the CFR to include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Waters of the United States are often categorized as "jurisdictional wetlands" (i.e., wetlands over which the USACE exercises jurisdiction under Section 404) and "other waters of the United States" when habitat values and characteristics are being described. "Fill" is defined as any material that replaces any portion of a water of the United States with dry land or that changes the bottom elevation of any portion of a water of the United States. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from USACE. In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the proposed Project would uphold State of California water quality standards.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the CWA.

West Mojave Plan

The West Mojave Plan (WEMO) is a pending Habitat Conservation Plan pursuant to the FESA and an amendment to the California Desert Conservation Area Plan covering over nine million acres in five counties (Inyo, Kern, Los Angeles, San Bernardino, and Riverside) with the purpose of creating a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel (*Xerospermophilus mohavensis*), and almost 100 other sensitive species, as well as the natural communities in which they reside. In addition, this HCP provides a streamlined

[2] Based on the Supreme Court ruling Solid Waste Agency of Northern Cook City. v. Army Corps of Engineers, 531 U.S. 159 concerning the Clean Water Act jurisdiction over isolated waters (January 9, 2001), non-navigable, isolated, intrastate waters based solely on the use of such waters by migratory birds are no longer defined as waters of the United States. Jurisdiction of non-navigable, isolated, intrastate waters may be possible if their use, degradation, or destruction could affect other waters of the Unites States, or interstate or foreign commerce. Jurisdiction over such other waters is analyzed on a case-by-case basis. Impoundments of waters, tributaries of waters, and wetlands adjacent to waters should be analyzed on a case-by-case basis.

program for complying with the requirements of the California Endangered Species Act (CESA) and FESA.

According to the BLM's March 2006 Record of Decision (ROD) for the Final Environmental Impact Report evaluating the WEMO, the HCP has not yet been adopted; however, the ROD did approve Alternative B of the WEMO, which applies only to actions on BLM lands. Once it is completed, incidental take permits for an additional 48 covered species would be issued to participating local jurisdictions and state agencies. This incidental take authorization cannot be implemented, however, until the local governments complete the application for incidental take permits and receive approval from state and federal wildlife agencies. In 2007, the USFWS issued a BO amending the incidental take permit for desert tortoise, authorizing a specified level of take within the WEMO area from BLM-authorized activities.

Desert Renewable Energy Conservation Plan

In response to Executive Order S-14-08, which established a target of obtaining 33 percent of the state's electricity from renewable resources by 2020, the California Energy Commission, California Department of Fish and Wildlife (CDFW)[3], BLM, and USFWS have started preparing the Desert Renewable Energy Conservation Plan (DRECP). The plan area encompasses the Mojave and Colorado Desert regions in California, including all or a portion of the following counties: Kern, Los Angeles, San Bernardino, Inyo, Riverside, Imperial, and San Diego.

The DRECP is a state Natural Community Conservation Plan that is intended to provide for effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects. It is anticipated to provide long-term endangered species permit assurances to renewable energy developers and provide a process for conservation funding to implement the DRECP. It will also serve as the basis for one or more HCPs under the FESA. Public review of the DRECP was initiated in 2013. It has not yet been adopted.

Desert Tortoise Recovery Plan

The BLM adopted the Desert Tortoise Recovery Plan in 1994 designed to "achieve a 50 percent probability of survival for the tortoise for 500 years." Drawing from concepts outlined in FESA, six population units, called "recovery units," were identified in the Mojave and Sonoran deserts using published and unpublished data. The specified goal for each recovery unit is to reach a target of 50,000 breeding adult tortoises. Within the recovery units, the team recommended the establishment of 14 reserves or DWMAs, ranging in size from 415 to 3,367 square kilometers. Segments 1 through 4 and half of Segment 5 occur within the boundaries of the West Mojave Recovery Plan Area.

While the entire Project is situated within the area encompassed by the Recovery Plan, most of the work will not occur within a DWMA (Figure 1). Work areas MVL1 159-1 through MVL 129-1 in Segment 2 are located within the Ord-Rodman DWMA, and work areas MCV1-120-1 in

[3] The California Department of Fish and Game (CDFG) changed its name on January 1, 2013, to The California Department of Fish and Wildlife (CDFW). In this document, references to literature published by CDFW prior to January 1, 2013, are cited as "CDFG." The agency is otherwise referred to by its new name, CDFW.

Segment 3 and MCV1 120-1 through MCV2 93-4 in Segment 4 are located within the Superior-Cronese DWMA (West Mojave Plan 2005).

The remainder of Segment 5 and Segments 6 and 7 of the proposed action are located within the BLM Northern and Eastern Mojave Plan (NEMO) area, though no work occurs within a DWMA in these segments. The NEMO plan is a federal land use plan amendment to the CDCA Plan adopted in 2002. The NEMO plan addressed recovery of the desert tortoise and management of a few additional species of concern on public lands. Private lands and other federal agencies were not affected.

The NEMO Plan provides similar management decisions for the protection of species that complement other CDCA Plan amendments (BLM 2002a). The NEMO Plan states that existing utility corridors would be retained, and new utilities would be placed within them. Cumulative new surface disturbing projects on BLM lands in each tortoise DWMA would be limited to 1% of BLM lands in that area and no new access roads would be allowed in DWMAs. The size of each project would be minimized, and other standard mitigation measures would be applied to limit effects (BLM 2002b). These measures have been integrated into project design features or as mitigation measures, as necessary.

2.2.2 State

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, California Environmental Quality Act (CEQA) Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a Project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a Project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires findings of significance if there would be substantial losses. Natural communities listed by California Natural Diversity Database (CNDDB) as sensitive are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well.

California Wetlands Definition

Unlike the federal government, California has adopted the Cowardin, et al. (1979) definition of wetlands. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (at least

50 percent of the aerial vegetative cover); (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

Under normal circumstances, the federal definition of wetlands requires all three wetland identification parameters to be met, whereas the Cowardin definition requires the presence of at least one of these parameters. For this reason, identification of wetlands by state agencies consists of the union of all areas that are periodically inundated or saturated, or in which at least seasonal dominance by hydrophytes may be documented, or in which hydric soils are present.

California Department of Fish and Wildlife Streambed Alteration Agreement

CDFW regulates activities that would interfere with the natural flow of, or substantially alter, a channel, bed, or bank of a lake, river, or stream. These activities are regulated under the California Fish and Game Code Sections 1600–1616. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. Requirements may include avoidance or minimization of the use of heavy equipment, limitations on work periods to avoid impacts on wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses. A Streambed Alteration Agreement may be required by CDFW for construction activities that could result in an accidental release into a jurisdictional area.

Both state and federal wetland laws require that the biological and hydrological functions, which are lost when a wetland or water is altered or filled, be replaced as part of the respective permit processes. Compensatory actions include replacement of lost wetland acreage, usually in amounts substantially greater than the amount lost.

California Endangered Species Act

Under CESA, the CDFW is responsible for maintaining a list of threatened and endangered species (California Fish and Game Code 2007), candidate species, and species of special concern. Pursuant to the requirements of CESA, an agency reviewing a proposed Project within its jurisdiction must determine whether any state listed endangered or threatened species may be present on the Project region and determine whether the proposed Project would have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed Project that may impact a candidate species. If there were Project-related impacts to species on the CESA threatened and endangered list, they would be considered "significant." Impacts to "species of concern" would be considered "significant" under certain circumstances, as is discussed further in this report.

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the CEQA Guidelines primarily to deal with situations in which a public agency is reviewing a Project that may have a significant effect on, for example, a

candidate species that has not yet been listed by either the USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from a Project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

State Fish and Game Codes

Section 2080 of the State Fish and Game Code states, "No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission [State Fish and Wildlife Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081 of the Code, the CDFW may authorize individuals or public agencies to import, export, take, or possess, any state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or Memoranda of Understanding if: (1) the take is incidental to an otherwise lawful activity; (2) impacts of the authorized take are minimized and fully mitigated; (3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species; and (4) the applicant ensures adequate funding to implement the measures required by CDFW. The CDFW makes this determination based on available scientific information and considers the ability of the species to survive and reproduce. Because of the potential presence of state-listed rare, threatened, or endangered species in the APE, Sections 2080 and 2081 of the Code were considered in this evaluation.

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby Project construction. This statute does not provide for the issuance of any type of incidental take permit.

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying CDFW: substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. A stream is defined as a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration

agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species. CDFW has informed nonfederal agencies and private parties that they must avoid take of any fully protected species in carrying out Projects.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: "No person will import into this State, or take, possess, or sell within this State" any rare or endangered native plant, except in compliance with provisions of the act. Individual landowners are required to notify the CDFW at least 10 days in advance of changing land uses to allow the CDFW to salvage any rare or endangered native plant material. Because of the absence of state-listed rare, threatened, or endangered plant species in the APE, the NPPA was not considered in this evaluation.

California Desert Native Plants Act

The California Desert Native Plants Act (California Food and Agricultural Code, Sections 80001–80006) was enacted to protect desert vegetation from unlawful harvest on both private and public lands. Protected species under the Act include, among others, Joshua trees and other yuccas, bristlecone pine, fan palm, and all species of the cacti family. The Act requires a permit for removal of Joshua trees and other desert vegetation.

2.2.3 Local

San Bernardino County Development Code

Section 88.01.060(c) Regulated Desert Native Plants states, "The following desert native plants or any part of them, except the fruit, shall not be removed except under a Tree or Plant Removal Permit in compliance within Section 88.01.050 (Tree or Plant Removal Permits):

(1) The following desert native plants with stems two inches or greater in diameter or six feet or greater in height:

(A) *Dalea spinosa* (smoke tree)

(B) All species of the genus *Prosopis* (mesquites)

(2) All species of the family Agavaceae (century plants, nolinas, yuccas)

(3) Creosote Rings, 10 feet or greater in diameter

(4) All Joshua trees

(5) Any part of the following species, whether living or dead:

(A) *Olneya tesota* (desert ironwood)

(B) All species of the genus *Prosopis* (mesquites)

(C) All species of the genus *Cercidium* (palo verdes)

3. Methodology

3.1 Literature Search

Analysis of the biological resources associated with the APE began with a thorough review of relevant literature, which provides a baseline from which to evaluate potentially occurring species and habitats. The literature review included a review of current USGS 7.5-minute topographic quadrangle maps and aerial photographs as a preliminary analysis of the existing conditions within the APE and immediate vicinity. Information obtained from the review of the topographic maps included elevation and relief, general watershed information, and potential drainage feature locations. Pertinent U.S. Department of Agriculture soil survey maps were reviewed to determine the existing soil mapping units within the APE and to establish if soil conditions on-site are suitable for any sensitive plant or wildlife species.

Additionally, ESA compiled a list of threatened, endangered, and otherwise sensitive species previously recorded within the general area of the APE (Appendix B). A compilation of sensitive plant and wildlife species recorded in the vicinity of the site was derived from the CDFW's California Natural Diversity Database (CNDDB 2014). Additional recorded occurrences of plant species found on or near the site were obtained from the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California database. The CNDDB Geographic Information System (GIS) database was utilized, together with ArcGIS software, to determine sensitive species located within a 1-mile radius of each APE. The 1-mile radius search was deemed sufficient based on the project's linear nature and orientation generally in valleys between hilly or mountainous terrain. The sensitive plants and wildlife indicative of these lower elevations would be expected to be represented in a query of the CNDDB and CNPS databases that stretches the length of the APE, and the full complement of habitat types present within the APE were represented in the search. Expanding the query further would introduce additional species that are more associated with higher elevations and may not be likely to occur in the APE. Federal Register listings, protocols, and species lists provided by the BLM and USFWS were reviewed.

3.2 Biological Surveys

In July 2013, ESA biologists conducted an initial reconnaissance survey and habitat assessment at 15 locations in California identified by LADWP as priority work areas. The purpose of this survey was to assess the potential for occurrence and document observations of special-status plant and animal species (ESA 2013). These 15 locations were spread throughout the entire length of the Project, thereby providing an accurate representation of the habitats across the Project (i.e., all seven segments). Vegetation communities were classified in accordance with Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986).

Focused biological surveys for rare plants and desert tortoise were conducted by ESA biologists from April 15, 2014, to April 29, 2014, within each of the work areas identified in the APE, which was anticipated to encompass all proposed Project activities and account for any changes in the limits of disturbance and/or unforeseen Project activities (Figures 2 and 4). A detailed summary of the survey dates, survey personnel, and weather conditions during the surveys is included in Appendix C. General biological resources surveys were conducted concurrently to identify native cacti, special-status plants and special-status wildlife species, including burrowing animals (i.e., desert tortoise, burrowing owl, American badger, and desert kit fox) and nesting birds on transmission towers. The survey methods for the aforementioned biological resources consisted of the biologists walking belt transects in accordance with the plant and desert tortoise survey protocols indicated below. All transects included 100 percent visual coverage of the APE and included two passes to cover the potentially occurring special-status flora and fauna in the work area. Transects consisted of searches in one direction (i.e., pass) for special-status plants, burrowing animals, and nesting birds, and the second pass (going the opposite direction) focused entirely on identification of desert tortoise and signs of desert tortoise (e.g., scat, track, carcasses, shells, and burrows). Coordinates of any individual or sign of presence were collected using a handheld Global Positioning System (GPS) unit and its location marked on an aerial map.

Protocol-level surveys focused on species other than desert tortoise were not conducted because the methodology employed for the desert tortoise surveys was sufficient to detect the presence of other wildlife or sign thereof. In addition, as described in Section 5.2, additional take avoidance surveys will be performed to determine whether sensitive wildlife is present prior to construction. These preconstruction surveys will be conducted consistent with the methods outlined in the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation and will inform the implementation of avoidance and minimization measures as described in Section 5.2.

3.2.1 Rare Plant Surveys

Rare plant surveys were conducted following the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009). Prior to conducting the field surveys, vegetation and habitat types were identified on-site, and a list of potentially occurring "target species" was compiled based on habitats present and a review of the most recent databases provided by the CDFW and the CNPS for historically recorded occurrences of sensitive plant and animal species in the vicinity of the Project site. ESA also reviewed the USFWS and BLM lists of sensitive species for the Project area. Field surveys were comprehensive (i.e., not restricted to or focused only on the list of target species) and floristic in nature (i.e., every plant taxon that occurred on the site was identified to the taxonomic level necessary to determine rarity and listing status). All special-status plant species locations were documented in the field using a handheld GPS unit. Abundance information (number of individuals or density) was also recorded.

Plant species were identified by visual characteristics and morphology in the field and recorded in a field notebook. Uncommon and less familiar plants were identified off-site using taxonomical guides. A list of all species observed within the APE was compiled from the survey data, shown in Appendix D. Taxonomic nomenclature followed Baldwin (2012). Common plant names, when not available from Baldwin (2012), were taken from other regionally specific references.

3.2.2 Desert Tortoise Surveys

Because desert tortoise is the primary wildlife species of concern within the vicinity of the Project, survey methodology followed that prescribed in the most current USFWS desert tortoise survey protocol, *Preparing for Any Action that May Occur within the Range of the Mojave Desert Tortoise (Gopherus agassizii)* (USFWS 2010). Following the survey protocol, presence/absence surveys were performed during April and May when air temperatures were below 40°C within 10-meter (~30-foot) wide belt transects to ensure 100 percent coverage of the APE. These areas were surveyed for any signs of desert tortoise such as scat, carcasses, tracks, shells, or burrows and any other sensitive plants or wildlife species. During this survey, biologists also recorded characteristics of burrows that may be suitable for use by desert tortoise or other sensitive species. Such characteristics included diameter of burrow entrance, depth of burrow, and presence of sign such as whitewash, scat, prey remains, claw marks, etc.

3.2.3 Jurisdictional Waters and Wetlands

Prior to conducting the site visit, ESA biologists reviewed USGS topographic maps and aerial photography to identify any potential natural drainage features and water bodies that may fall within the jurisdiction of the USACE, RWQCB, and/or CDFW. In general, all surface drainage features indicated as blue-line streams on USGS maps and linear patches of vegetation expected to exhibit evidence of flows are considered potentially subject to state and federal regulatory authorities as "waters of the United States and/or State." The assessment was not intended as a formal delineation of waters of the United States or State, but rather to identify areas that may be considered waters of the United States and/or State and therefore might require a formal delineation.

4. Results

This section describes the results of the literature and database review and biological surveys conducted by ESA in 2013 and 2014. General biological issues are discussed first, including potentially occurring special-status species, jurisdictional resources, wildlife movement corridors and USFWS Critical Habitat. This discussion is followed by a summary of site-specific resources observed on-site, including plant species and vegetation communities, wildlife, and sensitive biological resources.

The total area that will be graded or disturbed is approximately 12 acres. The land designations in affected areas are summarized in Table 2. Previously undisturbed areas of native habitat were determined to constitute suitable desert tortoise habitat. Note that some of these designated areas overlap each other.

TABLE 2
LAND DESIGNATIONS AND IMPACT AREAS

Land Designation	Area to be Impacted (acres)	Area of Suitable Desert Tortoise Habitat to be Impacted (acres)
Public Land	7.43	4.96
Private Land	4.29	0.27

Land Designation		Area to be Impacted (acres)	Area of Suitable Desert Tortoise Habitat to be Impacted (acres)
	Undisturbed Land	8.81	
	Disturbed Land	2.95	
U.S. Fish and Wildlife Service Recovery Unit	Western Mojave Recovery Area	10.32	4.14
	Eastern Mojave Recovery Area	1.39	1.17
	Desert Tortoise Critical Habitat	1.50	0.66
Desert Wilderness Management Area	Ord-Rodman DWMA	1.04	0.45
	Superior-Cronese DWMA	0.47	0.21
BLM Area of Critical Environmental Concern	Mojave Monkey Flower ACEC	0.43	0.23
	Clark Mountain ACEC	0.39	0.29

4.1 General Biological Issues

4.1.1 Potentially Occurring Species

Potentially Occurring Special-Status Plant Species

Based on a review of the CNDDB and CNPS databases and habitat survey, a total of 21 special-status plant species were determined to have the potential to occur within the APE (Table 3). Figures 3-1 through 3-7 show known recorded occurrences of special-status plant species based on a search of the CNDDB species database. Seventeen of these species were determined to have a low potential to occur based on the results of the biological surveys, species distribution, and habitat types found within the APE. The remaining four species were observed on-site during the biological surveys within Segments 1, 6, and 7, depicted in Figures 4-1 through 4-85. Additional details about these species are given below in Section 4.2. Native succulents that are protected under the California Desert Native Plants Act were also observed, including buckhorn cholla (*Cylindropuntia acanthocarpa* var. *acanthocarpa*), silver cholla (*Cylindropuntia echinocarpa*), pencil cholla (*Cylindropuntia ramosissima*), hedgehog cactus (*Echinocereus engelmannii*), cottontop barrel cactus (*Echinocactus polycephalus*), California barrel cactus (*Ferocactus cylindraceus)*, fish hook cactus (*Mammillaria tetrancistra*), and beavertail cactus (*Opuntia basilaris*)and are represented in the Figure 4 series and included in Table 2.

Based on the field surveys, each special-status species was determined to have a low, moderate, or high potential to occur in the APE during NERC code clearance activities. A high potential for sensitive species was determined if the sensitive species was observed in the APE during the clearance surveys, is known to occur in the area, and would highly likely be present during future NERC code clearance activities. A moderate potential for sensitive species was determined if signs, including burrows and/or scat, of the species was observed; the species is known to occur in the area; and the species may occur during NERC code clearance activities. A low potential for sensitive species was determined if neither the species nor sign was observed in the APE, but the species is known to occur in the area.

TABLE 3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE APE

Species[1]	Status[2]	Habitat Requirements	Potential to Occur
Great Basin onion *Allium atrorubens* Wats. Var. *atrorubens*	-- /CRPR 2B.3	Perennial bulbiferous herb found in rocky or sandy substrates in Great Basin scrub and pinyon and juniper woodland habitats. It is found at elevations ranging from 1,200 to 2,315 meters and blooms from May-June.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
small-flowered androstephium *Androstephium breviflorum*	-- /CRPR 2.2	Perennial bulbiferous herb found in open sandy flats and bajadas, and typically stabilized blow sands at elevations between 220 and 800 meters, and in locations that are cold in the winter and have relatively high summer rainfall levels Blooms from March–April.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
Tidestrom's milkvetch *Astragalus tidestromii*	-- /CRPR 2B.2	This perennial herb is found in Mojavean desert scrub within carbonate, sandy, or gravelly soils. It can be found between 600 and 1,585 meters in elevation and blooms between January and July.	**Observed.** This species was observed throughout Segment 7 (Figures 4-79 and 4-80).
scaly cloak fern *Astrolepis cochinensis* ssp. *cochinensis*	-- /CRPR 2B.3	Perennial rhizomatous herb found in carbonate substrates in Joshua tree woodland and pinyon and juniper woodland. It is found from 900 to 1,800 meters in elevation and blooms from April-October.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
Emory's crucifixion-thorn *Castela emoryi*	-- /CRPR 2.2	Perennial deciduous shrub found in gravelly soil in Mojavean desert scrub, on playas and in Sonoran desert scrub at elevations between 90 to 670 meters in elevation. Blooms from April–September.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
desert pincushion *Coryphantha chlorantha*	-- /CRPR 2B.1	Perennial stem succulent found in Joshua tree woodland, Mojavean desert scrub, and pinyon juniper woodland within carbonate, gravelly, and rocky soils. It can be found between 45 and 1,705 meters in elevation and blooms between April and September.	**Observed.** This species was observed throughout Segment 7 (Figures 4-79 and 4-80 and 4-82 through 4-84).
buckhorn cholla *Cylindropuntia acanthocarpa* var. *coloradensis*	-- /CDNPA	Perennial stem succulent found in creosote bush scrub and Joshua tree woodland. Occurs below 1,600 meters in elevation and blooms from May-June.	**Observed**. This species was observed throughout Segment 7 (Figures 4-80 through 4-85).
silver cholla *Cylindropuntia echinocarpa*	-- /CDNPA	Perennial stem succulent found in creosote bush/white bur-sage, blackbush, saltbush, and other desert and Great Basin scrub habitats. Occurs from 300 to 1,600 meters in elevation and blooms from March-June.	**Observed**. This species was observed in Segment 5 (Figure 4-68) and throughout Segment 6 (Figures 4-69, 4-70, 4-76, and 4-78).

TABLE 3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE APE

Species[1]	Status[2]	Habitat Requirements	Potential to Occur
pencil cholla *Cylindropuntia ramosissima*	-- /CDNPA	Perennial stem succulent found in creosote bush scrub and Joshua tree woodland. Occurs from 50 to 1,100 meters in elevation and blooms from April-August.	**Observed**. This species was observed in Segments 1 and 4 (Figures 4-6 and 4-27, respectively).
hedgehog cactus *Echinocereus engelmannii*	-- /CDNPA	Perennial stem succulent found in creosote bush scrub, pinyon and juniper woodland, and Joshua tree woodland. It occurs below 1,525 meters in elevation and blooms from April-May.	**Observed.** This species was observed in Segment 6 (Figure 4-77) and throughout Segment 7 (Figures 4-82 through 4-85).
cottontop barrel cactus *Echinocactus polycephalus*	-- /CDNPA	Perennial stem succulent found on rocky or gravelly soils in a variety of desert scrub and woodland habitats. It occurs below 1,500 meters in elevation and blooms from March-August.	**Observed.** This species was observed in Segment 6 (Figures 4-74 and 4-75).
Selena Pass wild-rye *Elymus salina*	-- /CRPR 2B.3	Perennial rhizomatous herb found in rocky areas in pinyon and juniper woodland. Grows between 1,350 and 2,135 meters in elevation and blooms from May-June.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
nine-awned pappus grass *Enneapogon desvauxii*	-- /CRPR 2B.2	Perennial herb found in rocky, carbonate soils in pinyon and juniper woodland. It occurs from 1,275 to 1,825 meters in elevation and blooms from August-September.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
California barrel cactus *Ferocactus cylindraceus*	-- /CDNPA	Perennial stem succulent found in gravelly, rocky or sandy soils in creosote bush scrub and Joshua tree woodland. It occurs from 60 to 1,500 meters in elevation and blooms from April-May.	**Observed.** This species was observed in Segment 4 (Figures 4-22 and 4-28) and Segment 7 (Figures 4-84).
Parish's club cholla *Grusonia parishii*	-- /CRPR 2B.2	Perennial stem succulent found in Joshua tree woodland, Mojavean desert scrub and Sonoran desert scrub within sandy and rocky soils. It can be found between 300 and 1,524 meters in elevation and blooms between May and July.	**Observed.** This species was observed throughout Segment 7 (Figures 4-82 and 4-83).
fishhook cactus *Mammillaria tetrancistra*	-- /CDNPA	Perennial stem succulent found in sandy soils in creosote bush scrub and a variety of other desert habitats. It occurs from 130 to 1,400 meters in elevation and blooms in April.	**Observed.** This species was observed in Segment 6 (Figures 4-77 and 4-78).
Mojave menodora *Menodora spinescens* var. *mohavensis*	-- /CRPR 1B.2	Perennial deciduous shrub found in Mojavean desert scrub in andesite gravel along rocky hillsides and canyons. Occurs from 690 to 2,000 meters in elevation and blooms from April–May.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.

TABLE 3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE APE

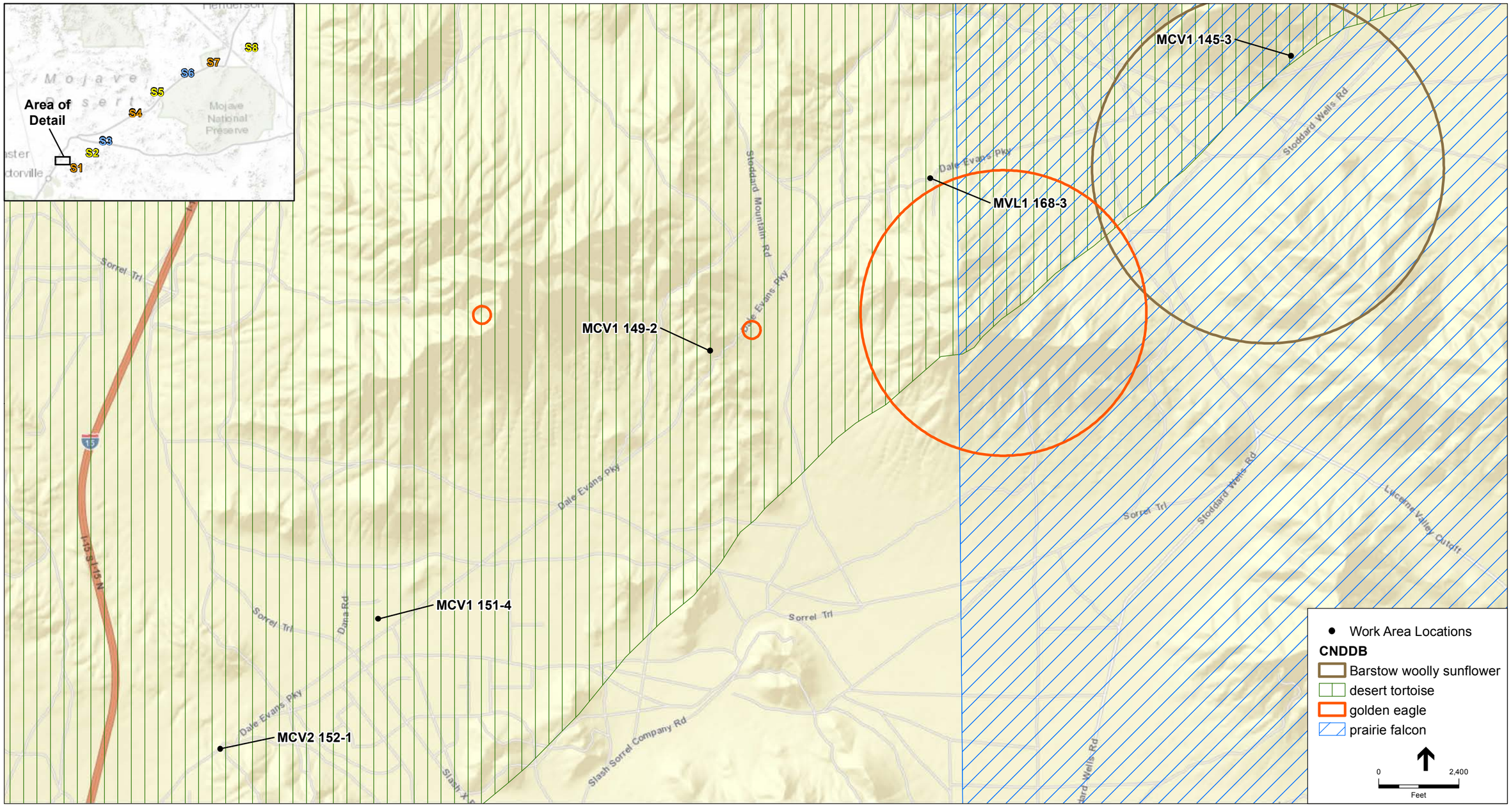
Species[1]	Status[2]	Habitat Requirements	Potential to Occur
polished blazing star *Mentzelia polita*	-- /CRPR 1B.2	Perennial herb found in carbonate soils in Mojavean desert scrub. Occurs at elevations ranging from 1,200 to 1,580 meters and blooms from April-August.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
creamy blazing star *Mentzelia tridentata*	-- /CRPR 1B.3	Annual herb found in Mojavean desert scrub in gravelly, rocky, and sandy soils. It occurs at elevations ranging from 700 to 1,160 meters and blooms from March–May.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
Mojave monkeyflower *Mimulus mohavensis*	-- /CRPR 1B.2	Annual herb found in Mojavean desert scrub and Joshua tree woodland in sandy or gravelly soils from 600 to 1,200 meters in elevation. It is often found in washes and blooms from April–June.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
beavertail cactus *Opuntia basilaris*	-- /CDNPA	Perennial stem succulent found in sandy or gravelly soils in a variety of habitats including creosote bush scrub, Joshua tree woodland, chaparral, southern oak woodland, coastal sage scrub, pinyon and juniper woodland, and valley grassland. It occurs from 60 to 1,800 meters in elevation and blooms from April-June.	**Observed.** This species was observed throughout Segment 4 (Figures 4-19, 4-22 through 4-25, and Figure 4-28), in Segment 5 (Figure 4-36), Segment 6 (Figures 4-69 and 4-70), and Segment 7 (Figure 4-79).
Beaver Dam breadroot *Pediomelum castoreum*	-- /CRPR 1B.2	Perennial herb found in Mojavean desert scrub and Joshua tree woodland in sandy washes and road cuts. It occurs between 610 and 1,525 meters in elevation and blooms from April–May.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
Utah beardtongue *Penstemon utahensis*	-- /CRPR 2B.3	Perennial herb found in rocky areas in chenopod scrub, Great Basin scrub, Mojavean desert scrub, and pinyon and juniper woodland. It occurs between 1,065 and 2,500 meters and blooms from April-May.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
Aven Nelson's phacelia *Phacelia anelsonii*	-- /CRPR 2B.3	Annual herb found in sandy or gravelly carbonate substrates in Joshua tree woodland and pinyon and juniper woodland. It occurs between 1,200 and 1,500 meters in elevation and blooms from April-May.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
Parish's phacelia *Phacelia parishii*	-- /CRPR 1B.1	Annual herb found in clay or alkaline soils in Mojavean desert scrub or playas. It occurs from 540 to 1,200 meters in elevation and blooms from April-July.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.

TABLE 3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE APE

Species[1]	Status[2]	Habitat Requirements	Potential to Occur
lobed ground-cherry *Physalis lobata*	-- /CRPR 2B.3	Perennial herb found in decomposed granitic soils in Mojavean desert scrub and in playas. It grows from 500 to 800 meters in elevation and blooms from Maj-January.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
Johnson's bee-hive cactus *Sclerocactus johnsonii*	-- /CRPR 2B.2	Perennial stem succulent found in granitic substrates in Mojavean desert scrub. It occurs from 500 to 1,200 meters in elevation and blooms from April-May.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.
Rusby's desert mallow *Sphaeralcea rusby* var. *eremicola*	BLMS/ CRPR 1B.2	Perennial herb found in Joshua tree woodland and Mojavean desert scrub. It can be found between 975 and 1,645 meters in elevation and blooms between March and June.	**Observed.** This species was observed throughout Segment 7 (Figures 4-79 through 4-85).
Mormon needle grass *Stipa arida*	-- /CRPR 2B.3	Perennial herb found in carbonate soils in Joshua tree woodland and pinyon and juniper woodland. It grows between 500 and 2,570 meters in elevation and blooms between May-July.	**Low.** Species was not observed during rare plant surveys; therefore, the potential for occurrence of this species within the proposed impact areas is low.

Primary Sources: CNDDB (2014), Data Base Record Search for Information on Threatened, Endangered, Rare, or Otherwise Sensitive Species and Communities

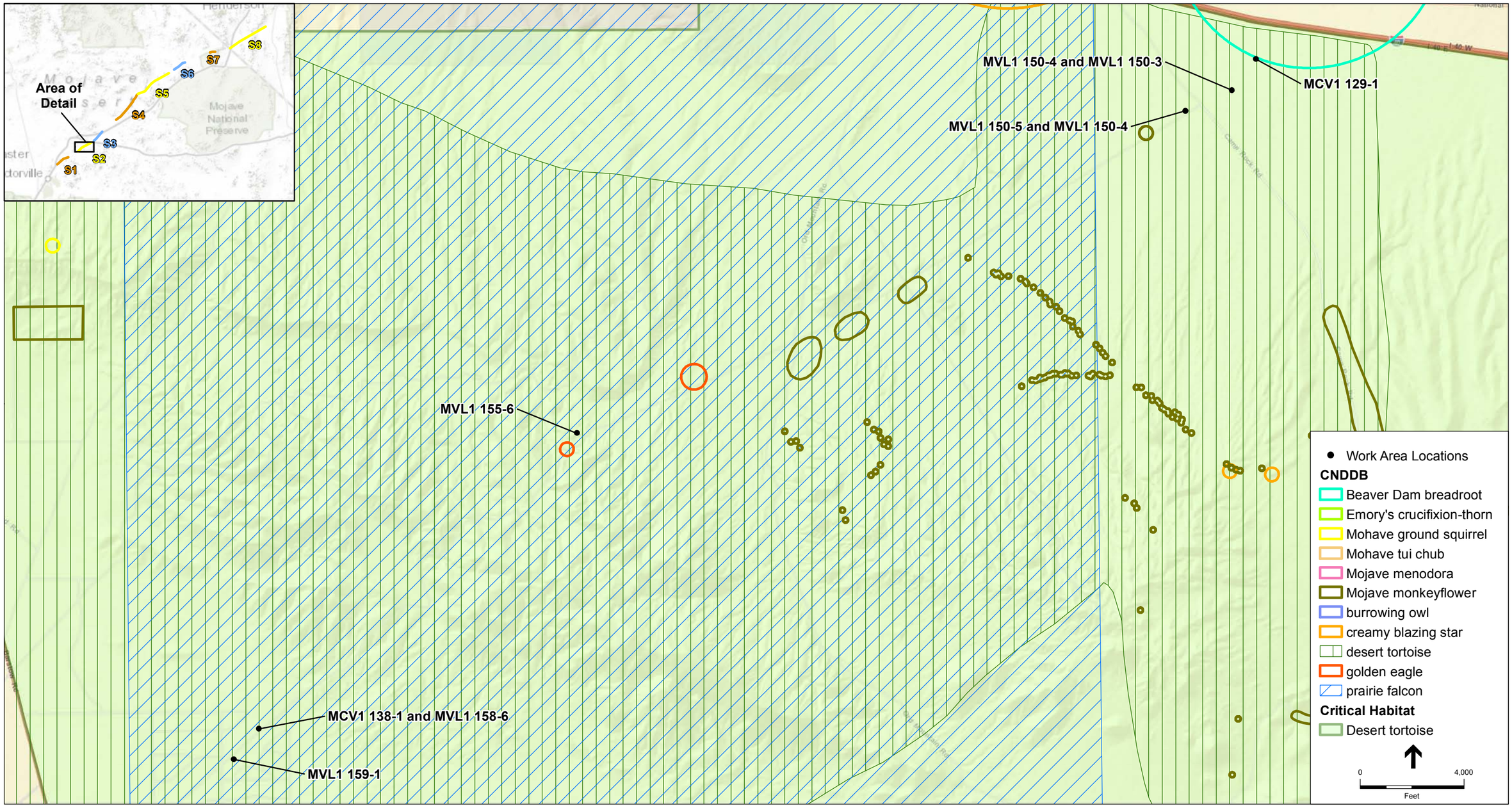
Status
Federal "--" = no federal status; BLMS = considered sensitive by the Bureau of Land Management
State: CDNPA = protected by the California Desert Native Plants Act
California Rare Plant Rank (CRPR)
CRPR 1B – plants rare, threatened, or endangered in California, and elsewhere
CRPR 2 – plants are rare, threatened, or endangered in California, but more common elsewhere
1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
2 – Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)
3 – Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)



Source: USGS, BLM

LADWP - Path 46 Transmission Line Clearence . 211490.28

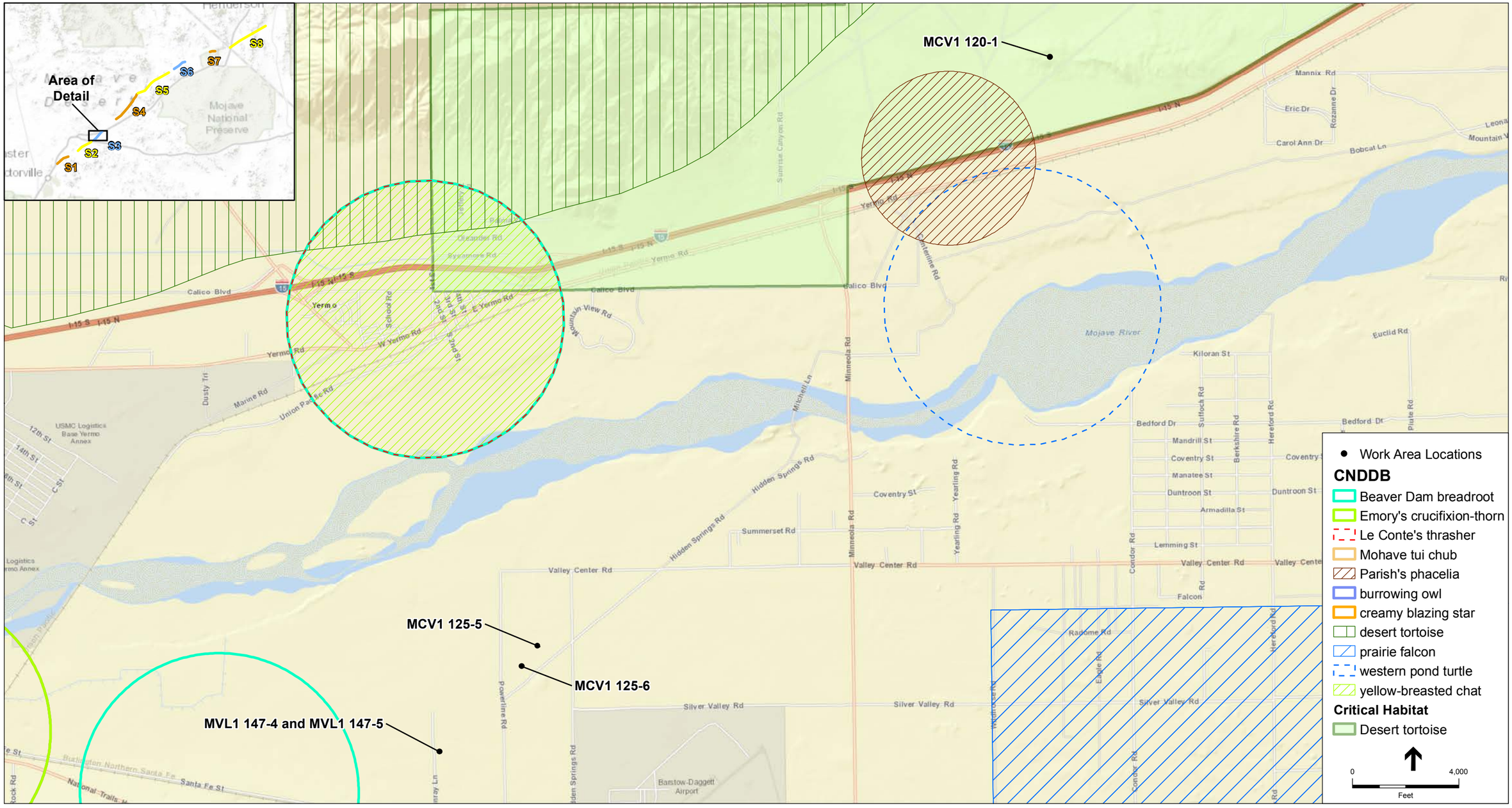
Figure 3-1
CNDDB and Critical Habitat
Segment 1

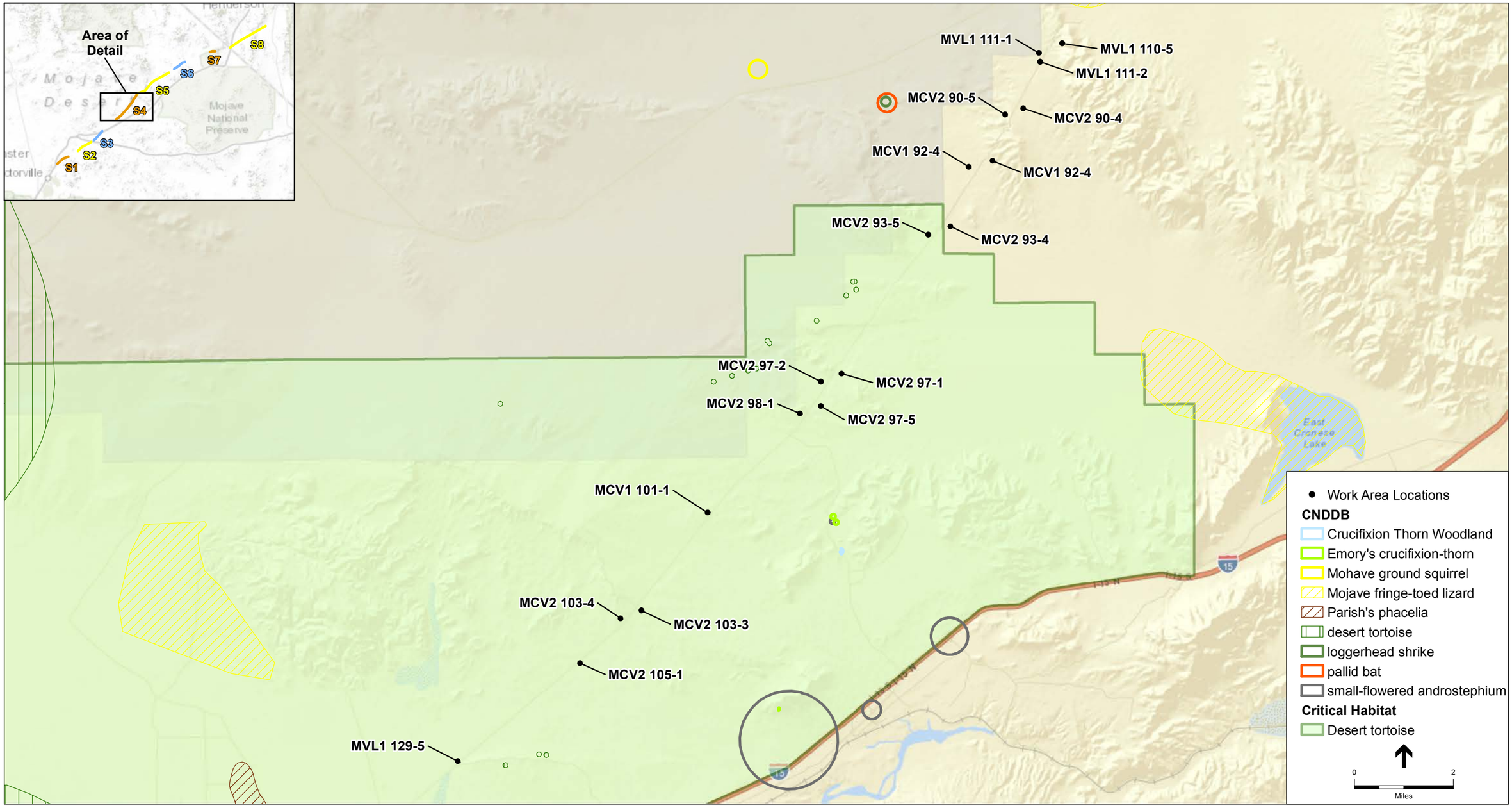


Source: USGS, BLM

LADWP - Path 46 Transmission Line Clearence . 211490.28

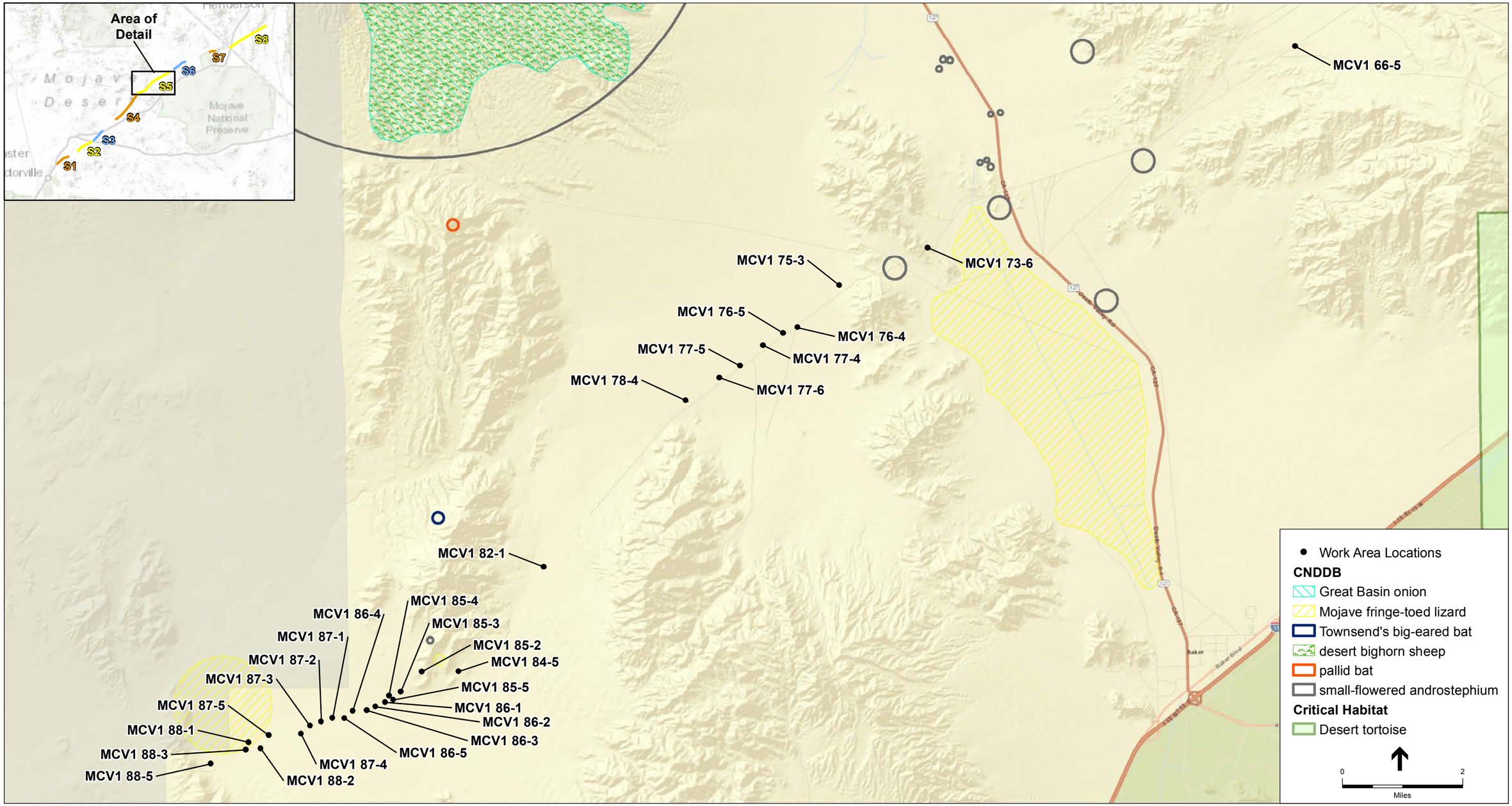
Figure 3-2
CNDDB and Critical Habitat
Segment 2


Area of Detail
S1
S2
S3
S4
S5
S6
S7
S8
MCV1 120-1
MCV1 125-5
MCV1 125-6
MVL1 147-4 and MVL1 147-5
Work Area Locations
CNDDB
Beaver Dam breadroot
Emory's crucifixion-thorn
Le Conte's thrasher
Mohave tui chub
Parish's phacelia
burrowing owl
creamy blazing star
desert tortoise
prairie falcon
western pond turtle
yellow-breasted chat
Critical Habitat
Desert tortoise
0
4,000
Feet
Calico Blvd
Yermo
Yermo Rd
W Yermo Rd
E Yermo Rd
I-15 S
I-15 N
Mountain View Rd
Marine Rd
Union Pacific Rd
Dusty Trl
School Rd
Minneola Rd
Mitchell Ln
Hidden Springs Rd
Summerset Rd
Valley Center Rd
Silver Valley Rd
Powerline Rd
Yearling Rd
Coventry St
Duntroon St
Armadilla St
Lemming St
Falcon Rd
Condor Rd
Radome Rd
Eagle Rd
Hereford Rd
Bedford Dr
Mandrill St
Manatee St
Kiloran St
Euclid Rd
Mannix Rd
Eric Dr
Carol Ann Dr
Bobcat Ln
Rozanne Dr
Sunrise Canyon Rd
Centerline Rd
Mojave River
Mojave National Preserve
USMC Logistics Base Yermo Annex
Barstow-Daggett Airport
Burlington Northern Santa Fe
Santa Fe St
Sioux Trl
Alexander Rd
Sycamore Rd
Powell Rd
Yermo Rd
Calico Blvd
Mountain View Rd
Minneola Rd
Mitchell Ln
Hidden Springs Rd
Summerset Rd
Valley Center Rd
Silver Valley Rd
Powerline Rd
Yearling Rd
Coventry St
Duntroon St
Armadilla St
Lemming St
Falcon Rd
Condor Rd
Radome Rd
Eagle Rd
Hereford Rd
Bedford Dr
Mandrill St
Manatee St
Kiloran St
Euclid Rd
Mannix Rd
Eric Dr
Carol Ann Dr
Bobcat Ln
Rozanne Dr
Sunrise Canyon Rd
Centerline Rd
Mojave River
Mojave National Preserve
USMC Logistics Base Yermo Annex
Barstow-Daggett Airport
Burlington Northern Santa Fe
Santa Fe St
Sioux Trl
Alexander Rd
Sycamore Rd
Powell Rd
Yermo Rd
Calico Blvd
Mountain View Rd
Marine Rd
Union Pacific Rd
Dusty Trl
School



Source: USGS, BLM

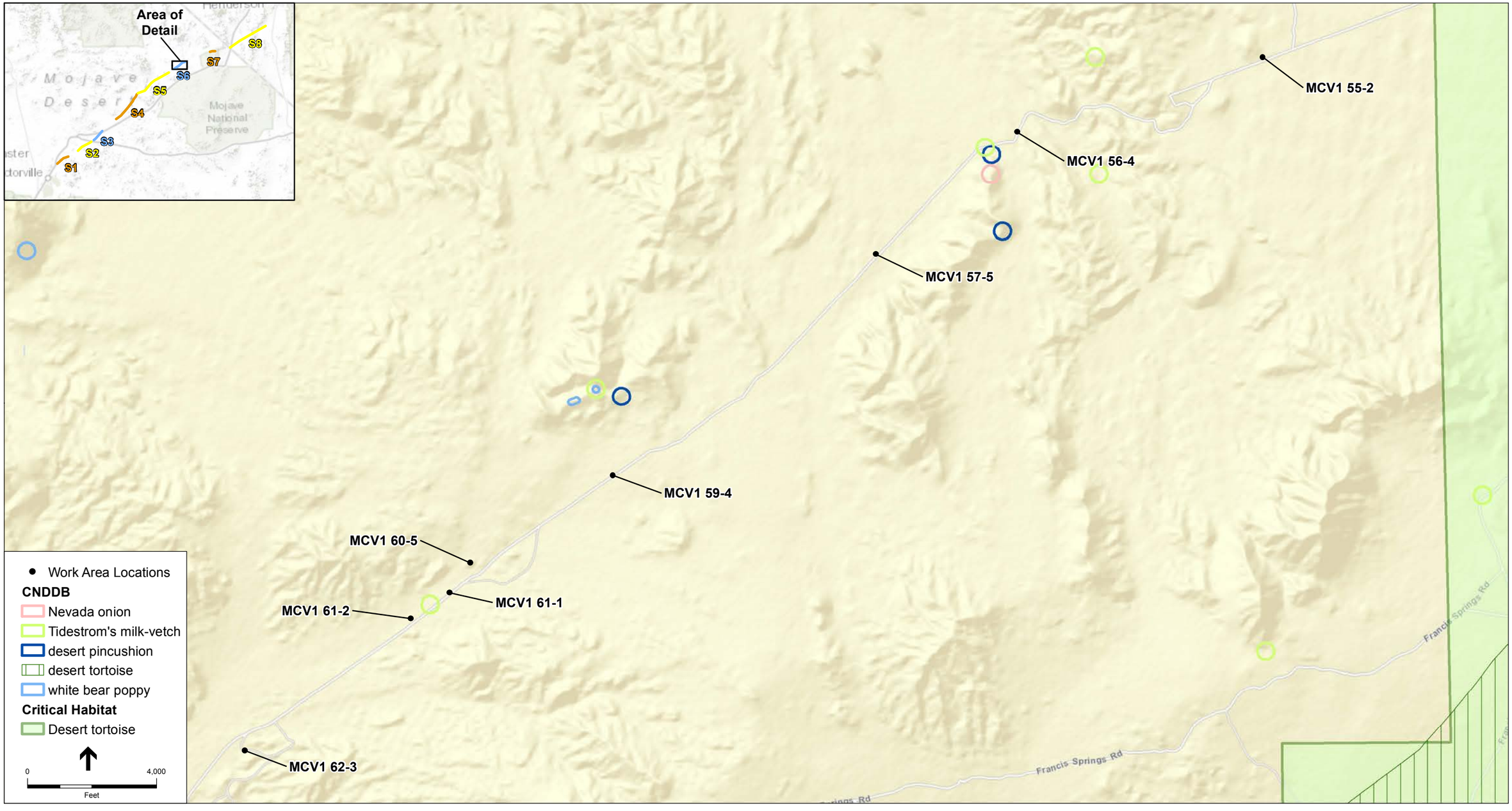
Figure 3-4
CNDDB and Critical Habitat
Segment 4



Source: USGS, BLM

LADWP - Path 46 Transmission Line Clearence . 211490.28

Figure 3-5
CNDDB and Critical Habitat
Segment 5



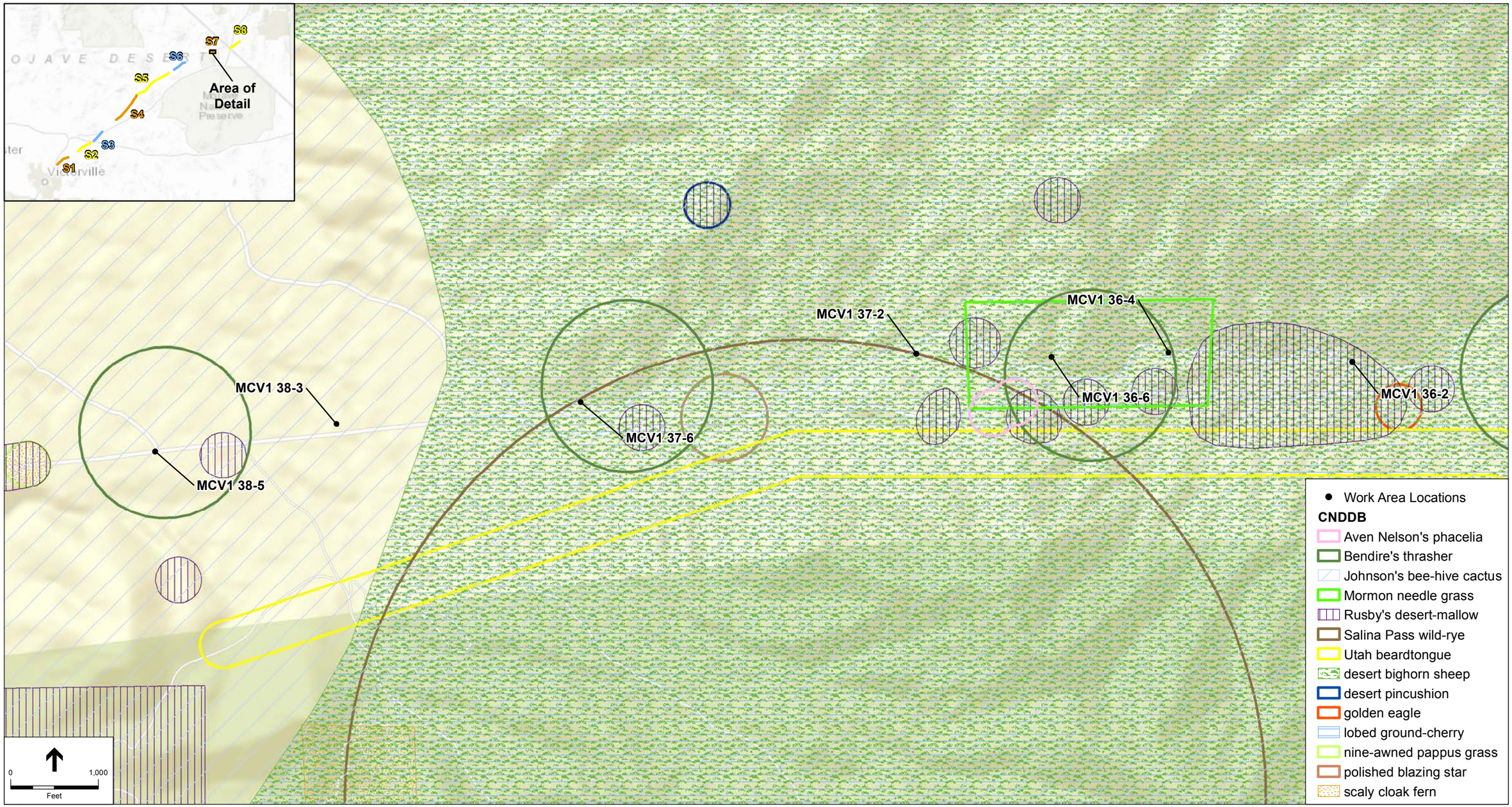
Source: USGS, BLM

LADWP - Path 46 Transmission Line Clearence . 211490.28

Figure 3-6

CNDDB and Critical Habitat

Segment 6



Source: USGS, BLM

Figure 3-7
CNDDB and Critical Habitat
Segment 7

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Potentially Occurring Wildlife Species

Special-status wildlife includes those listed or candidates for listing by the USFWS or CDFW, or species considered sensitive by the BLM. Special-status wildlife species with the potential to occur in the APE appear in Table 4. Recorded CNDDB and USFWS occurrences within the vicinity of the APE are depicted in Figures 3-1 through 3-7.

Fifteen wildlife species were determined to have some potential to occur within the APE, including five mammal species, six bird species, three reptile species, and one fish species. Two special-status wildlife species were determined to be in the APE: desert tortoise (*Gopherus agassizii*), a federal and state threatened species, was determined to be present within the project area in Segments 2, 3, 4, and 6, and loggerhead shrike (*Toxostoma lecontei*), a California Species of Special Concern, was observed in Segment 5. One species, the golden eagle, was determined to have a high potential to occur in Segments 1, 2, and 5, and in areas outside of the APE proper, though close enough that they may be affected by project activities. Additional details regarding presence of golden eagles in the vicinity of individual project components and potential effects are provided in the site-specific discussions in Section 4.2. Five special-status wildlife species were determined to have a moderate potential to occur: American badger, desert kit fox, pallid bat, loggerhead shrike, and burrowing owl. The remaining seven special-status species were determined to have a low or negligible potential to occur based on results of biological surveys, known species distribution, and poor habitat suitability found within the APE.

TABLE 4
SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE APE

Species[1]	Status[2]	Preferred Habitat	Probability of Occurrence in Project Area
Fish			
Mohave tui chub *Gila bicolor mohavensis*	FE/SE, FP	The fish requires freshwater flow into a pond or pool of a minimum depth of 4 feet. They use aquatic plants for fish egg attachment and a minimal amount of riparian or wetland vegetation for shade. Too much vegetation, such as cattails, can clog waterways. Arroyo chubs and other nonnative, aquatic animal species can act as competitors or predators of the Mohave tui chub. The species historically existed in the Mojave River. Today, there are only four known populations: China Lake NAWS, Zzyzx, CDFW Camp Cady Wildlife Area, and Deppe Pond.	**Low.** Species requires perennial ponding water that is not present within the APE. Species was not observed during biological surveys.
Reptiles			
western pond turtle *Emys marmorata*	BLMS/SSC	The western pond turtle is found in almost all kinds of habitat, as long as there is a permanent water source. Populations in the Mojave Desert are found only along the Mojave River and tributaries. Ideal habitat contains emergent vegetation, sites for basking, and places for refuge, such as undercut banks, mud, rocks, logs, and submerged vegetation.	**Low.** Species requires permanent water source, which is not present within the APE. Species was not observed during biological surveys.
desert tortoise *Gopherus agassizii*	FT/ST	Habitat for the Mojave population of the desert tortoise is typically below 4,500 feet (1,372 meters) amsl within creosote bush scrub and other Mojave desert scrub communities. Dominant plants within these communities are typically creosote bush and burrobush, and can also include various cacti and yucca species. Other communities where tortoises may occur include saltbush scrub and Joshua tree woodlands at elevations up to approximately 5,000 feet (1,524 meters) amsl (USFWS 2010). Habitat usually consists of alluvial fans and plains and slopes of colluvium and bedrock. Tortoises burrow in soil; therefore, soil must be adequately strong to allow for burrowing but must be soft enough for the tortoise to dig in. Tortoises alternatively use rock formations as shelter. They will avoid using shallow or rocky bedrock on steep slopes in the Mojave Desert as habitat because of the difficulty it poses for making a shelter.	**Observed.** Suitable habitat for the species, including USFWS Critical Habitat, exists throughout much of the APE. Sign of the species, including potentially active burrows and a desert tortoise carcass, was observed in Segments 2, 3, 4, and 6 within the APE. Live tortoises were observed within Segment 2.
Mojave fringe-toed lizard *Uma scoparia*	BLMS/SSC	Mojave fringe-toed lizards occur on fine, loose, wind-blown sands and sand dunes, dry lakebeds, riverbanks, and desert washes. Sand deposits in the Mojave Desert are widely spaced and associated with historical lake and river drainages. The home range of male Mojave fringe-toed lizards is approximately 0.05 to 0.25 acres, and the range of females is approximately 0.08 acres.	**Low.** Suitable habitat for the species is limited within the APE. Species was not observed during biological surveys.
Birds			
burrowing owl *Athene cunicularia*	BCC, BLMS/ SSC	Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use manmade structures, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement (CDFW 2012).	**Moderate.** Suitable habitat for the species is present throughout much of the APE. Although the species was not observed during biological surveys, multiple burrows suitable for occupation by the species were observed.

TABLE 4
SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE APE

Species[1]	Status[2]	Preferred Habitat	Probability of Occurrence in Project Area
golden eagle *Aquila chrysaetos*	BEPA/FP	The golden eagle is a permanent winter and breeding resident in California. It needs open terrain for hunting and eats mostly lagomorphs and rodents, but also takes other mammals, birds, reptiles, and some carrion. The golden eagle nests on cliffs of all heights. It maintains alternative nest sites and reuses old nests. It builds large platform nests of sticks, twigs, and greenery, and locates its nests most frequently in rugged, open habitats with canyons and escarpments.	**High**. Suitable foraging habitat for the species exists throughout much of the APE. A single historic nesting occurrence for the species is present within the APE (Figure 4-9). This nesting location was observed during biological surveys.
loggerhead shrike *Lanius ludovicianus*	-- / SSC	The loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. It prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches and frequently uses shrubs or small trees for cover. It eats mostly large insects, but also takes small birds, mammals, amphibians, reptiles, fish, carrion, and various other invertebrates. It searches for prey from a perch at least 2 feet above ground. The loggerhead shrike builds nests on stable branches in densely foliaged shrub or tree, up to 50 feet above ground.	**Moderate.** Suitable habitat for the species is present throughout much of the APE. Although the species was not observed during biological surveys, previously conducted surveys (MBA 2011) recorded the species in the vicinity of the APE.
summer tanager *Piranga rubra*	-- / SSC	The summer tanager in California breeds mostly in mature riparian woodland that has an extensive Fremont cottonwood canopy. The few exceptions to riparian forest habitat contain other types of tall trees that provide shade. Tanagers forage as they move through the tree canopy. They survive on a diet of insects. Summer tanagers also forage for fruit during the late breeding season, migration, and winter.	**Low.** Species requires riparian forest habitat for foraging and nesting, which is not present within the APE. Species was not observed during biological surveys.
vermillion flycatcher *Pyrocephalus rubinus*	-- / SSC	Vermilion flycatchers occupy arid scrub, agricultural areas, savanna, and riparian woodland, and frequently require surface water. Flycatchers prefer open habitat over dense vegetation. Nests occur in native and nonnative trees. They forage for insects, and usually hunt by sitting on an open perch and watching for prey.	**Low.** Marginally suitable habitat exists within scrub habitats present within the APE. Species generally requires access to water source and mature trees for nesting, which are not present within the APE. Species was not observed during biological surveys.
LeConte's thrasher *Toxostoma lecontei*	-- / SSC	LeConte's thrasher is a desert resident that primarily inhabits open desert washes, desert scrub, alkali desert scrub, and desert succulent scrub habitats. This species commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat. This thrasher will forage and nest typically 2-8 feet above ground.	**Observed.** This species was observed in Segment 5 within the APE.
Mammals			
pallid bat *Antrozous pallidus*	BLMS/ SSC	The pallid bat occurs throughout the Mojave Desert. Pallid bats prefer cliffs, crevices, and rock outcrops adjacent to open foraging habitat to roost, but have also been spotted large distances from these preferred habitats. They also roost in structures such as mines, barns, and bridges and have been found roosting on the ground under stones and baseboards. Desert roost sites are typically located near water, but this habitat characteristic is not always present. Foraging habitat varies widely, and includes grasslands, open pine forests, talus slopes, and riparian areas. Pallid bats move mostly close to their roosting sites, but commonly travel more than 1.2 miles from their roosting area, and have been recorded up to 18.6 miles from roosts.	**Moderate.** Suitable habitat exists within cliff and rock outcrops habitat within the APE. Species was not observed during biological surveys.

TABLE 4
SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE APE

Species[1]	Status[2]	Preferred Habitat	Probability of Occurrence in Project Area
Nelson's bighorn sheep *Ovis canadensis nelsoni*	BLMS/FP	Nelson's bighorn sheep occupies the southwestern desert region of California. It prefers steep slopes (40 to 80 percent) at high elevations (4,900–5,600 feet amsl). It prefers to stay in mountainous areas that provide views of the surrounding area and will travel to flat land for food and water. The species can travel long distances.	**Low.** The APE is outside of the preferred elevation range of the species. Species was not observed during biological surveys.
Mohave ground squirrel *Spermophilus mohavensis*	-- /ST	Mohave ground squirrels are endemic to the Mojave Desert. They prefer open desert scrub, alkali scrub, and Joshua tree woodland in sandy-to-gravelly soils. They typically avoid rocky places and often find cover and nest in burrows at the base of shrubs.	**Low.** Suitable habitat for the species exists within the more open, flat habitats within the APE; however all portions of the project occur outside of the species known range (see Figure 1). Species was not observed during biological surveys.
American badger *Taxidea taxus*	-- / SSC	American badgers inhabit shrub, forest, and herbaceous habitats with friable soils for burrows. They need open, uncultivated ground. They prey on fossorial mammals.	**Moderate.** Suitable habitat for the species is present within the APE. Burrows potentially suitable for occupancy by the species were observed in Segment 1 within the APE during biological surveys.
desert kit fox *Vulpes macrotis* ssp. *arsipus*	-- / SSC, FBM	The desert kit fox occupies arid and semi-arid locations at 1,300 to 6,250 feet amsl, and typically will avoid areas of rugged, sloped terrain. Vegetation communities in kit fox habitat include desert scrub, chaparral, halophytic (plants growing in salty conditions), and grassland. They live in dens and thus prefer loose-textured soils that are conducive to burrowing. They primarily subsist on kangaroo rats, prairie dogs, black-tailed jackrabbits, cottontails, birds, reptiles, and carrion. They do not need to live near a water source because they can get sufficient water from their food if they consume a sufficient quantity.	**Moderate.** Suitable habitat for the species exists within the flat, open habitats within the APE. Several potential burrows and den complexes were observed in Segments 1, 2, and 5 during biological surveys.

Primary Sources: CNDDB (2013), Data Base Record Search for Information on Threatened, Endangered, Rare, or Otherwise Sensitive Species and Communities.

Status: Federal/State
Federal: "--" = no federal status; BCC = USFWS Bird of Conservation Concern; BEPA = protected under Bald Eagle Protection Act; BLM = considered sensitive by the Bureau of Land Management; FE = federally endangered; FT = federally threatened.
State: FBM = protected by the state as a fur bearing mammal; FP = state fully protected; SE = state endangered; SSC = state species of special concern; ST = state threatened.

4.1.2 Jurisdictional Waters and Wetlands

Numerous drainage features such as ephemeral washes and swales traverse the APE (Figures 4-1 through 4-85). These washes are generally characterized by sloped or incised channels and the majority exhibit habitat that is contiguous with surrounding upland areas. The proposed NERC code clearance activities are not anticipated to impact any jurisdictional feature or alter the stream course of any feature. Furthermore, no proposed NERC code clearance activities are anticipated to result in temporary or permanent fill of any potential jurisdictional features. The majority of features observed that appear to convey flows in the APE are eroded rills and gullies that formed as a result of lack of activity on Powerline Road and large, sudden rain events that acted on the friable soils. These eroded rills and gullies are not generally considered jurisdictional features.

As currently designed, the Project will avoid all potential jurisdictional features to the greatest extent feasible. This includes avoiding impacts from grading, spoil distribution, and access to and from the grading work areas. Best Management Practices (BMPs) will be used in areas where work occurs adjacent to these features to limit the accidental deposition of soil into a potential jurisdictional drainage.

Should it be determined in the field that impacts to potential jurisdictional resources are unavoidable, the maximum amount of impact that could occur to all drainages within the APE (cumulatively) must be under 0.10 acre. For this type of work along utility lines, USACE allows up to 0.10 acre of impacts to potential jurisdictional waters without notification under Nationwide Permit 12. Moreover, Section 1602 (a) of the Fish and Game Code states that:

> *An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless a streambed alteration agreement is issued for the work.*

Based on existing guidance from the resource agencies, unforeseen impacts of up to 0.10 acre to potential jurisdictional waters throughout the APE would not produce a “substantial” effect on any natural flows, material in any bed, channel, or bank of any features through which water may flow, or on any plant and wildlife resources subject to the CDFW. Therefore, no consultation with USACE or CDFW should be necessary.

4.1.3 Wildlife Movement Corridors

The APE is generally located within disturbed areas associated with Powerline Road, surrounded by undeveloped open space. The open space surrounding these sections facilitates wildlife movement for several terrestrial animals moving through the area, specifically desert tortoise. All Project activities will occur within or immediately adjacent to disturbed and developed areas associated with existing transmission towers, access roads and spurs. The Project alignment and surrounding open space is bisected by I-15, State Route 247 (SR-247), and I-40, which restricts wildlife land movement across the interstate or highways. The proposed Project activities will not create a significant physical alteration to the land and immediate surroundings, beyond which

already exists from current and adjacent development. Additionally, the proposed NERC code clearance activities will not create any additional physical barriers that would prevent wildlife movement throughout the APE. Any NERC code clearance activities on Powerline Road, access roads, and spurs will limit berming on either side of the road to no higher than 6 inches, which would not impede wildlife movement or foraging opportunities. Berms will also contain breaks every 50 to100 feet to allow movement of desert tortoise and other wildlife across the APE. Therefore, application of the proposed Project will not result in any impacts to any wildlife movement corridors located within the APE.

4.1.4 USFWS Critical Habitat

The majority of the APE is outside of USFWS-designated Critical Habitat; however, the following 15 work areas, located within Segments 2, 3, and 4 (Figures 3-2 through 3-4), occur within Critical Habitat for desert tortoise (USFWS 2014):

- MVL1 159-1
- MCV1 138-1
- MVL1 158-6
- MVL1 155-5
- MVL1 150-4
- MVL1 150-3
- MCV1 129-1
- MCV1 120-1
- MVL1 129-4
- MCV2 104-5
- MCV2 103-3
- MCV2 100-5
- MCV2 97-5
- MCV2 97-1
- MCV2 93-4

Approximately 1.29 acres will be graded within desert tortoise Critical Habitat. No other Critical Habitat occurs within the APE. Impacts within Critical Habitat require consultation with USFWS and subsequent mitigation, such as habitat restoration and/or land acquisition/deeded easement for inclusion in a wildlife conservation area.

4.2 Site-Specific Biological Issues

The survey areas are relatively disturbed from the previous installation of the transmission towers, Powerline Road, and associated access roads and spurs, and the entire APE is subject to ongoing disturbance associated with unauthorized off-road vehicle use, motocross racing, and transmission line maintenance. Powerline Road is also used as a service road to other utilities in the area such as Level 3 and WorldCom Fiber Optics (one on each side of the road), as well as the Marketplace-Adelanto Line 1, and the Intermountain-Adelanto Line 1 and Line 2. To facilitate the discussion of the biological resources survey results, the APE survey area was divided into 7 segments that have similar biotic and abiotic characteristics (Figures 2-1 to 2-7). This section provides a discussion of each segment from west to east in terms of the plant communities, plant and wildlife species observed, and sensitive biological resources. A complete list of plant and wildlife species observed during the biological surveys is included in Appendix D.

Segment 1

Segment 1 extends from just east of I-15 to SR-247, south of the city of Barstow (Figure 2). Elevation ranges from 3,108 feet to 3,703 feet amsl. The land surrounding the survey areas consists of residential development to the north and undeveloped open space to the south, east and west. Within the survey areas, existing development consists of the transmission towers and unpaved roads, including Powerline Road, access roads and spur roads. Segment 1 is relatively flat, occurring along a valley between rocky mountains and hills. The mountains to the west of Segment 1 include Quartzite Mountain and Silver Mountain. The mountains to the east include Bell Mountain, Turtle Mountain, Stoddard Mountain, and Stoddard Ridge. Segment 1 passes through the foothills of Stoddard Mountain, but does not cross over or through any major topographic features.

Plant Species and Vegetation Communities

The APE within Segment 1 is moderately disturbed from previous construction and development associated with installation of the transmission towers, Powerline Road, and associated access and spur roads. The vegetation within Segment 1 consists of a moderate quality Mojave creosote bush scrub habitat dominated by native shrubs, such as creosote (*Larrea tridentata*) and cheesebush (*Ambrosia salsola*). Other common native species observed within Segment 1 include Mohave yucca (*Yucca schidigera*), eastern Mojave buckwheat (*Eriogonum fasciculatum* var. *polifolium*), California ephedra (*Ephedra californica*), burrobush (*Ambrosia dumosa*), Acton encelia (*Encelia actoni*), sweetbush (*Bebbia juncea*), and desert trumpet (*Eriogonum inflatum*). The Mojave creosote scrub community contains a disturbed understory dominated by annual non-native grasses such as red brome (*Bromus madritensis*) and cheat grass (*Bromus tectorum*), and forbs, such as fiddleneck (*Amsinckia tessellata*), red-stemmed filaree (*Erodium cicutarium*), Asian mustard (*Brassica tournefortii*), and short-pod mustard (*Hirschfeldia incana*).

Common Wildlife

The APE within Segment 1 provides suitable habitat for a number of common wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed within this APE include Great Basin collared lizard (*Crotaphytus bicinctores*), western side-blotched lizard (*Uta stansburiana elegans*), and western whiptail (*Aspidoscelis tigris tigris*); avian species observed or detected include ash-throated flycatcher (*Myiarchus cinerascens*), loggerhead shrike (*Lanius ludovicianus*), common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), verdin (*Auriparus flaviceps*), bushtit (*Psaltriparus minimus*), rock wren (*Salpinctes obsoletus*), cactus wren (*Campylorhynchus brunneicapillus*), European starling (*Sturnus vulgaris*), lark sparrow (*Chondestes grammacus*), black-throated sparrow (*Amphispiza bilineata*), and house finch (*Haemorhous mexicanus*); and mammal species observed during the survey include desert cottontail (*Sylvilagus audubonii*),white-tailed antelope ground squirrel (*Ammospermophilus leucurus*), kangaroo rat (*Dipodomys* sp.), and desert woodrat (*Neotoma lepida*). In addition, a potentially active coyote (*Canis latrans*) den was observed near tower MVL1 147-5 but no live coyotes were observed. Avian species were observed or detected within the desert scrub habitat surrounding the work area and perched on transmission lines and towers; however, no nests or nesting behavior were observed.

Sensitive Biological Resources

Sensitive Vegetation Communities

The CNDDB did not identify any sensitive plant communities within the Turtle Valley or Stoddard Well USGS 7.5-minute topographic quadrangles (Appendix B). No sensitive plant communities were observed on in the APE during the field surveys conducted in 2013 and 2014. Therefore, the proposed Project will not impact any sensitive plant communities.

Sensitive Plant Species

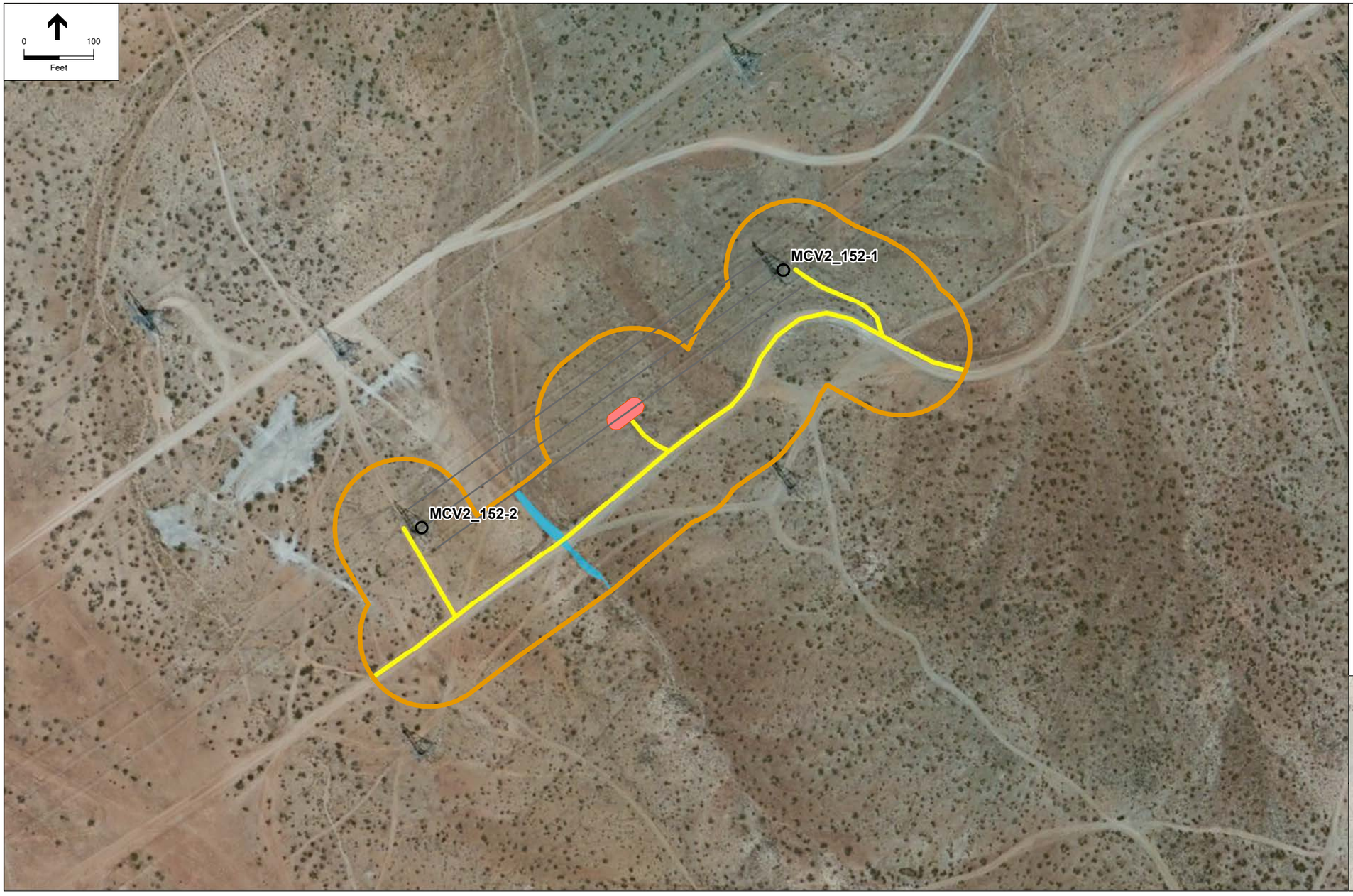
One sensitive plant species, Barstow woolly sunflower was recorded within 1 mile of the APE within Segment 1 (Figure 3-1). However, this single recorded occurrence was in 1914 and no additional occurrences have been recorded since. Two teddy bear chollas and one pencil cholla were mapped near the impact area between towers MCV1 145-3 and MCV1 145-4 (Figure 4-6).

Sensitive Wildlife Species

The CNDDB documents the occurrence of three species within 5 miles of the APE within Segment 1: golden eagle, desert tortoise, and prairie falcon (*Falco mexicanus*) (Appendix B). The habitat within Segment 1 provides high-quality habitat for the federal and state threatened desert tortoise. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area; however, no desert tortoise or signs of desert tortoise (burrows, scat, tracks, shell fragments, etc.) were found in the APE in Segment 1. Although no desert tortoises were observed in Segment 1 during the biological surveys, there is a moderate to high potential for the species to enter or occupy the work area prior to ground disturbance based on the presence of suitable habitat known occurrences within the region (CNDDB 2014).

The habitat within Segment 1 provides moderately suitable habitat for several species that are listed as California Species of Special Concern, including burrowing mammals, such as desert kit fox and American badger. None of these species were observed within the APE during the biological surveys; however, one inactive kit fox den site was observed near tower MCV1 145-3, south of the access road (Figure 4-6).

The APE within Segment 1 provides suitable nesting habitat for a number of shrub and ground-nesting avian species, including horned lark, loggerhead shrike, and burrowing owl. This area also provides suitable foraging habitat and nesting opportunities for golden eagle and the BLM reports that there is an active golden eagle nest on a tower in this segment. In addition, there are several golden eagle nests in the vicinity of Stoddard Mountain. Additionally, although not considered natural nesting habitat, the transmission towers located within the APE provide suitable nesting habitat for larger avian species including common raven and red-tailed hawk (*Buteo jamaicensis*). The following California Species of Special Concern were observed within Segment 1: loggerhead shrike, horned lark, and lark sparrow. No other active or inactive nests were observed within transmission towers or within the habitat throughout the Segment 1 APE; however, focused surveys were not conducted and additional nests may be present.

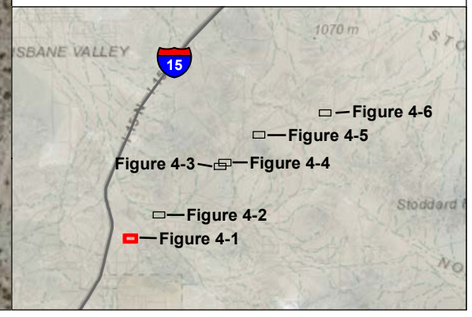


Basemap Legend

- Wash
- Tower
- Powerline
- Biological Survey Area
- Grading Limits
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

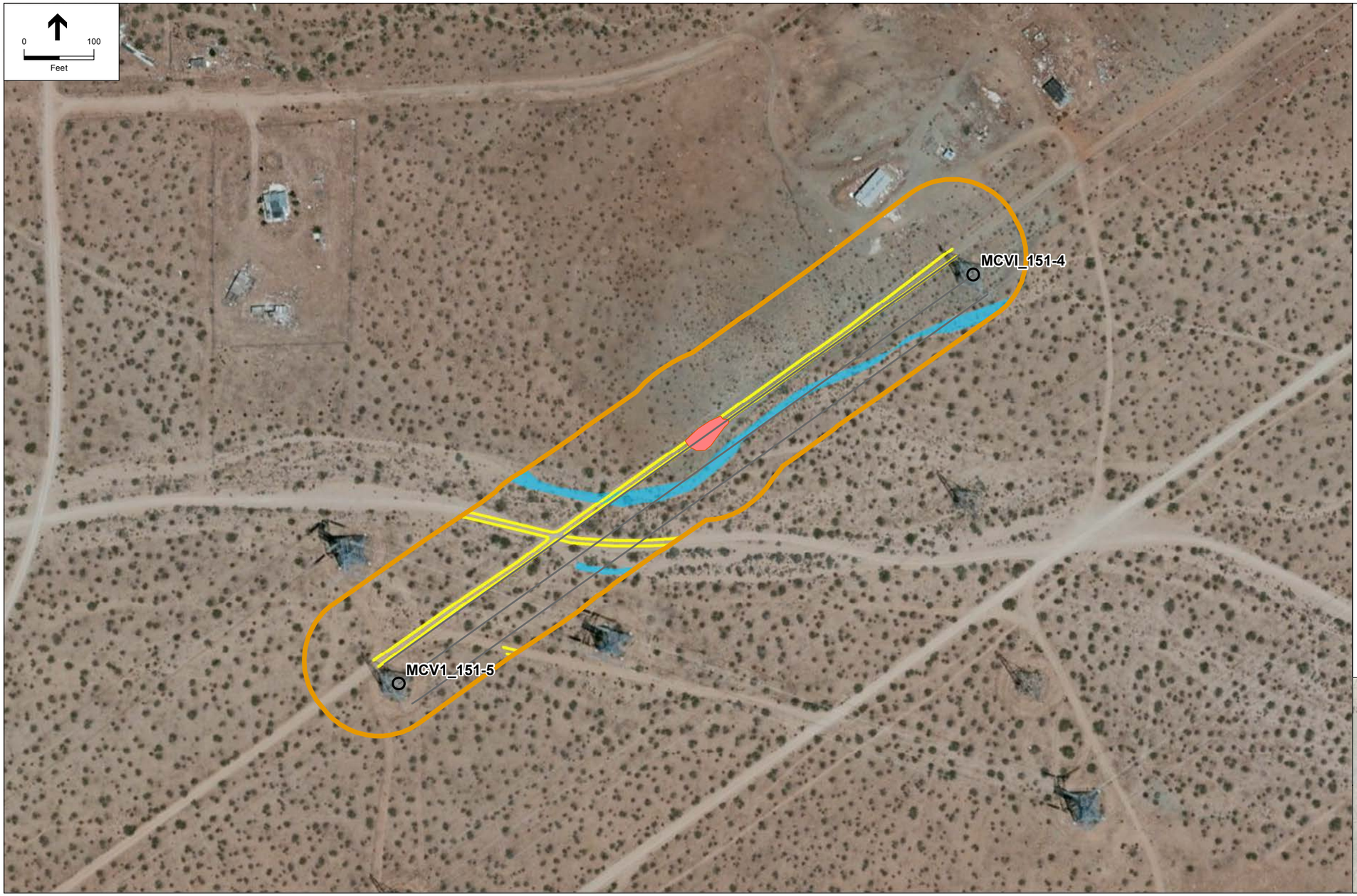
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-1

Biological Survey Results

Segment 1

MCV2 152-1

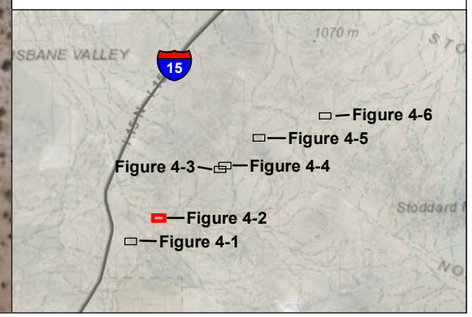


Basemap Legend

- Wash
- Tower
- Powerline
- Biological Survey Area
- Grading Limits
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-2

Biological Survey Results

Segment 1

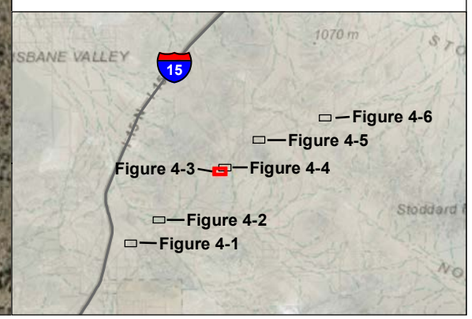
MCV1 151-4

Basemap Legend

- Wash
- Tower
- Powerline
- Biological Survey Area
- Grading Limits
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-3

Biological Survey Results

Segment 1

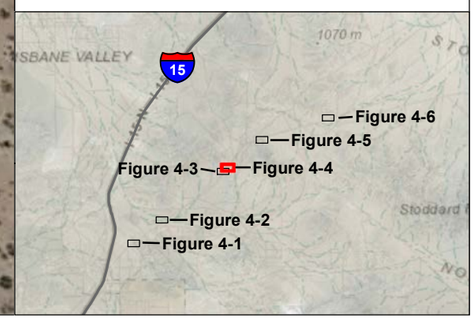
MCV1 149-2

Basemap Legend

- Wash
- Tower
- Powerline
- Biological Survey Area
- Grading Limits
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

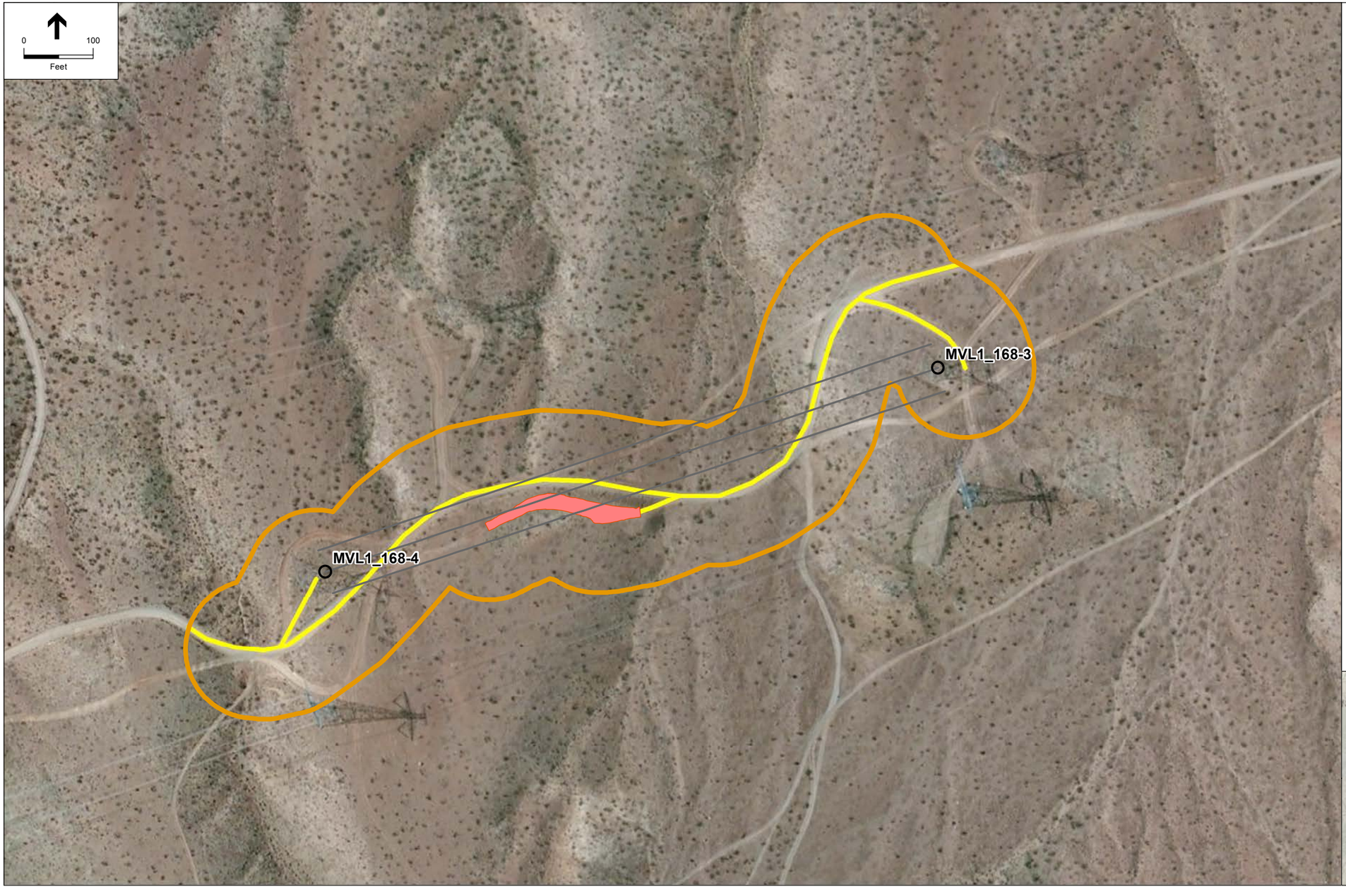
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-4

Biological Survey Results

Segment 1

MCV1 149-2

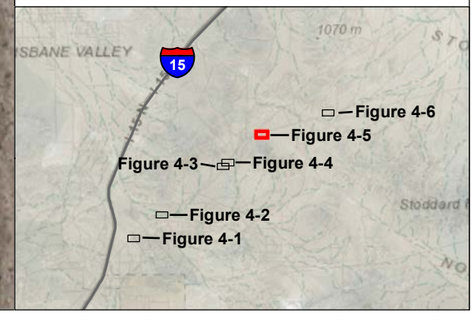


Basemap Legend

- Wash
- Tower
- Powerline
- Biological Survey Area
- Grading Limits
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-5

Biological Survey Results

Segment 1

MVL1 168-3

0 100
Feet

MCV1_145-3

MCV1_145-4

Basemap Legend

- Wash
- Tower
- Powerline
- Biological Survey Area
- Grading Limits
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)

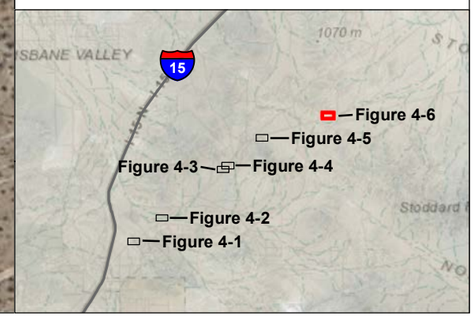
Biological Survey Results

Trees/Plants

- Pencil cholla (Cylindropuntia ramosissima)
- Teddy bear cholla (Cylindropuntia bigelovii)

Animals

- Kit fox den - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-6

Biological Survey Results

Segment 1

MCV1 145-3

Segment 2

Segment 2 extends from SR-247 to just south of I-40, near the town of Daggett (east of Barstow) (Figure 2-2). Elevation ranges from 2,206 feet to 3,224 feet amsl. The land surrounding the survey areas consists of scattered rural residences and agricultural land to the north and undeveloped open space to the south, east, and west. Within the survey areas, existing development consists of the transmission towers and unpaved roads, including Powerline Road, access roads, and spur roads. Segment 2 is relatively flat, occurring along a valley between rocky mountains and hills.

Plant Species and Vegetation Communities

The APE within Segment 2 is moderately disturbed from previous construction and development associated with installation of the transmission towers, Powerline Road, and associated access and spur roads. Vegetation within Segment 2 generally consists of a moderate-quality Mojave creosote bush scrub community dominated by creosote bush. Common succulent plant species observed in Segment 2 include silver cholla, pencil cholla, cottontop barrel cactus, and Engelmann's hedgehog cactus (*Echinocereus engelmannii*). Other common native species observed within this segment include Acton encelia, burrobush, cheesebush, desert tea, and desert trumpet. The Mojave creosote scrub community contains a disturbed understory dominated by annual non-native grasses such as red brome, cheat grass, small flower melic grass, common Mediterranean grass, fiddleneck, red-stemmed filaree, Asian mustard, and short-pod mustard.

Common Wildlife

The APE within Segment 2 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed within this APE include western whiptail, zebratail lizard (*Callisaurus draconoides*), and side-blotched lizard (*Uta stansburiana*). Common avian species observed within Segment 2 include ash-throated flycatcher and black-throated sparrow (*Amphispiza bilineata*). Mammal species observed during the survey include desert woodrat, white-tailed antelope squirrel, and black-tailed jackrabbit (*Lepus californicus*).

Sensitive Biological Resources

Sensitive Vegetation Communities

The CNDDB did not identify any sensitive plant communities that occur within the Daggett or Minneola USGS 7.5-minute topographic quadrangles. No sensitive plant communities were observed in the APE during the reconnaissance-level surveys; therefore, no impacts are anticipated.

Sensitive Plant Species

No special-status plant species were observed during the rare plant surveys. The potential for occurrence of these species within the proposed impact areas is low based on the level of existing disturbance/development within the limits of the majority of proposed work areas (i.e., existing roads used for access, marked for grading, and designated for spoils distribution).

Eight native succulents that are protected under the California Desert Native Plants Act were observed within or immediately adjacent to the APE in Segment 2: silver cholla, pencil cholla, hedgehog cactus, cottontop barrel cactus, teddy bear cholla (*Cylindopuntia bigelovii*), silver cholla (*Cylindropuntia echinocarpa*), beavertail, and Mohave yucca. One teddy bear cholla was mapped south of tower MVL1 158-6, and another along the edge of the access road between towers MVL1 150-4 and MVL1 150-5 (Figures 4-8 and 4-11). One Mojave yucca was mapped near the excavation area between towers MVL1 155-5 and MVL1 155-6 (Figure 4-9). The remaining species were observed outside of the immediate vicinity of the proposed impact areas and were therefore not mapped.

Sensitive Wildlife Species

The APE for Segment 2 provides high quality habitat for the federal and state threatened desert tortoise. This segment occurs entirely within the Ord-Rodman WEMO-designated DWMA and USFWS-designated desert tortoise Critical Habitat Unit. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. During the 2014 focused surveys, a total of 5 active burrows, 10 inactive burrows, and 4 observations of sign (scat, carcass, and pellets) were observed within Segment 2 (Figures 4-7, 4-8, 4-11, 4-12, and 4-13). Three of the active burrows were unoccupied during the survey and were located adjacent to the access road; one active burrow (occupied by a tortoise) was located near the excavation area between towers MCV1 129-1 and MCV1 129-2; and one occupied burrow was located north of tower MCV1 129-1 away from the impact area, but still within the APE. Of the inactive burrows, four were located adjacent to the access road, three were located within or adjacent to an excavation area, and three were located away from impact areas.

The APE also provides high-quality suitable habitat for several additional burrowing wildlife species which are listed as California Species of Special Concern or otherwise considered sensitive by CDFW. These species include burrowing owl, desert kit fox, and American badger. Several suitable burrowing owl burrows were found throughout the APE. Although these burrows were observed within the APE, none were within or near the proposed impact areas. Two potentially active kit fox dens and two burrows of unknown species were observed within the APE; however, none were observed within or near the proposed impact areas. Based on the size and shape of the unidentified burrows, there is potential for burrowing owl, desert kit fox, and American badger to use them; however, no identifying signs for these species (scat, tracks, whitewash, prey remains, burrow decoration, etc.) were observed.

The APE for work areas within Segment 2 provides suitable nesting habitat for a number of shrub and ground-nesting avian species, such as black-tailed gnatcatcher (*Polioptila melanura*) and horned lark, which were observed. Although not considered natural nesting habitat, the transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including golden eagle, common raven, and red-tailed hawk. The CNDDB identified a historical nesting record of golden eagle on the lattice tower immediately south of transmission tower MVL1 155-6 (Figure 4-9). According to the BLM, this nest is known to have been consistently active in recent years. Biological surveys conducted in 2013 and 2014 confirmed the presence of this nest, although no golden eagles were observed during these

surveys. Based on the confirmed recent use of this nest, there is a high potential for the species to nest on the lattice tower in the future. In 2013, two additional unidentified stick nests were observed within transmission towers in the vicinity of MVL1 155-5 and MVL1 155-6 within the APE; however, these were not observed in 2014. It is possible that these were unfinished golden eagle nests but the eagles decided to nest elsewhere. It is common for eagles to construct multiple nests but only select one for breeding.

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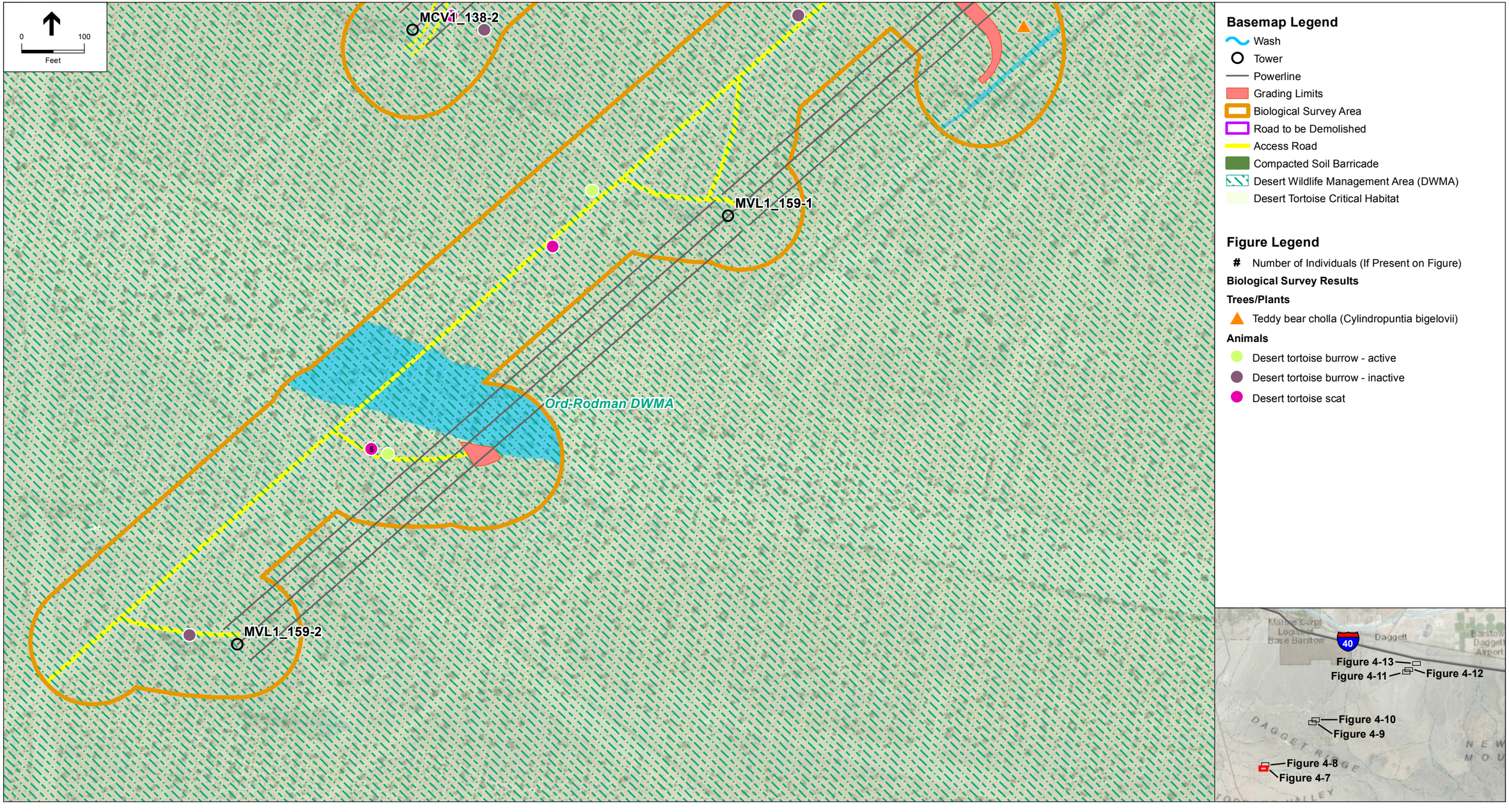


Source: ESRI Imagery

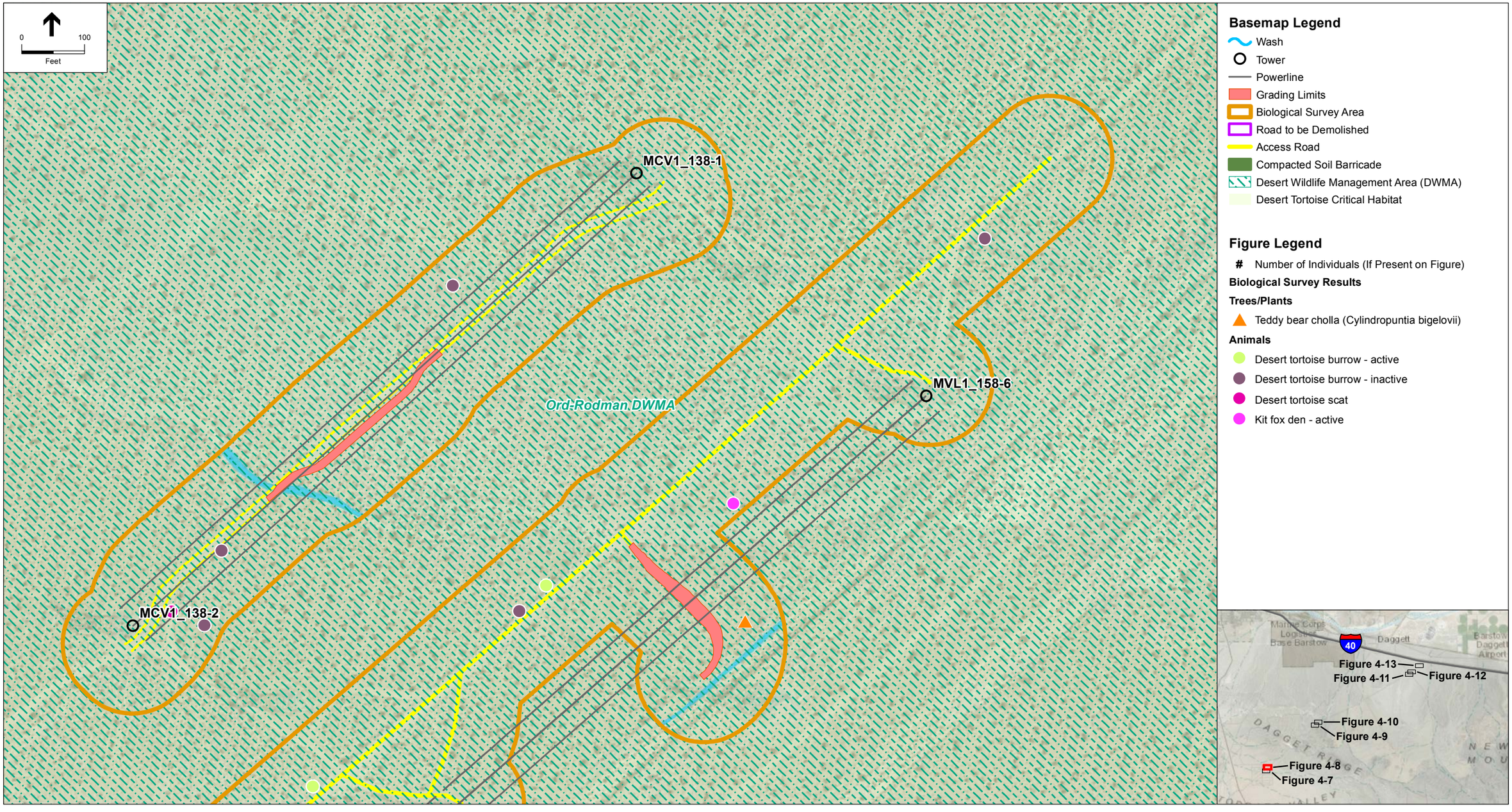
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-7

Biological Survey Results

Segment 2

MVL1 159-1



Source: ESRI Imagery

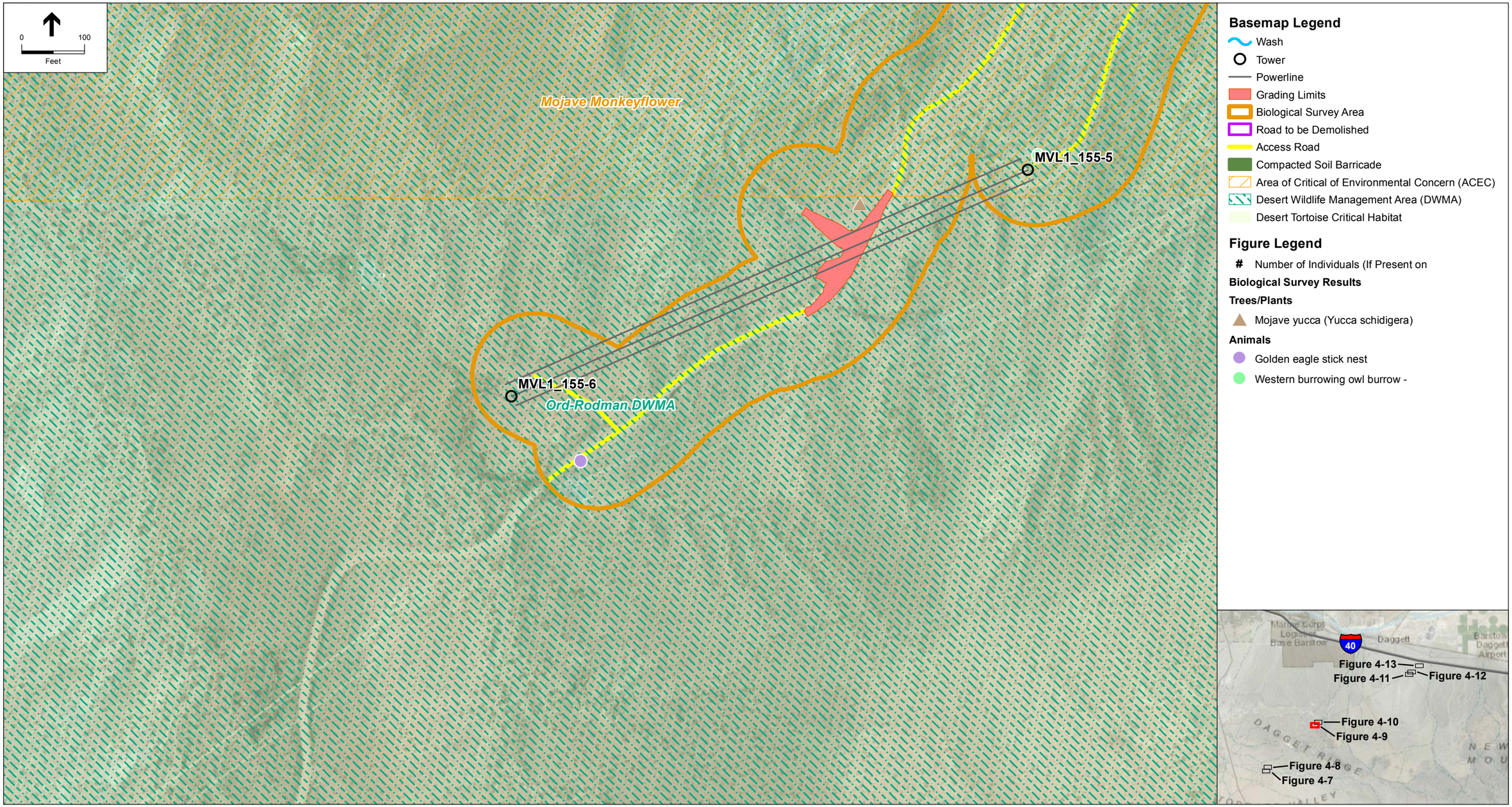
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-8

Biological Survey Results

Segment 2

MCV1 138-1 and MVL1 158-6



Source: ESRI Imagery

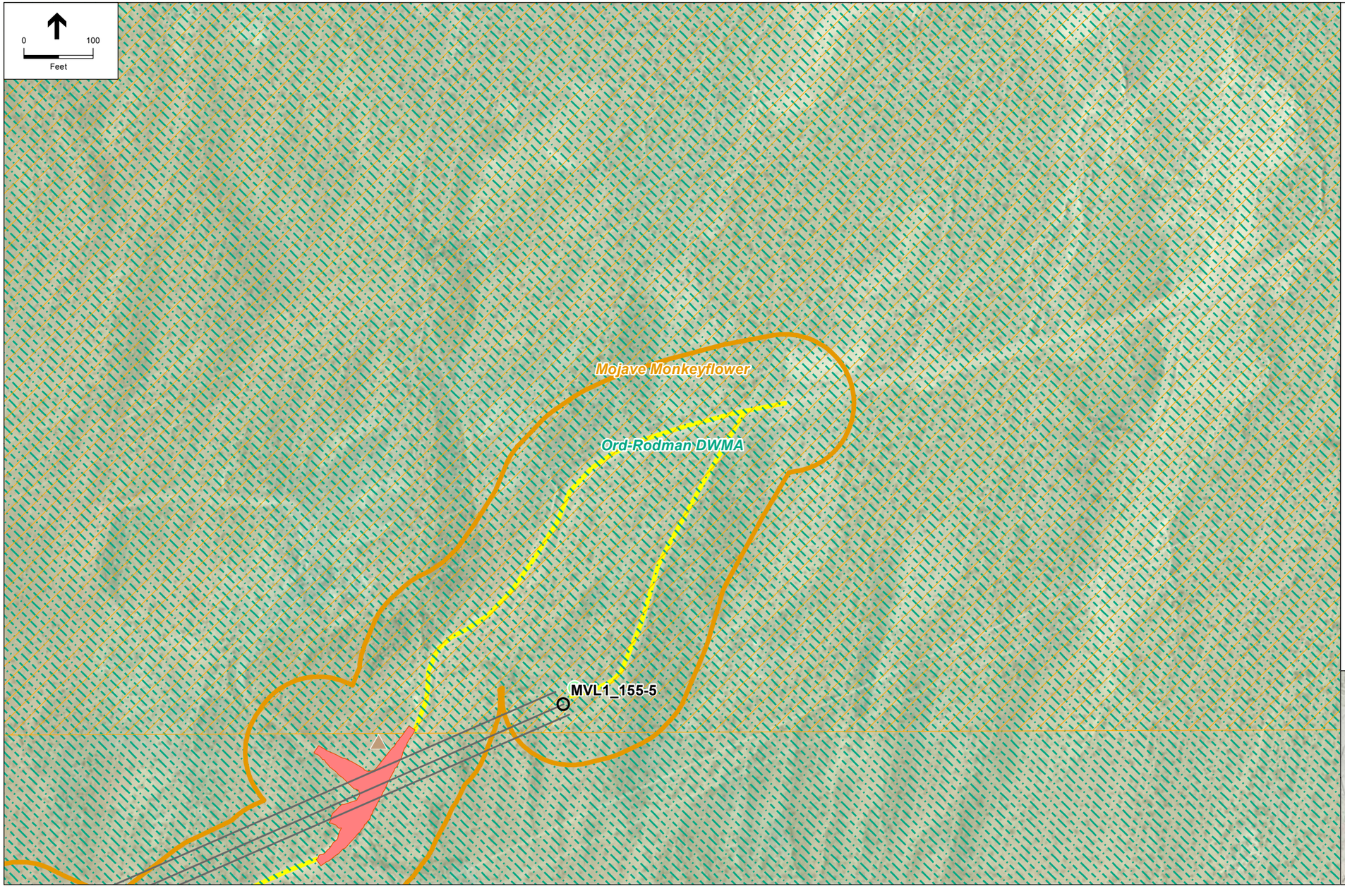
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-9

Biological Survey Results

Segment 2

MVL1 155-6



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on

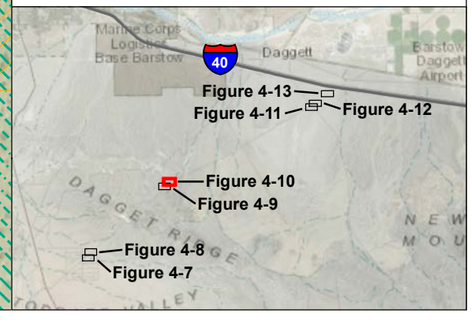
Biological Survey Results

Trees/Plants

Mojave yucca (Yucca schidigera)

Animals

Western burrowing owl burrow -



Source: ESRI Imagery

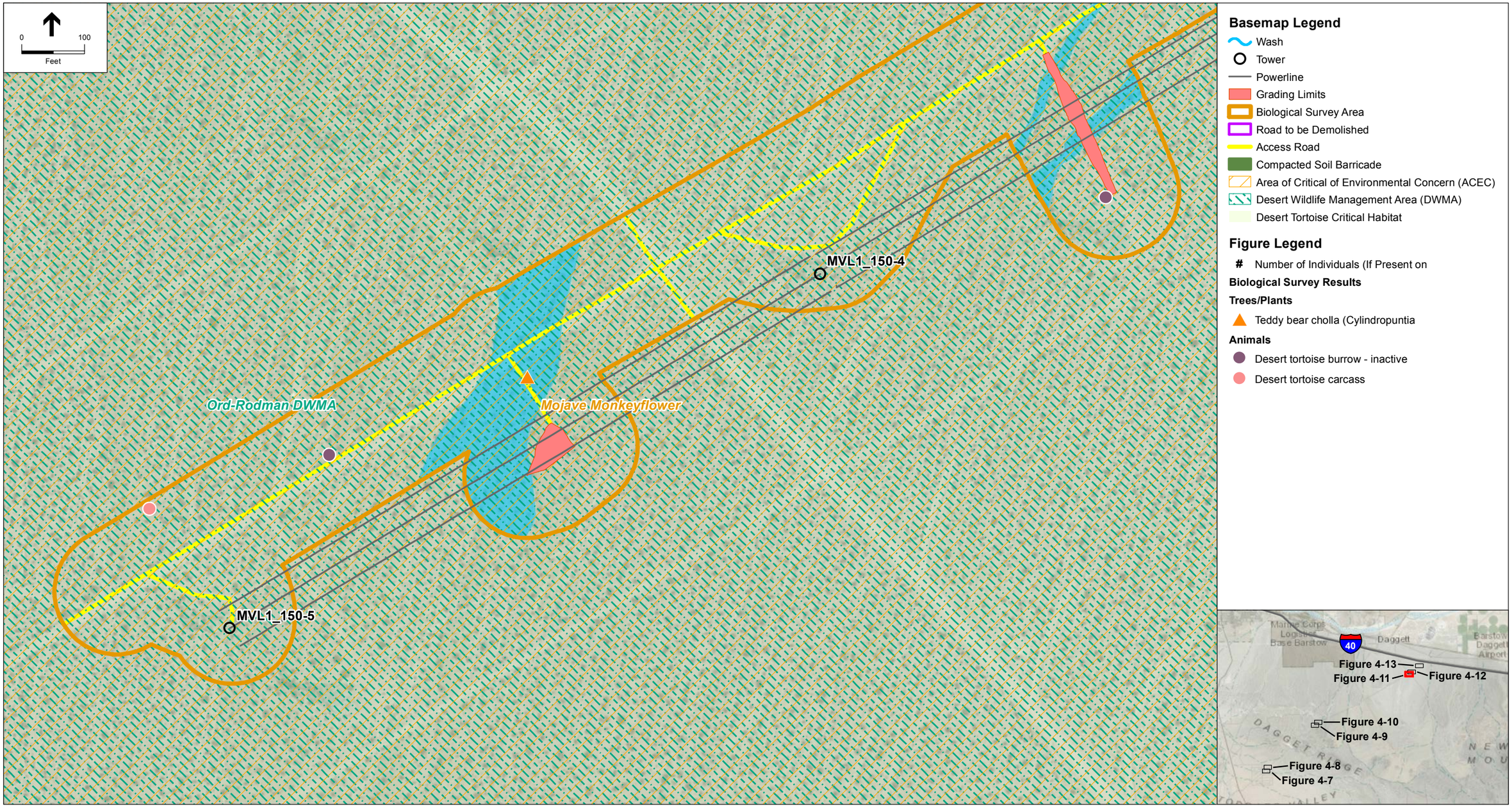
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-10

Biological Survey Results

Segment 2

MVL1 155-6



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on

Biological Survey Results

Trees/Plants

- Teddy bear cholla (Cylindropuntia

Animals

- Desert tortoise burrow - inactive
- Desert tortoise carcass

Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-11

Biological Survey Results

Segment 2

MVL1 150-5 and MVL1 150-4

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on

Biological Survey Results

Trees/Plants

- Teddy bear cholla (Cylindropuntia

Animals

- Desert tortoise burrow - inactive
- Juvenile desert tortoise

Source: ESRI Imagery

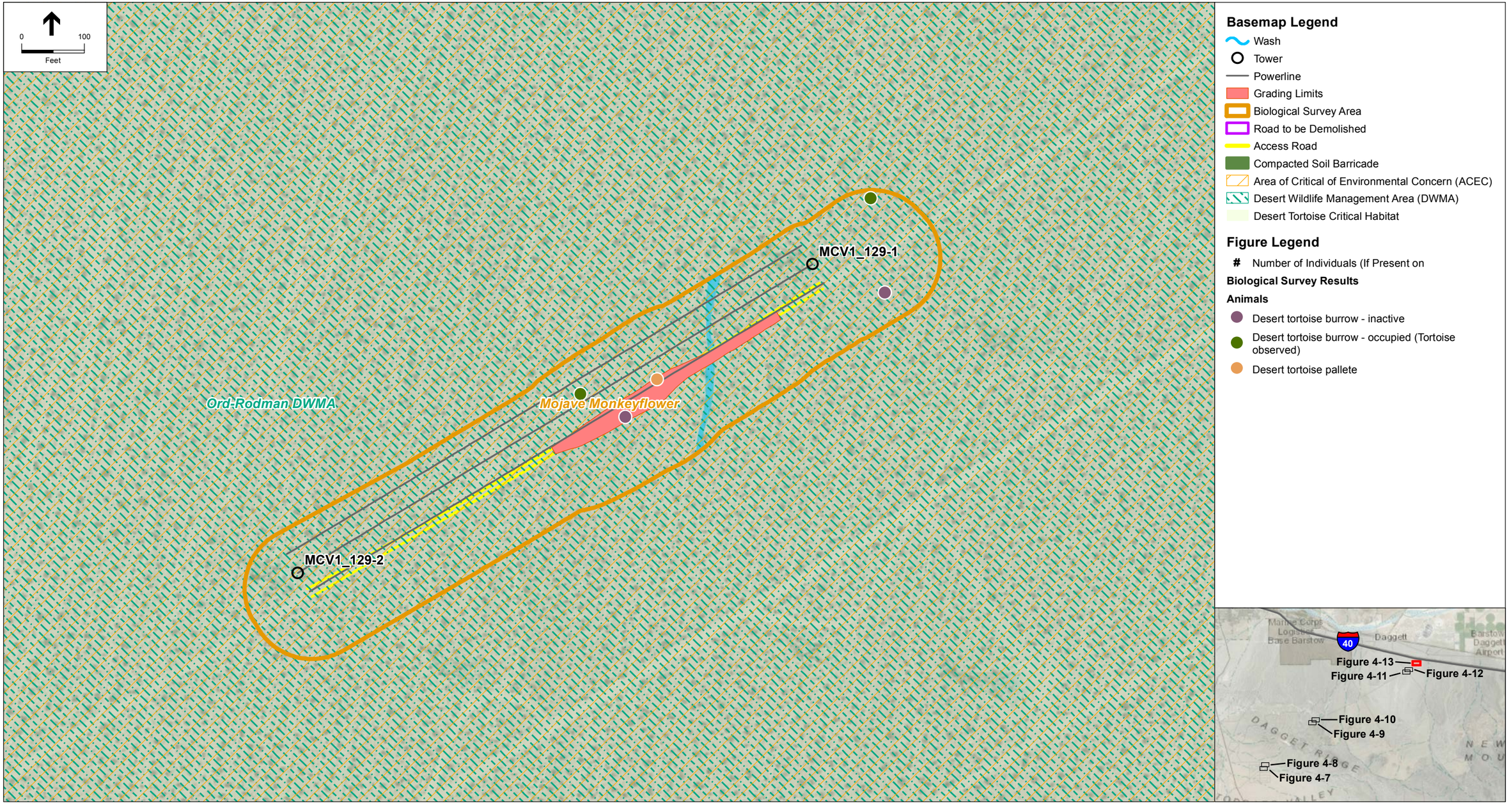
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-12

Biological Survey Results

Segment 2

MVL1 150-4 and MVL1 150-3



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-13

Biological Survey Results

Segment 2

MCV1 129-1

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Segment 3

Segment 3 extends from I-40 east of the town of Daggett northeastward to just beyond I-15 (east of Barstow) (Figure 2-3). Elevation ranges from 1,972 feet to 1,977 feet amsl. The land surrounding the APE consists of residential development to the west, agricultural land to the east, and undeveloped open space to the north and south. Within the APE, existing development consists of the transmission towers and unpaved roads, including Powerline Road, access roads, and spur roads. Segment 3 is relatively flat, occurring within a dry river valley between mountains to the north and south.

Plant Species and Vegetation Communities

The APE within Segment 3 is moderately to highly disturbed from previous construction and development associated with installation of the transmission towers, agriculture, Powerline Road, and associated access and spur roads. Therefore, the native species diversity in Segment 3 is much lower than in other segments due to these disturbances. Vegetation within Segment 3 generally consists of a disturbed Mojave creosote bush scrub community dominated by creosote bush and active agriculture around tower MCV1 125-6. Less common native shrubs include burrobush and saltbush. The Mojave creosote scrub community contains a disturbed understory dominated by Mediterranean grass and other non-native species.

Common Wildlife

The APE within Segment 3 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed during biological surveys include western side-blotched lizard and western whiptail. Avian species observed or detected include red-tailed hawk, killdeer (*Charadrius vociferus*), common raven and turkey vulture (*Cathartes aura*). Mammal species observed during the surveys include coyote and black-tailed jackrabbit.

Sensitive Biological Resources

Sensitive Vegetation Communities

The CNDDB did not identify any sensitive plant communities that occur within the Minneola or Harvard Hill USGS 7.5-minute topographic quadrangles. No sensitive plant communities were observed in the APE during the reconnaissance-level surveys; therefore, the proposed Project will not impact any sensitive plant communities within this segment.

Sensitive Plant Species

No special-status plant species were observed during the rare plant surveys. The potential for occurrence of special-status plant species within Segment 3 is low based on the level of existing disturbance/development within the limits of the majority of proposed work areas (i.e., existing roads used for access, marked for grading, and designated for spoils distribution). Moreover, no native species protected under the California Desert Native Plants Act were observed within the APE in Segment 3 during the biological surveys.

Sensitive Wildlife Species

The APE within Segment 3 provides moderate quality habitat for the federal and state threatened desert tortoise. Towers MCV1 120-1 and -2 in this segment occur within the Superior-Cronese Critical Habitat Unit designated by USFWS and a Desert Wildlife Management Unit (DWMA) designated by WEMO. The APE contains disturbed desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area; however, the highly disturbed nature of the surrounding areas limits the suitability of the work area for the species. Although no live desert tortoises were observed during the focused species survey, scat was observed between towers MCV1 120-1 and MCV1 120-2 (Figure 4-17) and therefore, it is presumed that desert tortoise may be present in the area.

The APE also provides moderately suitable habitat for several species which are listed as California Species of Special Concern or considered sensitive by CDFW. These species include burrowing owl, desert kit fox, and American badger. No observations or sign associated with these burrowing mammal species (i.e., scat, tracks, burrows, prey remains, etc.) was observed in the APE.

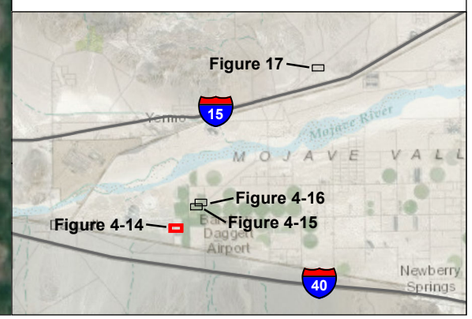
The APE within Segment 3 provides suitable nesting habitat for a number of shrub and ground-nesting avian species including horned lark and killdeer, which were observed during biological surveys. The transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors including common raven, red-tailed hawk and potentially golden eagle. However, no nesting activity was observed within Segment 3 during the biological surveys, nor was any nests.

Basemap Legend

- Tower
- Wash
- Powerline
- Access Road
- Biological Survey Area
- Grading Limits
- Road to be Demolished
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

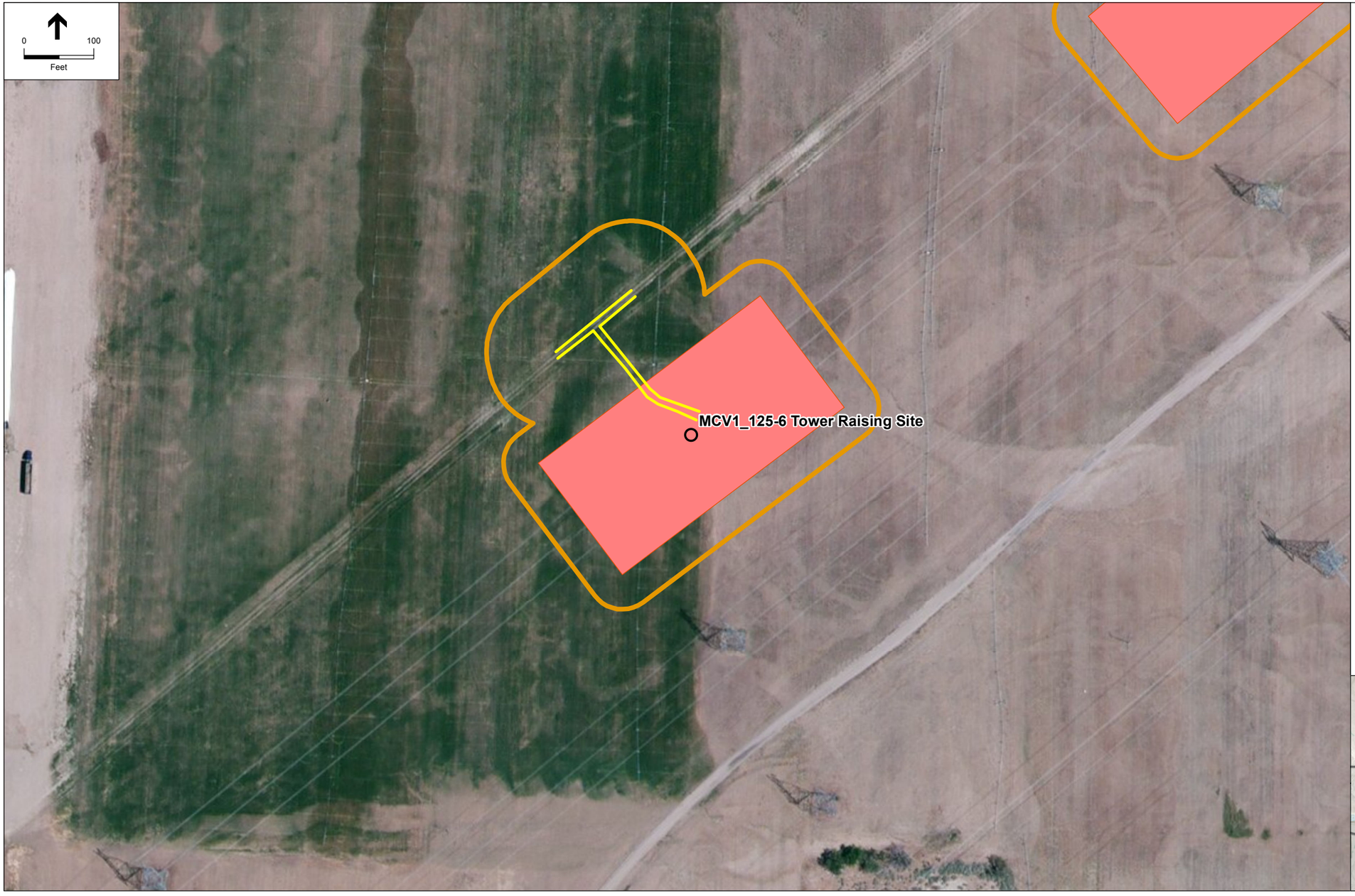
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-14

Biological Survey Results

Segment 3

MVL1 147-4 and MVL1 147-5

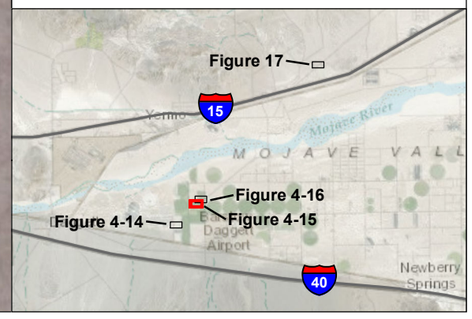


Basemap Legend

- Wash
- Tower
- Powerline
- Biological Survey Area
- Road to be Demolished
- Access Road
- Grading Limits
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

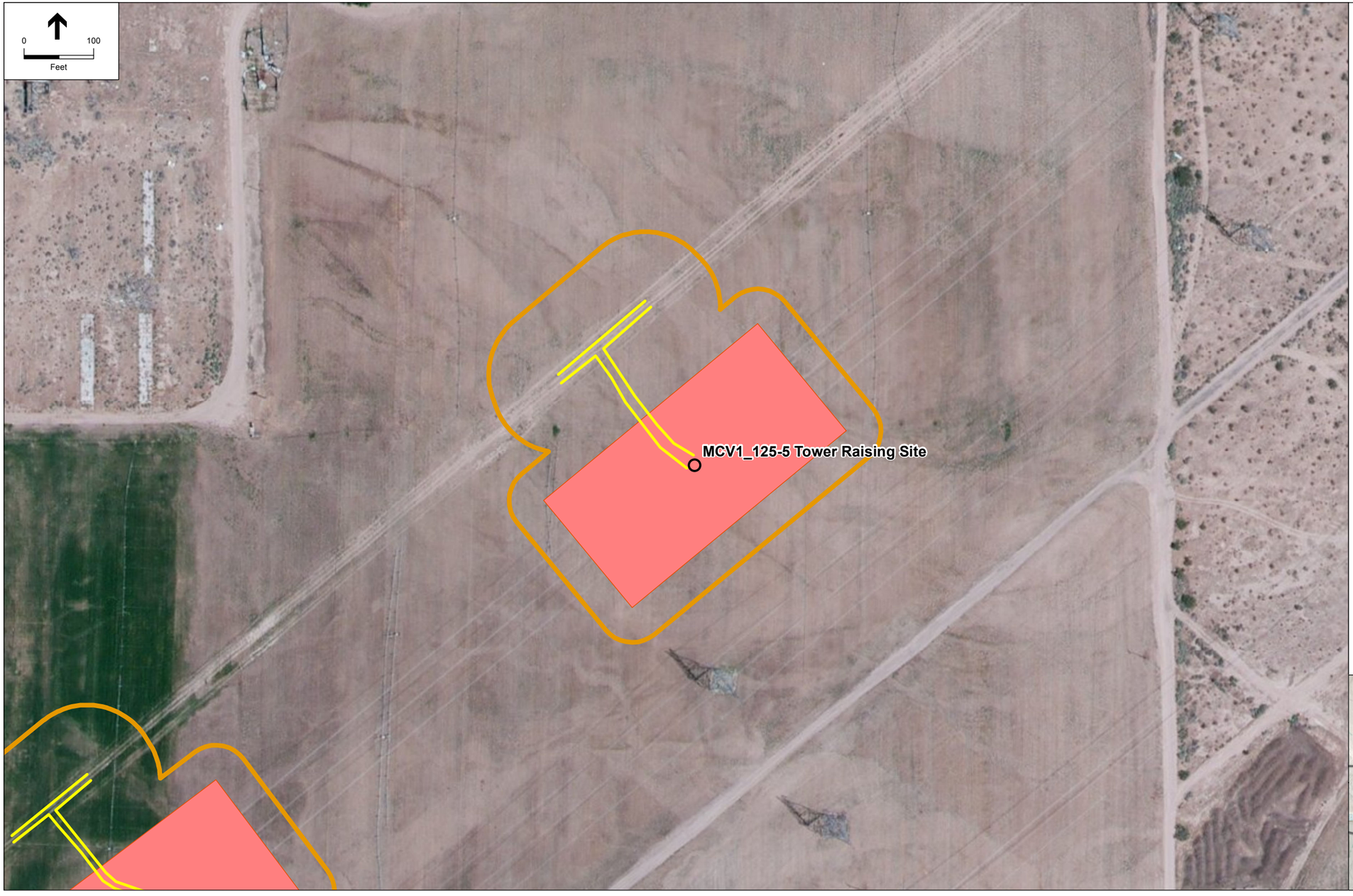
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-15

Biological Survey Results

Segment 3

MCV1 125-6

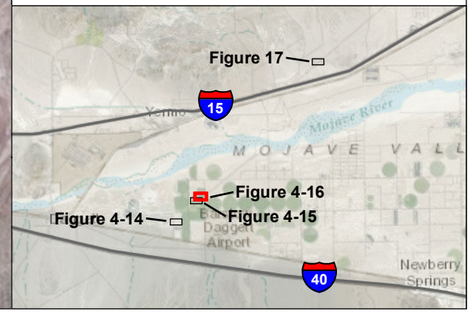


Basemap Legend

- Wash
- Tower
- Powerline
- Biological Survey Area
- Road to be Demolished
- Access Road
- Grading Limits
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

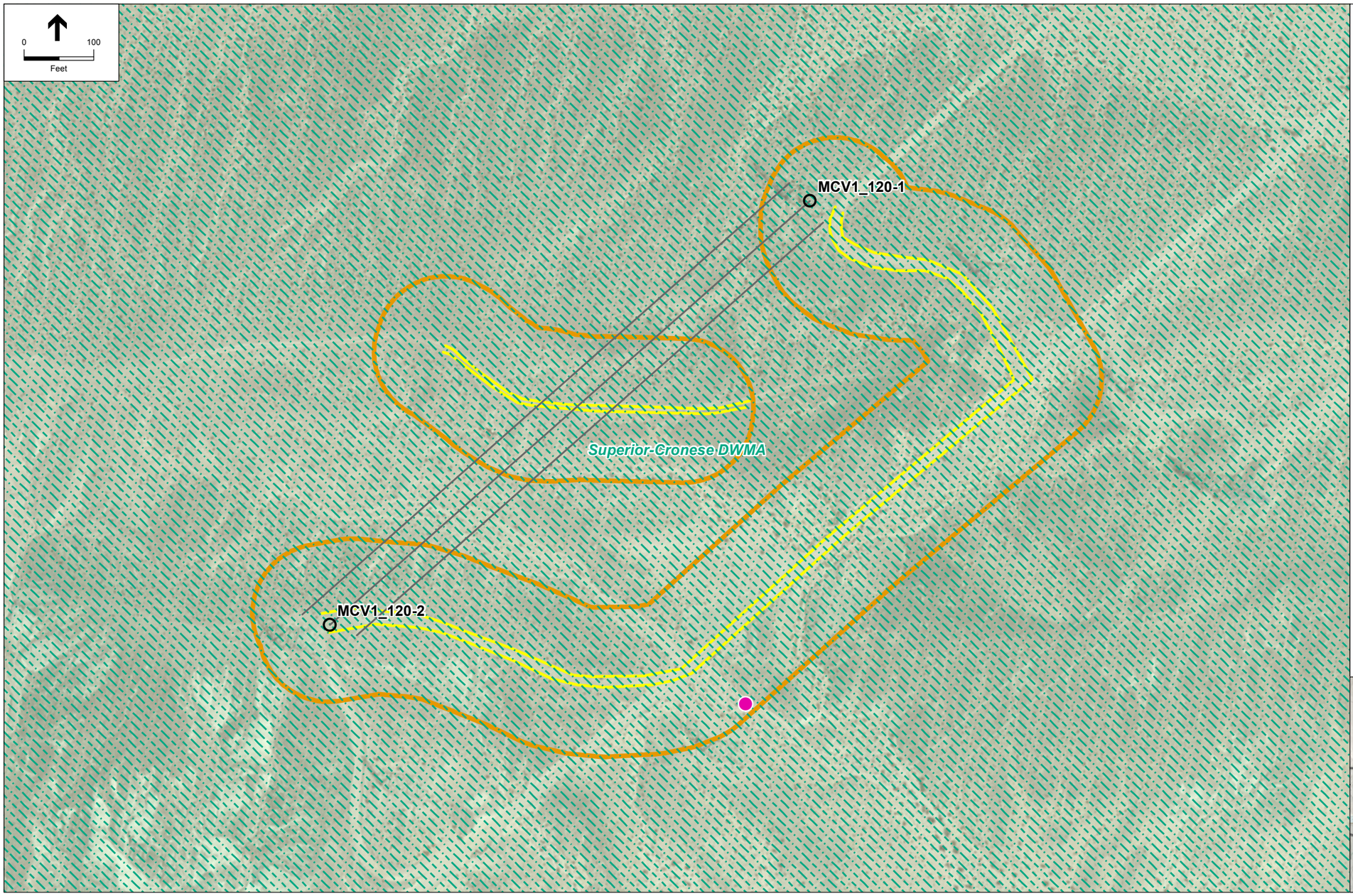
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-16

Biological Survey Results

Segment 3

MCV1 125-5



Basemap Legend

- Wash
- Tower
- Powerline
- Desert Wildlife Management Area (DWMA)
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

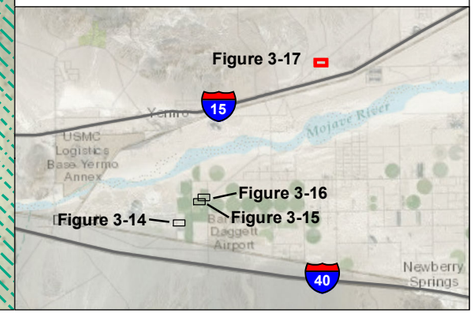
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Desert tortoise scat



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-17

Biological Survey Results

Segment 3

MCV1 120-1

Segment 4

Segment 4 of the project site is located north of I-15, extending from north of Newberry Springs approximately 19 miles to the northeast near Red Pass Lake, a dry lake bed (Figure 2). Elevation ranges from 1,309 feet to 2,565 feet amsl. Segment 4 has fewer disturbances and development than in Segments 1 - 3. The land surrounding the APE within Segment 4 consists of undeveloped open space to the north, south, east and west. Although this segment is less disturbed than others, it does contain a moderate level of disturbance from the transmission towers and associated unpaved roads, including Powerline Road, access roads and spur roads. Segment 4 is relatively flat and surrounded by rocky hills and mountains. It is largely characterized as dunes by large amounts of blowing sand, which comes from a variety of dry lake beds in the area.

Plant Species and Vegetation Communities

Vegetation within the limits of APE generally consists of a disturbed Mojave creosote bush scrub community with rocky soils dominated by creosote bush and burrobush. Other common native species observed within this APE include desert tea, desert trumpet, saltbush, and cheesebush. The Mojave creosote scrub community contains a disturbed understory dominated by annual non-native grasses such as red brome, cheat grass, common Mediterranean grass, Asian mustard, and short-pod mustard.

Common Wildlife

The APE within Segment 4 provides suitable habitat for a number of wildlife species known to occur within creosote scrub and other desert habitats. Reptile species observed during the survey included long-nosed leopard lizard (*Gambelia wislizenii*), western whiptail, zebratail lizard, side-blotched lizard, desert iguana (*Dipsosaurus doralis*), and desert horned lizard. Common avian species observed during the surveys include red-tailed hawk, Say's phoebe (*Sayornis saya*), ash-throated flycatcher (*Myiarchus cinerascens*), northern mockingbird (*Mimulus polyglottos*), black-throated sparrow (*Spizella breweri*), white-crowned sparrow (*Zonotrichia leucophrys*), and common raven. Mammal species observed during the surveys include black-tailed jackrabbit, and coyote.

Sensitive Biological Resources

Sensitive Vegetation Communities

The CNDDB identified one sensitive plant community, Crucifixion Thorn Woodland, which occurs within the Dunn USGS 7.5-minute topographic quadrangle. No other sensitive plant communities were identified within the Alvord Mountain East, Bitter Spring, and Cronese Lakes USGS 7.5-minute topographic quadrangles. However, no sensitive plant communities were observed in the APE during the reconnaissance-level surveys, including Crucifixion Thorn Woodland. Therefore, the proposed Project will not impact any sensitive plant communities.

Sensitive Plant Species

One sensitive plant species, Death Valley sandpaper plant (*Petalonyx thurberi* ssp. *gilmanii*), was observed within Segment 4 of the APE. This species is considered sensitive by BLM, and has a

California Rare Plant Rank of 1B.3. No other sensitive plant species were observed during the rare plant surveys.

Eight native species protected under the California Desert Native Plants Act—silver cholla, beavertail cactus, California barrel cactus, cottontop barrel cactus, teddy bear cholla, pencil cholla, fish hook cactus, and desert holly saltbush—were observed during the biological surveys. The following species were observed in the immediate vicinity of proposed grading areas: one beavertail cactus (Figures 4-23 and 4-24). Although located within the APE, the other species indicated above do not occur within or immediately adjacent to the proposed impact areas and were, therefore, not mapped.

Sensitive Wildlife Species

The APE within Segment 4 provides moderate to high quality habitat for the federal and state threatened desert tortoise. Towers MVL1 129-5 through MCV2 93-4 within this segment occur within the Superior-Cronese Critical Habitat Unit designated by USFWS and a Desert Wildlife Management Unit (DWMA) designated by WEMO. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. A total of 18 potentially active desert tortoise burrows were observed within the APE, only one of which was located near an area of excavation (Figure 4-27). Although no desert tortoises were observed during the focused survey in Segment 4, there is a moderate to high potential for the species to occupy the work area prior to ground disturbance based on the presence of suitable habitat and inactive burrows, as well as historical records within the vicinity (CNDDB 2014).

The APE also provides moderately suitable habitat for several species which are listed as California Species of Special Concern or considered sensitive by CDFW. These species include burrowing owl, desert kit fox, and American badger. Several inactive burrowing owl burrows were found within the APE, but outside of the impact areas (Figures 4-19, 4-22, 4-25, 4-26, 4-27, 4-38, and 4-35). Four inactive potential desert kit fox dens were observed within the APE, but not near a proposed impact area (Figures 4-26, 4-27, 4-29, 4-35). No signs of American badger (scat, tracks, burrows, prey remains, etc.) were observed in the APE within Segment 4.

Segment 4 provides suitable nesting habitat for a number of shrub- and ground-nesting special-status avian species. Loggerhead shrike and horned lark, both California Species of Special Concern, were observed within Segment 4. The transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including common raven and red-tailed hawk. One red-tailed hawk nest was observed in tower MCV2 93-5. In addition, the Soda Mountains in the vicinity of this segment provide nesting opportunities for golden eagle. Two dilapidated nests were detected in this area in 2012 and were determined inactive at the time (BLM 2016). The current status of these nests is unknown.

0 100
Feet

MVL1_129-4

Superior-Cronese DWMA

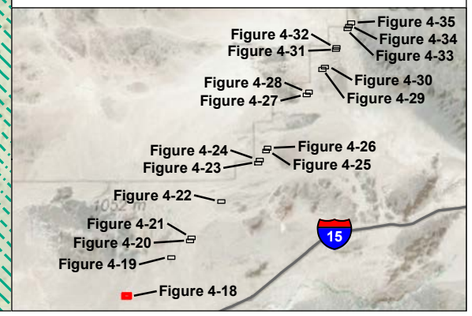
MVL1_129-5

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

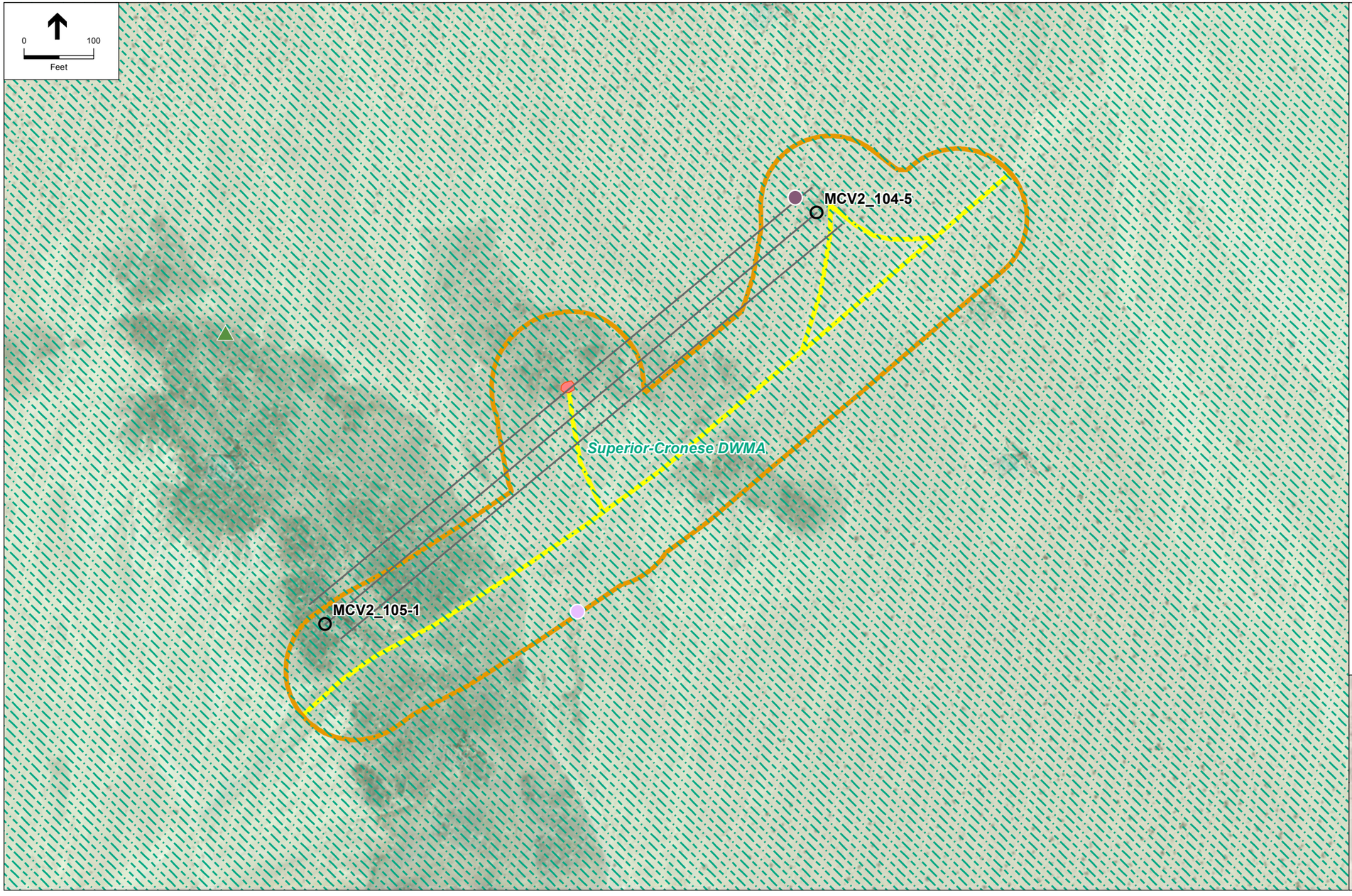
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-18

Biological Survey Results

Segment 4

MVL1 129-5



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

- # Number of Individuals (If Present on Figure)

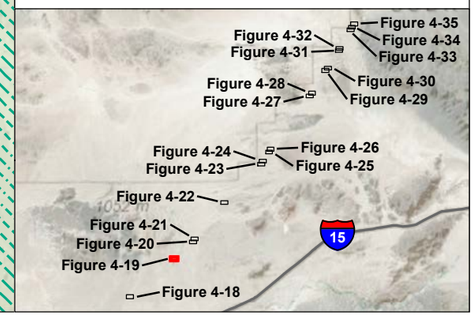
Biological Survey Results

Trees/Plants

- Beavertail (Opuntia basilaris)

Animals

- Desert tortoise burrow - inactive
- Western burrowing owl burrow - active



Source: ESRI Imagery

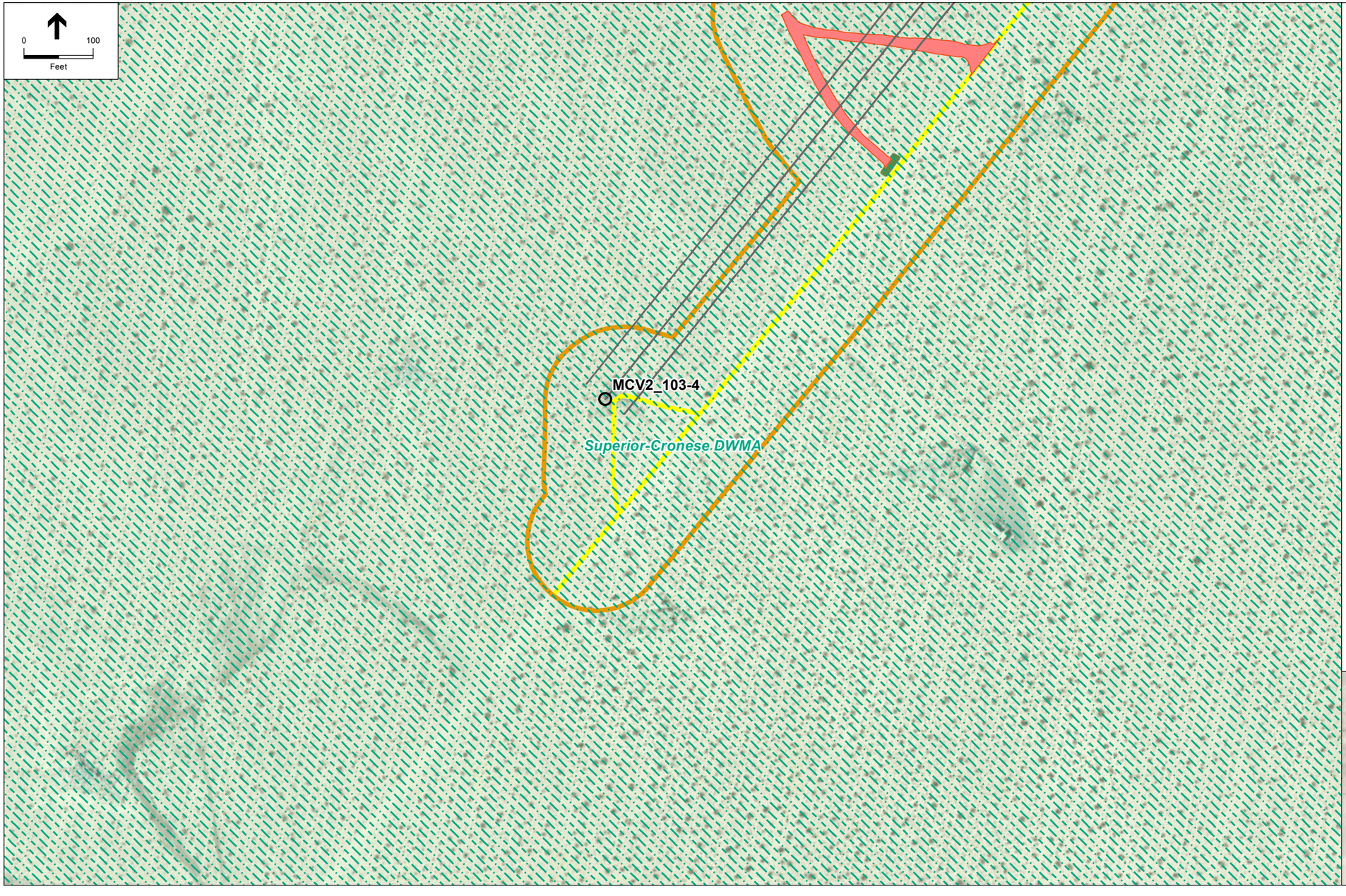
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-19

Biological Survey Results

Segment 4

MCV2 104-5

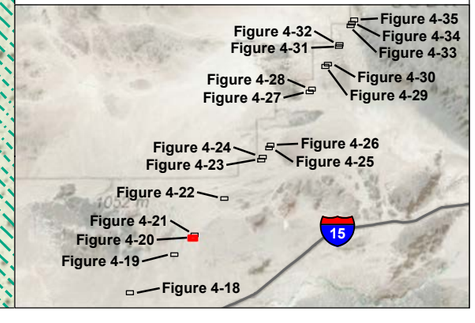


Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-20

Biological Survey Results

Segment 4

MCV2 103-4

0 100
Feet

Superior-Cronese DWMA

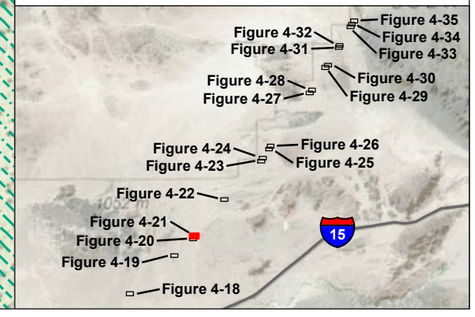
MCV2_103-3

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-21

Biological Survey Results

Segment 4

MCV2 103-3

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

- # Number of Individuals (If Present on Figure)

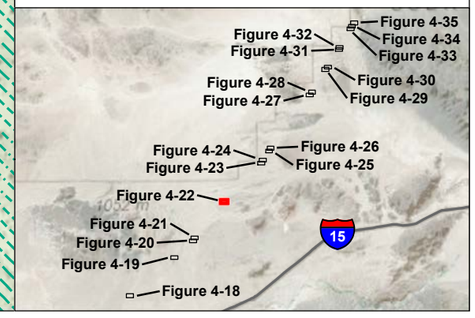
Biological Survey Results

Trees/Plants

- Barrel Cactus (Ferocactus cylindraceus)
- Beavertail (Opuntia basilaris)

Animals

- Desert tortoise burrow - active
- Desert tortoise shell fragments
- Western burrowing owl burrow - active



Source: ESRI Imagery

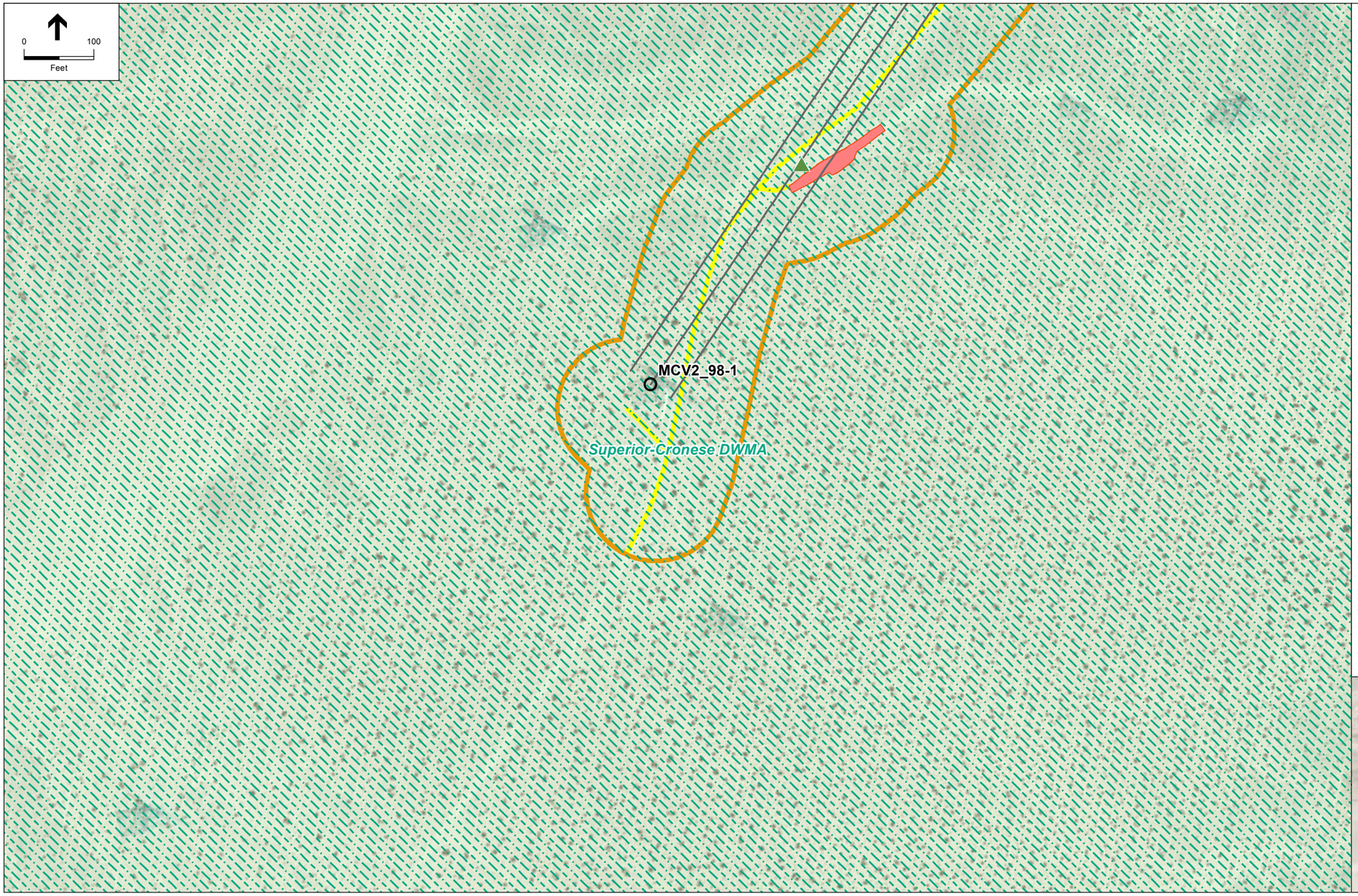
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-22

Biological Survey Results

Segment 4

MCV1 105-5



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

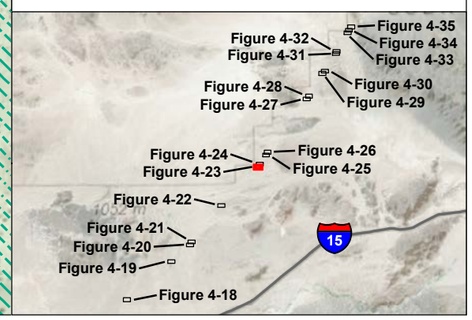
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Beavertail (Opuntia basilaris)



Source: ESRI Imagery

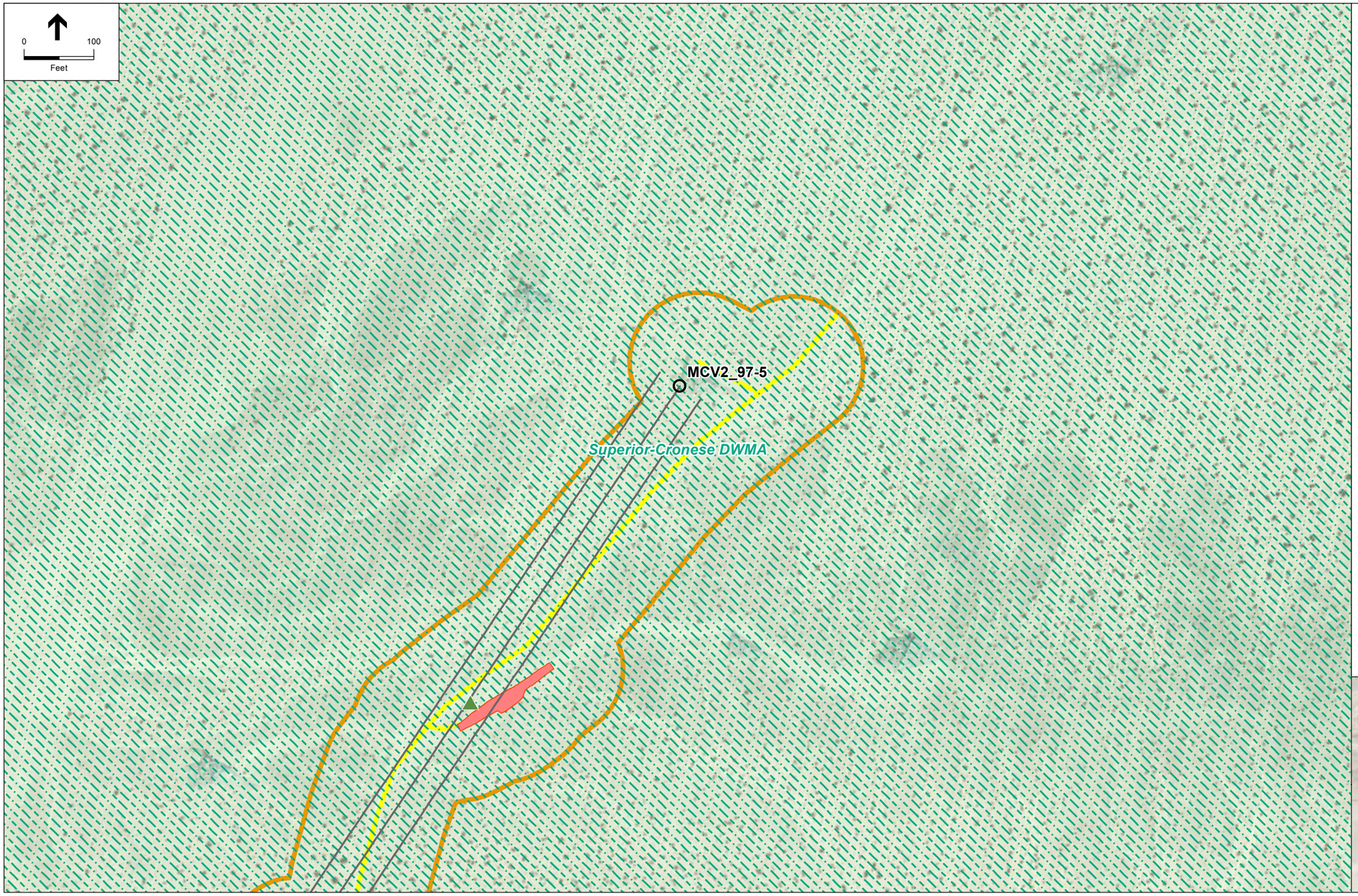
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-23

Biological Survey Results

Segment 4

MCV2 98-1



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

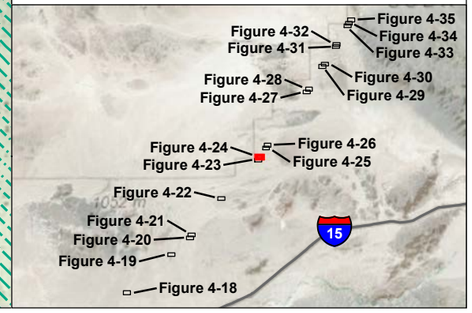
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Beavertail (Opuntia basilaris)



Source: ESRI Imagery

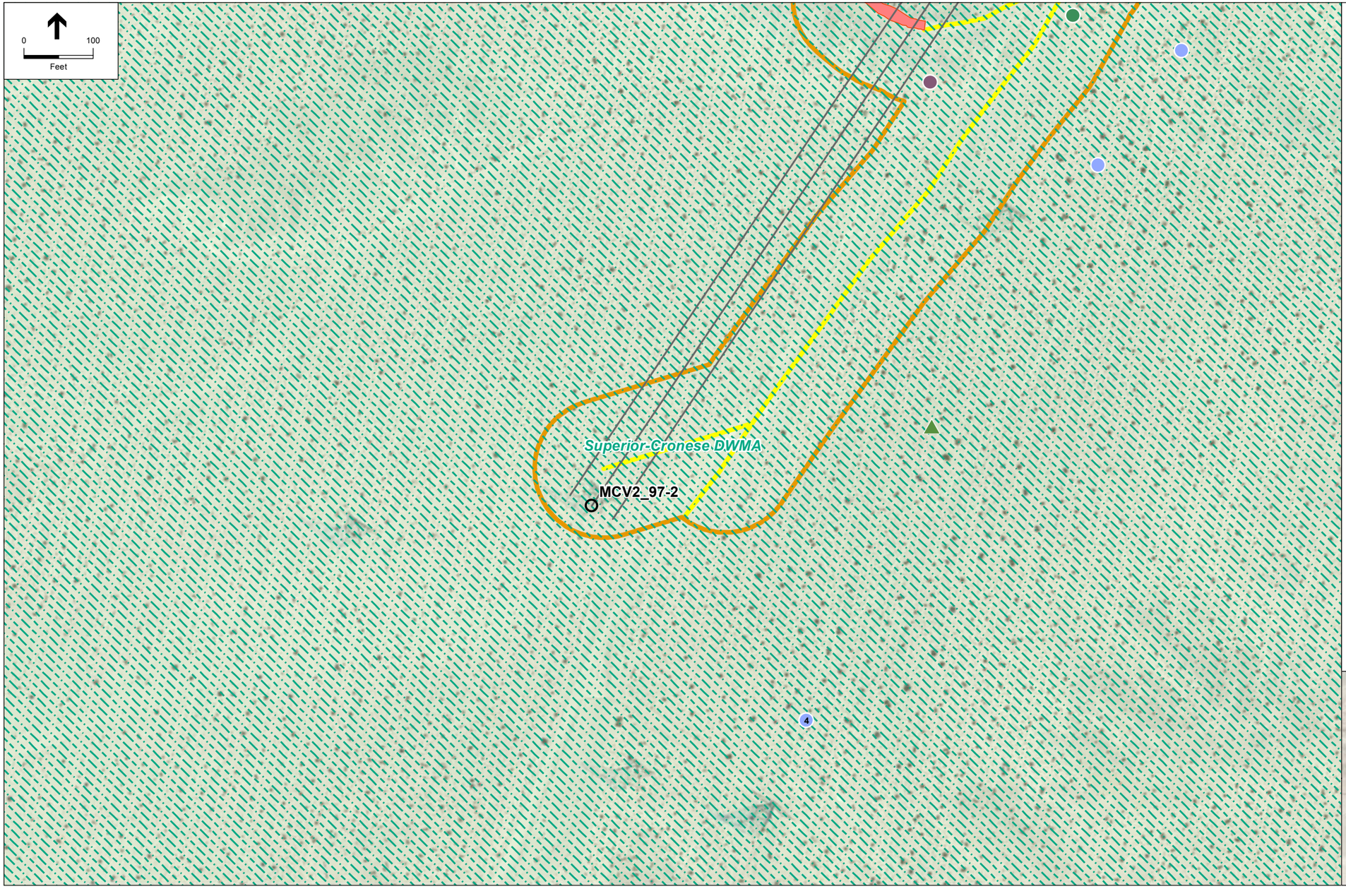
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-24

Biological Survey Results

Segment 4

MCV2 97-5



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on Figure)

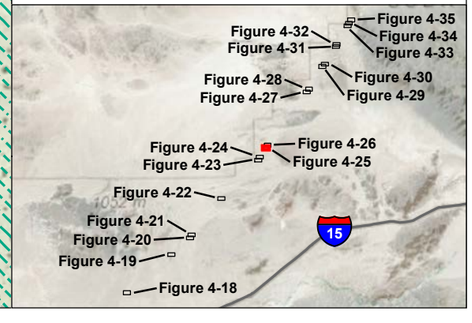
Biological Survey Results

Trees/Plants

- Beavertail (Opuntia basilaris)

Animals

- Desert tortoise burrow - inactive
- Kit fox den complex - inactive
- Potential Western burrowing owl burrow - active



Source: ESRI Imagery

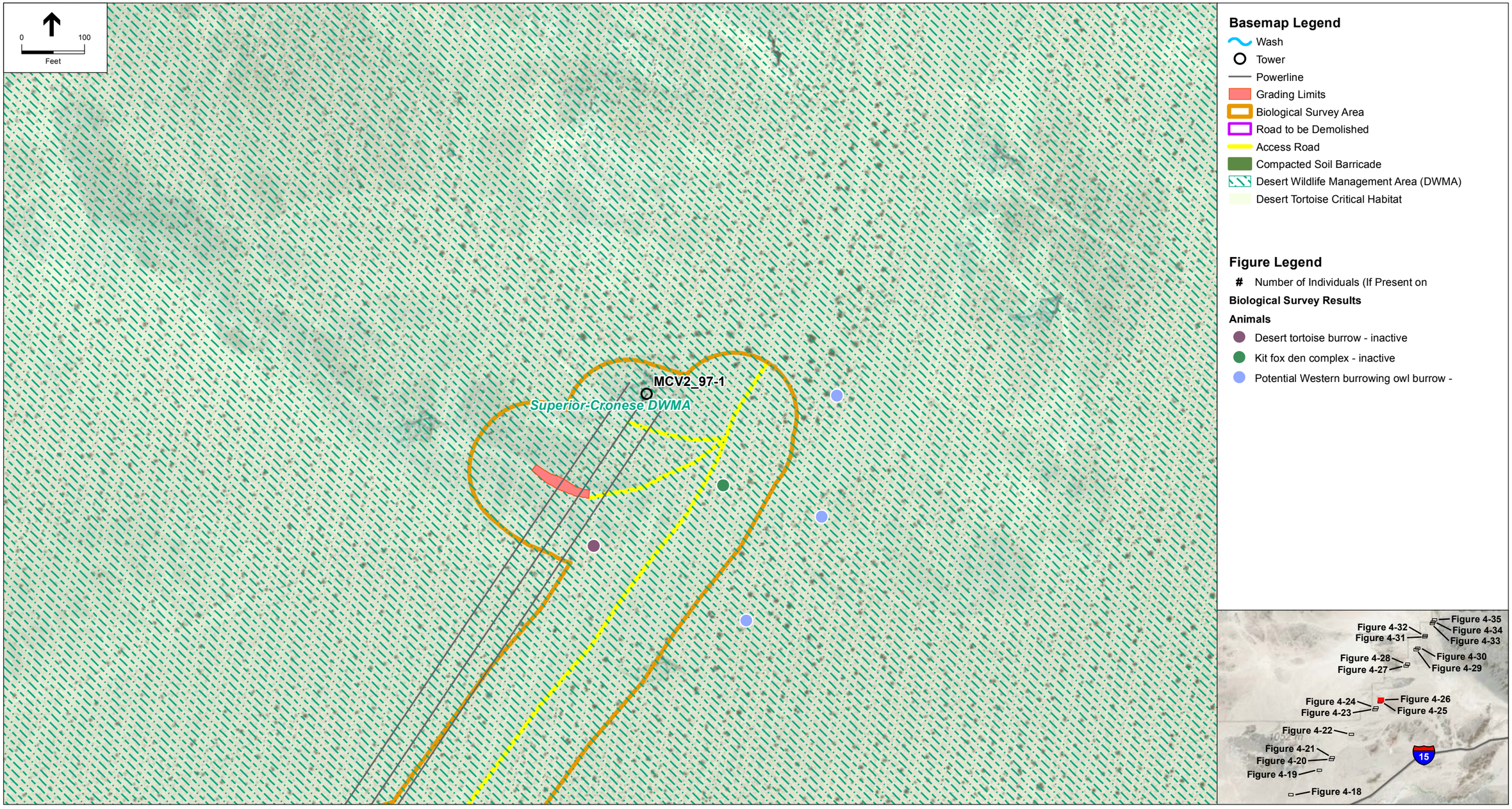
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-25

Biological Survey Results

Segment 4

MCV2 97-2



Source: ESRI Imagery

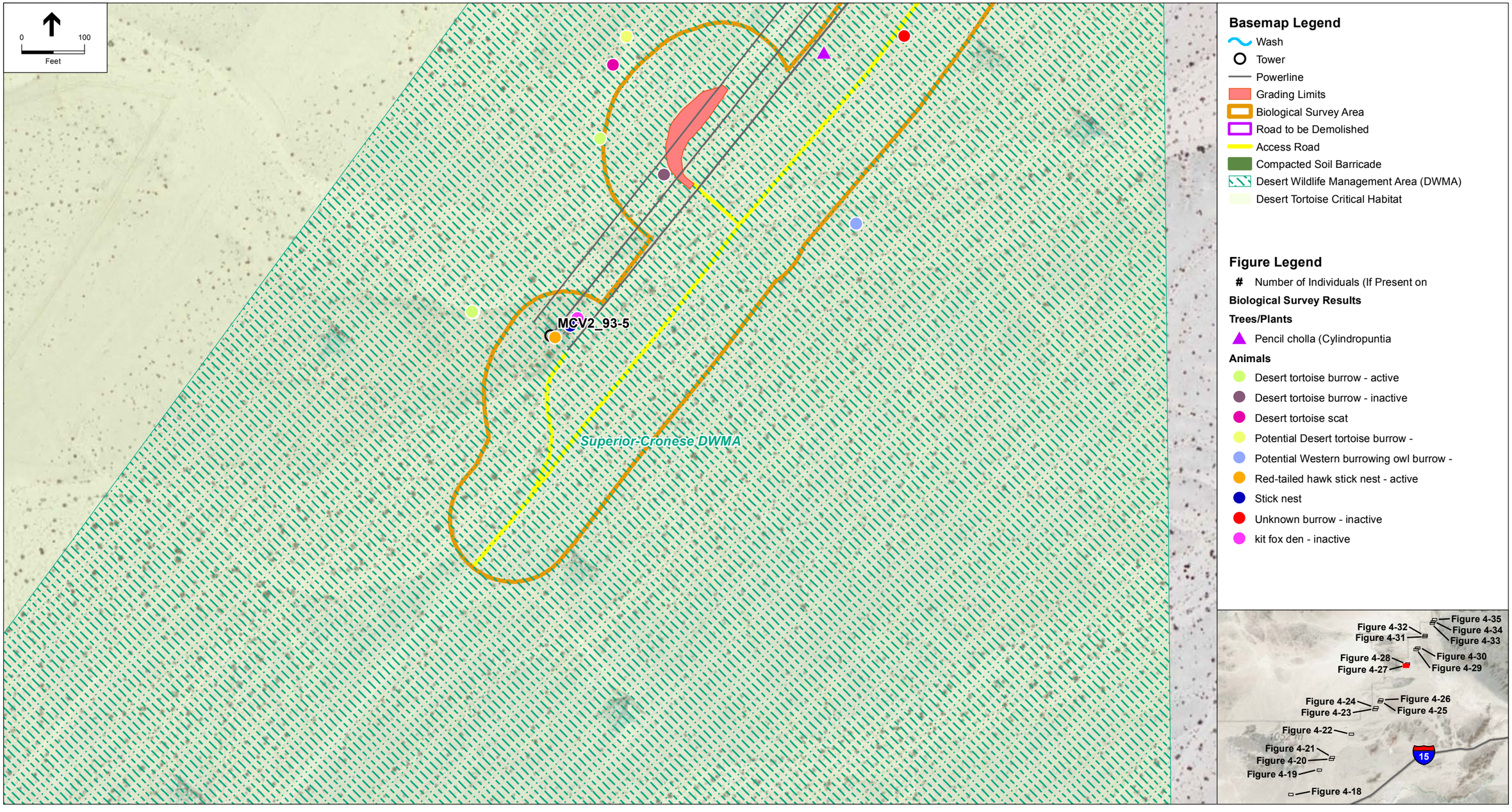
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-26

Biological Survey Results

Segment 4

MCV2 97-1



Source: ESRI Imagery

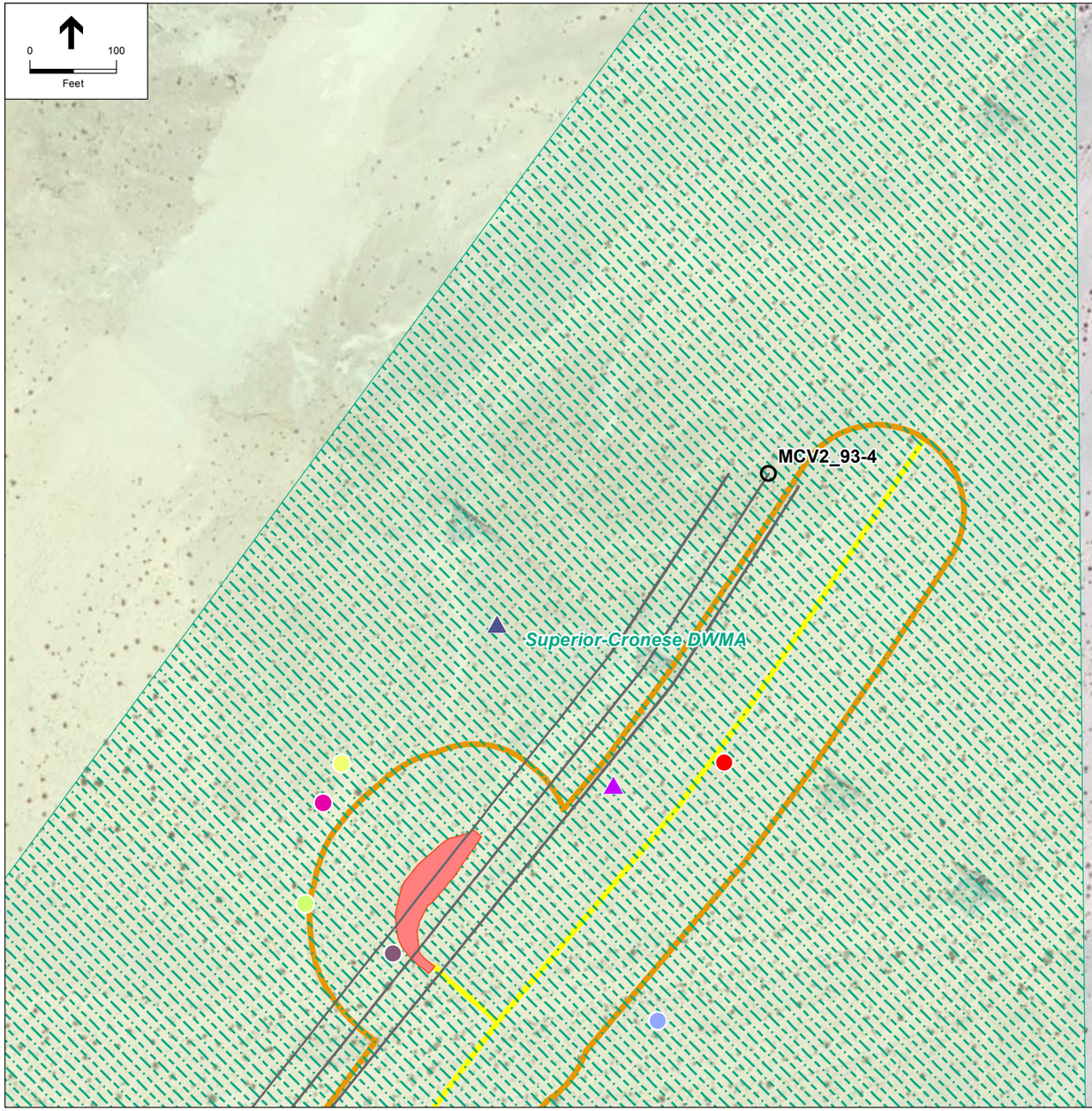
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-27

Biological Survey Results

Segment 4

MCV2 93-5



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Wildlife Management Area (DWMA)
- Desert Tortoise Critical Habitat

Figure Legend

- # Number of Individuals (If Present on Figure)

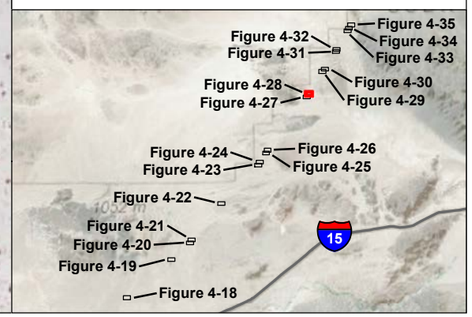
Biological Survey Results

Trees/Plants

- Barrel Cactus (Ferocactus cylindraceus)
- Pencil cholla (Cylindropuntia ramosissima)

Animals

- Desert tortoise burrow - active
- Desert tortoise burrow - inactive
- Desert tortoise scat
- Potential Desert tortoise burrow - active
- Potential Western burrowing owl burrow - active
- Unknown burrow - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-28

Biological Survey Results

Segment 4

MCV2 93-4

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

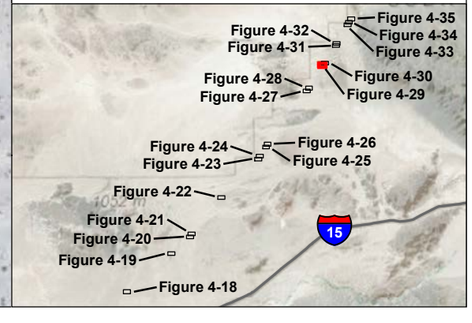
Figure Legend

\# Number of Individuals (If Present on

Biological Survey Results

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-29

Biological Survey Results

Segment 4

MCV1 92-4

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

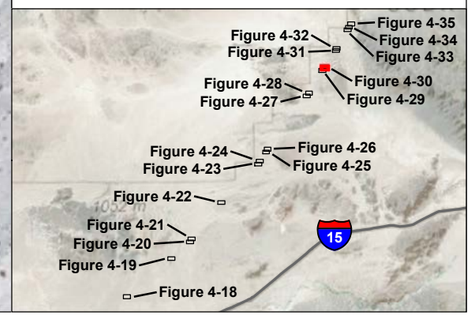
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

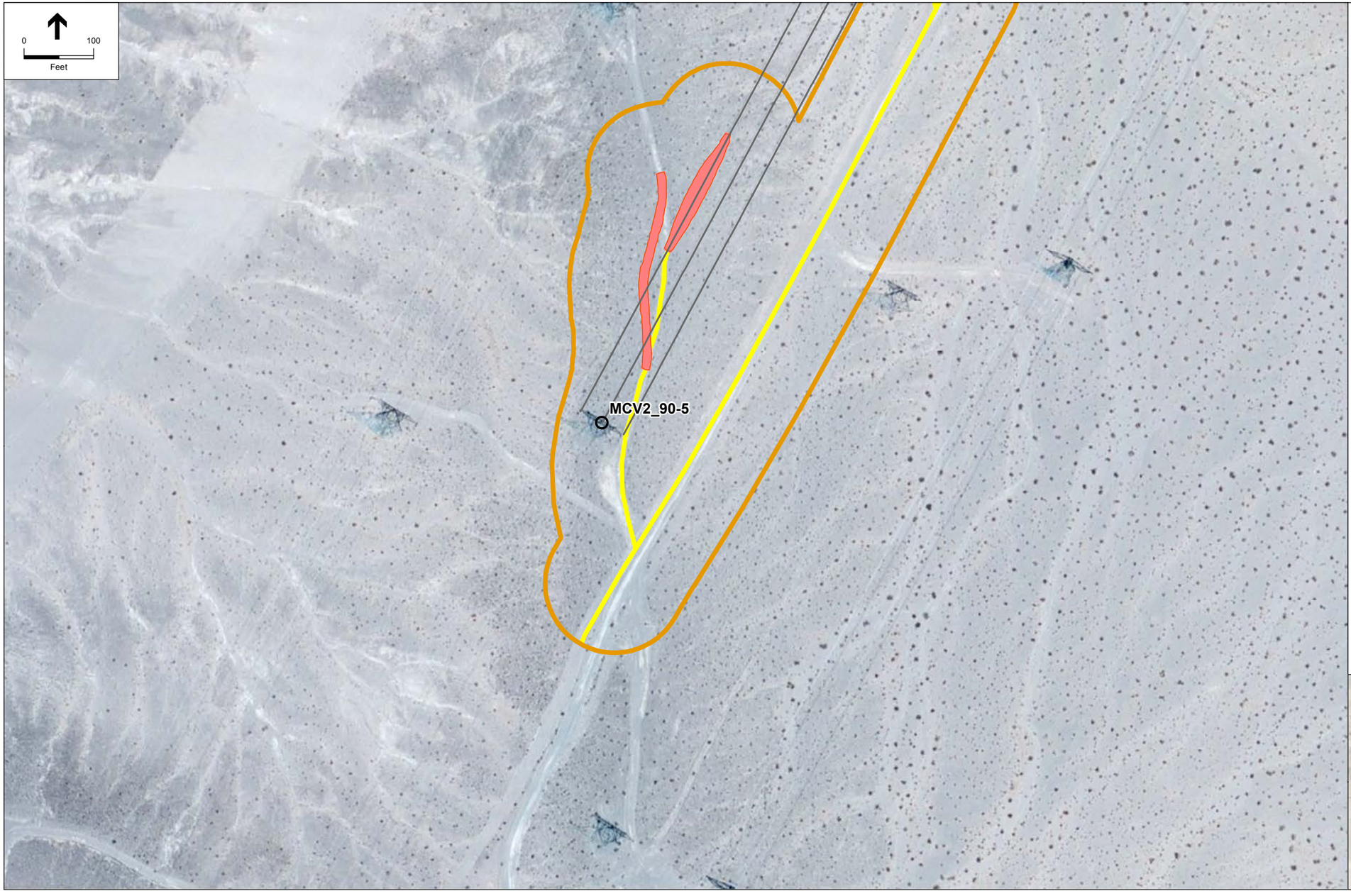
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-30

Biological Survey Results

Segment 4

MCV1 92-4

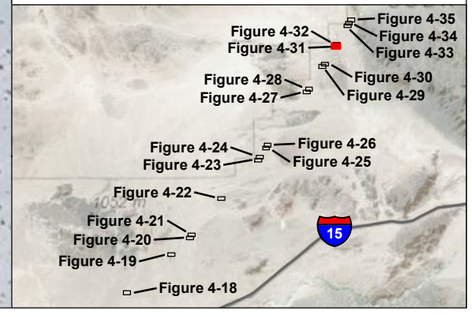


Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

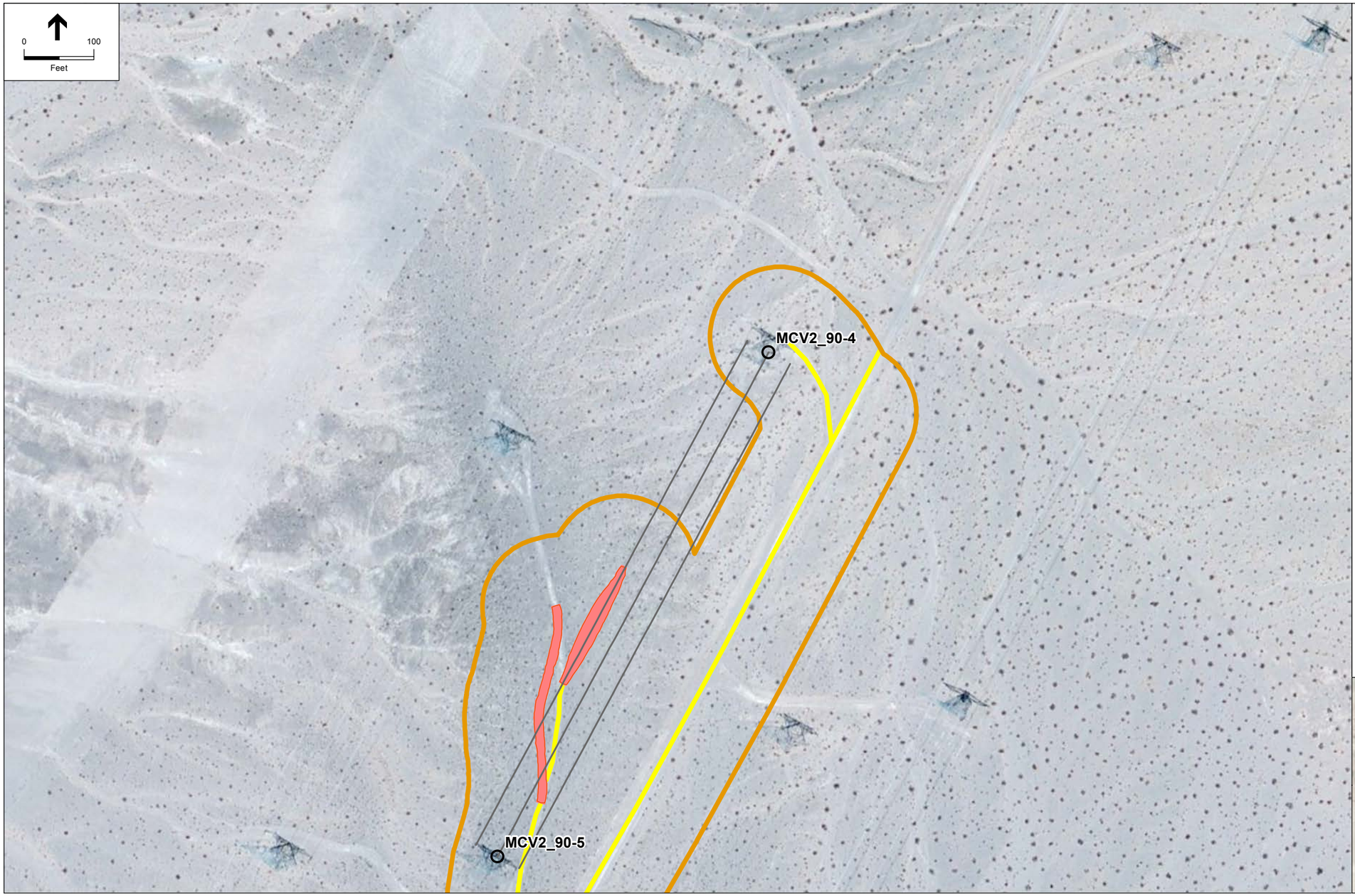
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-31

Biological Survey Results

Segment 4

MCV2 90-5

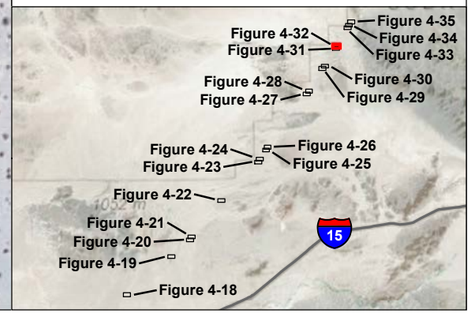


Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

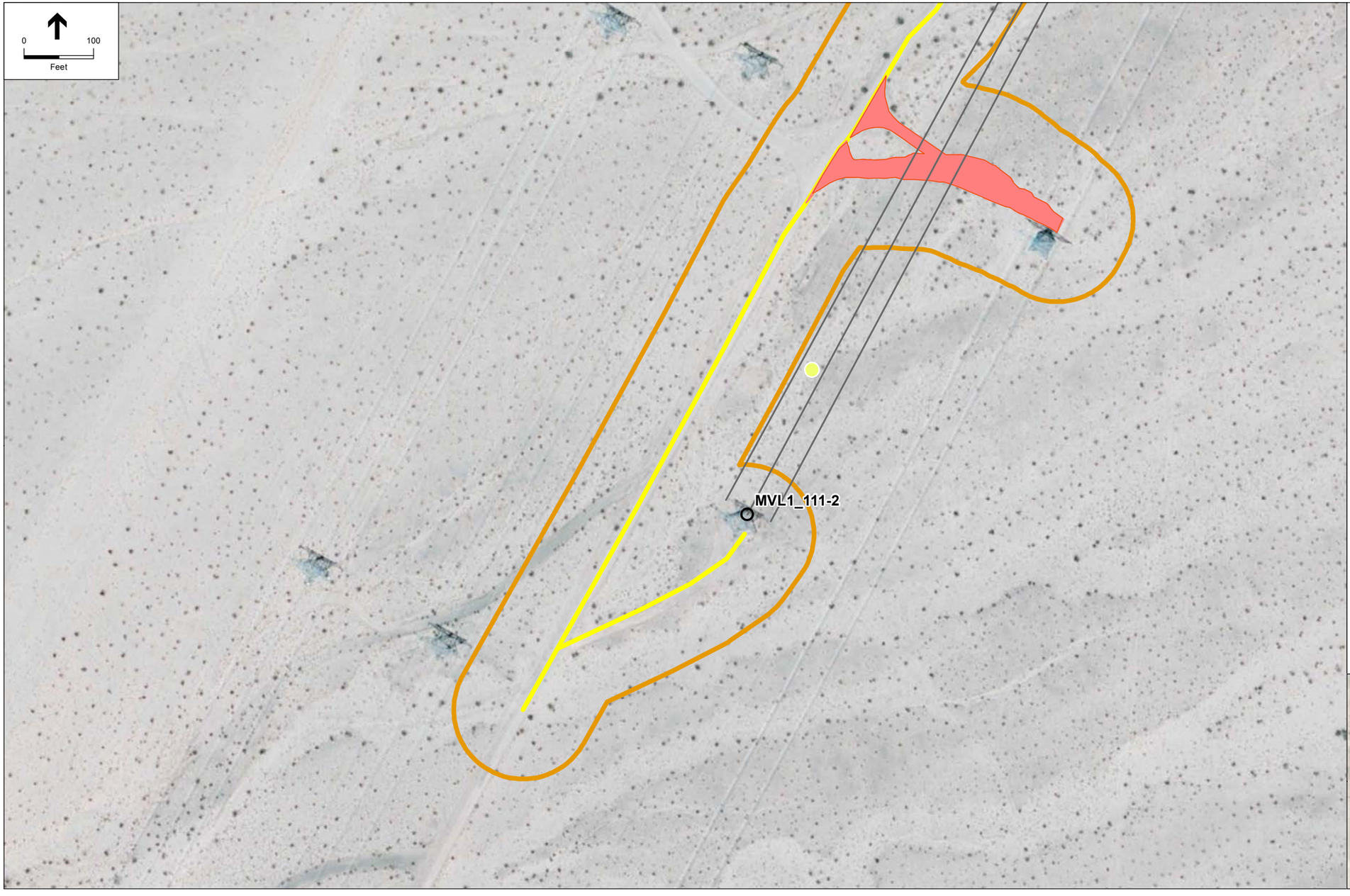
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-32

Biological Survey Results

Segment 4

MCV2 90-4



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

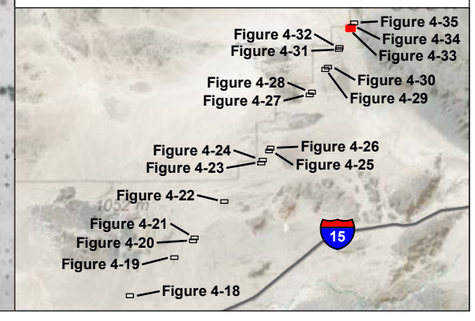
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Potential Desert tortoise burrow - active



Source: ESRI Imagery

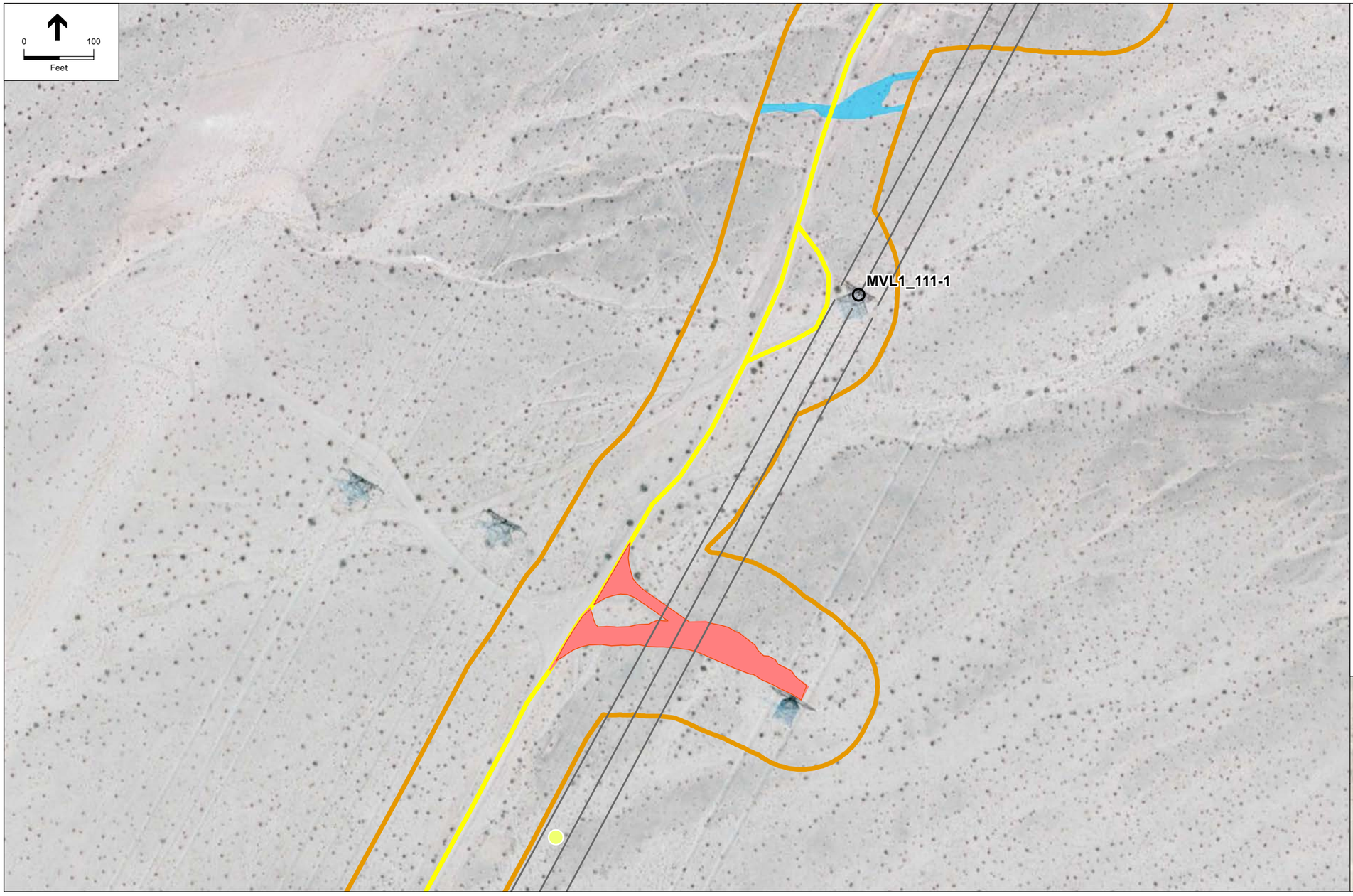
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-33

Biological Survey Results

Segment 4

MVL1 111-2



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

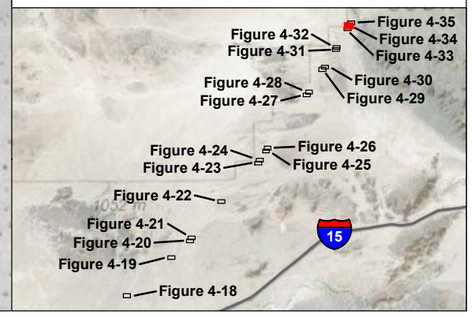
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Potential Desert tortoise burrow - active



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-34

Biological Survey Results

Segment 4

MVL1 111-1

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Desert Tortoise Critical Habitat

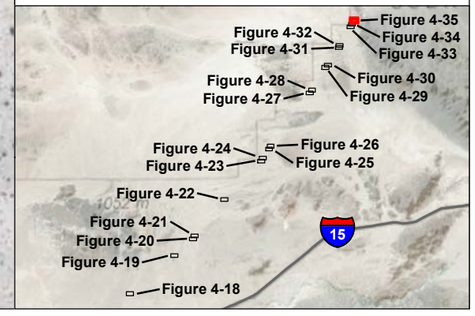
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Desert tortoise burrow - inactive
- Kit fox den - active
- Kit fox scat
- Potential Western burrowing owl burrow - active
- Potential kit fox den - active
- Potential kit fox den - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-35

Biological Survey Results

Segment 4

MVL1 110-5

Segment 5

Segment 5 of the Project is the longest, extending approximately 25 miles from Red Pass Lake to the northeast, approximately 6 miles beyond SR 127 (Figures 2-5 and 3-5). Elevation ranges from 881 feet to 2,199 feet amsl. Segment 5 has fewer disturbances and development than in Segments 1 through 4. The land surrounding the survey areas within Segment 5 consists of undeveloped open space to the north, south, east, and west. Within the survey areas, existing development consists of the transmission towers and unpaved roads, including Powerline Road, access roads, and spur roads. Segment 5 is relatively flat and surrounded by rocky hills and mountains. It is characterized by dunes created by large amounts of blowing sand, which comes from a variety of dry lake beds in the area.

Plant Species and Vegetation Communities

Vegetation within the limits of APE generally consists of a disturbed Mojave creosote bush scrub community with rocky soils dominated by creosote bush and burrobush. Other common native species observed within this APE include desert tea, desert trumpet, saltbush, and cheesebush. The Mojave creosote scrub community contains a disturbed understory dominated by annual non-native grasses such as red brome, cheat grass, common Mediterranean grass, Asian mustard, and short-pod mustard.

Common Wildlife

The APE within Segment 5 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed during the survey include western whiptail, zebratail lizard, and desert iguana. Common avian species observed during the surveys include turkey vulture, rock wren, orange-crowned warbler (*Oreothlypis celata*), Townsend's warbler (*Setophaga townsendi*), and black-throated sparrow. Mammal species observed during the surveys include black-tailed jackrabbit and coyote.

Sensitive Biological Resources

Sensitive Vegetation Communities

The CNDDB did not identify any sensitive plant communities that occur within the Red Pass Lake, West of Baker, and North of Baker USGS 7.5-minute topographic quadrangles. No sensitive plant communities were observed in the APE during the reconnaissance-level surveys; therefore, no impacts would occur.

Sensitive Plant Species

No sensitive plant species were observed during the rare plant surveys. The potential for occurrence of special-status plant species within the proposed impact areas is low based on the level of existing disturbance/development within the limits of the majority of proposed work areas (i.e., existing roads used for access, marked for grading, and designated for spoils distribution).

Seven native species protected under the California Desert Native Plants Act—Desert holly saltbush, silver cholla, pencil cholla, cottontop barrel cactus, strawberry cactus (*Mammilaria dioica*), beavertail cactus, and Mojave yucca—were observed during the biological surveys. Of

these species, only two were in the vicinity of any impact area: one silver cholla near the excavation area east of tower MCV1 66-6 and one beavertail cactus near the excavation area between towers MCV1 88-5 and MCV1 89-1. The other species do not occur within or in the vicinity of the proposed impact areas and were, therefore, not mapped.

Sensitive Wildlife Species

The APE within Segment 5 provides moderate to high-quality habitat for the federal and state threatened desert tortoise. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. No desert tortoise or sign were observed within the APE during the focused species survey; however, there is a moderate to high potential for the species to occupy the work area prior to ground disturbance based on the presence of suitable habitat and historical records within the vicinity (CNDDB 2014).

The APE also provides moderately suitable habitat for several species which are listed as California Species of Special Concern or considered sensitive by CDFW. A total of 13 inactive kit fox dens or potential dens, and three active dens were observed during biological surveys. Two of these kit fox dens were located in the vicinity of impact areas: one active den near the excavation area between towers MCV1 87-2 and MCV1 87-3 (Figure 4-43), and two inactive dens between towers MCV1 86-3 and 86-4 (Figure 4-47). No signs of the burrowing owl or American badger (scat, tracks, burrows, prey remains, etc.) were observed in the APE within Segment 5.

Segment 5 provides suitable nesting habitat for a number of shrub- and ground-nesting special-status avian species. Loggerhead shrike and LeConte's thrasher, both California Species of Special Concern, were observed within Segment 5. The transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including common raven and red-tailed hawk; however, no nests were observed during the surveys.

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

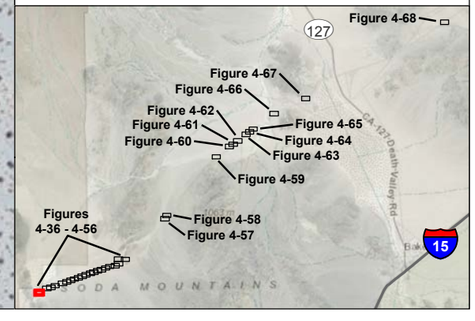
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Beavertail (Opuntia basilaris)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-36

Biological Survey Results

Segment 5

MCV1 88-5

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

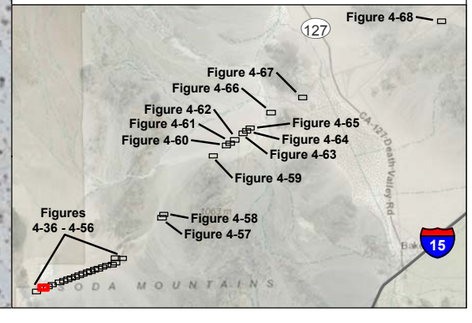
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den - inactive



Source: ESRI Imagery

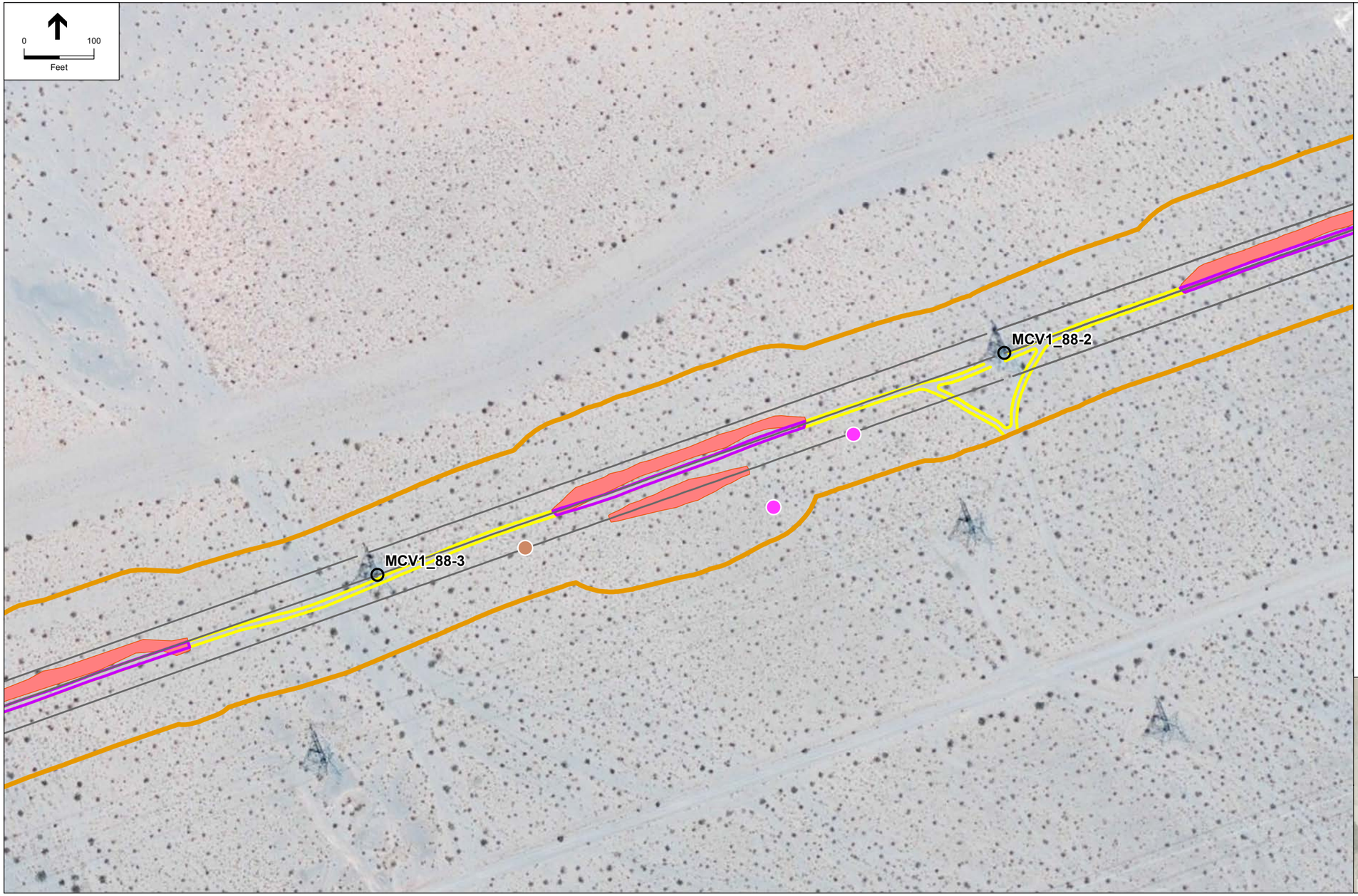
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-37

Biological Survey Results

Segment 5

MCV1 88-3



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

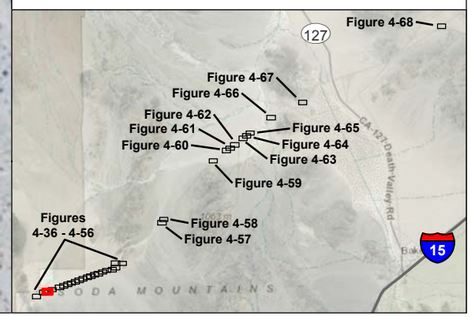
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den - active
- Kit fox den - inactive



Source: ESRI Imagery

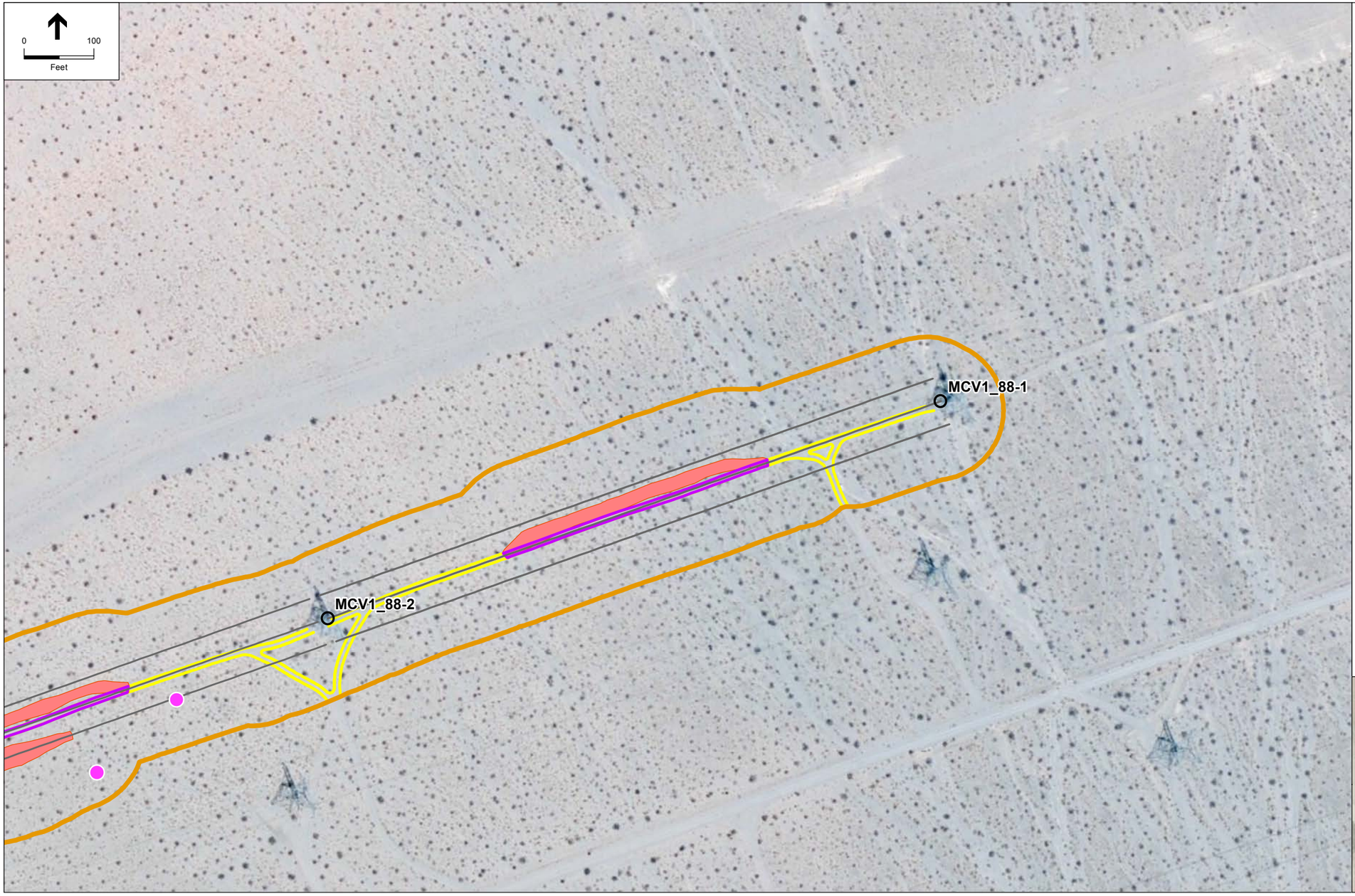
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-38

Biological Survey Results

Segment 5

MCV1 88-2



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

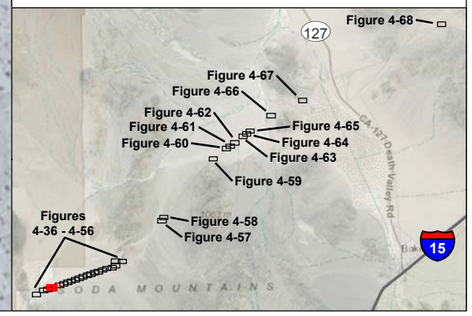
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den - active



Source: ESRI Imagery

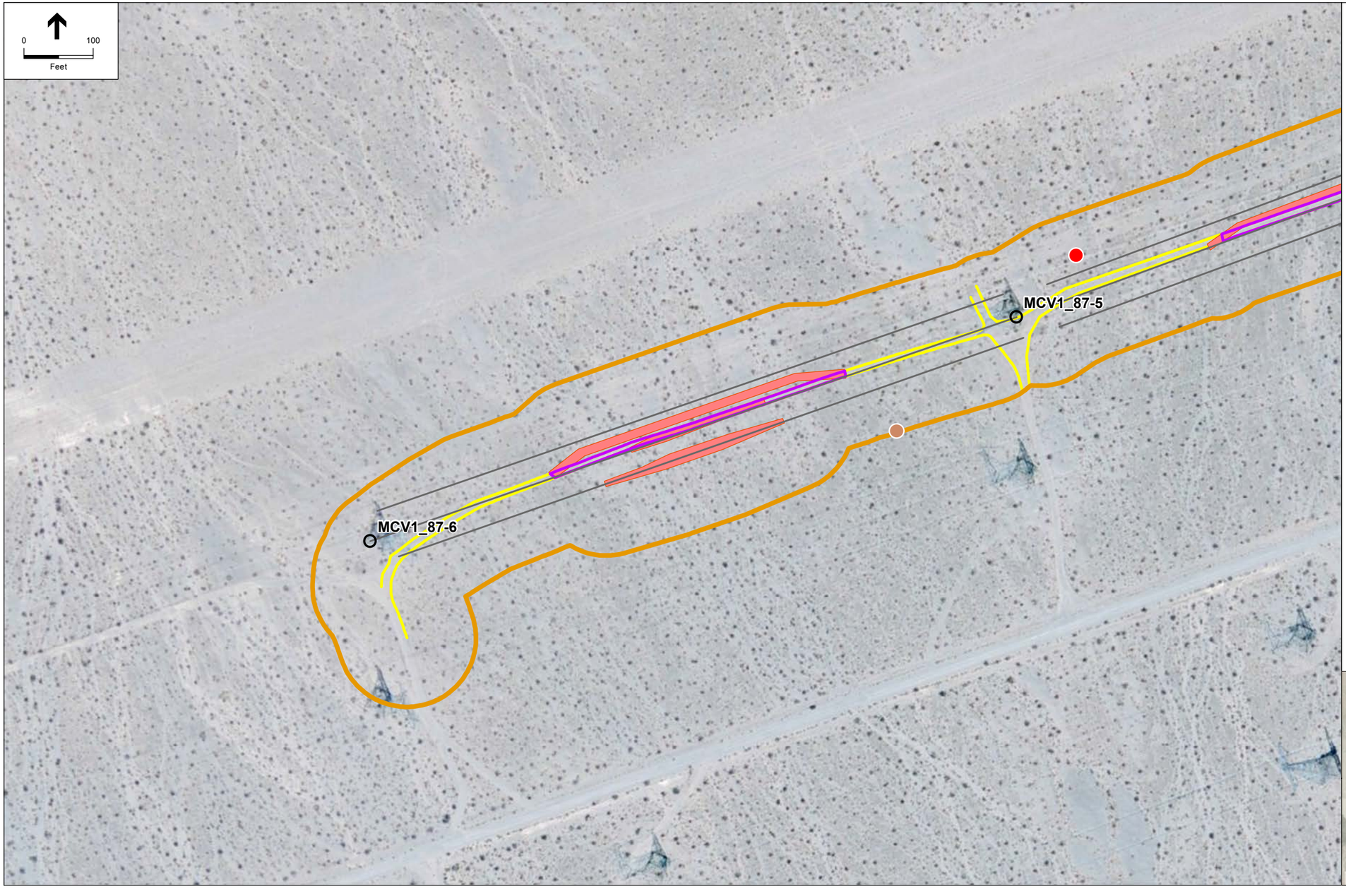
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-39

Biological Survey Results

Segment 5

MCV1 88-1



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

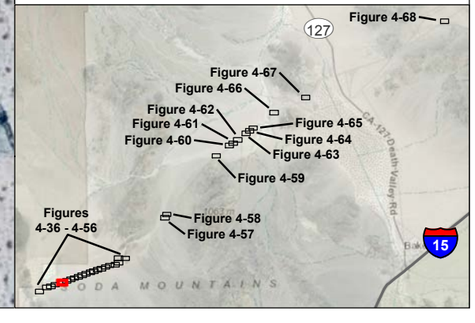
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den - inactive
- Unknown burrow - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-40

Biological Survey Results

Segment 5

MCV1 87-5

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

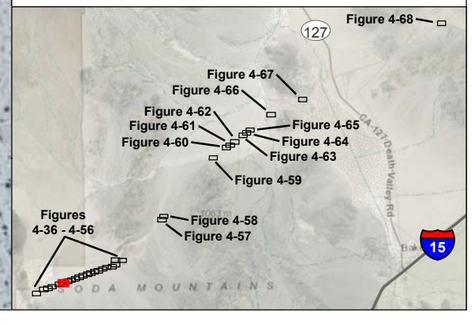
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den - active
- Kit fox den - inactive
- Unknown burrow - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-41

Biological Survey Results

Segment 5

MCV1 87-4

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

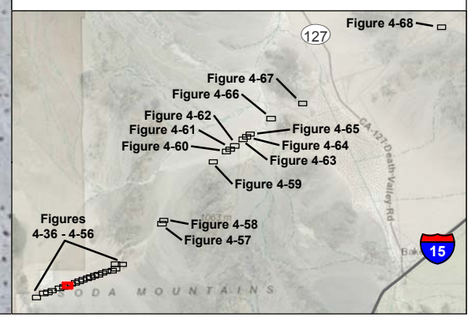
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den - active
- Kit fox den - inactive
- Kit fox den complex - active



Source: ESRI Imagery

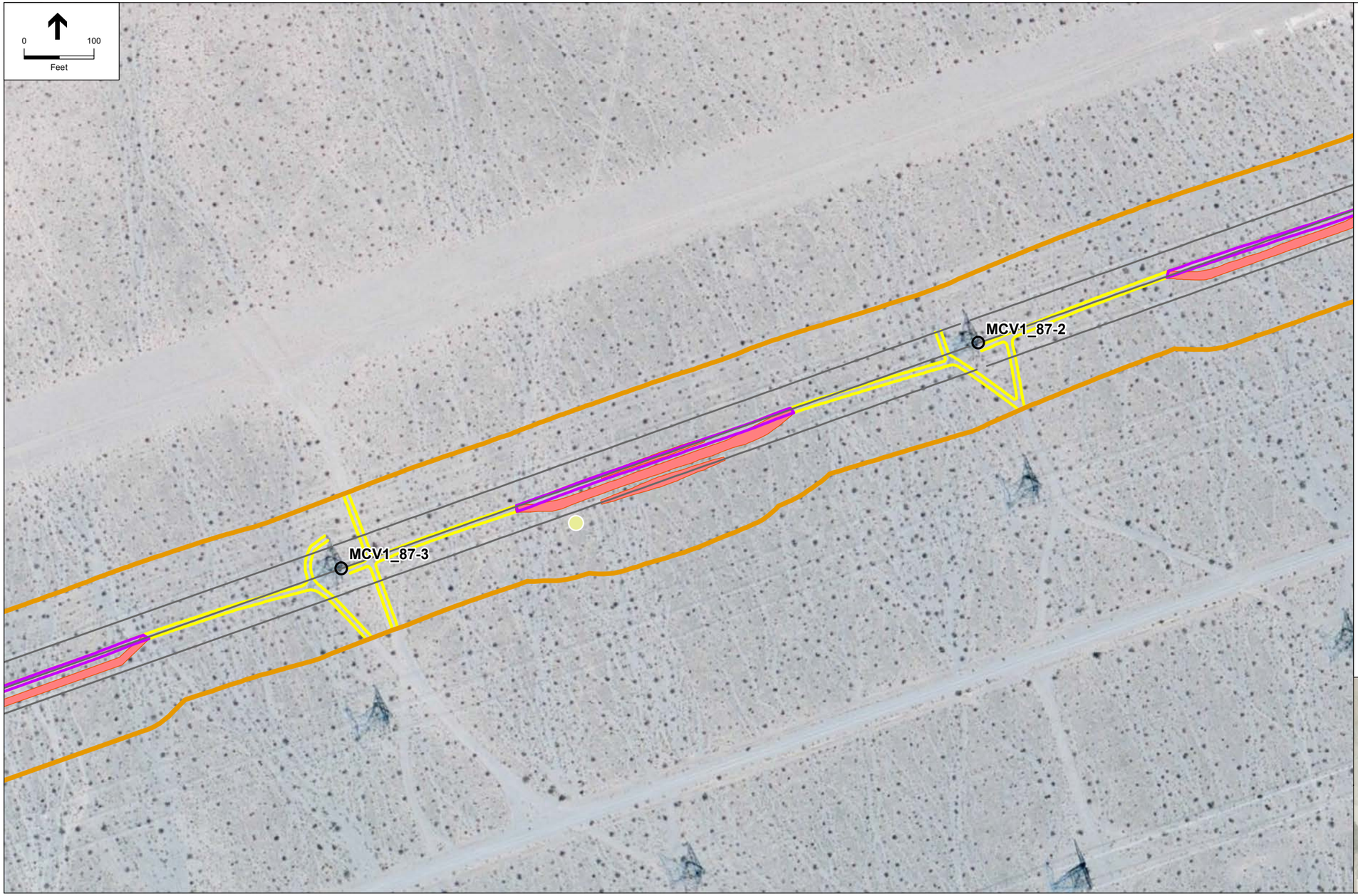
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-42

Biological Survey Results

Segment 5

MCV1 87-3



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

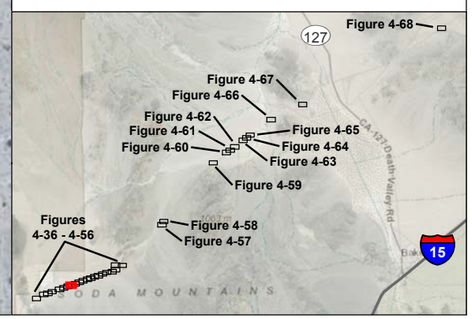
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den complex - active



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-43

Biological Survey Results

Segment 5

MCV1 87-2

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

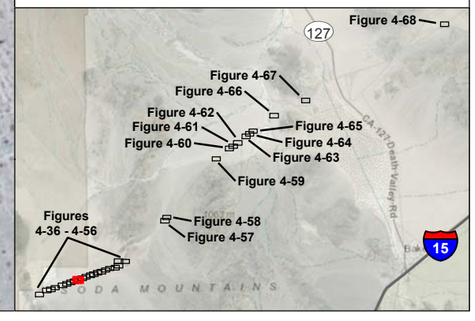
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

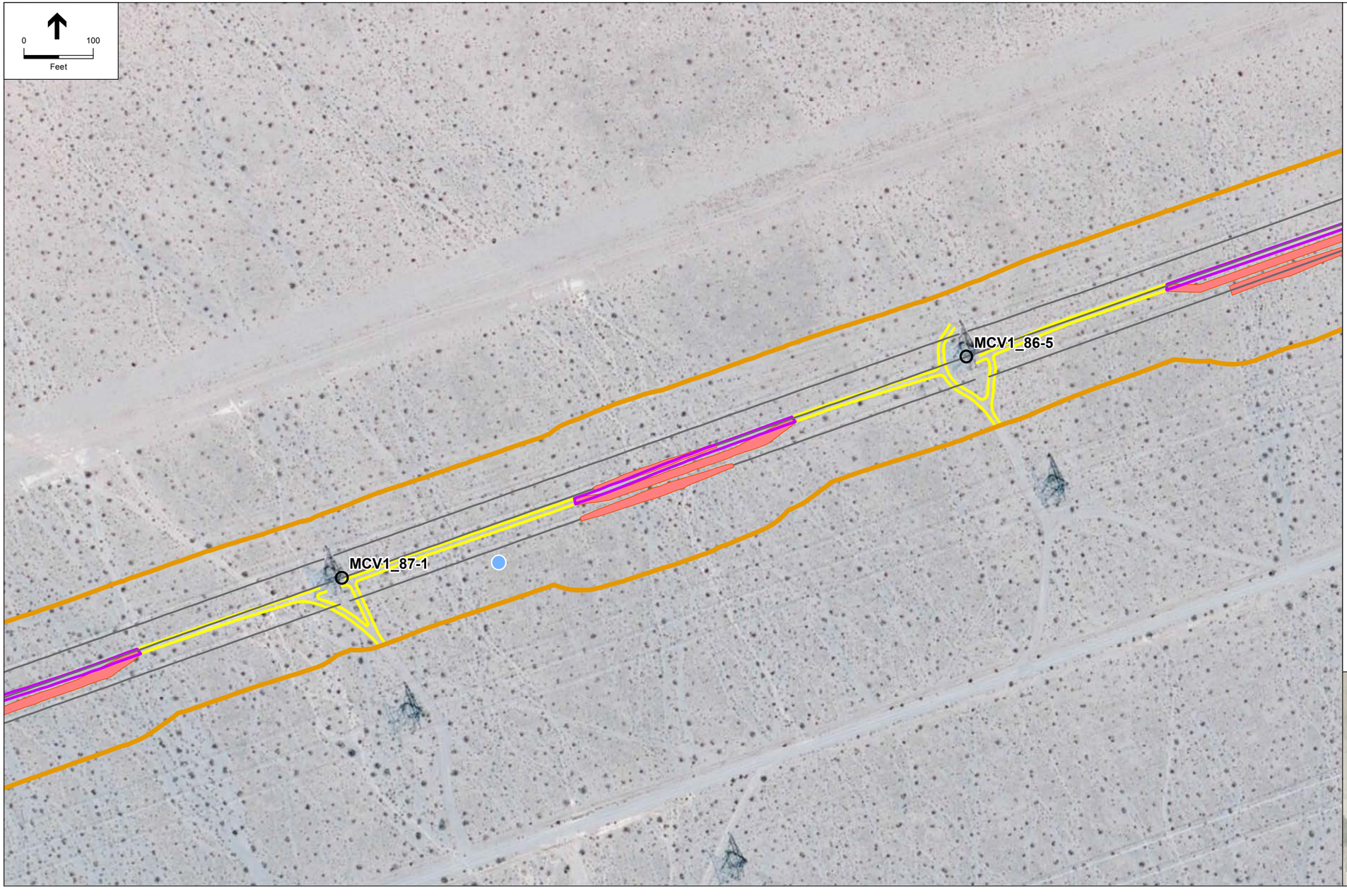
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-44

Biological Survey Results

Segment 5

MCV1 87-1



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

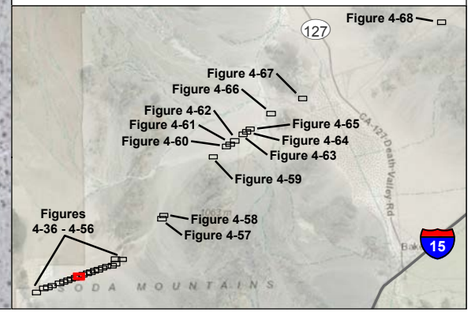
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

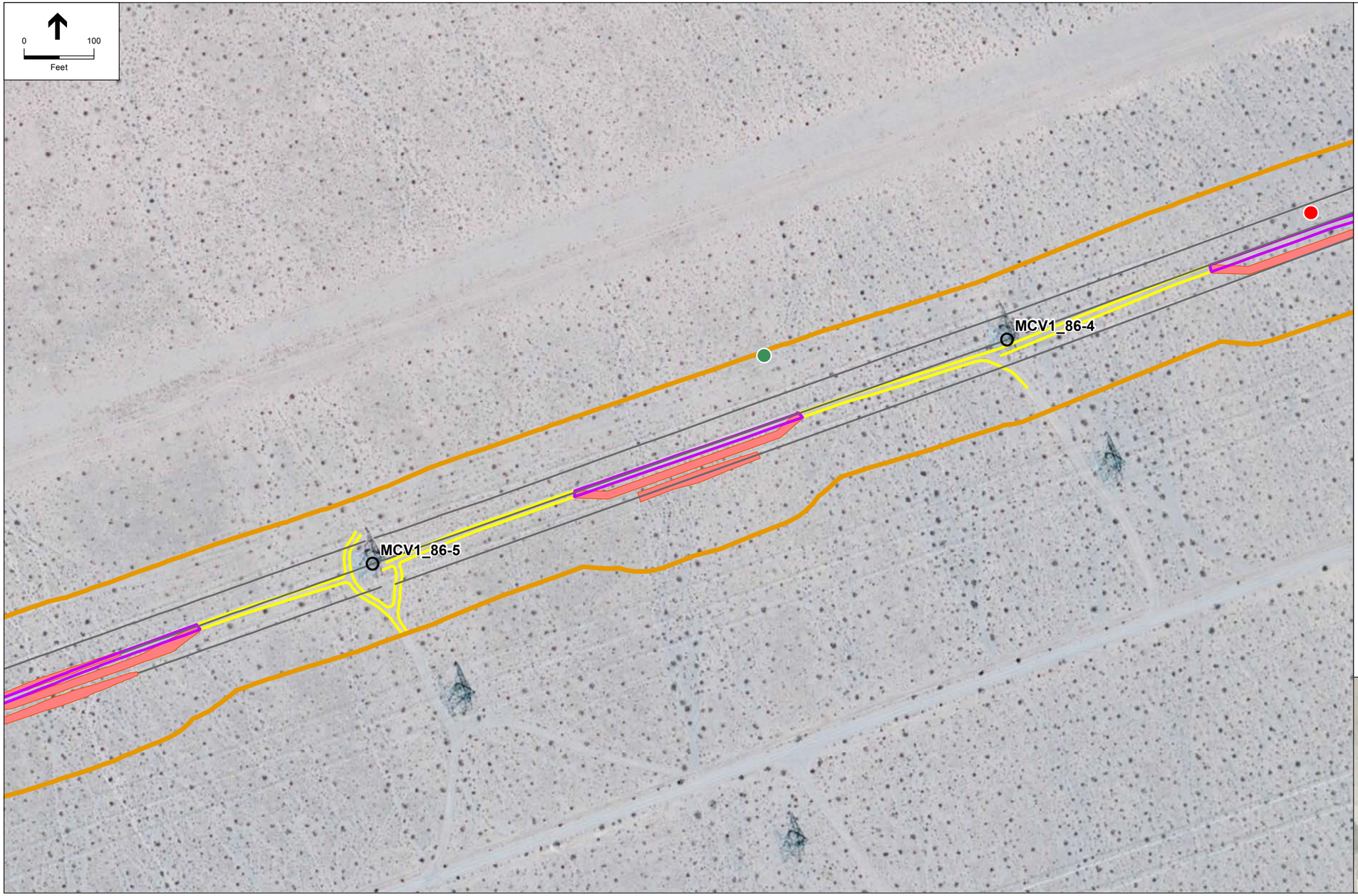
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-45

Biological Survey Results

Segment 5

MCV1 86-5



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

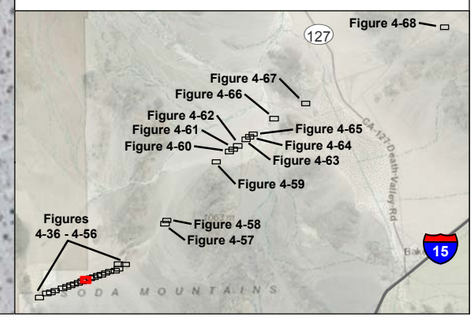
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den complex - inactive
- Unknown burrow - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-46

Biological Survey Results

Segment 5

MCV1 86-4

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

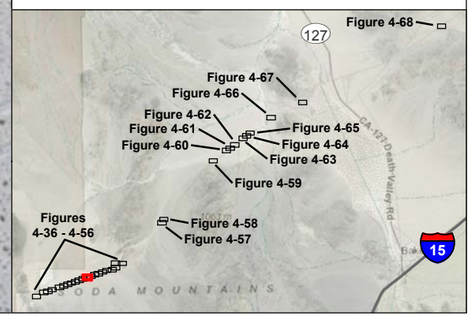
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den complex - inactive
- Potential kit fox den - inactive
- Unknown burrow - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-47

Biological Survey Results

Segment 5

MCV1 86-3

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

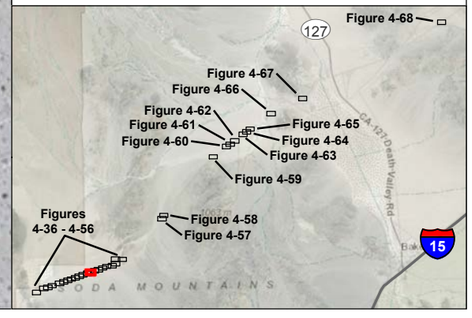
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Potential kit fox den - inactive
- Unknown burrow - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-48

Biological Survey Results

Segment 5

MCV1 86-2

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

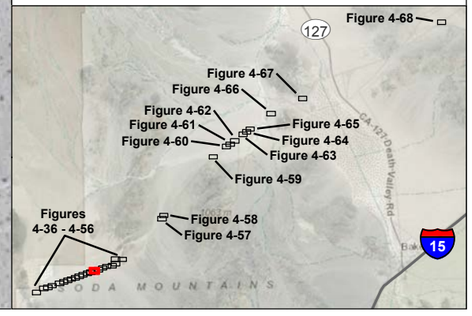
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den - inactive
- Potential kit fox den - inactive



Source: ESRI Imagery

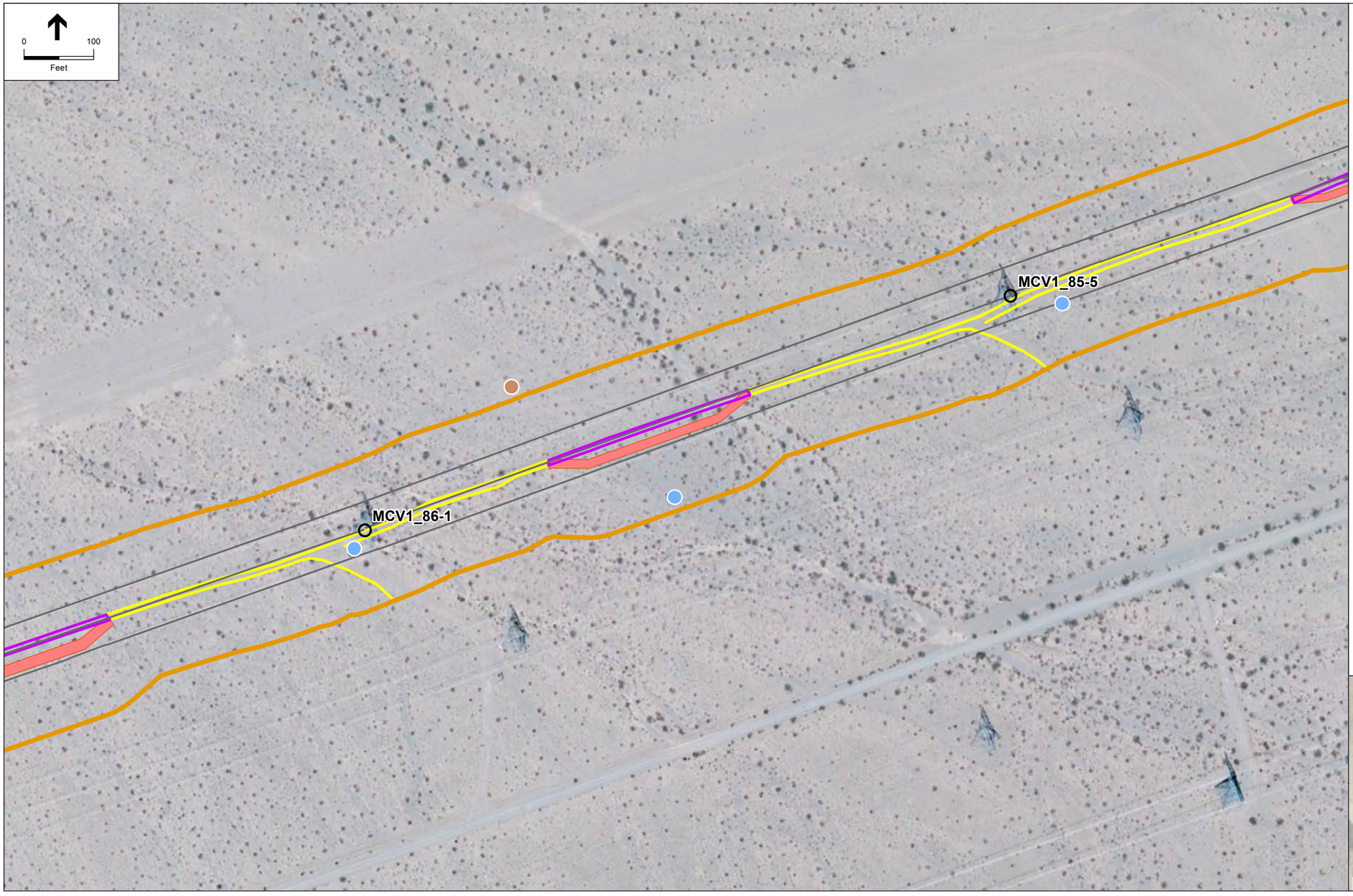
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-49

Biological Survey Results

Segment 5

MCV1 86-1



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

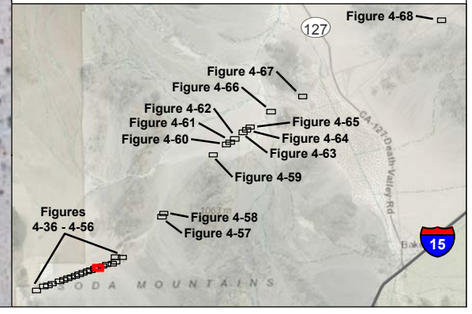
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Kit fox den - inactive
- Potential kit fox den - inactive



Source: ESRI Imagery

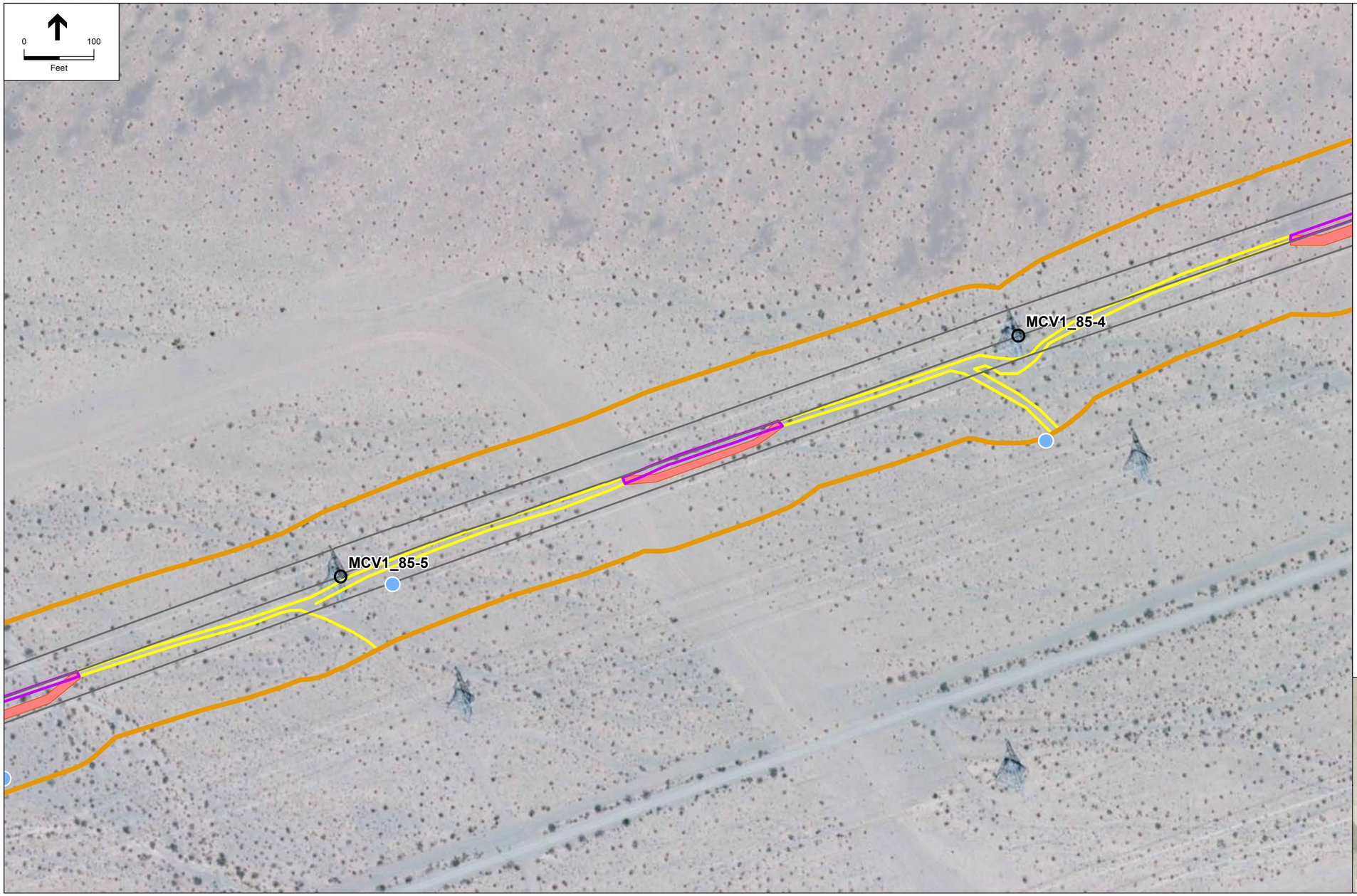
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-50

Biological Survey Results

Segment 5

MCV1 85-5



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

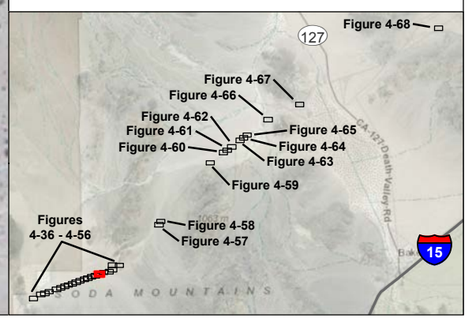
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

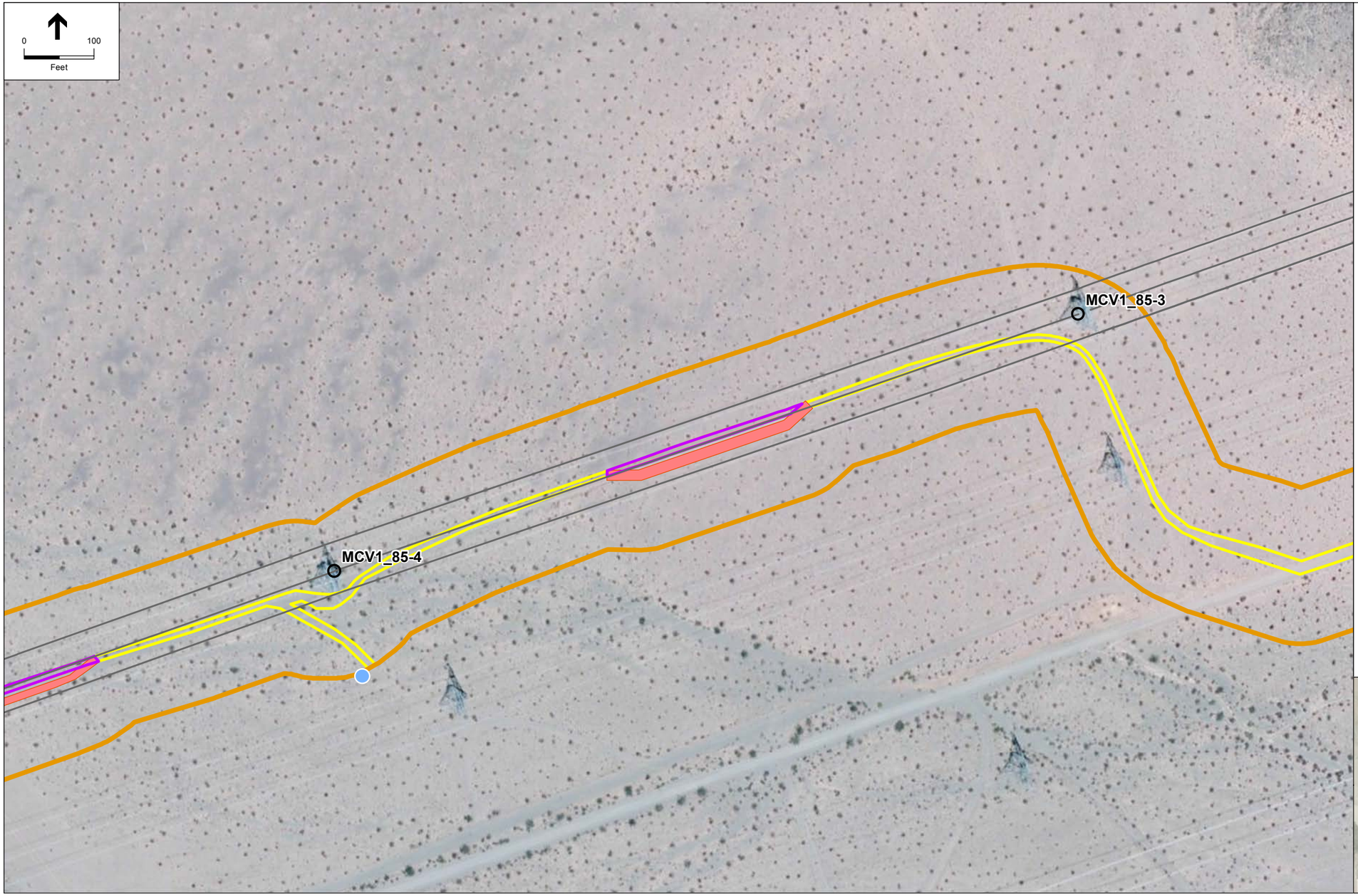
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-51

Biological Survey Results

Segment 5

MCV1 85-4



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

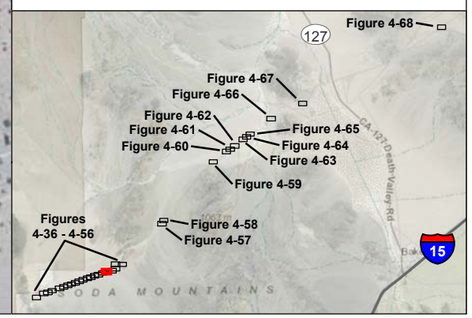
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

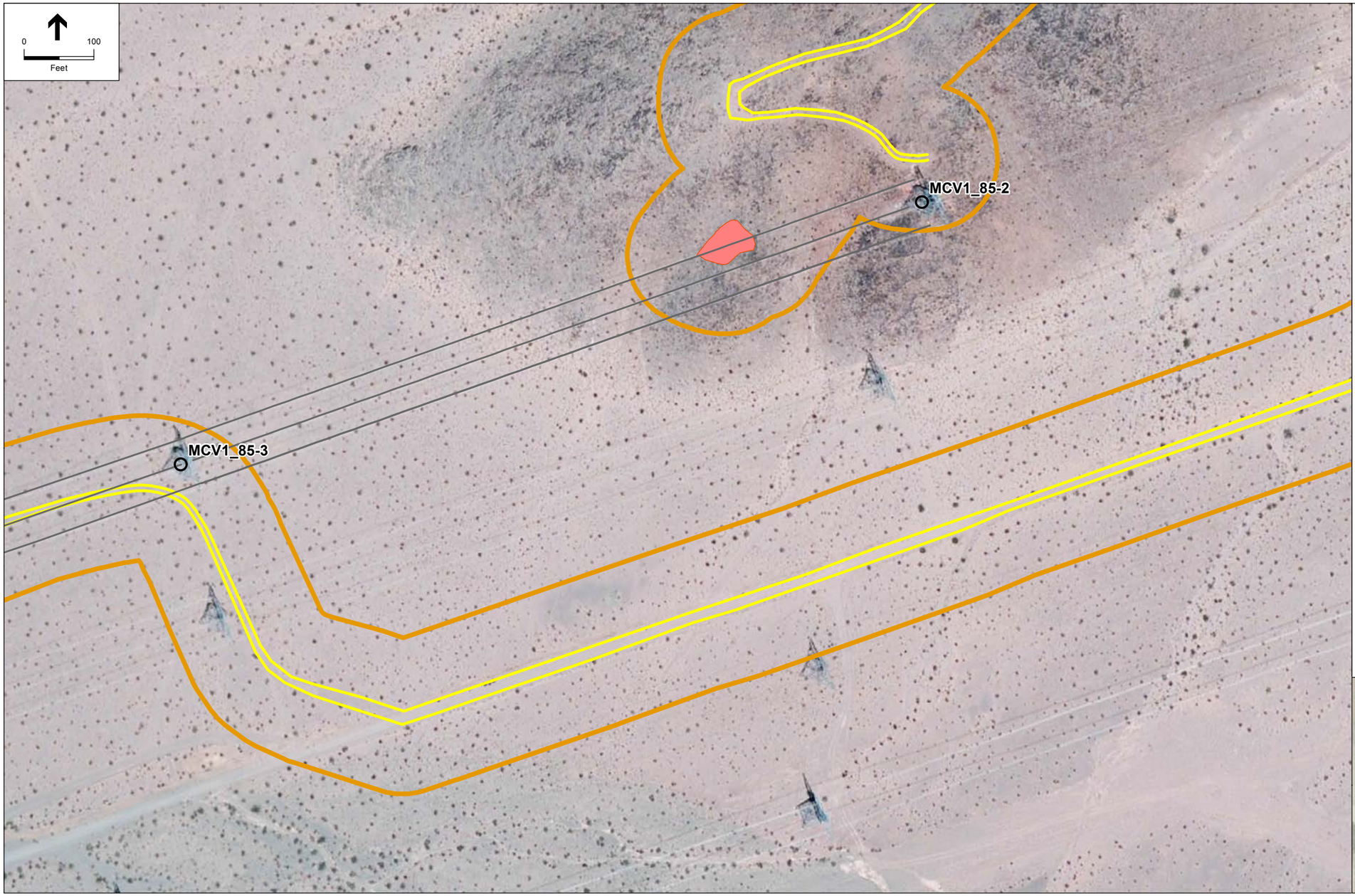
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-52

Biological Survey Results

Segment 5

MCV1 85-3

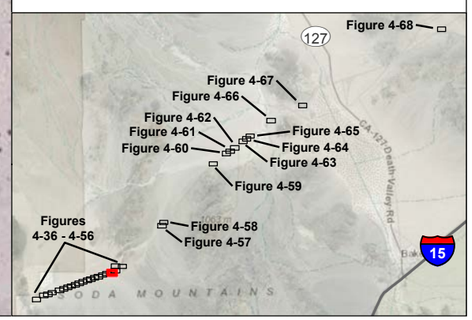


Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-53

Biological Survey Results

Segment 5

MCV1 85-2

0 100
Feet

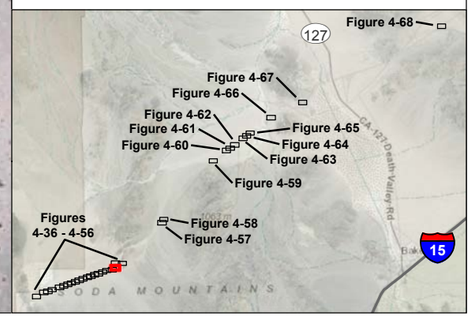
MCV1_85-2

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-54

Biological Survey Results

Segment 5

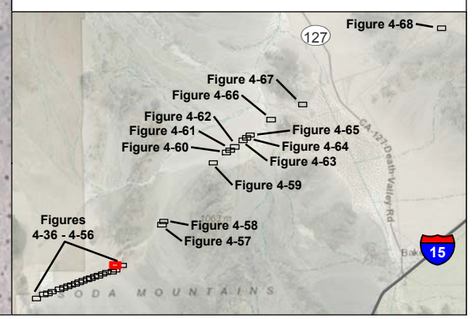
MCV1 85-2

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

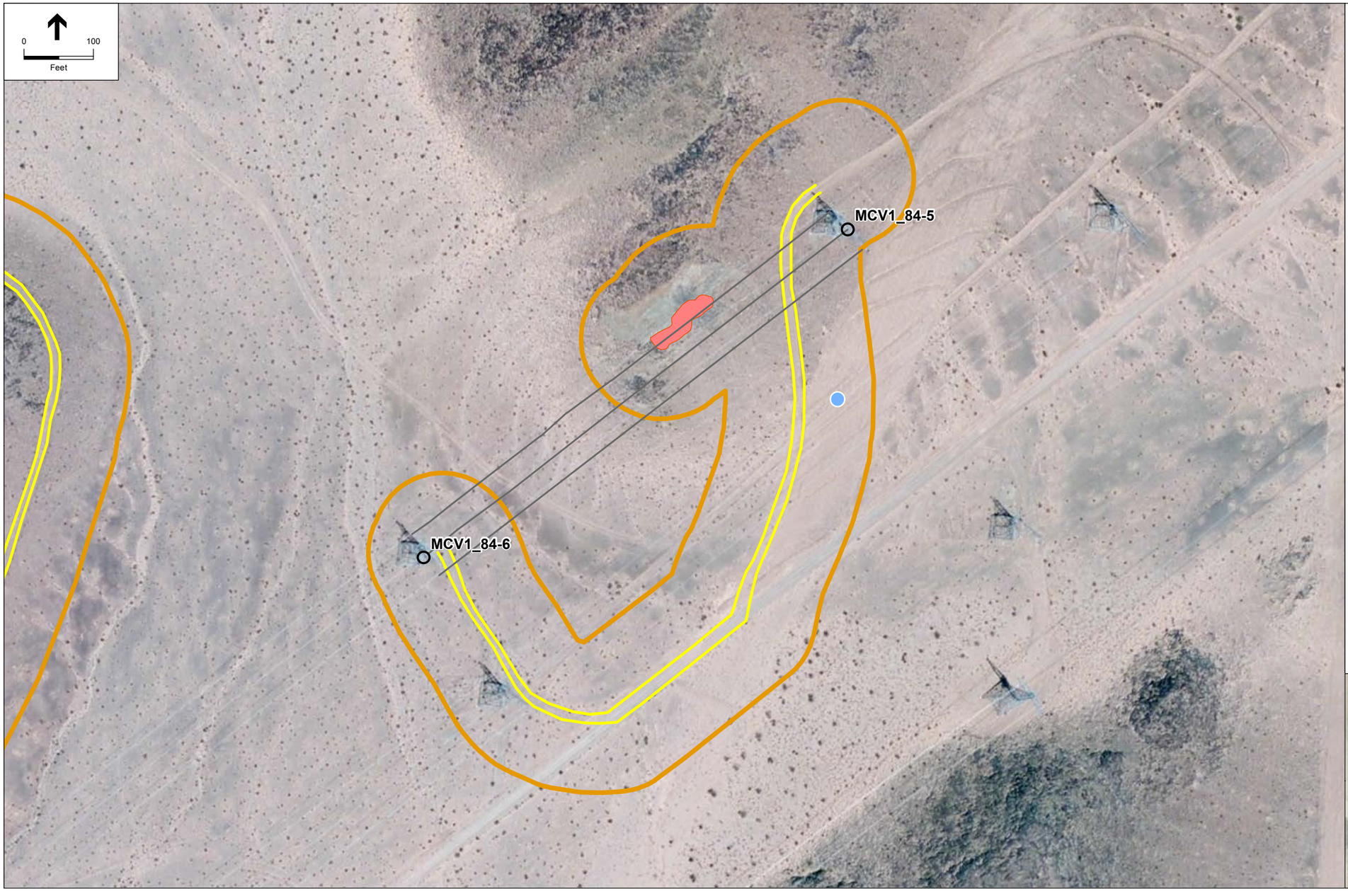
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-55

Biological Survey Results

Segment 5

MCV1 85-2



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

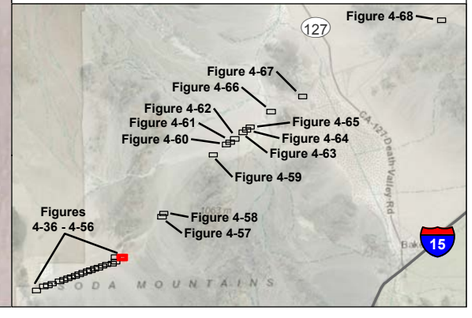
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-56

Biological Survey Results

Segment 5

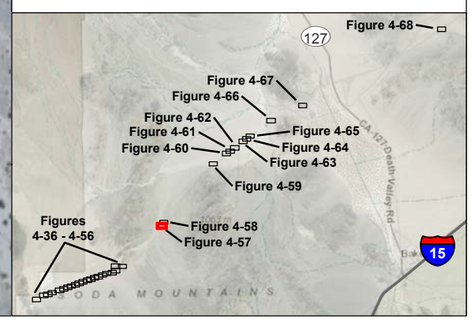
MCV1 84-5

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-57

Biological Survey Results

Segment 5

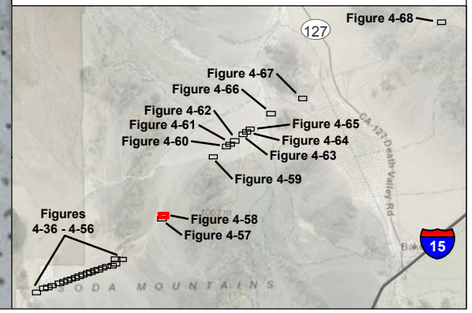
MCV1 82-1

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

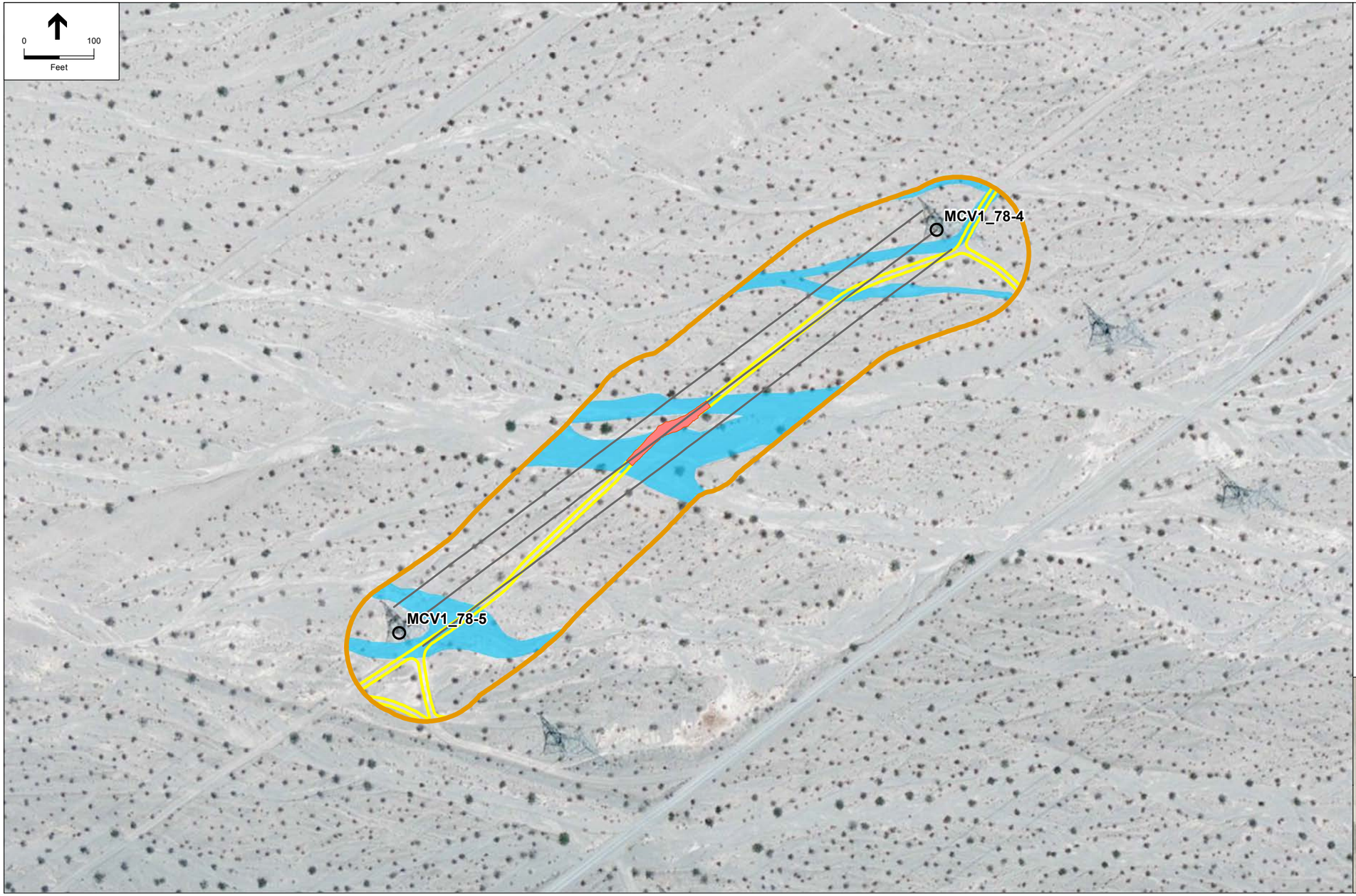
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-58

Biological Survey Results

Segment 5

MCV1 82-1

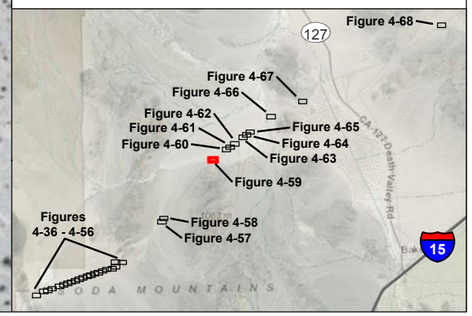


Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

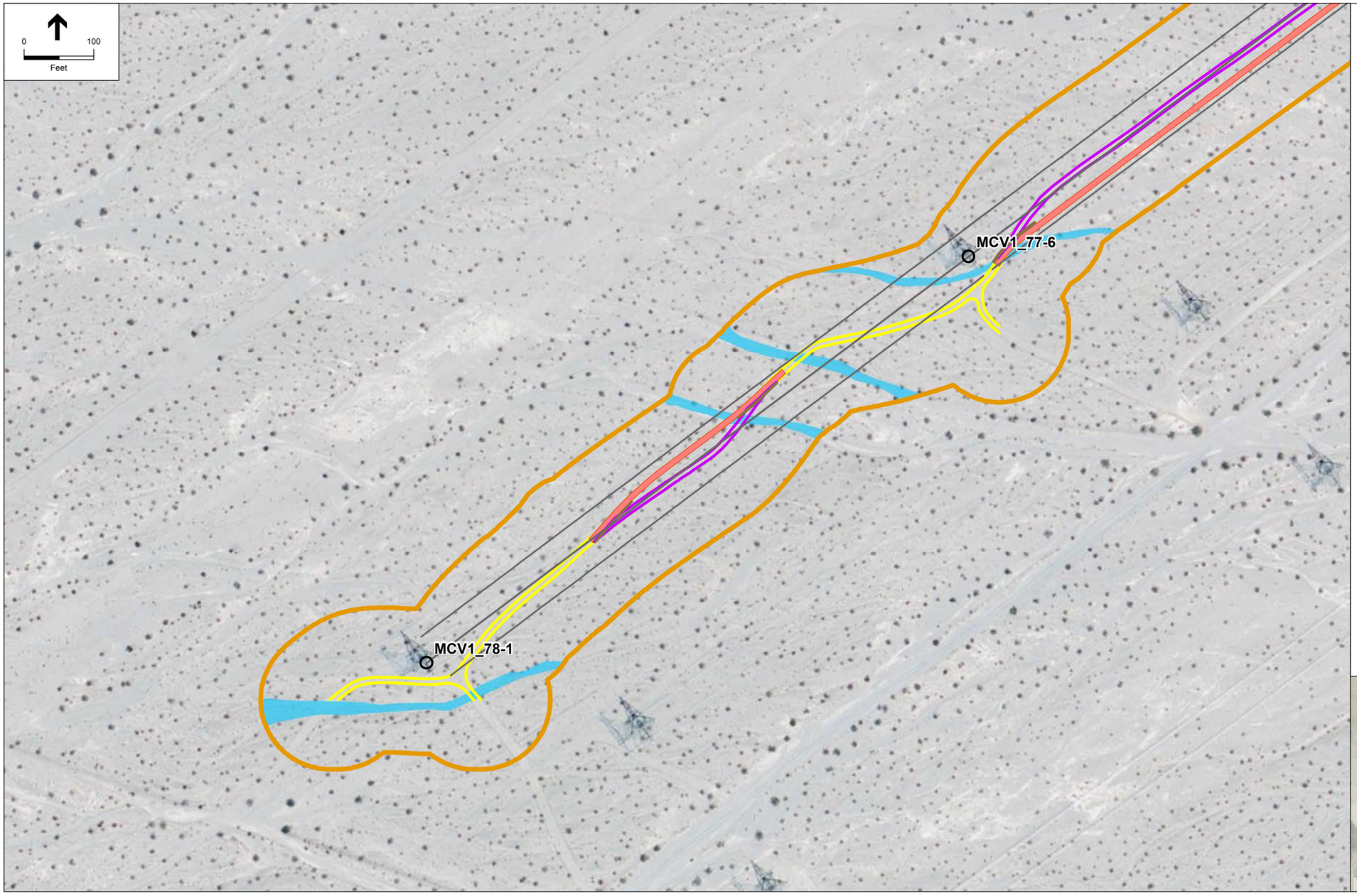
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-59

Biological Survey Results

Segment 5

MCV1 78-4

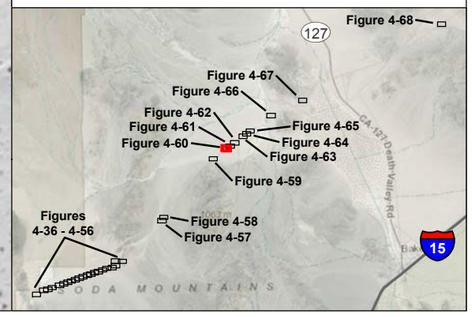


Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade
- Berm

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-60

Biological Survey Results

Segment 5

MCV1 77-6

0 100
Feet

MCV1_77-5

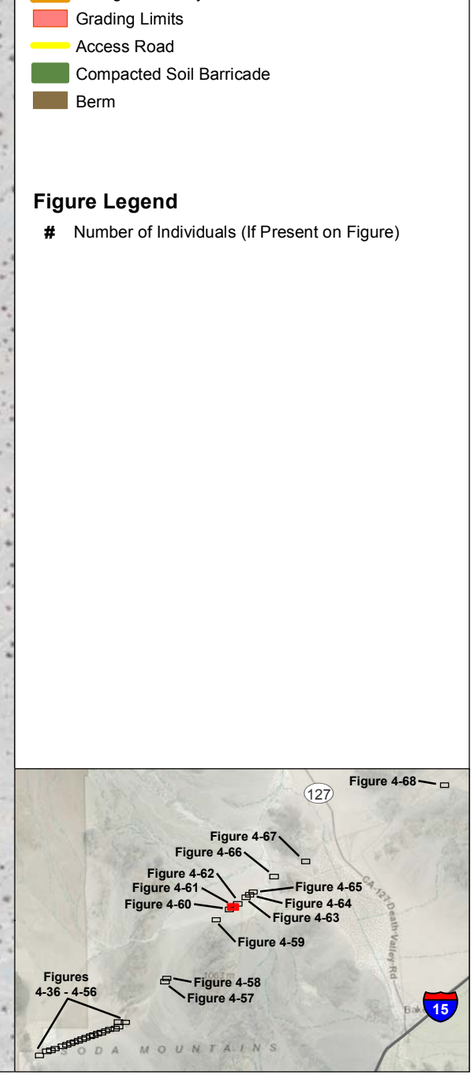
MCV1_77-6

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade
- Berm

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

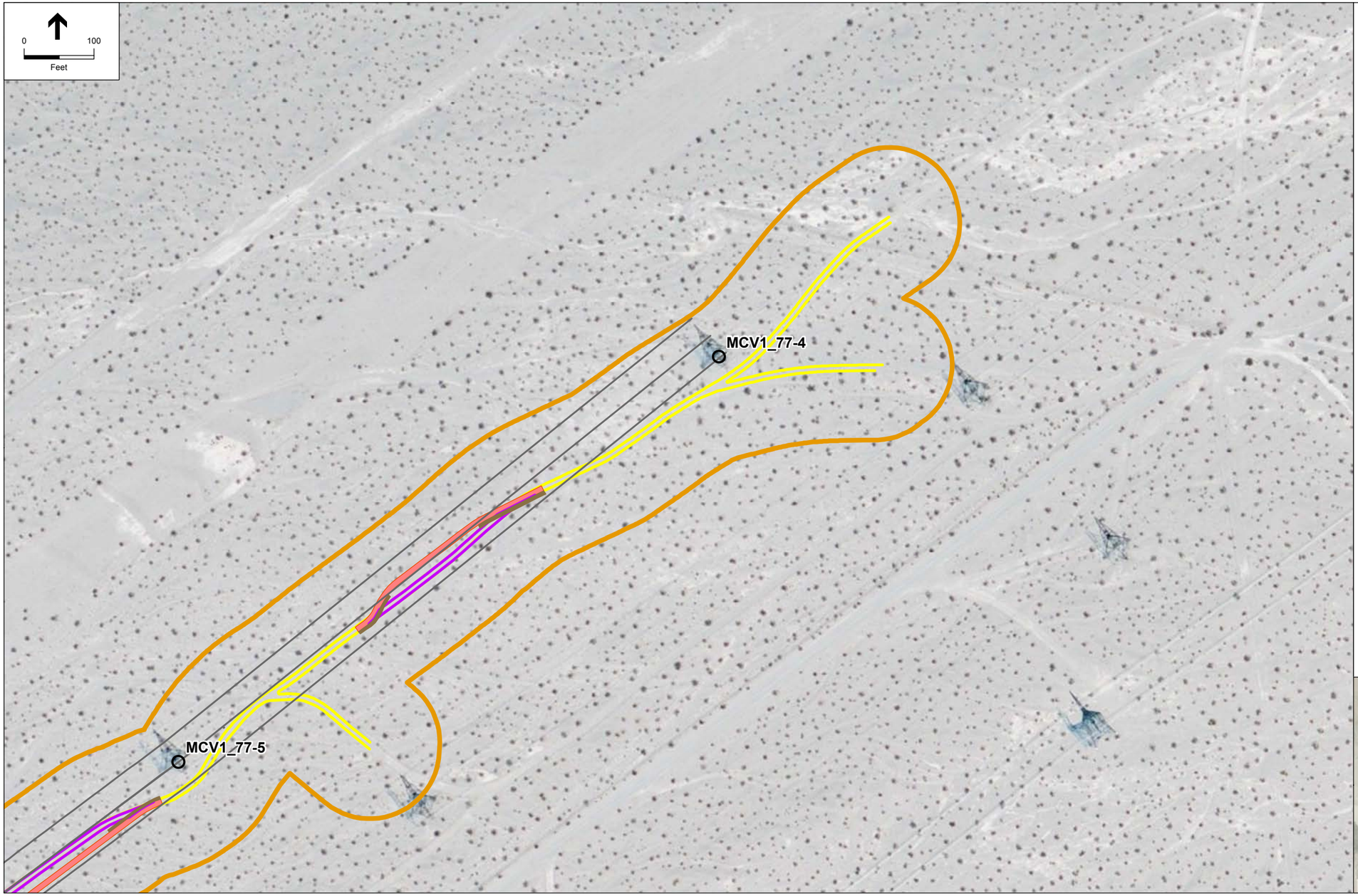
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-61

Biological Survey Results

Segment 5

MCV1 77-5

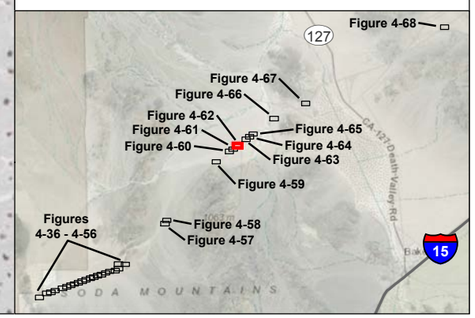


Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade
- Berm

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

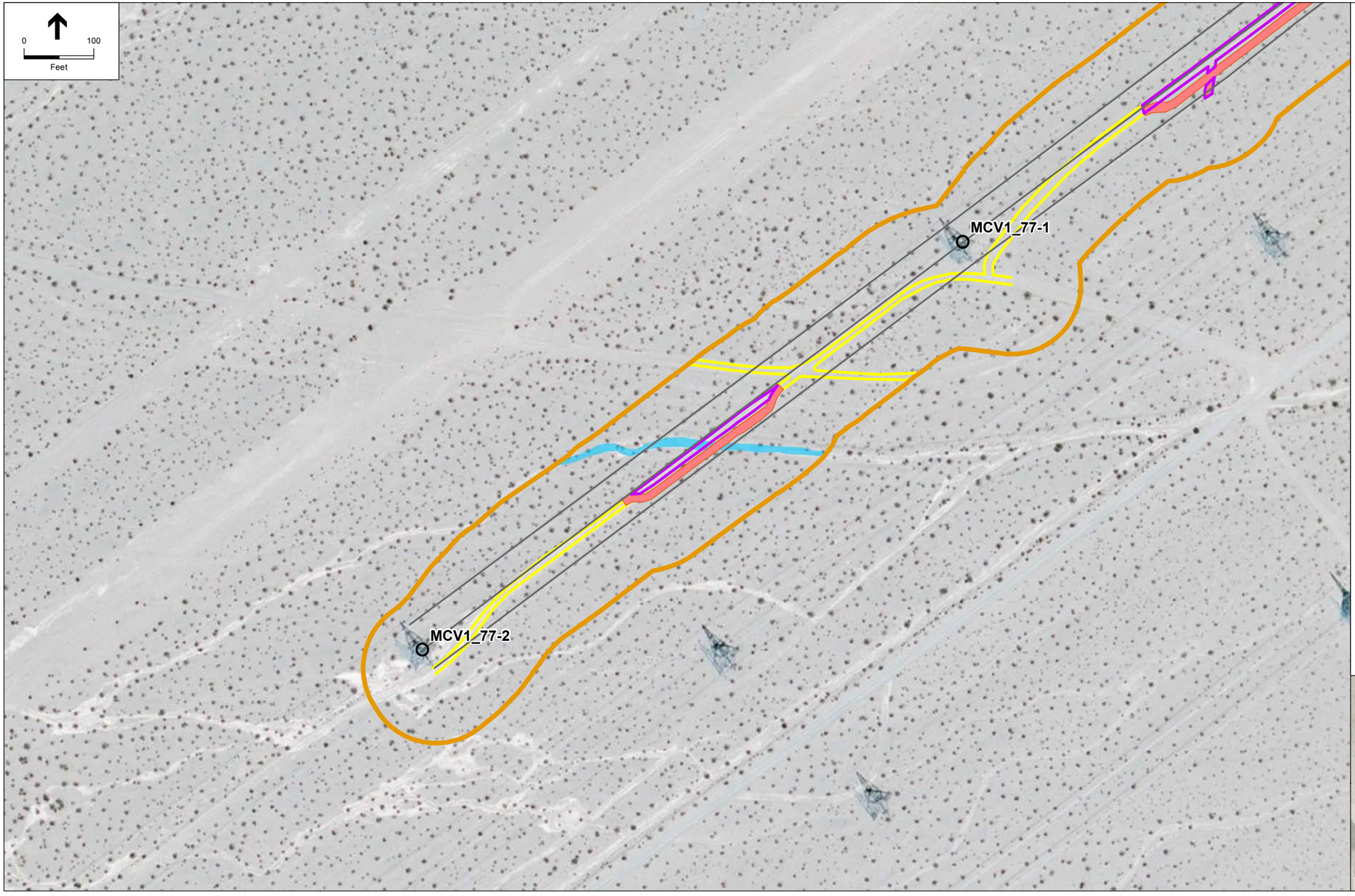
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-62

Biological Survey Results

Segment 5

MCV1 77-4

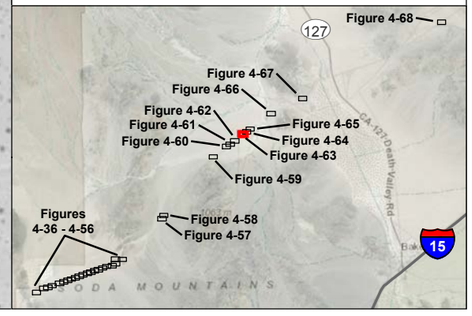


Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

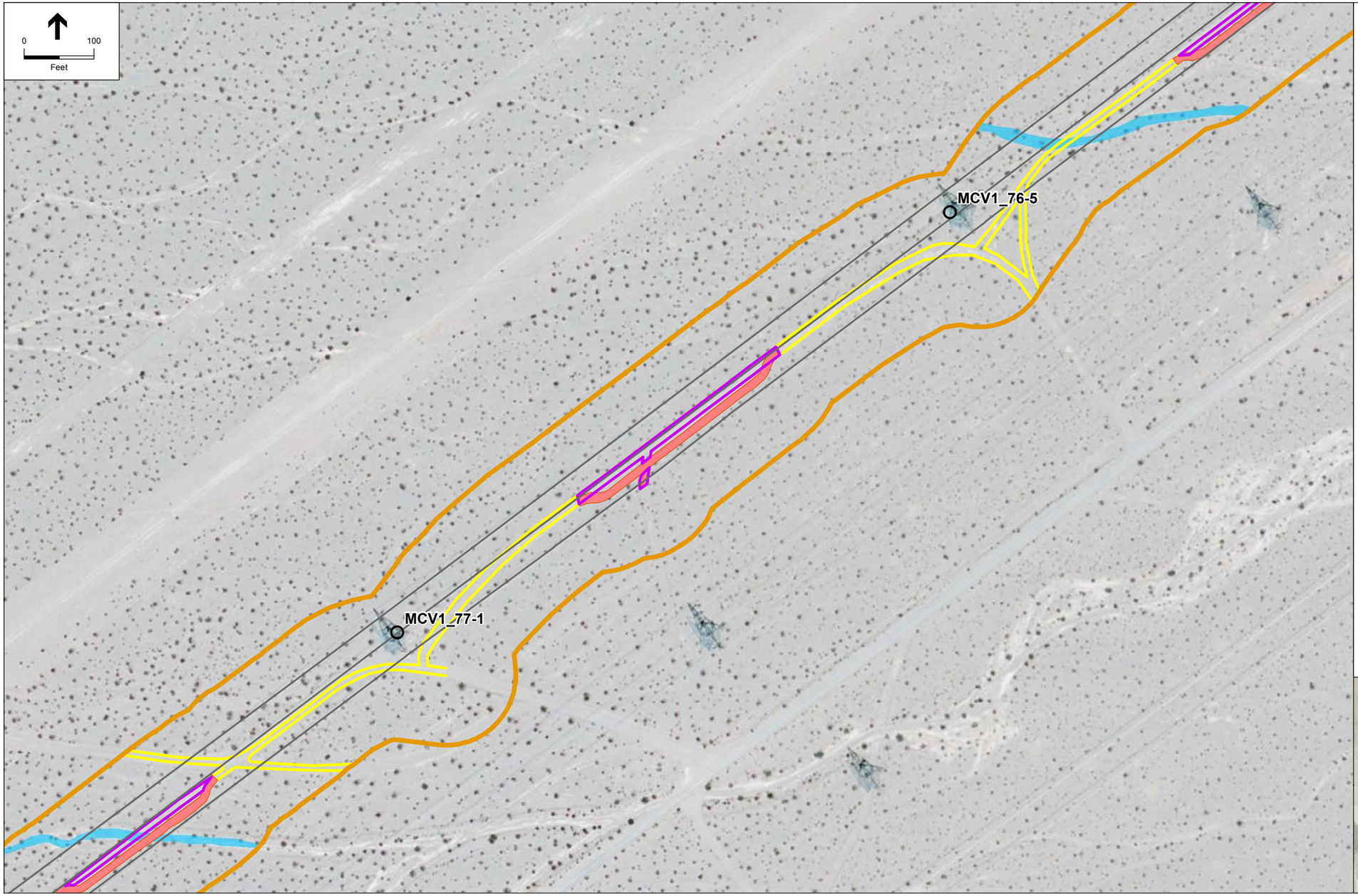
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-63

Biological Survey Results

Segment 5

MCV1 77-1

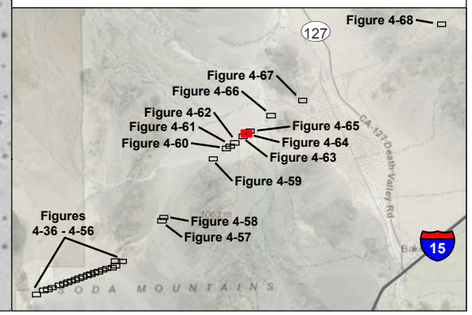


Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

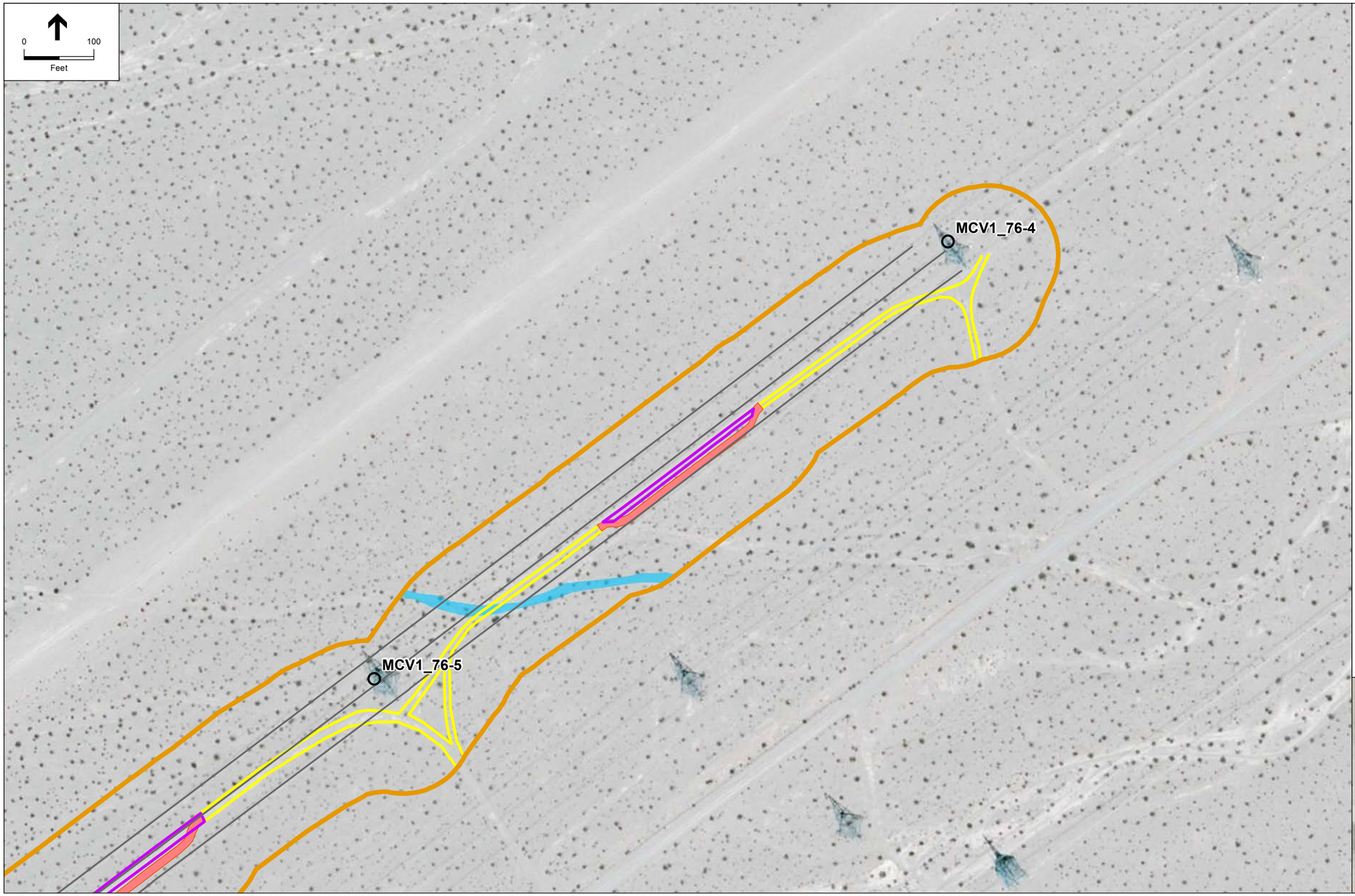
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-64

Biological Survey Results

Segment 5

MCV1 76-5

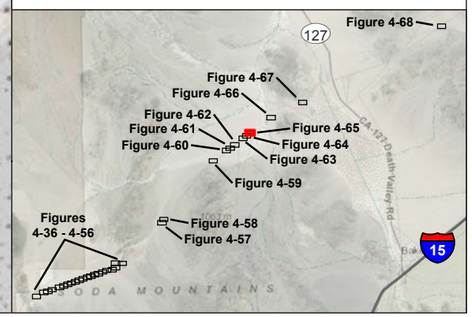


Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

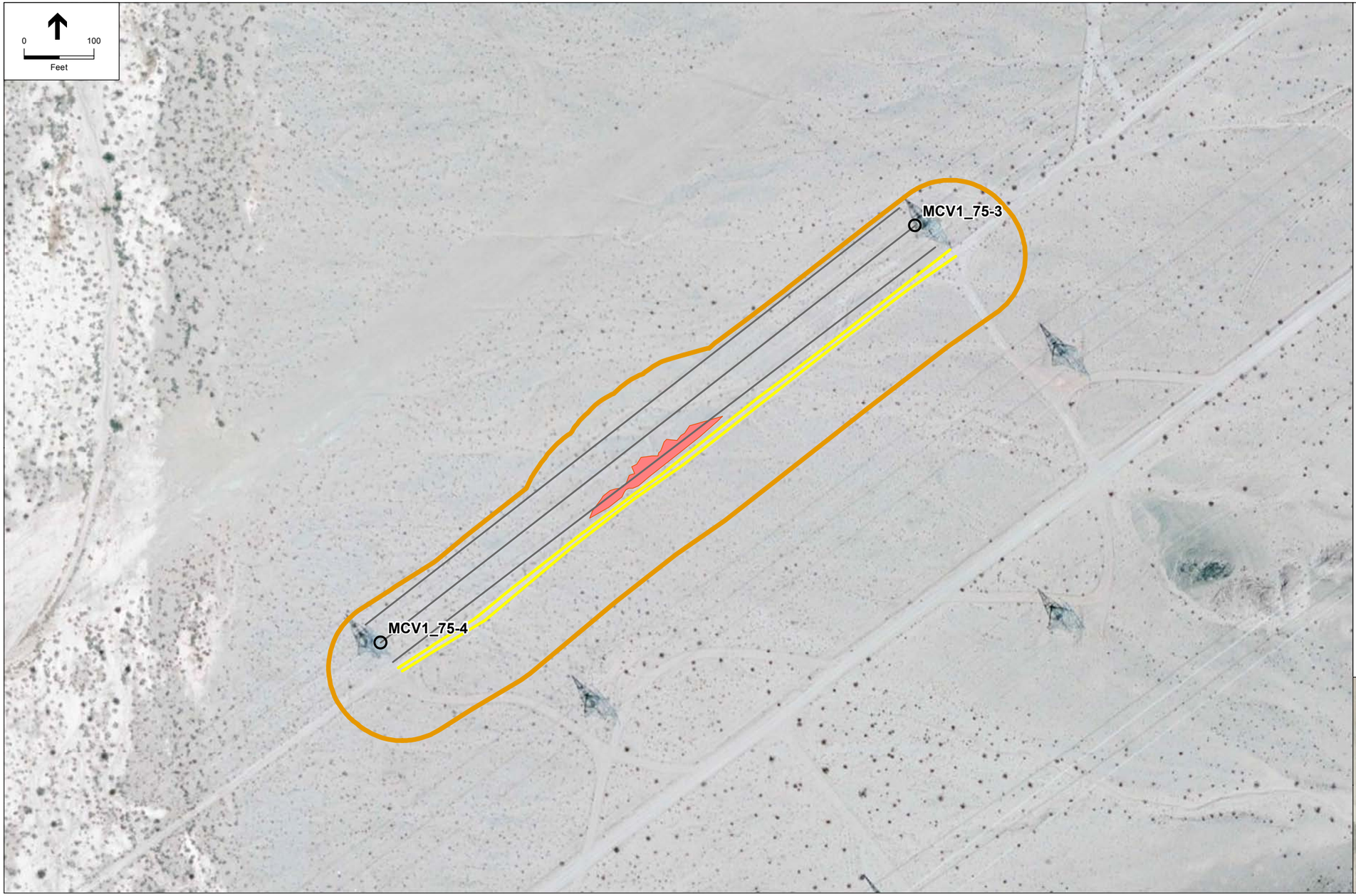
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-65

Biological Survey Results

Segment 5

MCV1 76-4

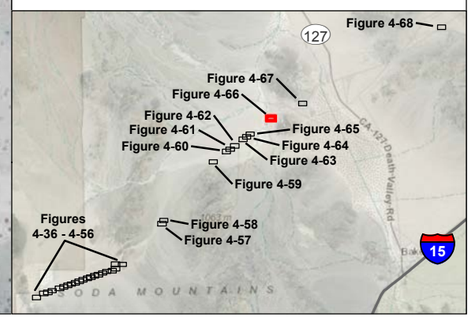


Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-66

Biological Survey Results

Segment 5

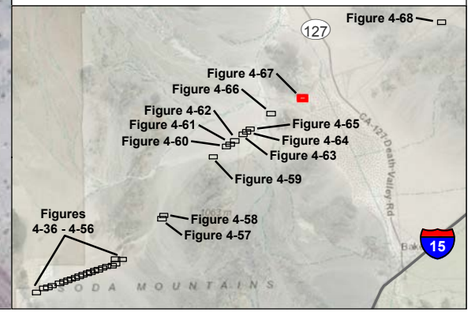
MCV1 75-3

Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)



Source: ESRI Imagery

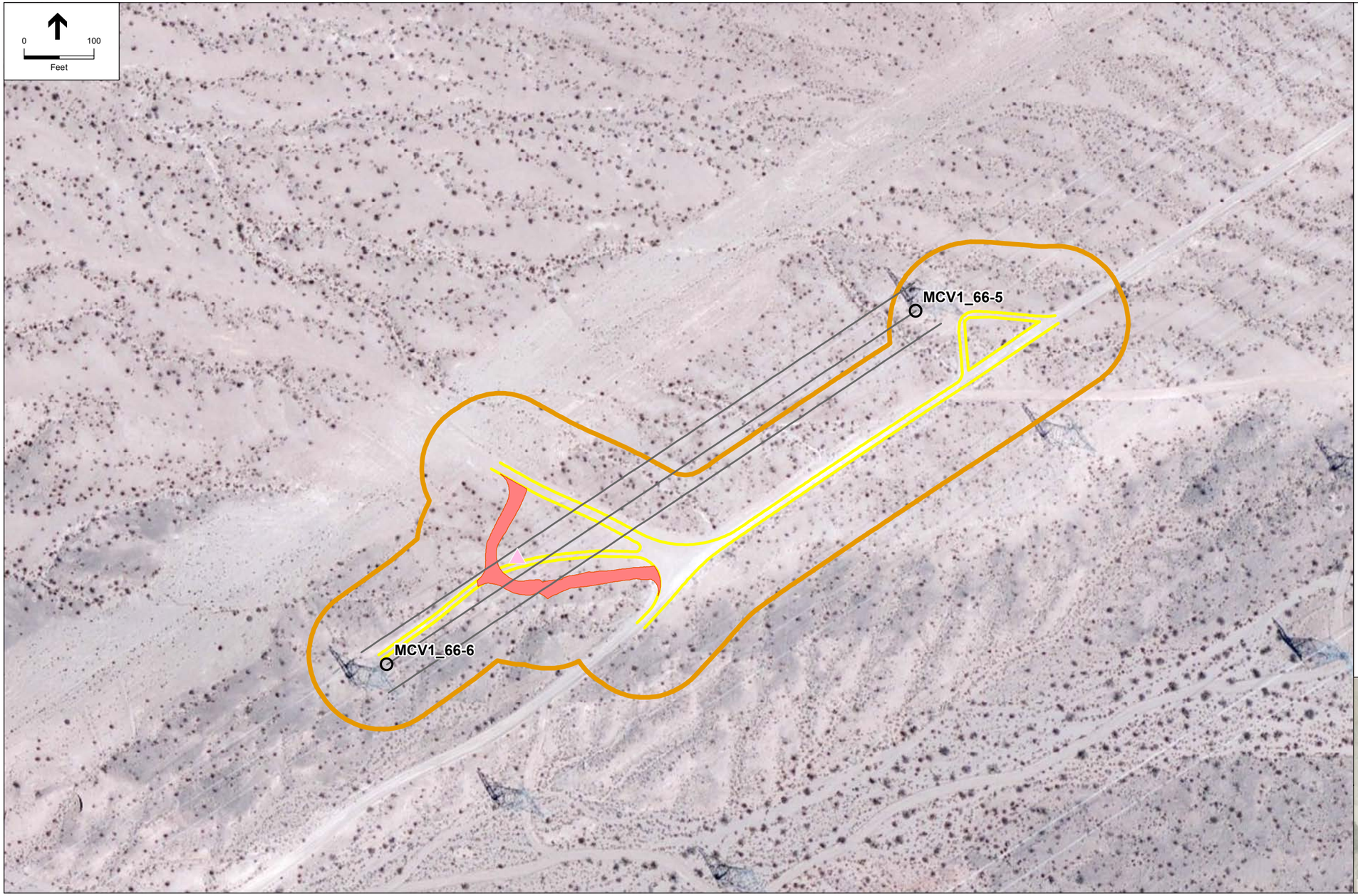
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-67

Biological Survey Results

Segment 5

MCV1 73-6



Basemap Legend

- Wash
- Tower
- Powerline
- Road to be Demolished
- Biological Survey Area
- Grading Limits
- Access Road
- Compacted Soil Barricade

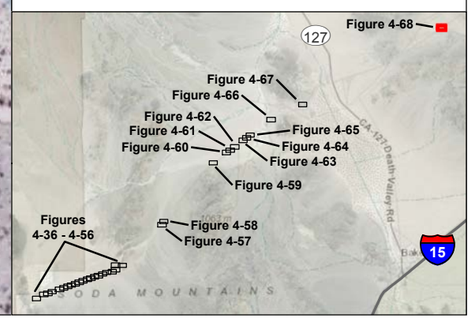
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Silver cholla - (Cylindropuntia echinocarpa)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-68

Biological Survey Results

Segment 5

MCV1 66-5

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Segment 6

Segment 6 of the project site is located north of I-15 and east of SR-127, extending for approximately 8 miles. Elevation ranges from 3,022 feet to 3,759 feet amsl. Segment 6 has fewer disturbances and development than in Segments 1 through 3. The land surrounding the survey areas within Segment 6 consists of undeveloped open space to the north, south, east, and west. Within the survey areas, existing development consists of the transmission towers and unpaved roads, including Powerline Road, access roads, and spur roads. Segment 6 is located along a relatively flat valley and is surrounded by steep, rocky mountains, including Turquoise Mountain and Squaw Mountain to the south and Shadow Mountain and Silurian Hills to the north.

Plant Species and Vegetation Communities

The native plant diversity within Segment 6 is higher than in Segments 1-5. Vegetation within Segment 6 generally consists of a mosaic of Mojave creosote bush scrub and Joshua tree woodland communities dominated by creosote bush, cheesebush, and Joshua trees. Other common native shrubs include saltbush, desert tea, button brittlebush (*Encelia frutescens*), narrowleaf goldenbush (*Ericameria linearifolia*), and desert sunflower (*Garea canescens*). The scrub community contains an understory dominated by native and non-native forbs and grasses.

Common Wildlife

The APE within Segment 6 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed during the survey included red racer (*Coluber flagellum piceus*), western whiptail, and side-blotched lizard. Common avian species observed during the surveys include red-tailed hawk, northern mockingbird, black-throated sparrow, western kingbird (*Tyrannus verticalis*), and phainopepla (*Phainopepla nitens*). Mammal species observed during the survey include black-tailed jackrabbit, desert cottontail, antelope ground squirrel, desert woodrat (*Neotoma lepida*), and coyote.

Sensitive Biological Resources

Sensitive Vegetation Communities

The CNDDB did not identify any sensitive plant communities that occur within the Turquoise Mountain, Kingston Spring, East of Kingston Spring USGS 7.5-minute topographic quadrangles. No sensitive plant communities were observed in the APE during the reconnaissance-level surveys; therefore, no impacts would occur.

Sensitive Plant Species

No sensitive plant species were observed within the APE in Segment 6. The potential for occurrence of other special-status plant species within the proposed impact areas is low based on the level of existing disturbance/development within the limits of the majority of proposed work areas (i.e., existing roads used for access, marked for grading, and designated for spoils distribution).

Ten native species protected under the California Desert Native Plants Act—desert holly saltbush, catclaw acacia (*Acacia greggii*), hedgehog cactus, silver cholla, pencil cholla, cottontop

barrel cactus, fish hook cactus, beavertail cactus, Joshua tree, and Mojave yucca—were observed during the biological surveys. Of these species, the following were in the vicinity an excavation area: three Joshua trees were located between towers MCV 61-2 and MCV 61-3 (Figure 4-71); one Joshua tree was located between towers MCV1 61-1 and MCV1 61-2 (Figure 4-72); one cottontop barrel cactus and five Joshua trees were located west of tower MCV1 59-4 (Figure 4-75); two Joshua trees and one silver cholla were located between MCV1 57-5 and MCV1 58-1 (Figure 4-76); one Mojave yucca, one fish hook cactus, and two Joshua trees were located between towers MCV1 56-4 and MCV1-56-5 (Figure 4-77); and two silver cholla, one fish hook cactus, and one Joshua tree were located between towers MCV1 55-2 and MCV1 55-3 (Figure 4-78). Although located within the APE, the other species do not occur in the vicinity of the proposed impact areas and were, therefore, not mapped.

Sensitive Wildlife Species

The APE within Segment 6 provides moderate to high-quality habitat for the federal and state threatened desert tortoise. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. Six inactive desert tortoise burrows were observed during focused species surveys. One burrow was near an excavation area between MCV1 60-5 and 61-1, and two burrows were near an access road between towers MCV1 60-5 and 61-2. Although located within the APE, the remaining three burrows are not in the immediate vicinity of any impact area. No desert tortoises were observed within the APE in Segment 6 during the focused species survey; however, there is a moderate to high potential for the species to occupy the work area prior to ground disturbance based on the presence of suitable habitat, signs, and historical records within the vicinity (CNDDB 2014).

The APE also provides moderately suitable habitat for several species which are listed as California Species of Special Concern or considered sensitive by CDFW, including kit fox, burrowing owl, and American badger. A total of six inactive kit fox dens or potential dens were observed within Segment 6 during biological surveys, none of which were located in the vicinity of the excavation areas. One potential burrowing owl burrow was observed, but was located approximately 350 feet from the nearest impact area. No American badger or signs thereof (scat, tracks, burrows, prey remains, etc.) were observed in the APE within Segment 6.

Segment 6 provides suitable nesting habitat for a number of shrub and ground-nesting special-status avian species, such as black-tailed gnatcatcher, a California Species of Special Concern. Transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including common raven and red-tailed hawk. One unidentified potential raptor nest was observed in the tower south of tower MCV1 61-2 during the biological surveys.

There are 2 golden eagle nests located approximately 5 miles north of Segment 6, the status of which is currently unknown (BLM 2016). However, the distance to the nests is sufficient to avoid direct impacts to either nest.

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

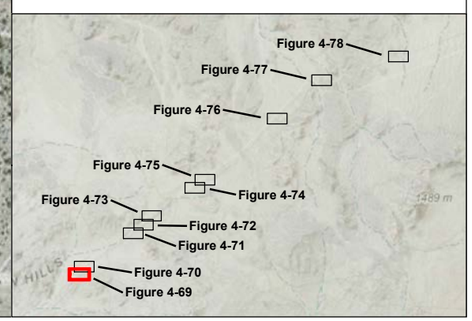
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Beavertail (Opuntia basilaris)
- Silver cholla - (Cylindropuntia echinocarpa)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-69

Biological Survey Results

Segment 6

MCV1 62-3

0 100
Feet

MCV1_62-3

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

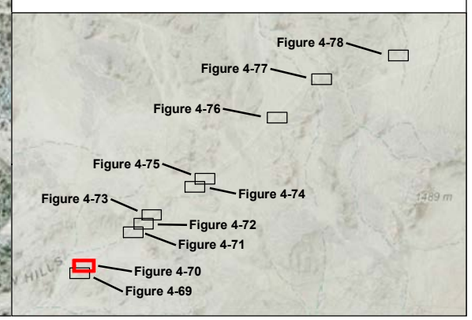
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Beavertail (Opuntia basilaris)
- Silver cholla - (Cylindropuntia echinocarpa)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-70

Biological Survey Results

Segment 6

MCV1 62-3

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)

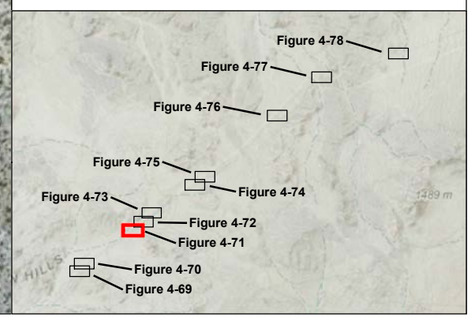
Biological Survey Results

Trees/Plants

- Joshua tree (Yucca brevifolia)

Animals

- Desert tortoise burrow - inactive
- Kit fox den - inactive
- Potential Western burrowing owl burrow - inactive
- Stick nest



Source: ESRI Imagery

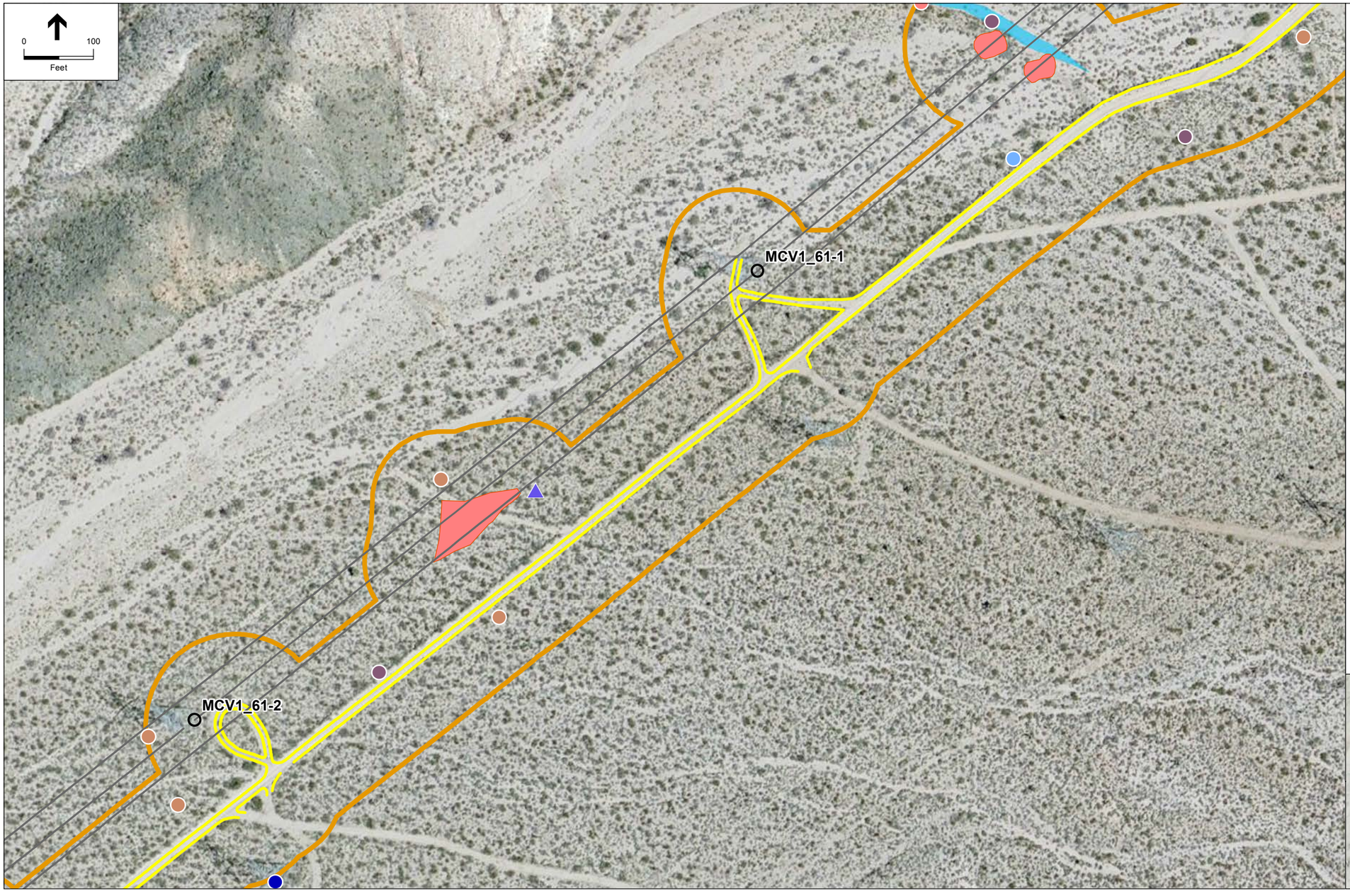
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-71

Biological Survey Results

Segment 6

MCV1 61-2



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)

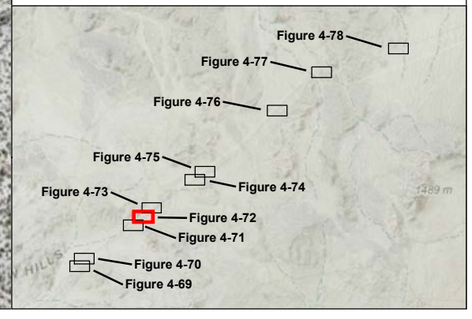
Biological Survey Results

Trees/Plants

- Joshua tree (Yucca brevifolia)

Animals

- Desert tortoise burrow - inactive
- Kit fox den - inactive
- Potential carnivore burrow - active
- Potential kit fox den - inactive
- Stick nest



Source: ESRI Imagery

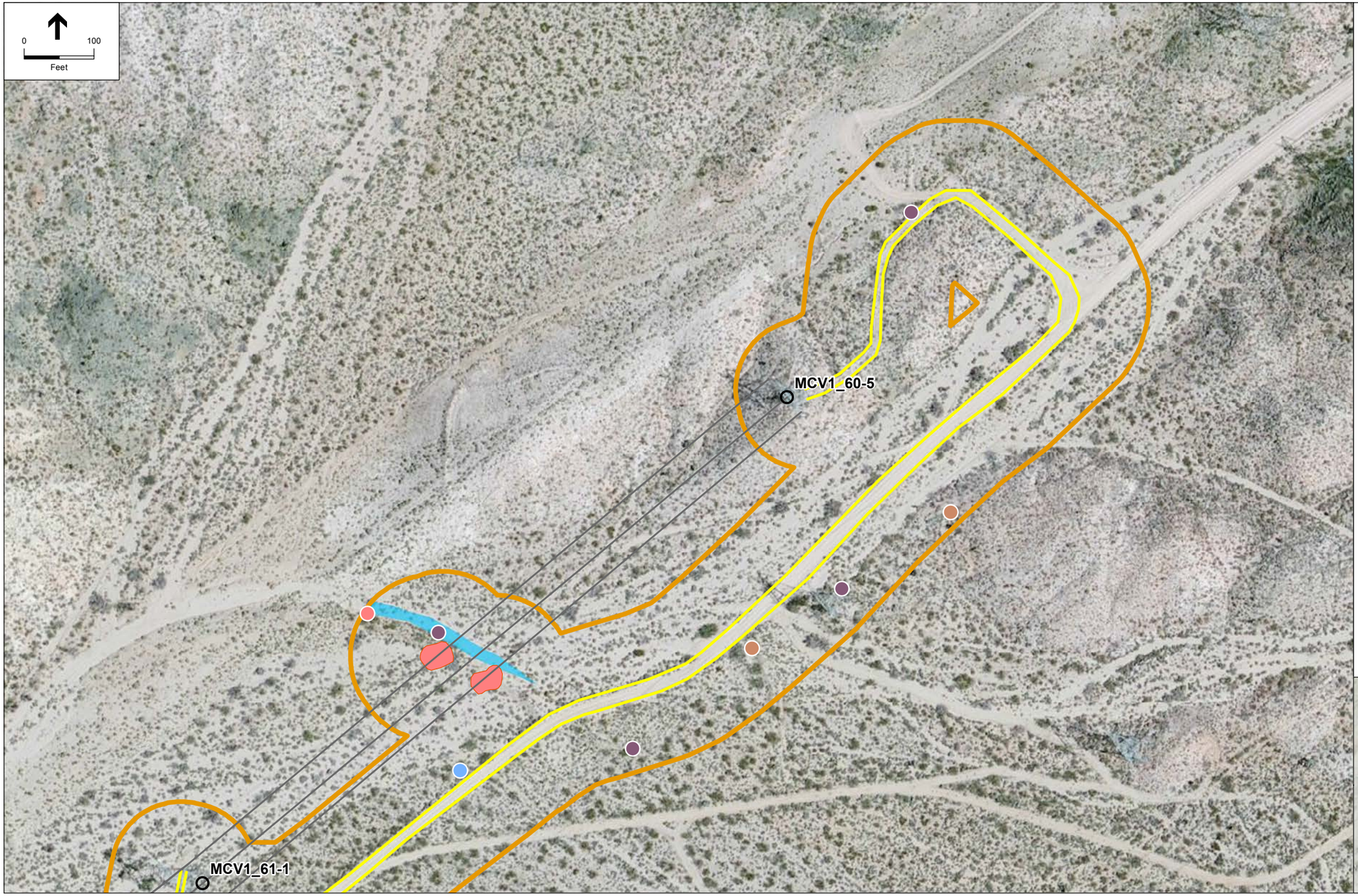
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-72

Biological Survey Results

Segment 6

MCV1 61-1



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

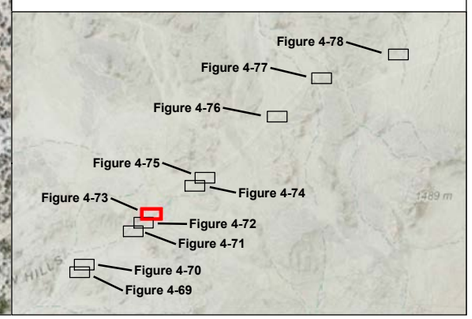
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Animals

- Desert tortoise burrow - inactive
- Kit fox den - inactive
- Potential carnivore burrow - active
- Potential kit fox den - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-73

Biological Survey Results

Segment 6

MCV1 60-5

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

Figure Legend

\# Number of Individuals (If Present on Figure)

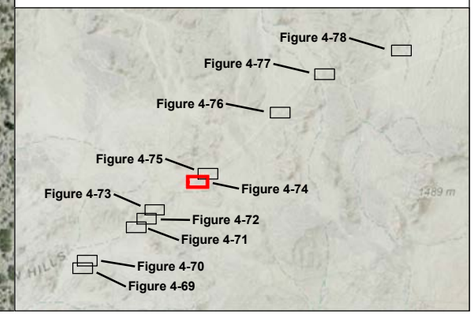
Biological Survey Results

Trees/Plants

- Cottontop cactus (Echinocctus polycephalus)
- Joshua tree (Yucca brevifolia)

Animals

- Desert tortoise burrow - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-74

Biological Survey Results

Segment 6

MCV1 59-4

Source: ESRI Imagery

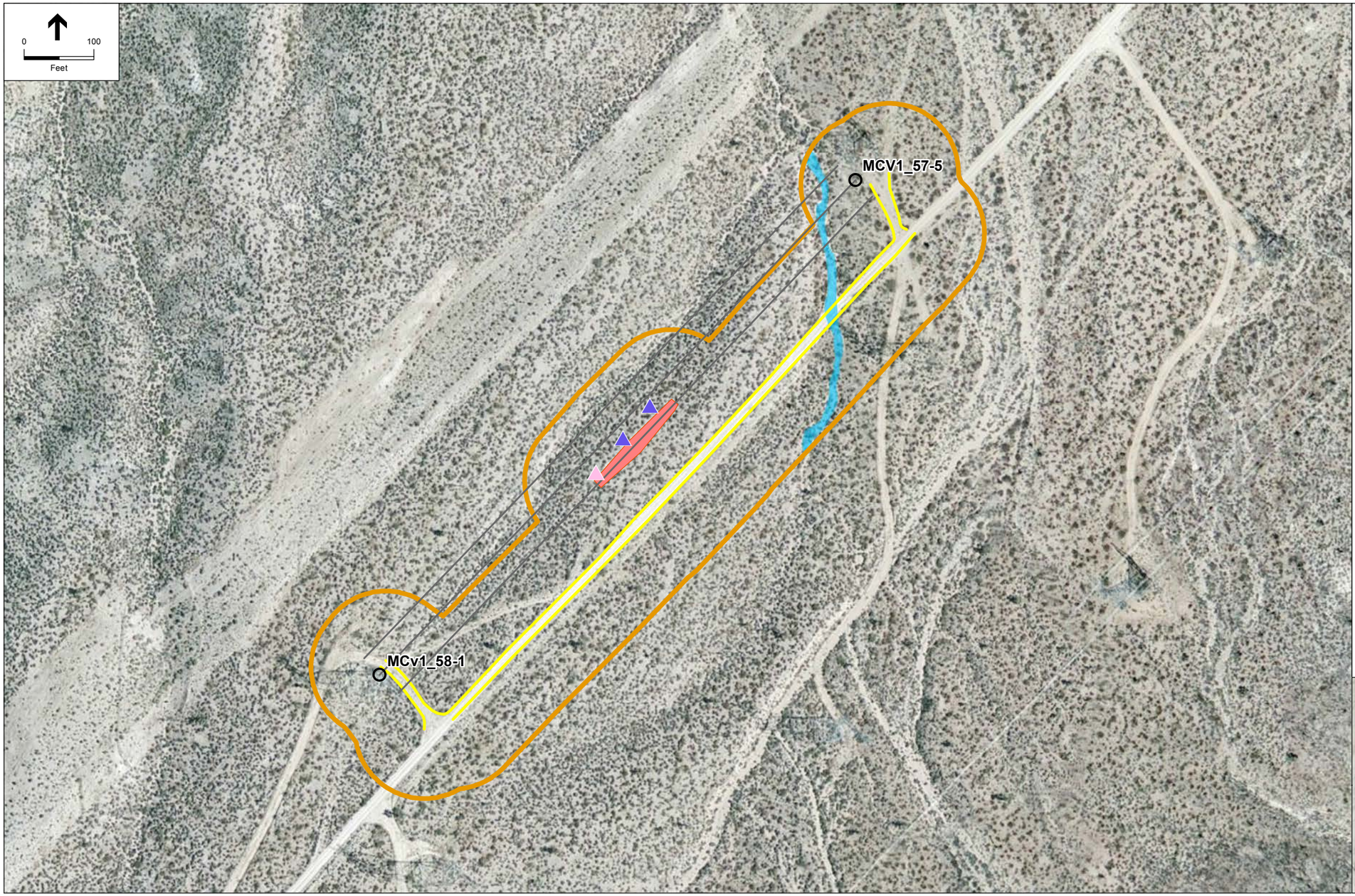
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-75

Biological Survey Results

Segment 6

MCV1 59-4



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

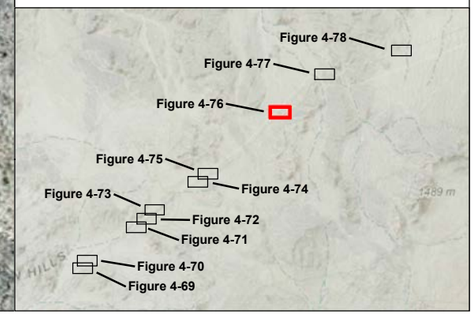
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Joshua tree (Yucca brevifolia)
- Silver cholla - (Cylindropuntia echinocarpa)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-76

Biological Survey Results

Segment 6

MCV1 57-5

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

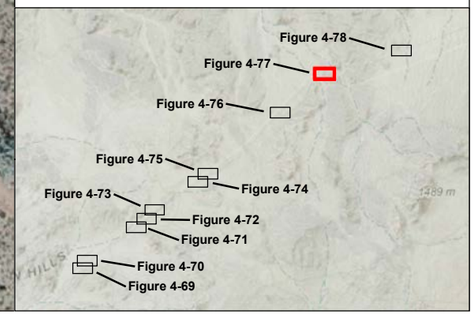
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Fish Hook Cactus (Mammillaria tetrancistra)
- Joshua tree (Yucca brevifolia)
- Mojave yucca (Yucca schidigera)
- hedgehog cactus (Echinocereus engelmannii)



Source: ESRI Imagery

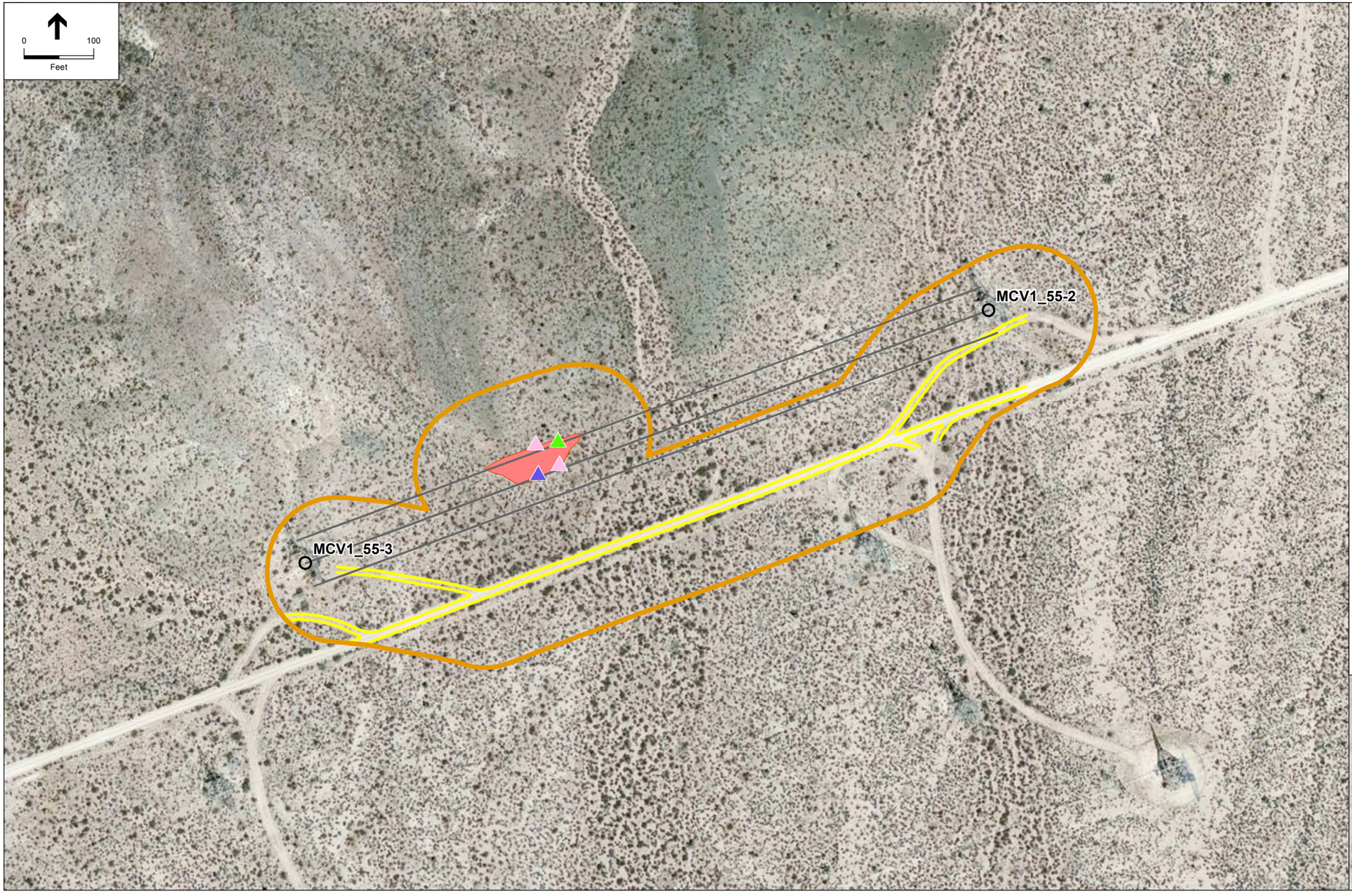
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-77

Biological Survey Results

Segment 6

MCV1 56-4



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade

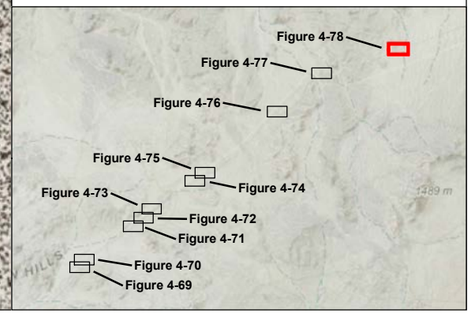
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Fish Hook Cactus (Mammillaria tetrancistra)
- Joshua tree (Yucca brevifolia)
- Silver cholla - (Cylindropuntia echinocarpa)



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-78

Biological Survey Results

Segment 6

MCV1 55-2

Segment 7

Segment 7 of the project site is fairly short, extending only approximately 3 miles west to east. Elevation ranges from 4,398 feet to 4,838 feet amsl. This stretch is located approximately 9 miles west of the Nevada–California border. Segment 7 has few disturbances other than the existing development associated with the transmission towers and unpaved roads, including Powerline Road, access roads, and spur roads. The land surrounding the survey areas within Segment 7 consists of undeveloped open space to the north, south, east, and west. Segment 7 is located within fairly rocky, moderately steep terrain north of Clark Mountain.

Plant Species and Vegetation Communities

Vegetation within Segment 7 generally consists of a mosaic of black brush scrub and Joshua tree woodland communities dominated by black brush (*Coleogyne ramosissima*) and Joshua trees. Other common native shrubs include cheese bush, Acton Encelia, desert tea, ratany (*Krameria erecta*), Mexican bladder sage (*Salazaria mexicana*), desert pepperweed (*Lepidium fremontii*), and creosote bush. The scrub community contains an understory dominated by native and non-native forbs and herbs.

Common Wildlife

The APE within Segment 7 provides suitable habitat for a number of wildlife species known to occur within desert scrub and creosote scrub habitats. Reptile species observed during the survey included western whiptail, and side-blotched lizard. Common avian species observed during the surveys include Gambel's quail (*Callipepla gambelii*), red-tailed hawk, hairy woodpecker (*Picoides villosus*), ash-throated flycatcher, western kingbird, bushtit (*Psaltiparus minimus*), cactus wren, blue-gray gnatcatcher (*Polioptila caerulea*), phainopepla, MacGillivray's warbler (*Geothlypis tolmiei*), and Brewer's sparrow (*Spizella breweri*). Mammal species observed during the survey include desert cottontail, antelope ground squirrel, and desert woodrat.

Sensitive Biological Resources

Sensitive Vegetation Communities

The CNDDB did not identify any sensitive plant communities that occur within the Clarke Mountain USGS 7.5-minute topographic quadrangle. No sensitive plant communities were observed in the APE during the reconnaissance-level surveys; therefore, no impacts would occur.

Sensitive Plant Species

Four sensitive plant species were observed within the APE in Segment 7. One species, Parish's club cholla (*Grusonia parishii*), which has a California Rare Plant Rank of 2B.2, was not located in the immediate vicinity of any impact area. The other three species were found throughout Segment 7 as follows: approximately 83 Tidestrom's milkvetch (*Astragalus tidestromii*; CRPR 2B.3) plants were located along access roads between towers MCV1 38-4 and MCV1 39-1; five desert pincushions (*Coryphantha chlorantha*; CRPR 2B.1) were observed along access roads, one within an excavation area; and 20 individual pincushions were observed away from any potential impact areas between towers MCV1 36-4 and MCV1 39-1. A total of 276 individual Rusby's desert mallow (*Sphaeralcea rusby* var. *eremicola*; CRPR 1B.2; BLM sensitive) were observed

along access roads, 2 were located within excavation areas, and 19 were found away from impact areas between towers MSV1 36-2 and MSV1 39-1.

Six native species protected under the California Desert Native Plants Act—catclaw acacia, teddy bear cholla, silver cholla, cottontop barrel cactus, fish hook cactus, and old man prickly pear cactus (*Opuntia erinacea*)—were observed during the biological surveys within the APE but were not located in the vicinity of any impact area. Six additional protected species were observed, including one beavertail cactus near the access road south of tower MCV1 39-1, one California barrel cactus (*Ferocactus cylindraceus*) near the excavation area between towers MCV1 36-4 and 36-5, and the following species located within the excavation areas between towers MCV1 36-2 and 39-1 MCV1: 49 buckthorn cactus (*Opuntia acanthocarpa*), 15 Joshua trees, 27 Mojave yuccas, and 6 hedgehog cactus (Figures 4-79 through 4-85).

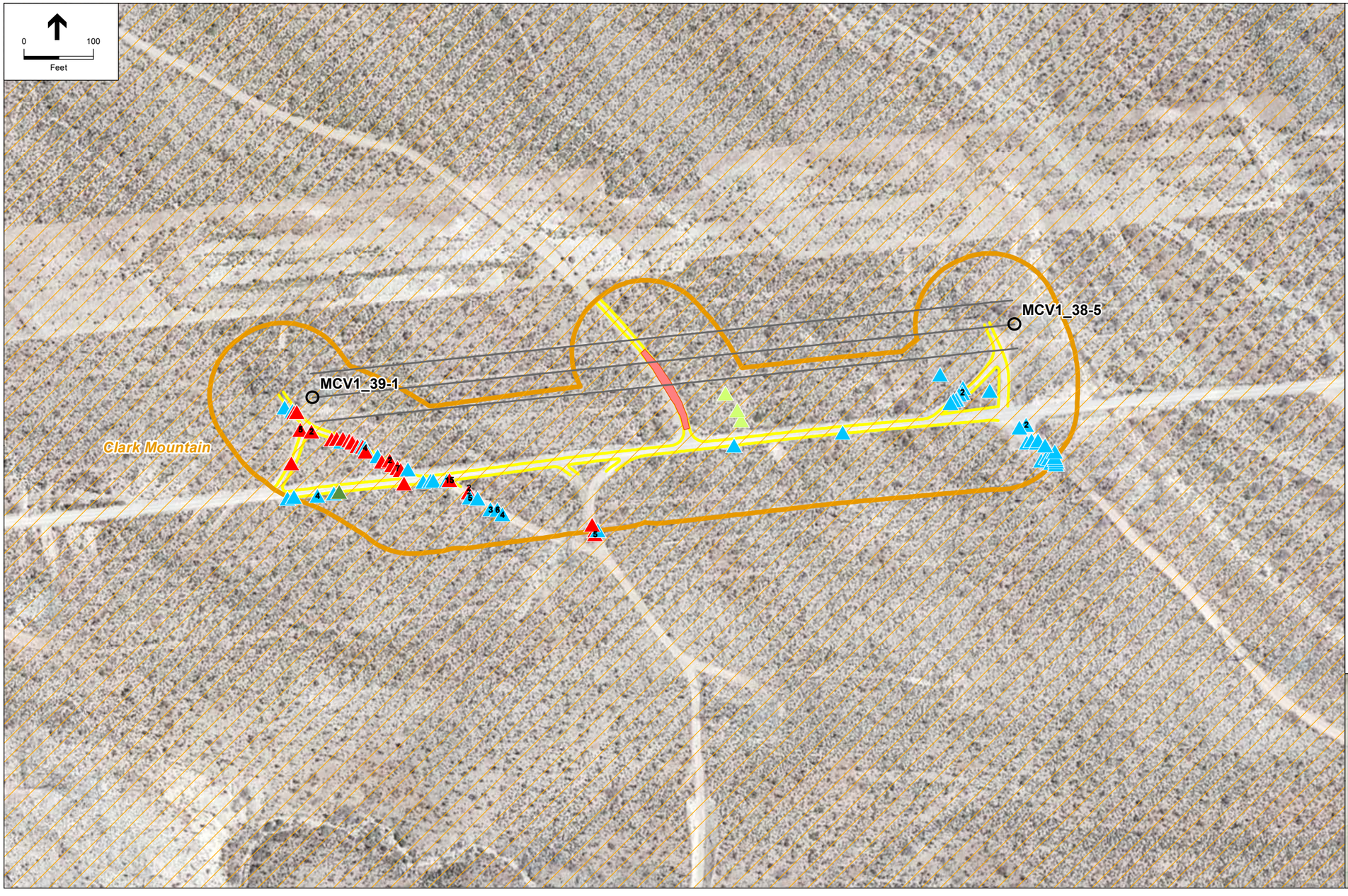
Sensitive Wildlife Species

The APE within Segment 7 provides moderate to high-quality habitat for the federal and state threatened desert tortoise. The APE contains desert scrub habitat, friable soils for burrowing, and open vegetation allowing movement throughout the work area. No desert tortoise or sign of desert tortoise was observed within Segment 7 during the focused surveys; however, there is a moderate to high potential for the species to occupy the work area prior to ground disturbance based on the presence of suitable habitat, signs, and historical records within the vicinity (CNDDB 2014).

The APE also provides moderately suitable habitat for several species which are listed as California Species of Special Concern or considered sensitive by CDFW, including kit fox, burrowing owl and American badger. A total of four inactive kit fox dens or potential dens were observed within Segment 7 during biological surveys. Of these, two were located in the vicinity of the access roads near towers MCV1 36-5 and MCV1 36-2, while the others were observed away from proposed impact areas. No burrowing owl or American badger or signs of them (scat, tracks, burrows, prey remains, etc.) were observed in the APE within Segment 7.

Segment 7 provides suitable nesting habitat for a number of shrub- and ground-nesting special-status avian species. No nests were observed within Segment 7; however, the transmission towers located within the APE provide suitable nesting habitat for larger avian species and raptors, including common raven and red-tailed hawk.

There are known golden eagle nests located approximately 6 miles south of Segment 7, the status of which is currently unknown. However, the distance to the nests is sufficient that direct impacts to nesting would not occur.



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)

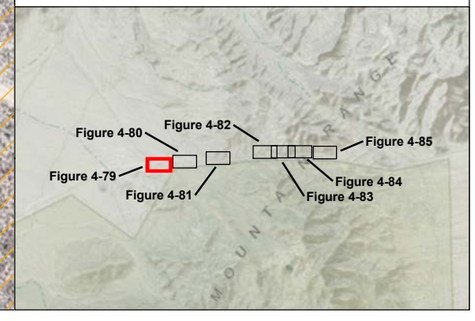
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Beavertail (Opuntia basilaris)
- Desert pincushion (Coryphantha chlorantha)
- Rusby's desert-mallow(Sphaeralcea rusbyi var. eremicola)
- Tidestrom's milkvetch (Astragalus tidestromii)



Source: ESRI Imagery

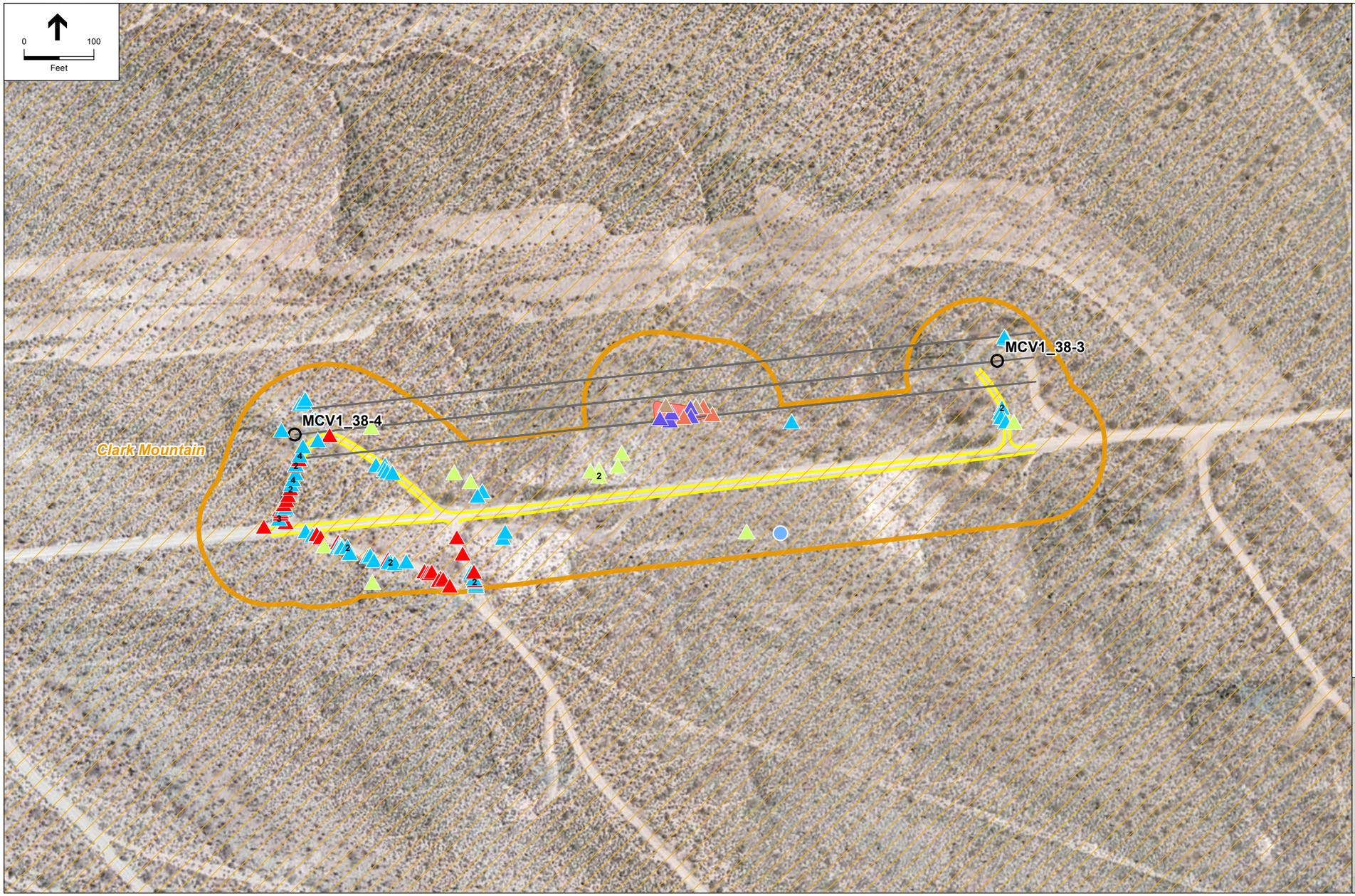
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-79

Biological Survey Results

Segment 7

MCV1 38-5



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)

Figure Legend

\# Number of Individuals (If Present on Figure)

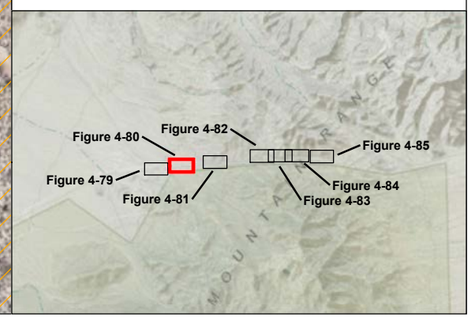
Biological Survey Results

Trees/Plants

- Buckthorn cholla (Cylindropuntia acanthocarpavar. coloradensis)
- Desert pincushion (Coryphantha chlorantha)
- Joshua tree (Yucca brevifolia)
- Mojave yucca (Yucca schidigera)
- Rusby's desert-mallow(Sphaeralcea rusbyi var. eremicola)
- Tidestrom's milkvetch (Astragalus tidestromii)

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-80

Biological Survey Results

Segment 7

MCV1 38-3

Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)

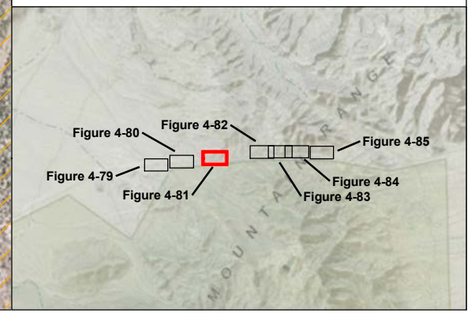
Figure Legend

\# Number of Individuals (If Present on Figure)

Biological Survey Results

Trees/Plants

- Buckthorn cholla (Cylindropuntia acanthocarpavar. coloradensis)
- Joshua tree (Yucca brevifolia)
- Mojave yucca (Yucca schidigera)
- Rusby's desert-mallow(Sphaeralcea rusbyi var. eremicola)



Source: ESRI Imagery

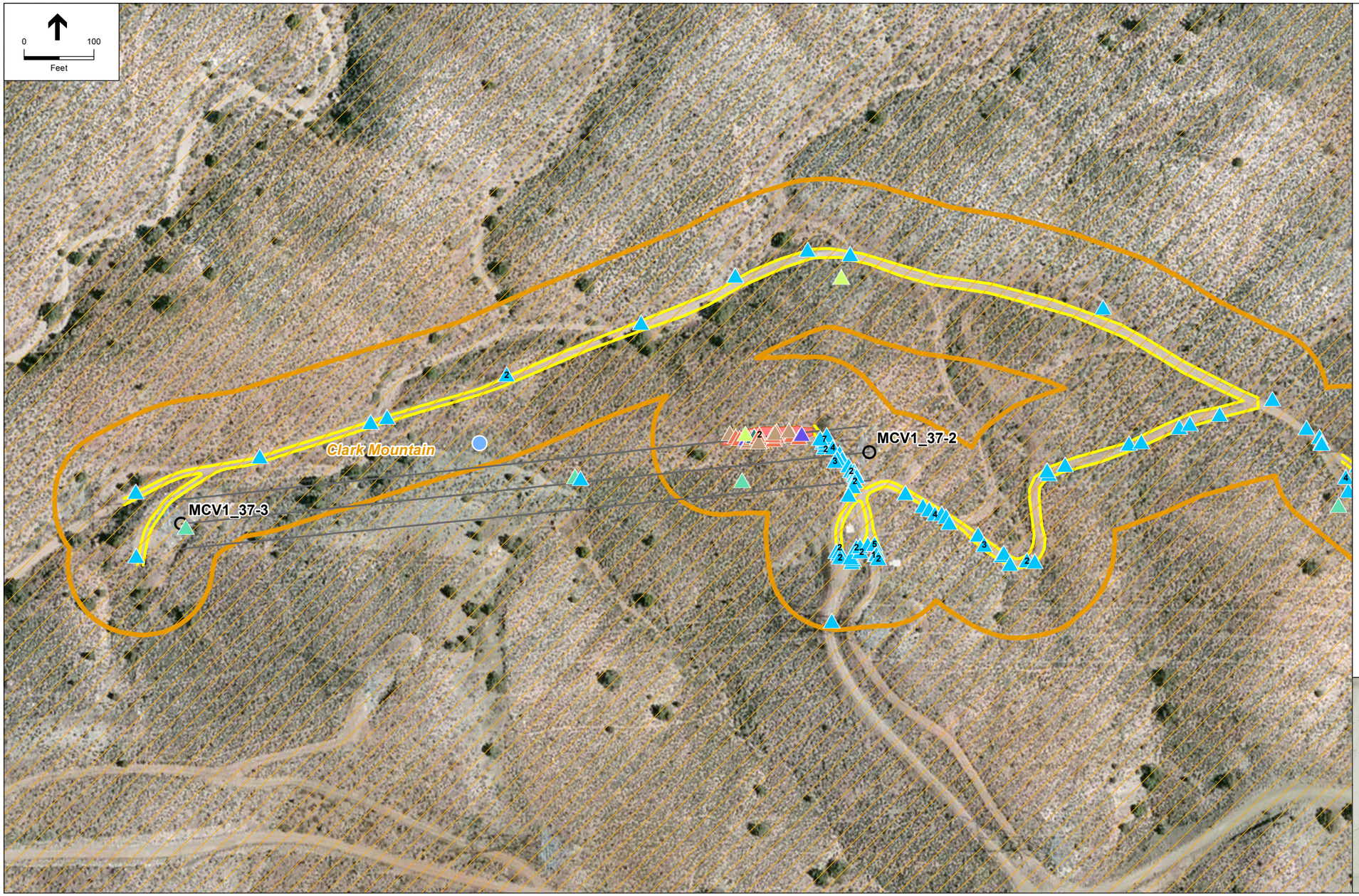
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-81

Biological Survey Results

Segment 7

MCV1 37-6



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)

Figure Legend

\# Number of Individuals (If Present on Figure)

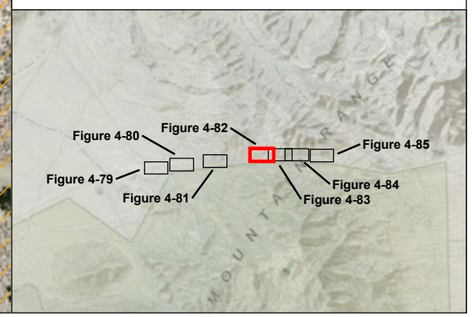
Biological Survey Results

Trees/Plants

- Buckthorn cholla (Cylindropuntia acanthocarpavar. coloradensis)
- Desert pincushion (Coryphantha chlorantha)
- Hedgehog cactus (Echinocereus engelmannii)
- Joshua tree (Yucca brevifolia)
- Mojave yucca (Yucca schidigera)
- Parish's club-cholla (Grusonia parishii)
- Rusby's desert-mallow(Sphaeralcea rusbyi var. eremicola)

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

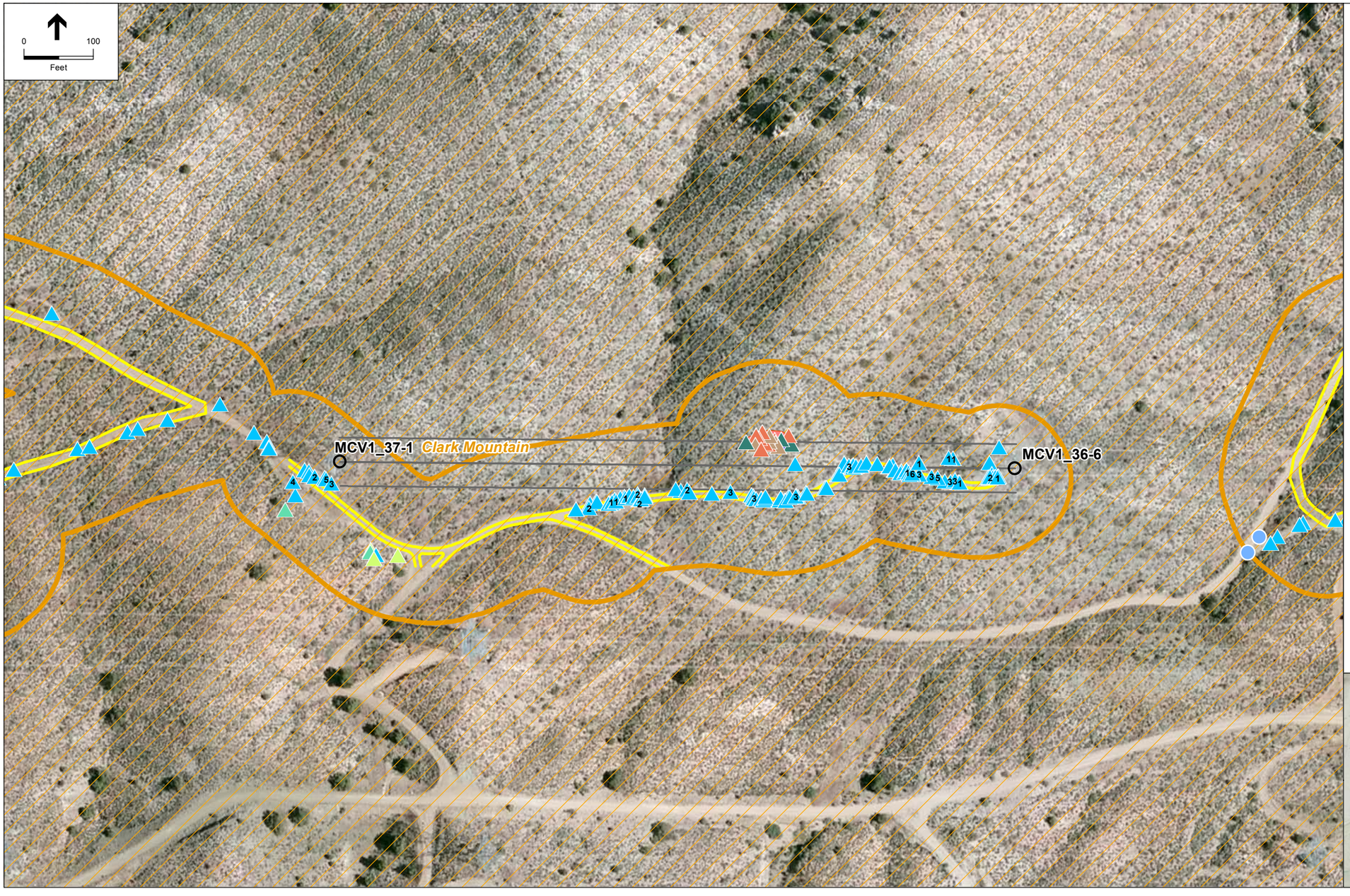
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-82

Biological Survey Results

Segment 7

MCV1 37-2



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)

Figure Legend

\# Number of Individuals (If Present on Figure)

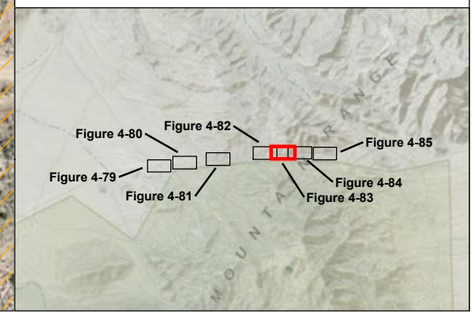
Biological Survey Results

Trees/Plants

- Buckthorn cholla (Cylindropuntia acanthocarpavar. coloradensis)
- Desert pincushion (Coryphantha chlorantha)
- Hedgehog cactus (Echinocereus engelmannii)
- Joshua tree (Yucca brevifolia)
- Mojave yucca (Yucca schidigera)
- Parish's club-cholla (Grusonia parishii)
- Rusby's desert-mallow(Sphaeralcea rusbyi var. eremicola)

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

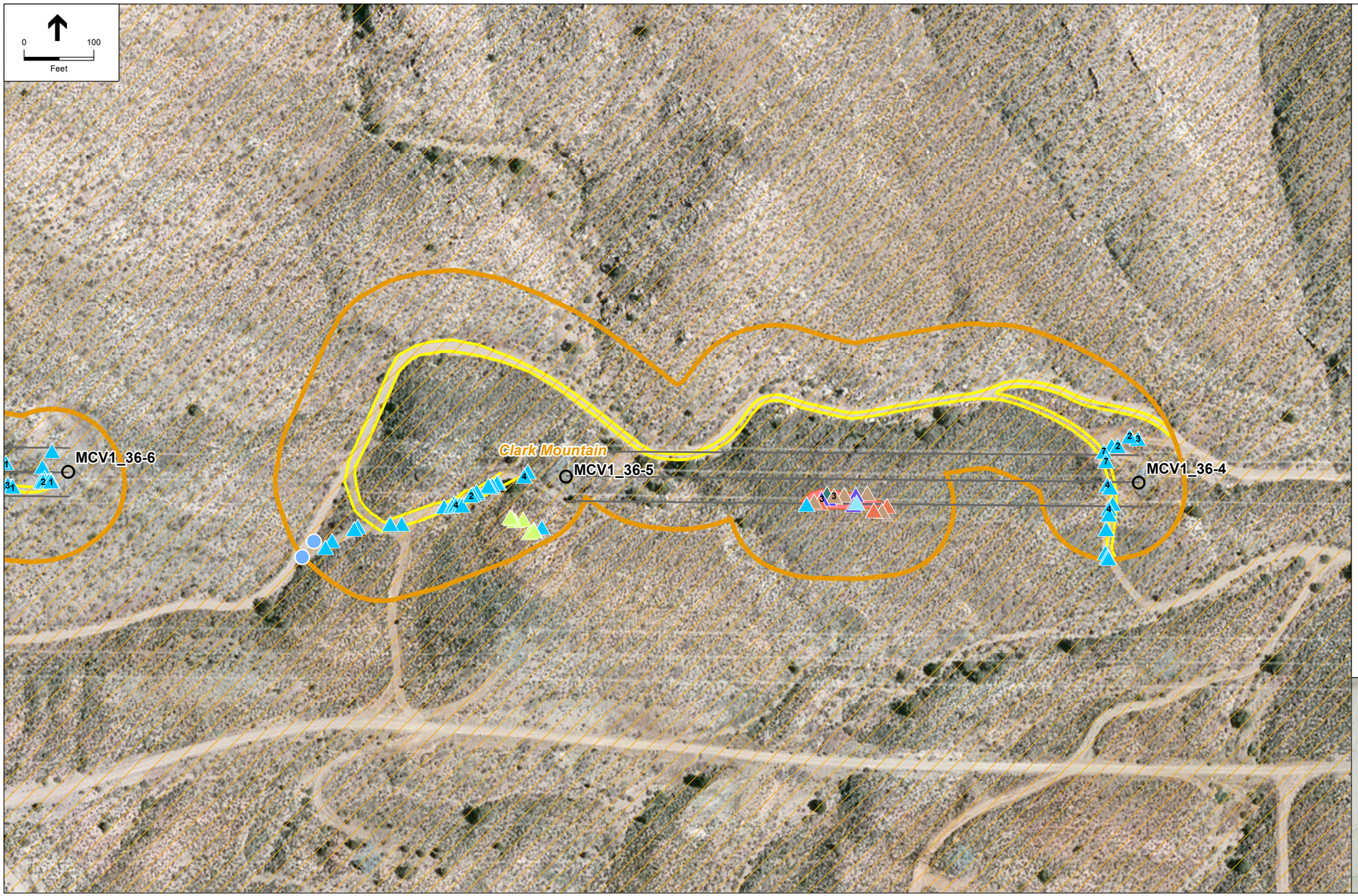
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-83

Biological Survey Results

Segment 7

MCV1 36-6



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)

Figure Legend

\# Number of Individuals (If Present on Figure)

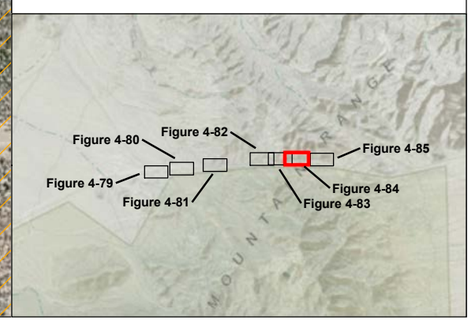
Biological Survey Results

Trees/Plants

- Buckthorn cholla (Cylindropuntia acanthocarpavar. coloradensis)
- California barrel cactus (Ferocactus cylindraceous)
- Desert pincushion (Coryphantha chlorantha)
- Hedgehog cactus (Echinocereus engelmannii)
- Joshua tree (Yucca brevifolia)
- Mojave yucca (Yucca schidigera)
- Rusby's desert-mallow(Sphaeralcea rusbyi var. eremicola)

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

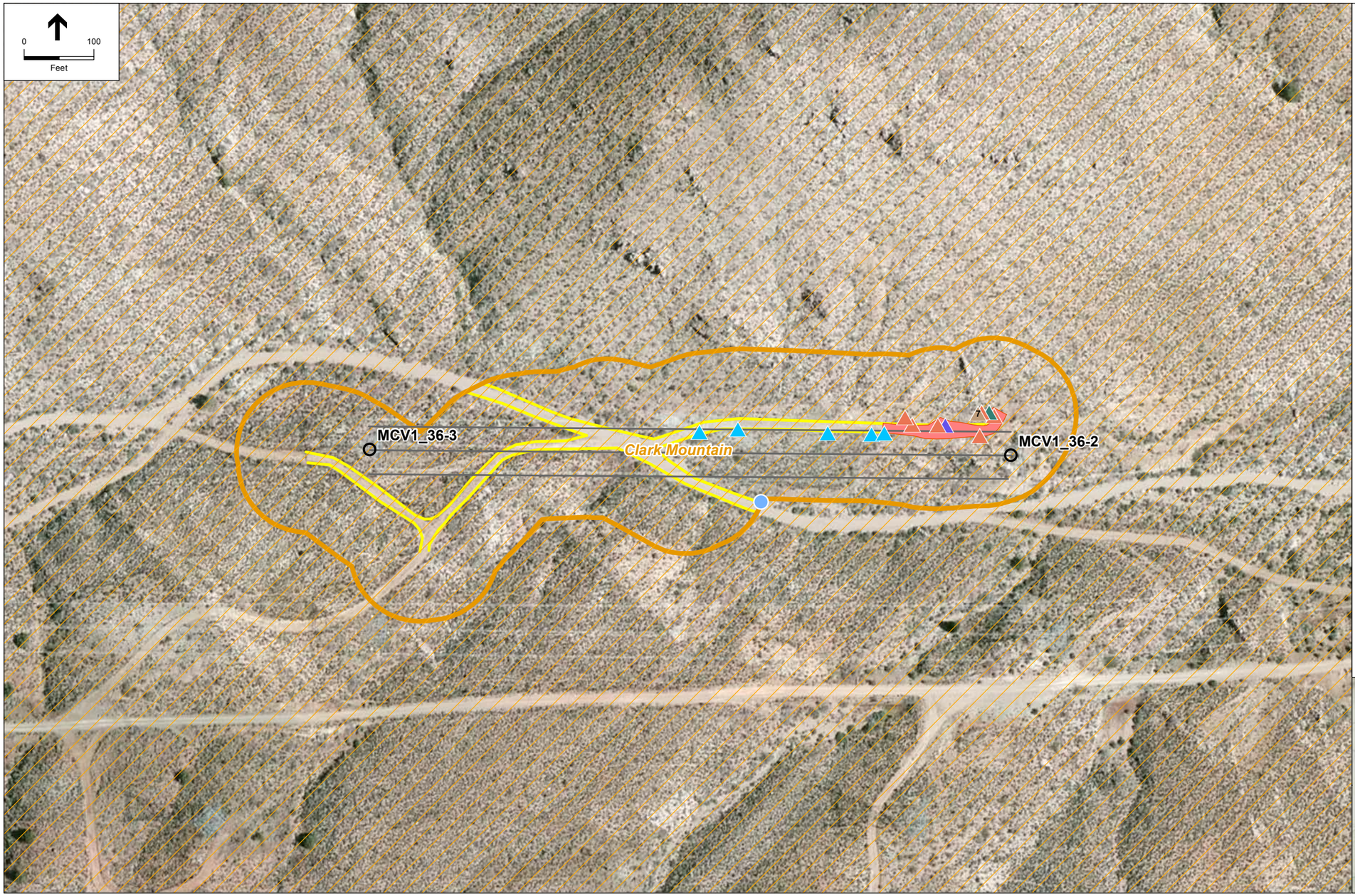
LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-84

Biological Survey Results

Segment 7

MCV1 36-4



Basemap Legend

- Wash
- Tower
- Powerline
- Grading Limits
- Biological Survey Area
- Road to be Demolished
- Access Road
- Compacted Soil Barricade
- Area of Critical of Environmental Concern (ACEC)

Figure Legend

\# Number of Individuals (If Present on Figure)

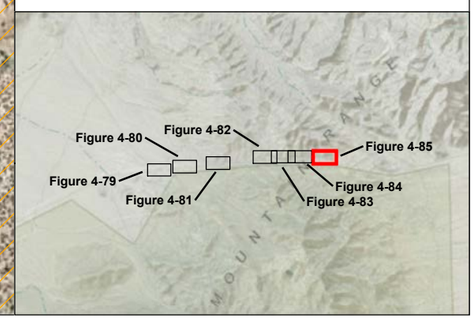
Biological Survey Results

Trees/Plants

- Buckthorn cholla (Cylindropuntia acanthocarpavar. coloradensis)
- Hedgehog cactus (Echinocereus engelmannii)
- Joshua tree (Yucca brevifolia)
- Mojave yucca (Yucca schidigera)
- Rusby's desert-mallow(Sphaeralcea rusbyi var. eremicola)

Animals

- Potential kit fox den - inactive



Source: ESRI Imagery

LADWP - Path 46 Transmission Line Clearance. 211490.28

Figure 4-85

Biological Survey Results

Segment 7

MCV1 36-2

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5. Summary of Findings and Recommendations

5.1 General Biological Issues

Jurisdictional Waters and Wetlands

Several potentially jurisdictional features occur throughout the Project work areas. However, no potentially jurisdictional drainage features that occur within the APE are expected be impacted beyond the existing road limits and no stream courses or flows will be substantially altered or reduced. Because no substantial impacts are expected to occur during Project implementation, a formal delineation or subsequent report is not recommended.

Wildlife Movement Corridors

The Project occurs in relatively undeveloped areas dominated by Mojave scrub vegetation and transmission tower. The undeveloped land within and surrounding the Project APE provides suitable areas for the movement of wildlife species including but not limited to desert tortoise and coyote. The Project will not create a significant physical alteration to the land beyond that which already exists or create a physical barrier that would restrict the movement of wildlife species across the Mojave Desert, and construction of the Project will be temporary. Additionally, the Project does not occur within an area that provides a narrow linkage between larger areas of undeveloped land that would facilitate the movement of wildlife species between two blocks of habitat. Therefore, no impacts to any proposed or established wildlife movement corridors will occur as a result of Project implementation.

USFWS Critical Habitat

Segments 2, 3, and 4 of the Project occur within Critical Habitat for desert tortoise. Several observations of desert tortoise, including active and inactive burrows, and signs were recorded during the biological surveys. The Project may result in significant impacts to desert tortoise Critical Habitat, including removal of suitable habitat or impeding the use of suitable habitat by desert tortoise. Impacts within Critical Habitat may require consultation with USFWS and subsequent mitigation. Mitigation may include revegetation and restoration of impacted areas, and/or land acquisition/deeded easement into a wildlife conservation area.

Segments 2, 3, and 4 are considered occupied by desert tortoise and the BMPs prescribed in Section 5.2 are recommended to minimize any potential Project impact to desert tortoise to a less-than-significant level.

BLM Areas of Critical Environmental Concern and Desert Wildlife Management Areas

Work areas MLV1 150-5 through MLV1 129-1 in Segment 2 occur within the Mojave Monkey Flower ACEC, and work areas MCV1 38-5 through MCV1 36-2 in Segment 7 occur within the Clark Mountain ACEC. The BLM has established these special management areas to protect and prevent irreparable damage to important historical, cultural, and scenic values; fish or wildlife resources, or other natural systems or processes; or to protect human life and safety from natural hazards. Areas protected based on their importance for fish and wildlife resources include habitat

for endangered, threatened, or sensitive species, or habitat essential for maintaining species diversity. Areas protected based on their importance for natural processes or systems may be habitat for endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features (BLM 1988).

Work areas MVL1 159-1 through MCV1 129-1 in Segment 2 occur within the Ord-Rodman DWMA; and work areas MCV1 120-1 in Segment 3 and MVL1 129-4 through MCV2 93-4 in Segment 4 occur within the Superior-Cronese DWMA. Some of these areas overlap with the aforementioned ACECs and most DWMAs overlap with critical habitat for desert tortoise. These areas have been established to protect high quality habitat for the species. Impacts to ACECs and/or DWMAs shall be compensated at a 5:1 mitigation ratio.

5.2 Site Specific Biological Issues

Sensitive Plant Communities

No sensitive plant communities were identified by the CNDDB or observed during the biological surveys.

Sensitive Plant Species

One sensitive plant species, the Death Valley sandpaper plant, was observed in the Segment 4 APE and an additional 4 sensitive plants were observed within Segment 7 of the Project: Tidestrom's milkvetch, desert pincushion, Parish's club cholla, and Rusby's desert mallow. Desert pincushion was also observed in Segment 8. Numerous native plants and succulents protected by the Native Plant Protection Act, California Desert Native Plants Act, and San Bernardino County Development Code Section 88.01.060(c) were also observed throughout the Project APE. Recommendations for reducing impacts to sensitive plants include complete avoidance—if complete avoidance isn't possible, the following shall apply:

- Prepare and implement a BLM-approved Translocation Plan for removal and transplanting of larger perennial plants, such as Joshua tree, yucca, and cacti species.
- Remove and store the top 2 inches of soil from the grading areas, which contain the seed bank for sensitive annual species, and re-spread the soil in the grading areas after excavation has been completed.

Sensitive Wildlife Species

Desert Tortoise

Impacts to suitable desert tortoise habitat within a DWMA shall be mitigated at a 5:1 ratio. Due to the fact that areas within all segments of the Project have a moderate to high potential to support desert tortoise, the following protective measures shall be implemented throughout all work areas:

- LADWP shall designate a Field Contact Representative (FCR) for each active segment. The FCR shall be responsible for implementing the required stipulations and halting any

activity that may endanger a tortoise or any other sensitive species. The FCR may be a monitor or a project foreman.

- All workers shall participate in a Worker Environmental Awareness Program. The program shall be developed by the Project proponent and provided to the BLM two weeks prior to beginning of construction. The program should include, at a minimum, the following topics: occurrences of desert tortoise, sensitivity of the species to human activities, legal protection, penalties for violations of Federal and State laws, general desert tortoise activity patterns, reporting requirements, measures for protection during construction and operation, and personal measures employees can take to promote conservation.
- LADWP shall provide a minimum of one biological monitor for each active segment of the project who is authorized by the USFWS and the CDFW to handle desert tortoises.
- All work areas shall be cleared by an authorized biologist within 48 hours of the onset of construction at any work location.
- A qualified biologist shall inspect work areas each day before work commences and shall remain onsite for the entire duration of work activities.
- Tortoise handling is prohibited except by an authorized biologist or a biological monitor who is working under the direct supervision of an authorized biologist and only when it is necessary to do so. Should it be necessary to handle a tortoise, the authorized biologist or trainee shall do so using the techniques outlined in the most current version of the Desert Tortoise Field Manual produced by the USFWS.
- All access roads not required for NERC code clearance activities shall be avoided. This would limit new or improved accessibility into the area.
- Vehicles shall not exceed a speed of 15 mph in desert tortoise habitat.
- Overnight parking and storage of equipment and material shall be restricted to previously disturbed areas (i.e., access roads and other disturbed areas lacking vegetation). These areas shall be marked by the biological monitor and may include batch sites, pulling sites, and tower sites. If previously disturbed areas are not available, these activities shall be restricted to the right-of-way and should be cleared of desert tortoises by the biological monitor prior to use.
- Within desert tortoise habitat, workers shall limit their activities and equipment to construction areas and routes of travel which have been flagged to eliminate adverse impacts to desert tortoises and their habitat. Cross-country travel is prohibited. All workers shall be instructed of this requirement.
- During NERC code clearance activities, construction personnel shall immediately report any sightings of desert tortoises within the construction zone to the biological monitor.
- Trash and food items shall be removed daily or placed in raven-proof containers.
- Within 30 days following completion of project activities, the FCR and authorized biologist shall prepare a report that includes the following:

- All tortoises encountered or moved,
- Any tortoise that was injured or killed or found dead by project personnel,
- The practical application of these proposed mitigation measures an any measures that may further the protection of the tortoise during future projects,
- A total of acreage disturbed by jurisdiction, and
- Site photos.

Golden Eagle

Several golden eagle nests are known to occur in the areas surrounding the Project. Some, such as those in the vicinity of Segments 6 and 7, are sufficiently distant from Project activities that direct impacts would not occur and/or indirect impacts may occur but would be negligible. In other areas, such as adjacent to work areas MVL1 155-5_MVL1 155-6, nests are close enough to Project activities that they may directly affect nesting golden eagles. Project activities that take place in such areas, or any other (active or inactive) golden eagle nest discovered during pre-construction nesting bird surveys, shall adhere to general avoidance/minimization including:

- A qualified eagle biologist shall determine the nesting status of any golden eagle nest within one mile of any proposed project activities. LADWP shall forward the name(s) and qualifications of each raptor biologist 2 weeks prior to project activities.

- No work shall occur within 1 mile of an active golden eagle nest during the breeding season (January 31–August 31) unless a written determination which shows no nest activity has been forwarded to and approved by the BLM. Upon approval of a report showing an inactive nest, the BLM may approve work within 1 mile of an eagle nest.

- If an injured golden eagle is observed within or adjacent to an active work area, all work shall immediately stop and USFWS and BLM shall be contacted for further instructions.

California Species of Special Concern

The proposed Project has the potential to result in direct removal of suitable habitat for California Species of Special Concern, including loggerhead shrike, burrowing owl, desert kit fox, American badger, and pallid bat. These species may occur immediately adjacent to the Project and may be indirectly impacted by noises and vibrations generated by the Project; however, as the proposed Project is linear and limited in size, impacts to a California Species of Special Concern are not expected, or are expected to be minimal. Transmission towers are not considered primary roosting habitat for pallid bat; therefore, the Project will not result in a significant impact to suitable habitat for pallid bat, or any other bat species.

To ensure that California Species of Special Concern are not adversely impacted by the Project, preconstruction clearance surveys should be conducted by a qualified biologist within 500 feet (150 meters) of work areas. Surveys should be conducted within 14 days prior to the start of construction in a given work area. The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 23 to 66 feet (7 to 20 meters) apart,

adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls. Surveys may be conducted concurrently with desert tortoise preconstruction surveys and, as each burrow is investigated, surveying biologists shall also look for signs of American badger and desert kit fox. The qualified biologist may use a variety of approaches (including but not limited to monitoring, track plates, and direct observation) and evidence (including burrow characteristics and presence of sign such as scat and tracks) to determine burrow activity. If a burrow within a proposed disturbance area is definitively determined to be inactive, it may be collapsed to prevent future occupation. If any evidence of occupation of the Project site special-status species is observed, a buffer shall be established by a qualified biologist that results in sufficient avoidance, as listed below:

- Desert kit fox or American badger potential den: 50 feet
- Desert kit fox or American badger active den: 100 feet
- Desert kit fox or American badger natal den: 500 feet
- Burrowing owl active burrow during breeding season: 330 feet
- Burrowing owl active burrow during non-breeding season: 165 feet

If avoidance of the potential American badger or desert kit fox dens is not possible, the following measures are required to avoid potential adverse effects to these species:

- If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent American badgers or desert kit foxes from re-using them during construction.
- If the qualified biologist determines that potential dens may be active, an on-site passive relocation program shall be implemented. This program shall consist of excluding American badgers or desert kit foxes from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for seven days to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the qualified biologist determines that American badgers or desert kit foxes have stopped using the dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.

In the case of burrowing owls, if burrow avoidance is infeasible during the non-breeding season or during the breeding season (February 1 through August 31) where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with Appendix E1 (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation. If passive relocation is required, a qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and a Mitigation Land Management Plan in, accordance with the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation, for review by California Department of Fish and Wildlife prior to passive relocation activities. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation.

Nesting Birds

The APE provides suitable nesting and foraging habitat for a number of common migratory birds and raptor species protected under the MBTA and Fish and Game Code. Therefore, to reduce any potential impacts resulting from application of the proposed Project, Project activities should avoid the avian nesting season of February through August. If Project activities must take place during the avian nesting season, a preconstruction clearance survey should be conducted by a qualified biologist in areas of suitable nesting habitat, particularly those in which nests were observed during previous surveys to ensure direct or incidental take does not occur during the proposed Project. Surveys for raptor nests shall focus on potential nesting sites (e.g., cliffs, transmission line structures) within a 0.5-mile buffer around the work areas; and surveys for nesting passerines shall be conducted within 200 feet of the work areas. The clearance survey should take place no more than 7 days prior to the commencement of Project activities, and may occur in conjunction with on-site monitoring for other sensitive wildlife species.

If a nesting bird is found during the clearance survey, an adequate buffer area will be established by a biological monitor in which no construction will occur to protect the active nest during the duration of the Project. Suitable buffers are typically up to 500 feet for common raptors and up to 200 feet for passerines, though buffer distances may be adjusted at the discretion of the biological monitor based on site conditions such as topography and vegetative cover and observed tolerance of the nesting individual(s) to disturbance. For non-listed species, Project activities may encroach into the buffer area at the discretion of the biological monitor; however, for listed species, appropriate resource agencies shall be consulted prior to encroachment into an established buffer. Additionally, routine washing/power spraying of transmission towers containing a nest should also occur outside of the avian breeding season to avoid any potential impacts to nesting birds.

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APPENDIX A
Estimated Limits of Grading

Path 46 Transmission Line Clearance Project

Lines Affected	McCullough-Victorville 1, McCullough-Victorville 2, Mead-Victorville 1
Number of Work Areas	72 (MVL1 – 10; MCV1 – 54; MCV2 – 8)
Total Acres of Grading	Approx. 7.8
Total Acres of Tower Raising Work Areas	Approx. 3.7
Average Depth of Excavation (Grading)	2.18 feet
Total Spoils Volume (Grading)	10,838 cubic yards

Estimated Limits of Grading (Work Areas)

Associated Tower Number	BLM Field Office	Max. Width (Ft.)	Max. Length (Ft.)	Max. Depth (Ft.)	Area (Sq. Ft.)	Cubic Yards	Special Land Designations
MCV2 152-1	Barstow	35	70	3.25	1,685	91	Western Mojave Recovery Area
MCV1 151-4	Barstow	25	60	2.75	1,525	77	Western Mojave Recovery Area
MCV1 149-2	Barstow	90	115	9	7,060	1,080	Western Mojave Recovery Area
MVL1 168-3	Barstow	66	216	3	4,840	253	Western Mojave Recovery Area
MCV1 145-3	Barstow	70	160	2.5	4,236	201	Western Mojave Recovery Area
MVL1 159-1	Barstow	42	62	2.3	1,490	68	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Ord-Rodman DWMA

Estimated Limits of Grading (Work Areas)

Associated Tower Number	BLM Field Office	Max. Width (Ft.)	Max. Length (Ft.)	Max. Depth (Ft.)	Area (Sq. Ft.)	Cubic Yards	Special Land Designations
MVL1 158-6	Barstow	76	247	3.8	5,155	280	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Ord-Rodman DWMA
MVL1 155-5	Barstow	114	237	5.4	7,987	731	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Ord-Rodman DWMA
MCV1 138-1	Barstow	30	440	1	11,530	41	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Ord-Rodman DWMA
MVL1 150-4	Barstow	59	90	2	3,081	121	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Ord-Rodman DWMA; Mojave Monkeyflower ACEC
MVL1 150-3	Barstow	27	240	3	5,240	242	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Ord-Rodman DWMA; Mojave Monkeyflower ACEC
MVL1 147-4	Barstow	(Barricade installation)	0	0	0	9	Western Mojave Recovery Area
MCV1 129-1	Barstow	38	420	3.7	10,641	580	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Ord-Rodman DWMA; Mojave Monkeyflower ACEC
MCV1 125-5 (Tower raising)	Barstow	400	200	-*	80,000	-	Western Mojave Recovery Area
MCV1 125-6 (Tower raising)	Barstow	400	200	-*	80,000	-	Western Mojave Recovery Area
MCV1 120-1	Barstow	(Barricade installation)	0	0	0	0	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Superior-Cronese DWMA

Estimated Limits of Grading (Work Areas)

Associated Tower Number	BLM Field Office	Max. Width (Ft.)	Max. Length (Ft.)	Max. Depth (Ft.)	Area (Sq. Ft.)	Cubic Yards	Special Land Designations
MVL1 129-4	Barstow	32	90	2.5	445	15	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Superior-Cronese DWMA
MCV2 104-5	Barstow	12	21	3	210	8	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Superior-Cronese DWMA
MCV2 103-3	Barstow	55	316	3.2	8,030	278	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Superior-Cronese DWMA
MCV2 100-5	Barstow	20	77	1.75	1,125	27	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Superior-Cronese DWMA
MCV2 97-5	Barstow	26	181	1.7	2,674	82	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Superior-Cronese DWMA
MCV2 97-1	Barstow	25	200	2.25	1,522	73	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Superior-Cronese DWMA
MCV2 93-4	Barstow	89	162	4.8	5,877	456	Western Mojave Recovery Area; Desert Tortoise Critical Habitat; Superior-Cronese DWMA
MCV1 92-4	Barstow	18	120	2	1,840	62	Western Mojave Recovery Area
MCV2 90-4	Barstow	45	365	4	11,900	320	Western Mojave Recovery Area
MVL1 111-1	Barstow	115	270	3.5	9,000	314	Western Mojave Recovery Area
MVL1 110-5	Barstow	19	140	2	2,300	71	Western Mojave Recovery Area
MCV1 88-5	Barstow	16.4 / 17 / 24	154 / 156 / 281	1.5 / 1/ 2.2	2,188 / 2,301 / 5,440	285	Western Mojave Recovery Area

Estimated Limits of Grading (Work Areas)

Associated Tower Number	BLM Field Office	Max. Width (Ft.)	Max. Length (Ft.)	Max. Depth (Ft.)	Area (Sq. Ft.)	Cubic Yards	Special Land Designations
MCV1 88-3	Barstow	40	428	1.1	6,903	34	Western Mojave Recovery Area
MCV1 88-2	Barstow	33 / 35	213 / 382	1.9 / 0.65	4,843 / 7,150	157 / 57.5	Western Mojave Recovery Area
MCV1 88-1	Barstow	25.3	216	1.6	4,800	120	Western Mojave Recovery Area
MCV1 87-5	Barstow	20 / 15 / 31	275 / 202 / 452	3 / 2 /1.5'	3,940 / 2,260 / 6,172	204 / 71 / 88	Western Mojave Recovery Area
MCV1 87-4	Barstow	30	450	1.1	5,870	58.3	Western Mojave Recovery Area
MCV1 87-3	Barstow	25	408	1	5,470	52.1	Western Mojave Recovery Area
MCV1 87-2	Barstow	15 / 9 / 26	190 / 160 / 424	2.3 / 1 / 1.2	2,060 / 1,161 / 5,960	68.9 / 17.1 / 99	Western Mojave Recovery Area
MCV1 87-1	Barstow	31	385	0.6	4,770	51.9	Western Mojave Recovery Area
MCV1 86-5	Barstow	15 / 10 / 20	236.3 / 190 / 340	2.4 / 1.5 / 0.5	2,755 / 1,580 / 4,100	97.4 /34.8 / 9.7	Western Mojave Recovery Area
MCV1 86-4	Barstow	30	350	2	7,708	96	Western Mojave Recovery Area
MCV1 86-3	Barstow	15	420	1.3	4,425	15	Western Mojave Recovery Area
MCV1 86-2	Barstow	15	320	1.3	3,511	14	Western Mojave Recovery Area
MCV1 86-1	Barstow	15	285	1.3	3,222	18	Western Mojave Recovery Area
MCV1 85-5	Barstow	15	310	1.3	3,300	19	Western Mojave Recovery Area
MCV1 85-4	Barstow	15	240	1.5	2,740	25	Western Mojave Recovery Area
MCV1 85-3	Barstow	15	310	1.3	3,322	14	Western Mojave Recovery Area
MCV1 85-2	Barstow	57	85	7	3,356	382	Western Mojave Recovery Area

Estimated Limits of Grading (Work Areas)

Associated Tower Number	BLM Field Office	Max. Width (Ft.)	Max. Length (Ft.)	Max. Depth (Ft.)	Area (Sq. Ft.)	Cubic Yards	Special Land Designations
MCV1 84-5	Barstow	36	107	4	2,736	230	Western Mojave Recovery Area
MCV1 82-1	Barstow	16.5	147	1.3	1,996	40	Western Mojave Recovery Area
MCV1 78-4	Barstow	22	141	1.6	1,976	34	Western Mojave Recovery Area
MCV1 77-6	Barstow	50	560	1	17,000	10	Western Mojave Recovery Area
MCV1 77-5	Barstow	50	900	1	21,000	10	Western Mojave Recovery Area
MCV1 77-4	Barstow	30	330	1	5,000	10	Western Mojave Recovery Area
MCV1 77-1	Barstow	15	300	1.3	3,436	29	Western Mojave Recovery Area
MCV1 76-5	Barstow	13	300	1.3	3,300	16	Western Mojave Recovery Area
MCV1 76-4	Barstow	15	300	1.3	3,300	21	Western Mojave Recovery Area
MCV1 75-3	Barstow	29	240	2.3	3,617	102	Western Mojave Recovery Area
MCV1 73-6	Barstow	25	190	2	5,000	79	Western Mojave Recovery Area
MCV1 66-5	Barstow	25	275	3.5	9,025	179	Eastern Mojave Recovery Area
MCV1 62-3	Barstow	60	93	3.5	4,740	295	Eastern Mojave Recovery Area
MCV1 61-2	Barstow	23 / 32	70 / 95	2.2 / 0.8	1,200 / 1,960	63	Eastern Mojave Recovery Area
MCV1 61-1	Needles	76	160.2	1.1	5,973	63	Eastern Mojave Recovery Area
MCV1 60-5	Needles	37 / 40	41 / 46	4 / 5	140 / 150	207	Eastern Mojave Recovery Area
MCV1 59-4	Needles	25	280	3	8,700	446	Eastern Mojave Recovery Area
MCV1 57-5	Needles	20	160	2.5	3,000	116	Eastern Mojave Recovery Area

Estimated Limits of Grading (Work Areas)

Associated Tower Number	BLM Field Office	Max. Width (Ft.)	Max. Length (Ft.)	Max. Depth (Ft.)	Area (Sq. Ft.)	Cubic Yards	Special Land Designations
MCV1 56-4	Needles	35	170	5.2	4,300	420	Eastern Mojave Recovery Area
MCV1 55-2	Needles	45	151	1.9	4,620	122	Eastern Mojave Recovery Area
MCV1 38-5	Needles	13	130	1.5	1,398	31	Eastern Mojave Recovery Area; Clark Mountain ACEC
MCV1 38-3	Needles	35	85	1.5	1,948	48	Eastern Mojave Recovery Area; Clark Mountain ACEC
MCV1 37-6	Needles	40	100	4	3,246	240	Eastern Mojave Recovery Area; Clark Mountain ACEC
MCV1 37-2	Needles	25	130	3	2,514	150	Eastern Mojave Recovery Area; Clark Mountain ACEC
MCV1 36-6	Needles	27	75	3.1	1,528	59	Eastern Mojave Recovery Area; Clark Mountain ACEC
MCV1 36-4	Needles	30	123	2.7	2,577	107	Eastern Mojave Recovery Area; Clark Mountain ACEC
MCV1 36-2	Needles	32	175	2	3,653	115	Eastern Mojave Recovery Area; Clark Mountain ACEC

SOURCE: LADWP

* Footings for Towers MCV1 125-5 and MCV1 125-6 are expected to be excavated to a depth of 30 feet.

APPENDIX B
CNDDB Results

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Alvord Mtn. East (3511615) or Bitter Spring (3511624) or Clark Mtn. (3511555) or Cronese Lakes (3511623) or Daggett (3411678) or Dunn (3511614) or East of Kingston Spring (3511557) or Harvard Hill (3411686) or Kingston Spring (3511558) or Minneola (3411677) or North of Baker (3511641) or Red Pass Lake (3511633) or Silurian Valley (3511642) or Stoddard Well (3411761) or Turquoise Mtn. (3511548) or Turtle Valley (3411762) or West of Baker (3511632))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S3	
ABNKC22010	***Aquila chrysaetos*** golden eagle	None	None	G5	S3	FP
ABNKD06090	***Falco mexicanus*** prairie falcon	None	None	G5	S4	WL
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S3	SSC
ABNYF10040	***Colaptes chrysoides*** gilded flicker	None	Endangered	G5	S1	
ABPAE36010	***Pyrocephalus rubinus*** vermilion flycatcher	None	None	G5	S2S3	SSC
ABPBK06050	***Toxostoma bendirei*** Bendire's thrasher	None	None	G4G5	S3	SSC
ABPBK06100	***Toxostoma lecontei*** Le Conte's thrasher	None	None	G4	S3	SSC
ABPBR01030	***Lanius ludovicianus*** loggerhead shrike	None	None	G4	S4	SSC
ABPBW01140	***Vireo vicinior*** gray vireo	None	None	G4	S2	SSC
ABPBX01070	***Oreothlypis virginiae*** Virginia's warbler	None	None	G5	S2	WL
ABPBX45020	***Piranga flava*** hepatic tanager	None	None	G5	S1	WL
ABPBX45030	***Piranga rubra*** summer tanager	None	None	G5	S1	SSC
ABPBXA5021	***Junco hyemalis caniceps*** gray-headed junco	None	None	G5T5	S1	WL
AFCJB1303H	***Siphateles bicolor mohavensis*** Mohave tui chub	Endangered	Endangered	G4T1	S1	FP
AMACC01090	***Myotis thysanodes*** fringed myotis	None	None	G4	S3	
AMACC05030	***Lasiurus cinereus*** hoary bat	None	None	G5	S4	
AMACC08010	***Corynorhinus townsendii*** Townsend's big-eared bat	None	Candidate Threatened	G3G4	S2	SSC
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G5	S3	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AMAFB05150	***Xerospermophilus mohavensis*** Mohave ground squirrel	None	Threatened	G2G3	S2S3	
AMALE04013	***Ovis canadensis nelsoni*** desert bighorn sheep	None	None	G4T4	S3	FP
ARAAD02030	***Emys marmorata*** western pond turtle	None	None	G3G4	S3	SSC
ARAAF01012	***Gopherus agassizii*** desert tortoise	Threatened	Threatened	G3	S2	
ARACF15030	***Uma scoparia*** Mojave fringe-toed lizard	None	None	G3G4	S3S4	SSC
CTT61700CA	***Mojave Riparian Forest*** Mojave Riparian Forest	None	None	G1	S1.1	
CTT75200CA	***Crucifixion Thorn Woodland*** Crucifixion Thorn Woodland	None	None	G3	S1.2	
IIHYM24460	***Bombus morrisoni*** Morrison bumble bee	None	None	G4G5	S1S2	
IIHYM24480	***Bombus crotchii*** Crotch bumble bee	None	None	G3G4	S1S2	
NBMUS7K090	***Tortella alpicola*** alpine crisp moss	None	None	G4G5	S1	2B.3
NBMUS97020	***Jaffueliobryum wrightii*** Wright's jaffueliobryum moss	None	None	G4G5	S2?	2B.3
PDAPI0U0C0	***Cymopterus gilmanii*** Gilman's cymopterus	None	None	G3?	S2	2B.3
PDAPI0U0Q0	***Cymopterus multinervatus*** purple-nerve cymopterus	None	None	G5?	S2	2B.2
PDASC02190	***Asclepias nyctaginifolia*** Mojave milkweed	None	None	G4G5	S2	2B.1
PDAST2E083	***Cirsium arizonicum var. tenuisectum*** desert mountain thistle	None	None	G5T2	S2	1B.2
PDAST3M452	***Erigeron uncialis var. uncialis*** limestone daisy	None	None	G3G4T2	S2	1B.2
PDAST3N070	***Eriophyllum mohavense*** Barstow woolly sunflower	None	None	G2	S2	1B.2
PDAST51032	***Hymenopappus filifolius var. eriopodus*** hairy-podded fine-leaf hymenopappus	None	None	G5T3?	S2?	2B.3
PDAST89010	***Sanvitalia abertii*** Abert's sanvitalia	None	None	G5	S2S3	2B.2
PDAST8C020	***Bahia neomexicana*** many-flowered bahia	None	None	G5	S2S3	2B.3
PDASTBX0J0	***Ageratina herbacea*** desert ageratina	None	None	G5	S2S3	2B.3

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDBRA22050	***Physaria chambersii*** Chambers' physaria	None	None	G5	S2S3	2B.3
PDCAC040J0	***Coryphantha chlorantha*** desert pincushion	None	None	G2G3	S2	2B.1
PDCAC0J0H0	***Sclerocactus johnsonii*** Johnson's bee-hive cactus	None	None	G3G4	S2	2B.2
PDCAC0X0G8	***Coryphantha vivipara var. rosea*** viviparous foxtail cactus	None	None	G5T3	S1	2B.2
PDCPP09013	***Wislizenia refracta ssp. refracta*** jackass-clover	None	None	G5T5?	S1	2B.2
PDCRO04020	***Glossopetalon pungens*** pungent glossopetalon	None	None	G2G3	S1	1B.2
PDEUP0Q0P1	***Euphorbia exstipulata var. exstipulata*** Clark Mountain spurge	None	None	G5T5?	S2	2B.1
PDFAB0F8X0	***Astragalus tidestromii*** Tidestrom's milk-vetch	None	None	G4G5	S2	2B.2
PDFAB5L050	***Pediomelum castoreum*** Beaver Dam breadroot	None	None	G3	S2	1B.2
PDGEN05022	***Frasera albomarginata var. induta*** Clark Mountain green-gentian	None	None	G5T2	S1	1B.2
PDHYD0C060	***Phacelia anelsonii*** Aven Nelson's phacelia	None	None	G3	S2	2B.3
PDHYD0C0C0	***Phacelia barnebyana*** Barneby's phacelia	None	None	G3?	S2	2B.3
PDHYD0C0U0	***Phacelia coerulea*** sky-blue phacelia	None	None	G5	S2	2B.3
PDHYD0C1M0	***Phacelia perityloides var. jaegeri*** Jaeger's phacelia	None	None	G4T2	S1	1B.3
PDHYD0C3G0	***Phacelia parishii*** Parish's phacelia	None	None	G2G3	S1	1B.1
PDLAM18130	***Monardella eremicola*** Clark Mountain monardella	None	None	G3Q	S3	1B.3
PDLIN020P0	***Linum puberulum*** plains flax	None	None	G5	S2	2B.3
PDLOA031D0	***Mentzelia polita*** polished blazing star	None	None	G2	S2	1B.2
PDLOA031E0	***Mentzelia pterosperma*** wing-seed blazing star	None	None	G4	S2	2B.2
PDLOA031U0	***Mentzelia tridentata*** creamy blazing star	None	None	G3	S3	1B.3
PDMAL140L1	***Sphaeralcea rusbyi var. eremicola*** Rusby's desert-mallow	None	None	G4T2	S2	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDOLE09040	***Menodora scabra*** rough menodora	None	None	G5	S3	2B.3
PDOLE09061	***Menodora spinescens var. mohavensis*** Mojave menodora	None	None	G4T2	S2	1B.2
PDONA0C090	***Oenothera cavernae*** cave evening-primrose	None	None	G2G3	S1	2B.1
PDPAP02030	***Arctomecon merriamii*** white bear poppy	None	None	G3	S3	2B.2
PDPGN080R0	***Eriogonum bifurcatum*** forked buckwheat	None	None	G3	S3	1B.2
PDPGN086U6	***Eriogonum umbellatum var. juniporinum*** juniper sulphur-flowered buckwheat	None	None	G5T4	S3	2B.3
PDPLM041T0	***Aliciella triodon*** coyote gilia	None	None	G5	S2	2B.2
PDROS0X080	***Ivesia jaegeri*** Jaeger's ivesia	None	None	G2G3	S1	1B.3
PDRUB0N1V0	***Galium proliferum*** desert bedstraw	None	None	G5	S2	2B.2
PDRUB0N2F0	***Galium wrightii*** Wright's bedstraw	None	None	G3G4	S2	2B.3
PDSCR1B1V0	***Mimulus mohavensis*** Mojave monkeyflower	None	None	G2	S2	1B.2
PDSCR1L670	***Penstemon thompsoniae*** Thompson's beardtongue	None	None	G4	S1	2B.3
PDSCR1L6G0	***Penstemon utahensis*** Utah beardtongue	None	None	G4	S2	2B.3
PDSIM03030	***Castela emoryi*** Emory's crucifixion-thorn	None	None	G3G4	S2S3	2B.2
PDSOL0T010	***Physalis lobata*** lobed ground-cherry	None	None	G5	S2	2B.3
PMJUN01210	***Juncus nodosus*** knotted rush	None	None	G5	S3	2B.3
PMLIL02061	***Allium atrorubens var. atrorubens*** Great Basin onion	None	None	G4T4	S2	2B.3
PMLIL021J0	***Allium nevadense*** Nevada onion	None	None	G4	S3	2B.3
PMLIL06010	***Androstephium breviflorum*** small-flowered androstephium	None	None	G4	S2	2B.2
PMPOA100L0	***Bouteloua trifida*** three-awned grama	None	None	G4G5	S2	2B.3
PMPOA2J010	***Enneapogon desvauxii*** nine-awned pappus grass	None	None	G5	S3	2B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PMPOA2S020	***Erioneuron pilosum*** hairy erioneuron	None	None	G5	S3	2B.3
PMPOA48060	***Muhlenbergia arsenei*** tough muhly	None	None	G5	S2	2B.3
PMPOA480Q0	***Muhlenbergia fragilis*** delicate muhly	None	None	G5?	S1	2B.3
PMPOA49010	***Munroa squarrosa*** false buffalo-grass	None	None	G5	S2	2B.2
PMPOA4J070	***Stipa divaricata*** small-flowered rice grass	None	None	G5	S2	2B.3
PMPOA5X010	***Stipa arida*** Mormon needle grass	None	None	G5	S3?	2B.3
PMPOA6P010	***Elymus salina*** Salina Pass wild-rye	None	None	G5	S2	2B.3
PPADI0P013	***Astrolepis cochisensis ssp. cochisensis*** scaly cloak fern	None	None	G5?T4	S2	2B.3
PPDRY0U0A0	***Woodsia plummerae*** Plummer's woodsia	None	None	G5	S2	2B.3

Record Count: 91

APPENDIX C
Survey Dates and Weather Conditions

Date	Work Area	Segment #	Personnel*	Time	Temperature (°F)	Wind Speed Average (mph)	Cloud Cover (%)
4/15/14	MCV2 152-1 to MCV2 152-2	1	MS, DP, KFa	1200 – 1300	76	0 – 5	5
	MCV1 151-4 to MCV1 151-5	1	MS, DP, KFa	1310 – 1410	75	0 – 5	5
	MCV1 149-2 to MCV1 149-3	1	MS, DP, KFa	1425 – 1522	80	0 – 5	5
4/16/14	MVL1 168-5 to MVL1 169-1	1	MS, DP, KFa	0855 – 0940	66	0 – 5	0
	MVL1 147-4 to MVL1 147-5	1	MS, DP, KFa	0955 – 1050	68	0 – 5	0
	MVL1 168-3 to MVL1 168-4	1	MS, DP, KFa	1055 – 1112	70	0 – 5	0
	MCV1 145-3 to MCV1 145-4	1	MS, DP, KFa	1130 – 1200	80	0 – 5	0
	MVL1 158-6 to MVL1 159-2 MCV1 138-1 to MCV1 138-2	2	MS, DP, KFa	1310 – 1507	82 - 90	0 – 5	0
4/17/14	MVL1 155-5 to MVL1 155-6	2	MS, DP, KFl	0835 – 0955	70 – 72	0 – 1	5
	MVL1 150-3 to MVL1 150-5	2	MS, DP, KFl	1035 – 1145	82 – 89	0 – 1	10
	MCV1 129-1 to MCV1 129-2	2	MS, DP, KFl	1215 – 1251	89 – 92	3 – 4	10
	MVL1 147-4 to MVL1 147-5	3	MS, DP, KFl	1332 – 1343	91	3	10
	MCV1 125-6 to MCV1 125-5	3	MS, DP, KFl	1355 – 1410	91	3	10
	MCV1 120-1 to MCV1 120-2	3	MS, DP, KFl	1420 – 1515	92 – 91	7 – 14	10 – 50
4/18/14	MVL1 129-4 to MVL1 129-5	4	MS, DP, KFl	0820 – 0930	70 – 72	2 – 3	100
	MCV2 104-5 to MCV2 105-1	4	MS, DP, KFl	0954 – 1030	75 – 78	4 – 2	90 – 100
	MCV2 103-3 to MCV2 103-4	4	MS, DP, KFl	1045 – 1120	78 – 76	2	100
	MCV1 100-5 to MCV1 101-1	4	MS, DP, KFl	1150 – 1225	78	2 – 4	95 – 100
	MCV2 97-5 to MCV2 98-1	4	MS, DP, KFl	1238 – 1305	78 – 82	3 – 5	100
	MCV2 97-1 to MCV2 97-2	4	MS, DP, KFl	1310 – 1351	82 – 84	1 – 2	90 – 70
4/22/14	MCV1 73-6 to MCV1 74-1	5	MS, RS, KFa	1450 – 1558	93 – 94	3 – 2	5

Date	Work Area	Segment #	Personnel*	Time	Temperature (°F)	Wind Speed Average (mph)	Cloud Cover (%)
	MCV1 75-3 to MCV1 75-4	5	MS, RS, KFa	1610 – 1648	93	5 – 3	10
4/23/14	MCV1 88-5 to MCV1 89-1 MCV1 88-1 to MCV1 88-4 MCV1 85-2 to MCV1 87-6 MCV1 85-2 to MCV1 85-3 MCV1 84-6 to MCV1 84-5	5	MS, DP, RS, JH, RH, KFa	1039 – 1449	76 – 84	2 – 1	1
	MCV1 62-3 to MCV1 62-4	6	DP, JH, RH	1513 – 1630	75 – 74	17 – 14	5 – 0
	MCV1 60-5 to MCV1 61-3	6	MS, RS, KFa	1516 – 1745	80 – 76	19 – 14	0
	MCV1 66-5 to MCV1 66-6	5	DP, JH, RH	1650 – 1718	74	19 – 16	0
4/24/14	MCV2 93-4 to MCV2 93-5	4	DP, JH, RH, RS, KFa	0859 – 1010	70 – 81	0 – 2	0
	MCV1 92-4 to MCV1 92-5	4	DP, JH, RH, RS, KFa	1021 – 1114	81 – 87	0 – 2	0
	MCV2 90-4 to MCV2 90-5	4	DP, JH, RH, RS, KFa	1127 – 1153	86 – 90	0 – 1	0
	MVL1 110-5 to MVL1 111-2	4	DP, JH, RH, RS, KFa	1207 – 1319	87 – 82	3 – 2	0
	MCV1 82-1 to MCV1 82-2	5	DP, JH, RH	1449 – 1514	88 – 89	6 – 3	0
4/25/14	MCV1 78-4 to MCV1 78-5 MCV1 77-5 to MCV1 78-1 MCV1 76-4 to MCV1 77-2	5	DP, JH, RH	0748 - 0933	73 – 81	6 – 5	80 – 70
	MCV1 59-5 to MCV1 59-4 MCV1 57-5 to MCV1 58-1 MCV1 56-4 to MCV1 56-5 MCV1 55-2 to MCV1 55-3	6	DP, JH, RH	1128 – 1435	70 – 68	11 – 13	80
	MCV1 36-2 to MCV1 36-3	7	RS, KFa, KFl	1658 – 1838	73 – 69	1 – 2	0

Date	Work Area	Segment #	Personnel*	Time	Temperature (°F)	Wind Speed Average (mph)	Cloud Cover (%)
4/29/14	MCV1 38-5 to MCV1 39-1 MCV1 38-3 to MCV1 38-4 MCV1 37-6 to MCV1 38-1 MCV1 36-6 to MCV1 37-3 MCV1 36-4 to MCV1 36-5	7	RS, KFa, KFl	0900 – 1514	57 – 72	5 – 7	0

* DP = Dallas Pugh; JH = Joe Henry; KFa = Karl Fairchild; KFl = Karla Flores; MS = Matthew South; RH = Rosanne Humphrey; RS = Robert Sweet

APPENDIX D

Botanical and Wildlife Species Compendiums

Common Name	Scientific Name	Segment							Status
		1	2	3	4	5	6	7	
INSECTS									
Swallowtail	Lepidoptera: Papilonidae	X							
black beetle	Coleoptera	X							
White/Black spotted beetle	*Cysteodemus sp.* (Coleoptera: Meloidae)		X						
Sphinx moth	*Hyles lineata* (Lepidoptera: Sphingidae)		X						
Velvet ant	*Dasymutilla sp.* (Hymenoptera: Mutillidae)					X			
REPTILES									
Glossy snake	*Arizona elegans*				X				
Red racer	*Coluber flagellum piceus*						X		
Mojave desert sidewinder	*Crotalus cerastes cerastes*		X						
Great Basin collared lizard	*Crotaphytus bicinctores*	X							
Long-nosed leopard lizard	*Gambelia wislizenii*				X				
Northern desert iguana	*Dipsosaurus dorsalis dorsalis*		X			X			
Western zebra-tailed lizard	*Callisaurus draconoides rhodostictus*		X		X	X			
Desert horned lizard	*Phrynosoma platyrhinos*		X						
Western Side-blotched lizard	*Uta stansburiana elegans*	X		X			X	X	
Western whiptail	*Aspidoscelis tigris tigris*	X	X	X	X	X	X	X	
Desert tortoise sign	*Gopherus agassizii* (sign)		X	X	X		X		**FT, ST**
Desert tortoise seen	*Gopherus agassizii* (live)		X						**FT, ST**
Desert tortoise carcass	*Gopherus agassizii* (carcass)		X		X				**FT, ST**
BIRDS									
Gambel's quail	*Callipepla gambelii*							X	
Turkey vulture	*Cathartes aura*		X	x		X			
Golden eagle nest (inactive)	*Aquila chrysaetos*nest		X						**BEPA, FP**
Hawk nest	*Buteo* sp.nest		X	X	X				
Red-tailed Hawk	*Buteo jamaicensis*			X	X		X	X	
Killdeer	*Charadrius vociferus*			x					
Rock pigeon	*Columba livia*			X					

Common Name	Scientific Name	Segment							Status
		1	2	3	4	5	6	7	
Mourning dove	*Zenaida macroura*						X		
Hairy woodpecker	*Picoides villosus*							X	
Say's phoebe	*Sayornis saya*				X				
Ash-throated flycatcher	*Myiarchus cinerascens*	X	X					X	
Western kingbird	*Tyrannus verticalis*				X		X	X	
Loggerhead shrike	*Lanius ludovicianus*	X			X	X			**SCC**
Common raven	*Corvus corax*	X		X	X				
Common raven nest	*Corvus corax* nest				X				
Horned lark	*Eremophila alpestris*	X	X	X	X				**SCC**
Verdin	*Auriparus flaviceps*	X							
Bushtit	*Psaltriparus minimus*							X	
Rock wren	*Salpinctes obsoletus*	X	X			X			
Bewick's wren	*Thryomanes bewickii*							X	
Cactus wren	*Campylorhynchus brunneicapillus*	X						X	
Blue-gray gnatcatcher	*Polioptila caerulea*							X	
Black-tailed gnatcatcher	*Polioptila melanura*						X		**SCC**
LeConte's thrasher	*Toxostoma lecontei*					X			**SCC**
Northern mockingbird	*Mimus polyglottos*				X		X		
European starling	*Sturnus vulgaris*	X							
Phainopepla	*Phainopepla nitens*						X	X	
Orange-crowned warbler	*Oreothlypis celata*					X		X	
MacGillivray's warbler	*Geothlypis tolmiei*							X	
Yellow-rumped warbler	*Setophaga coronata*							X	
Townsend's warbler	*Setophaga townsendi*					X			
Wilson's warbler	*Cardellina pusilla*							X	
Brewer's sparrow	*Spizella breweri*		X					X	
Lark Sparrow	*Chondestes grammacus*	X							**SCC**
Black throated sparrow	*Amphispiza bilineata*	X	X		X	X	X	X	

Common Name	Scientific Name	Segment							Status
		1	2	3	4	5	6	7	
Bell's sparrow	*Artemisiospiza belli*		X						
White-crowned sparrow	*Zonotrichia leucophrys*				X				
House finch	*Haemorhous mexicanus*	X						X	
MAMMALS									
Black-tailed jackrabbit	*Lepus californicus*			X	X	X	X		
Desert cottontail	*Sylvilagus audubonii*	X					X	X	
Antelope ground squirrel	*Ammospermophilus leucurus*	X					X	X	
Kangaroo rat	*Dipodomys* sp.	X							
Kangaroo rat scat/tracks	*Dipodomys* sp. (sign)						X		
Woodrat sp.	*Neotoma* sp.	X	X				X	X	
Small mammal burrow	Rodentia sp. (burrow)	X		X	X		X		
Coyote	*Canis latrans*			X	X	X			
Coyote scat	*Canis latrans* (scat)	X	X		X				
Kit Fox den	*Vulpes macrotis*(den)	X	X			X			**SSC, FBM**
Kit Fox scat	*Vulpes macrotis*(scat)					X			**SSC, FBM**
Badger burrow	*Taxidea taxus* (burrow)	X							**SSC**

APPENDIX E
Photographic Log

Photograph 1. Photograph depicts typical desert scrub habitat in the vicinity of transmission line infrastructure.

Photograph 2. Photograph depicts typical desert scrub habitat and existing transmission line infrastructure.

Photograph 3. Photograph depicts typical desert scrub habitat, including Joshua trees, along transmission line.

Photograph 4. Photograph depicts typical disturbance from existing service roads along transmission line.

Photograph 5. Photograph depicts typical native desert scrub habitat and existing disturbance along transmission line corridor.

Photograph 6. Photograph depicts typical disturbance from existing spur roads.

APPENDIX D2

Jurisdictional Delineation Report

JURISDICTIONAL DELINEATION REPORT
FOR THE PATH 46 TRANSMISSION LINE CLEARANCES PROJECT
IN SAN BERNARDINO COUNTY, CALIFORNIA

PREPARED FOR

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September 2016, revised January 2017

TABLE OF CONTENTS

Section **Page**

Executive Summary **ES-1**

1.0 Introduction **1**

1.1 Project Location and Environmental Setting 1

1.2 Project Purpose and Description 1

1.2.1 Grading Process *2*
1.2.2 Tower Raising Process *2*

1.3 Regulatory Authority 3

1.3.1 U.S. Army Corps of Engineers *3*
1.3.2 Regional Water Quality Control Board *3*
1.3.3 California Department of Fish and Wildlife *3*

2.0 Methods **4**

2.1 Literature 4

2.2 Jurisdictional Delineation 4

2.2.1 Wetland Analysis *6*

3.0 Results **9**

3.1 Literature Review 9

3.2 U.S. Army Corps of Engineers Jurisdictional Determination 10

3.2.1 "Waters of the U.S." Determination (Non-Wetland) *10*
3.2.2 Preliminary Wetlands Determination *10*

3.3 Regional Water Quality Control Board Determination 11

3.4 California Department of Fish and Wildlife Determination 11

3.5 Incidental Observations 11

4.0 Impact Analysis **12**

5.0 Regulatory Approval Process **13**

5.1 Regulatory Permit Requirements 13

5.1.1 U.S. Army Corps of Engineers *13*
5.1.2 Regional Water Quality Control Board *13*
5.1.3 California Department of Fish and Wildlife *14*

5.2 Recommendations 14

6.0 References **15**

TABLES

Table **Page**

1 Summary of Impacts on Jurisdictional Resources in the Survey Area.....12

ATTACHMENTS

Attachment

A Exhibits
- 1 – Project Location
- 2 – Survey Area
- 3 – USGS 7.5-Minute Topographic Quadrangle
- 4 – Soil Types
- 5 – Potential Features
- 6 – Jurisdictional Resources
- 7 – Project Impacts

B Regulatory Authority
C Summary of Potential Jurisdictional Water Resources in the Survey Area
D Datasheets
E Representative Photographs
F California Natural Diversity Database Forms
G Detailed Project Impacts
H Nationwide Permit Summary

EXECUTIVE SUMMARY

The purpose of this report is to provide baseline data concerning the type and extent of potential jurisdictional water resources for the Path 46 Transmission Line Clearances Project (hereinafter referred to as the "Project"). The Project consists of eight segments, seven of which are located in the Mojave Desert in San Bernardino County, California and one located in Clark County, Nevada. Only Segments 1 through 7 in California are discussed in this report.

Jurisdictional water resources considered for this report include "waters of the U.S." regulated by the U.S. Army Corps of Engineers (USACE); "waters of the State" regulated by the Regional Water Quality Control Board (RWQCB); and the bed, bank, and channel of all lakes, rivers, and/or streams (and associated riparian vegetation), as regulated by the California Department of Fish and Wildlife (CDFW).

The jurisdictional delineation field work was performed by Psomas in September 2016. The limits of non-wetland "waters of the U.S." and "waters of the State" were identified by the presence of an ordinary high water mark (OHWM). Potential wetland "waters of the U.S." were assessed using a two-parameter approach (presence of wetland-associated plants and presence or evidence of hydrology). The limits of CDFW jurisdictional waters were identified as the top of bank or the outer drip line of riparian vegetation.

Based on the results of the field work, it was determined that the total jurisdictional water resources in the survey area are as follows:

- **USACE Jurisdiction:** 31.130 acres.
- **RWQCB Jurisdiction:** 57.733 acres (31.130 acres of "waters of the U.S." and 26.603 acres of isolated waters).
- **CDFW Jurisdiction:** 63.529 acres.

Based on the results of the data analysis, it was determined that the total impacts on jurisdictional water resources in the survey area are as follows:

- **USACE Jurisdiction:** 0.397 acre (0.337 acre grading and 0.060 acre road demolition).
- **RWQCB Jurisdiction:** 0.987 acre (0.794 acre grading and 0.193 acre road demolition).
- **CDFW Jurisdiction:** 1.018 acre (0.825 acre grading and 0.193 acre road demolition).

1.0 INTRODUCTION

This Jurisdictional Delineation Report (report) was prepared for the Los Angeles Department of Water and Power (LADWP) to provide baseline data concerning the type and extent of resources potentially subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW) for the Path 46 Transmission Line Clearances Project (hereinafter referred to as "Project").

1.1 PROJECT LOCATION AND ENVIRONMENTAL SETTING

The Project area is located in the Mojave Desert and extends from the vicinity of Victorville, California, northeast to Boulder City, Nevada (Attachment A, Exhibit 1). It is generally located along Interstate (I) 15. The Project area is divided into Segments 1 through 8; Segment 8, which occurs in Nevada, is not discussed in this report. The seven California segments are located in unincorporated San Bernardino County. The Project is located on land administered by the U.S. Bureau of Land Management (BLM), with a BLM right-of-way grant issued to the LADWP.

The Project extends across the Mojave Desert from the Stoddard Valley in the southwest, through the Mojave Valley, and into the Shadow Valley and Clark Mountain Range in the northeast. The Mojave Desert is a wedge-shaped basin that experiences precipitation primarily in the winter, with occasional summer thunderstorms.

At the southwestern end of the Project area (i.e., Victorville), the average annual precipitation is 6.15 inches with the temperature averaging 78.8 degrees Fahrenheit (°F) in the summer and 46.7°F in the winter (Arguez et al. 2010).[1] Precipitation is slightly lower and temperatures are slightly higher in the Barstow and Baker areas. Average annual precipitation is 5.30 inches and 4.48 inches, average summer temperatures are 83.1°F and 91.3°F, and average winter temperatures are 47.8°F and 50.1°F, respectively. Precipitation increases and temperature decreases at the northeastern end of the Project area (i.e., Mountain Pass 1 SE); average annual precipitation is 9.94 inches and average summer and winter temperatures are 76.7°F and 39.6°F, respectively.

The predominant vegetation communities in the Project area include creosote bush scrub and Joshua tree woodland (in the northeast). The surrounding land use is primarily open space crossed by the existing transmission line alignment and associated access roads; these areas are also used for off-highway vehicle (OHV) recreational uses. Agricultural land uses occur in the immediate vicinity of Segment 3, the Fort Irwin Military Reservation is located northwest of Segments 4 and 5, and the Mojave National Preserve and the Ivanpah Solar Electric Generating System are located south and southeast of Segment 7, respectively.

1.2 PROJECT PURPOSE AND DESCRIPTION

The following Project purpose and description come from the *Biological Resources Survey Report* for the Project (ESA 2016). The Project's objective is to restore the North American Electric Reliability Corporation (NERC) code clearances from the ground to the transmission conductors. The existing McCullough-Victorville Lines 1 and 2 (MCV1 and MCV2) and the Mead-Victorville Line 1 (MVL1) were installed in the 1930s to transmit power from Hoover Dam to Los Angeles. Since then, the transmission lines have sagged past code clearances. The LADWP has identified a total of 72 locations that do not currently meet NERC code requirements in California and

[1] Seasons are climatological; winter is considered to be December, January, and February and summer is considered to be June, July, and August.

intends to comply with the code clearances by grading the ground surface of the area underneath the transmission lines to achieve the required height consistency. In situations where grading has been determined to be infeasible due to topography, the LADWP proposes to raise existing transmission line towers to achieve height consistency. Project activities are discussed in further detail below.

Access to the proposed work areas will be limited to the existing main Powerline Road and associated spur roads, to the extent feasible. Where access to the proposed work areas is not possible via the existing roads, overland travel shall be limited to those areas designated by a qualified biologist as "non-sensitive". Access routes designated by a qualified biologist will follow the path of least resistance and avoid all sensitive biological resources, to the extent feasible.

1.2.1 Grading Process

Grading activities will be carried out within the LADWP's right-of-way in order to achieve height consistency and will include the staking of grading limits, grading, and site restoration. Prior to the start of grading, each site will have cut and fill stakes and construction perimeter stakes set. Construction equipment to be used for grading will include water trucks, backhoe loaders, wheel loaders, dump trucks, jack hammers, and various small utility vehicles. The construction equipment will be staged within the confines of existing roadways and turnouts.

Temporary storage of spoils will occur within the Project limits in previously disturbed areas identified in coordination with the LADWP and their biological and cultural resources specialists. Spoils accumulated during grading activities will then be spread within the existing access road for the MVL1 and MCV2 lines, known as Powerline Road, within 500 feet to either side of the work area to repair ruts and potholes consistent with activities associated with routine road maintenance. For the MCV1 lines, which are not located adjacent to Powerline Road, the spoils will be spread within the unnamed spur roads, within 500 feet to either side of the work area. Equipment and spoils spreading will be limited to within the confines of the existing road and are not anticipated to encroach upon adjacent habitat.

Certain portions of existing spur roads that directly conflict with clearance requirements will be decommissioned. This work will involve either scarifying the road surface or constructing compacted soil barricades (or other similar barrier system) to prevent vehicle access to that section of road. The spur road will be realigned around the demolished section to restore continuous access between towers. The portions of the road that are decommissioned will be restored and revegetated.

1.2.2 Tower Raising Process

Tower raising will be carried out at MCV1 125-5 and MCV1 125-6, where grading is infeasible due to topographic limitations. In order to achieve the required conductor-to-ground clearances, the existing free-standing lattice steel towers will be reinstalled in a manner that increases clearance distances. Tower raising will be accomplished by repositioning towers onto new footings that are necessary to accommodate the tower extension. Four new tower footings will be installed at each tower raising site. Standard footings are 4 feet in diameter and 30 feet in depth. Towers and tower footings would be installed on, or slightly offset from, the existing footprint of the tower prior to tower raising activities and will be on the centerline of the existing conductors. Tower raising activities will also include the preparation of pads for construction equipment, conductor offset adjustments, and site cleanup and restoration. The preparation of graded and compacted pads will be carried out as necessary to accommodate the cranes, forklifts, and man lifts required to raise the towers. The equipment to be used for tower raising activities will include backhoe loaders, rubber tire loaders, water trucks, large and small cranes, all terrain forklifts, man lifts, and various small utility vehicles.

The tower raising will begin with the removal of conductors and ground wires, followed by the lifting of the tower body which will be held in place by a large crane while a vertical extension is inserted within the tower body. After the tower has been raised, conductor offset adjustments may be required and would entail small adjustments to the conductor lengths, which would be carried out by technicians in large man lifts.

Cleanup would include the chipping of the old concrete footings one foot below the topsoil and the cutting of stub angles using a cutting torch. Approximately 3.7 acres will experience ground disturbance as a result of tower raising activities at the 2 work areas.

1.3 REGULATORY AUTHORITY

This section summarizes the federal and State agencies' regulatory jurisdiction over activities that have a potential to impact jurisdictional resources. A detailed explanation of each agency's regulatory authority is provided in Attachment B.

1.3.1 U.S. Army Corps of Engineers

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into "waters of the U.S." under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Its authority applies to all "waters of the U.S." where the material (1) replaces any portion of a "water of the U.S." with dry land or (2) changes the bottom elevation of any portion of any "waters of the U.S.". Activities that result in fill or dredge of "waters of the U.S." require a permit from the USACE.

1.3.2 Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB), in conjunction with the nine RWQCBs, is the primary agency responsible for protecting water quality in California through the regulation of discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The SWRCB's and RWQCBs' jurisdictions extend to all "waters of the State" and to all "waters of the U.S.", including wetlands (isolated and non-isolated).

1.3.3 California Department of Fish and Wildlife

The CDFW regulates activities that may affect rivers, streams, and lakes pursuant to the *California Fish and Game Code* (§§1600–1616). According to Section 1602 of the *California Fish and Game Code,* the CDFW has jurisdictional authority over any work that will (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

2.0 METHODS

The survey area for the Project consists of 72 proposed work areas (i.e., grading areas and the existing access roads where grading spoils will be redistributed), plus a 100-foot buffer (Attachment A, Exhibit 2). Note that the survey area does not include all existing roads that may be accessed for Project activities; these areas are actively used by the public utilities and the public and would not be expanded to accommodate construction traffic.

2.1 LITERATURE

Prior to conducting the delineation and during the course of preparing this report, the following documents were reviewed to identify areas that may fall under USACE, RWQCB, and/or CDFW jurisdiction: the U.S. Geological Survey's (USGS') 7.5-minute topographic quadrangle maps; color aerial photography provided by National Agriculture Imagery Program (NAIP) (2014) and Google Earth (various dates); the National Hydric Soils List (USDA NRCS 2015); soil data provided by the U.S. Department of Agriculture's Natural Resources Conservation Service (USDA NRCS); and the National Wetlands Inventory's (NWI) Wetlands Mapper (USFWS 2014).

USGS Topographic Quadrangle. USGS quadrangle maps show geological formations and their characteristics and describe the physical settings of an area through topographic contour lines and other major surface features. These features include lakes, streams, rivers, buildings, roadways, landmarks, and other features that may fall under the jurisdiction of one or more regulatory agencies. In addition, the USGS maps provide topographic information that is useful in determining elevations, latitude and longitude, and Universal Transverse Mercator Grid coordinates for a project site.

Color Aerial Photography. Color aerial photographs were reviewed prior to conducting the field delineation to identify the extent of any drainages and riparian vegetation occurring in the survey area.

U.S. Department of Agriculture, Natural Resources Conservation Service. The presence of hydric soils is one of the chief indicators of jurisdictional wetlands. Psomas reviewed U.S. Department of Agriculture (USDA) soil data for the survey area.

U.S. Fish and Wildlife Service, National Wetlands Inventory: The Wetlands Mapper shows wetland resources available from the Wetlands Spatial Data Layer of the National Spatial Data Infrastructure (USFWS 2014). This resource provides the classification of known wetlands following the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). This classification system is arranged in a hierarchy of (1) Systems that share the influence of similar hydrologic, geomorphologic, chemical, or biological factors (i.e., Marine, Estuarine, Riverine, Lacustrine, and Palustrine); (2) Subsystems (i.e., Subtidal and Intertidal; Tidal, Lower Perennial, Upper Perennial, and Intermittent; or Littoral and Limnetic); (3) Classes, which are based on substrate material and flooding regime or on vegetative life forms; (4) Subclasses; and (5) Dominance Types, which are named for the dominant plant or wildlife forms. In addition, there are modifying terms applied to Classes or Subclasses.

2.2 JURISDICTIONAL DELINEATION

The analysis contained in this report uses the results of field surveys conducted by Psomas Senior Biologist Allison Rudalevige; by Psomas Biologists Ian Cain and Christine Renfrew; and by MBC Applied Environmental Sciences Biologist Charleen Conlogue. Surveys were performed in teams of two on September 7, 8, 9, 19, 20, 21, 22, and 26, 2016. Jurisdictional features were delineated on aerial photographs of the survey area. The initial mapping scale was 1 inch equals 200 feet

(1″ = 200′); however, based on the field work conducted for Segments 1, 2, 3, and 4, the scale was changed to 1″ = 100′ for Segments 5, 6, and 7. This change was made due to the high number of drainages mapped in Segments 1 through 4; this allowed the field maps for Segments 5, 6, and 7 to be less cluttered with notations. In order to enhance navigation and the accuracy of the field delineation during the field survey, Apple iPads with Avensa PDF Maps Global Positioning System (GPS) software were loaded with the aerial maps. Jurisdictional water resources were either delineated as a drainage centerline with corresponding width measurements or, for wide and/or braided drainages clearly visible on aerial imagery, as a polygon. Each water resource was identified according to the number of the map sheet on which it occurred. Vegetation and hydrologic data were summarized for each jurisdictional feature. Incidental observations of special status biological resources (e.g., federally and/or State-listed species) were also noted during the field surveys.

Non-wetland "waters of the U.S." are delineated based on the limits of the OHWM, which can be determined by a number of factors, including the presence of a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, and the presence of litter and debris. The OHWM limits (i.e., active floodplain) occurring in the survey area were further verified using methods contained in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*, *A Delineation Manual* (Lichvar and McColley 2008) and the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010).

A two-parameter approach, in conjunction with a review of aerial and site photographs, topographic maps, and field data, was employed to make an initial assessment of the presence of wetlands. Areas containing hydrophytic vegetation and one or more indicators of wetland hydrology were considered to be potential wetlands. In the case of a potential wetland, a soil test pit would be dug in order to identify the presence/absence of hydric soil and to determine whether or not wetlands are present.

It should be noted that the RWQCB shares USACE jurisdiction unless isolated conditions are present. Water resources lacking connectivity to a Traditional Navigable Water[2] (TNW), whether by definition or through a significant nexus analysis, are considered isolated. If isolated waters are present, the RWQCB takes jurisdiction using the USACE's definition of the OHWM and/or the three-parameter wetlands method pursuant to the 1987 Wetlands Manual. Isolated conditions were assessed following the field delineation using aerial imagery from Google Earth and the National Hydrography Dataset (USGS 2016). Note that the USACE does not require continuous surface connectivity in order to establish jurisdiction; waters are considered a tributary even if there is a natural or constructed break along the connection to a TNW. Therefore, drainage channels disrupted by the graded access roads in the survey area may still be considered under the jurisdiction of the USACE and/or the RWQCB. Swales and erosional features are not considered jurisdictional (USACE 2007).

The CDFW's jurisdiction is defined as the top of the bank to the top of the bank of the stream, channel, or basin or to the outer limit of riparian vegetation located within or immediately adjacent to the river, stream, creek, pond, lake, or other impoundment.

[2] Traditional Navigable Waters are all waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

2.2.1 Wetland Analysis

Vegetation

Hydrophytic vegetation (or hydrophytes) is defined as any macrophytic plant that "grows in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content; plants typically found in wet habitats" (Environmental Laboratory 1987). Specifically, these plant species have specialized morphological, physiological, or other adaptations for surviving in permanently saturated to periodically saturated soils where oxygen levels are very low or the soils are anaerobic. Lichvar and Gillrich (2011) provide the following technical definitions of wetland plant indicator status categories:

- **Obligate Wetland (OBL):** These wetland-dependent plants (herbaceous or woody) require standing water or seasonally saturated soils (14 or more consecutive days) near the surface to assure adequate growth, development, and reproduction and to maintain healthy populations. These plants consist of four types:
  - *submerged:* plants that conduct virtually all of their growth and reproductive activity under water.
  - *floating:* plants that grow with leaves and most often their vegetative and reproductive organs floating on the water surface.
  - *floating-leaved:* plants that are rooted in sediment but also have leaves that float on the water surface.
  - *emergent:* herbaceous and woody plants that grow with their bases submerged and rooted in inundated sediment or seasonally saturated soil and their upper portions, including most of the vegetative and reproductive organs, growing above the water level.
- **Facultative Wetlands (FACW):** These plants depend on and predominantly occur with hydric soils, standing water, or seasonally high water tables in wet habitats for assuring optimal growth, development, and reproduction and for maintaining healthy populations. These plants often grow in geomorphic locations where water saturates soils or floods the soil surface at least seasonally.
- **Facultative (FAC):** These plants can occur in wetlands or non-wetlands. They can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology (e.g., shade tolerance, soil hydrogen potential [pH], and elevation) and they have a wide tolerance of soil moisture conditions.
- **Facultative Upland (FACU):** These plants are not wetland dependent. They can grow on hydric and seasonally saturated soils, but they develop optimal growth and healthy populations on predominantly drier or more mesic sites. Unlike FAC plants, these plants are non-wetland plants by habitat preference.
- **Obligate Upland (UPL):** These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

The USACE—as part of an interagency effort with the U.S. Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (USFWS), and the U.S. Department of Agriculture's Natural Resources Conservation Service (USDA NRCS)—has approved a National Wetland

Plant List (NWPL) that provides the current indicator status for plant species. The NWPL is used to determine whether the hydrophytic vegetation parameter is met when conducting wetland determinations under the CWA and the Wetland Conservation Provisions of the Food Security Act. The NWPL is also intended to be used for wetland restoration, establishment, and enhancement projects. This report utilized the indicator statuses for the Arid West Supplement portion of the NWPL.

The following are three procedures for determining whether the hydrophytic vegetation criterion is met: Indicator 1, "Dominance Test", using the "50/20 Rule"; Indicator 2, "Prevalence Index"; or Indicator 3, "Morphological Adaptation", as identified in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). The hydrophytic vegetation criterion is met if any indicator is satisfied. If none of the indicators are satisfied, then hydrophytic vegetation is absent unless (1) indicators of hydric soil and wetland hydrology are present and (2) the site meets the requirements for a problematic wetland situation.

- **Dominance Test:** Vegetative cover is estimated and is ranked according to its dominance. Dominant species are the most abundant species for each stratum of the community (i.e., tree, sapling/shrub, herb, or woody vine) that individually or collectively amount to 50 percent of the total coverage of vegetation plus any other species that, by itself, accounts for 20 percent of the total vegetation cover (also known as the "50/20 Rule"). These species are recorded on the "Wetland Determination Data Form – Arid West Region". The wetlands indicator status of each species is also recorded on the data forms based on the NWPL (Lichvar and Kartesz 2009). If greater than 50 percent of the dominant species across all strata are OBL, FACW or FAC species, the criterion for wetland vegetation is considered to be met.
- **Prevalence Index:** The prevalence index considers all plant species in a community, not just the dominant ones. The prevalence index is the average of the wetland indicator status of all plant species in a sampling plot. Each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and is weighted by the species' abundance (percent cover). Hydrophytic vegetation is present if the prevalence index is 3.0 or less.
- **Morphological Adaptation:** Morphological adaptations, such as adventitious roots (i.e., roots that take advantage of the wet conditions) and shallow root systems, must be observed on more than 50 percent of the individuals of a FACU species for the hydrophytic vegetation wetland criterion to be met.

Hydrology

Wetland hydrology indicators provide evidence that a site has a continuing wetland hydrologic regime. Wetlands hydrology is represented by either (1) all of the hydrological elements or characteristics of areas permanently or periodically inundated or (2) areas containing soils that are saturated for a sufficient duration of time to create hydric soils suitable for the establishment of plant species that are typically adapted to anaerobic soil conditions. The presence of wetland hydrology is evaluated at each intersect by recording the extent of observed surface flows; the depth of inundation; the depth to saturated soils; and the depth to free water in soil test pits. In instances where stream flow is divided into multiple channels with intervening sandbars, the entire area between the channels is considered to be within the "Active Floodplain" and within the OHWM. Therefore, an area containing these features would meet the indicator requirements for wetland hydrology.

Soils

The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as a soil that is formed under conditions of saturation, flooding, or ponding that occurs long enough during the growing season to develop anaerobic conditions (or conditions of limited oxygen) at or near the soil surface and that favor the establishment of hydrophytic vegetation (USDA NRCS 2008). It should be noted that hydric soils created under artificial conditions of flooding and inundation sufficient for the establishment of hydrophytic vegetation would also meet this hydric soils indicator.

Soil conditions are verified by digging test pits to a depth of at least 20 inches (except where a restrictive layer occurs in areas containing hard pan, cobble, or solid rock). Soil extracted from each soil test pit is then examined for texture and color using the standard plates on the Munsell Soil Color Chart (1994), and indicators of hydric soil were noted. If indicators of hydrophytic vegetation and wetland hydrology were not observed in the survey area, soil test pits were not dug and the water resource was considered to be a non-wetland water.

3.0 RESULTS

A total of 219 jurisdictional water resources were mapped in the survey area, totaling approximately 85,994 linear feet. Attachment C provides an overview of the various jurisdictional water resources, including their geographic setting and physical characteristics. Attachment D provides datasheets that summarize the overall condition of the individual drainages/waterbodies and indicators of OHWM. Representative photographs of individual drainages are provided in Attachment E.

3.1 LITERATURE REVIEW

USGS Topographic Quadrangle. The Project alignment is on the USGS' Alvord Mountain East, Bitter Spring, Clarke Mountain, Cronese Lakes, Daggett, Dunn, East of Kingstone Spring, Harvard Hills, Kingstone Spring, Minneola, North of Baker, Turquoise Mountain, Turtle Valley, Red Pass Lake, Stoddard Well, and West of Baker 7.5-minute quadrangle maps (Attachment A, Exhibit 3).

Topography across the Project area consists of relatively flat valleys and alluvial fans bound by sloping hills and mountains. Elevations in Segments 1 through 5 fluctuate across the Project area, ranging from approximately 870 feet above mean sea level (msl) to 3,675 feet above msl. Overall elevation in Segment 6 is slightly higher with elevations between 2,985 feet above msl and 3,775 feet above msl. Segment 7 is at the highest elevations of between 3,710 feet above msl and 4,925 feet above msl.

Blueline streams, as mapped on the USGS 7.5-minute topographic quadrangle maps, occur throughout the survey area. The identified blueline streams were used to provide guidance on planning the field surveys. The most prominent water features occurring in the vicinity of the survey area are the Mojave River and Amargosa River; however, many other named and unnamed blueline streams are also observed. In addition dry lake beds are shown on the topographic quadrangle maps.

The Project area is primarily located in the 4,580-square-mile Mojave Watershed (Cataloging Unit 18090208) and the 5,330-square-mile Death Valley–Lower Amargosa Watershed (Cataloging Unit 18090203). These areas are in closed desert basins that discharge into South Central California. Segment 7 is located in the 2,830-square-mile Ivanpah–Pahrump Valleys Watershed (Cataloging Unit 16060015), which discharges into South Central Nevada.

Color Aerial Photography. Throughout the survey area, numerous potential drainage features were evident from the aerial imagery. Most of them appear to flow through upland vegetation (e.g., desert scrub). The larger drainage features appear to have defined bed and banks. Many of the smaller features appear braided. Surface water was not observed on the aerial images. Dry lake beds are visible in the Project vicinity.

U.S. Department of Agriculture, Natural Resources Conservation Service. The survey area occurs in the following soil survey areas: San Bernardino County, California, Mojave River Area; Mojave Desert Area, California; and Mojave Desert Area, Northeast Part, California. Within these survey areas, the USDA NRCS has delineated the boundaries of 'soil map units', which often contain components of multiple soil types that may be classified as hydric or non-hydric. The National Hydric Soils List (USDA NRCS 2015) identifies a soil map unit as "hydric" if it contains either a major or minor component that is at least in part hydric. In the survey area, the following map units are listed as hydric on the National List: Yermo-Kimberlina, cool, association, sloping and Nebona-Cuddeback Complex, 2 to 9 percent slopes. All soil map units occurring within the survey area are shown in Attachment A (see Exhibit 4).

U.S. Fish and Wildlife Service, National Wetlands Inventory: Mapped wetlands, as defined by the NWI, occur throughout the survey area and are shown in Attachment A (see Exhibit 5). Wetlands overlapping the survey area were mapped as the Riverine System, Intermittent Subsystem, and Streambed Class with an intermittently flooded water regime (R4SBJ).

These streams and waterbodies were used to provide additional guidance on planning the field surveys. Given that wetland features mapped for the NWI may or not exist at present because of changing conditions and development, this resource provides preliminary data and historic data, but must be ground-truthed for each wetland feature.

3.2 U.S. ARMY CORPS OF ENGINEERS JURISDICTIONAL DETERMINATION

3.2.1 "Waters of the U.S." Determination (Non-Wetland)

Connectivity to a Traditional Navigable Water

The drainage features mapped in the survey area are typically ephemeral washes that contain surface water only immediately following storm events. Some of these drainage features (generally in Segments 4, 5, and 7) dissipate into uplands as sheet flow or drain into a dry lake bed outside the survey area. These drainages do not have connectivity to a TNW and so are not considered under the USACE's jurisdiction.

Some drainage features in the western end of the Project area exhibit a connection to the Mojave River while some drainages in the eastern end exhibit a connection to the Amargosa River. The Mojave River is navigable "in-fact" and is, therefore, subject to USACE jurisdiction. As an interstate water, the Amargosa River is, by definition, a "water of the U.S.". Therefore, connectivity to "waters of the U.S." is established, but these drainages have ephemeral flow and are, therefore, not considered "relatively permanent". For non-relatively permanent waters, a significant nexus is required in order for the USACE to assert jurisdiction. These drainages in the survey area have the capacity to carry nutrients into the Mojave River. Therefore, they would be under the jurisdiction of the USACE.

Limits of "Waters of the U.S."

Evidence of a OHWM was observed for all mapped water resources, though some features exhibited more pronounced indicators. The primary indicators of OHWM observed throughout the survey area were a change in sediment texture, a change in vegetation cover, and the presence of bed and bank. Surface soil cracks, drift deposits, and surface relief were observed in some areas. Arid West Ephemeral and Intermittent Streams OHWM Datasheets were completed for areas showing evidence of an OHWM (see Attachment D).

Results

Based on the field observations and data collected, approximately 31.130 acres of "waters of the U.S." occur in the survey area (Attachment A, Exhibit 6; Attachment C).

3.2.2 Preliminary Wetlands Determination

During the field delineation, each water resource in the survey area was assessed for evidence of wetland hydrology and hydrophytic vegetation. While various indicators of wetland hydrology (e.g., drainage patterns, drift deposits, surface soil cracks) were observed in drainage features throughout the survey area, vegetation consisted of upland plant species. Therefore, soil test pits were not dug and no wetland "waters of the U.S." were considered to be present in the survey area.

3.3 REGIONAL WATER QUALITY CONTROL BOARD DETERMINATION

The survey area falls within the jurisdiction of the Lahontan RWQCB. Some drainage features in the survey area exhibit an OHWM for a portion of their length, but dissipate into uplands through sheet flow or drain into a dry lake bed. Therefore, these features do not maintain a continuous surface connection with a TNW and are considered isolated "waters of the State" under the jurisdiction of the RWQCB. Drainages exhibiting a connection to a TNW (i.e., the Mojave River) are considered non-isolated and under the jurisdictions of both the USACE and the RWQCB.

Approximately 57.733 acres of "waters of the State" under the jurisdiction of the RWQCB (31.130 acres of "waters of the U.S." and 26.603 acres of isolated waters) occur in the survey area (Attachment A, Exhibit 6; Attachment C).

3.4 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE DETERMINATION

The drainage features in the survey area were mapped using the top of the stream bank. In some cases, CDFW jurisdiction extended across braided channels.

Approximately 63.529 acres of waters under the jurisdiction of the CDFW occur in the survey area (Attachment A, Exhibit 6; Attachment C).

3.5 INCIDENTAL OBSERVATIONS

During the jurisdictional delineation surveys, incidental observations were made of special status wildlife species in the vicinity of the survey area. The locations of these biological resources are shown in Attachment A (see Exhibit 2). These observations will be reported to the CDFW's California Natural Diversity Database (Attachment F).

One adult desert tortoise (*Gopherus agassizii*) was observed in Segment 2 near tower MCV1-129-2. A desert tortoise burrow was observed in the side of a bank in Segment 3 between towers MCV1-120-1 and MCV1-120-2. Desert tortoise is a federally and State-listed Threatened species. This species typically occurs in creosote bush scrub, Joshua tree woodland, Mojave–saltbush–allscale scrub, blackbrush, and/or juniper woodland communities and may occur throughout the Project area.

One desert bighorn sheep (*Ovis canadensis nelsoni*) carcass was observed along an access road east of Segment 7. Desert bighorn sheep is a CDFW Fully Protected species. This species occurs in open terrain of dry, desert mountains typically at elevations up to 4,000 feet above msl (Ingles 1965). Therefore, it would only be expected to occur in the vicinity of Segment 7.

4.0 IMPACT ANALYSIS

The limits of Project impacts for the purposes of this analysis are considered to be the grading boundaries and road demolition boundaries shown in Attachment A (see Exhibit 7). It is assumed that soil storage and spreading will occur in within existing roads and will avoid impacts on jurisdictional water resources.

Based on the current Project limits of disturbance, a total of 0.397 acre of non-wetland "waters of the U.S."; 0.987 acre of "waters of the State"; and 1.018 acres of waters under the regulatory authority of the CDFW would be impacted by the Project (Table 1; Attachment A, Exhibit 7). Project impacts on individual drainage features are provided in Attachment G.

TABLE 1
SUMMARY OF IMPACTS ON JURISDICTIONAL RESOURCES IN THE SURVEY AREA

Jurisdiction	Existing Resources (Acres)	Project Impact (Acres)		
		Grading	Road Demolition	Total
Total USACE "waters of the U.S."	31.130	0.337	0.060	**0.397**
Total RWQCB "waters of the State"*	57.733	0.794	0.193	**0.987**
Total CDFW Jurisdictional Resources	63.529	0.825	0.193	**1.018**

USACE: U.S. Army Corps of Engineers; RWQCB: Regional Water Quality Control Board; CDFW: California Department of Fish and Wildlife.

* RWQCB jurisdictional boundaries are defined as those determined for the USACE under "waters of the U.S."; however, the RWQCB also takes jurisdiction over isolated waters.

5.0 REGULATORY APPROVAL PROCESS

5.1 REGULATORY PERMIT REQUIREMENTS

This section summarizes the various permits, agreements, and certifications that are expected to be required prior to initiation of Project activities that involve impacts to jurisdictional waters.

- USACE Section 404 Permit
- RWQCB Section 401 Water Quality Certification
- CDFW Section 1602 Notification of Lake or Streambed Alteration

It should be noted that all regulatory permit applications can be processed concurrently. The USACE permit would be issued subject to the receipt of the RWQCB's Section 401 Water Quality Certification.

5.1.1 U.S. Army Corps of Engineers

Prior to construction in "waters of the U.S.", a Section 404 permit from the USACE is required. Regulatory authorization in the form of a Nationwide Permit (NWP) or regional permit is provided for certain categories of activities. If the NWP conditions cannot be met, an Individual Permit (IP) will be required.

The proposed project would likely fall under NWP 12 (Utility Line Activities), which authorizes activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in "waters of the U.S.", provided the activity does not result in the loss of greater than ½ acre of "waters of the U.S.". A preconstruction notification is required for project activities under certain conditions. A description of NWP 12 is included as Attachment H.

It should be noted that the current NWPs will expire on March 18, 2017. The USACE is in the process of reissuing the NWPs, including two new proposed NWPs. Activities authorized by the 2012 NWPs remain authorized by those NWPs until March 18, 2017. An activity completed under the authorization provided by a 2012 NWP continues to be authorized by that NWP. Activities authorized by the 2012 NWPs that have commenced or are under contract to commence by March 18, 2017, will have one year (i.e., until March 18, 2018) to complete those activities under the terms and conditions of the 2012 NWPs. Activities previously authorized by the 2012 NWPs that have not commenced or are not under contract to commence by March 18, 2017, will require reauthorization under the 2017 NWPs. If those activities no longer qualify for NWP authorization because they do not meet the terms and conditions of the 2017 NWPs, the project proponent will need to obtain an IP, or seek authorization under a regional general permit, if such a general permit is available

Issuance of the USACE Section 404 permit would be contingent upon the approval of a Section 401 Water Quality Certification from the Lahontan RWQCB. The RWQCB requires certification of the project's California Environmental Quality Act (CEQA) documentation before it will approve the Section 401 Water Quality Certification or Report of Waste Discharge (ROWD). The RWQCB, as a responsible agency, will use the project's CEQA document to satisfy its own CEQA-compliance requirements.

5.1.2 Regional Water Quality Control Board

The RWQCB normally has regulatory jurisdiction over "waters of the U.S." equal to the jurisdiction of the USACE under the federal CWA; in these cases, the RWQCB issues a Water Quality Certification under Section 401 of the federal CWA. Without USACE jurisdiction, and if the

drainage in question is isolated, the RWQCB has jurisdiction under the State's Porter-Cologne Water Quality Control Act. In the case of discharges into isolated waters, RWQCB authorization would be in the form of a ROWD. Since both isolated and non-isolated waters are present in the survey area, the RWQCB authorization would likely be in the form of a CWA Section 401 Water Quality Certification.

The RWQCB requires that the Applicant address urban storm water runoff during and after construction in the form of Best Management Practices (BMPs). These BMPs are intended to address the treatment of pollutants carried by storm water runoff and are required in all complete applications. The notification/application for a CWA Section 401 Water Quality Certification must also address compliance with the Basin Plan. Please note that the application would also require the payment of an application fee, which would be based on project impacts.

5.1.3 California Department of Fish and Wildlife

Prior to construction, a Notification of Lake or Streambed Alteration (LSA) must be submitted to the CDFW that describes any proposed streambed alteration contemplated by the Proposed Project. If an LSA Agreement is required, the CDFW may want to conduct an on-site inspection.

In addition to the formal application materials and the fee, a copy of the appropriate environmental document (e.g., Mitigated Negative Declaration) should be included in the submittal, consistent with CEQA requirements. The CDFW will not deem the application to be complete until the application fees have been paid and the agency is provided with a certified CEQA document and a signed copy of the receipt of County Clerk filing fees for the Notice of Determination (NOD).

5.2 RECOMMENDATIONS

Based on the conclusions of this Jurisdictional Delineation Report, the following recommendations are identified:

1. A pre-application meeting should be scheduled with USACE, USFWS, RWQCB, and CDFW staff to discuss site conditions; the Project; biological and jurisdictional resources and impacts to these resources resulting from the Project; proposed minimization measures and the mitigation program to offset these impacts; and the regulatory permit process, including the decision to prepare and submit an Approved Jurisdictional Determination or a Preliminary Jurisdictional Determination. The USACE is expected to approve a Preliminary Jurisdictional Determination as the appropriate jurisdictional determination given the extent of Project impacts and the length of Project construction.
2. The following should be prepared and processed: a USACE Section 404 Permit; an RWQCB Section 401 Water Quality Certification; a CDFW Section 1602 Notification of LSA; and the appropriate jurisdictional determination form approved by the USACE.
3. The Project Applicant should consider mitigating jurisdictional impacts resulting from Project implementation on site through the preparation of a Habitat Mitigation Monitoring Plan (HMMP). The preparation of an HMMP early in the process can help to accelerate and shorten the regulatory permitting process. Mitigation ratios for impacts to USACE jurisdictional resources would be based on the USACE's *Standard Operating Procedure for Determination of Mitigation Ratios* (USACE 2012).

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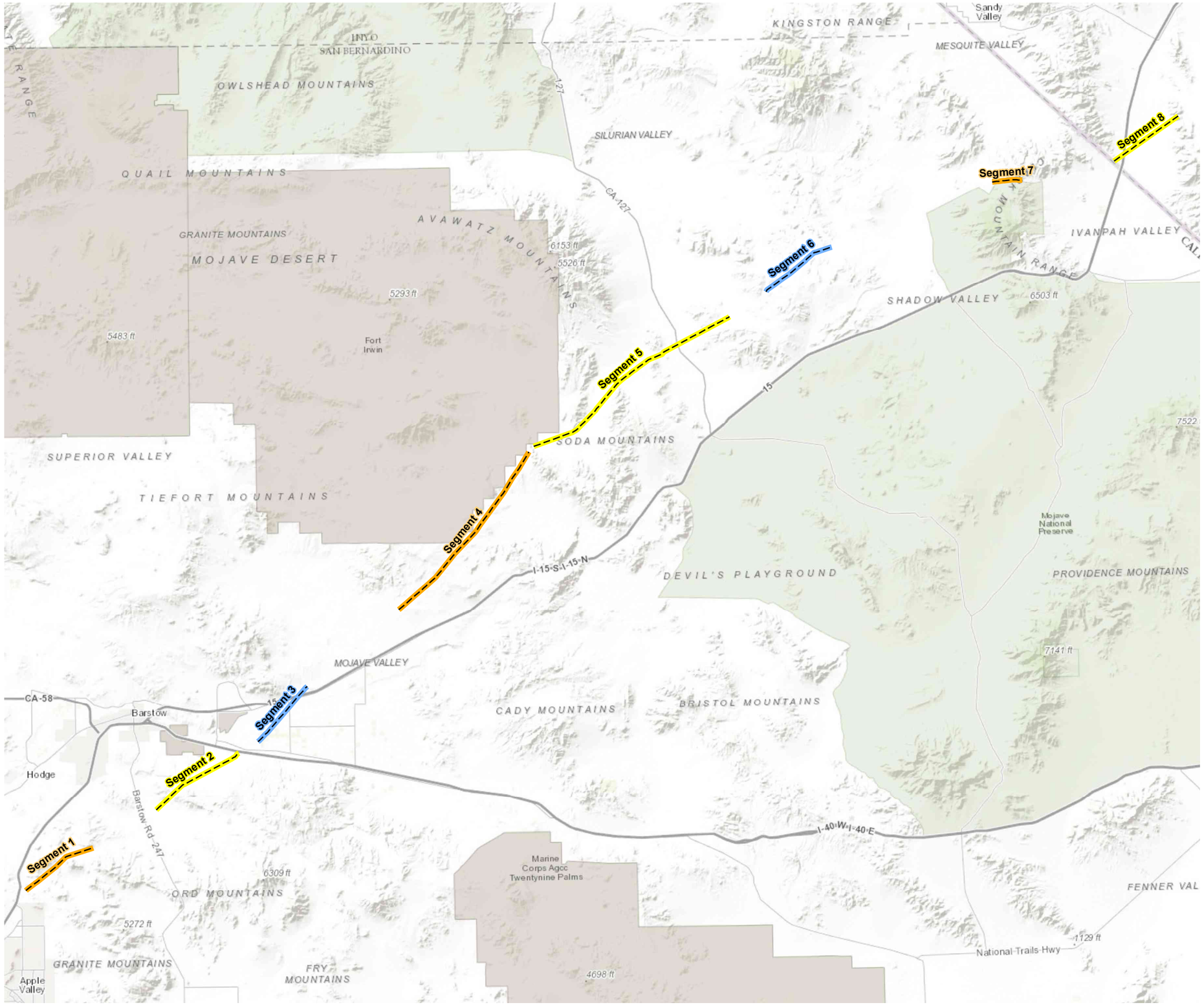
ATTACHMENT A

EXHIBITS


KINGSTON RANGE
Sandy Valley
INYO
SAN BERNARDINO
MESQUITE VALLEY
OWLSHEAD MOUNTAINS
SILURIAN VALLEY
QUAIL MOUNTAINS
GRANITE MOUNTAINS
AVAWATZ MOUNTAINS
MOJAVE DESERT
6153 ft
5526 ft
5293 ft
5483 ft
Fort Irwin
Segment 8
Segment 7
Segment 6
Segment 5
Segment 4
Segment 3
Segment 2
Segment 1
IVANPAH VALLEY
SHADOW VALLEY
6503 ft
SODA MOUNTAINS
SUPERIOR VALLEY
TIEFORT MOUNTAINS
I-15-S-I-15-N
DEVIL'S PLAYGROUND
Mojave National Preserve
PROVIDENCE MOUNTAINS
7141 ft
MOJAVE VALLEY
CA-58
Barstow
CADY MOUNTAINS
BRISTOL MOUNTAINS
Hodge
Barstow Rd-247
I-40-W-I-40-E
Marine Corps Agcc Twentynine Palms
6309 ft
ORD MOUNTAINS
5272 ft
GRANITE MOUNTAINS
FRY MOUNTAINS
Apple Valley
FENNER VAL
1129 ft
National Trails Hwy
4698 ft
Sequoia National Park
Death Valley National Park
Las Vegas
Sequoia National Forest
Henderson
Bakersfield
Mojave National Preserve
Lancaster
Victorville
Lake Havasu City
Palmdale
Santa Clarita
Angeles National Forest
San Bernardino National Forest
Los Angeles
Riverside
Anaheim
Cathedral City
Joshua Tree National Park
Long Beach
Santa Ana
Murrieta
Palm Desert
Indio
Salton Sea
Oceanside
San Diego
Yuma
Tijuana
Mexicali
Project Segment
1
2
3
4
5
6
7
8
N
W
E
S
9 4.5 0 9
Miles
PSOMAS
Exhibit 1
Project Location
Path 46 Transmission Line Clearances Project
(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex1_Project_Location_20160929.pdf
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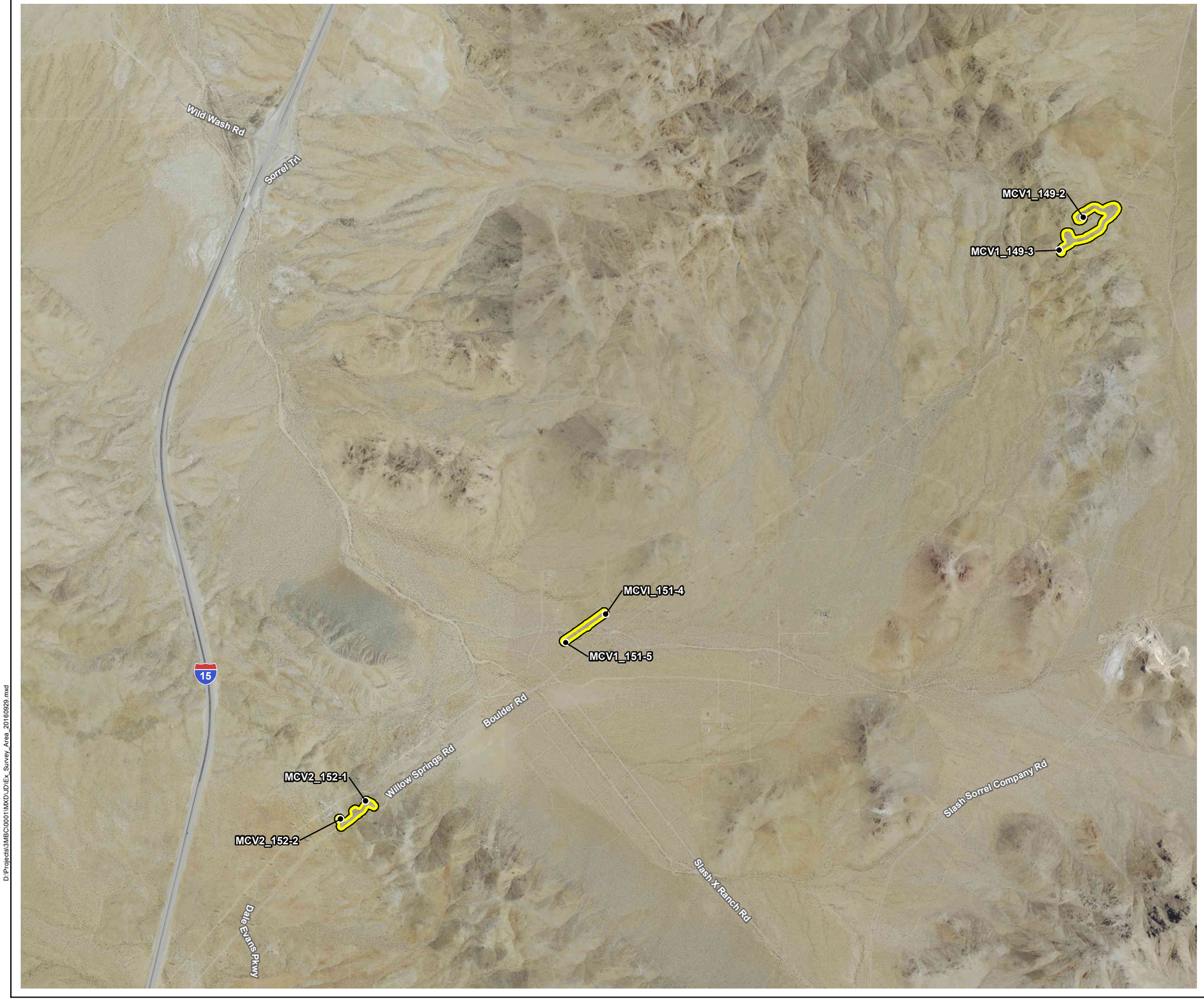

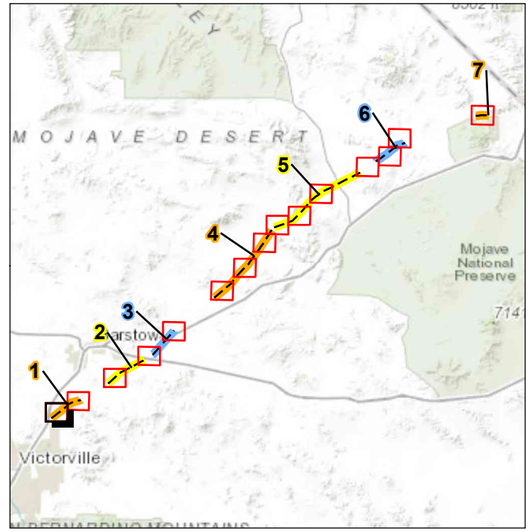

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2a
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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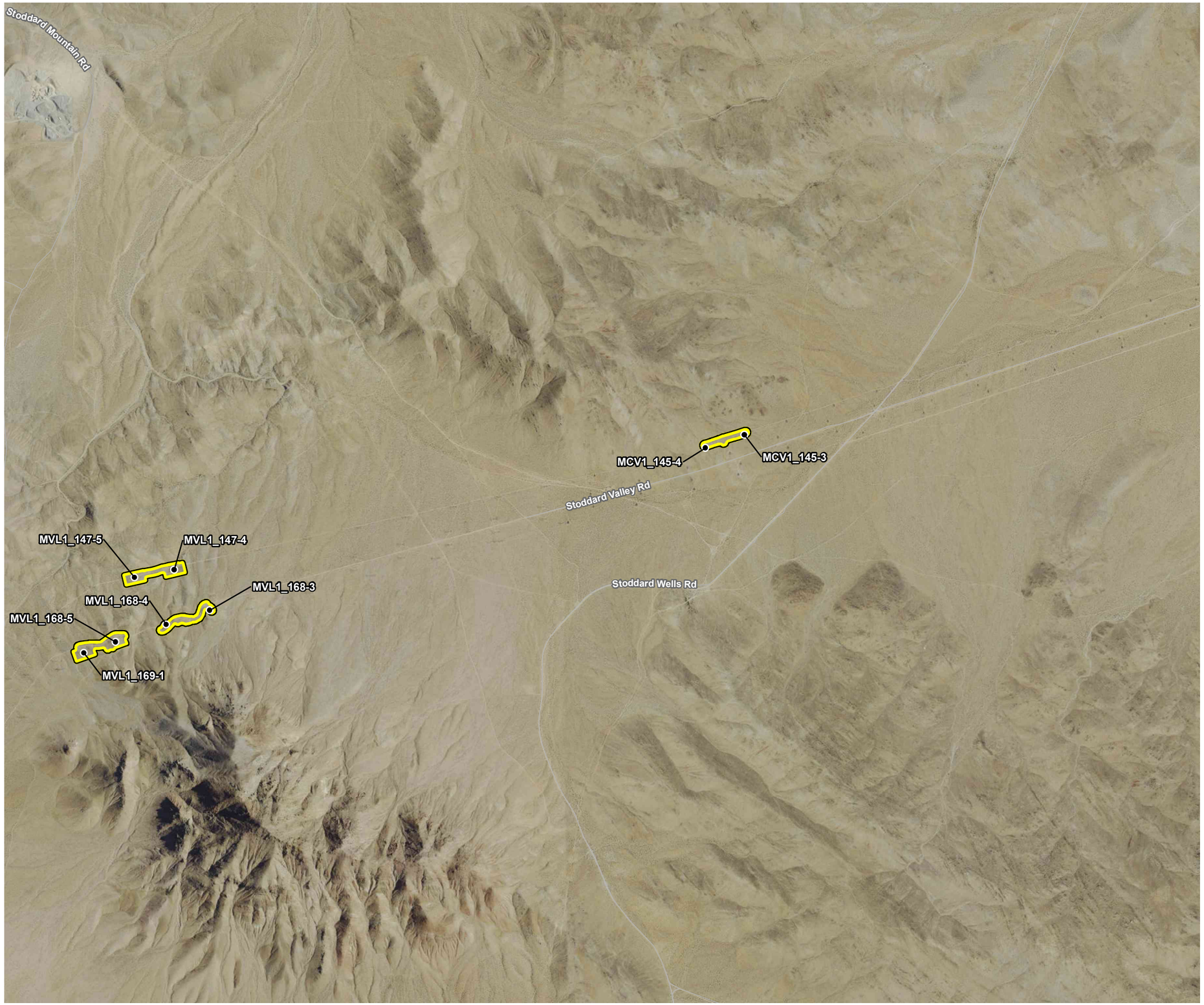

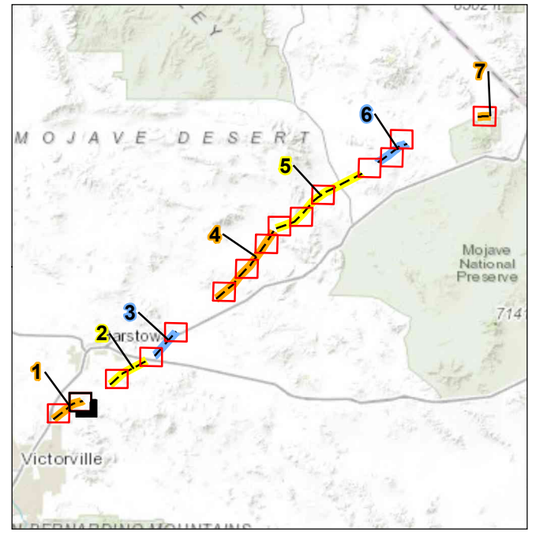

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2b
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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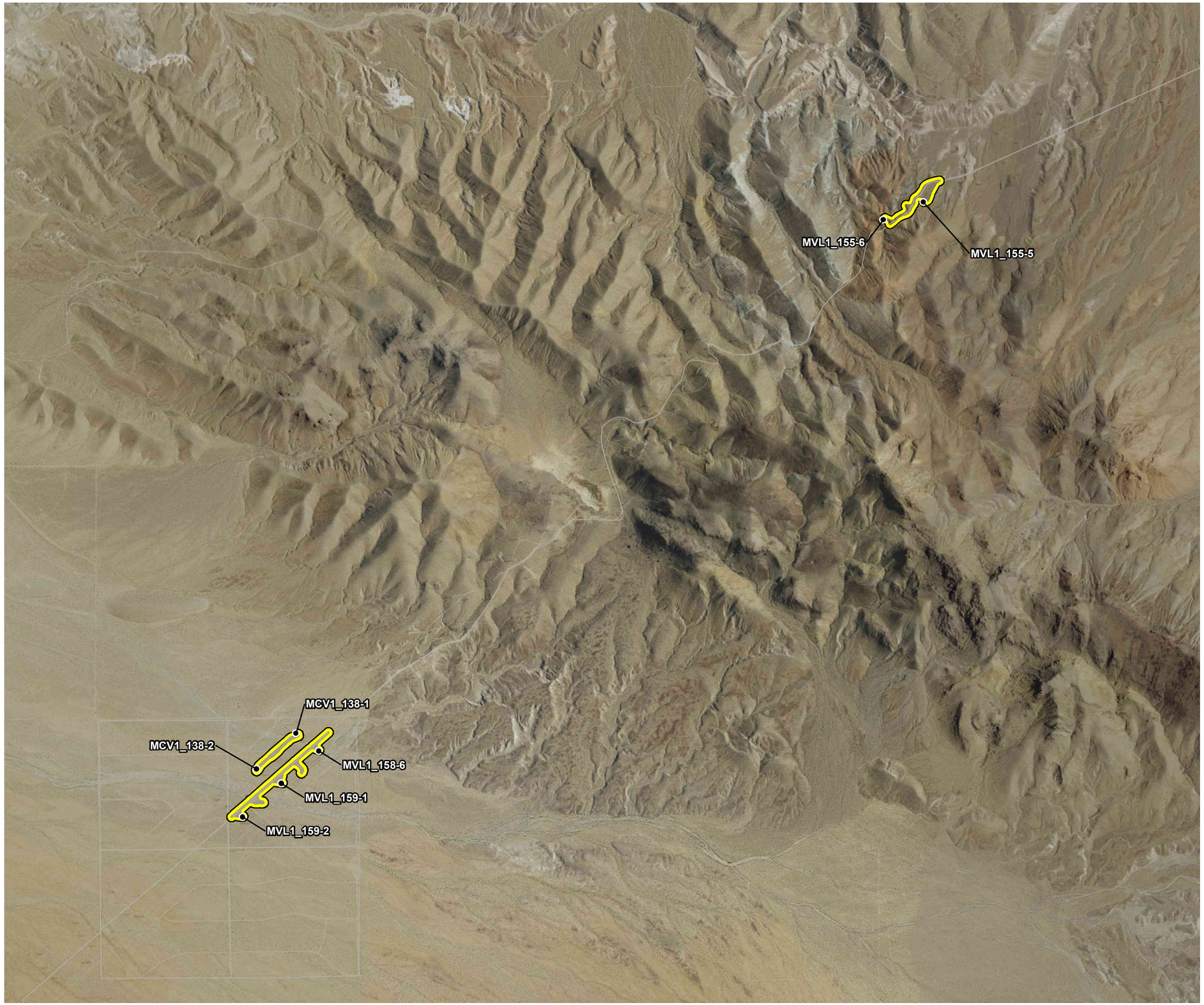

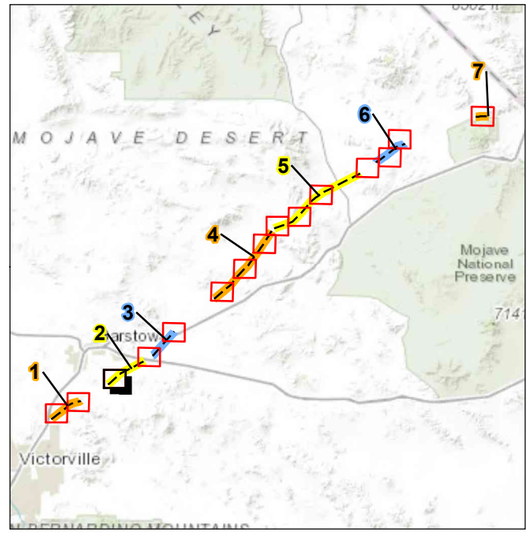

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2c
Survey Area

Path 46 Transmission Line Clearances Project

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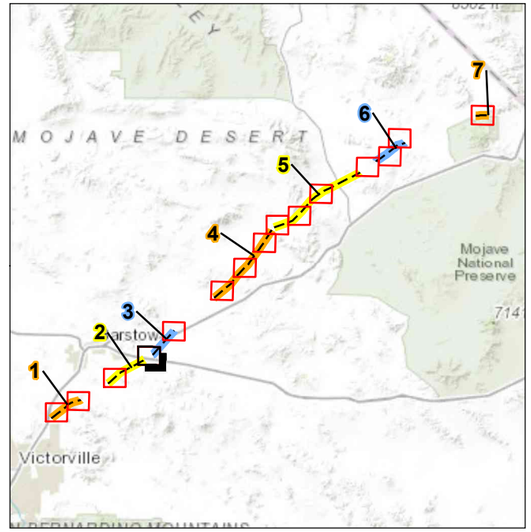

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

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PSOMAS

Exhibit 2d
Survey Area

Path 46 Transmission Line Clearances Project

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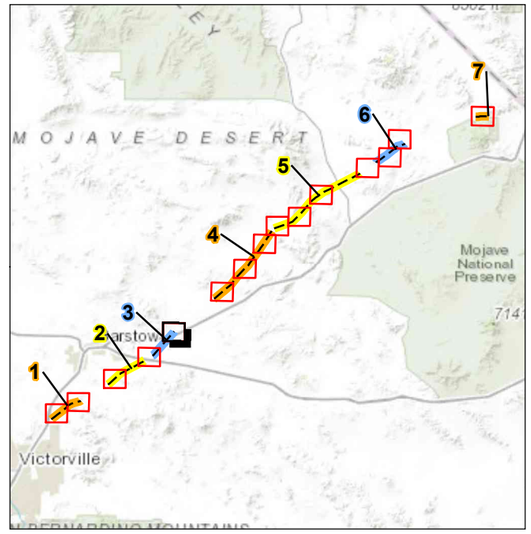

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2e
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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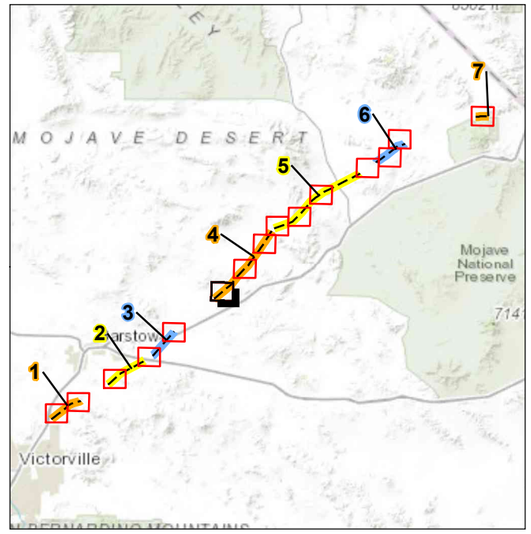

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2f
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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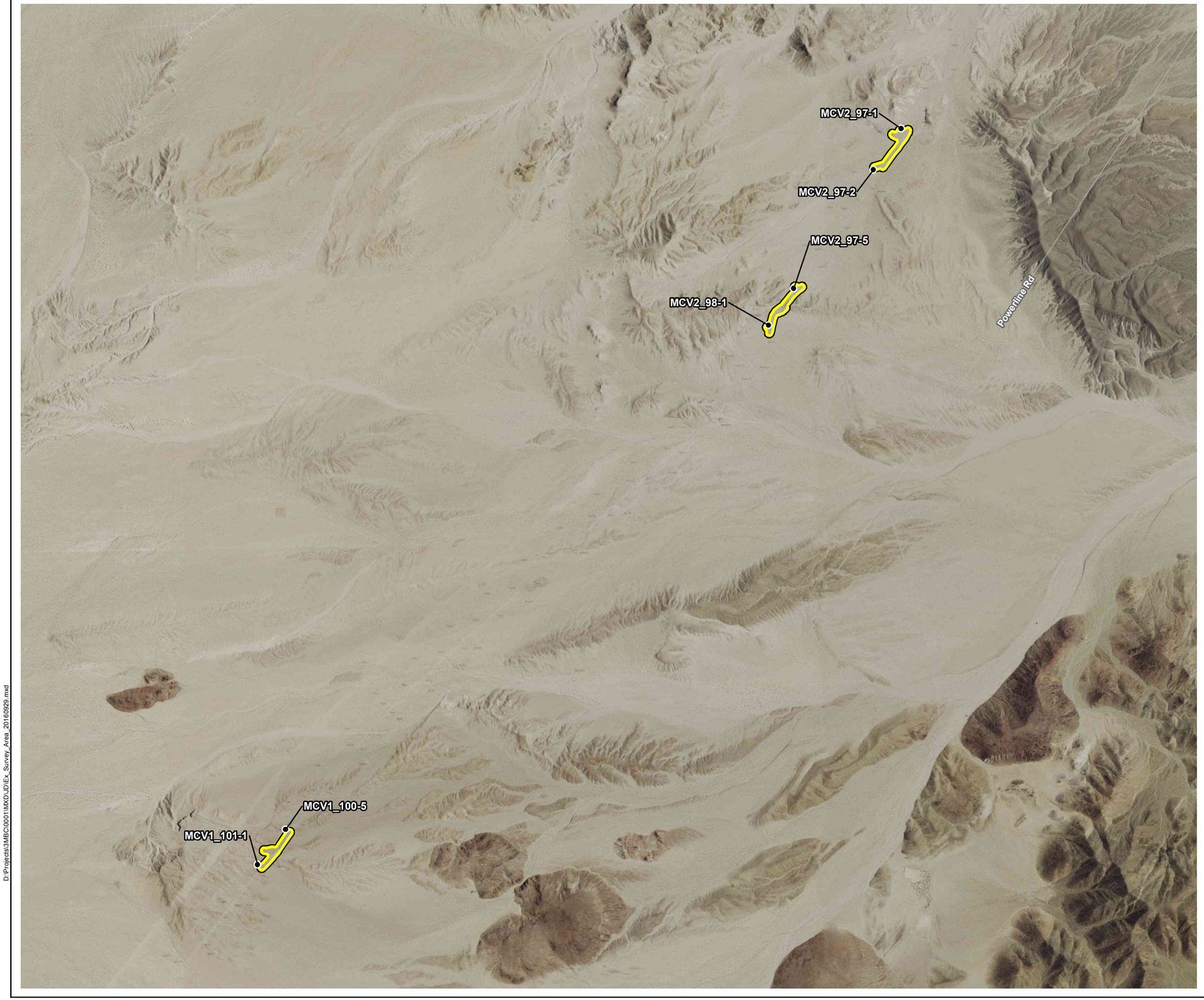

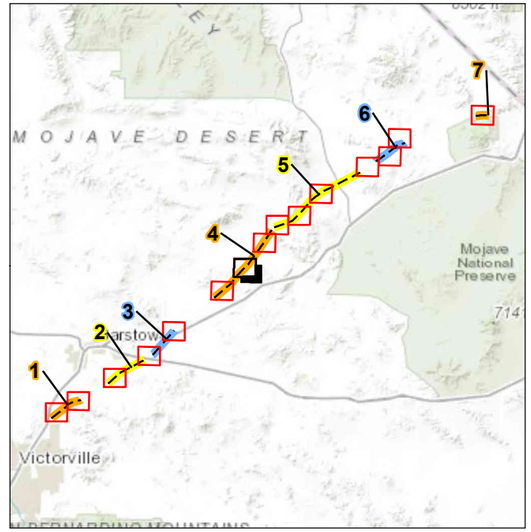

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2g
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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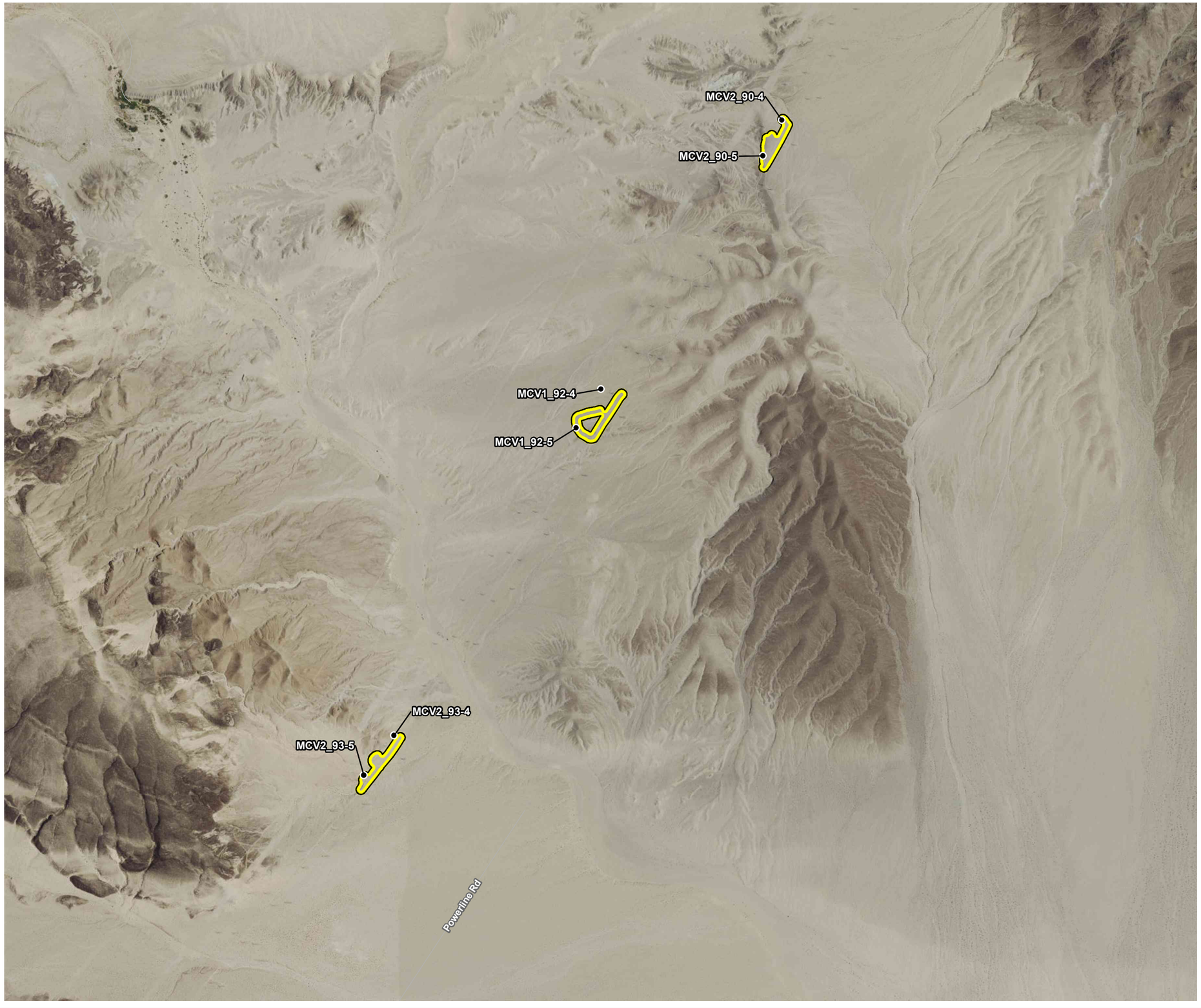

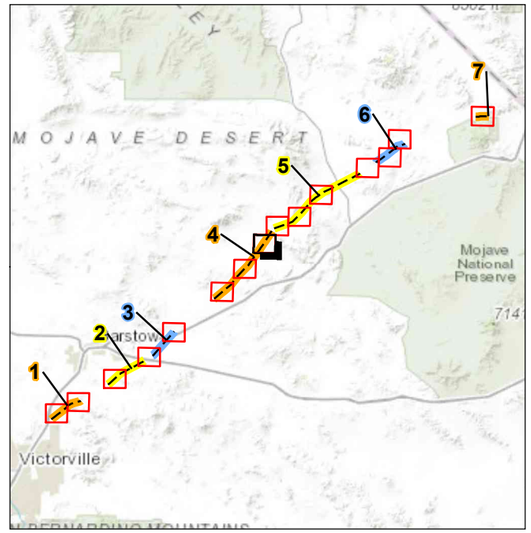

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2h
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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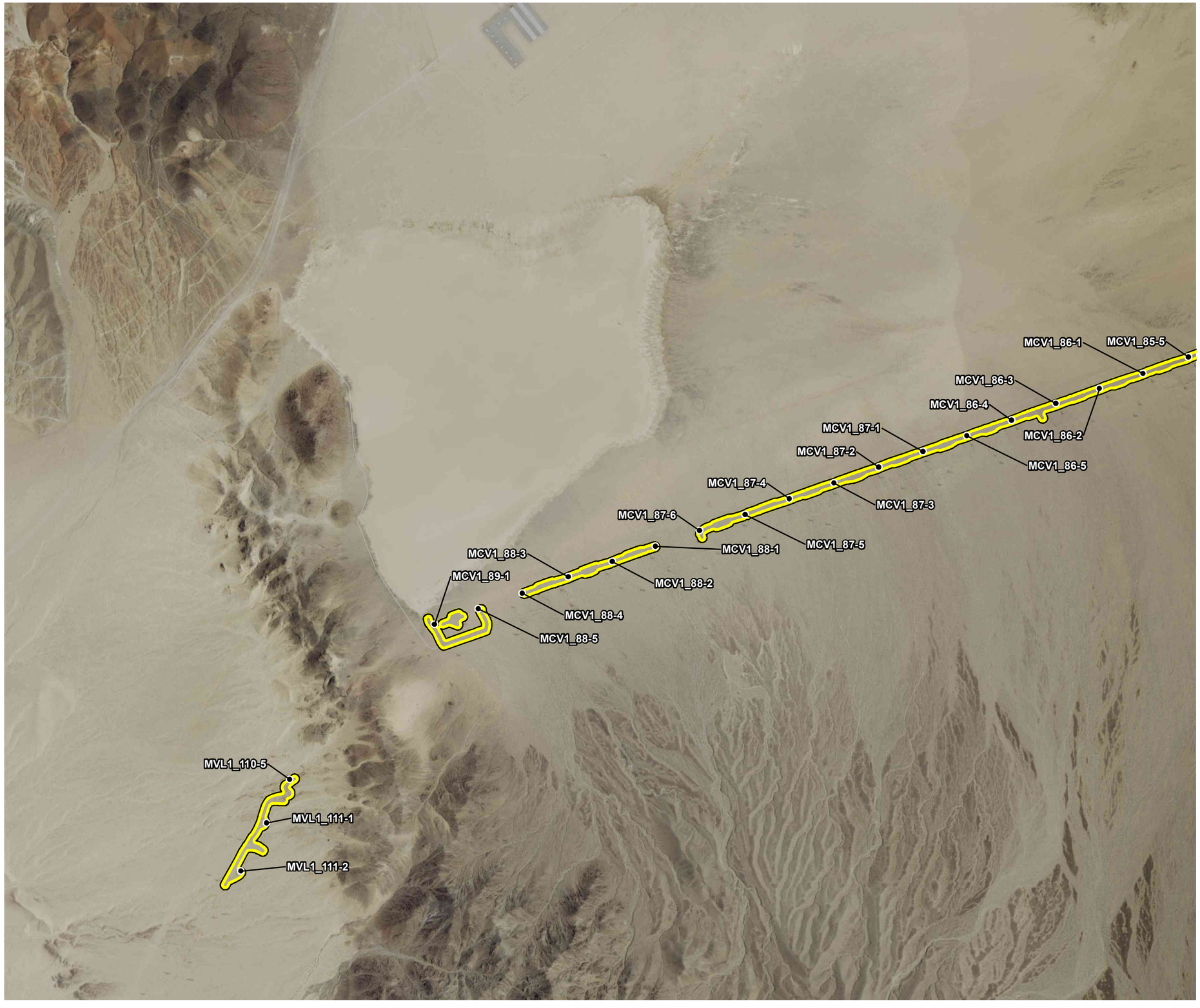

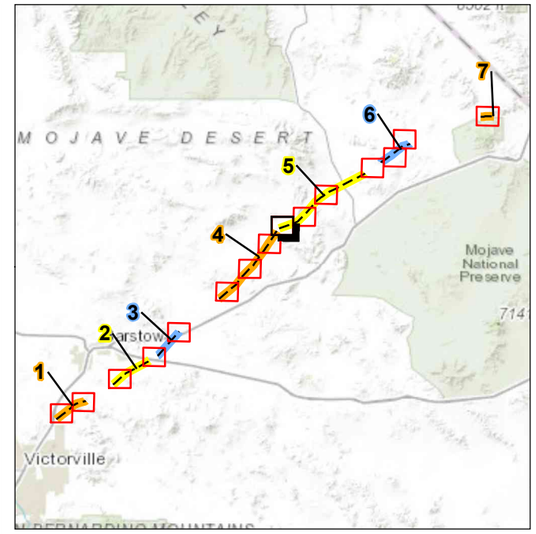

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

D:\Projects\3MBC\00001\MXD\JD\Ex_Survey_Area_20160929.mxd

PSOMAS

Exhibit 2i
Survey Area

Path 46 Transmission Line Clearances Project

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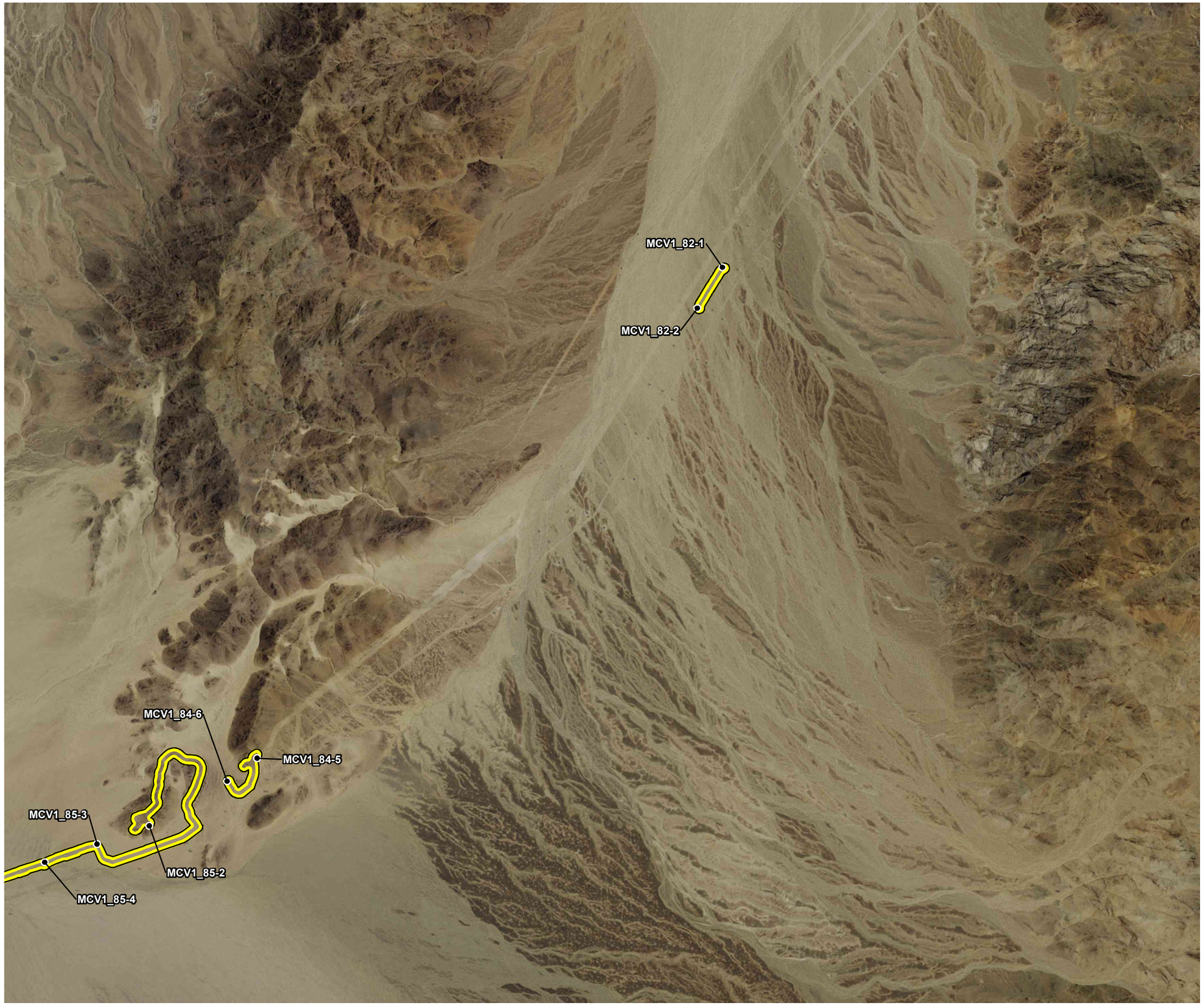

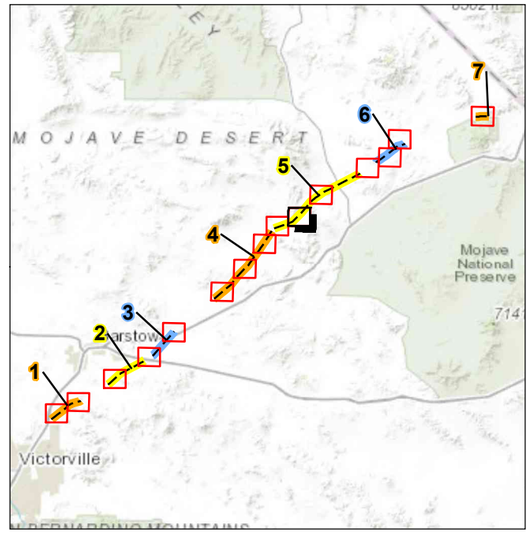

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2j
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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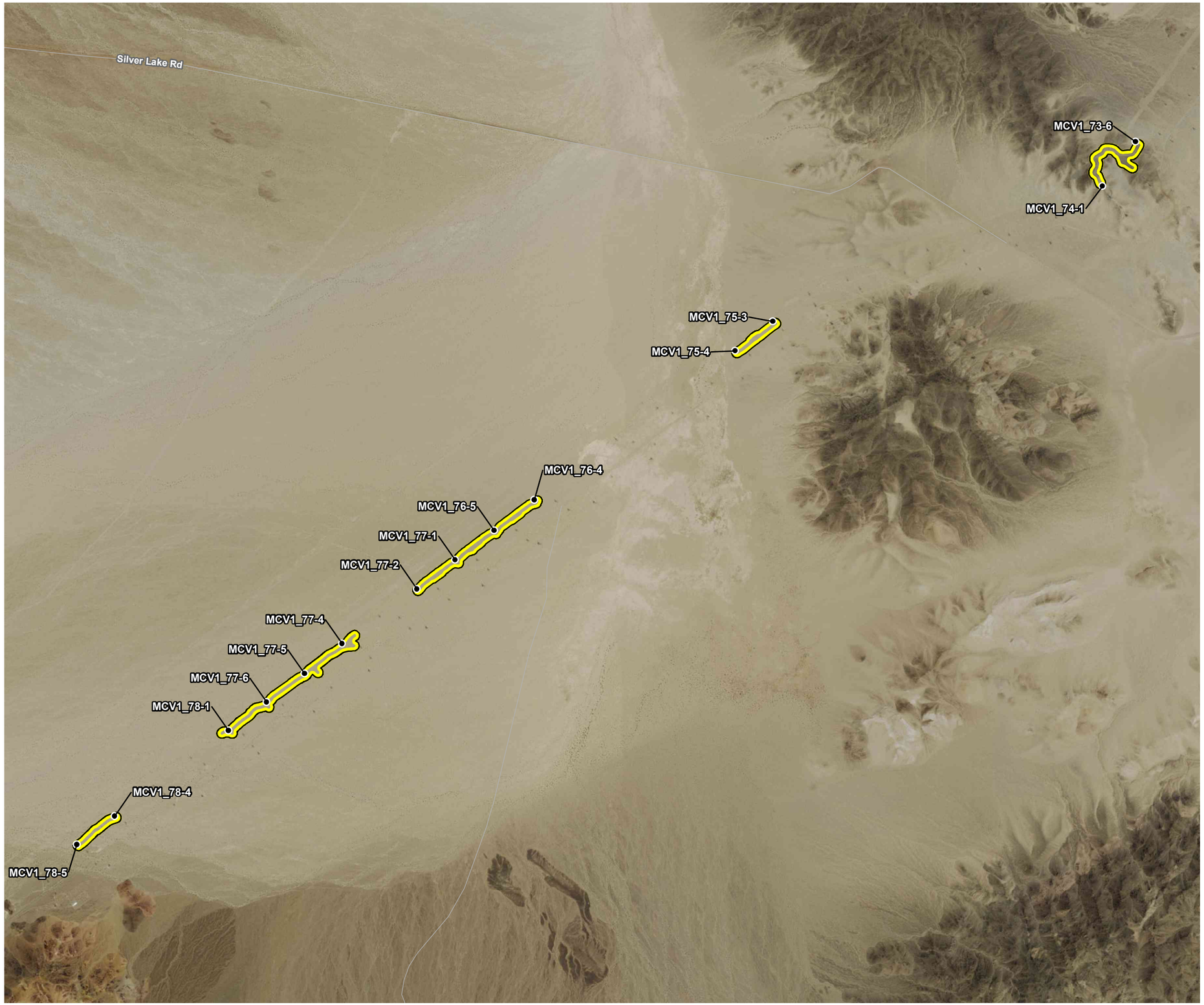

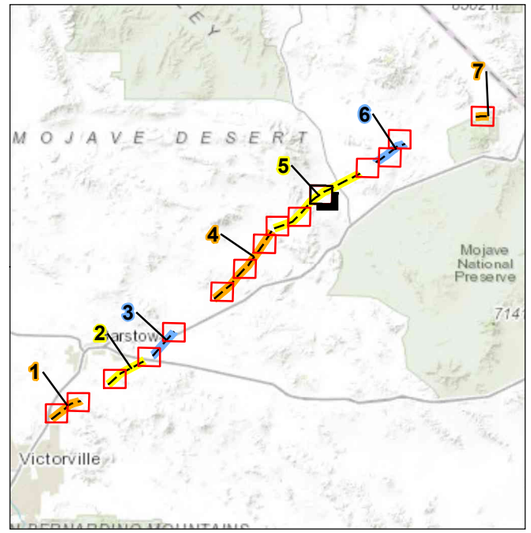

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2k
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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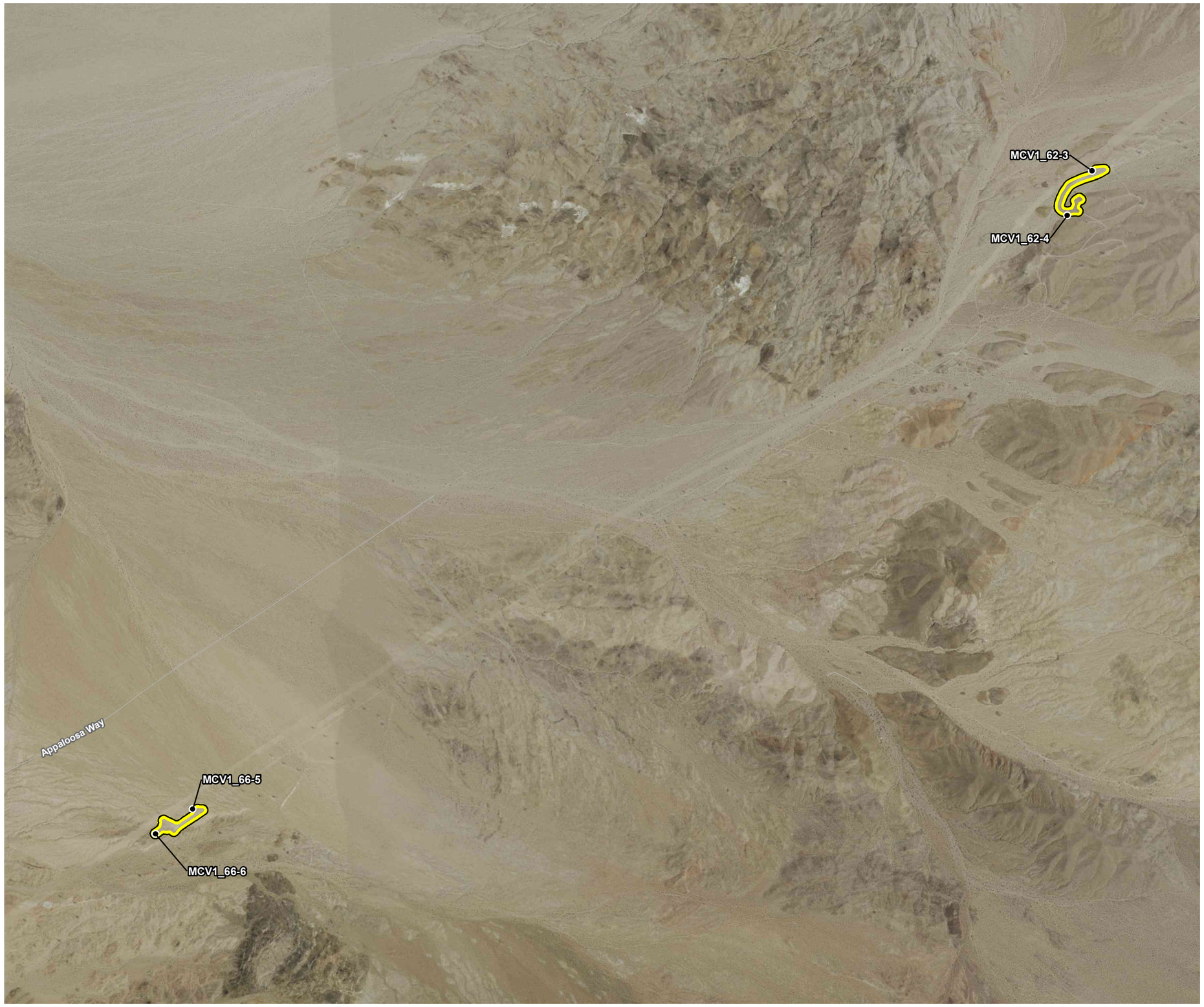

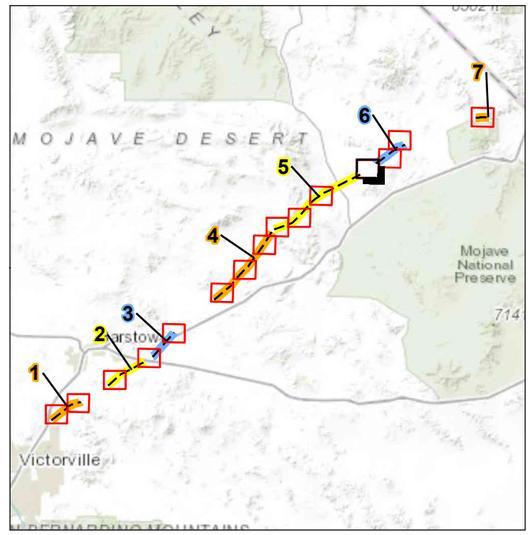

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2I
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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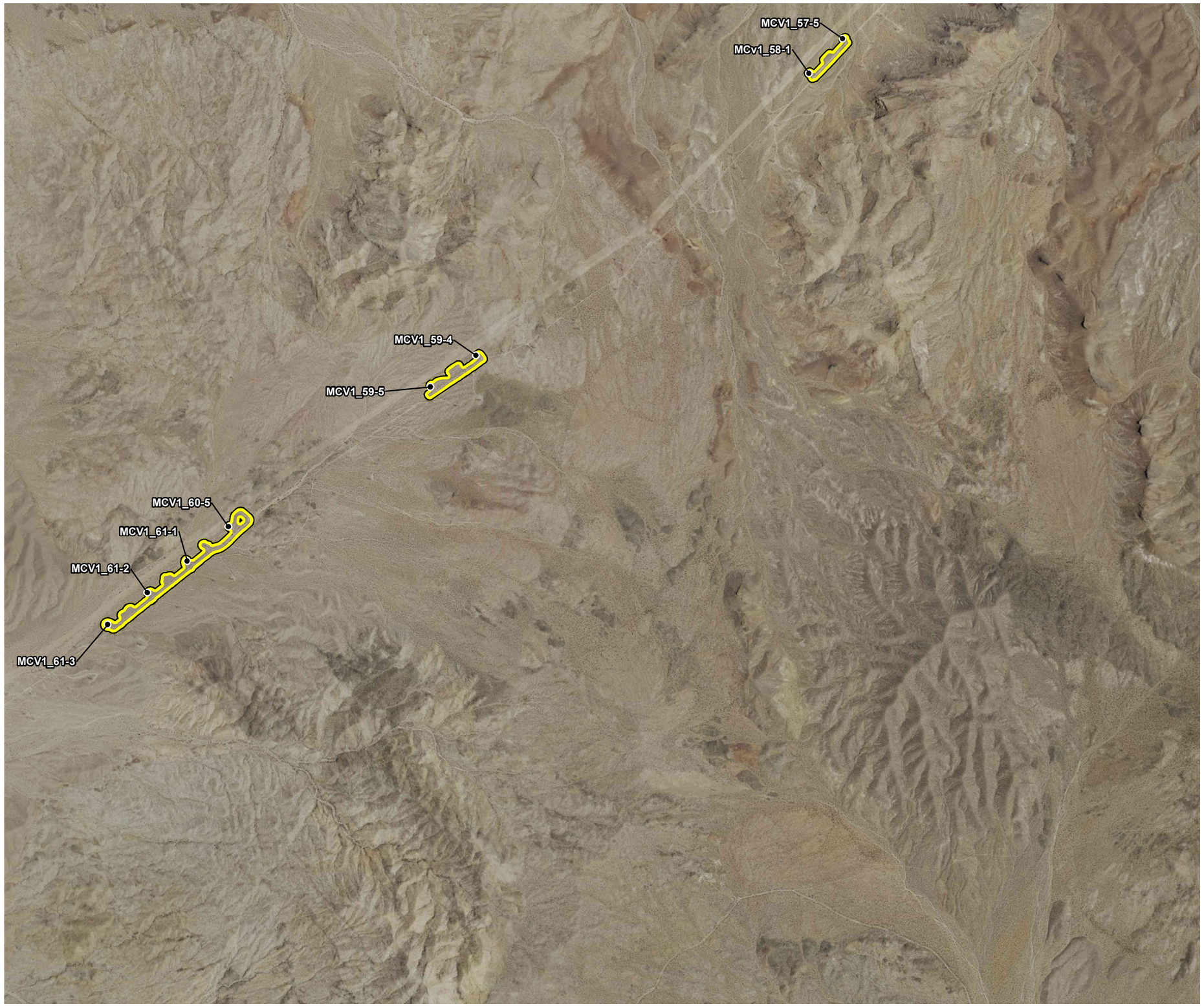

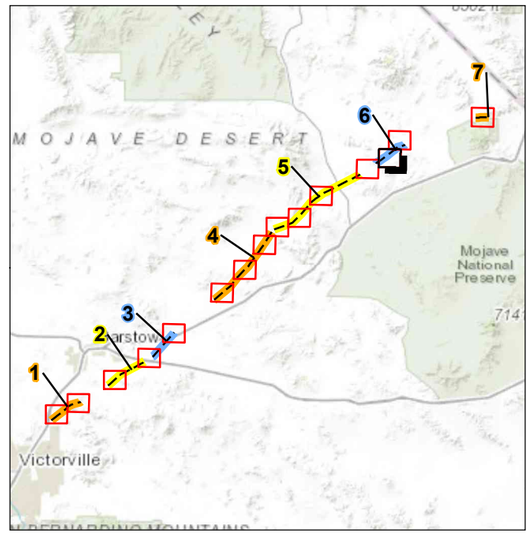

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2m Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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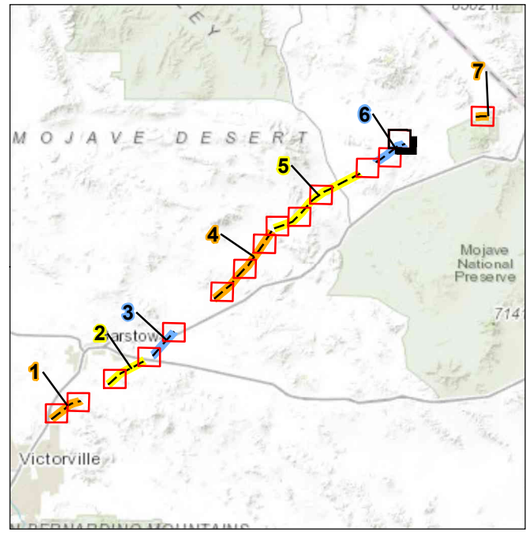

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2n
Survey Area

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex2_Survey_Area_20160929.pdf

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MCV1_37-1
MCV1_36-4
MCV1_38-1
MCV1_36-6
MCV1_36-3
MCV1_38-3
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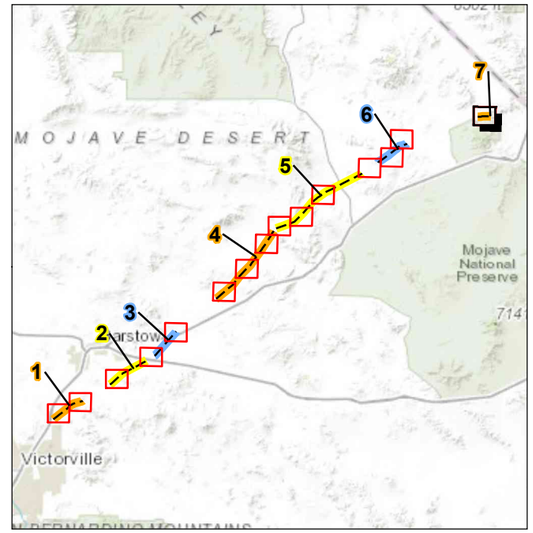

- Tower Location
- Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 2o
Survey Area

Path 46 Transmission Line Clearances Project

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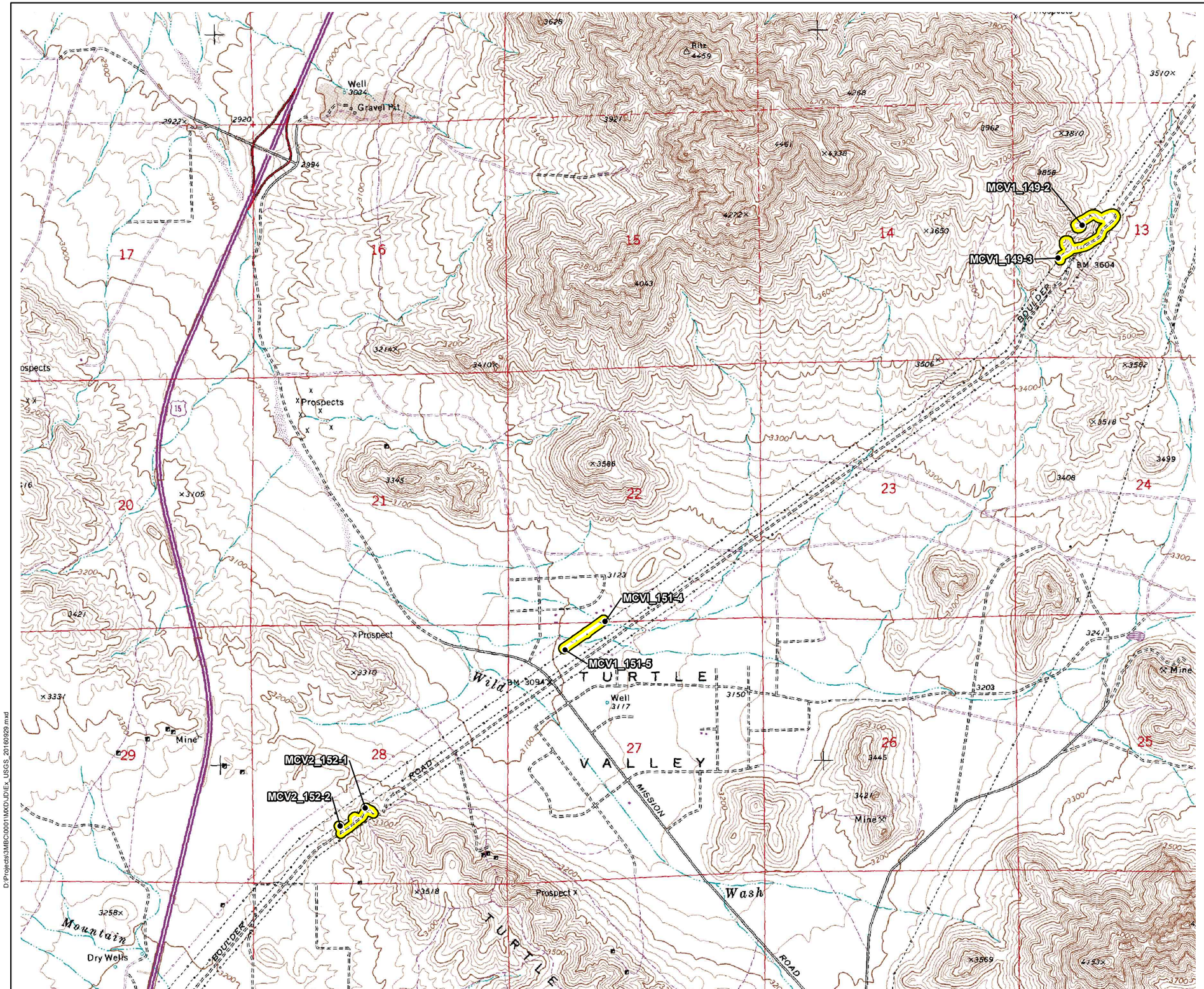

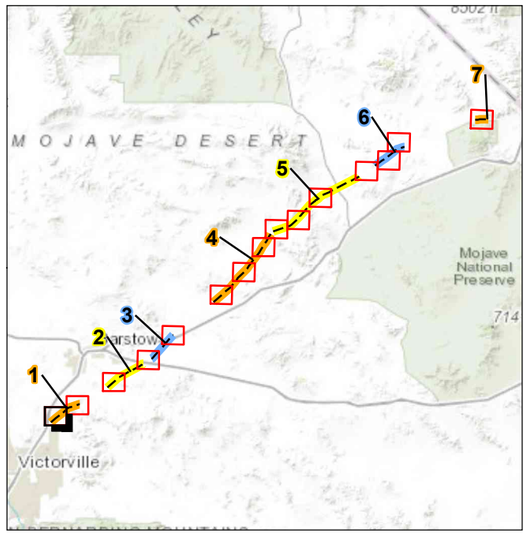

- Tower Location
- Survey Area

Quadrangle

Turtle Valley, CA

Meridian, Township, Range, Section

Overlapping the Survey Area:

S07N03W12

S07N03W13

S07N03W22

S07N03W27

S07N03W28

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3a
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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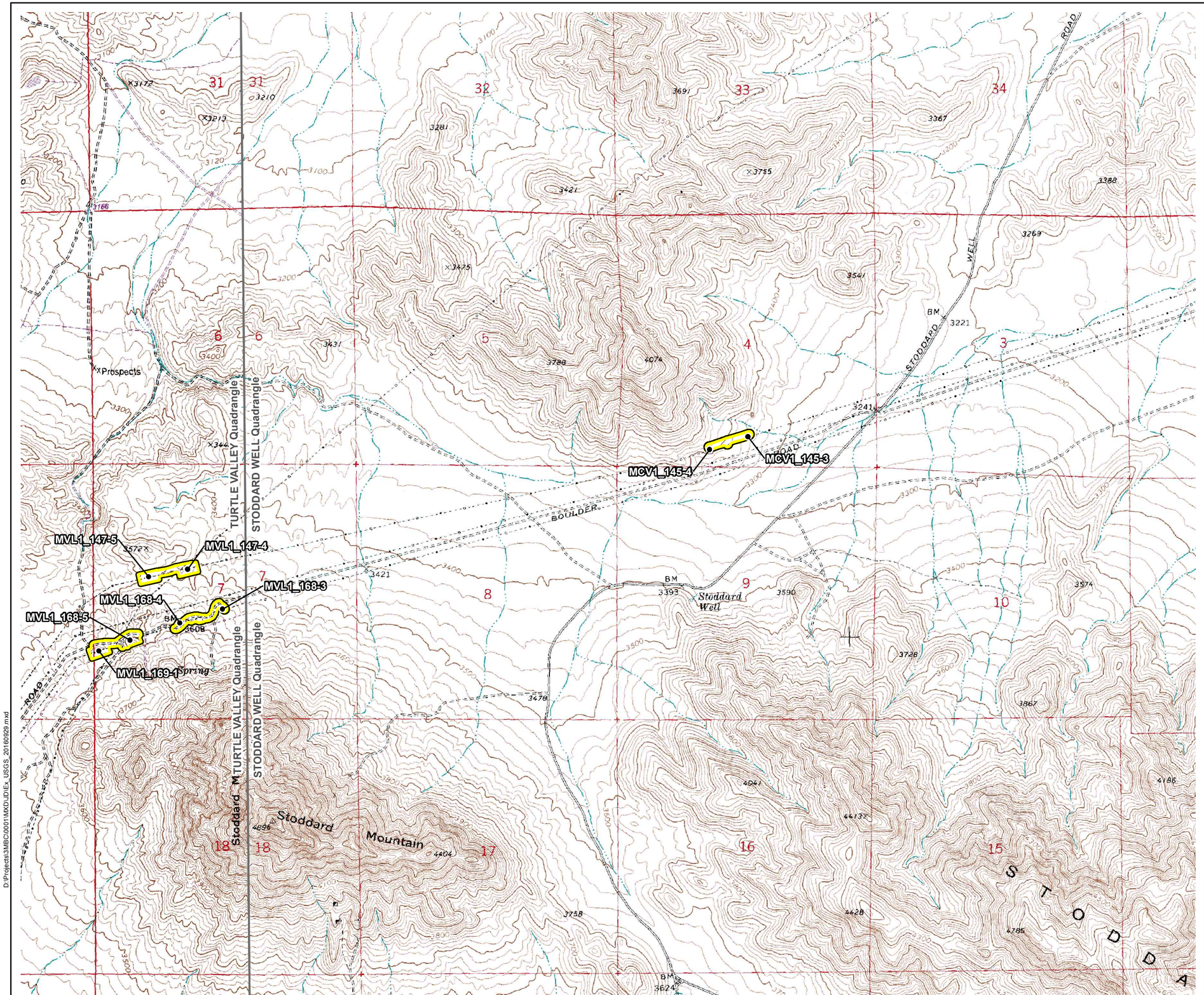

- Tower Location
- Survey Area

Quadrangle

Stoddard Well, CA

Turtle Valley, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S07N02W04

S07N02W07

S07N02W09

S07N03W12

S07N03W13

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3b
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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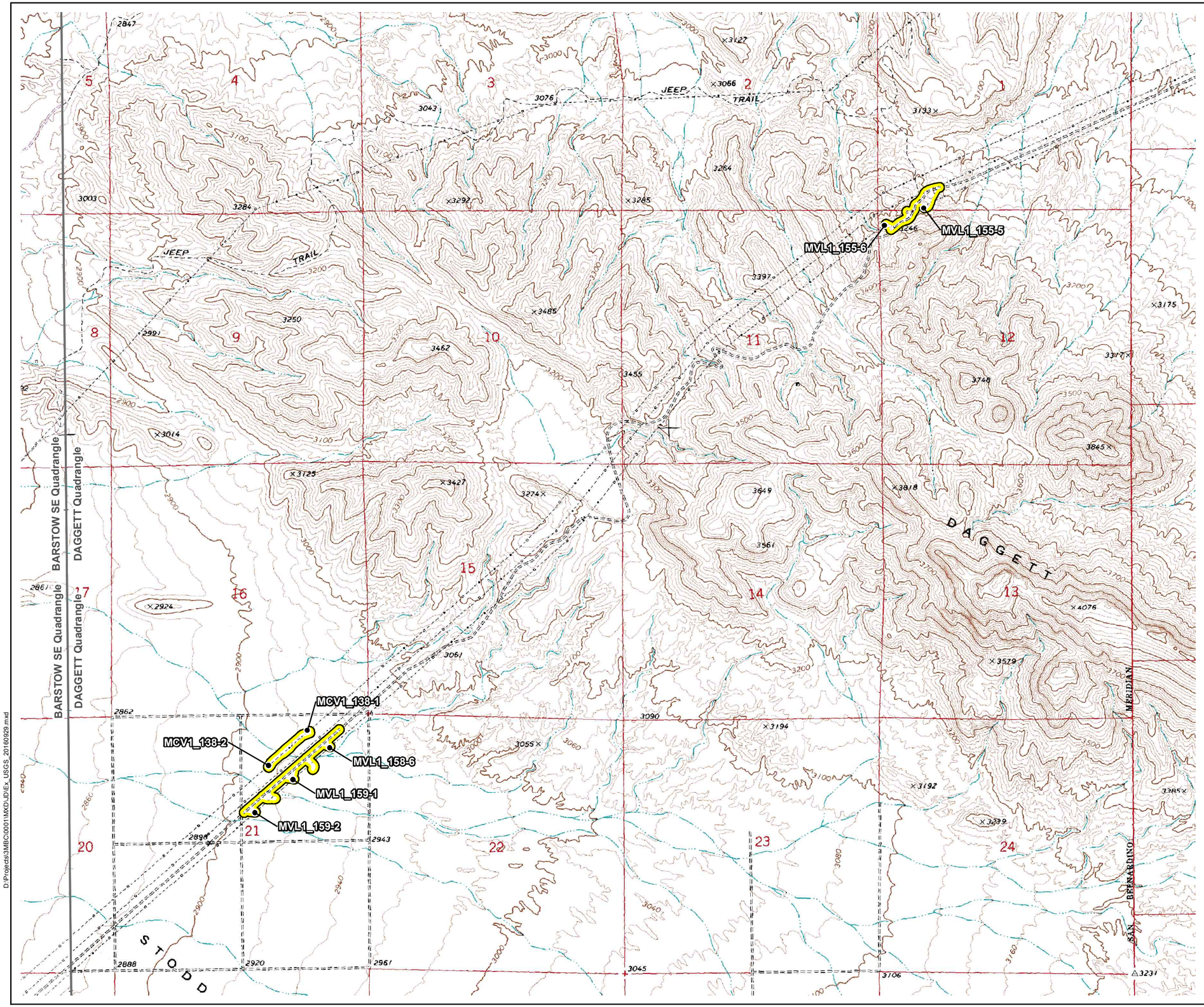

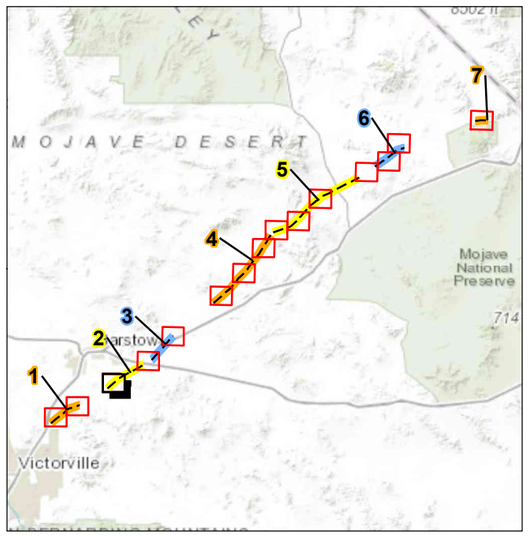

- Tower Location
- Survey Area

Quadrangle

Barstow SE, CA

Daggett, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S08N01W01

S08N01W02

S08N01W11

S08N01W12

S08N01W16

S08N01W21

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3c
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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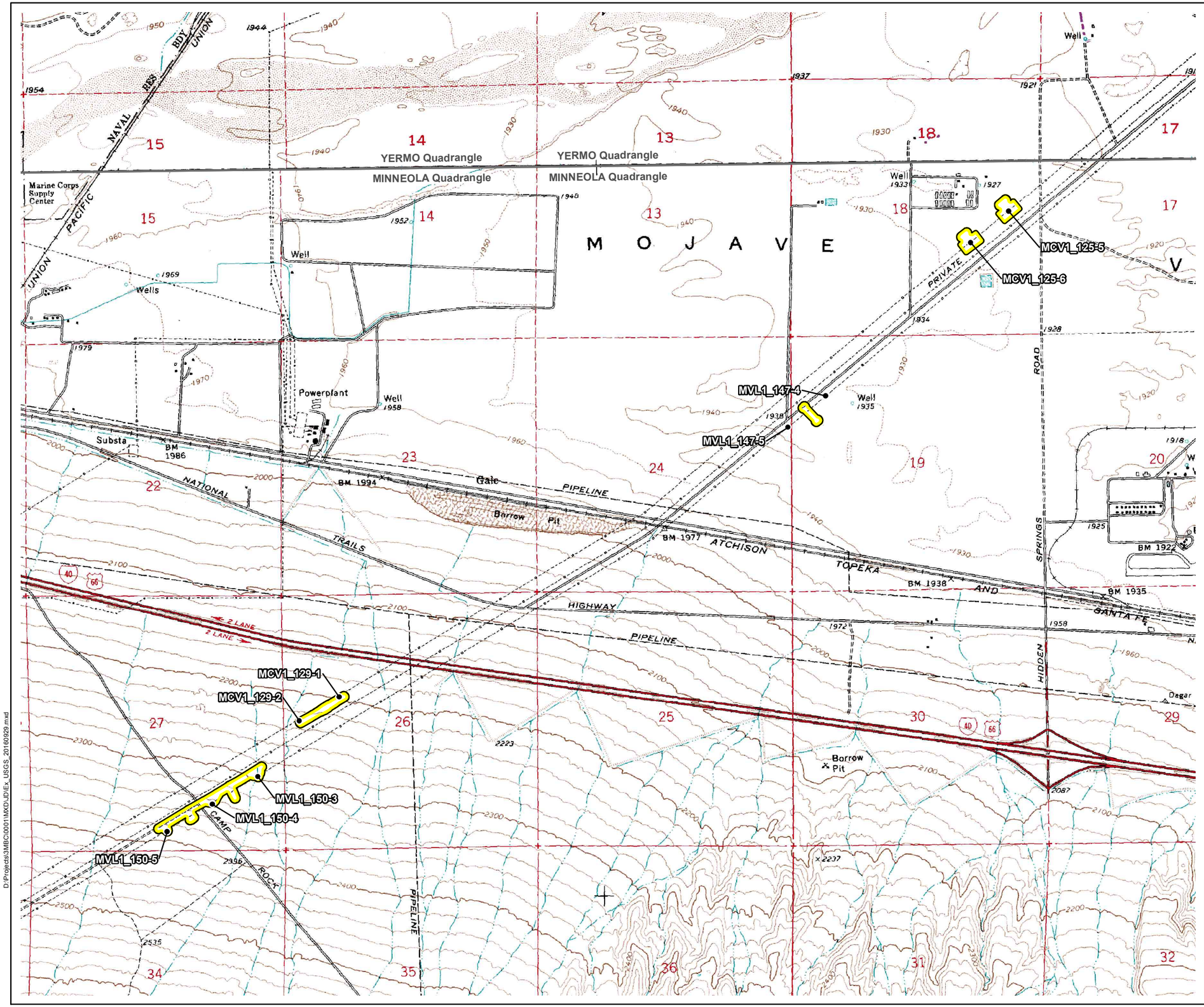

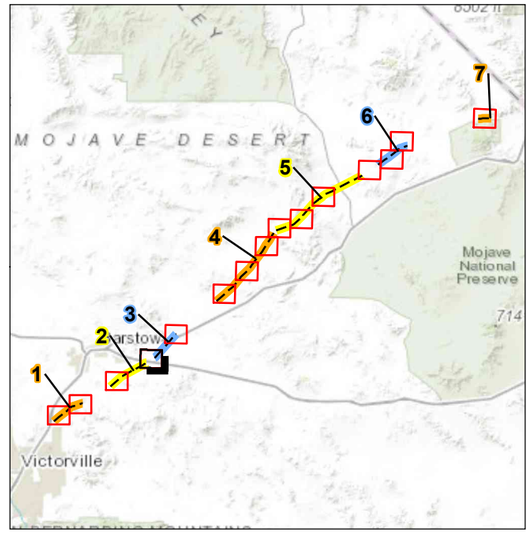

- Tower Location
- Survey Area

Quadrangle

Minneola, CA

Yermo, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S09N01E24

S09N01E26

S09N01E27

S09N01E34

S09N02E18

S09N02E19

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3d
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

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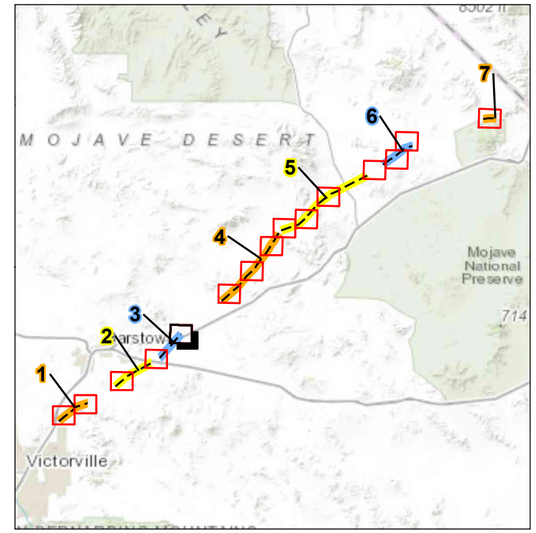

- Tower Location
- Survey Area

Quadrangle

Harvard Hill, CA

Yermo, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S10N02E26

N
W E
S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3e
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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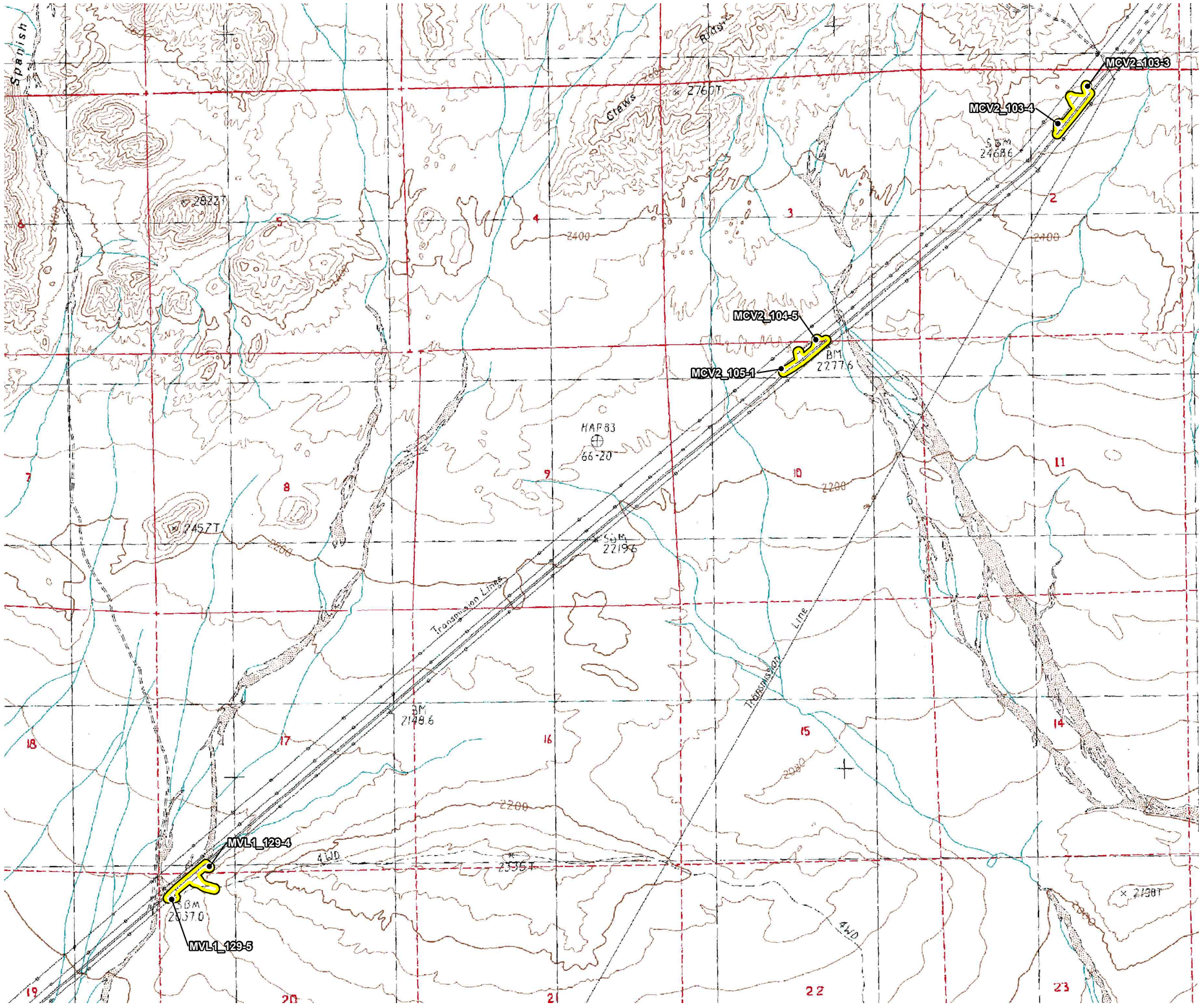

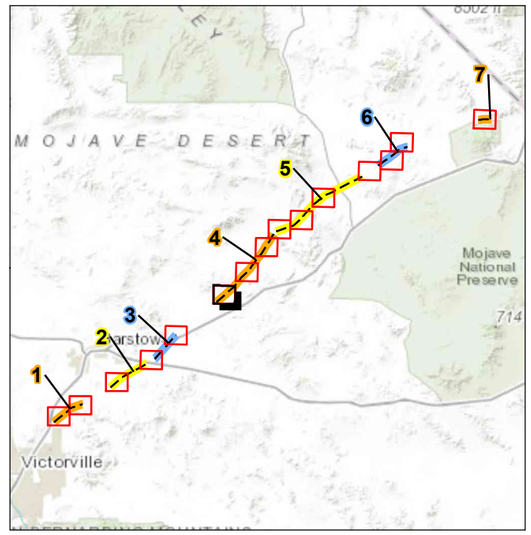

- Tower Location
- Survey Area

Quadrangle

Alvord Mountain East, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S11N04E02
S11N04E03
S11N04E10
S11N04E17
S11N04E18
S11N04E19
S11N04E20
S12N04E35

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3f
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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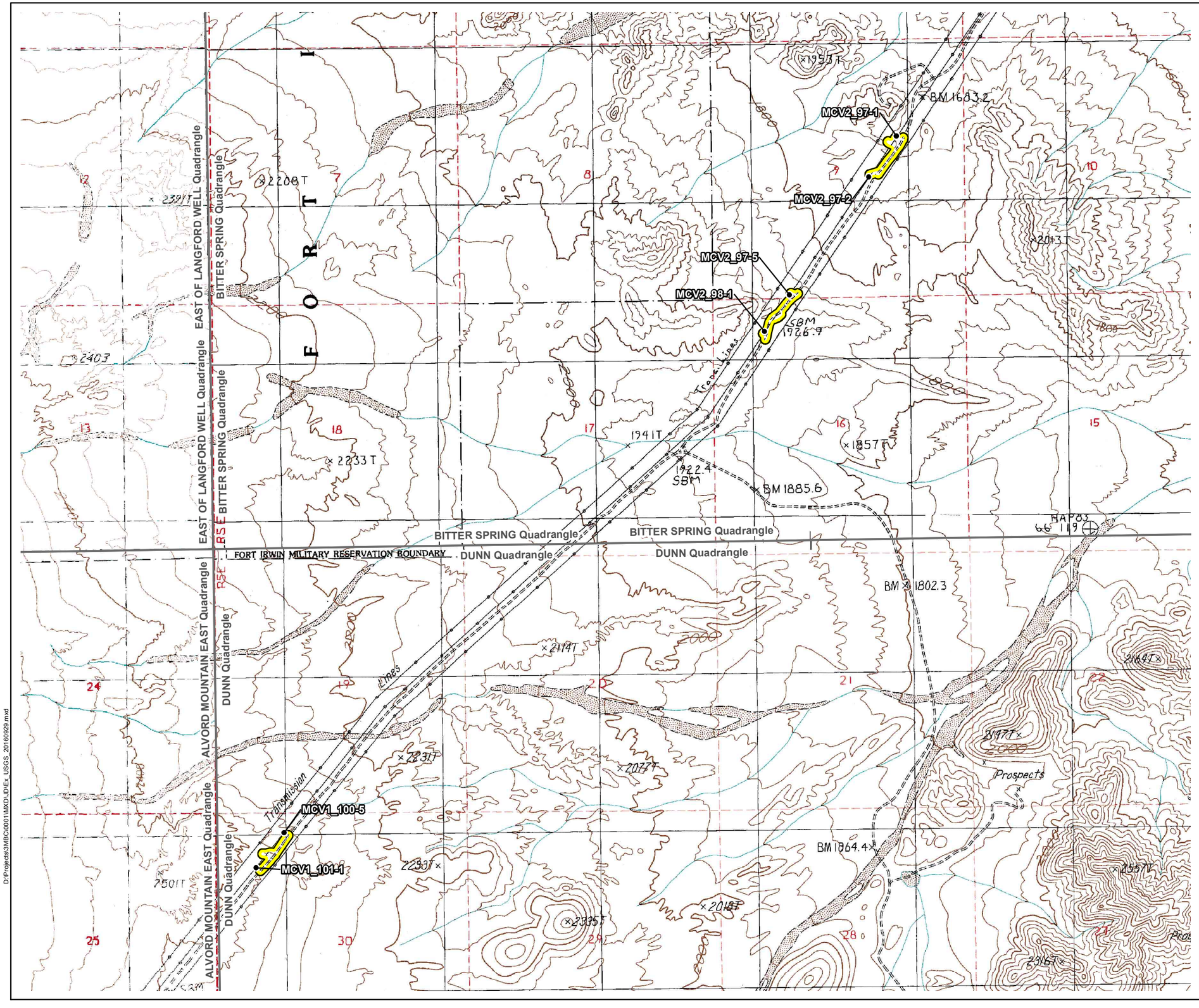

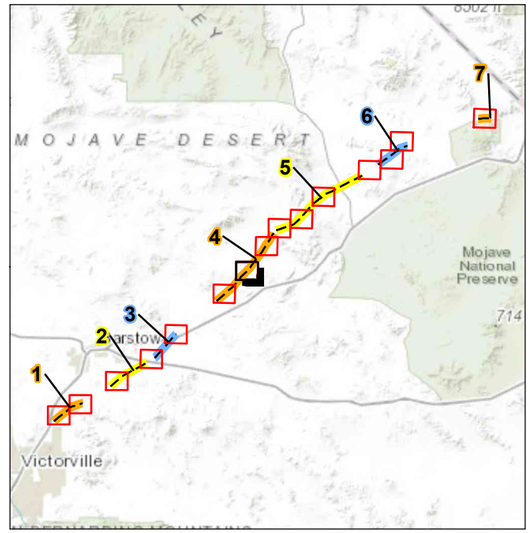

- Tower Location
- Survey Area

Quadrangle

Alvord Mountain East, CA

Bitter Spring, CA

Dunn, CA

East Of Langford Well, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S12N04E24

S12N04E25

S12N05E09

S12N05E16

S12N05E19

S12N05E30

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3g
USGS 7.5-minute
Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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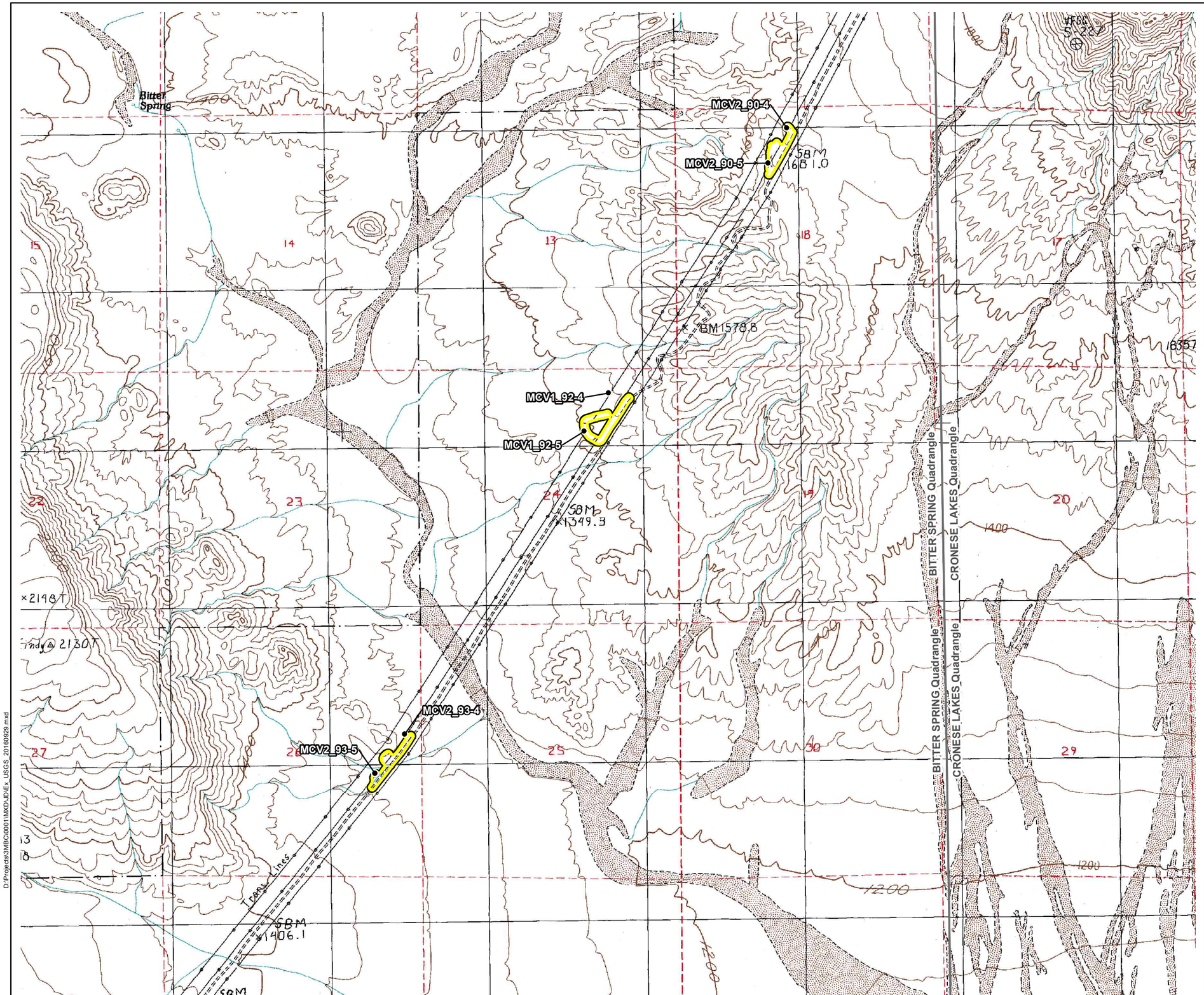

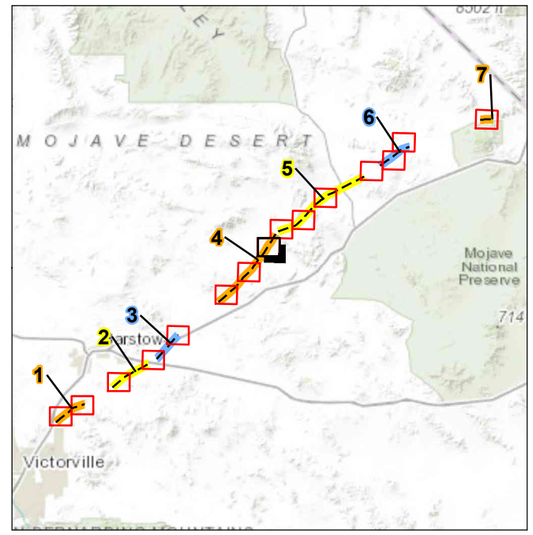

- Tower Location
- Survey Area

Quadrangle

Bitter Spring, CA

Cronese Lakes, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S13N05E24

S13N05E25

S13N05E26

S13N06E07

S13N06E08

S13N06E18

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3h
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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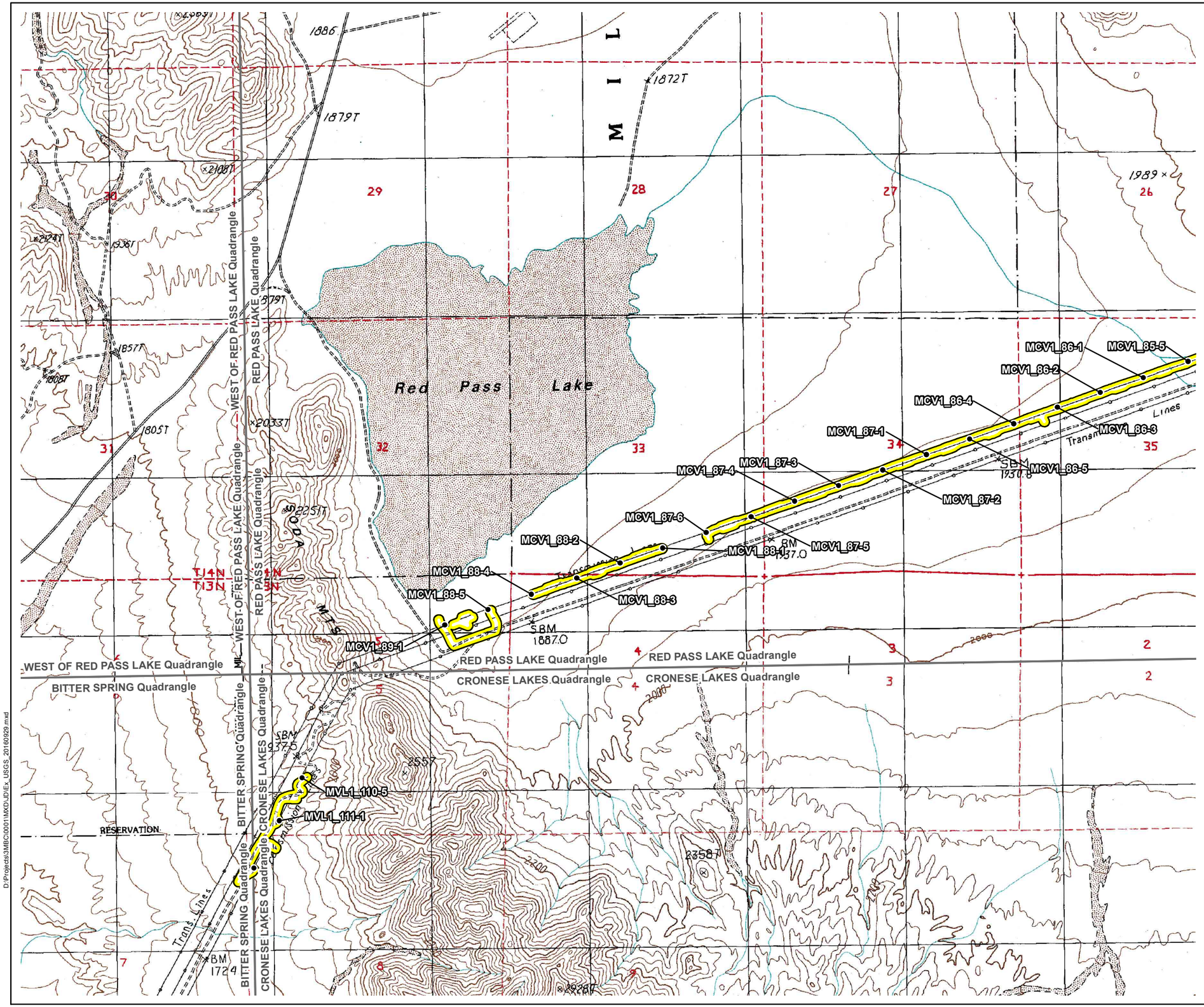

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PSOMAS

Exhibit 3i
USGS 7.5-minute
Topographic Quadrangle

Path 46 Transmission Line Clearances Project

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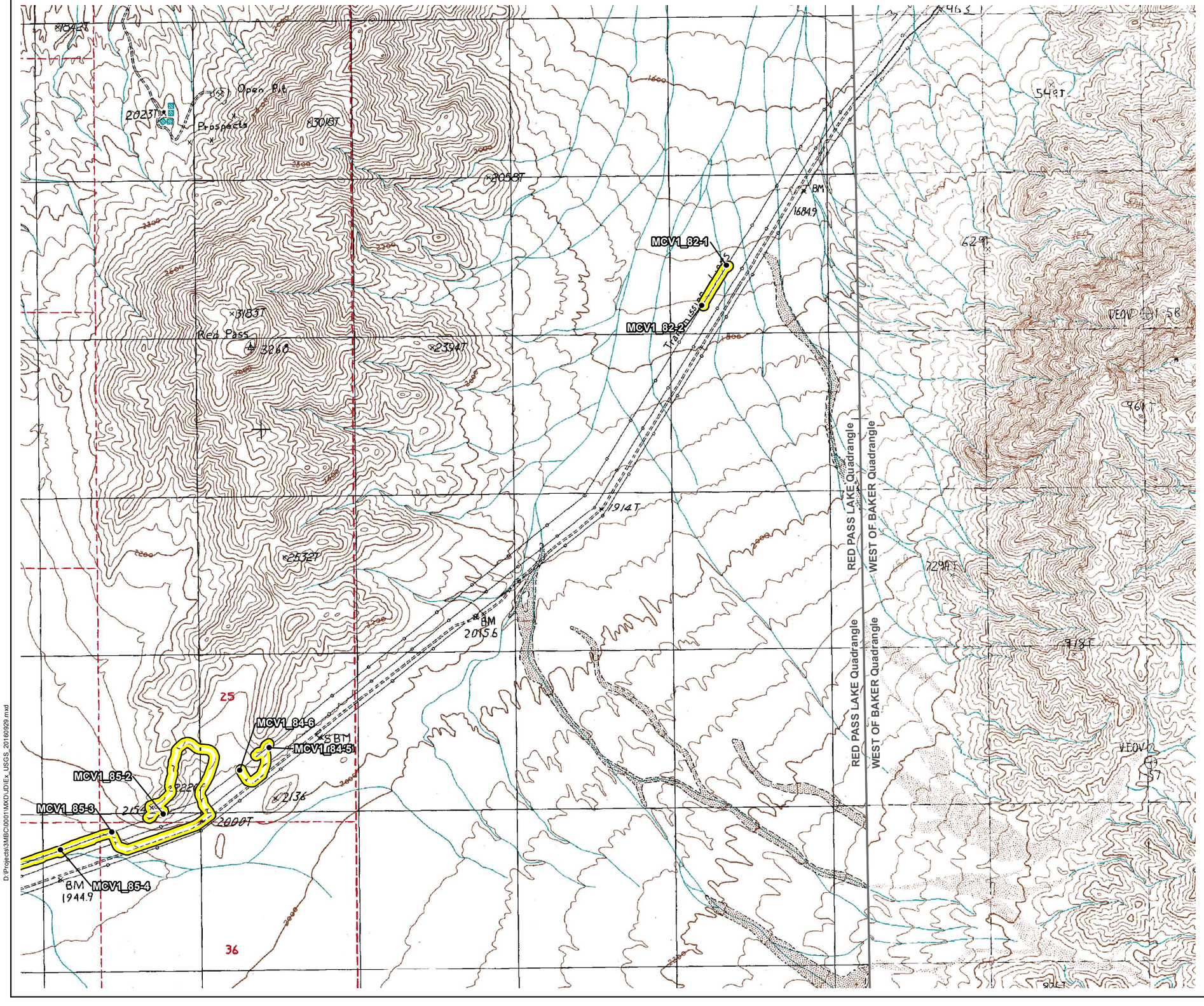

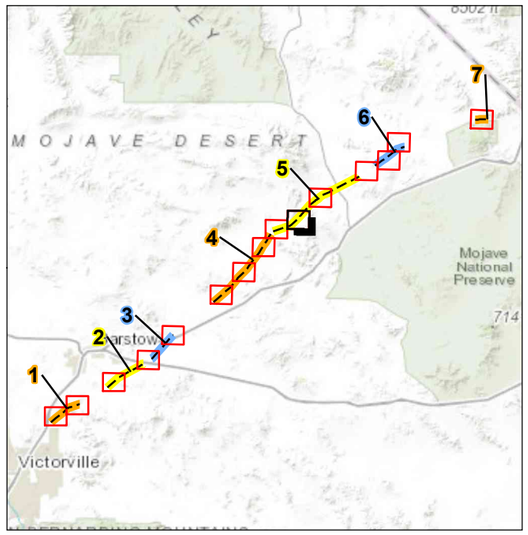

- Tower Location
- Survey Area

Quadrangle

Red Pass Lake, CA

West Of Baker, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S14N06E25

S14N06E26

S14N06E35

S14N06E36

S14N07E17

S14N07E20

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3j
USGS 7.5-minute
Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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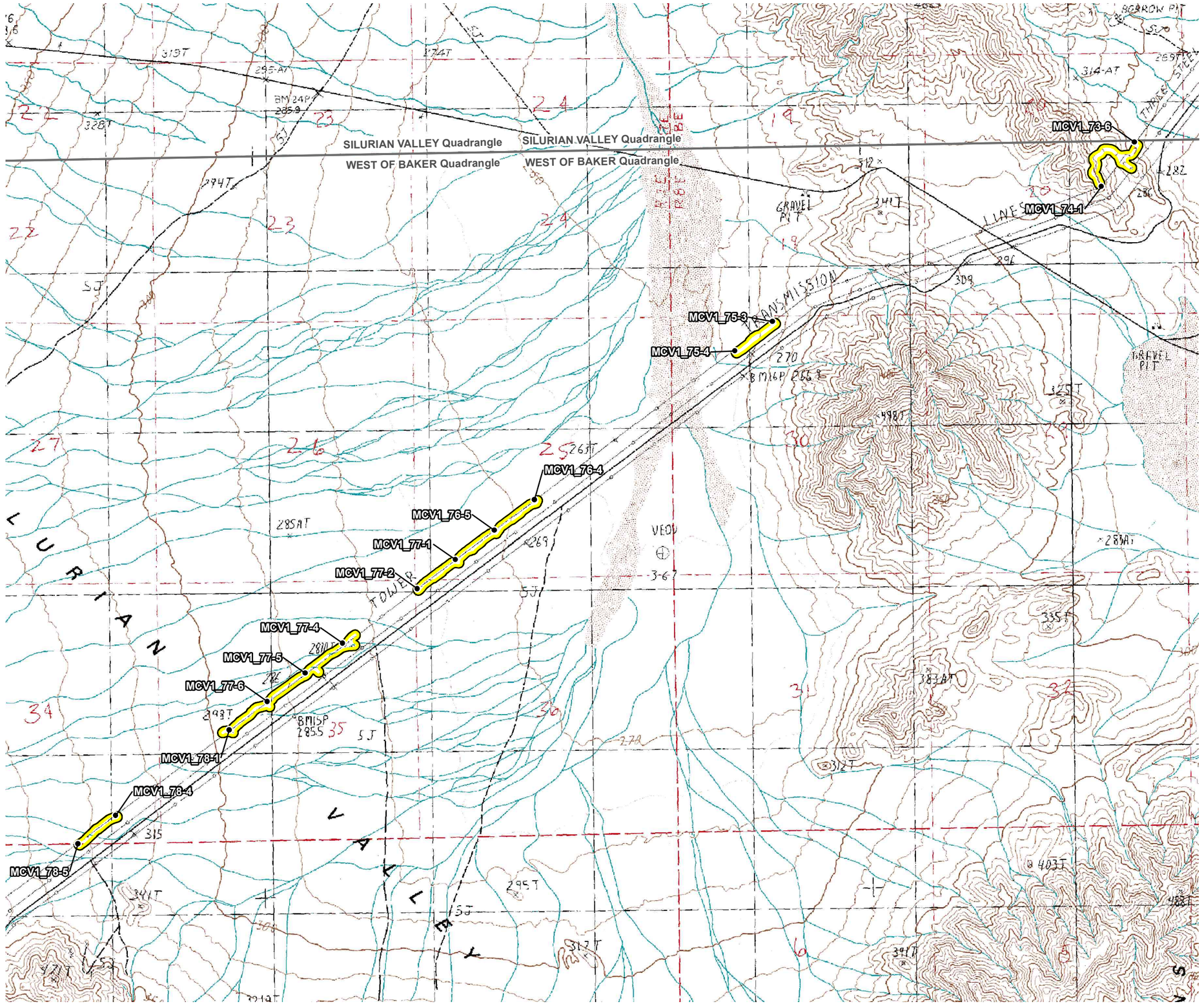

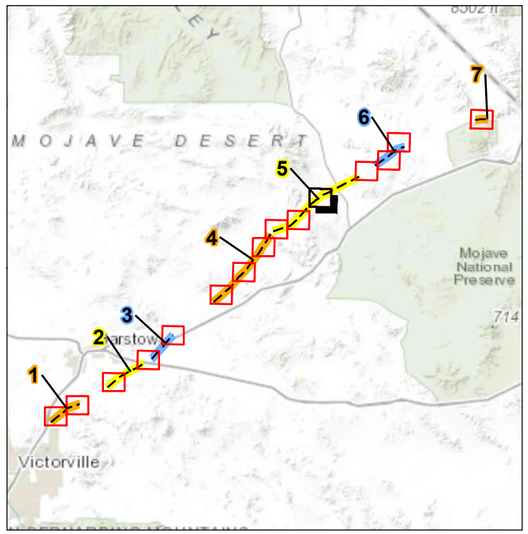

- Tower Location
- Survey Area

Quadrangle

Silurian Valley, CA

West Of Baker, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S14N07E03

S15N07E25

S15N07E26

S15N07E34

S15N07E35

S15N07E36

S15N08E19

S15N08E20

S15N08E30

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3k
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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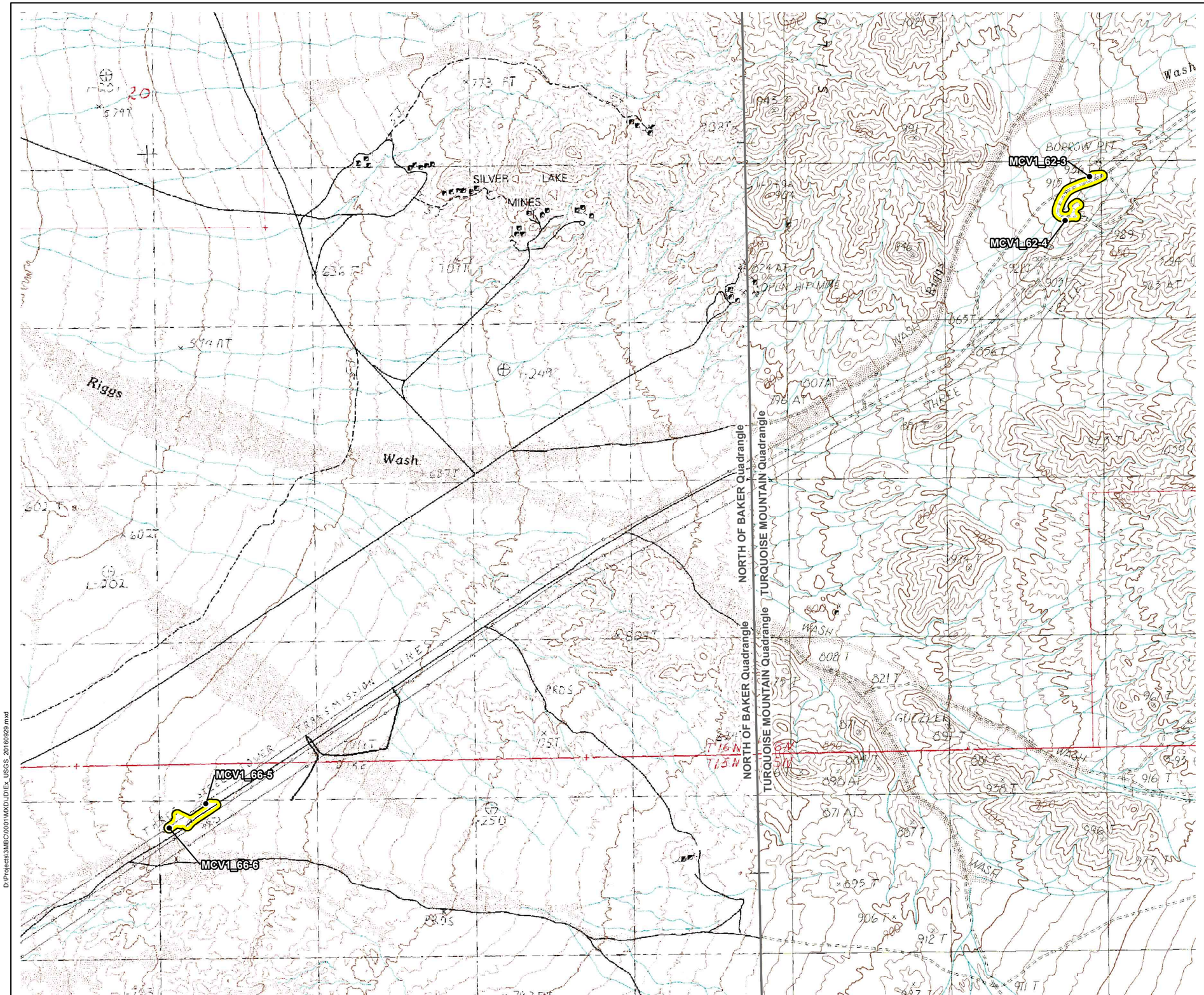

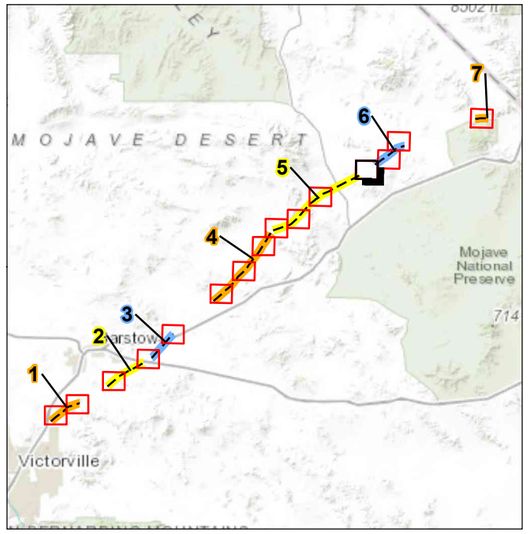

- Tower Location
- Survey Area

Quadrangle

North Of Baker, CA

Turquoise Mountain, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S15N09E04

S15N09E05

S16N09E23

S16N09E24

S16N09E25

S16N09E26

S16N09E32

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3I
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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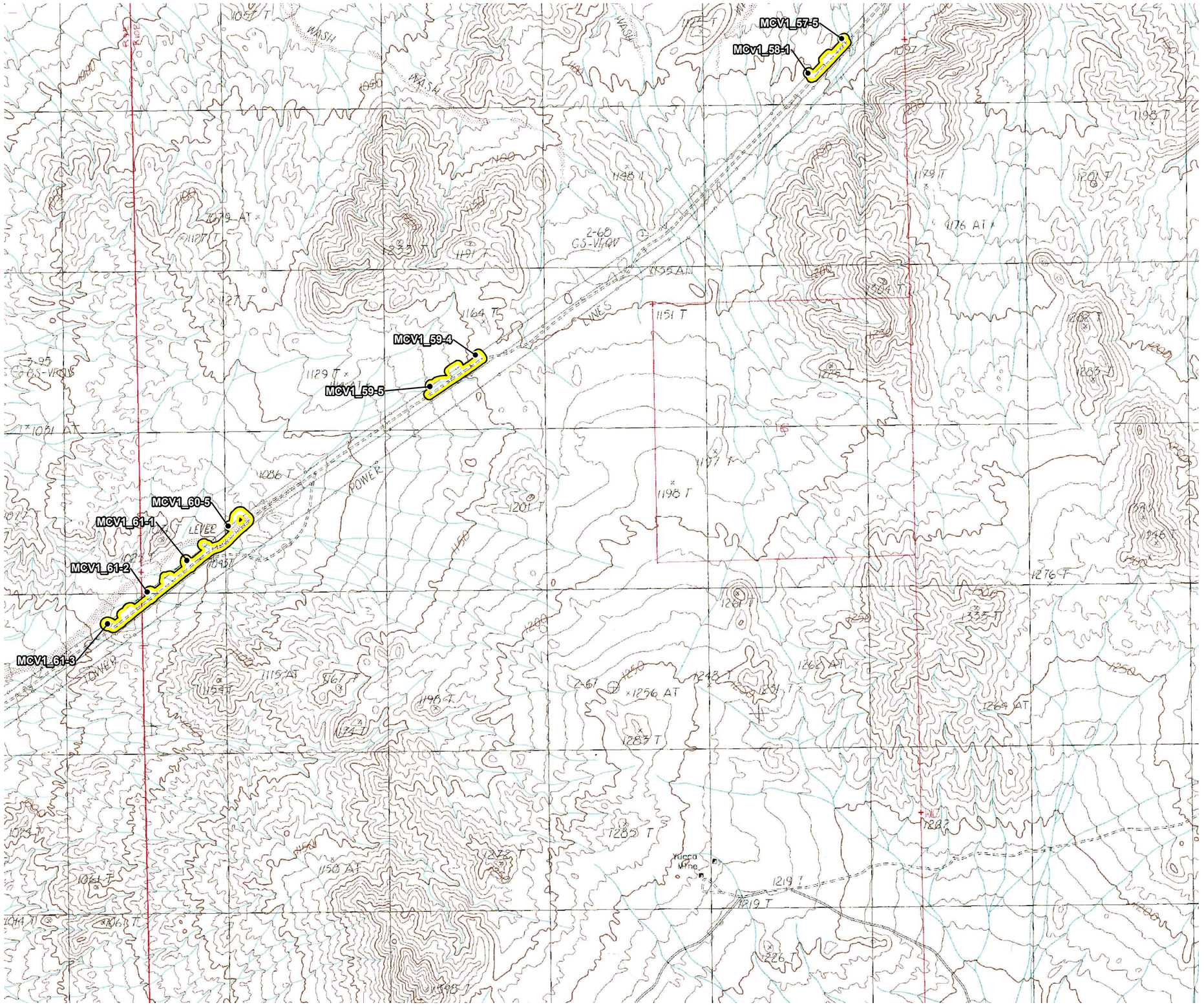

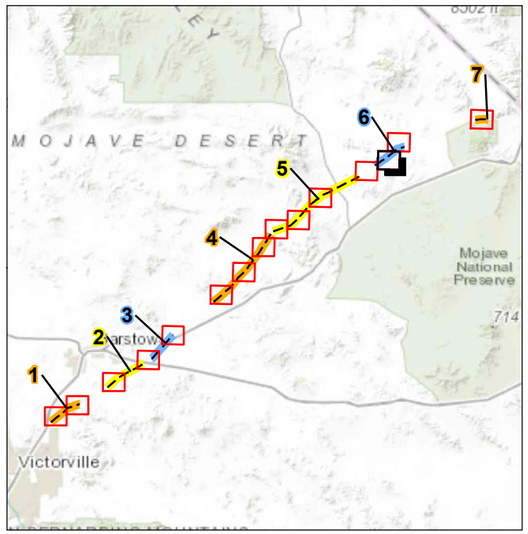

- Tower Location
- Survey Area

Quadrangle

Turquoise Mountain, CA

Meridian, Township, Range, Section

Overlapping the Survey Area:

S16N09E13
S16N09E24
S16N09E25
S16N10E02
S16N10E03
S16N10E04
S16N10E09
S16N10E17
S16N10E18
S16N10E19

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3m
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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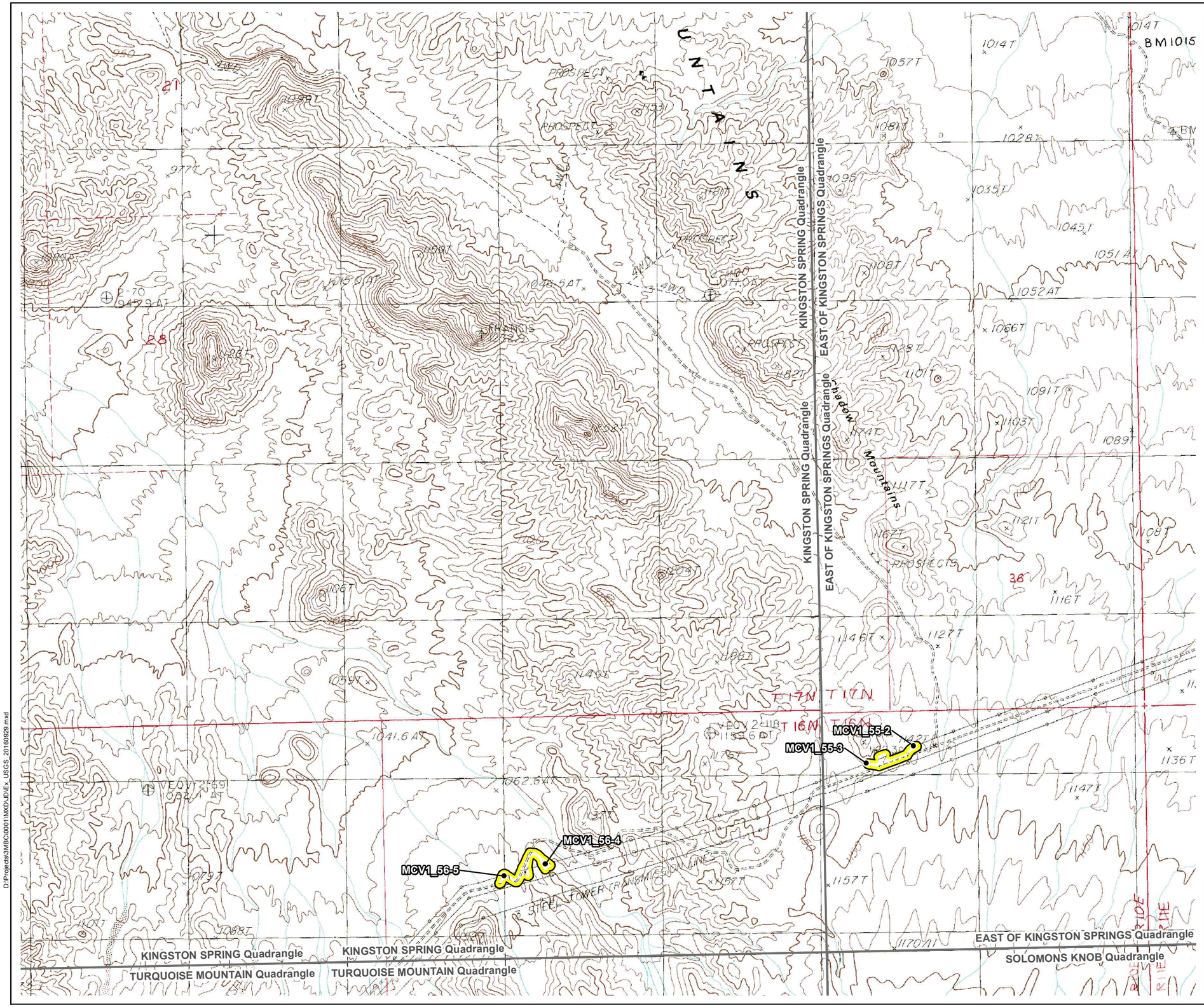

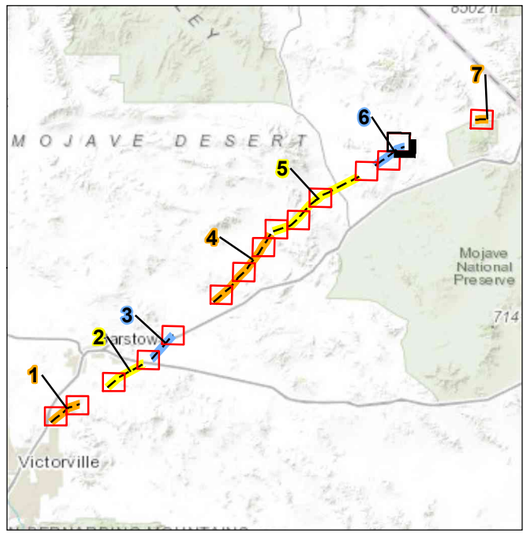

- Tower Location
- Survey Area

Quadrangle

East Of Kingston Springs, CA

Kingston Spring, CA

Solomons Knob, CA

Turquoise Mountain, CA

Meridian, Township, Range, Section Overlapping the Survey Area:

S16N10E01

S16N10E02

S16N10E03

S16N10E04

S17N10E35

S17N10E36

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

Exhibit 3n
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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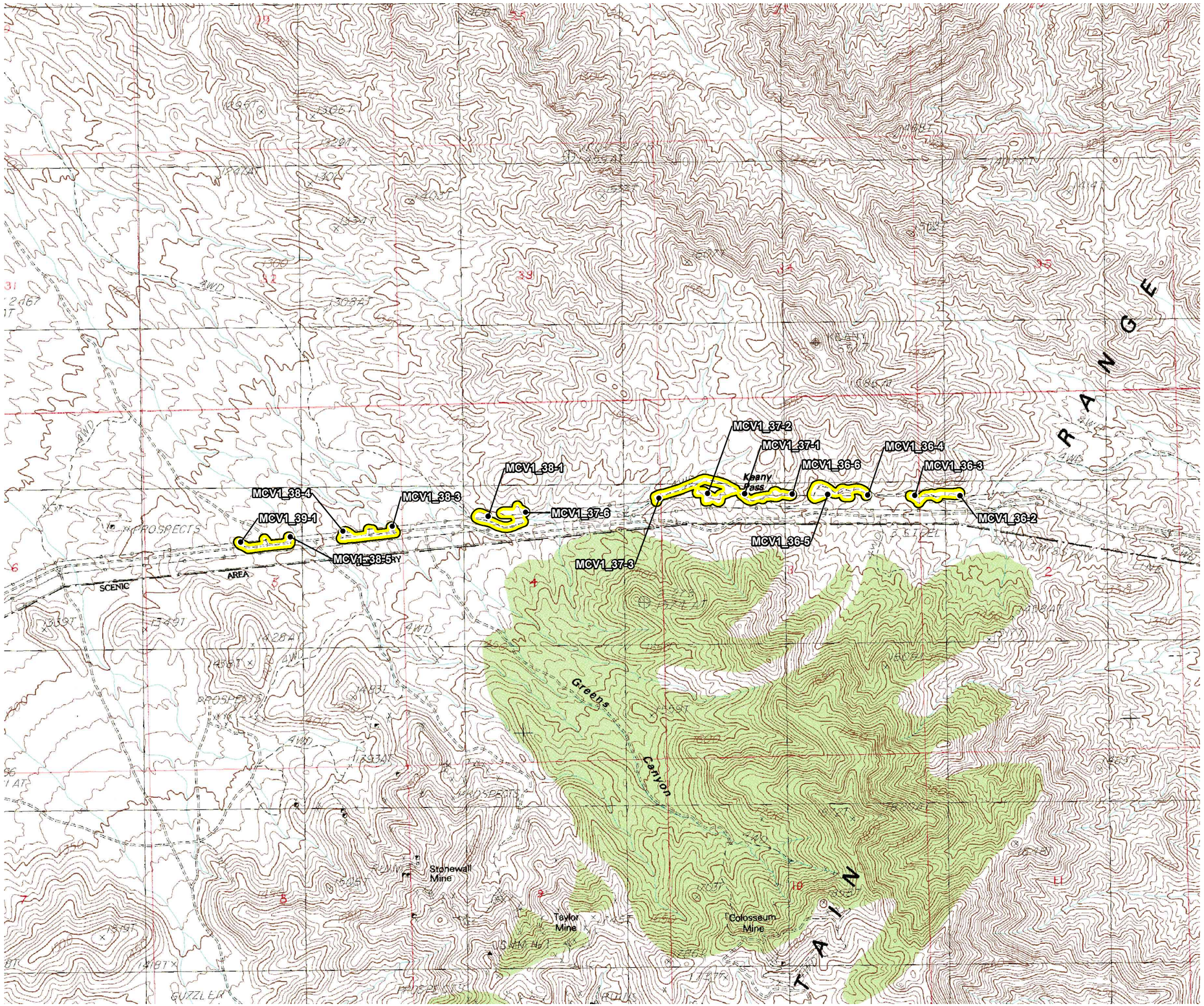

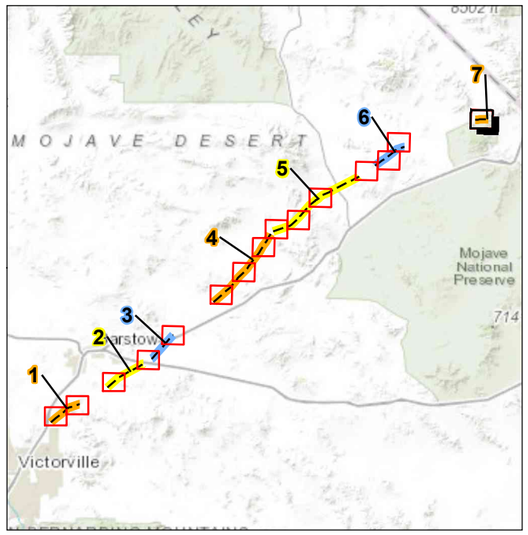

- Tower Location
- Survey Area

Quadrangle

Clark Mountain, CA

Meridian, Township, Range, Section

Overlapping the Survey Area:

S17N13E02

S17N13E03

S17N13E04

S17N13E05

N
W E
S

2,000 1,000 0 2,000
Feet

PSOMAS

Exhibit 3o
USGS 7.5-minute Topographic Quadrangle

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex3_USGS_20160929.pdf

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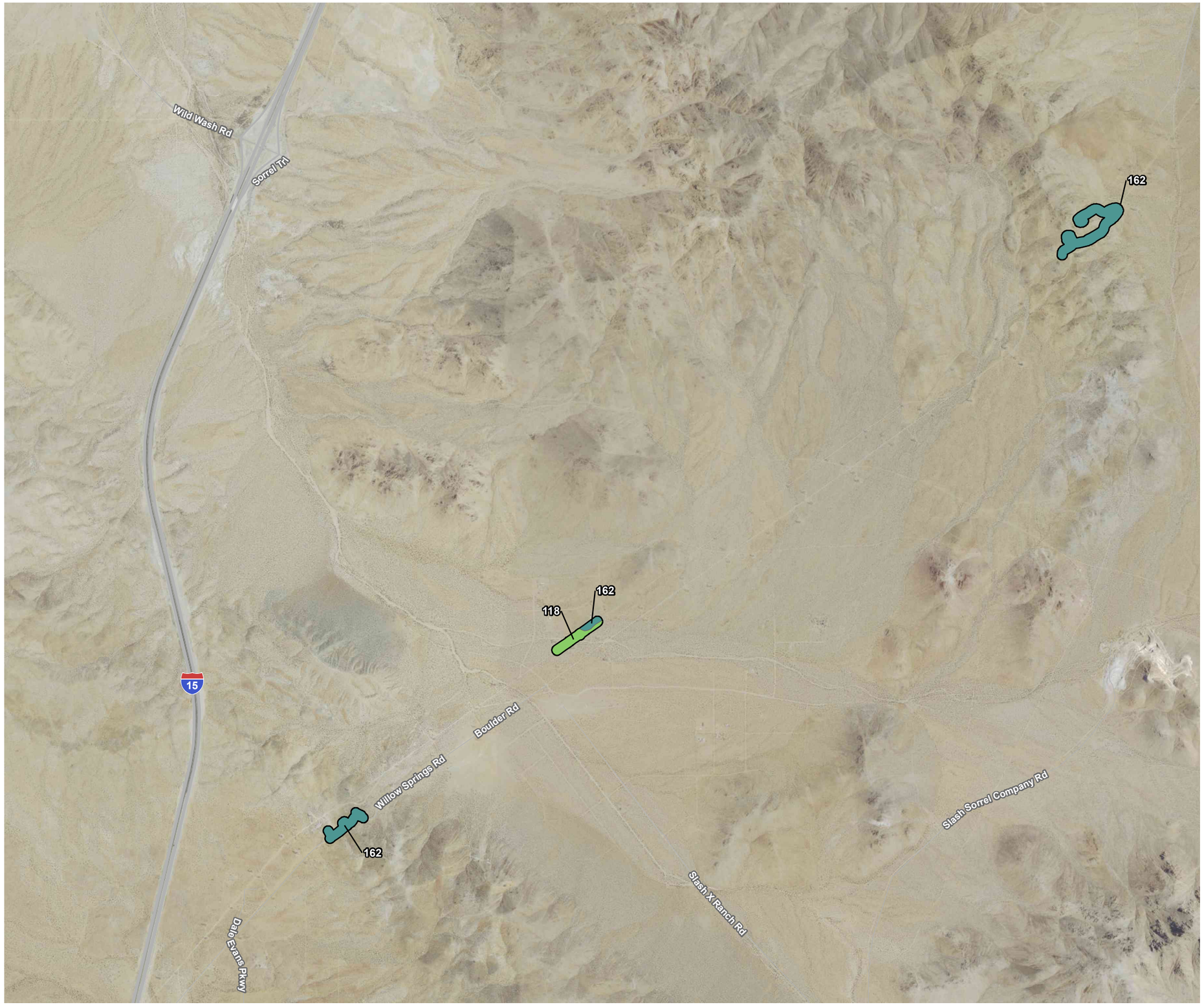

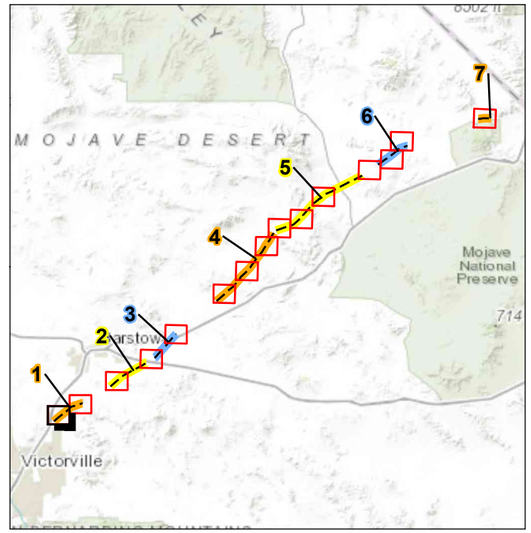

Survey Area

Soil Types

118 - Cajon-arizo complex, 2 to 15 percent slopes*

162 - Sparkhule-rock outcrop complex, 15 to 50 percent slopes*

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4a
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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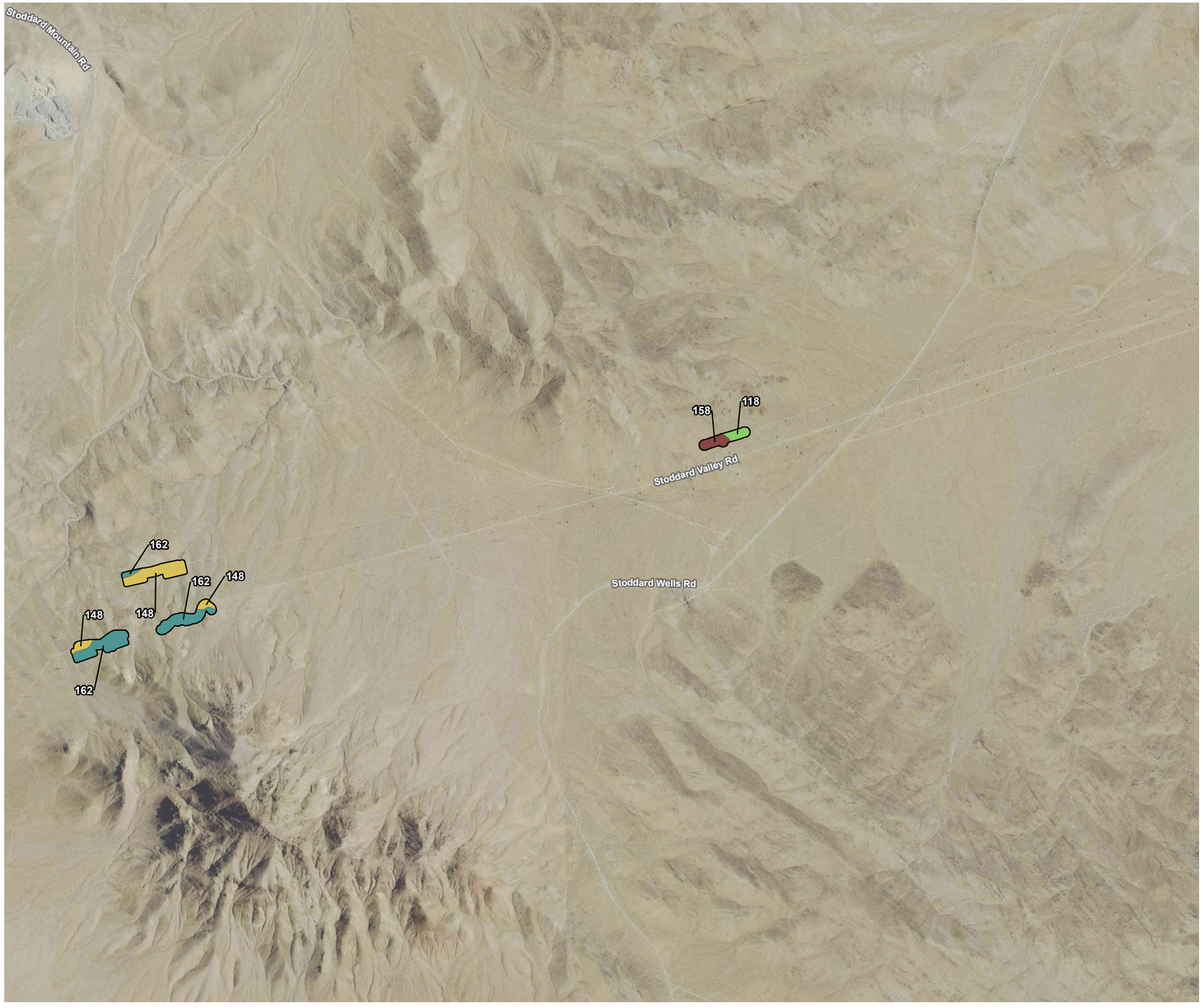

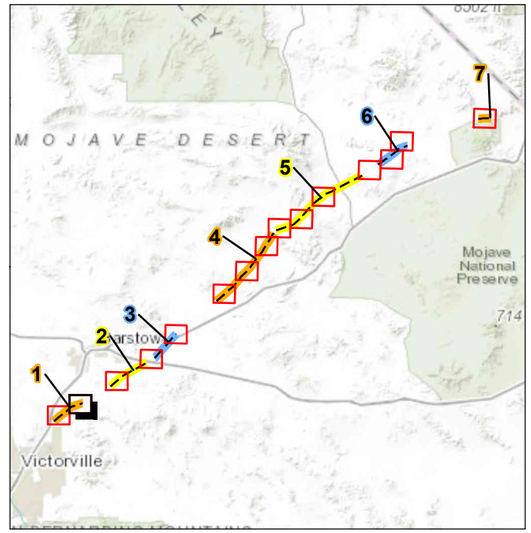

Survey Area

Soil Types

- 118 - Cajon-arizo complex, 2 to 15 percent slopes*
- 148 - Mirage sandy loam, 2 to 5 percent slopes*
- 158 - Rock outcrop-lithic torriorthents complex, 15 to 50 percent slopes*
- 162 - Sparkhule-rock outcrop complex, 15 to 50 percent slopes*

N W E S

2,000 1,000 0 2,000 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4b
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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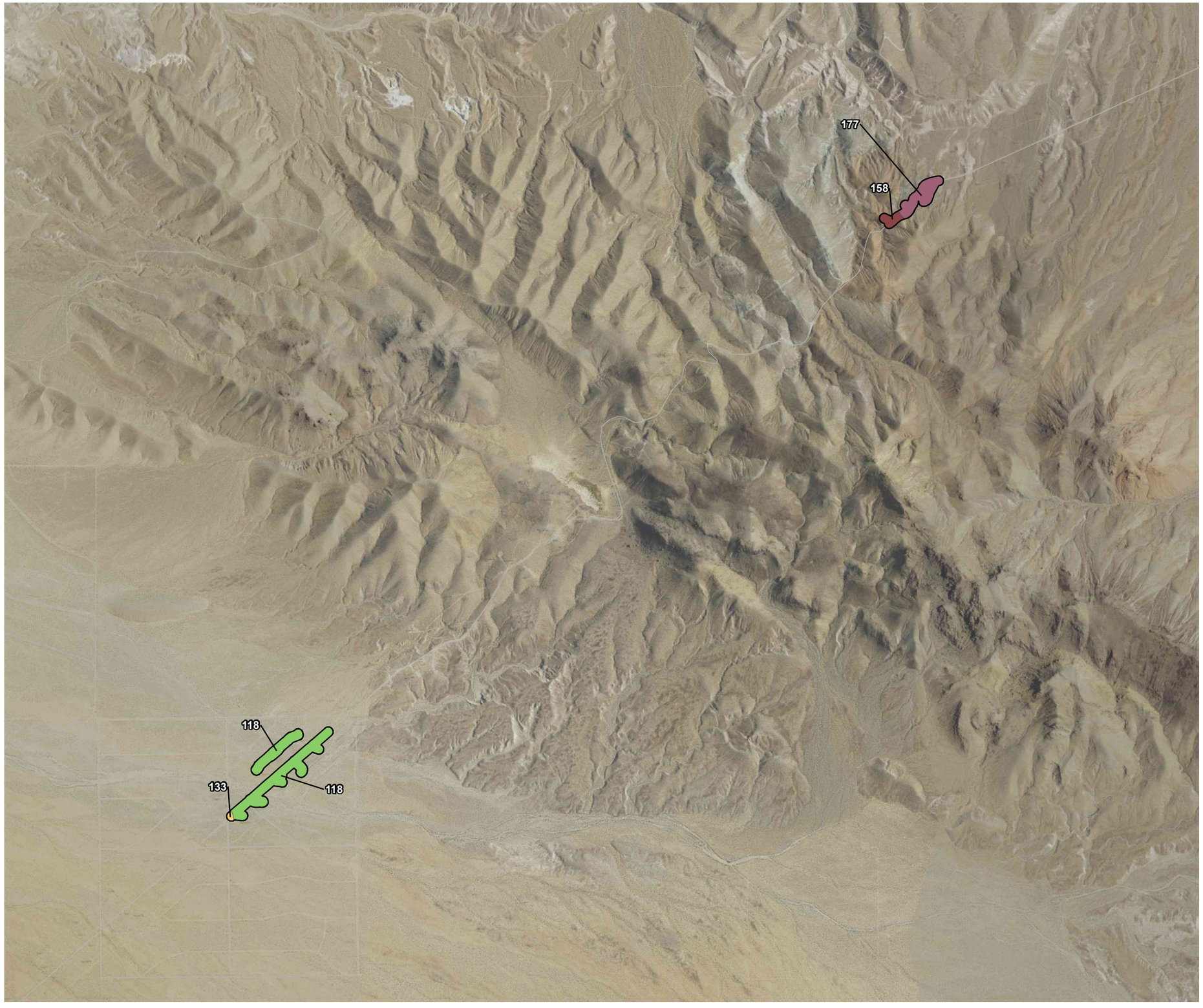

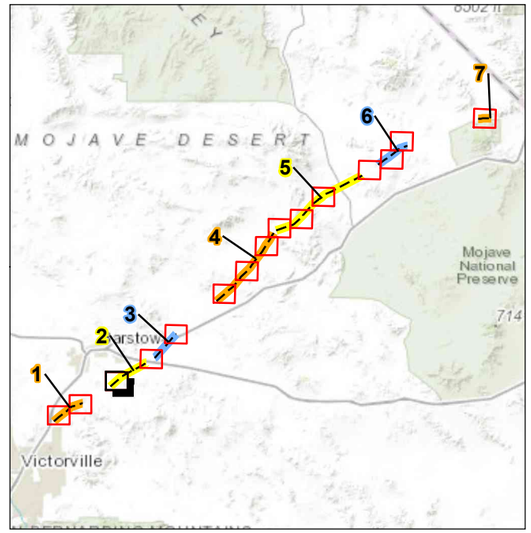

Survey Area

Soil Types

- 118 - Cajon-arizo complex, 2 to 15 percent slopes*
- 133 - Helendale-bryman loamy sands, 2 to 5 percent slopes*
- 158 - Rock outcrop-lithic torriorthents complex, 15 to 50 percent slopes*
- 177 - Yermo-kimberlina, cool, association, sloping*

N W E S

2,000 1,000 0 2,000 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4c Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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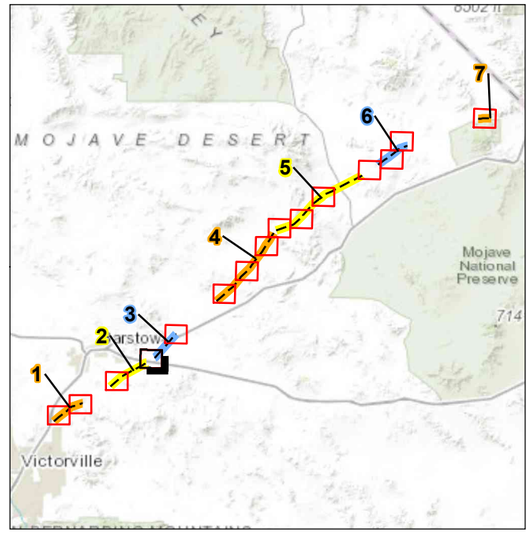

Survey Area

Soil Types

- 112 - Cajon sand, 0 to 2 percent slopes
- 115 - Cajon gravelly sand, 2 to 15 percent slopes
- 137 - Kimberlina loamy fine sand, cool, 0 to 2 percent slopes
- 151 - Nebona-cuddeback complex, 2 to 9 percent slopes*

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4d
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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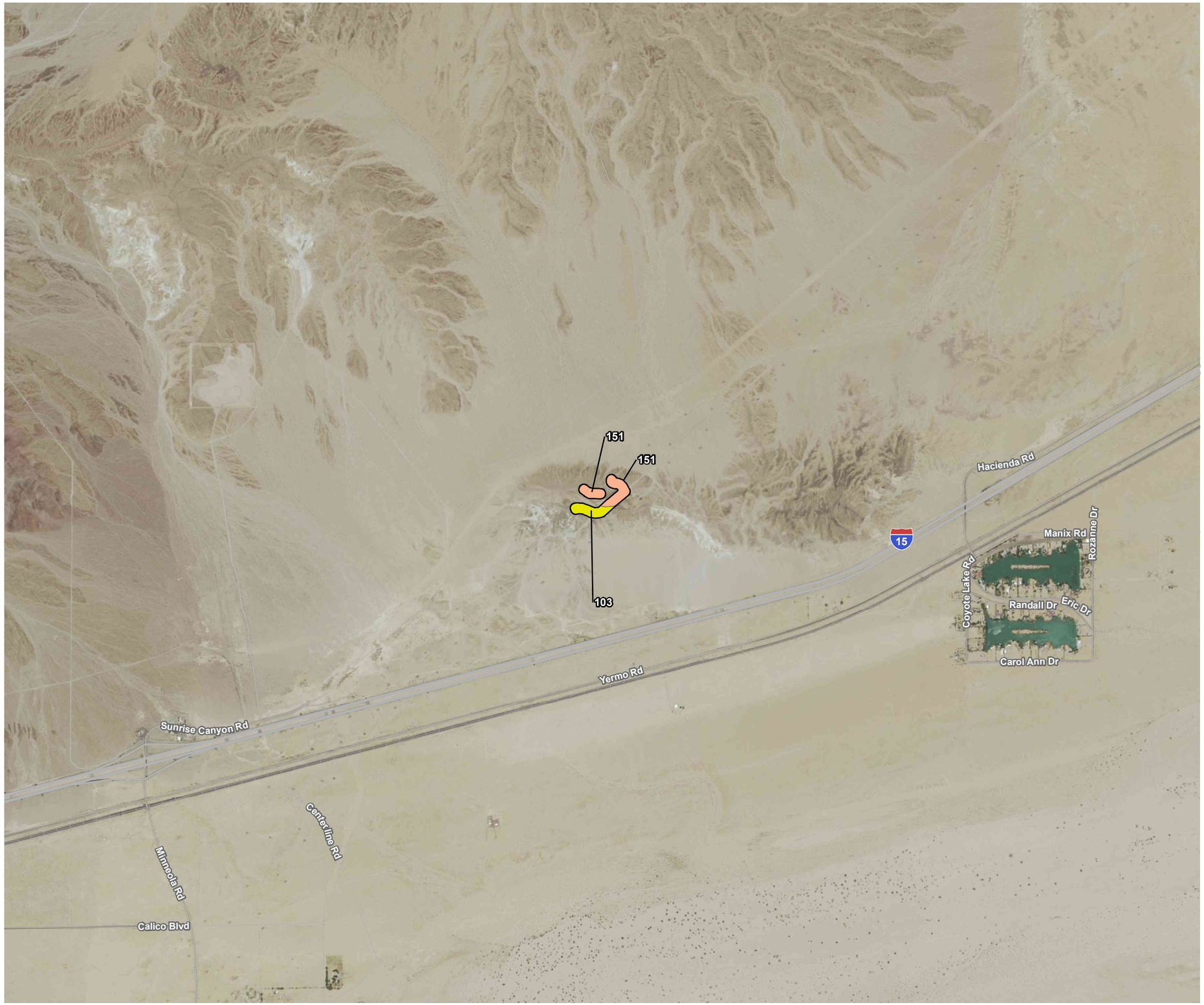

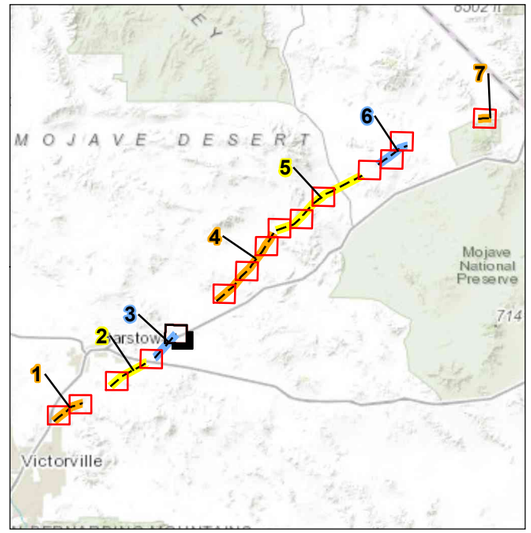

Survey Area

Soil Types

103 - Badland

151 - Nebona-cuddeback complex, 2 to 9 percent slopes*

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4e
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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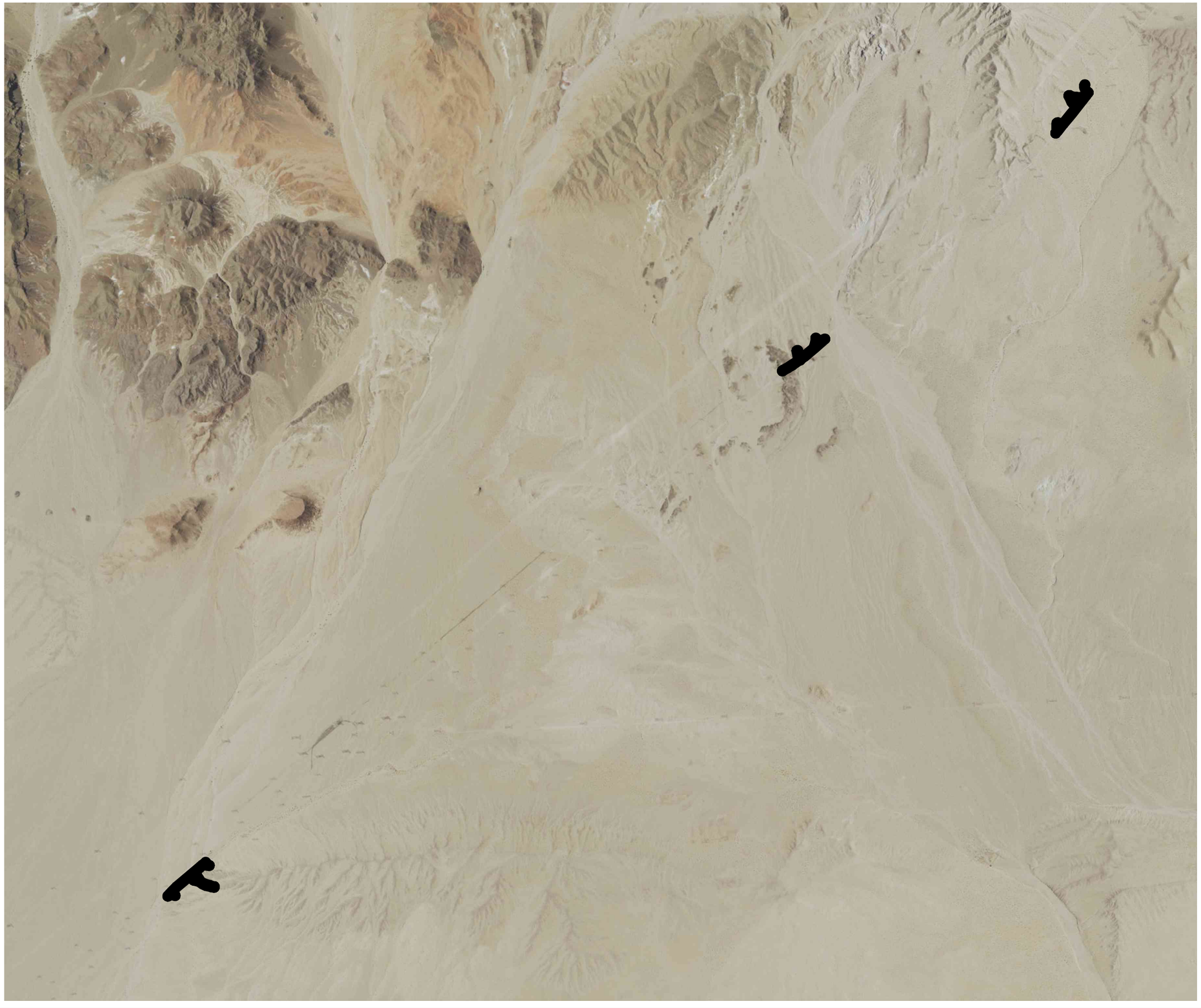

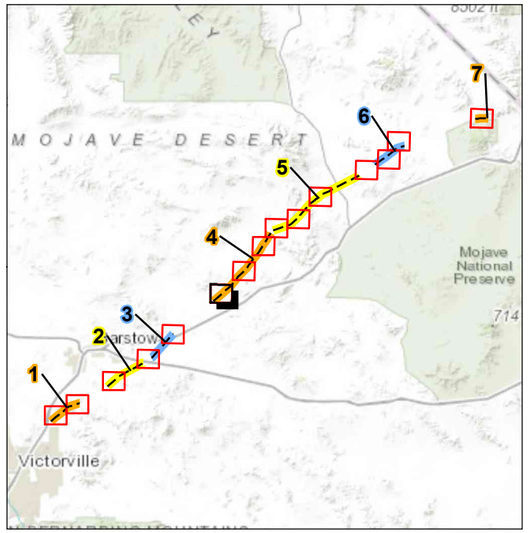

Survey Area

Soil Types

No digital data available

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4f
Soil Types

Path 46 Transmission Line Clearances Project

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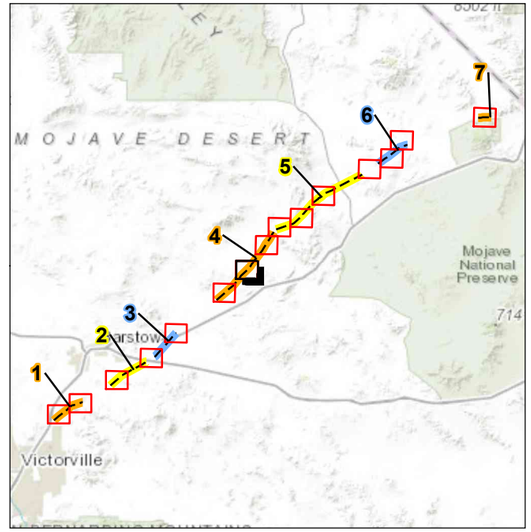

Survey Area

Soil Types

No digital data available

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4g
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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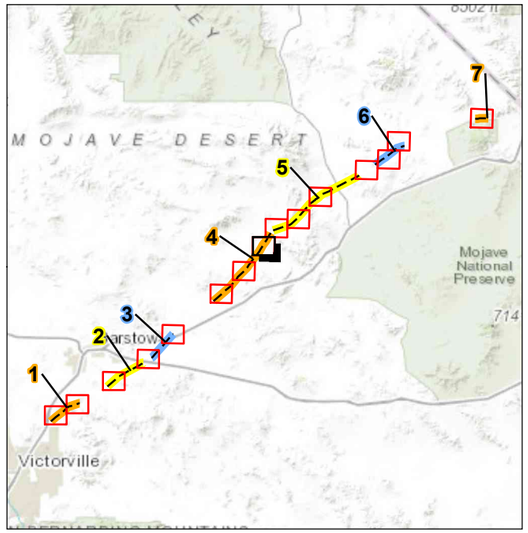

Survey Area

Soil Types

No digital data available

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4h
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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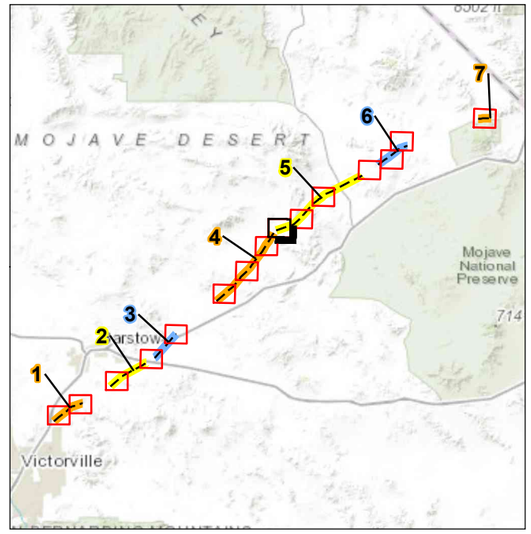

Survey Area

Soil Types

No digital data available

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4i
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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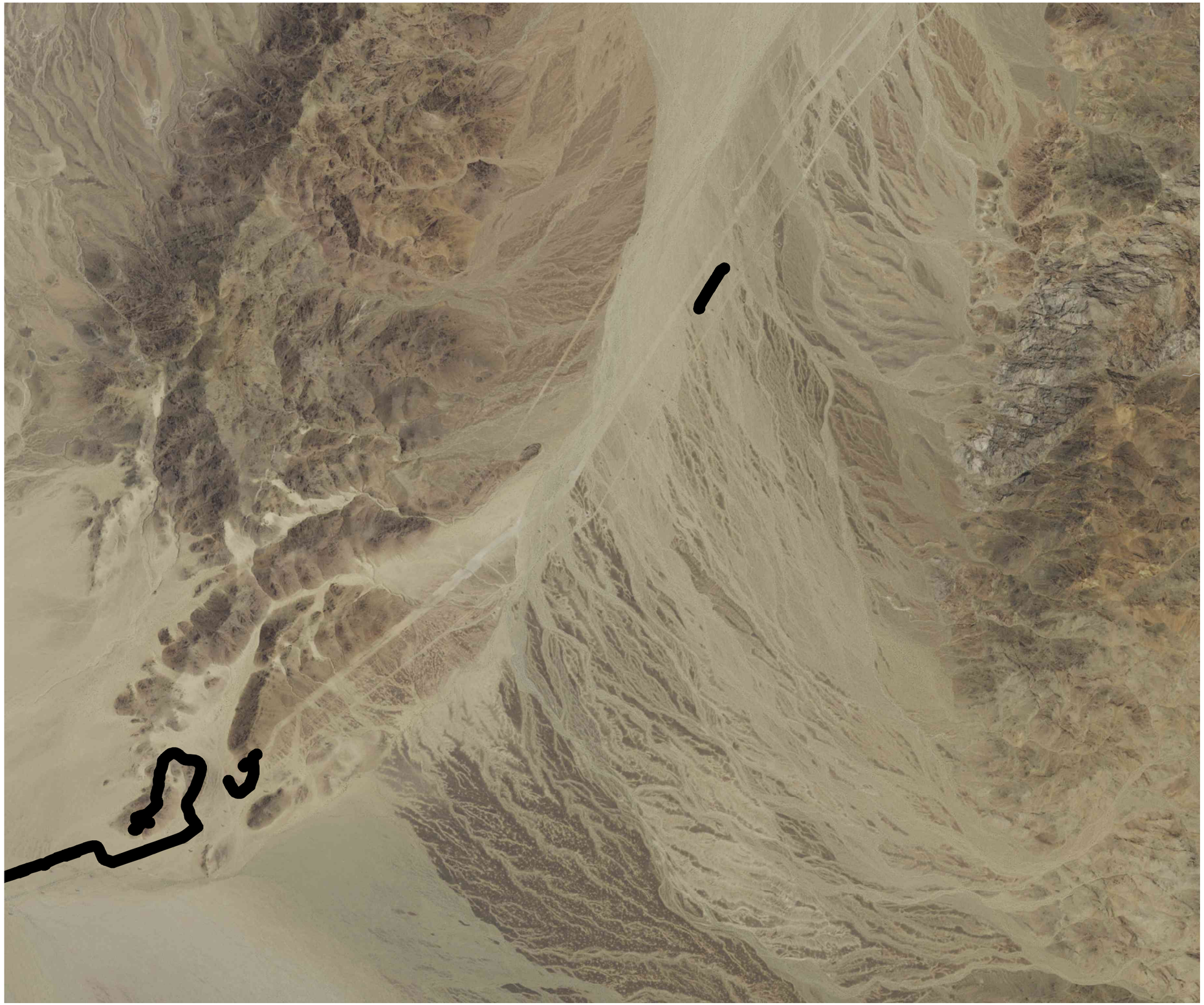

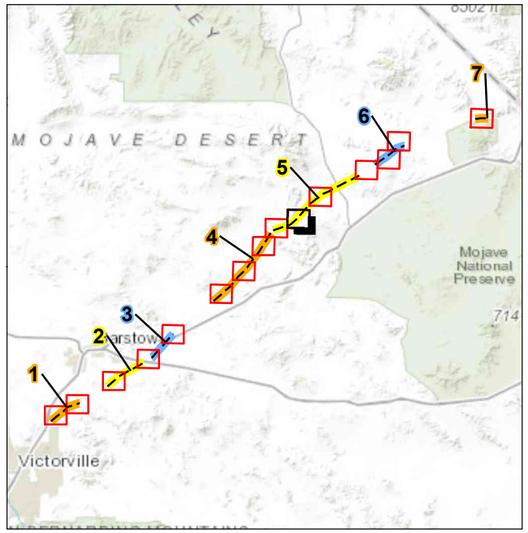

Survey Area

Soil Types

No digital data available

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4j
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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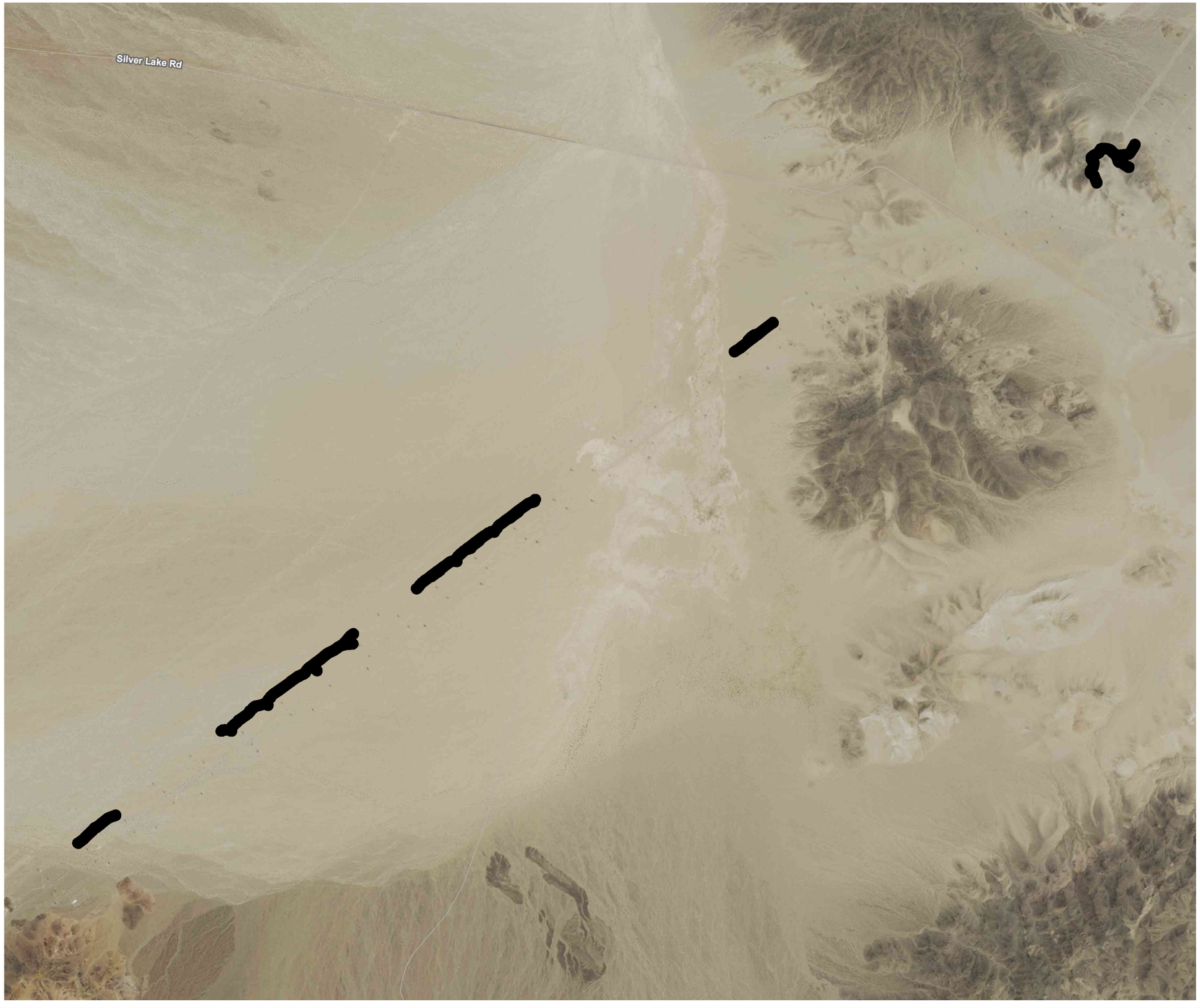

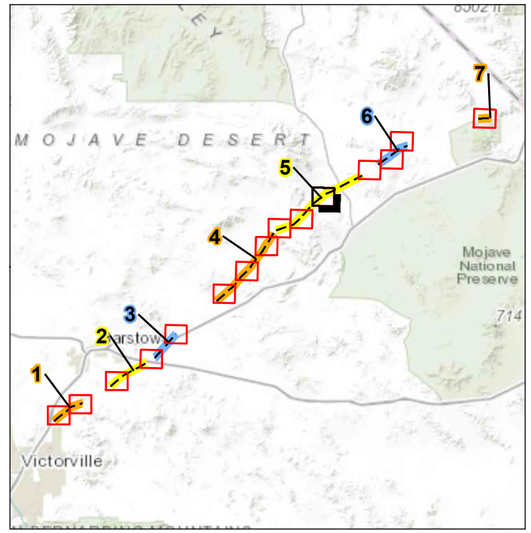

Survey Area

Soil Types

No digital data available

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4k
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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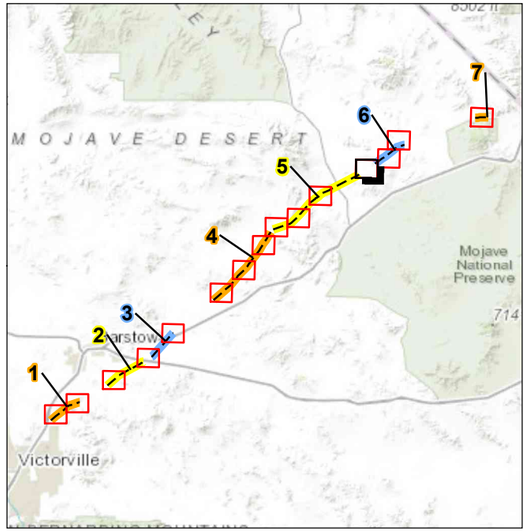

Survey Area

Soil Types

No digital data available

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4I
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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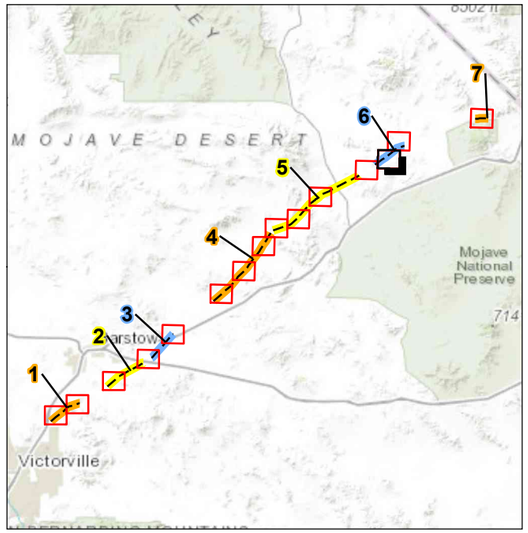

Survey Area

Soil Types

No digital data available

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4m
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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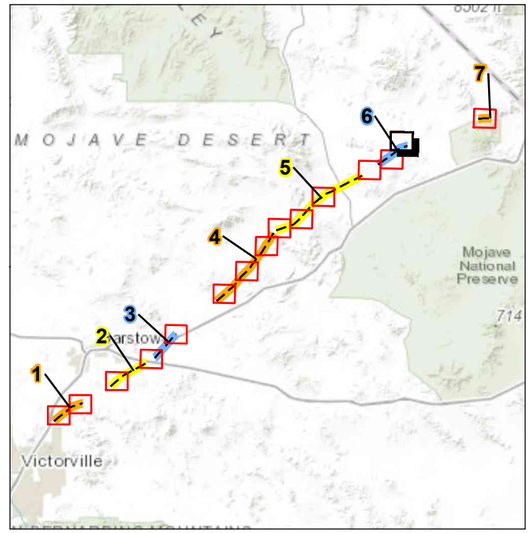

Survey Area

Soil Types

No digital data available

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4n
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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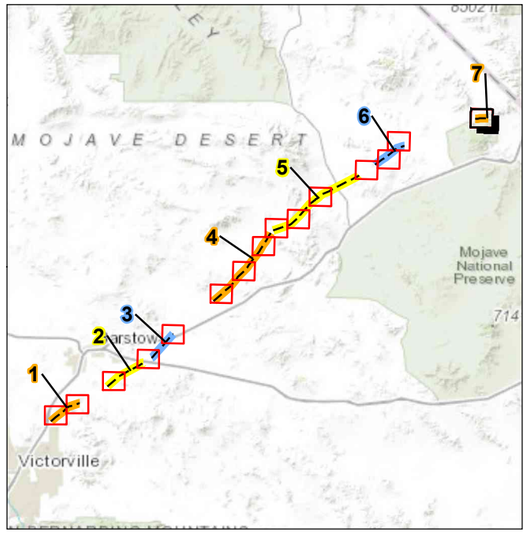

Survey Area

Soil Types

- 3000 - Copperworld association, 30 to 60 percent slopes
- 4200 - Owlshead loam, 2 to 30 percent slopes

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 4o
Soil Types

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex4_Soils_20160929.pdf

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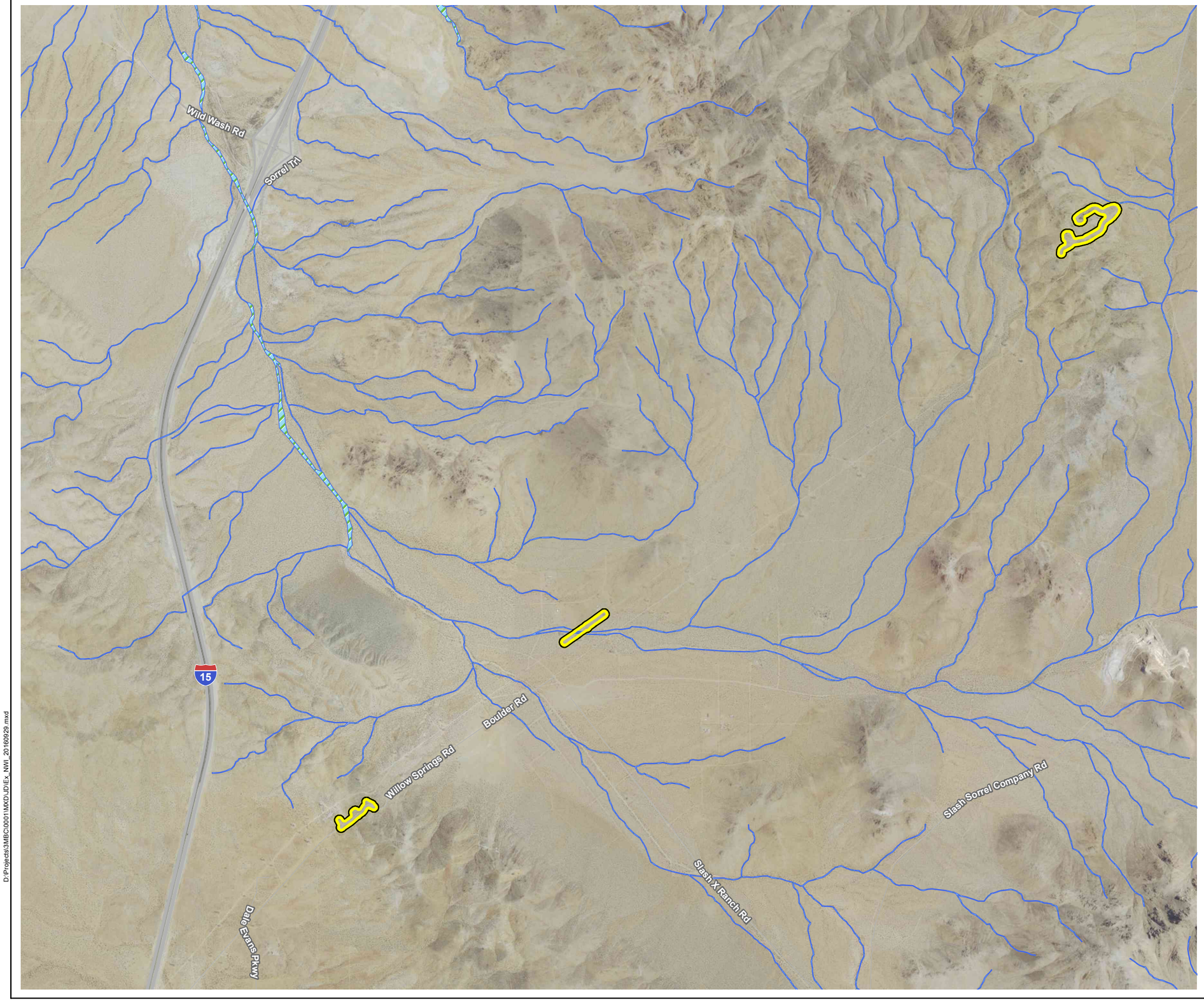

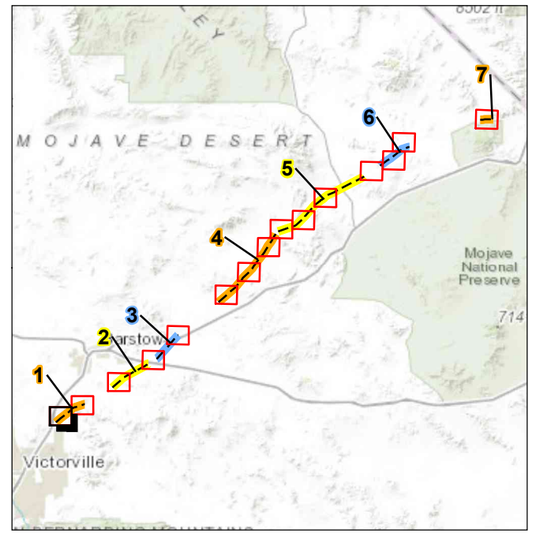

Survey Area

NWI Wetland (R4SBJ)

N

W E

S

2,000 1,000 0 2,000

Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5a
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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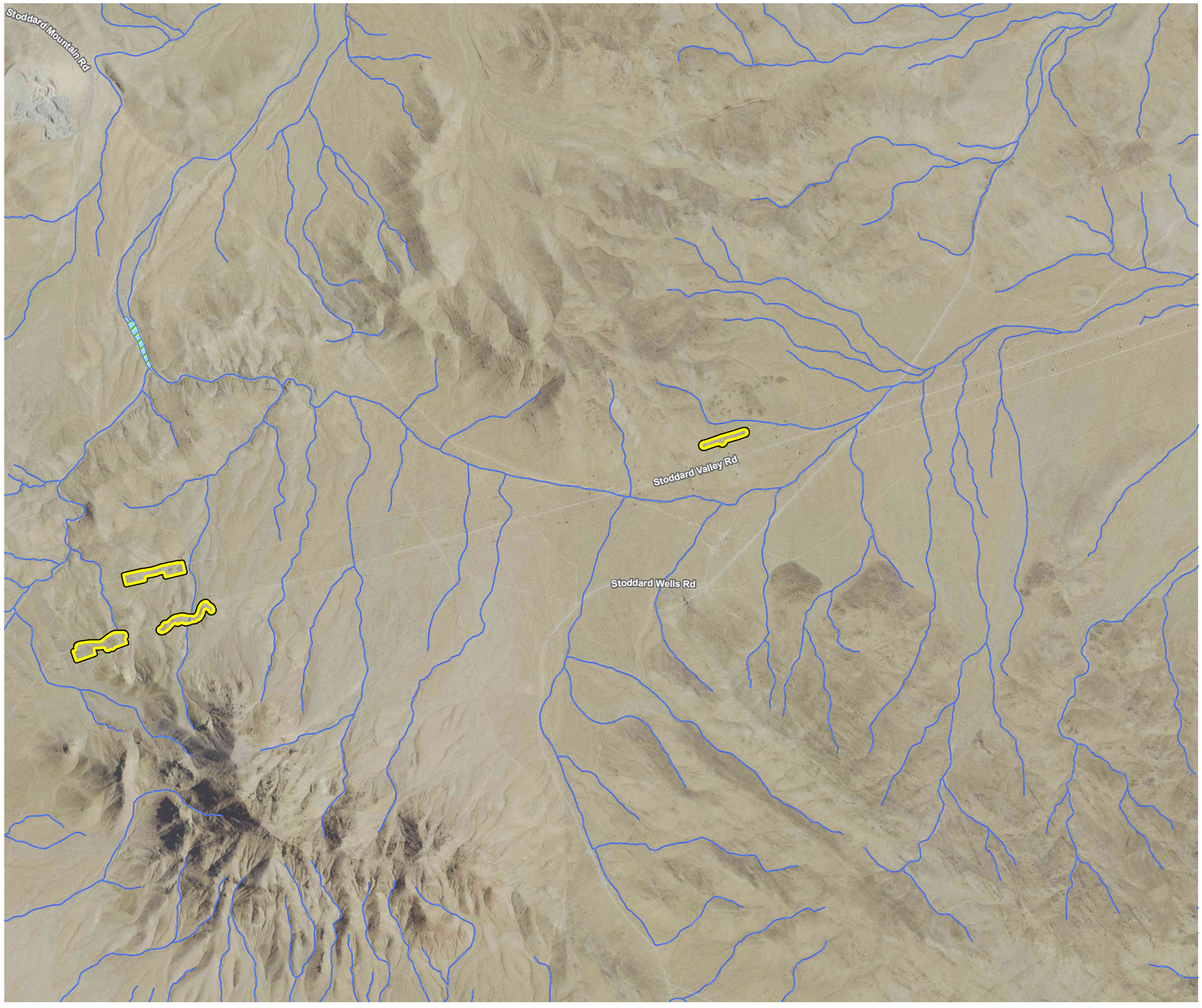

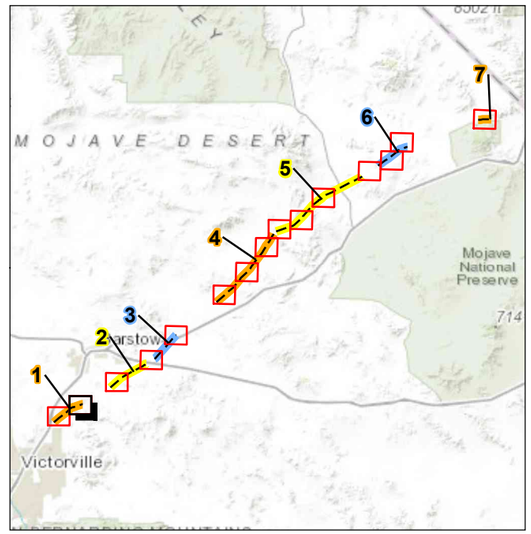

Survey Area

NWI Wetland (R4SBJ)

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5b
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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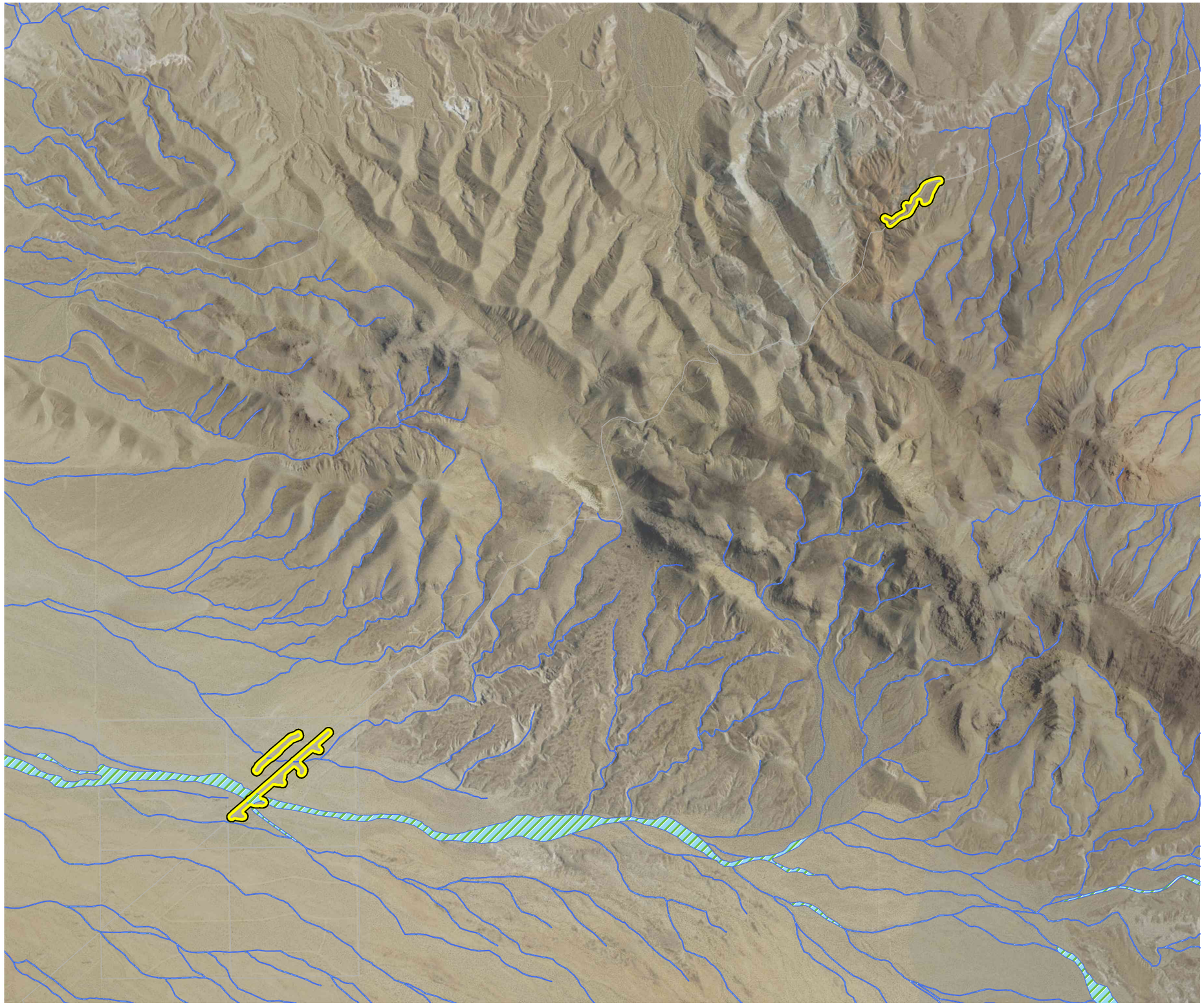

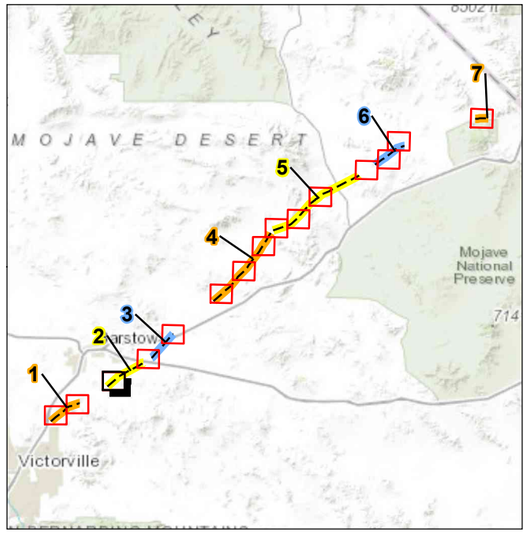

Survey Area

NWI Wetland (R4SBJ)

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5c
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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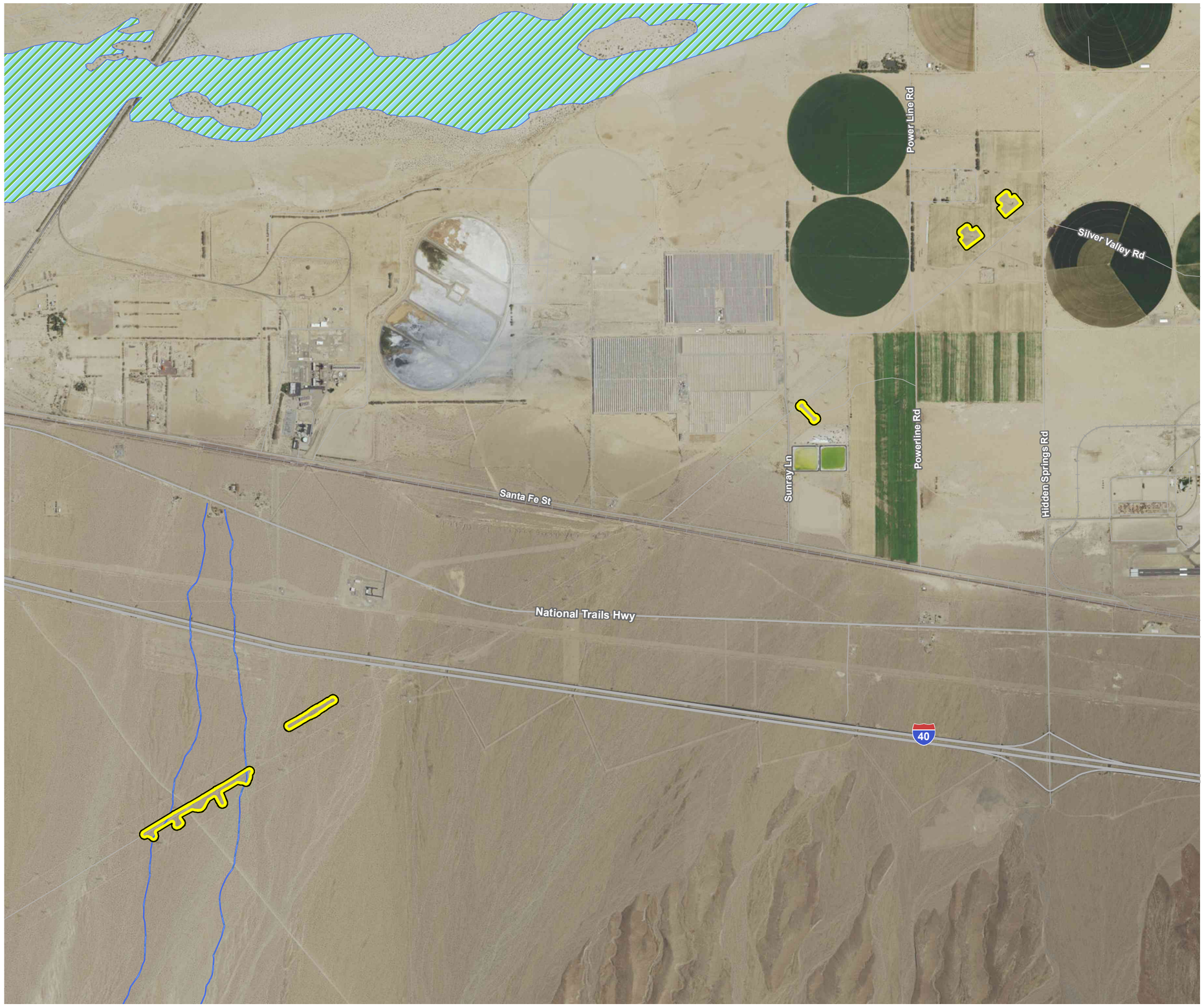

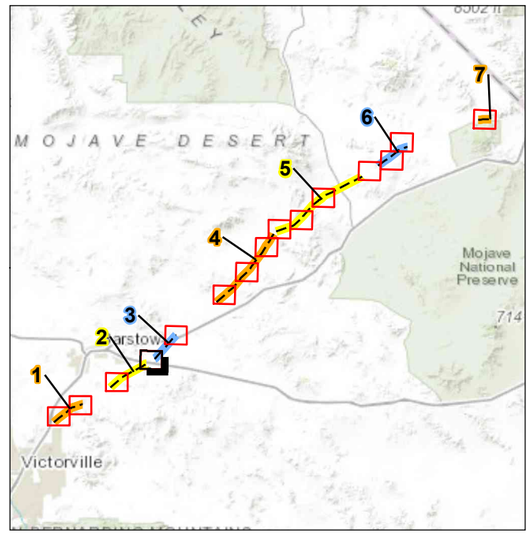

Survey Area

NWI Wetland (R4SBJ)

N
W
E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5d
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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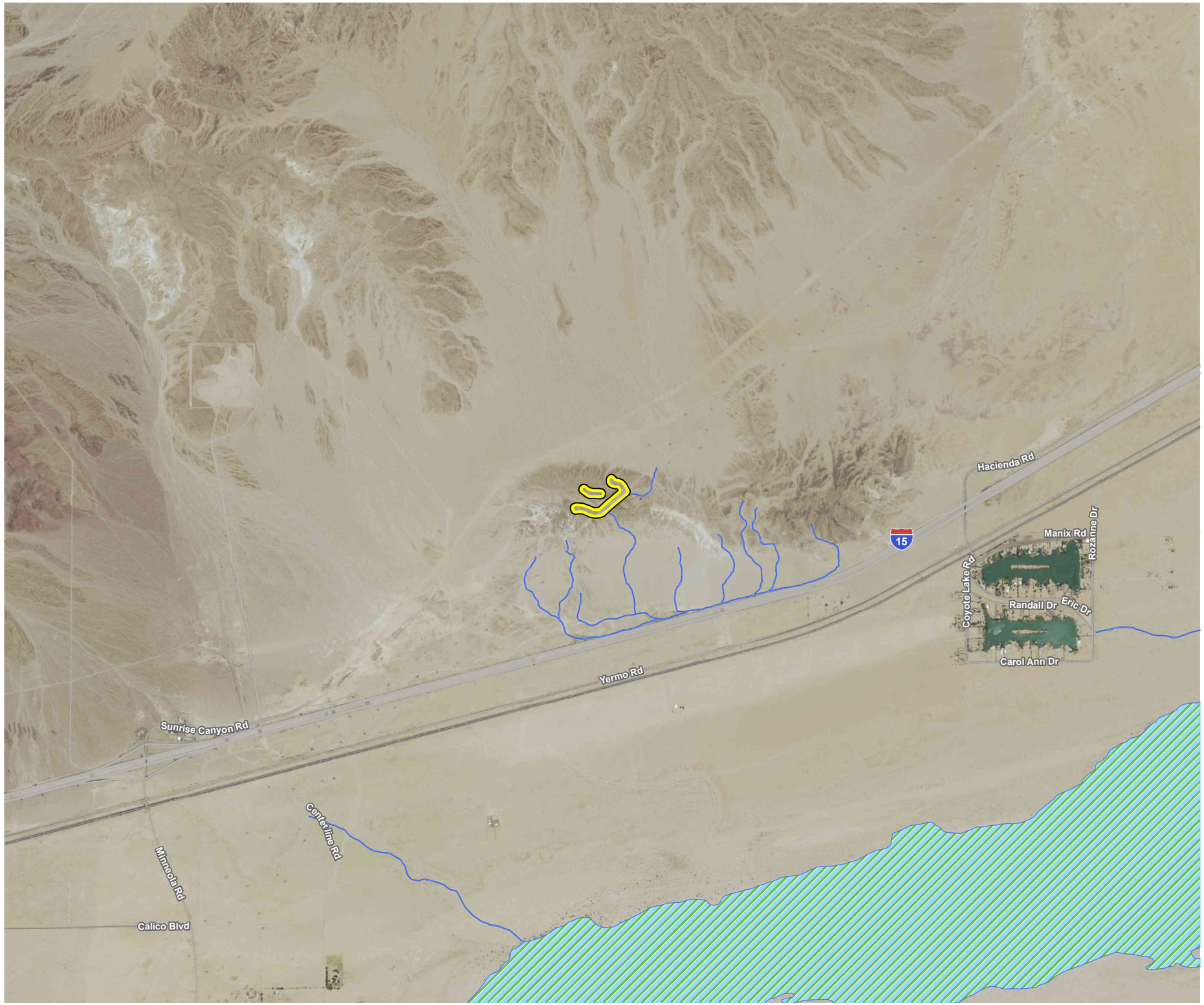

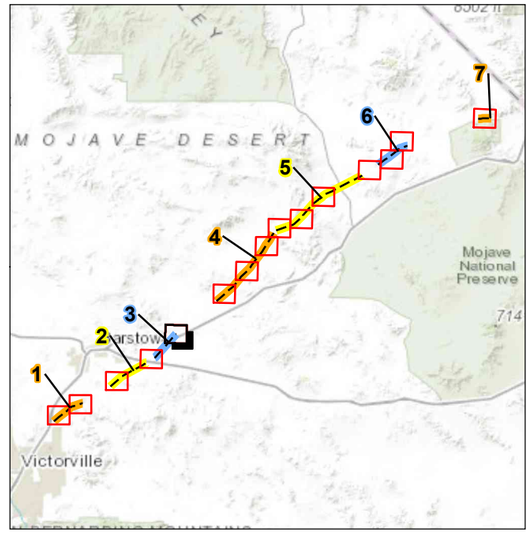

Survey Area

NWI Wetland (R4SBJ)

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5e
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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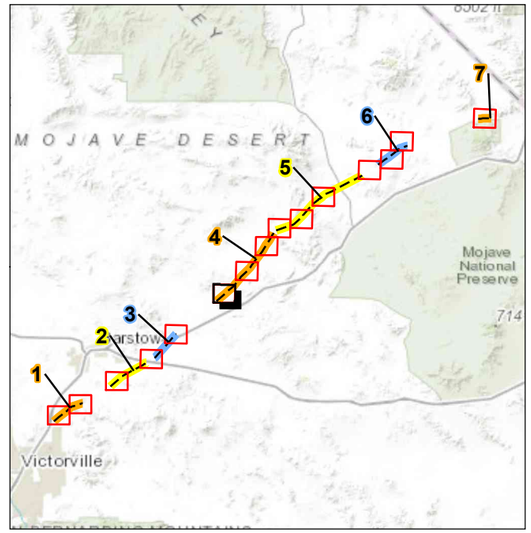

Survey Area

N
W
E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5f
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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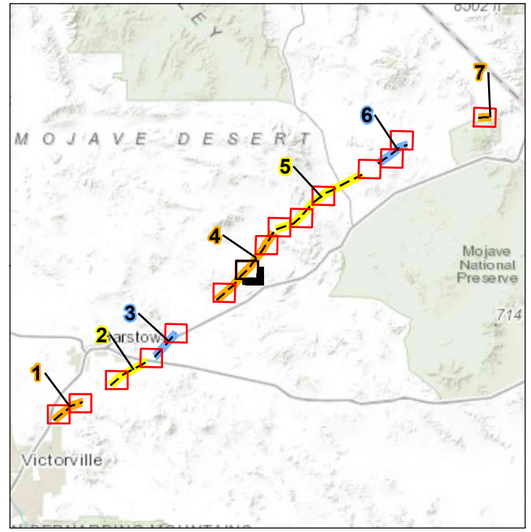

Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5g
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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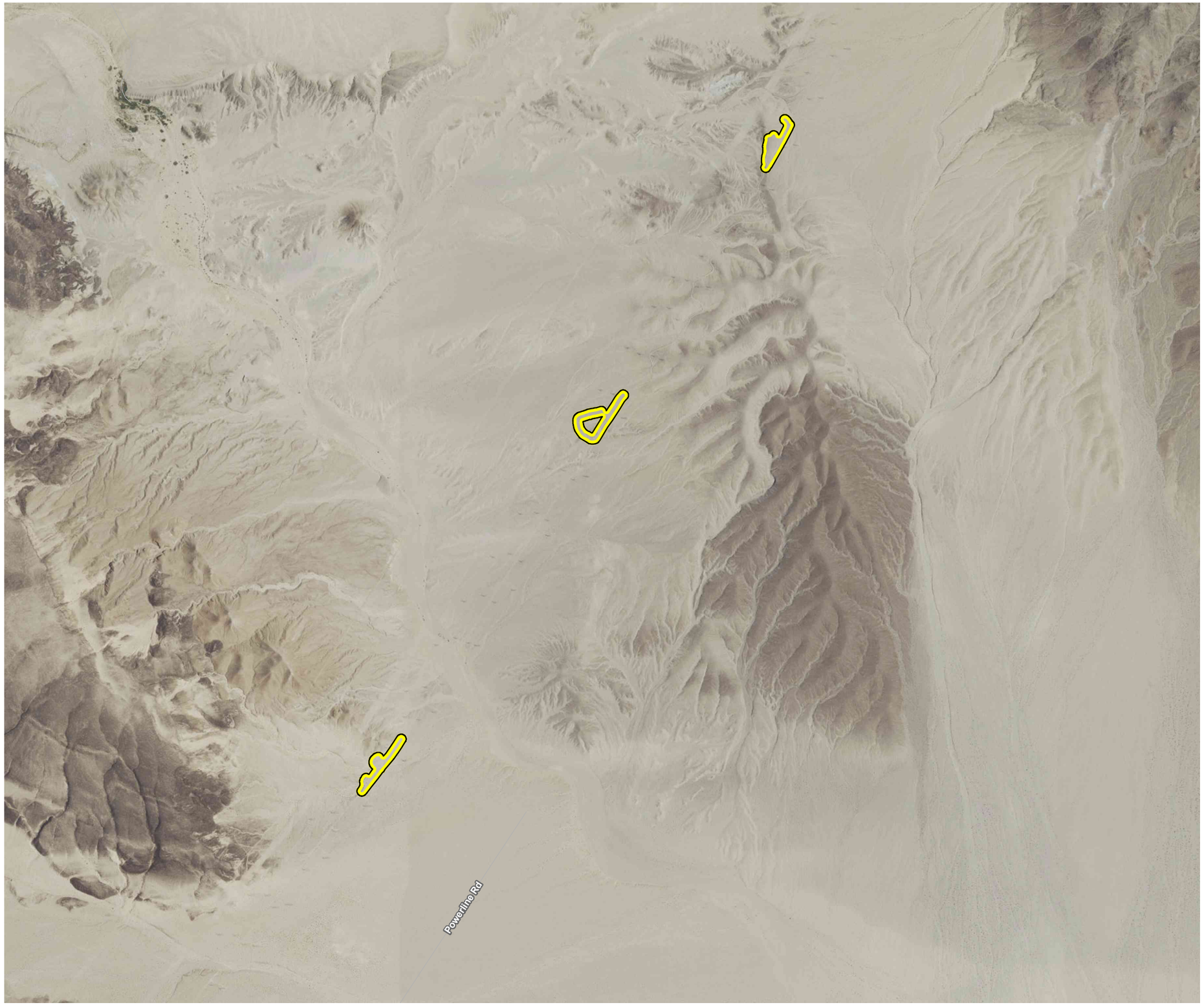

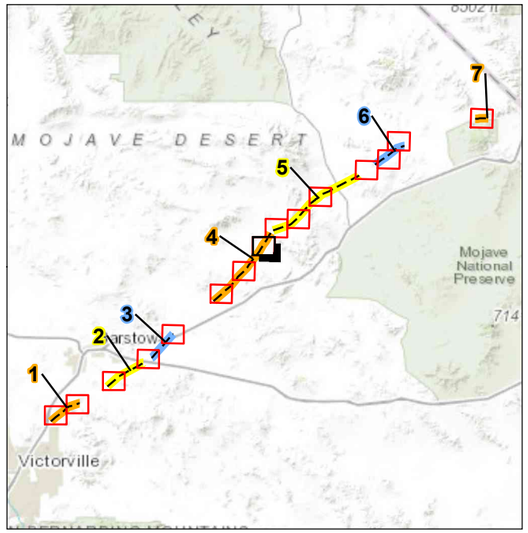

Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5h
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

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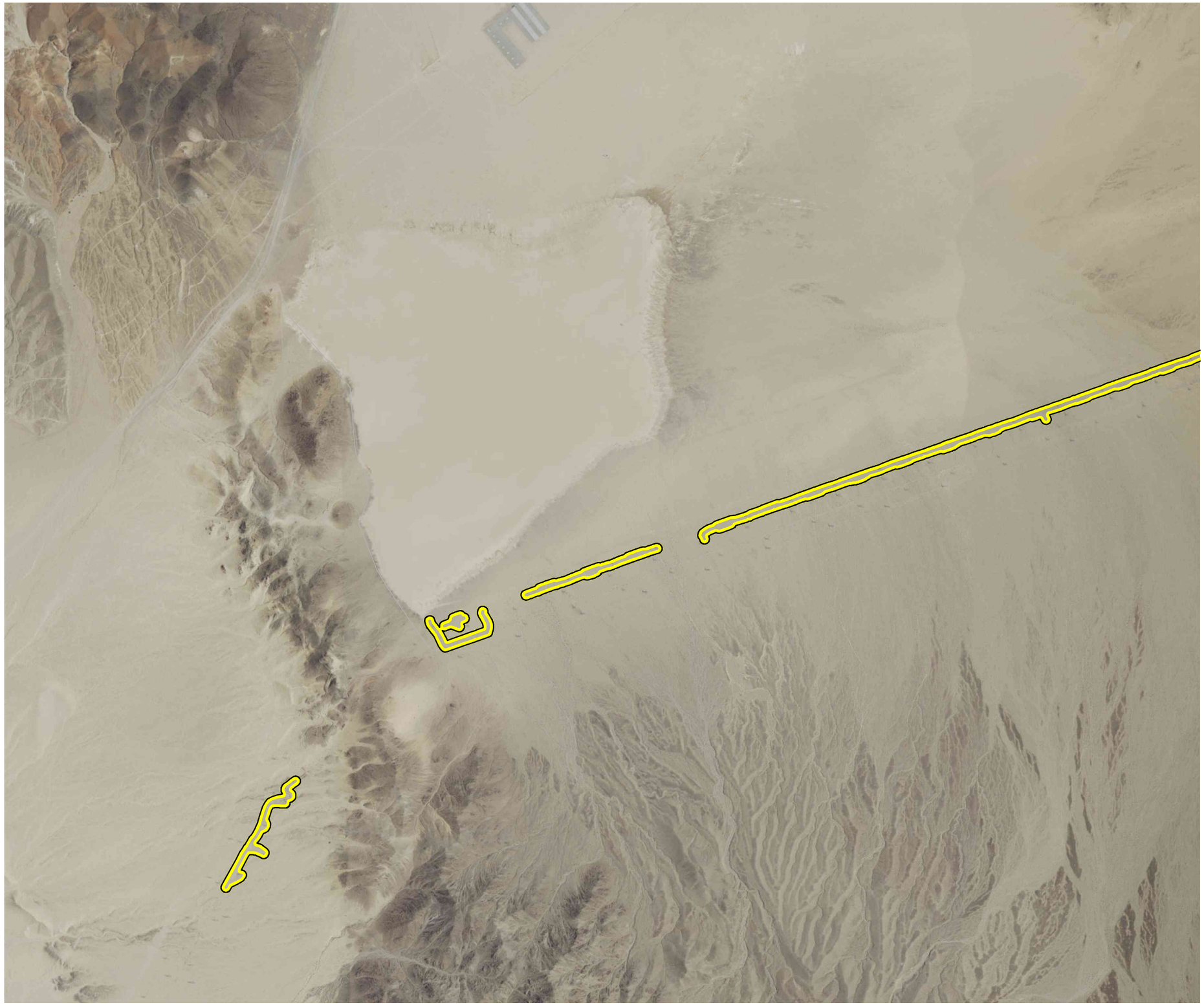

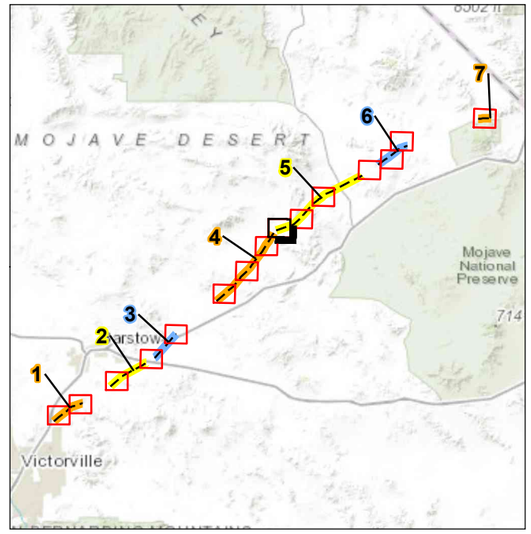

Survey Area

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5i
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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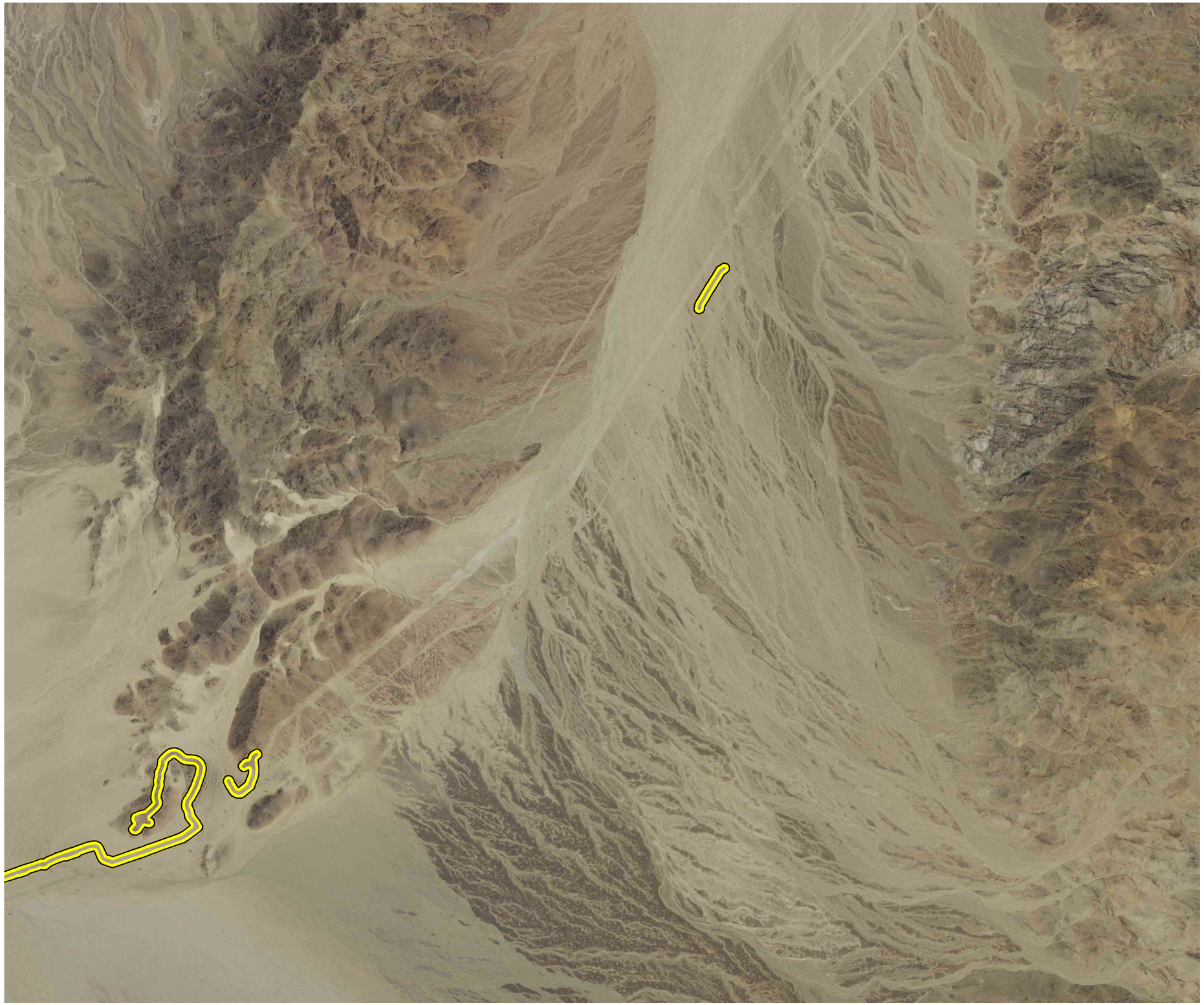

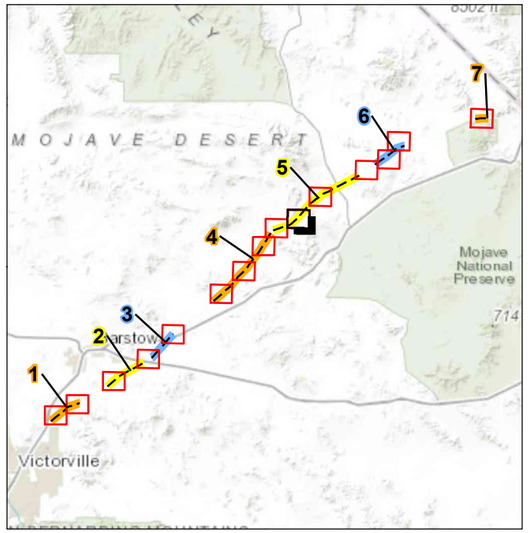

Survey Area

N
W
E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5j
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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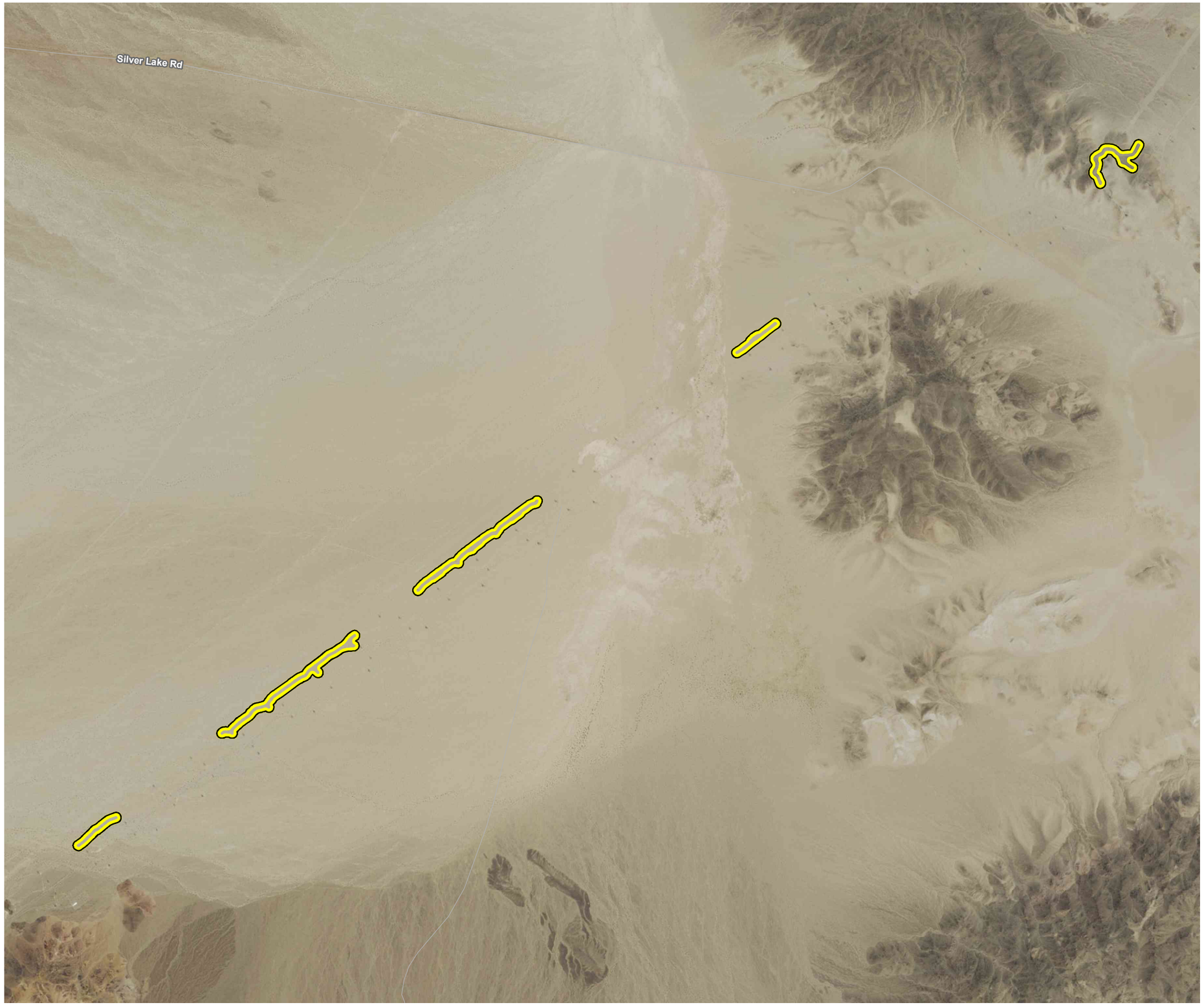

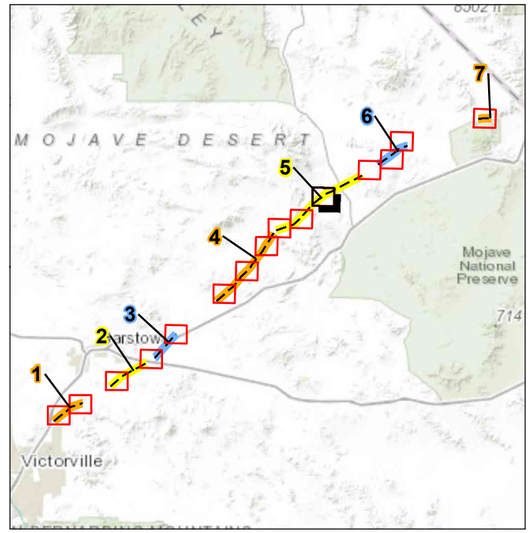

Survey Area

N
W
E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5k
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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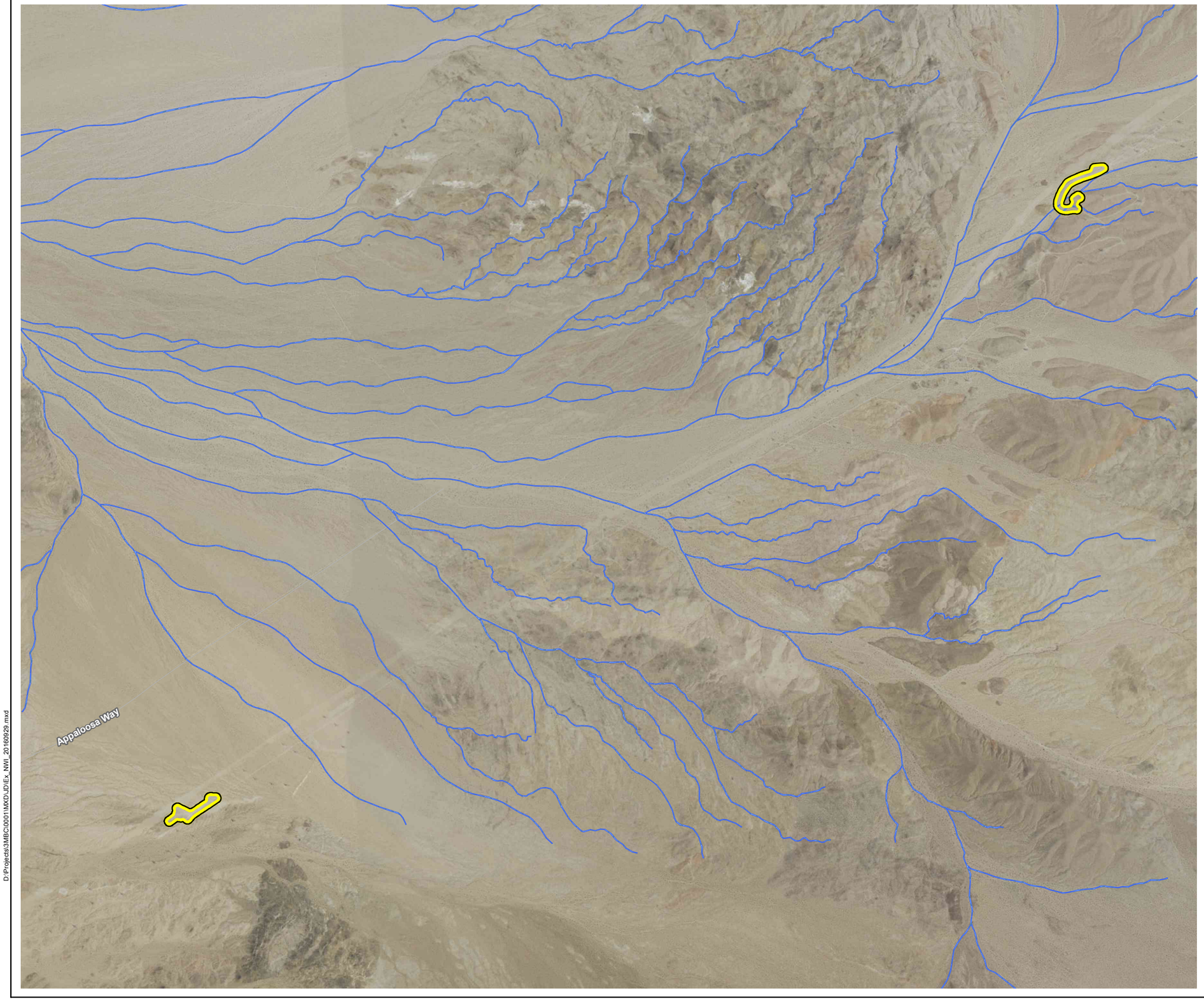

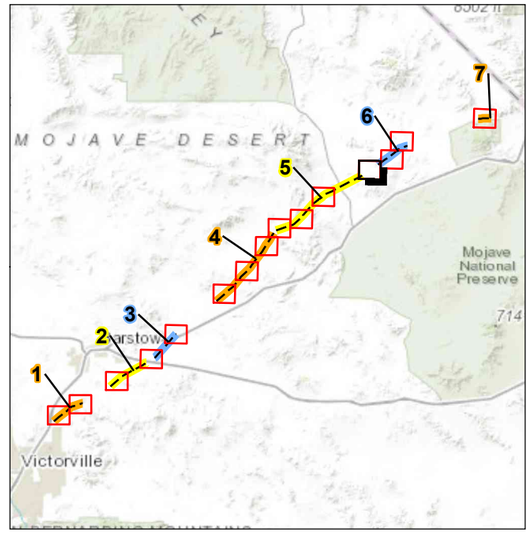

Survey Area

NWI Wetland (R4SBJ)

N

W E

S

2,000 1,000 0 2,000

Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5I
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

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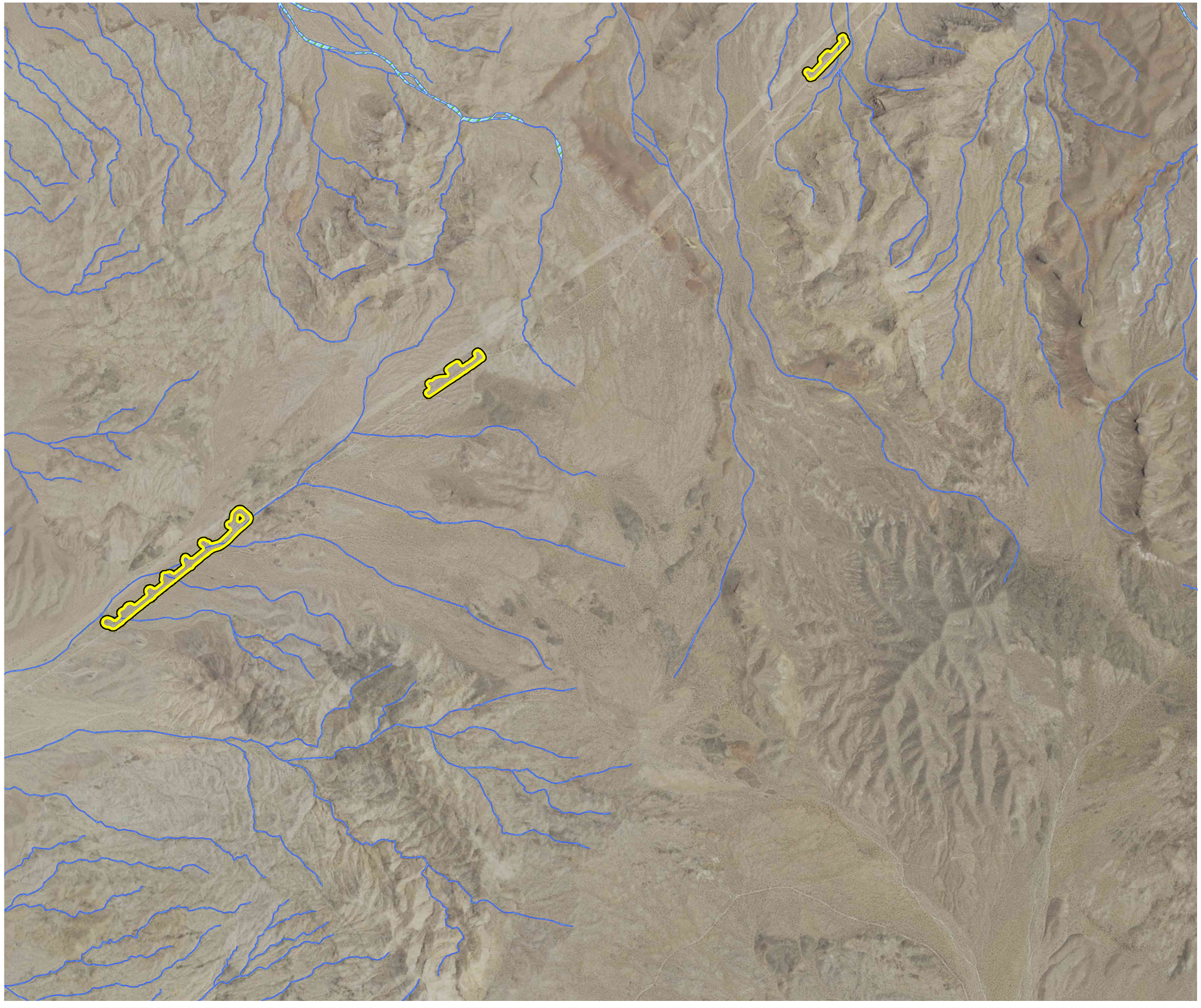

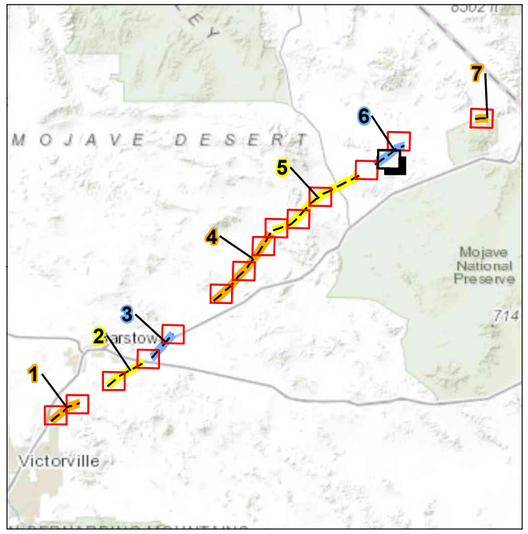

Survey Area

NWI Wetland (R4SBJ)

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5m
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

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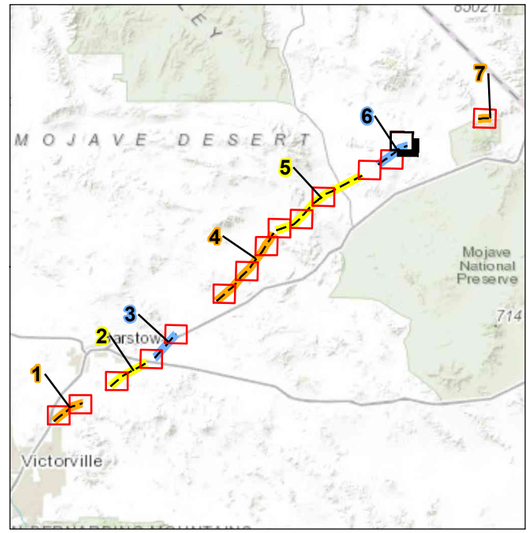

Survey Area

NWI Wetland (R4SBJ)

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5n
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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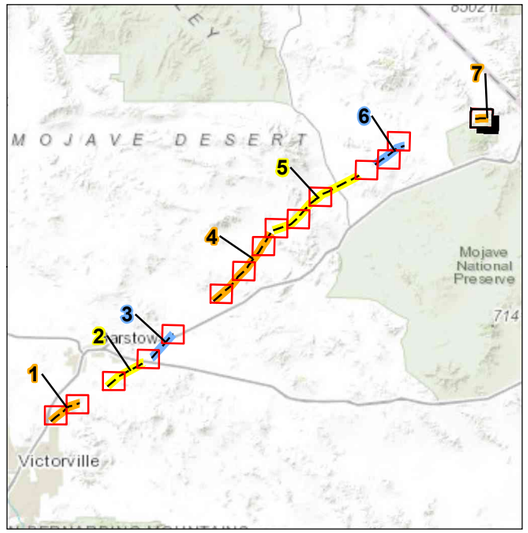

Survey Area

NWI Wetland (R4SBJ)

N
W E
S

2,000 1,000 0 2,000
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 5o
National Wetlands Inventory

Path 46 Transmission Line Clearances Project

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex5_NWI_20160929.pdf

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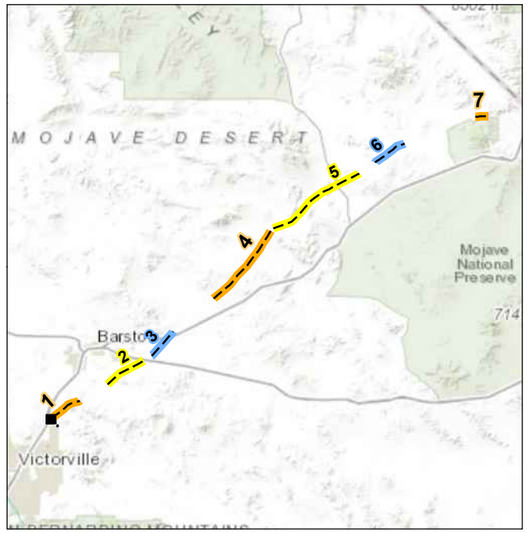

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 1a

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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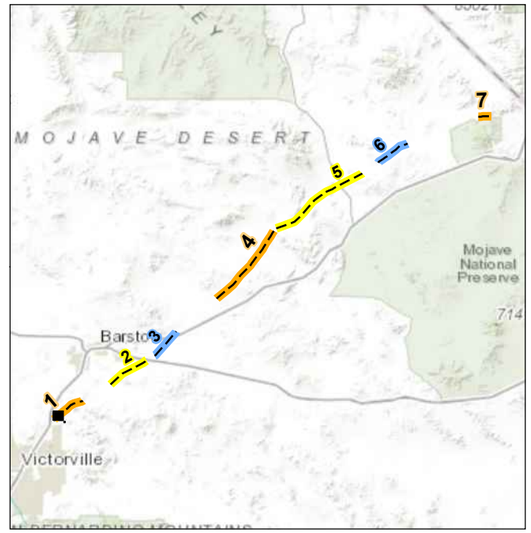

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 1b

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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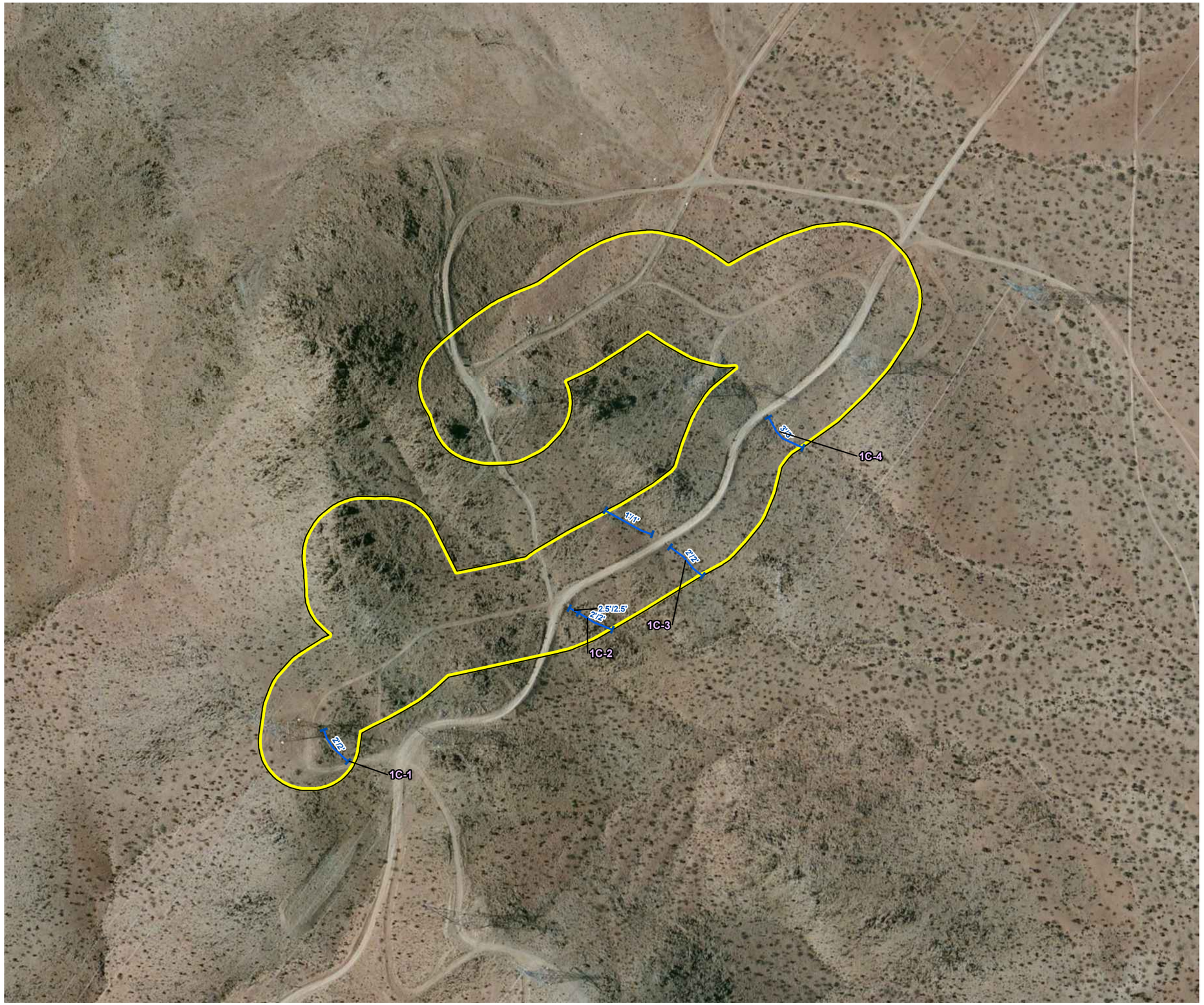

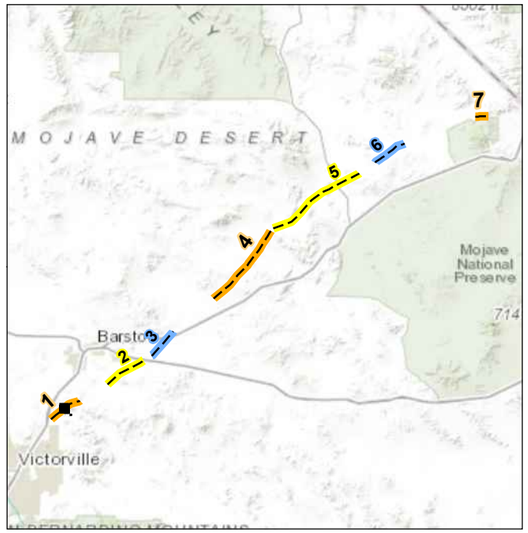

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 1c

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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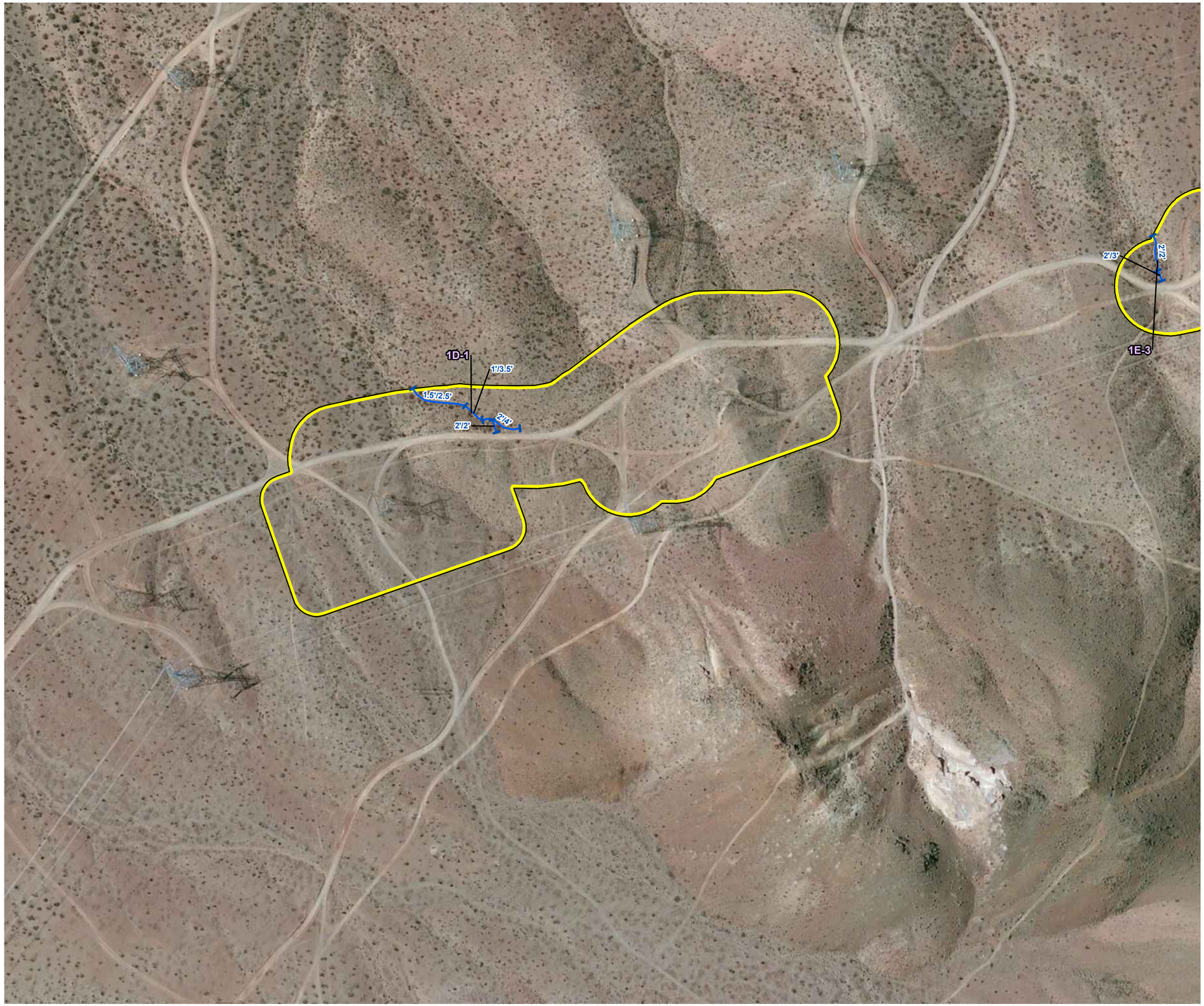

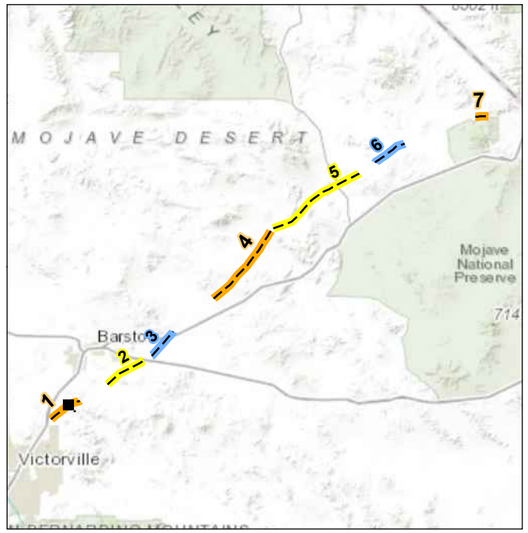

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 1d

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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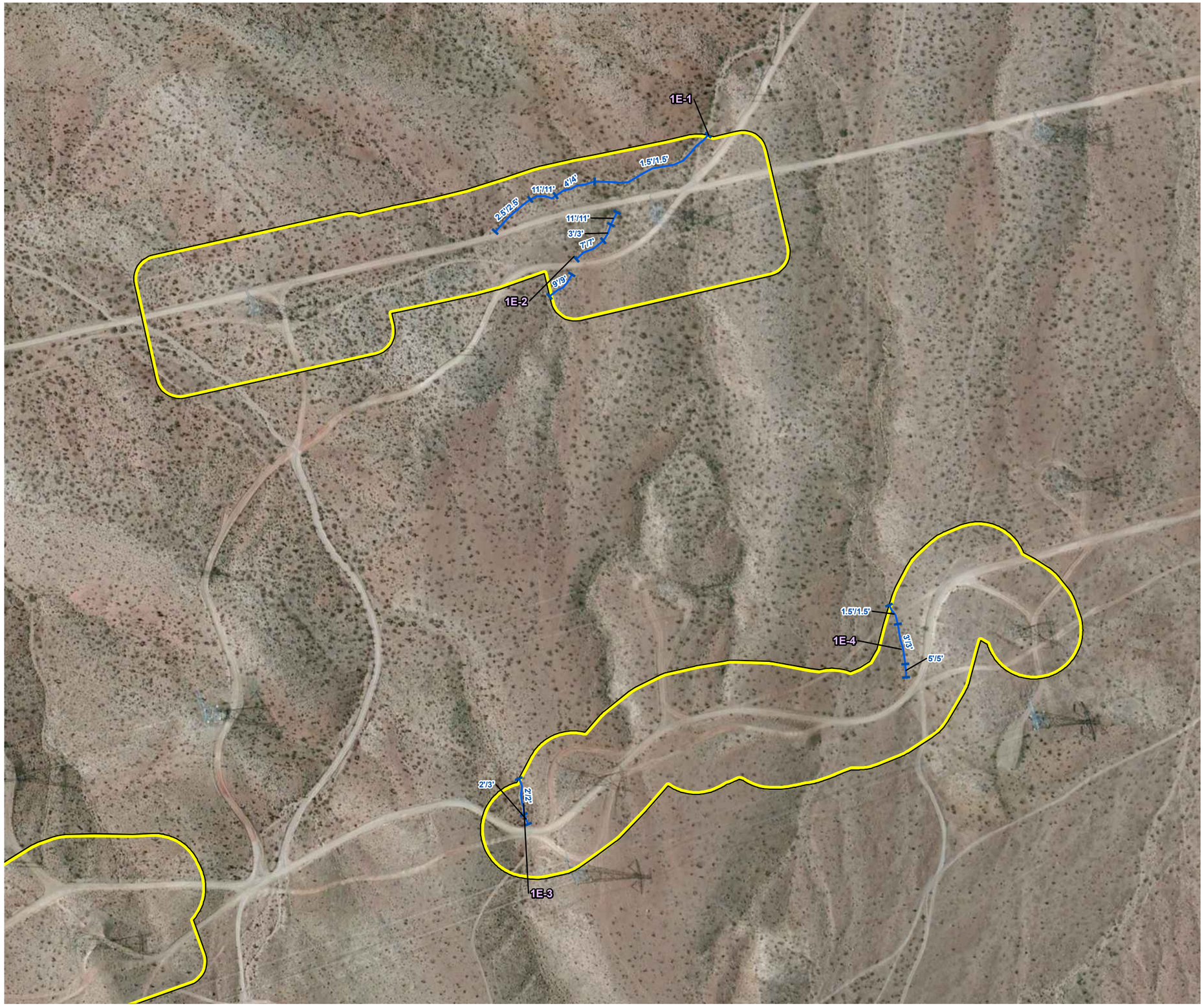

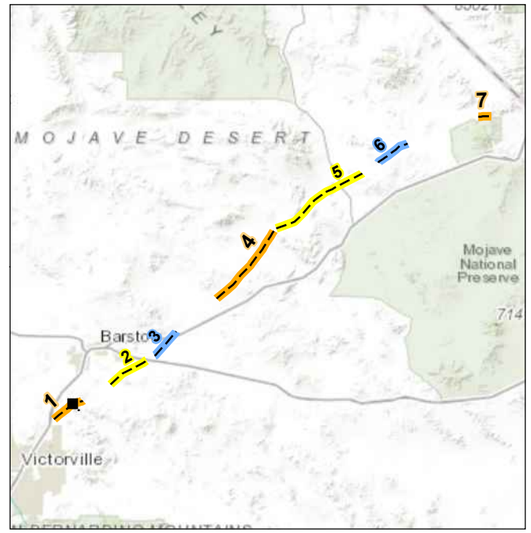

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 1e

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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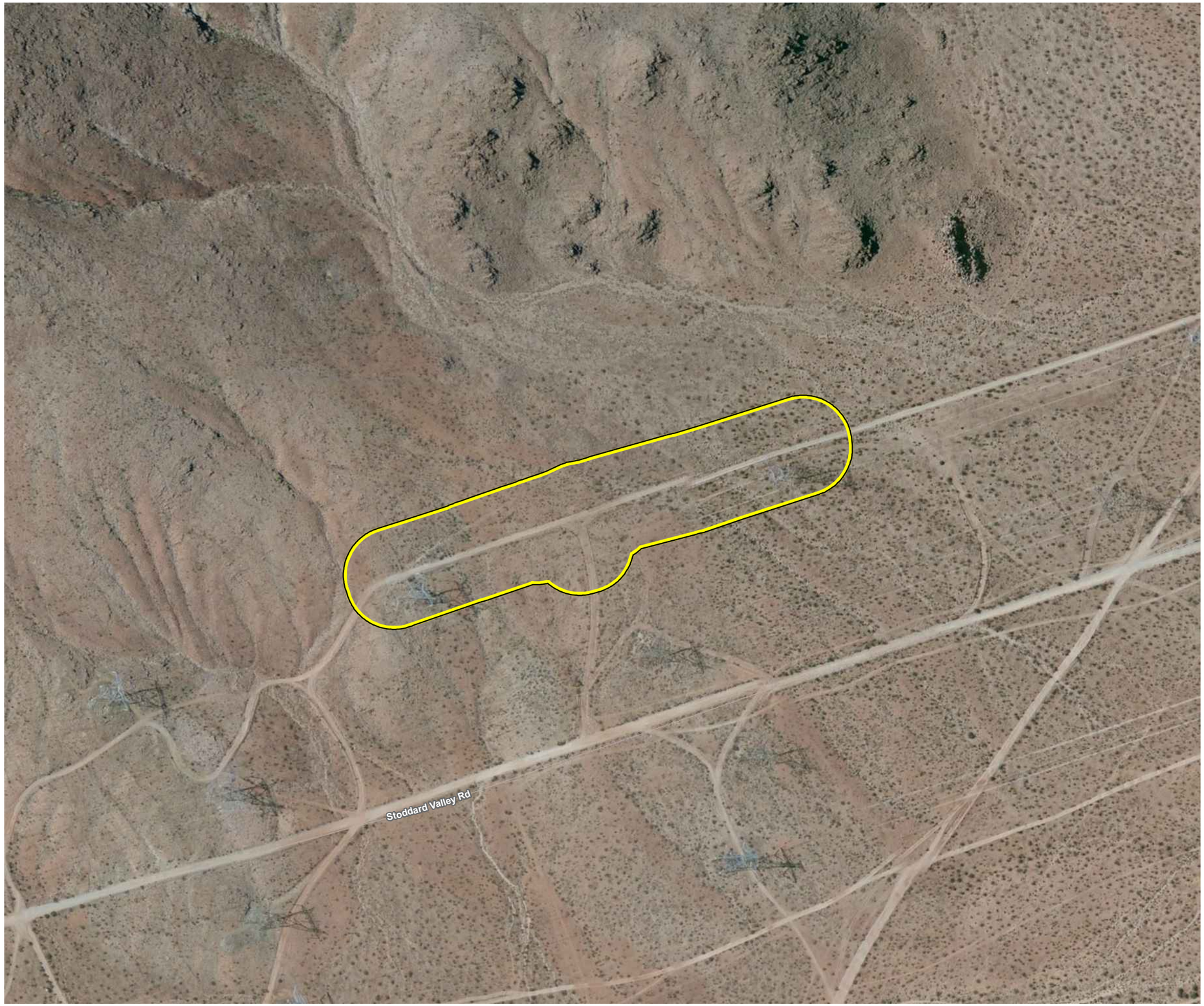

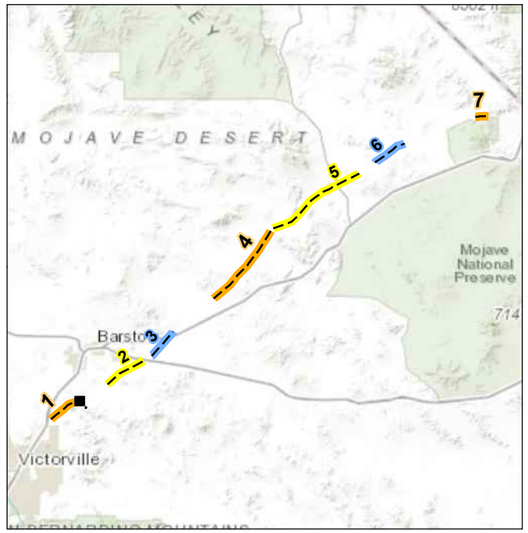

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N

W E

S

200 100 0 200

Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 1f

Path 46 Transmission Line Clearances Project

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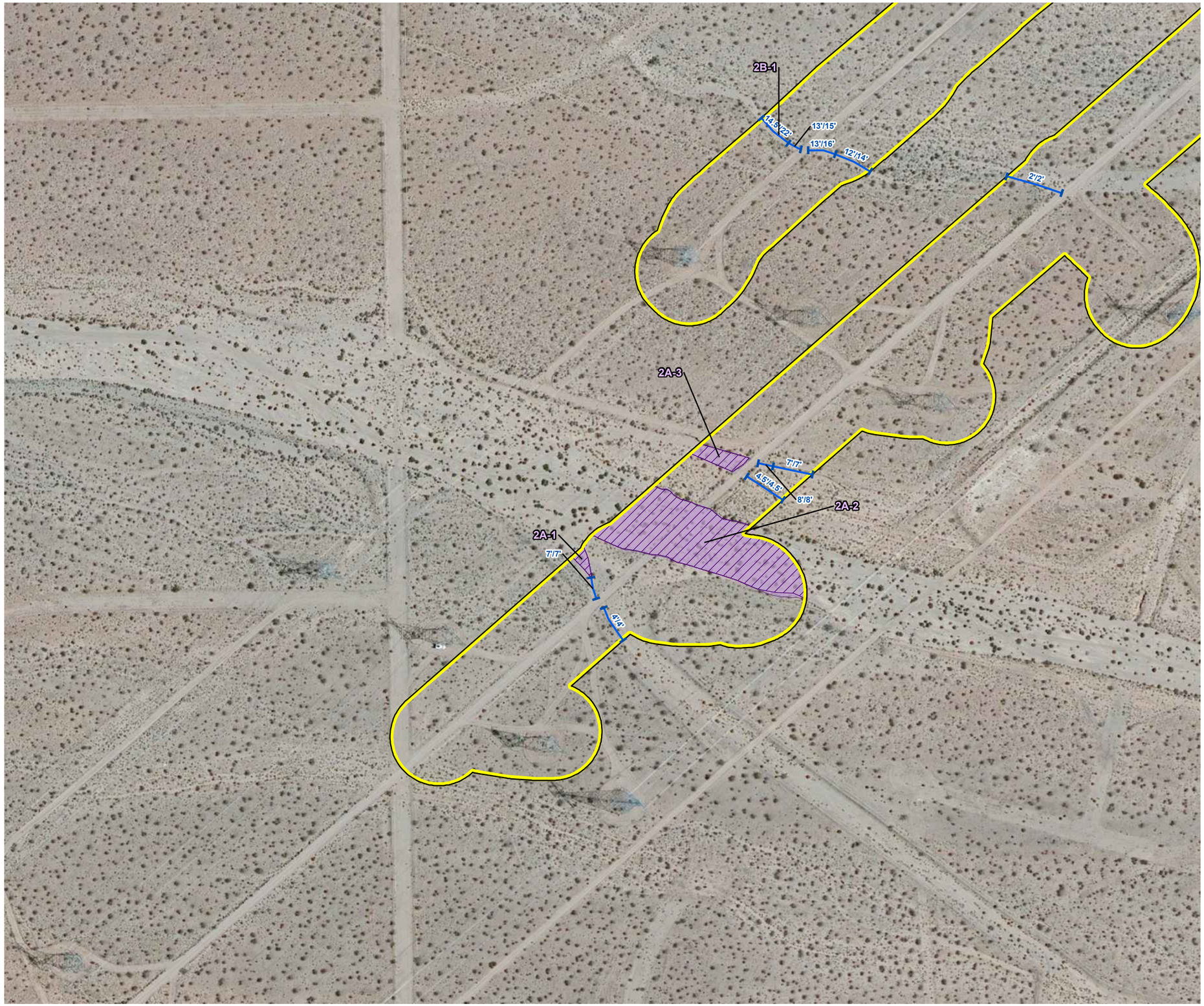

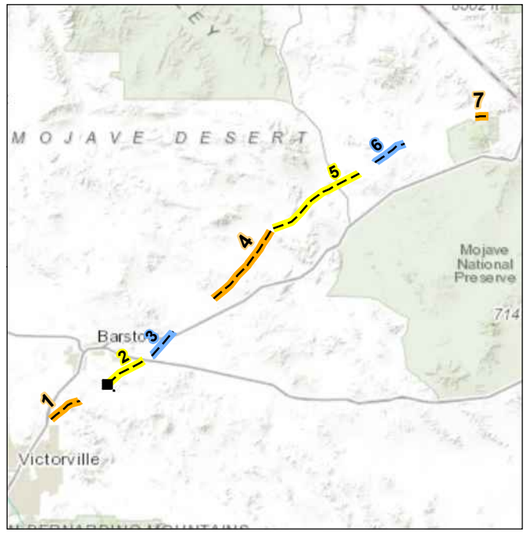

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 2a

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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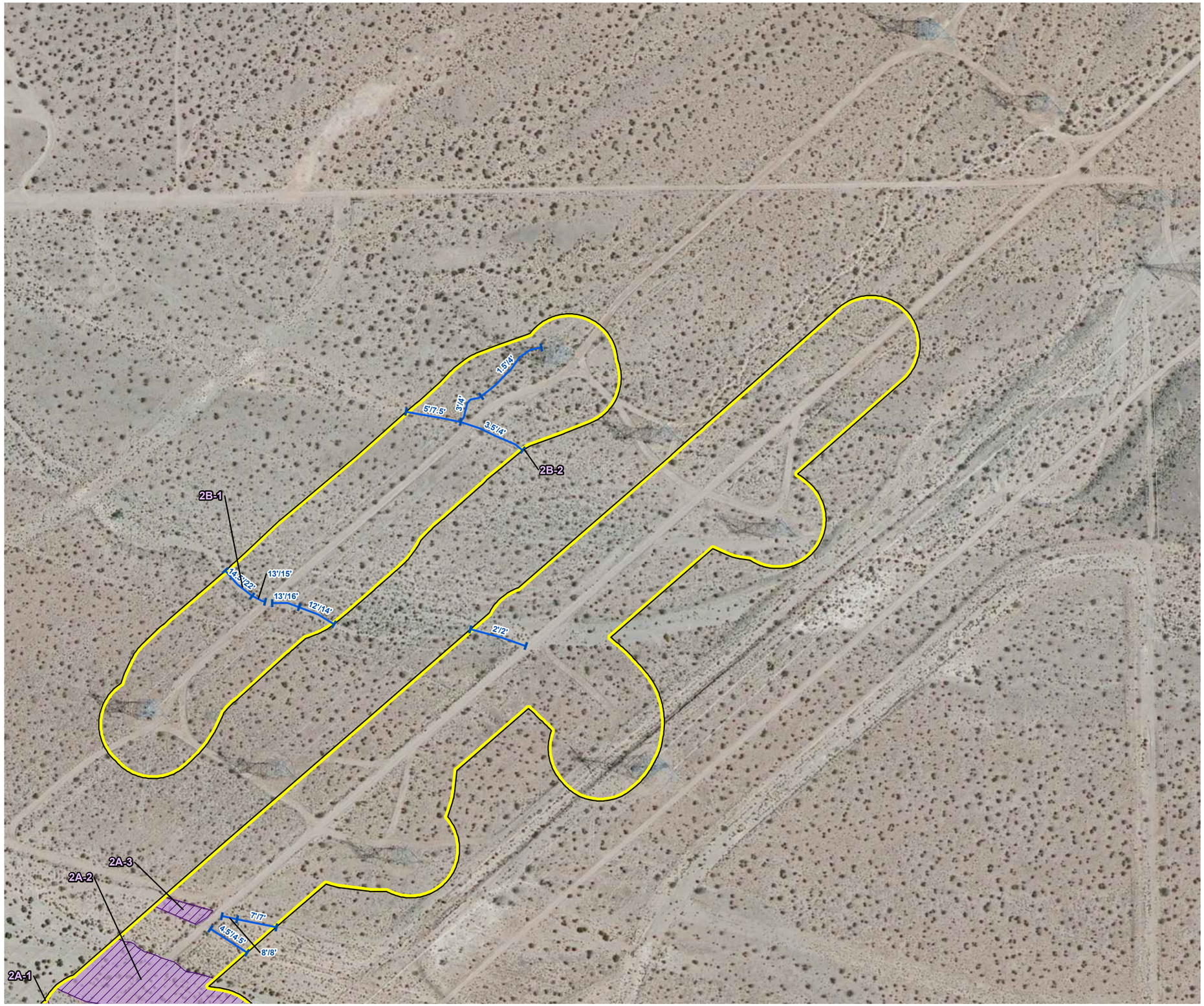

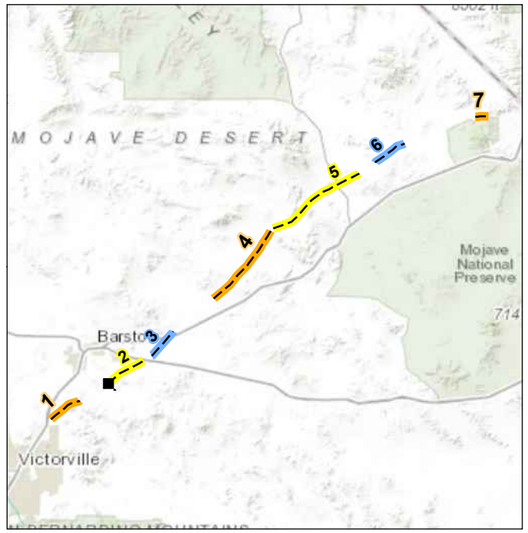

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 2b

Path 46 Transmission Line Clearances Project

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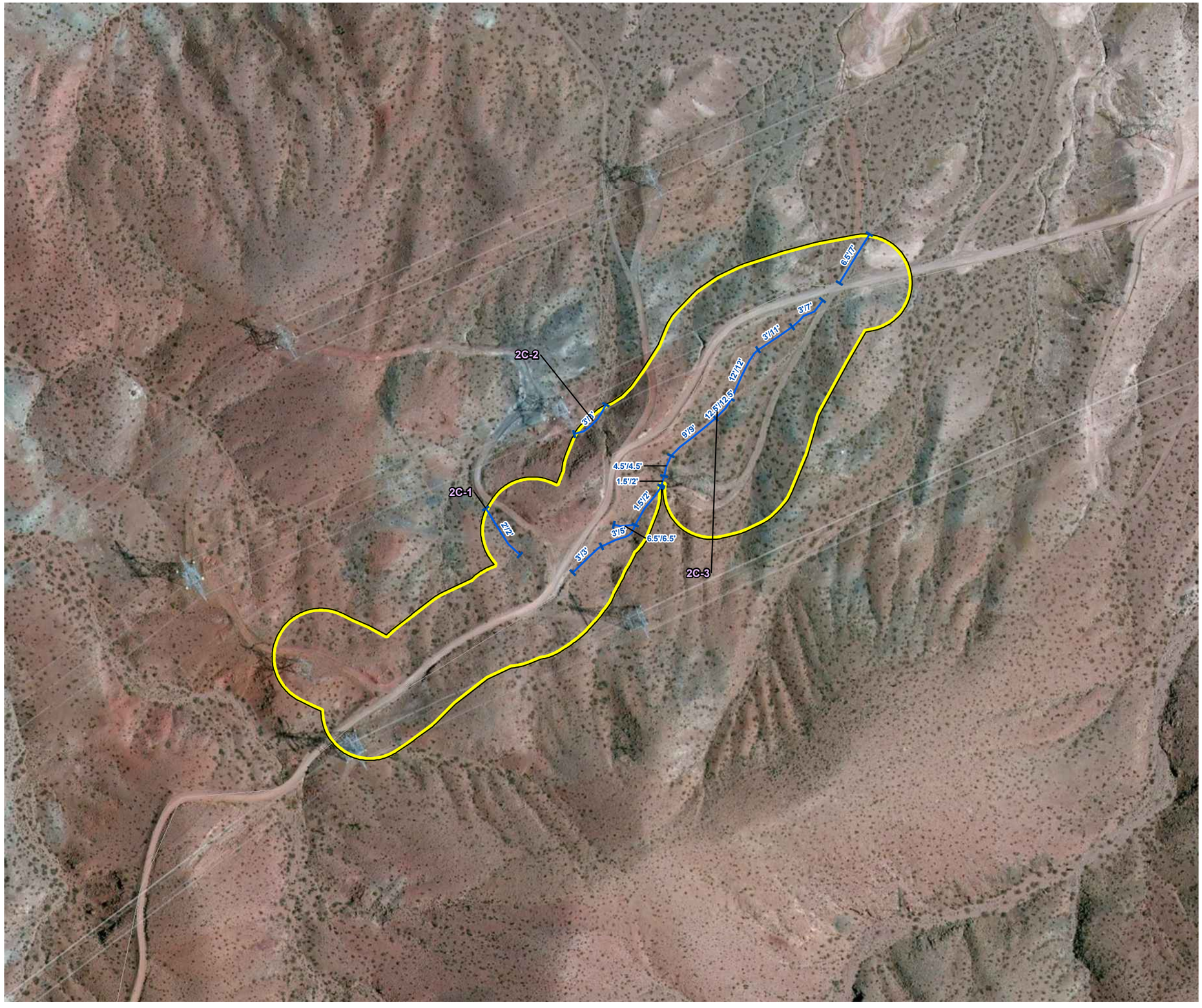

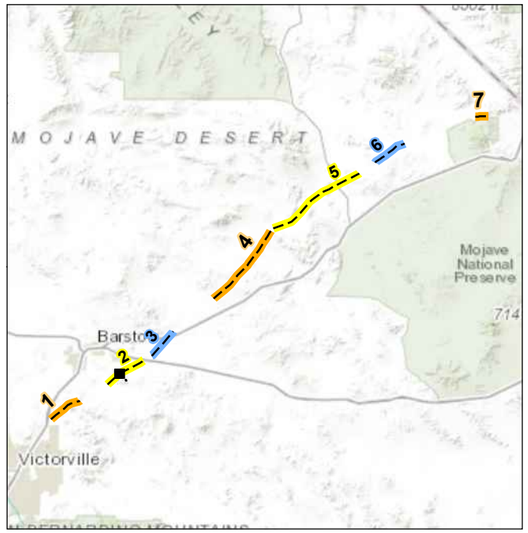

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 2c

Path 46 Transmission Line Clearances Project

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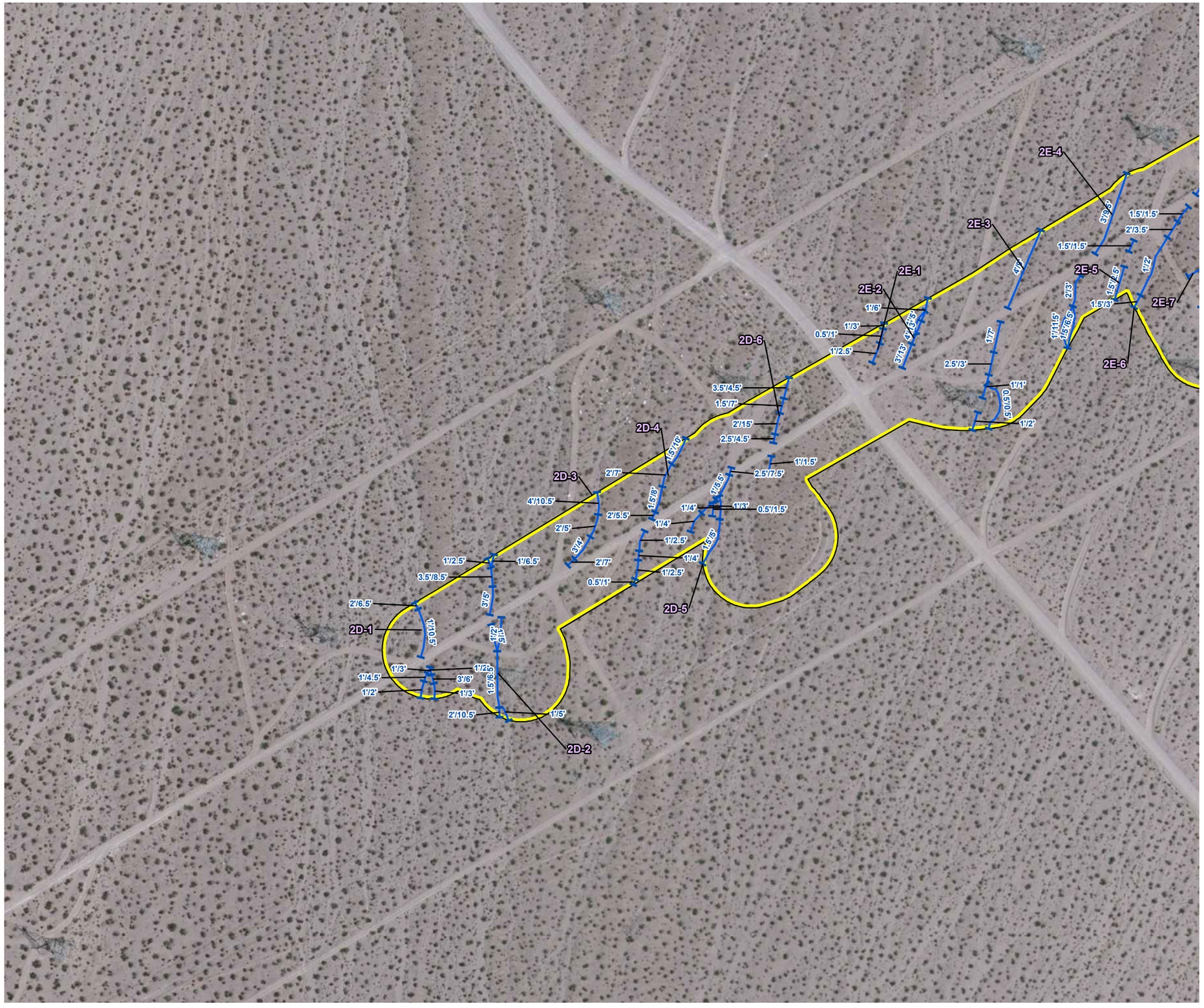

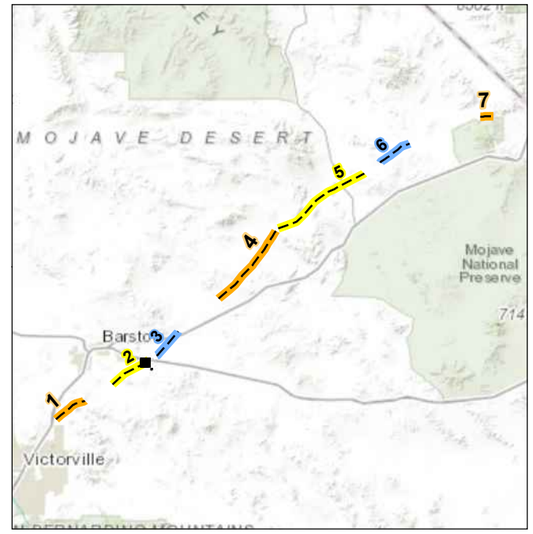

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 2d

Path 46 Transmission Line Clearances Project

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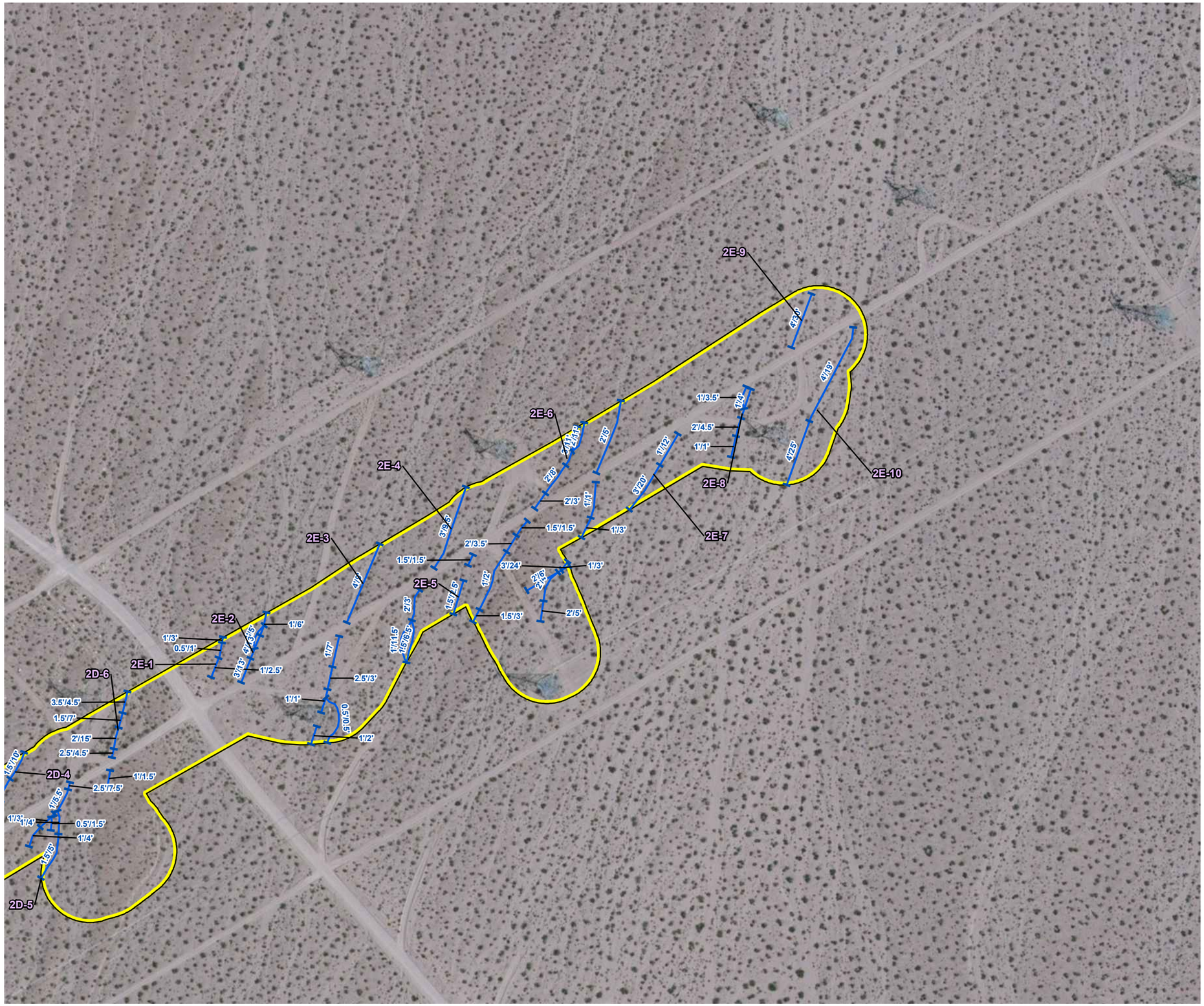

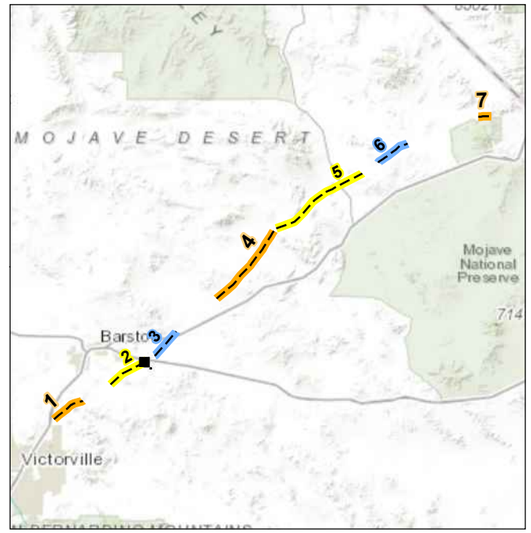

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 2e

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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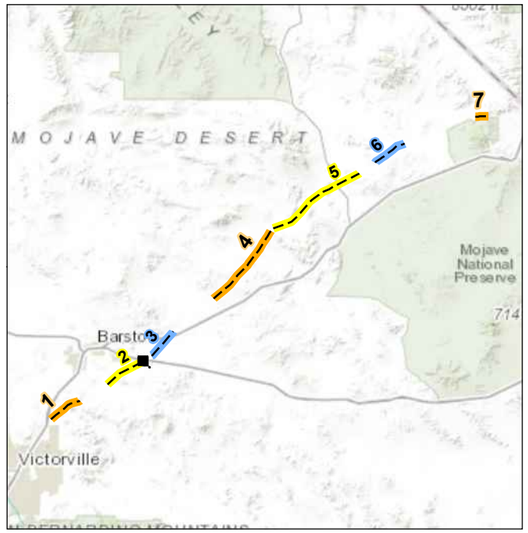

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 2f

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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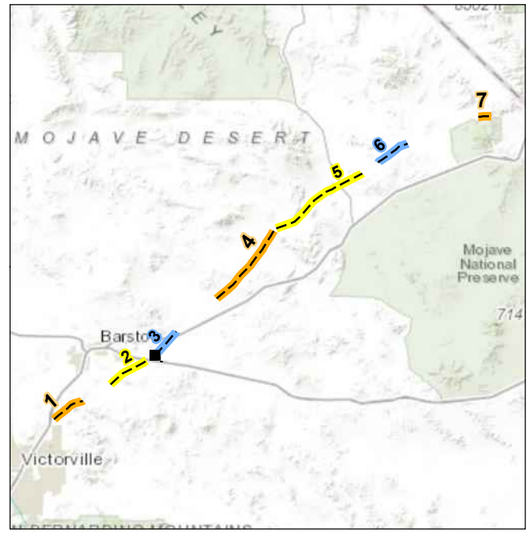

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 3a

Path 46 Transmission Line Clearances Project

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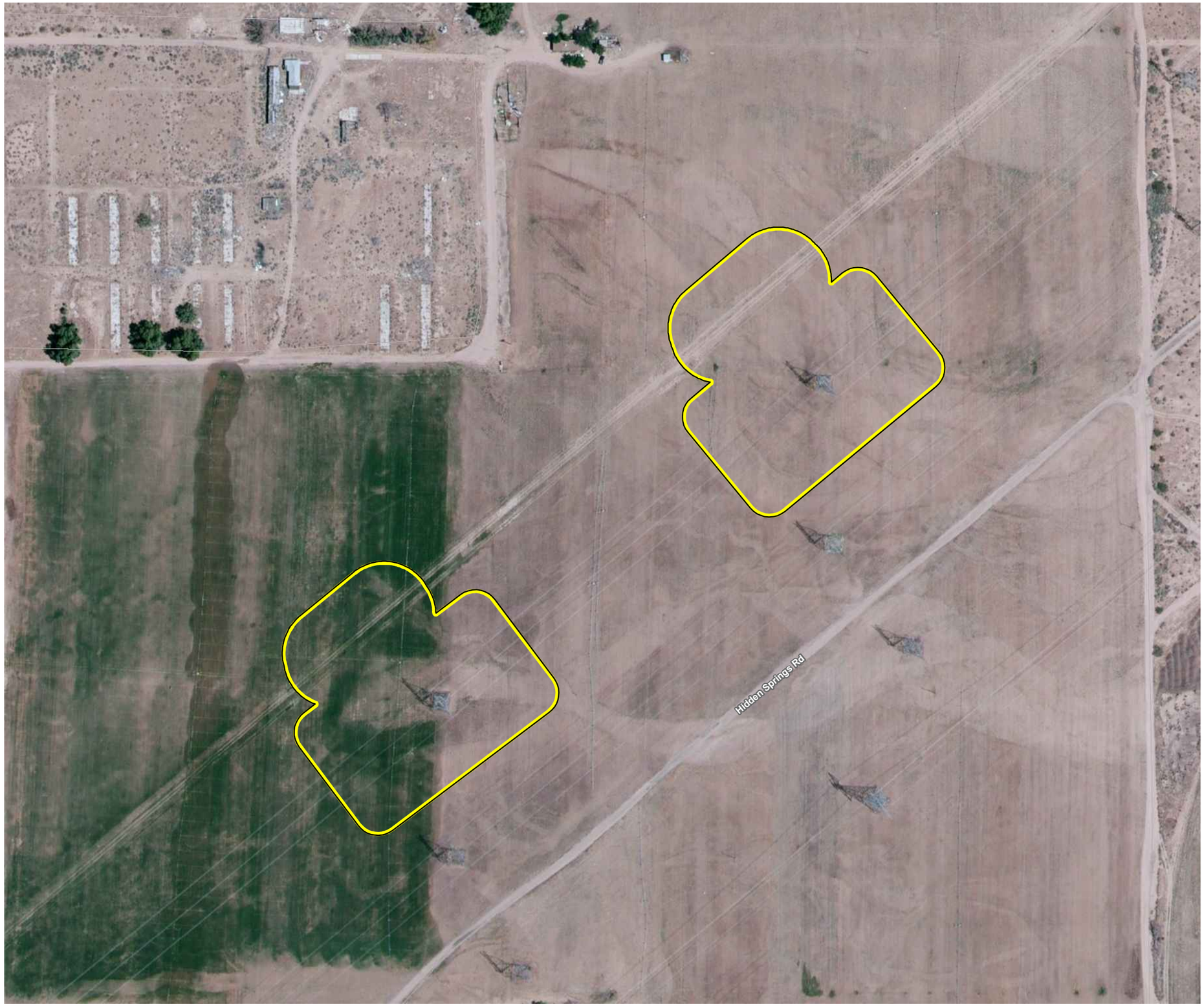

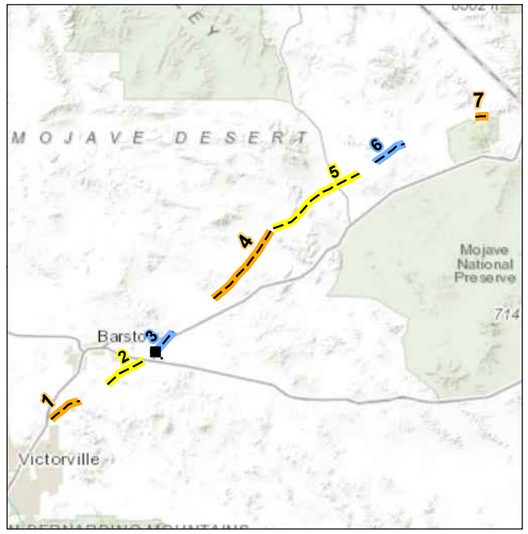

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 3b

Path 46 Transmission Line Clearances Project

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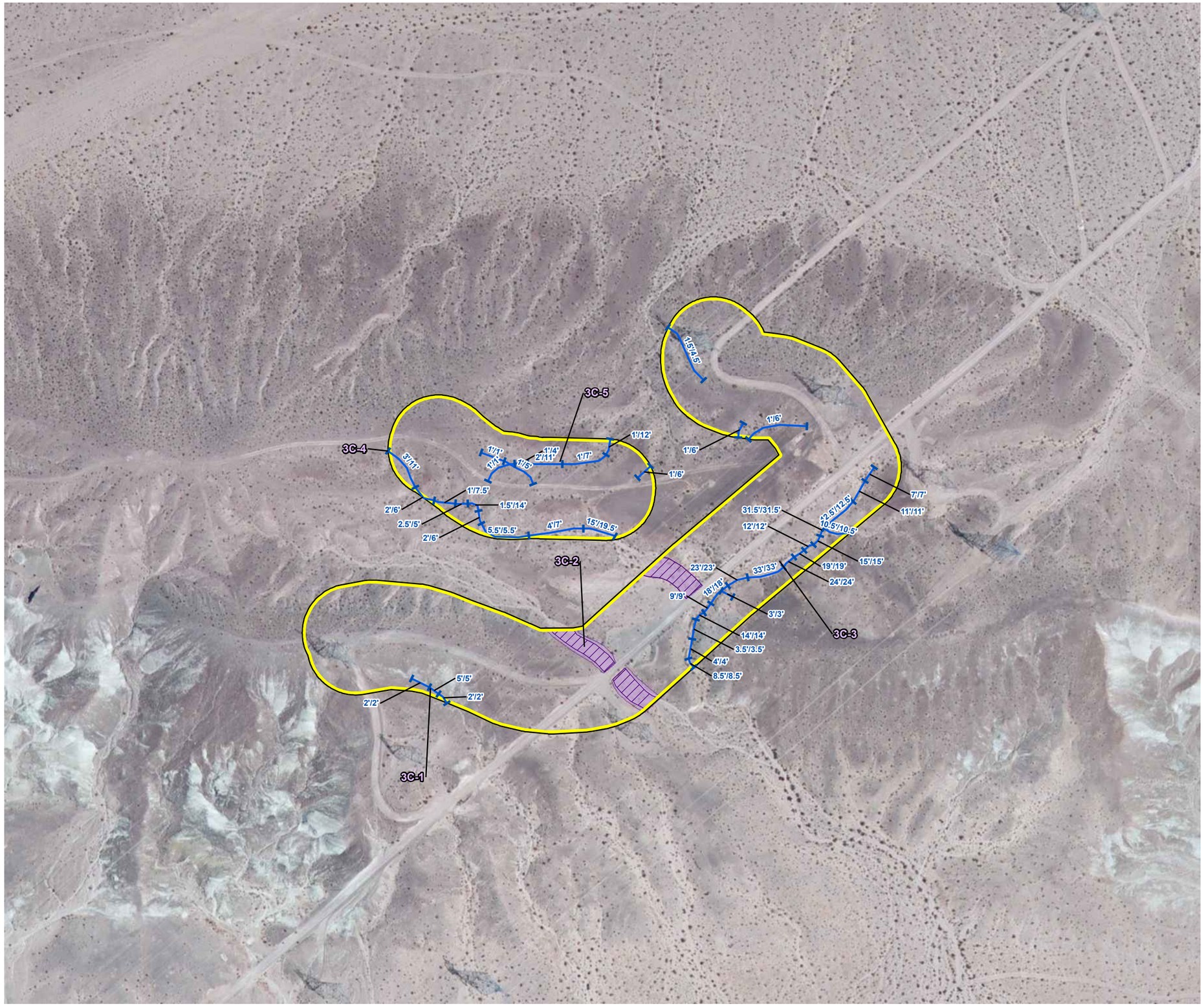

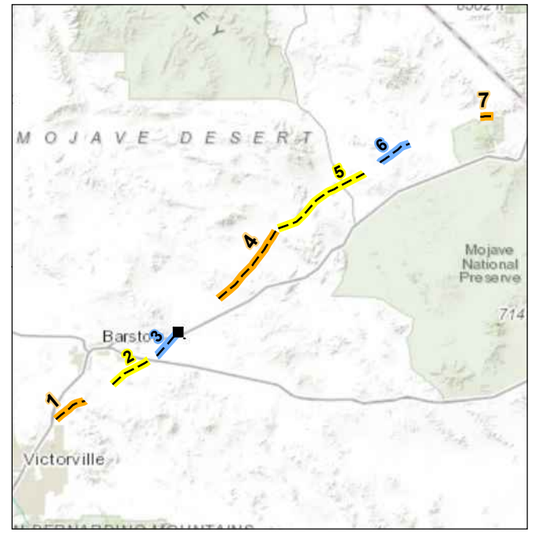

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 3c

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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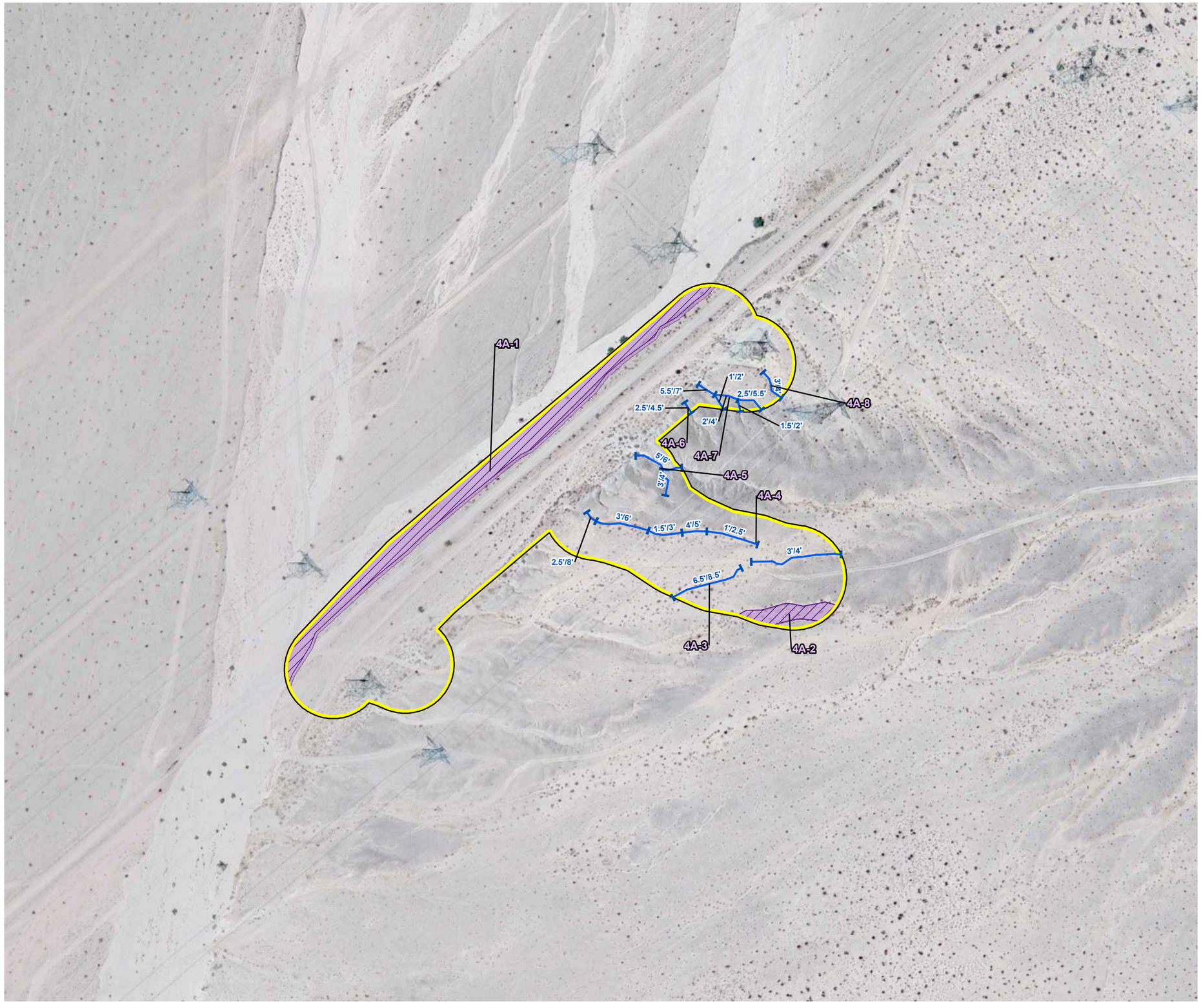

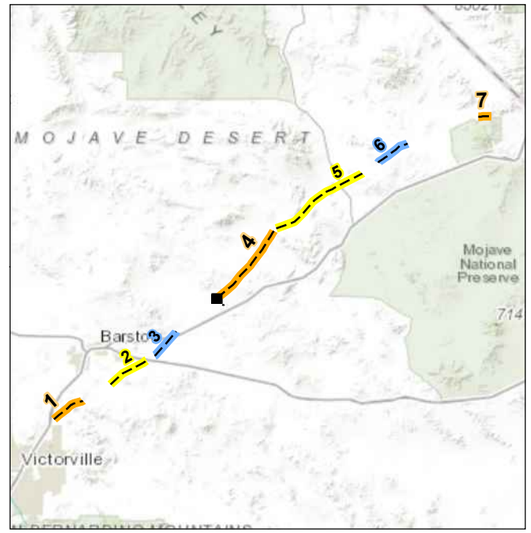

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4a

Path 46 Transmission Line Clearances Project

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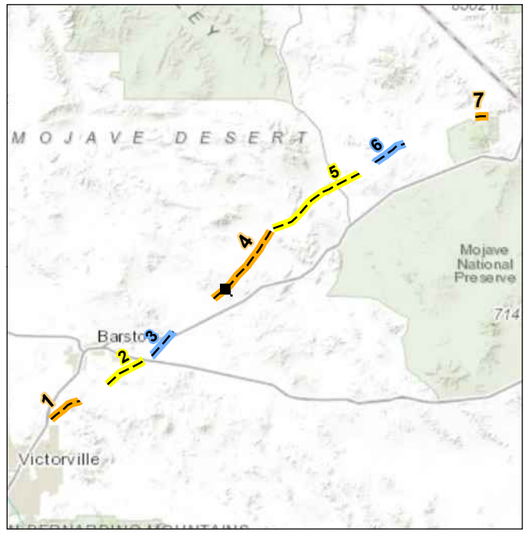

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4b

Path 46 Transmission Line Clearances Project

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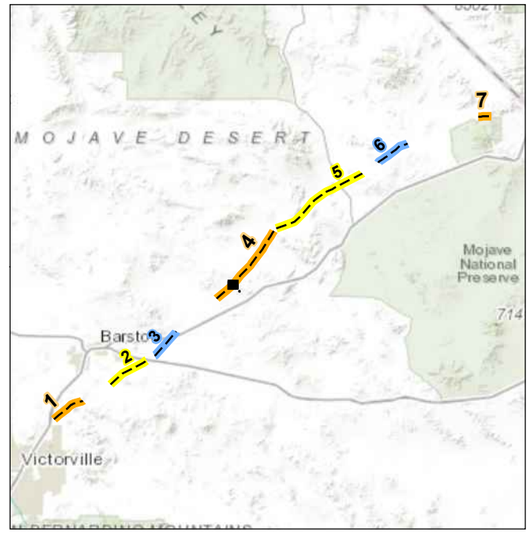

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4c

Path 46 Transmission Line Clearances Project

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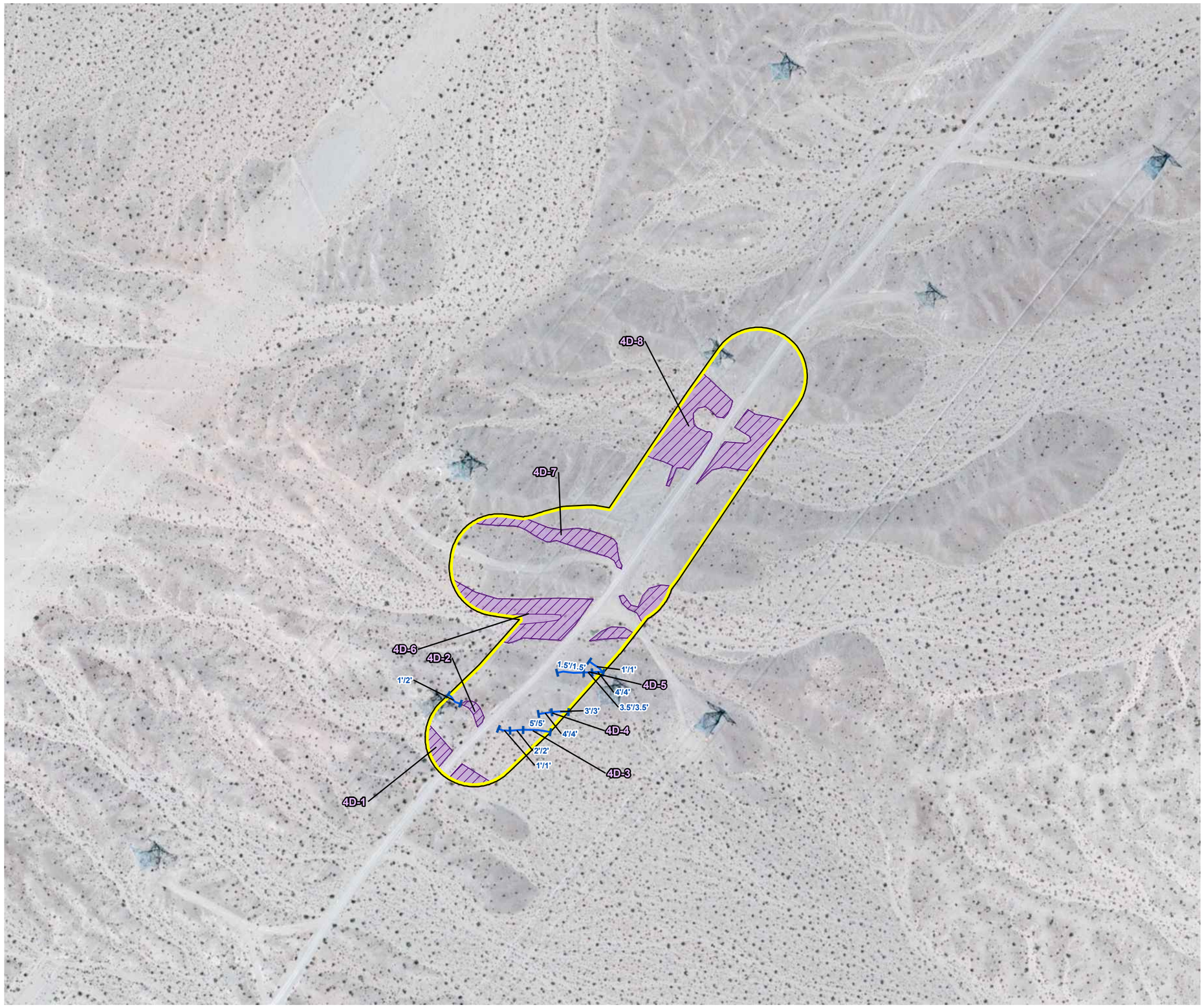

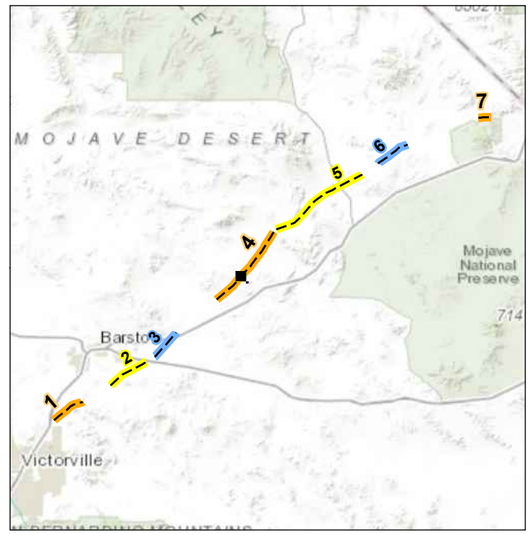

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4d

Path 46 Transmission Line Clearances Project

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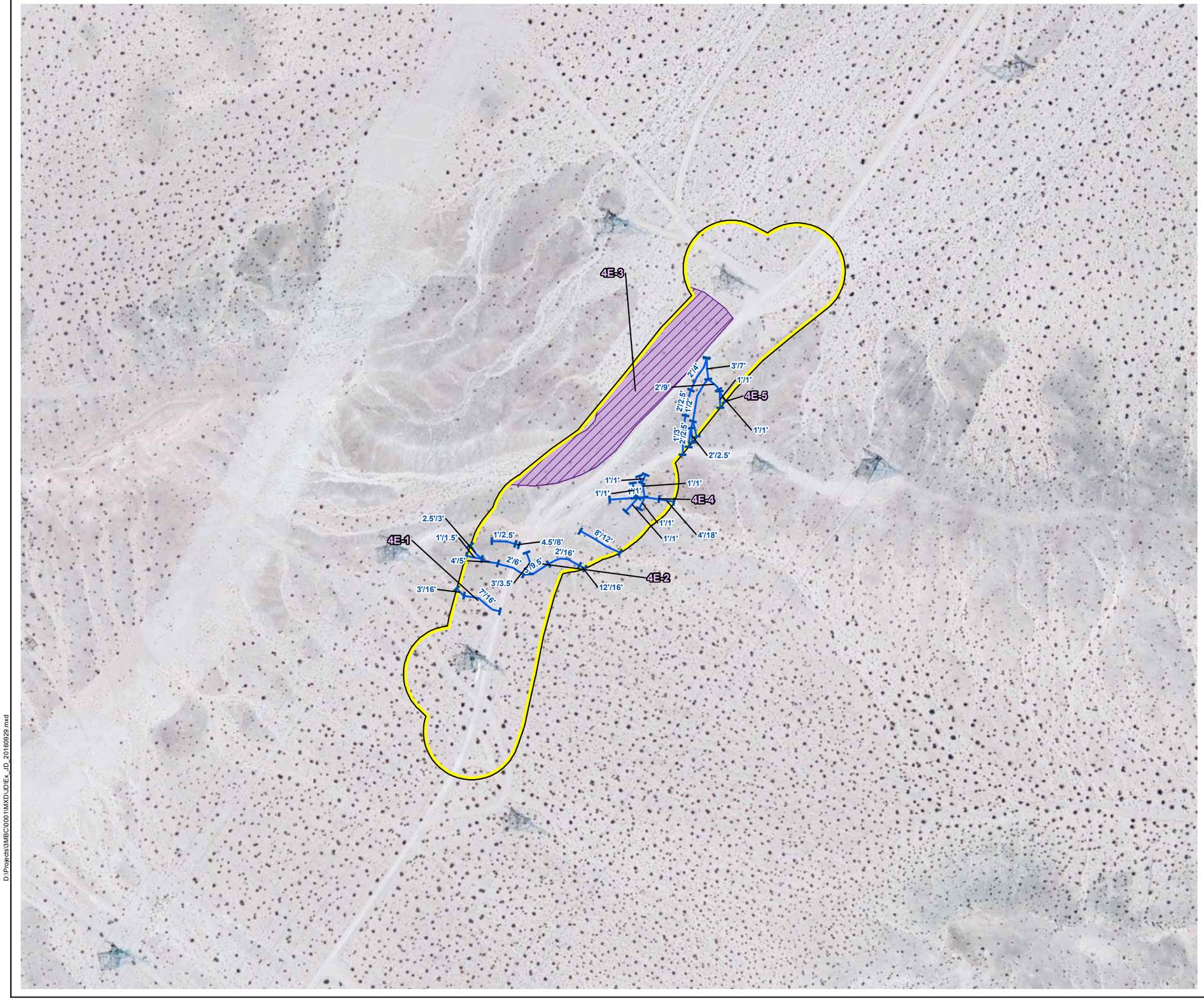

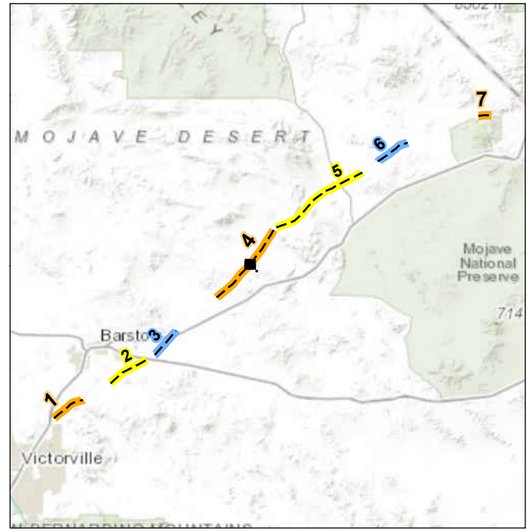

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4e

Path 46 Transmission Line Clearances Project

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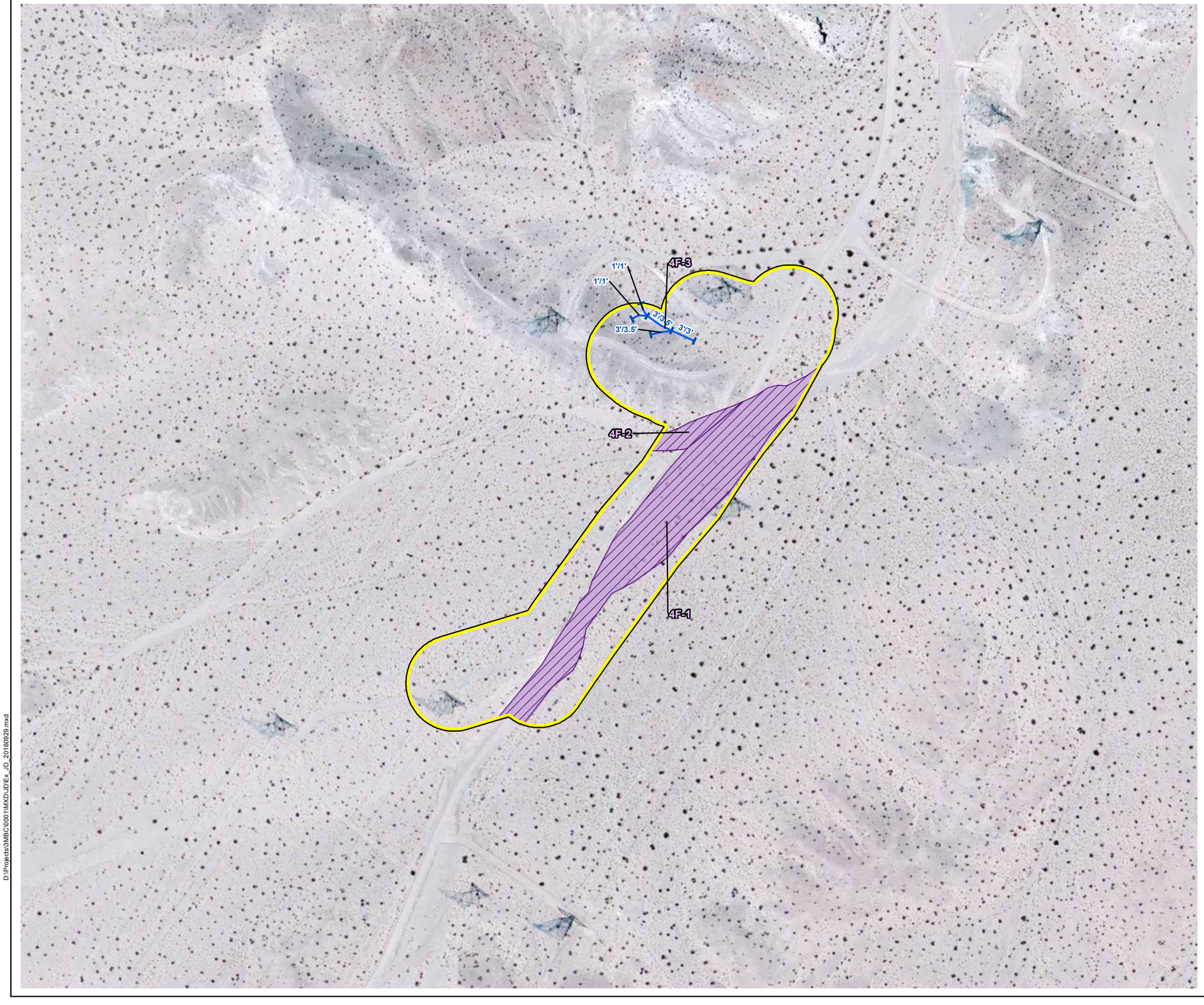

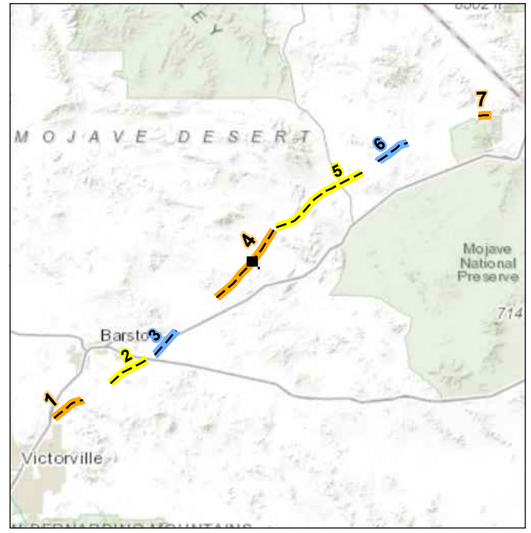

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4f

Path 46 Transmission Line Clearances Project

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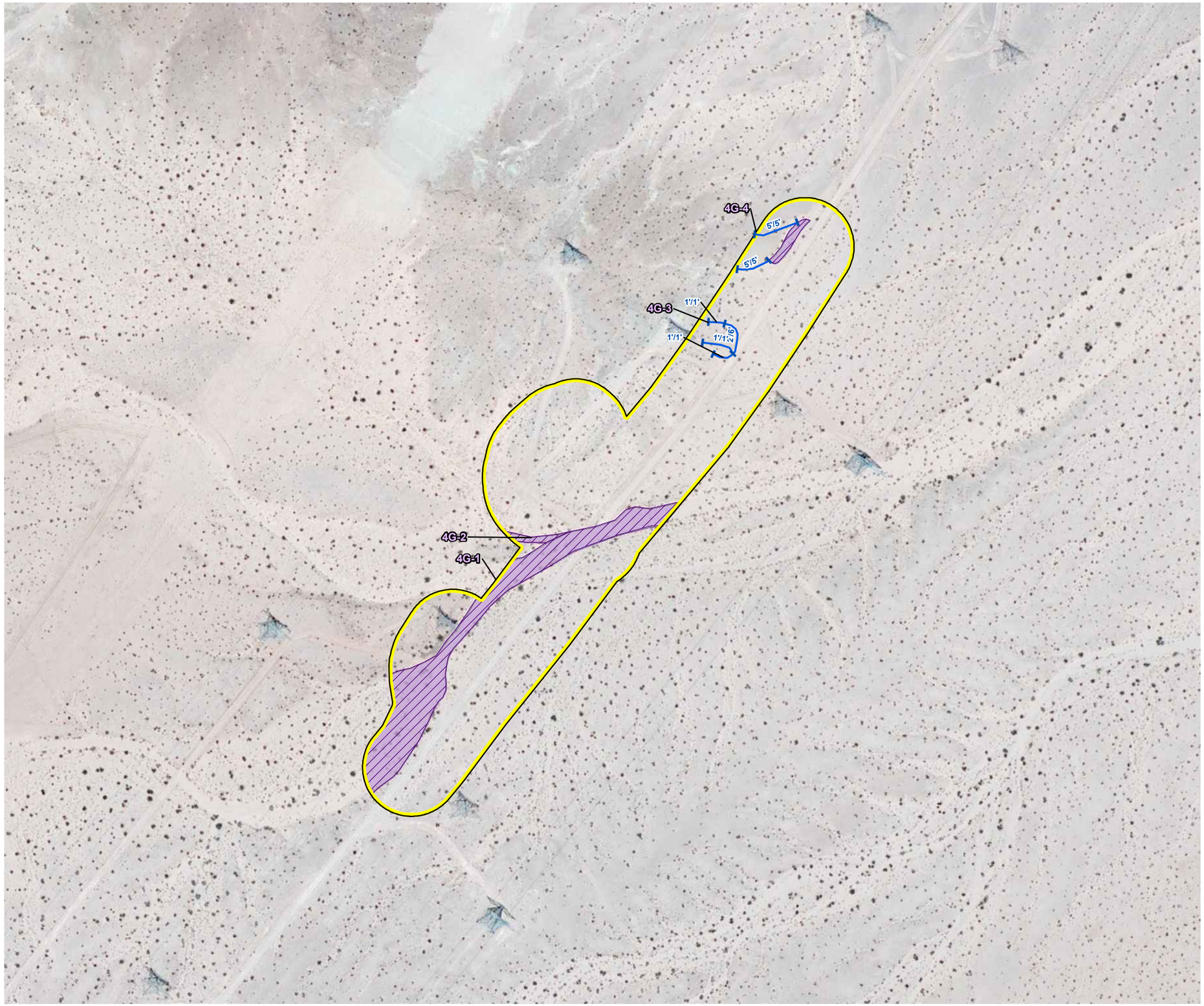

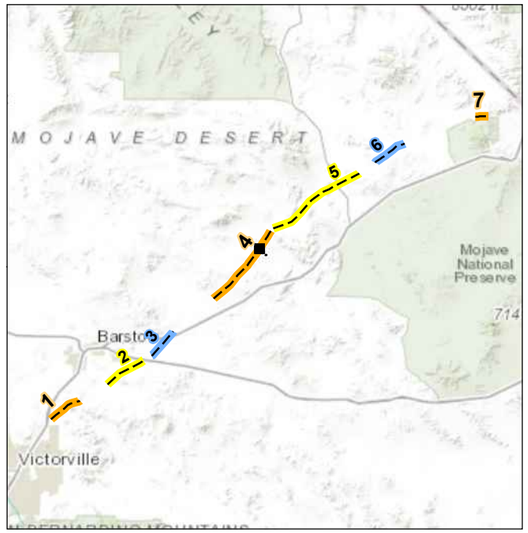

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4g

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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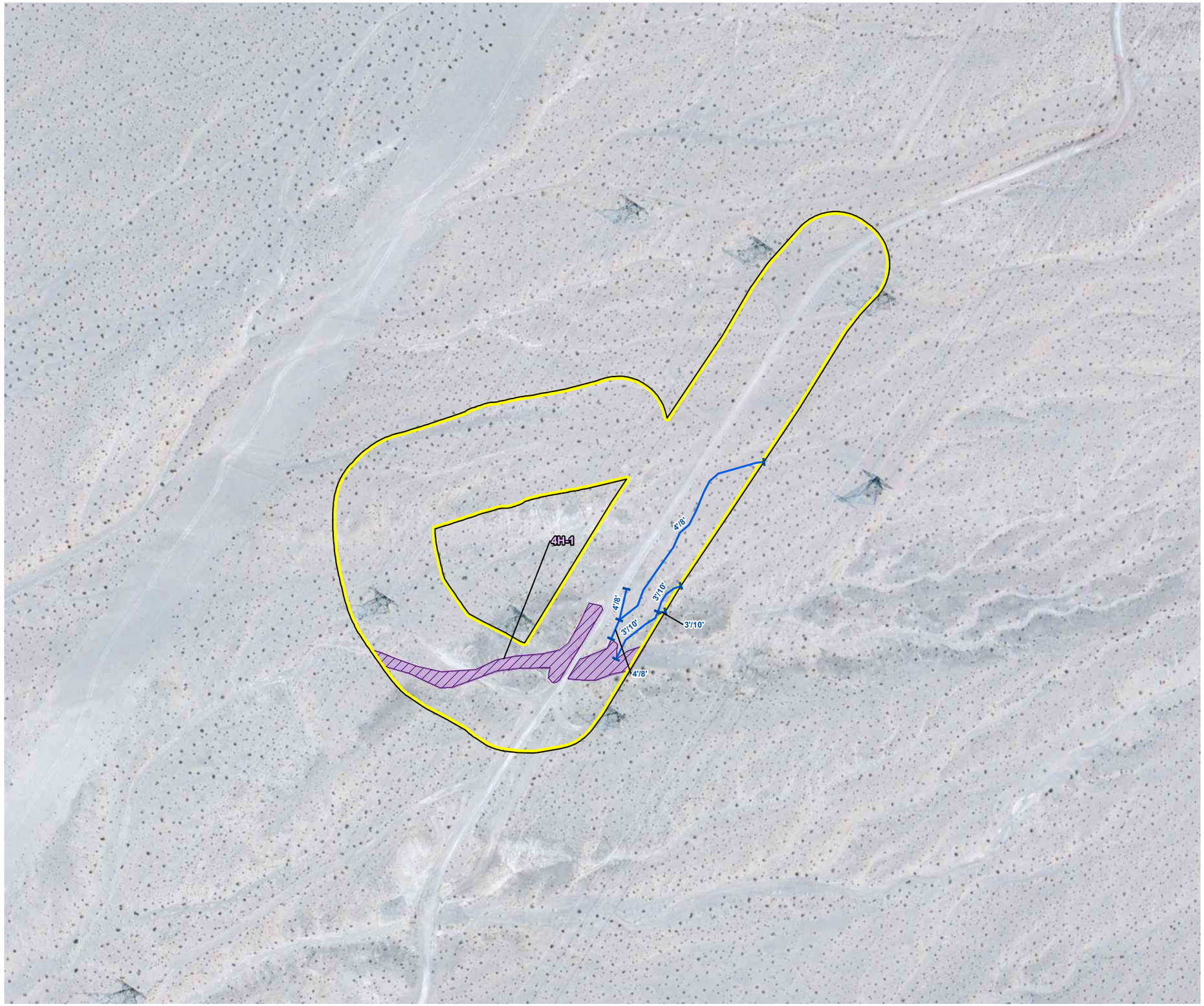

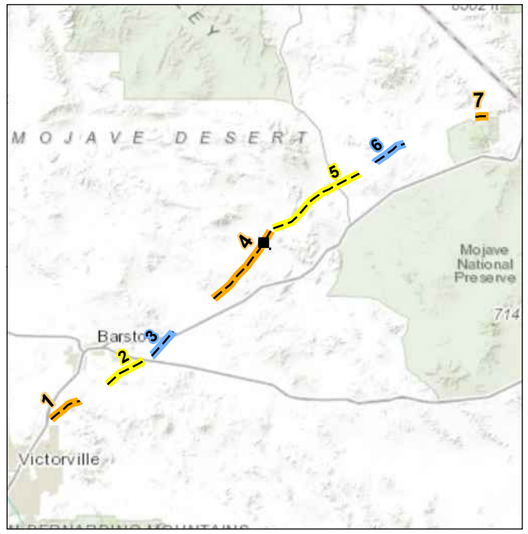

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4h

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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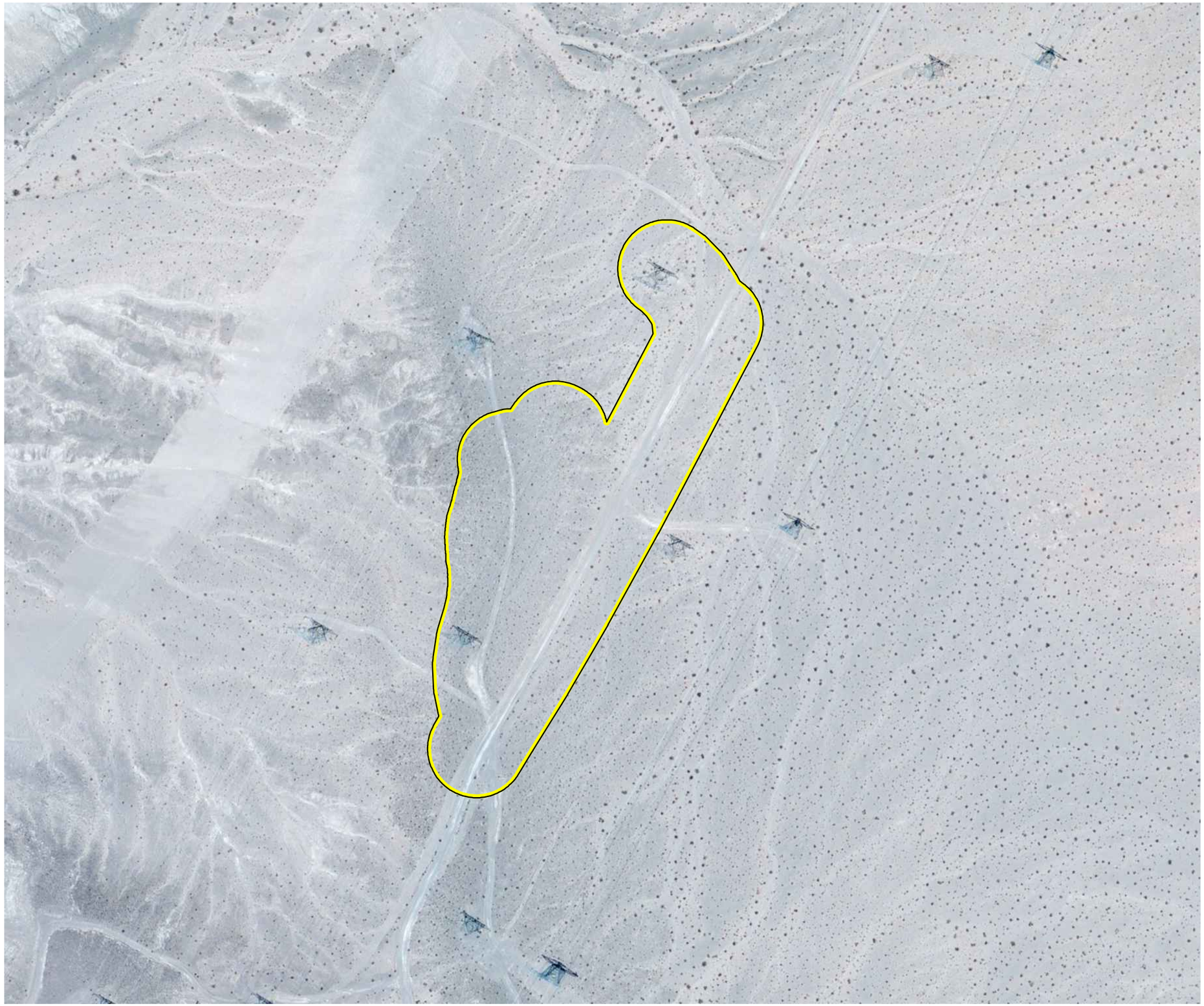

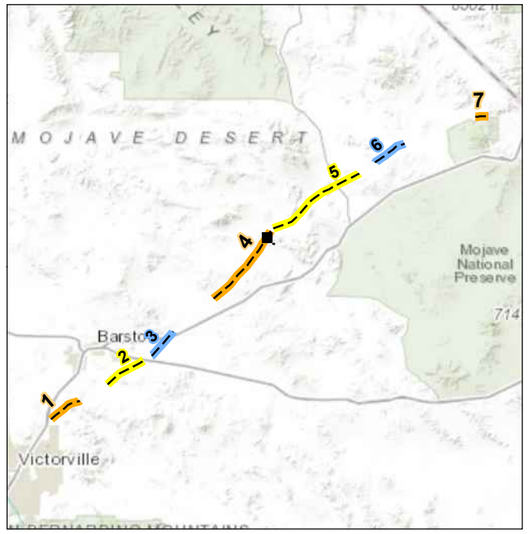

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N

W E

S

200 100 0 200

Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4i

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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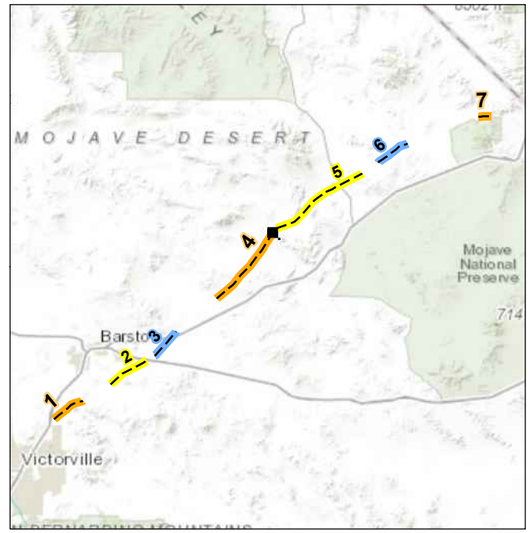

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4j

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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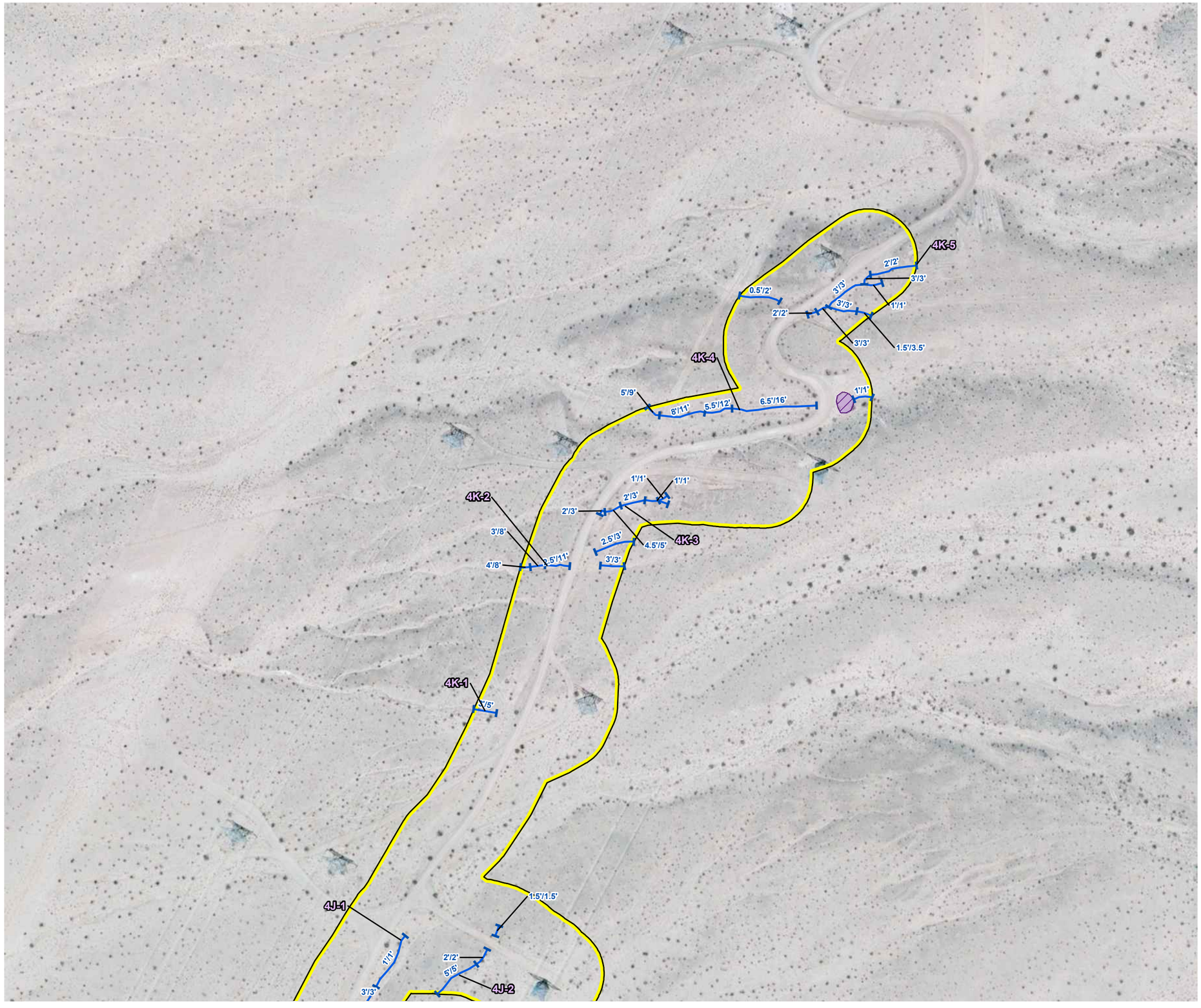

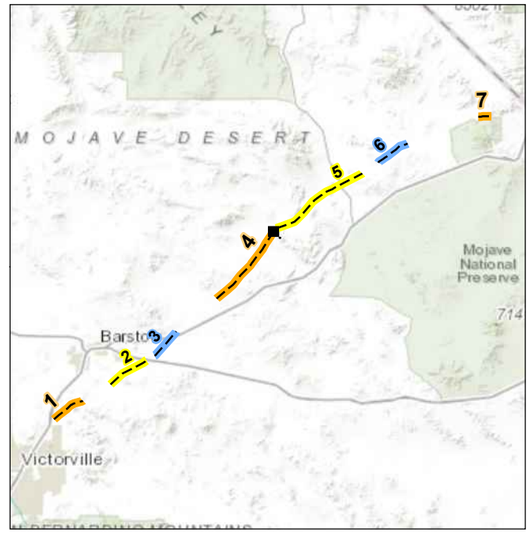

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 4k

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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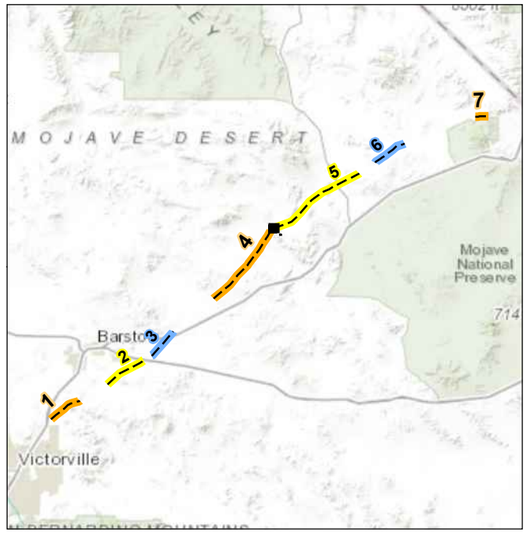

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N

W E

S

200 100 0 200

Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5a

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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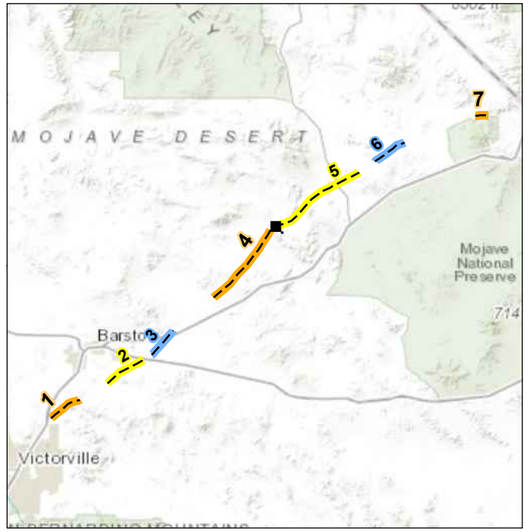

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N

W E

S

200 100 0 200

Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5b

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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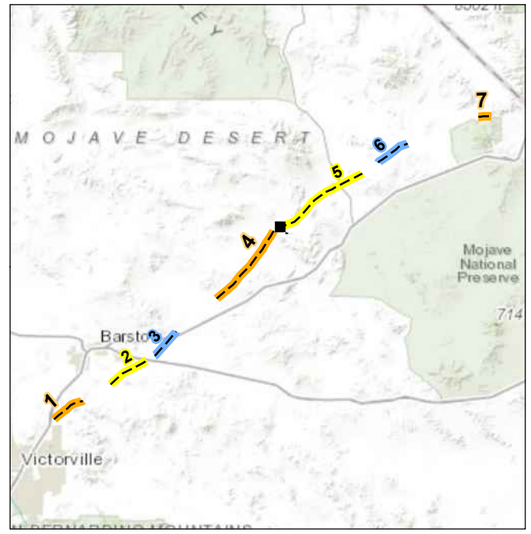

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5c

Path 46 Transmission Line Clearances Project

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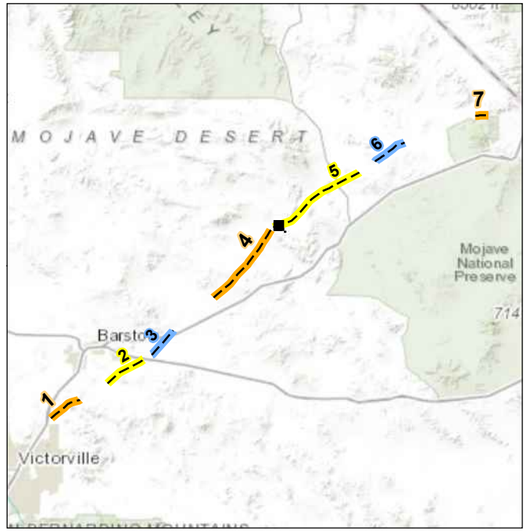

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5d

Path 46 Transmission Line Clearances Project

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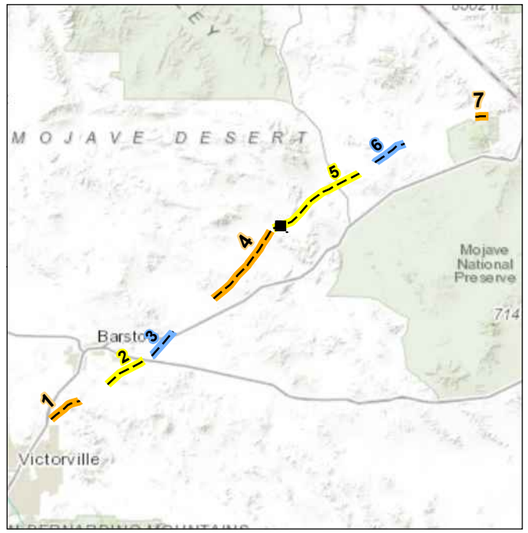

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5e

Path 46 Transmission Line Clearances Project

(Rev: 09/30/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex6_JD_20160929.pdf

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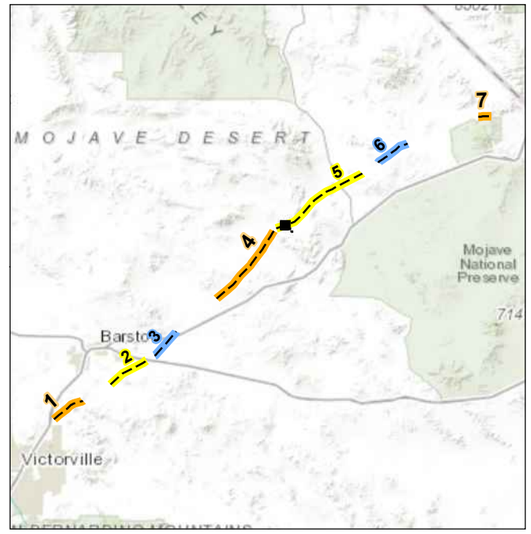

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5f

Path 46 Transmission Line Clearances Project

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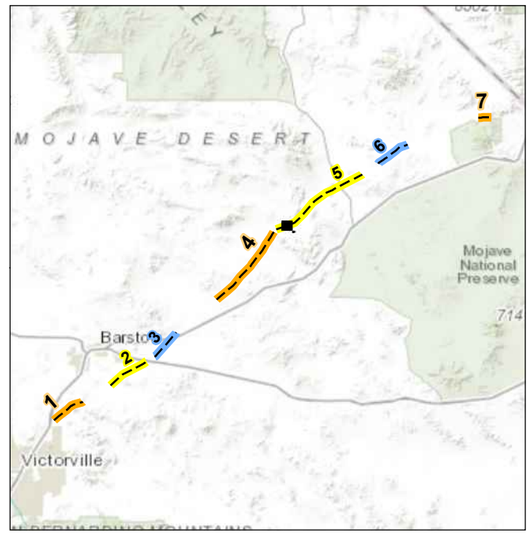

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5g

Path 46 Transmission Line Clearances Project

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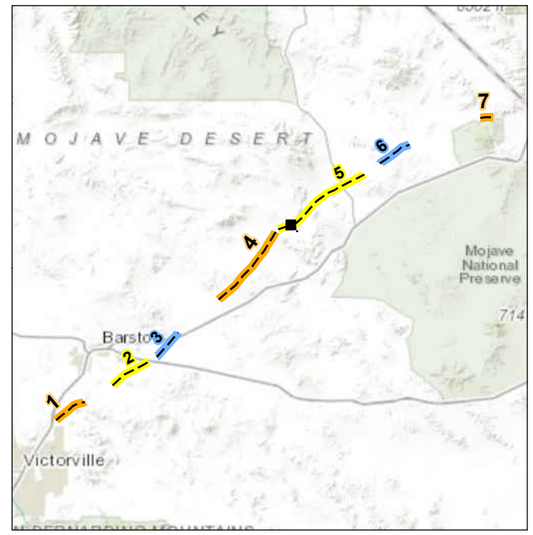

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5h

Path 46 Transmission Line Clearances Project

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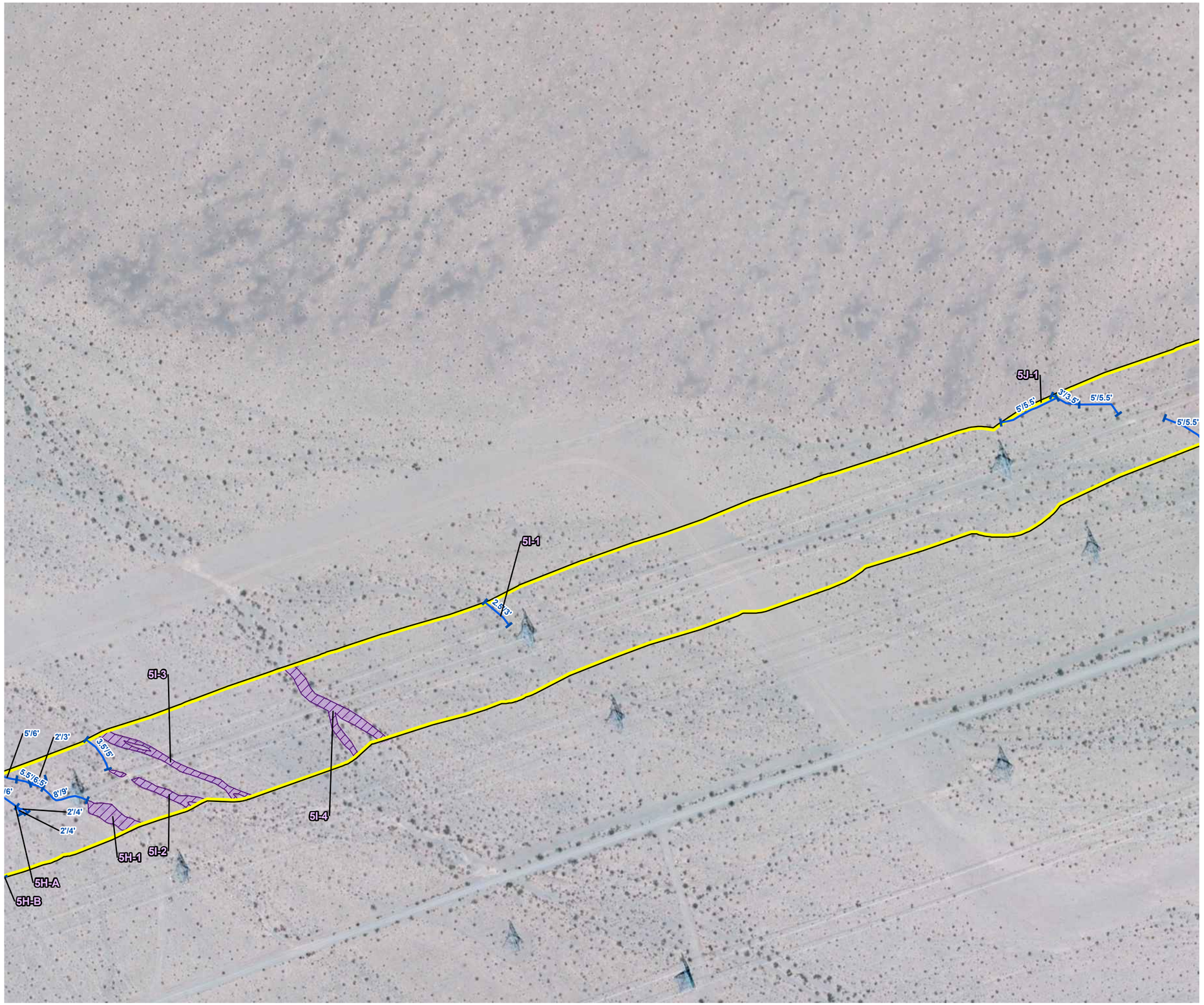

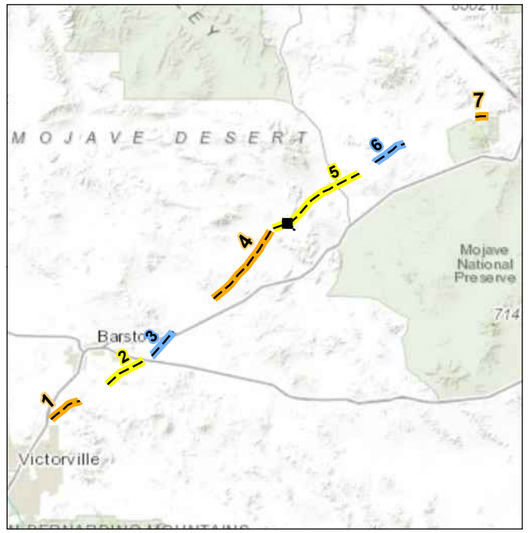

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5i

Path 46 Transmission Line Clearances Project

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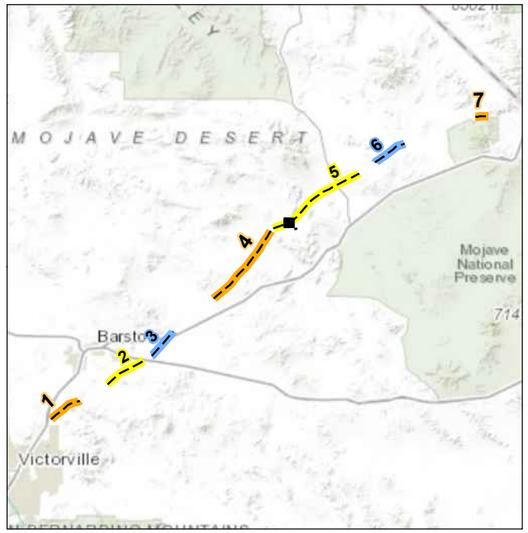

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5j

Path 46 Transmission Line Clearances Project

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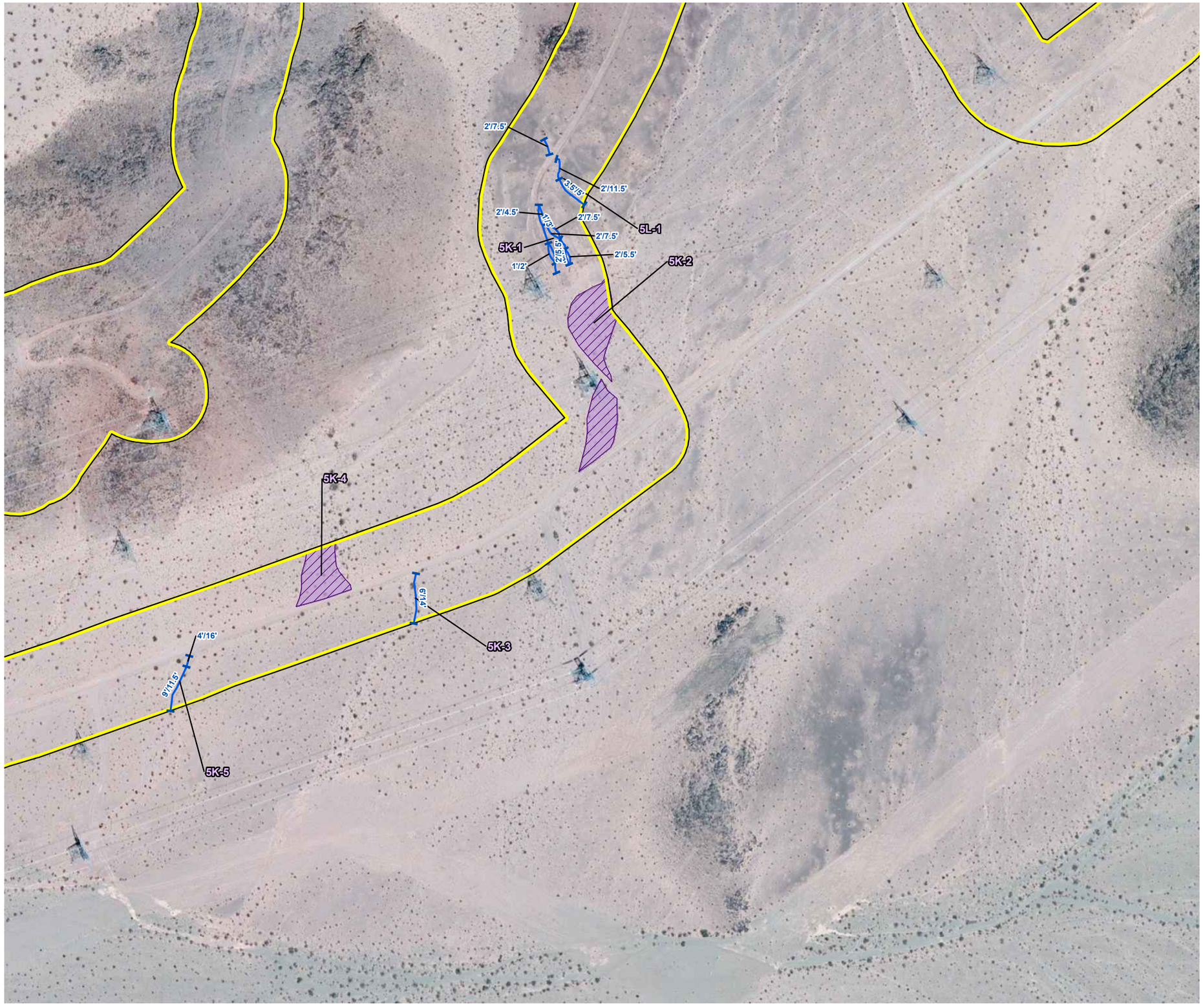

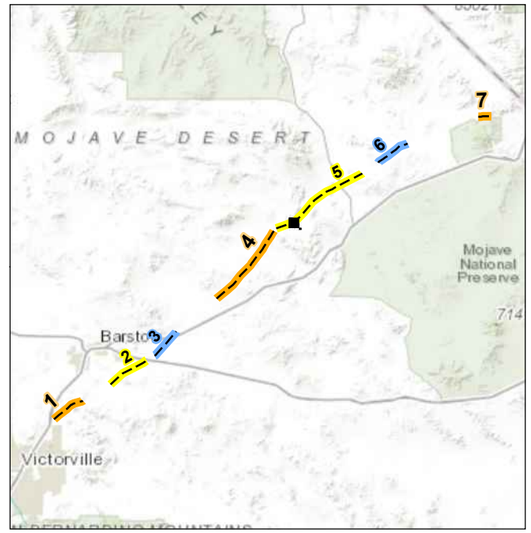

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5k

Path 46 Transmission Line Clearances Project

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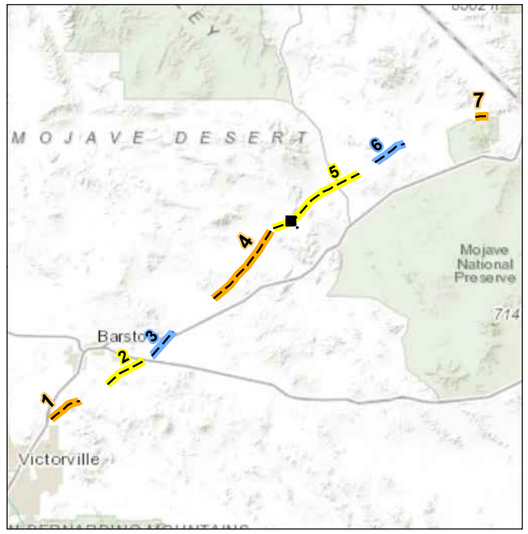

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5I

Path 46 Transmission Line Clearances Project

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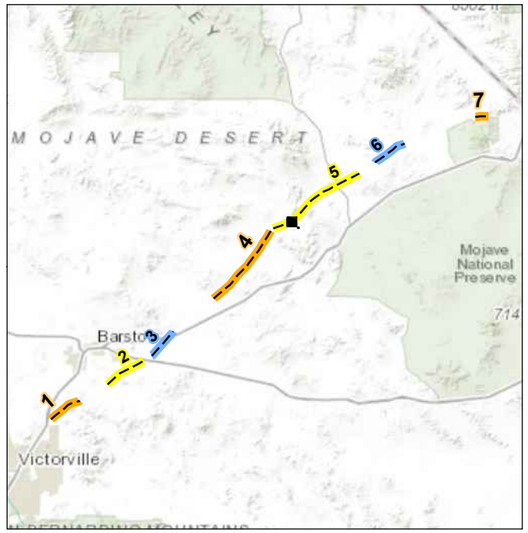

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5m

Path 46 Transmission Line Clearances Project

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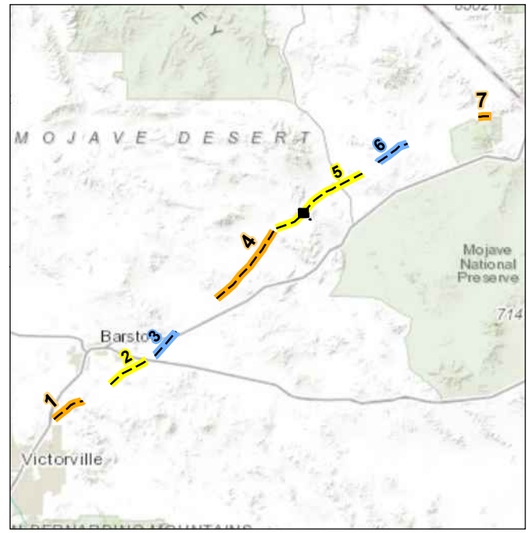

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5n

Path 46 Transmission Line Clearances Project

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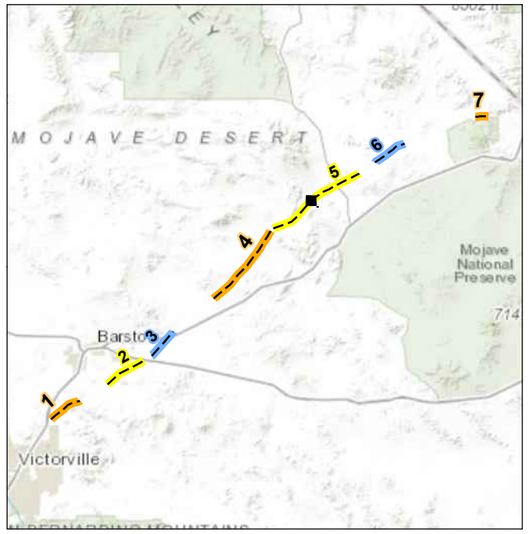

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5o

Path 46 Transmission Line Clearances Project

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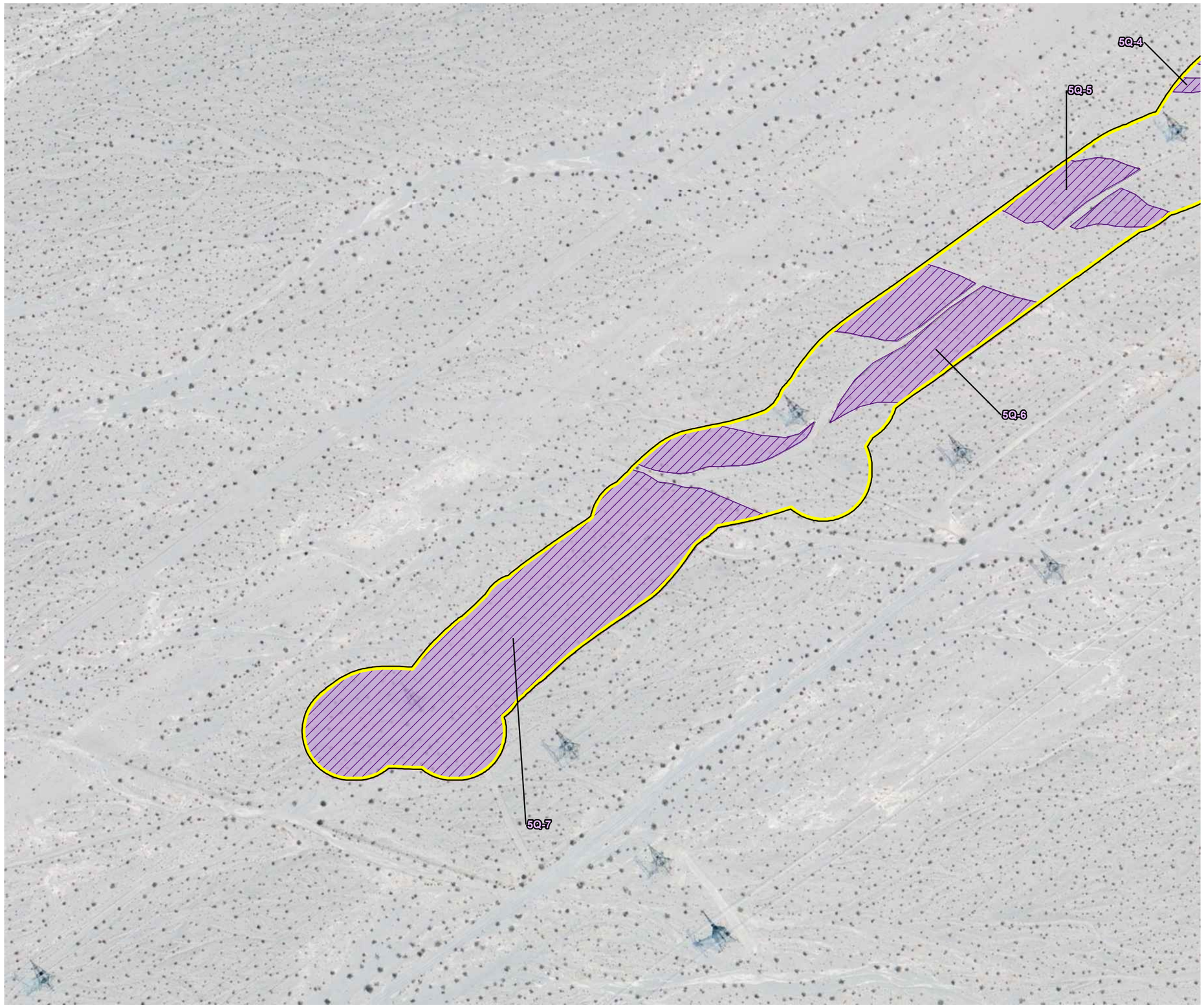

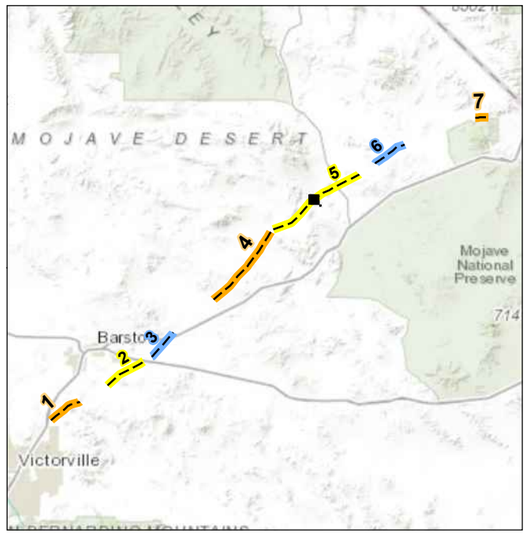

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5p

Path 46 Transmission Line Clearances Project

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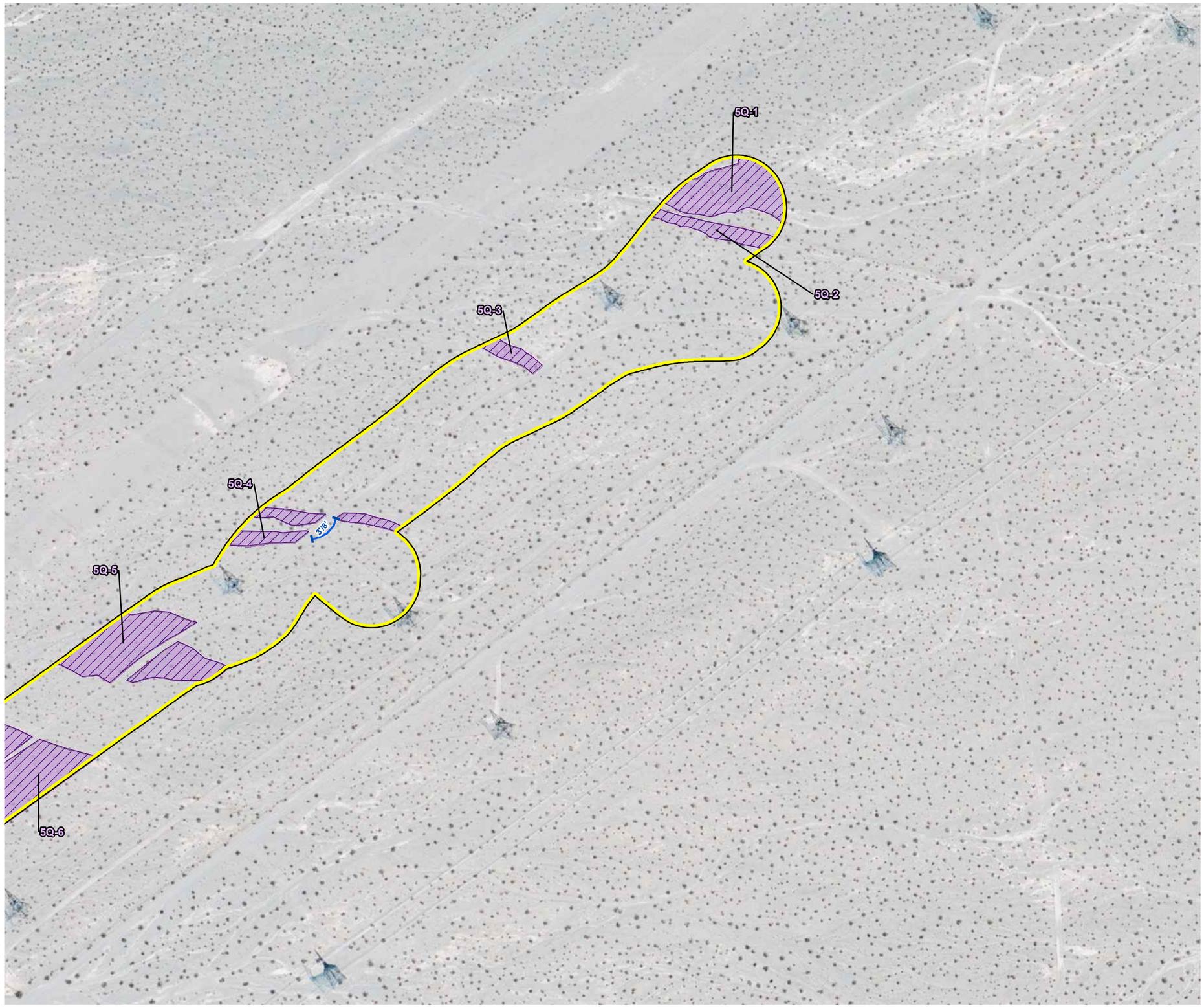

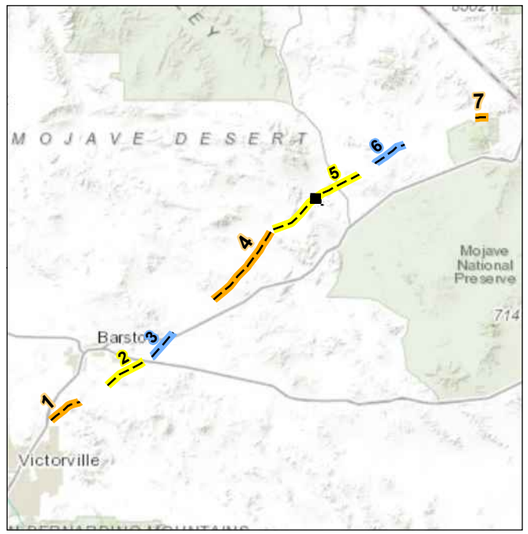

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5q

Path 46 Transmission Line Clearances Project

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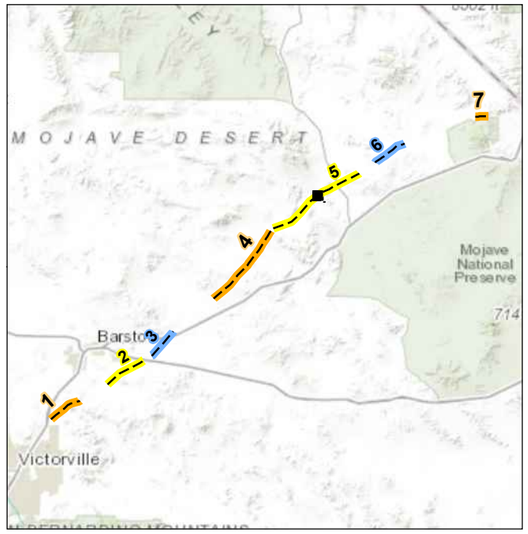

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5r

Path 46 Transmission Line Clearances Project

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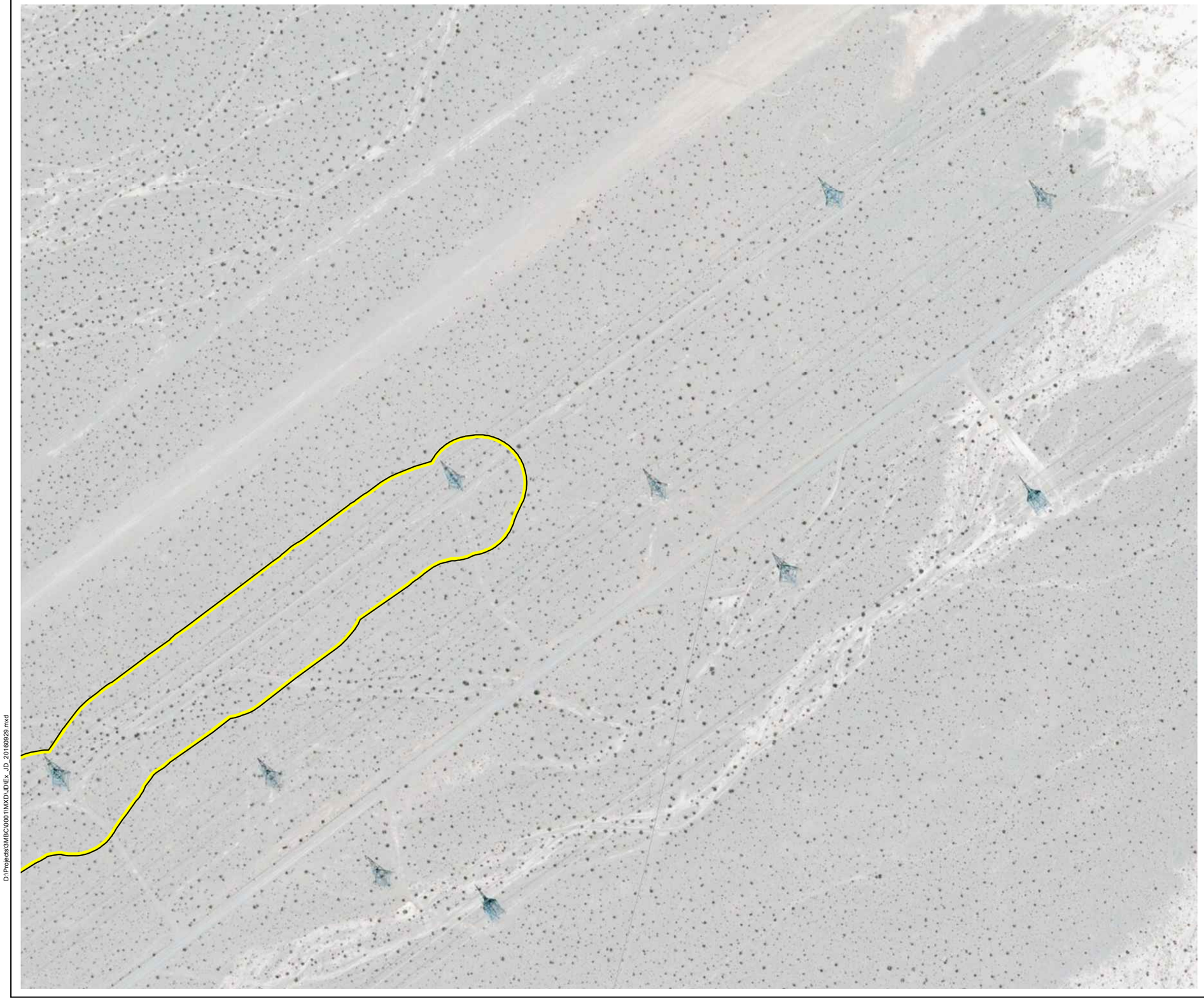

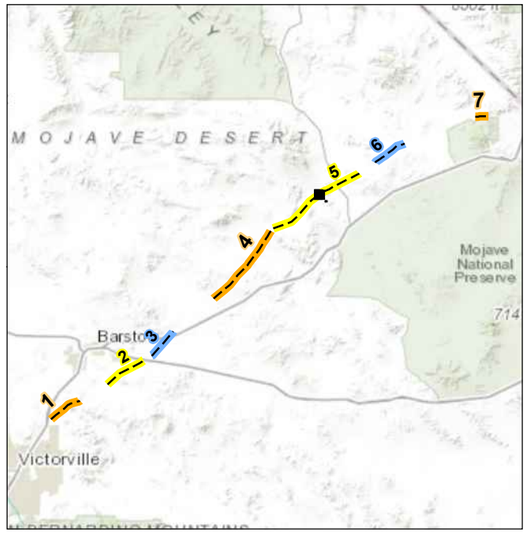

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5s

Path 46 Transmission Line Clearances Project

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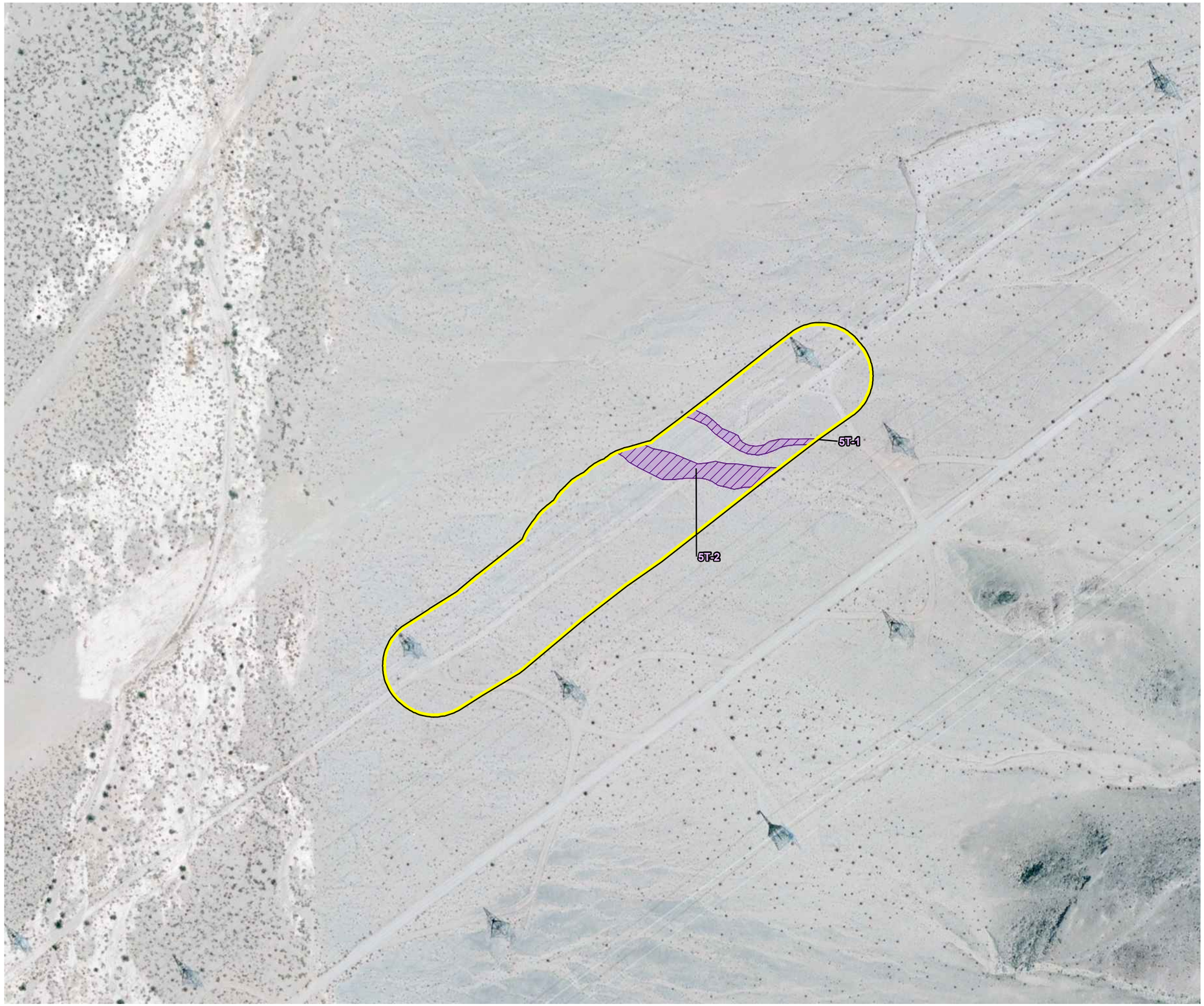

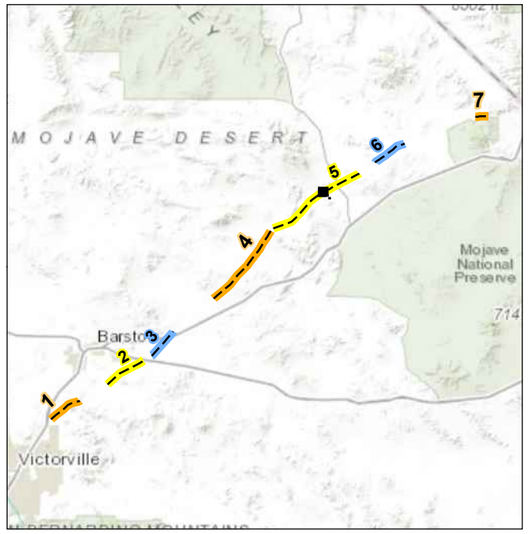

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5t

Path 46 Transmission Line Clearances Project

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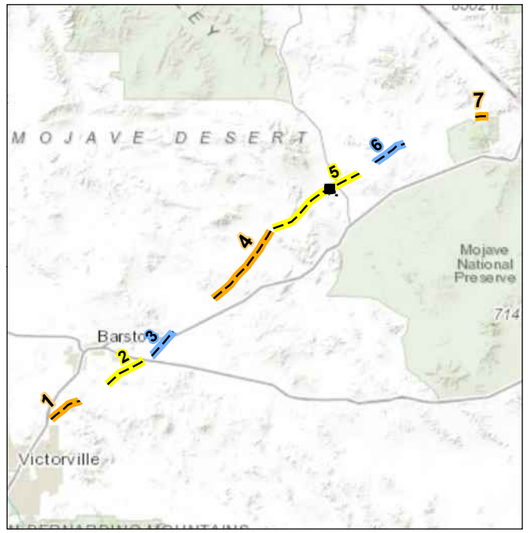

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5u

Path 46 Transmission Line Clearances Project

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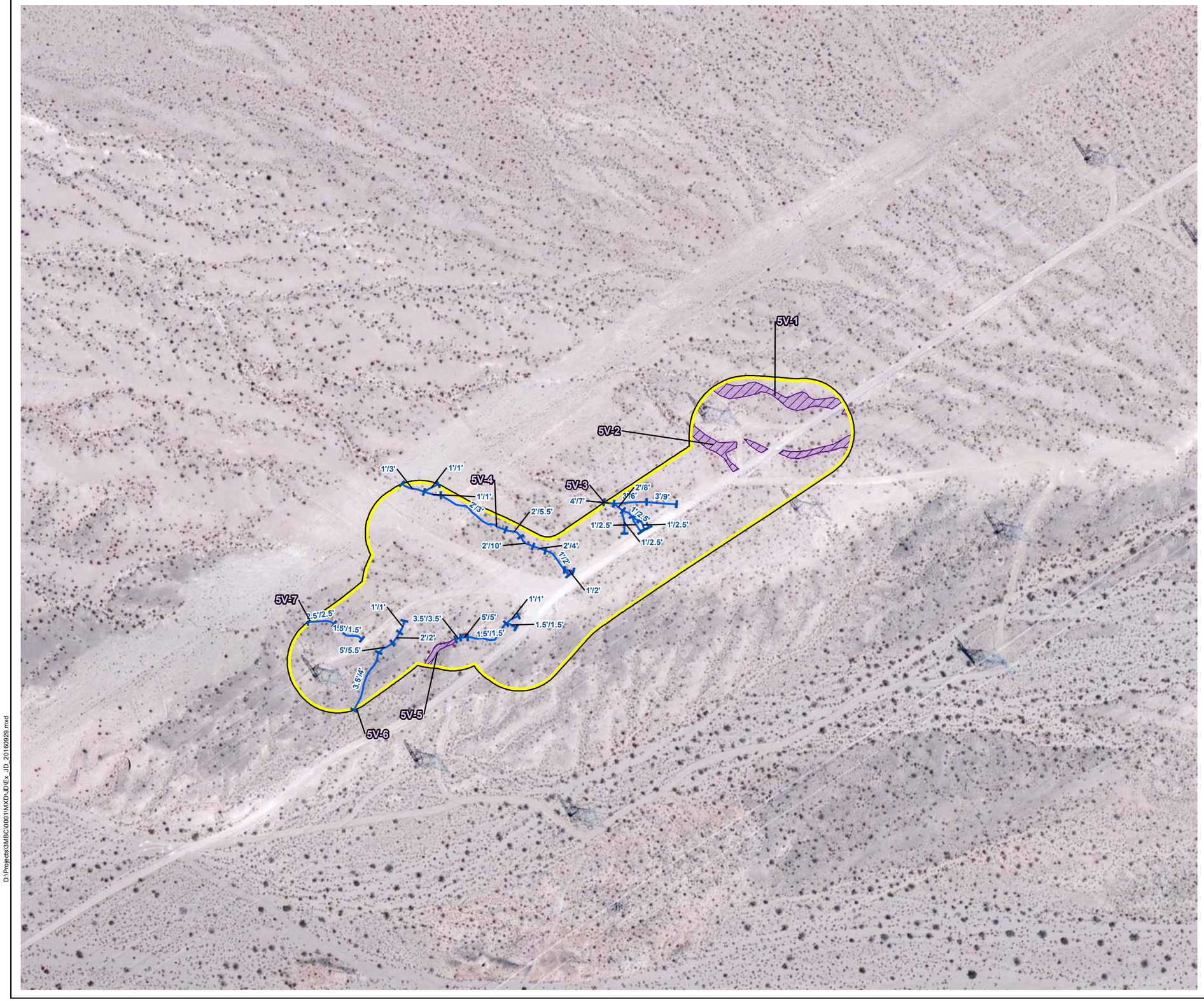

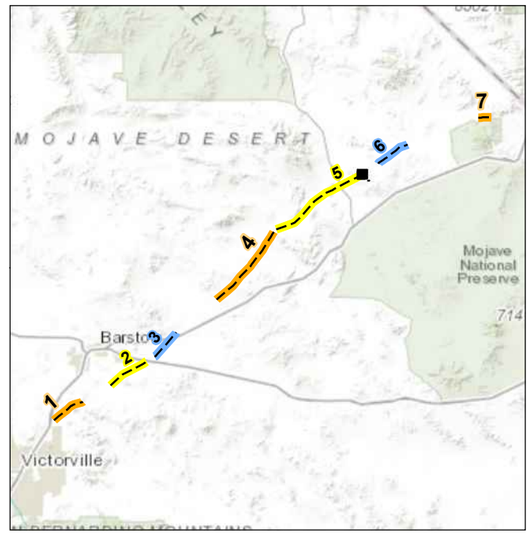

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 5v

Path 46 Transmission Line Clearances Project

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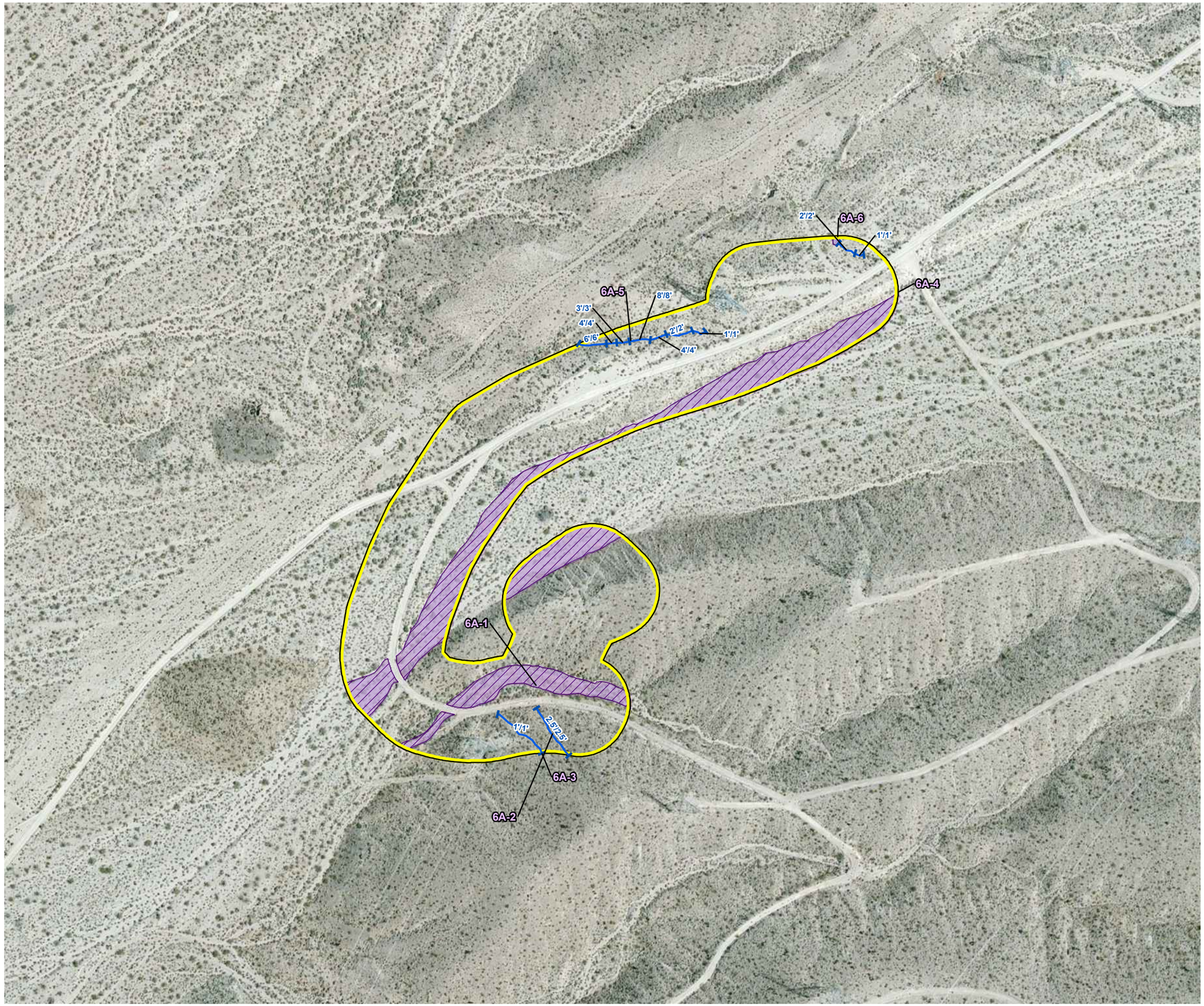

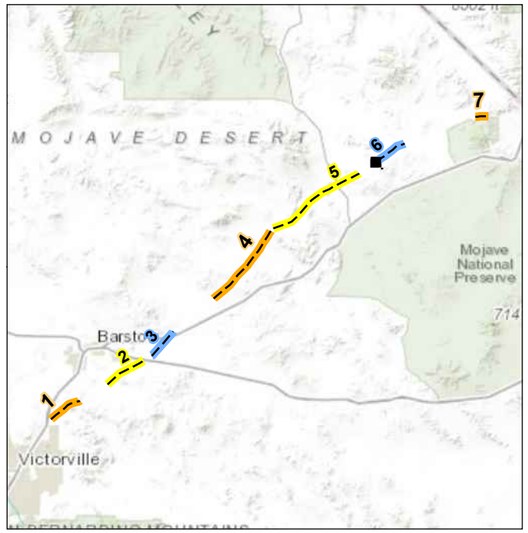

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 6a

Path 46 Transmission Line Clearances Project

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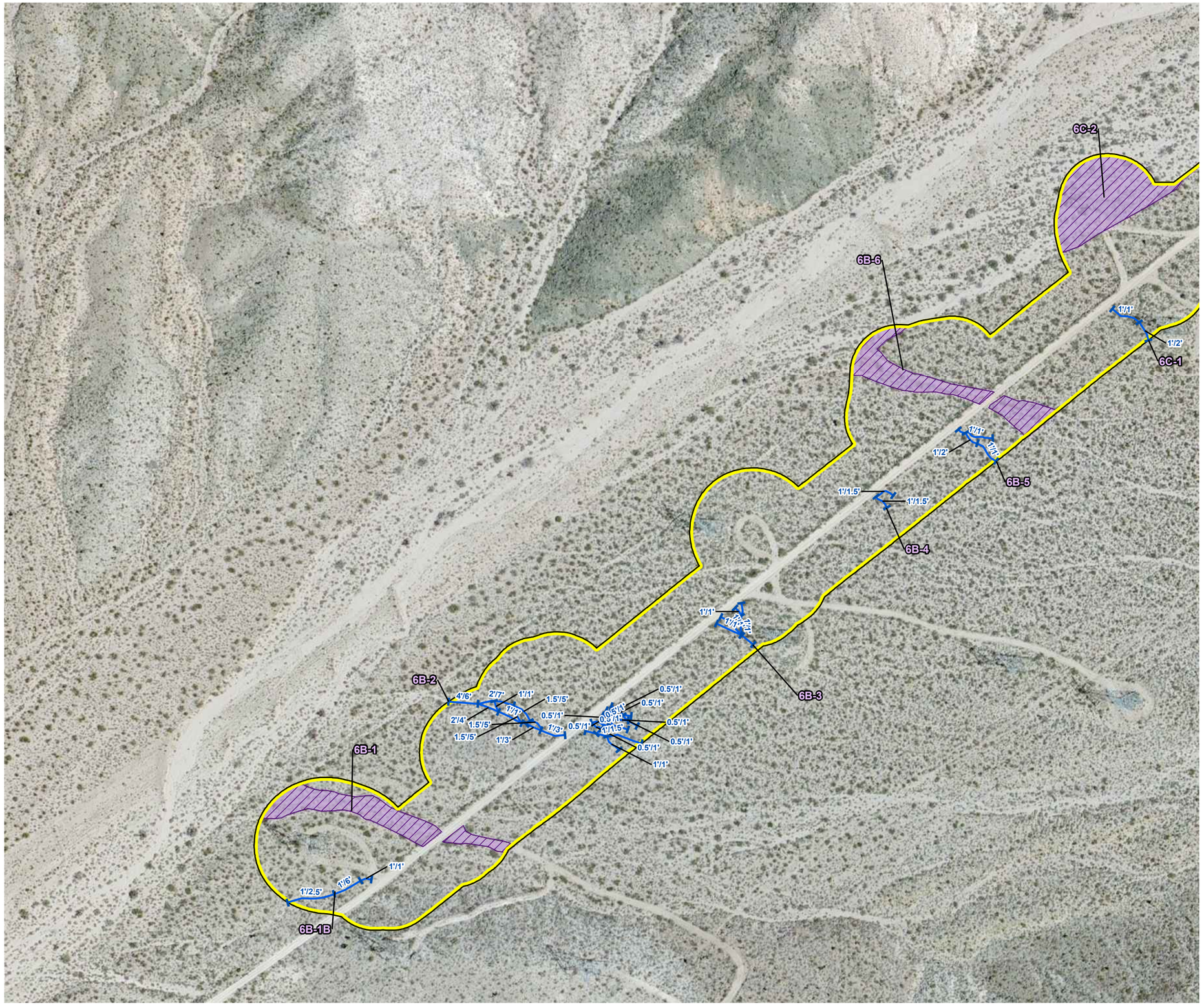

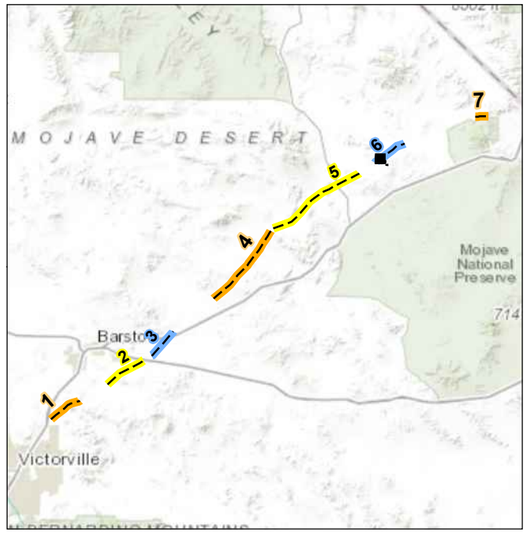

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N

W E

S

200 100 0 200

Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 6b

Path 46 Transmission Line Clearances Project

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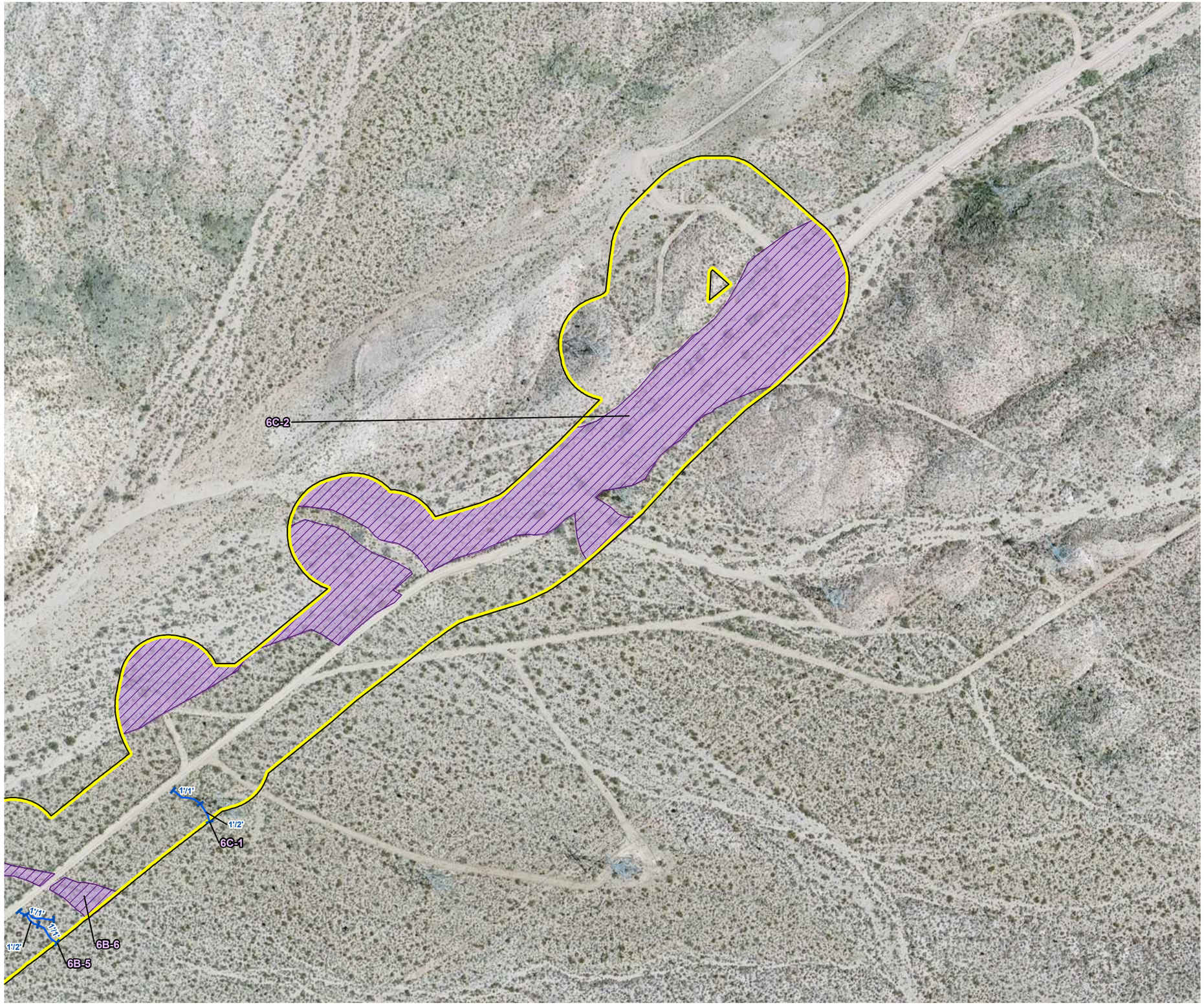

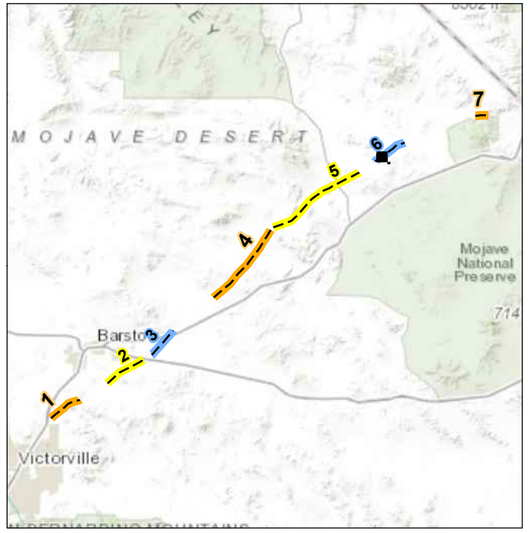

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 6c

Path 46 Transmission Line Clearances Project

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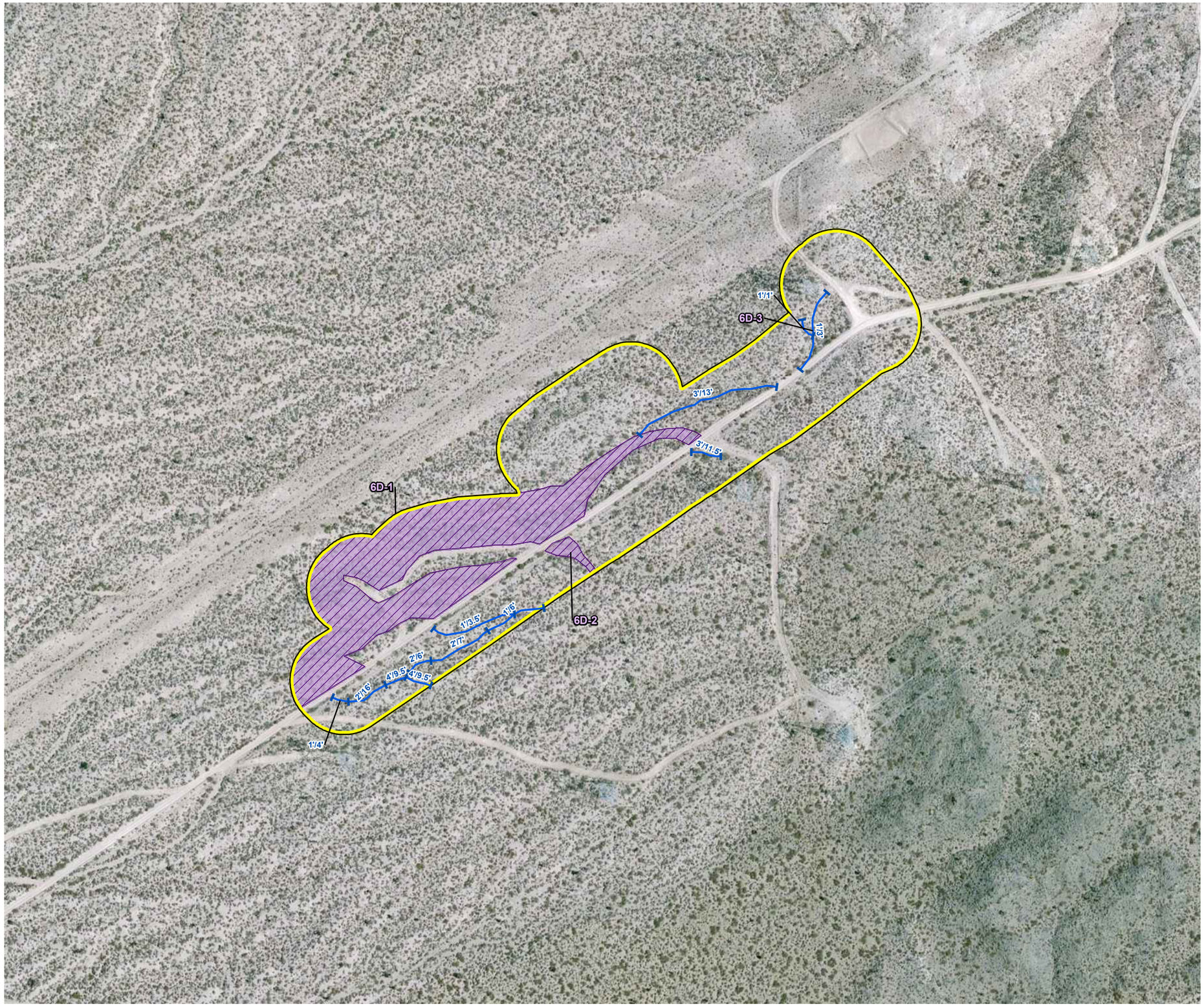

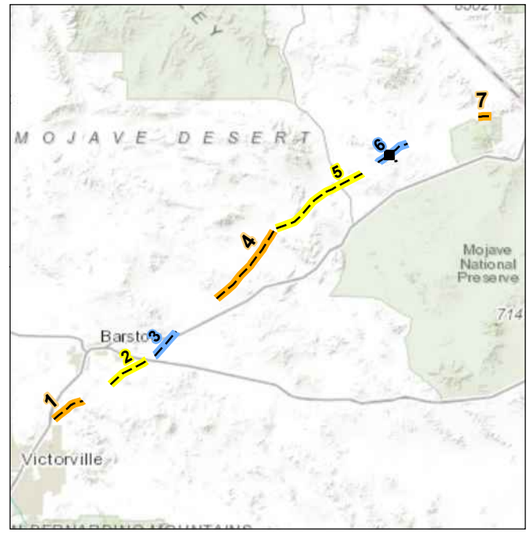

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 6d

Path 46 Transmission Line Clearances Project

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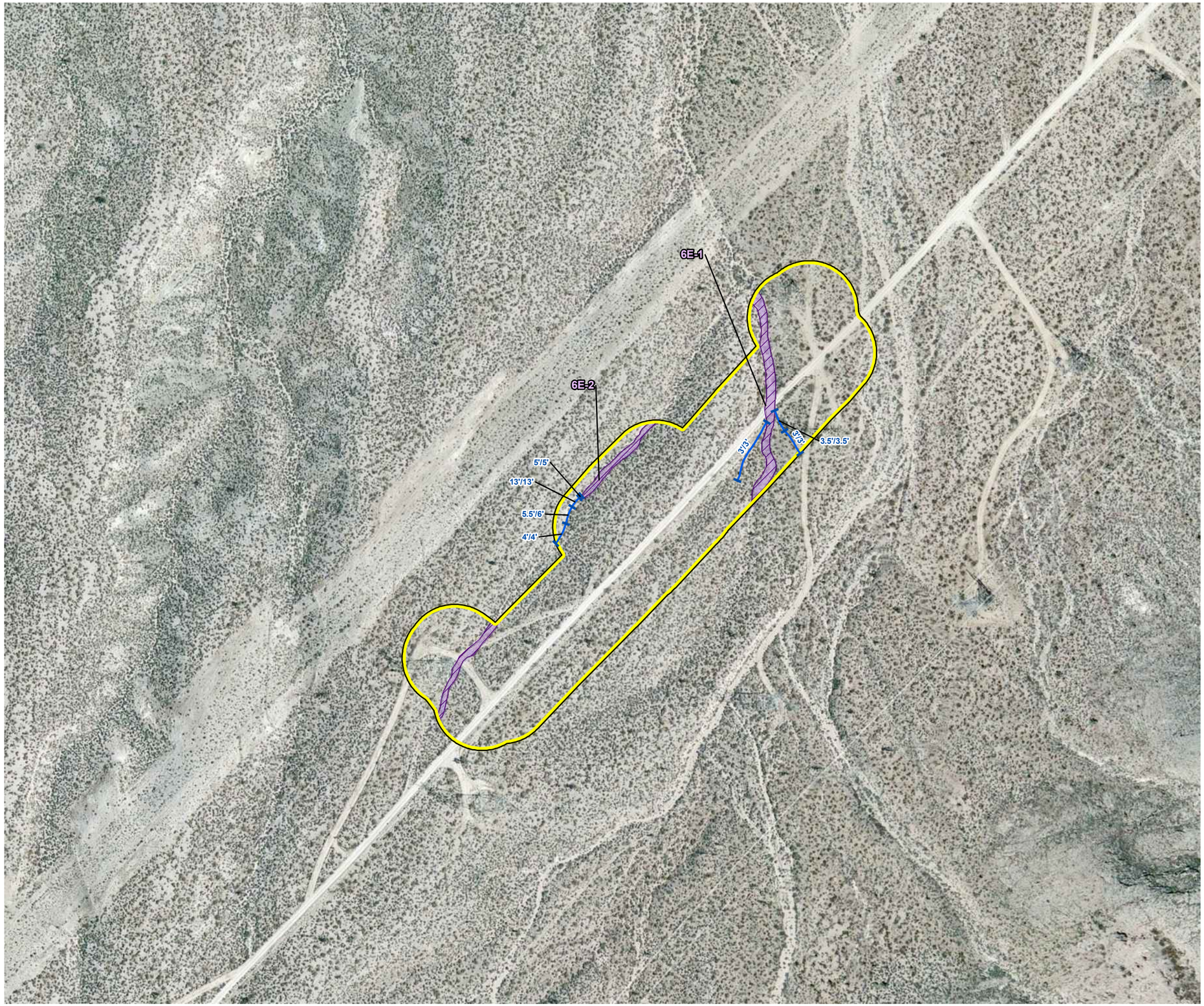

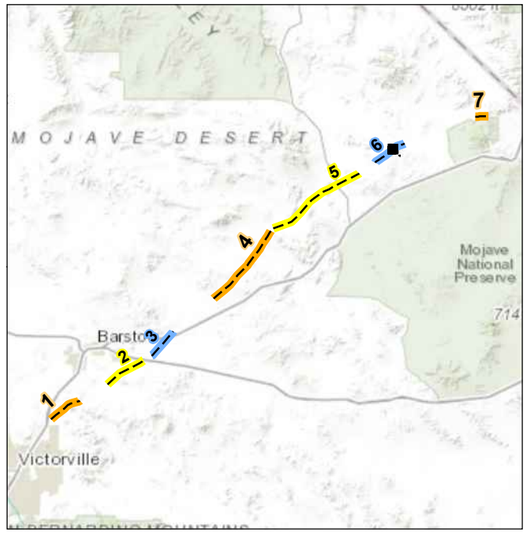

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 6e

Path 46 Transmission Line Clearances Project

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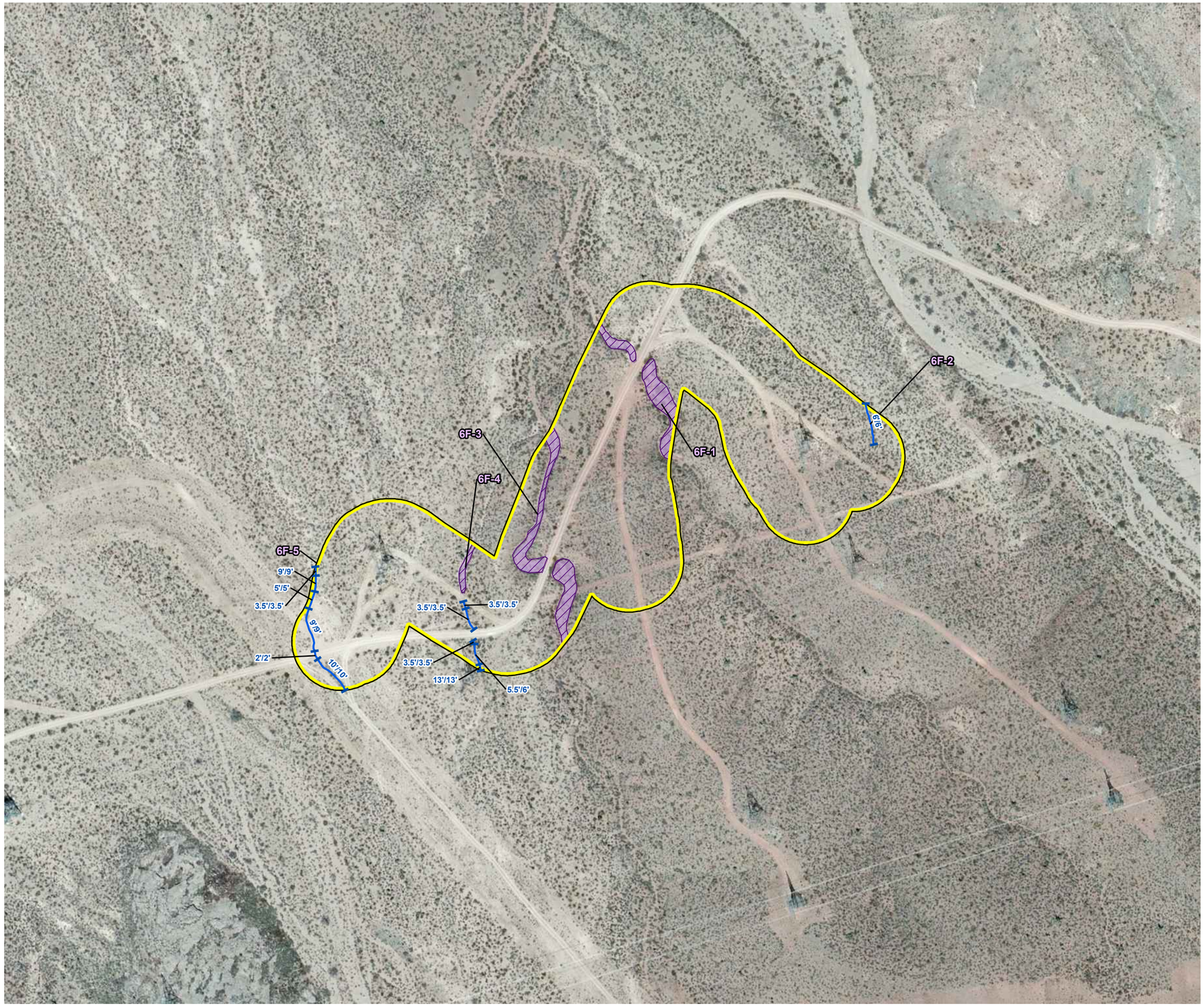

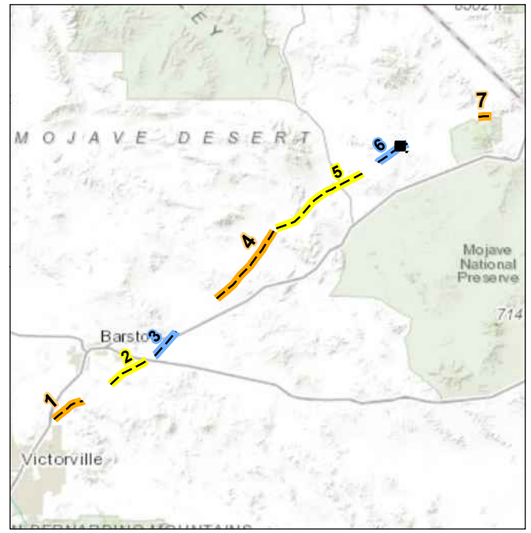

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 6f

Path 46 Transmission Line Clearances Project

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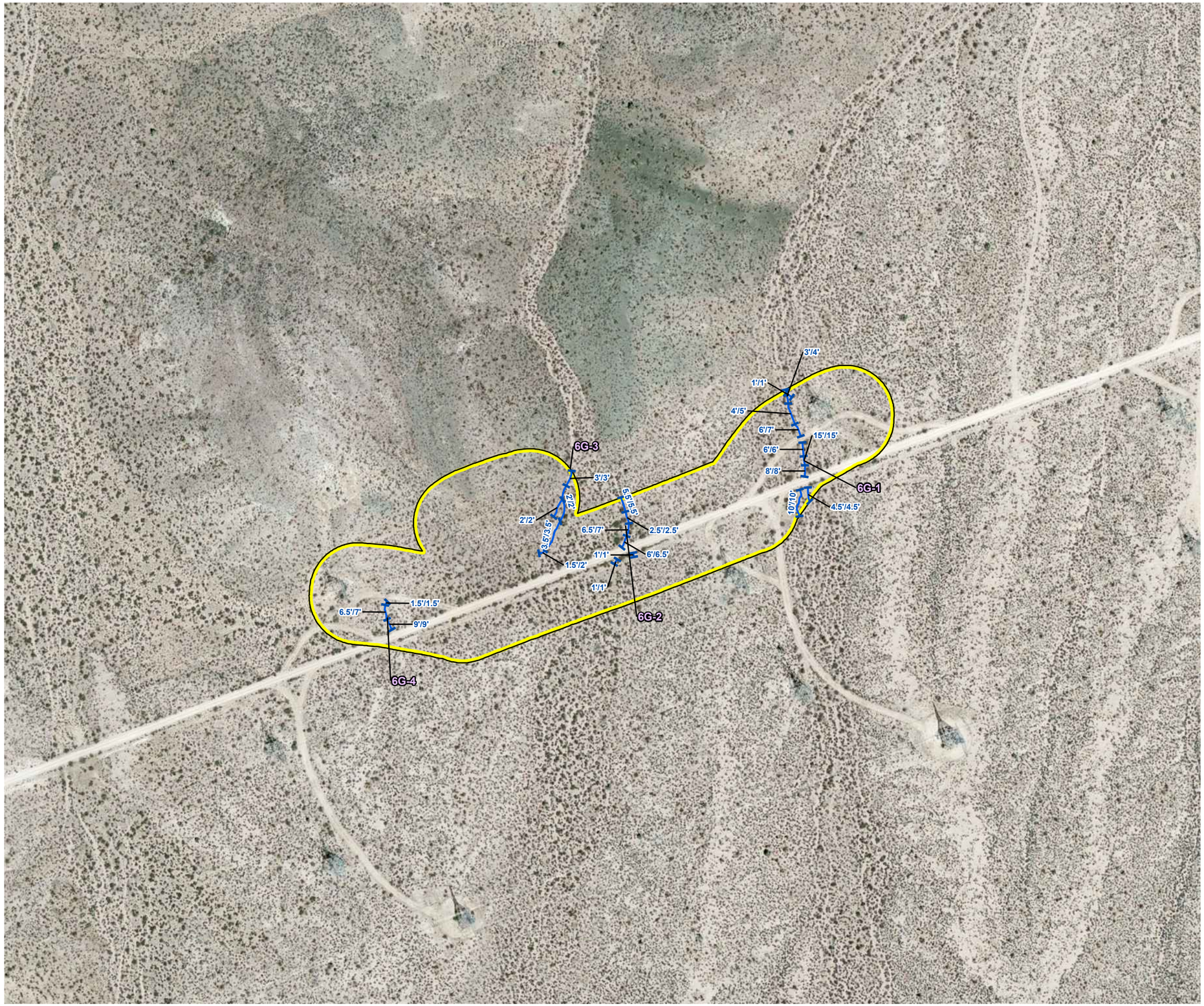

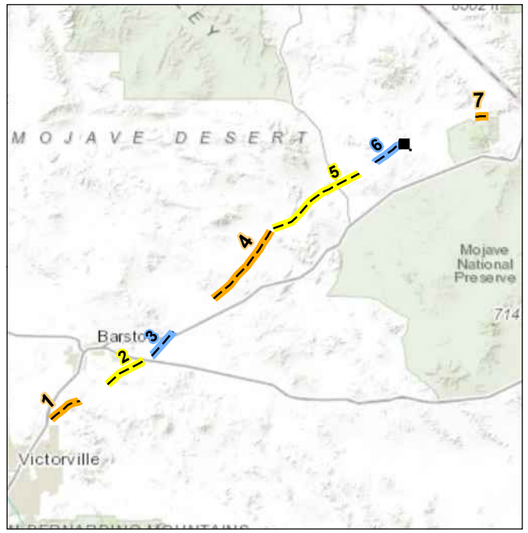

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 6g

Path 46 Transmission Line Clearances Project

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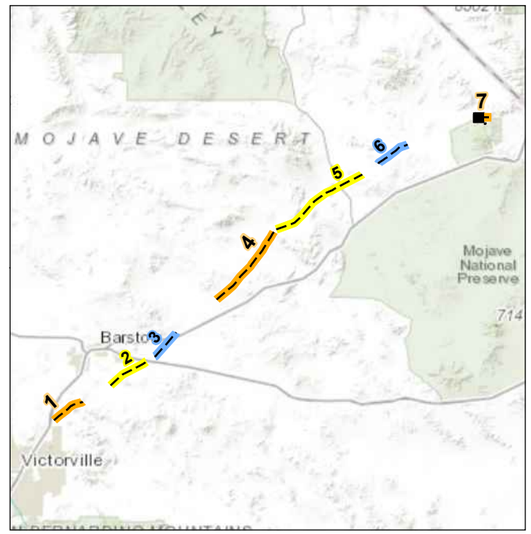

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 7a

Path 46 Transmission Line Clearances Project

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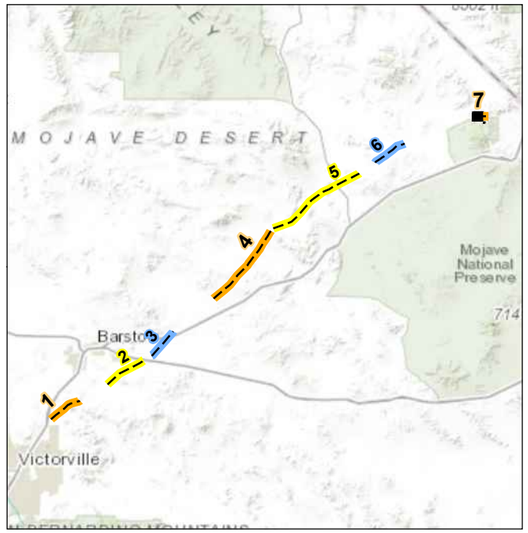

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 7b

Path 46 Transmission Line Clearances Project

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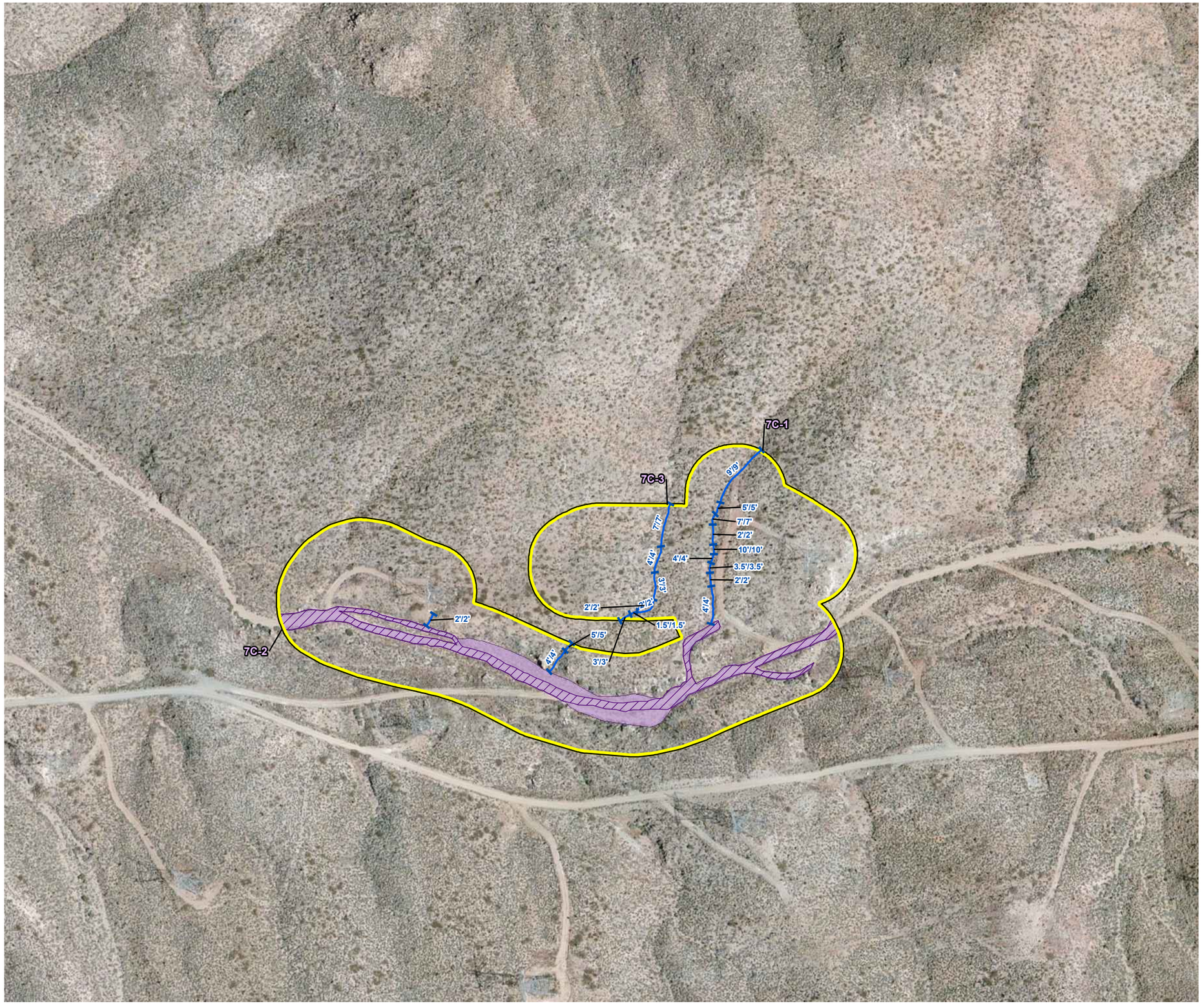

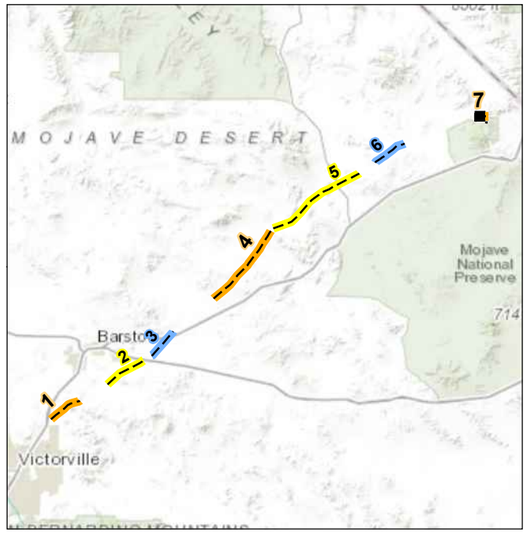

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 7c

Path 46 Transmission Line Clearances Project

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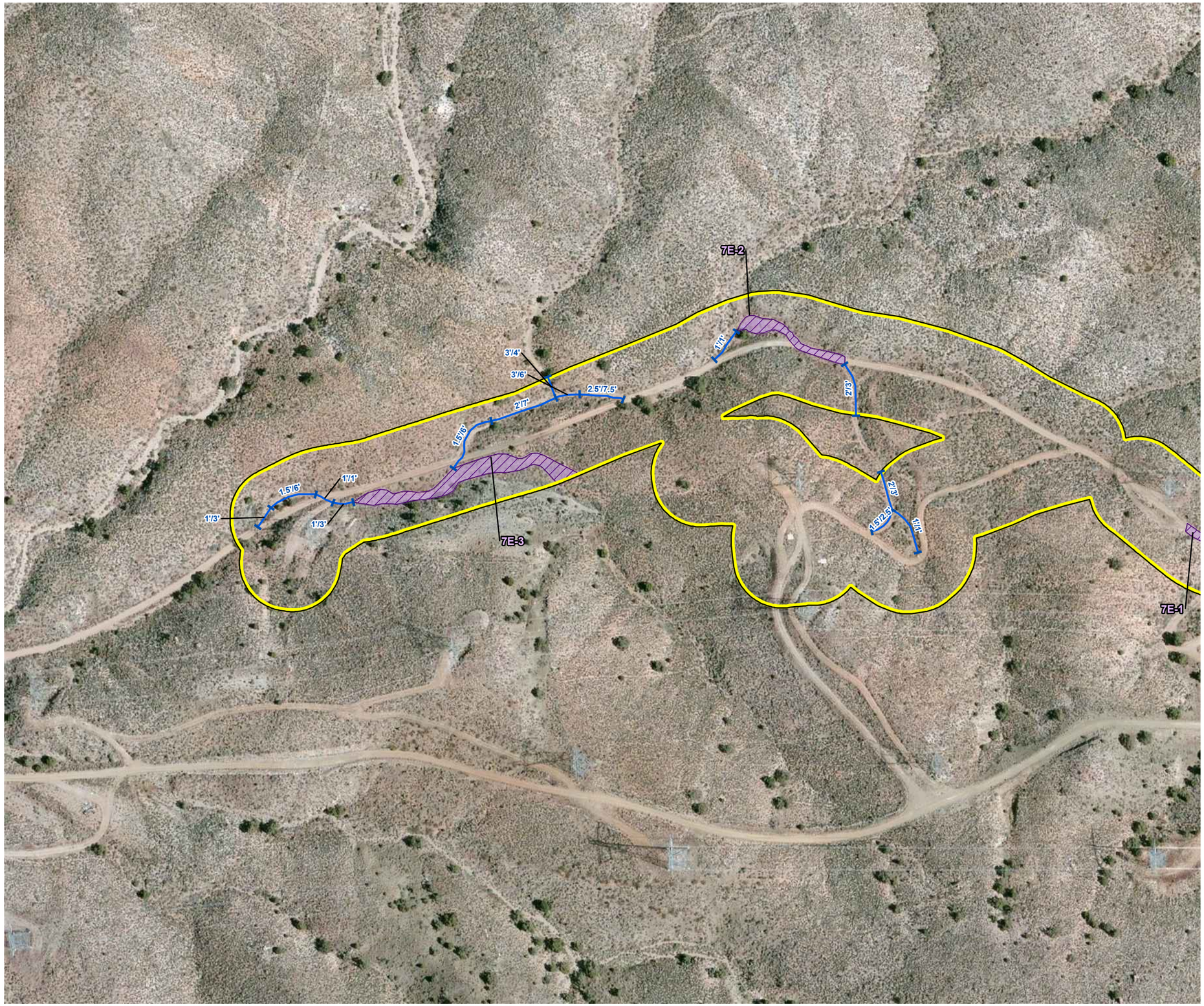

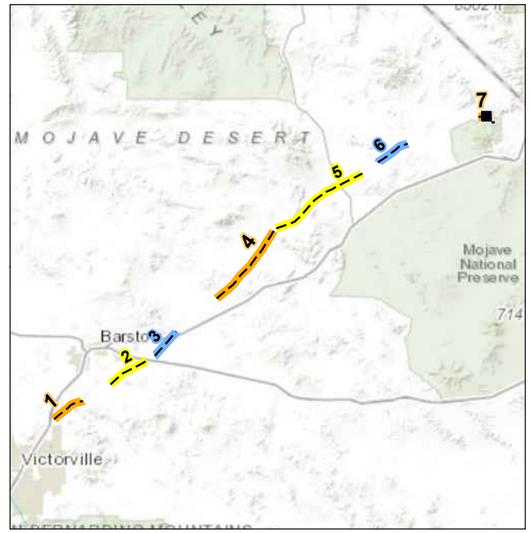

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 7d

Path 46 Transmission Line Clearances Project

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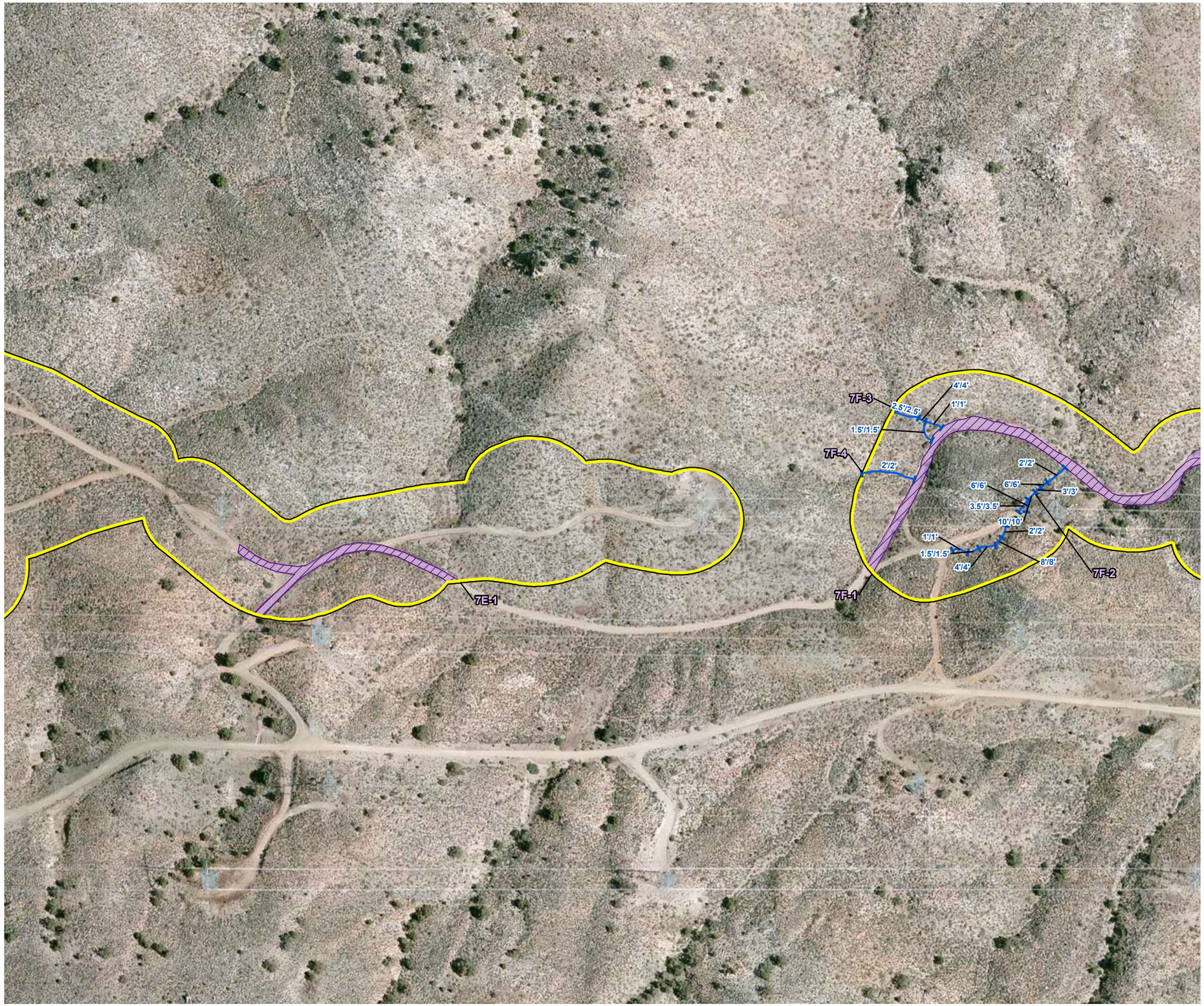

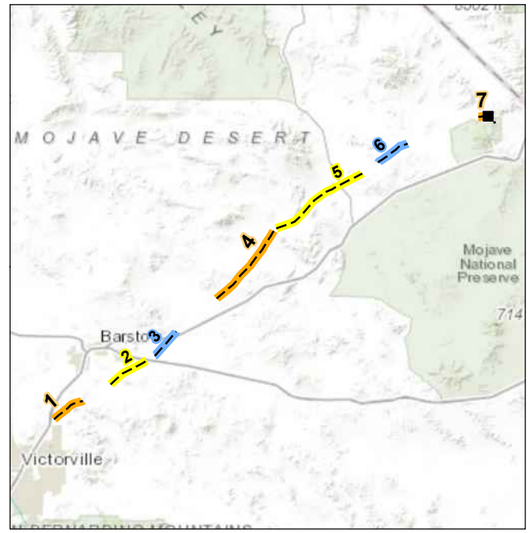

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 7e

Path 46 Transmission Line Clearances Project

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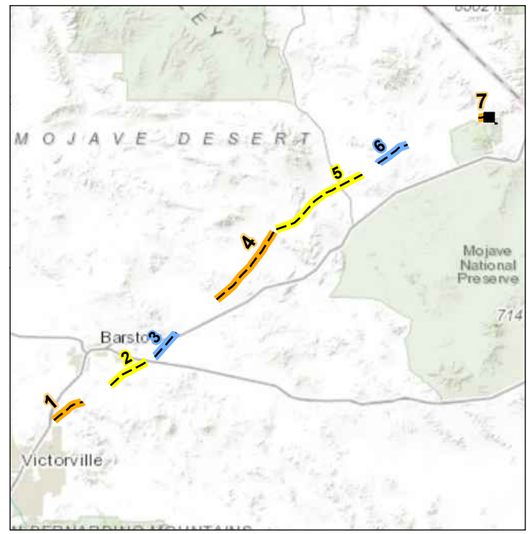

Survey Area

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 7f

Path 46 Transmission Line Clearances Project

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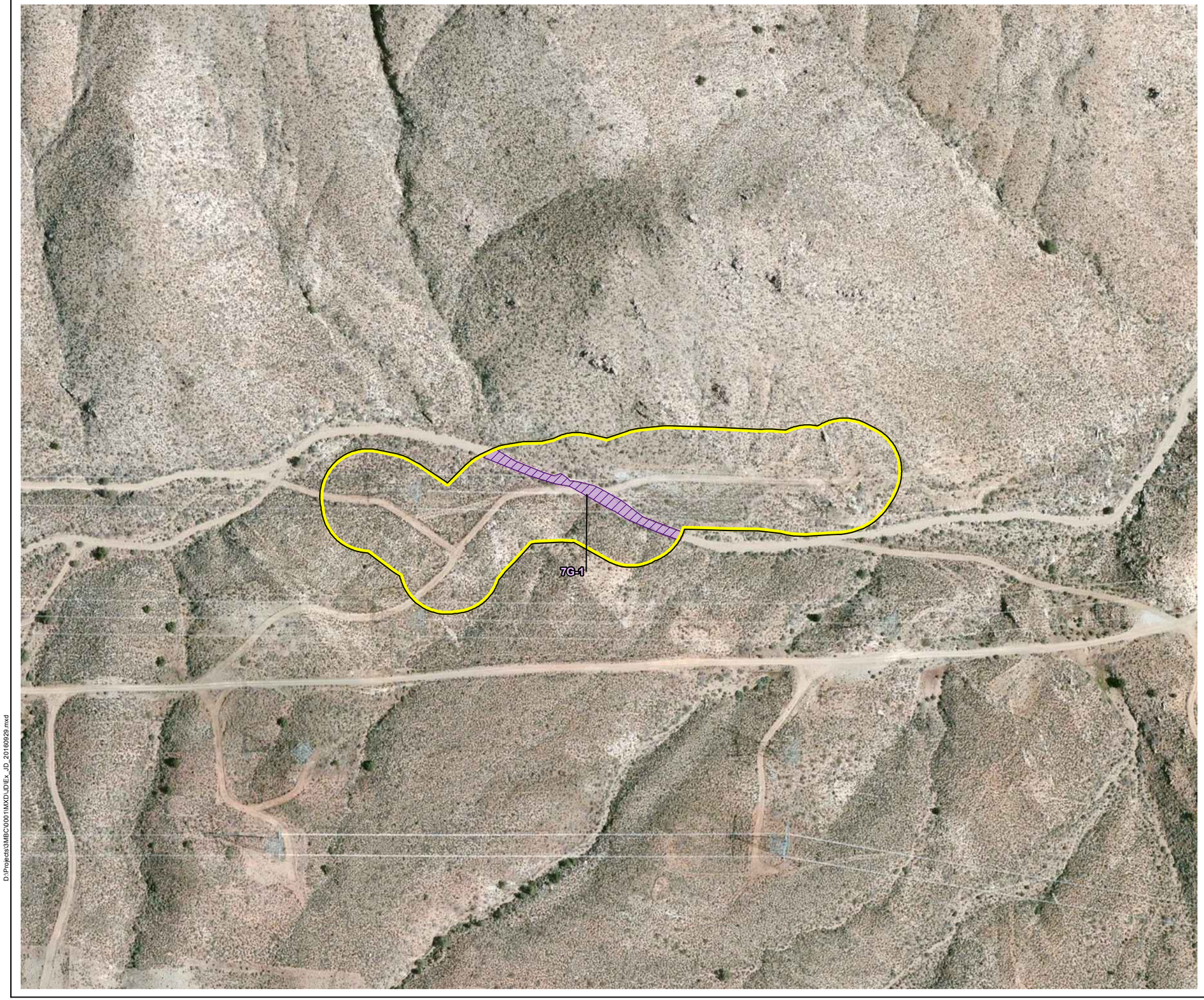

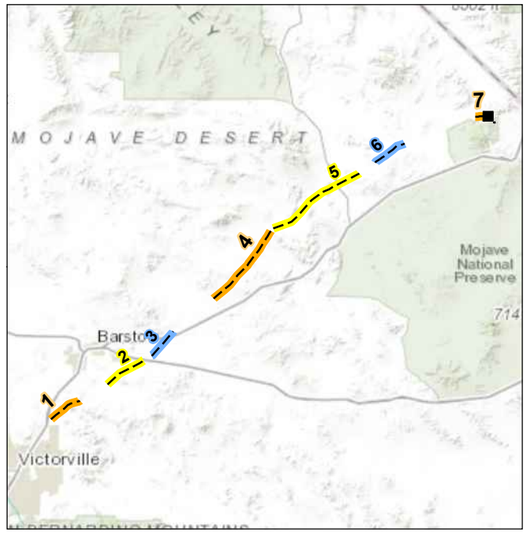

Survey Area

Jurisdictional Resources

Centerline (OHWM/TOB width – feet)

Ordinary High Water Mark (OHWM) Extent

Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 6
Jurisdictional Resources
Segment 7g

Path 46 Transmission Line Clearances Project

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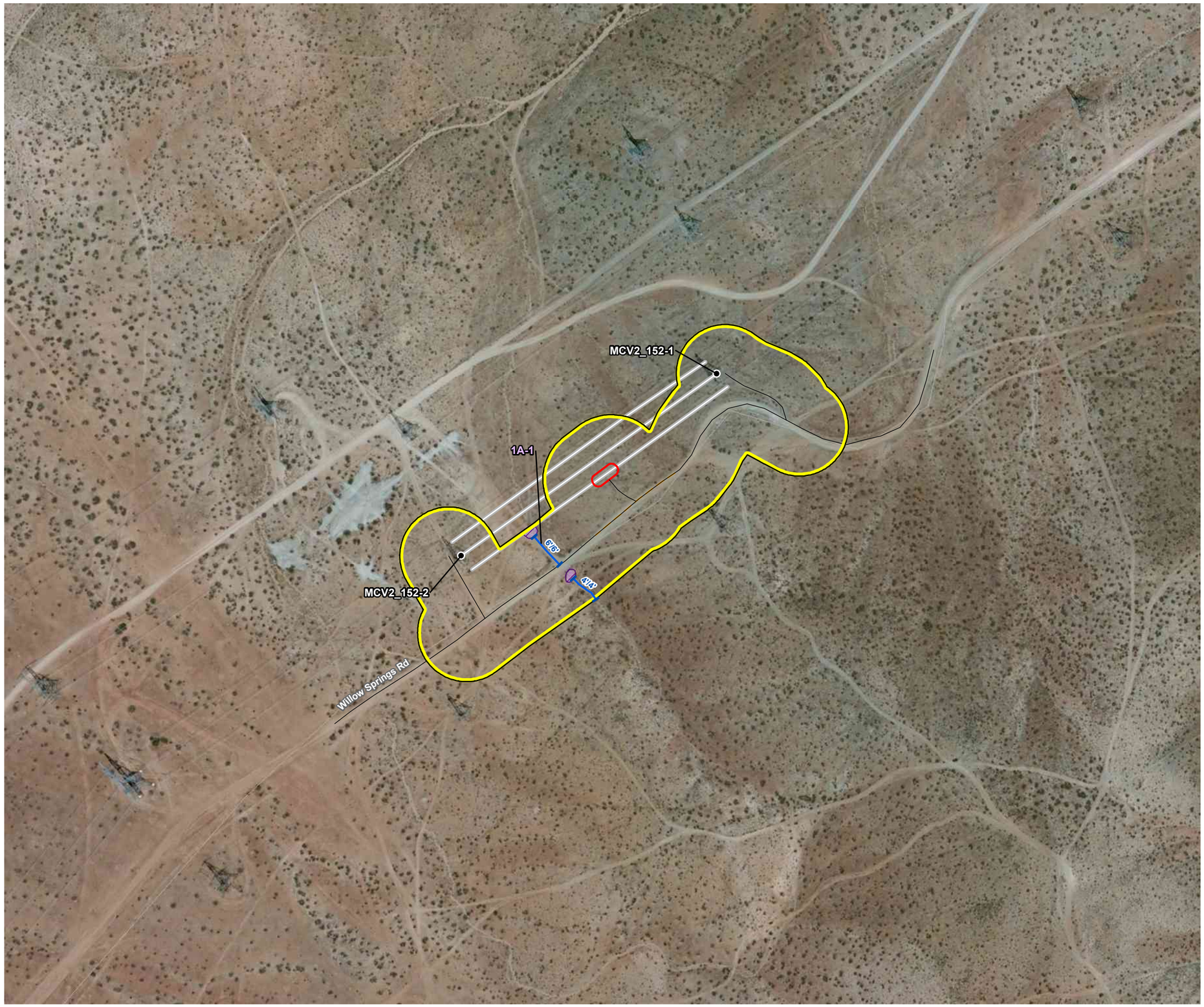

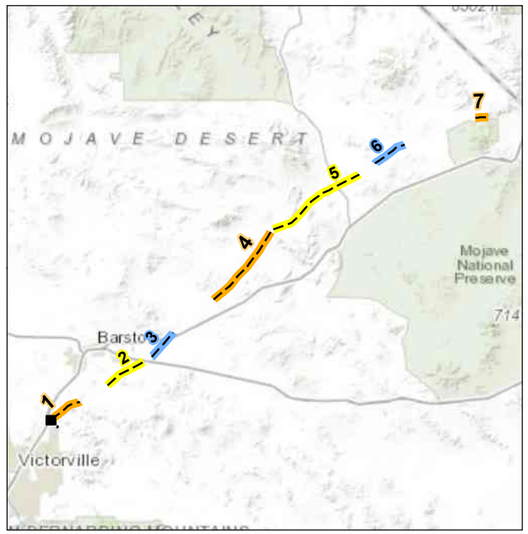

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 1a

Path 46 Transmission Line Clearances Project

(Rev: 01/12/2017 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex7_Impacts_20160929.pdf

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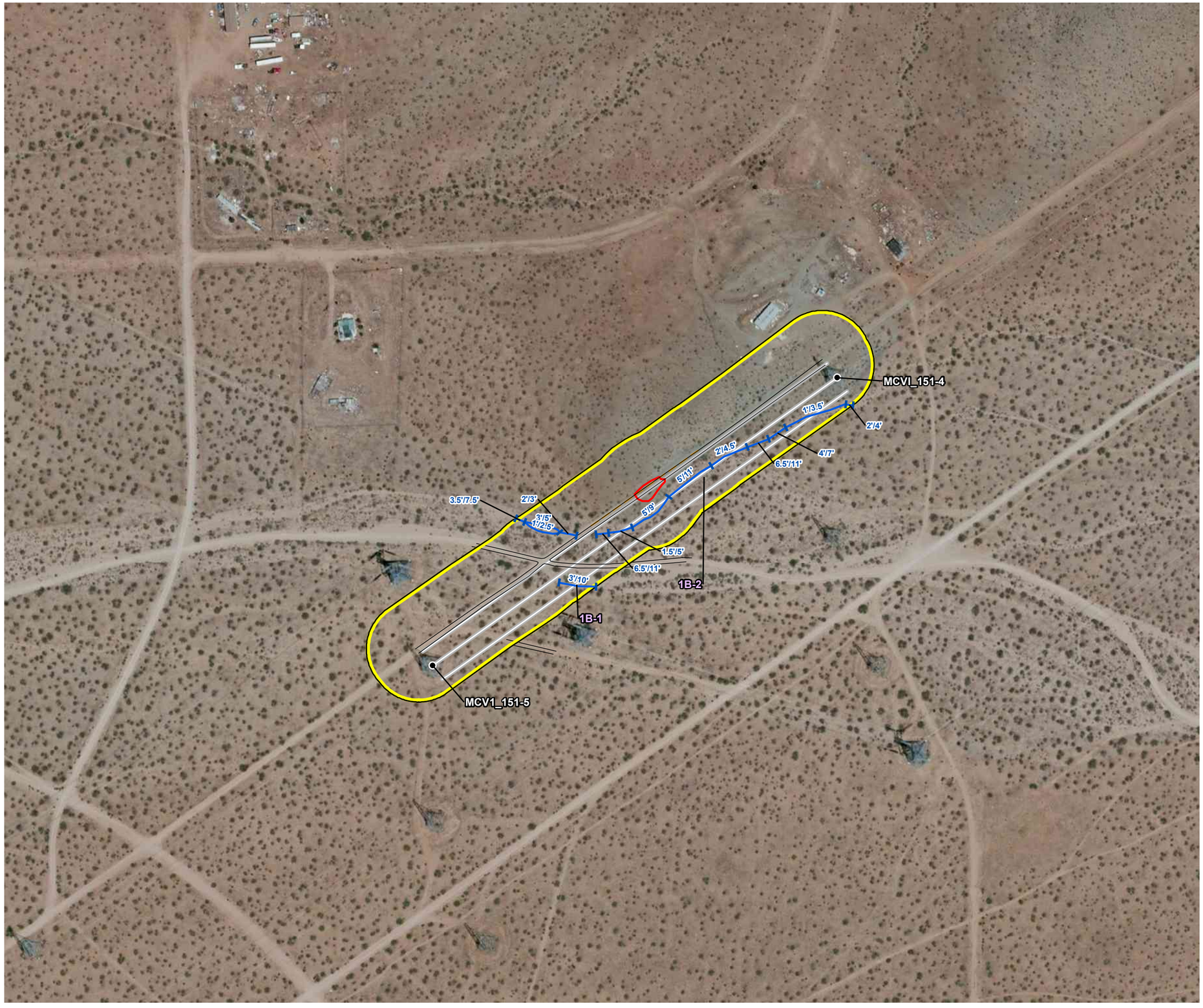

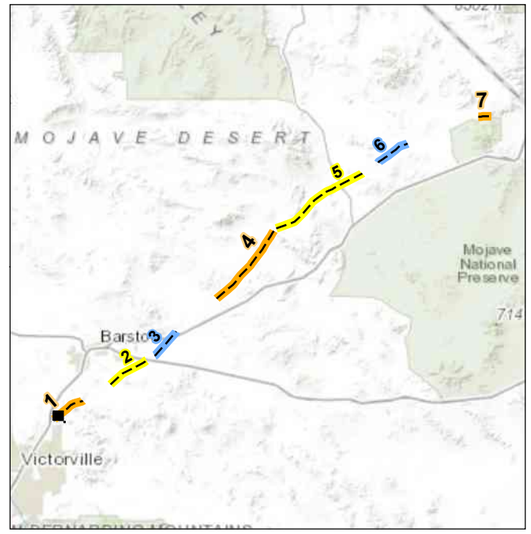

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 1b

Path 46 Transmission Line Clearances Project

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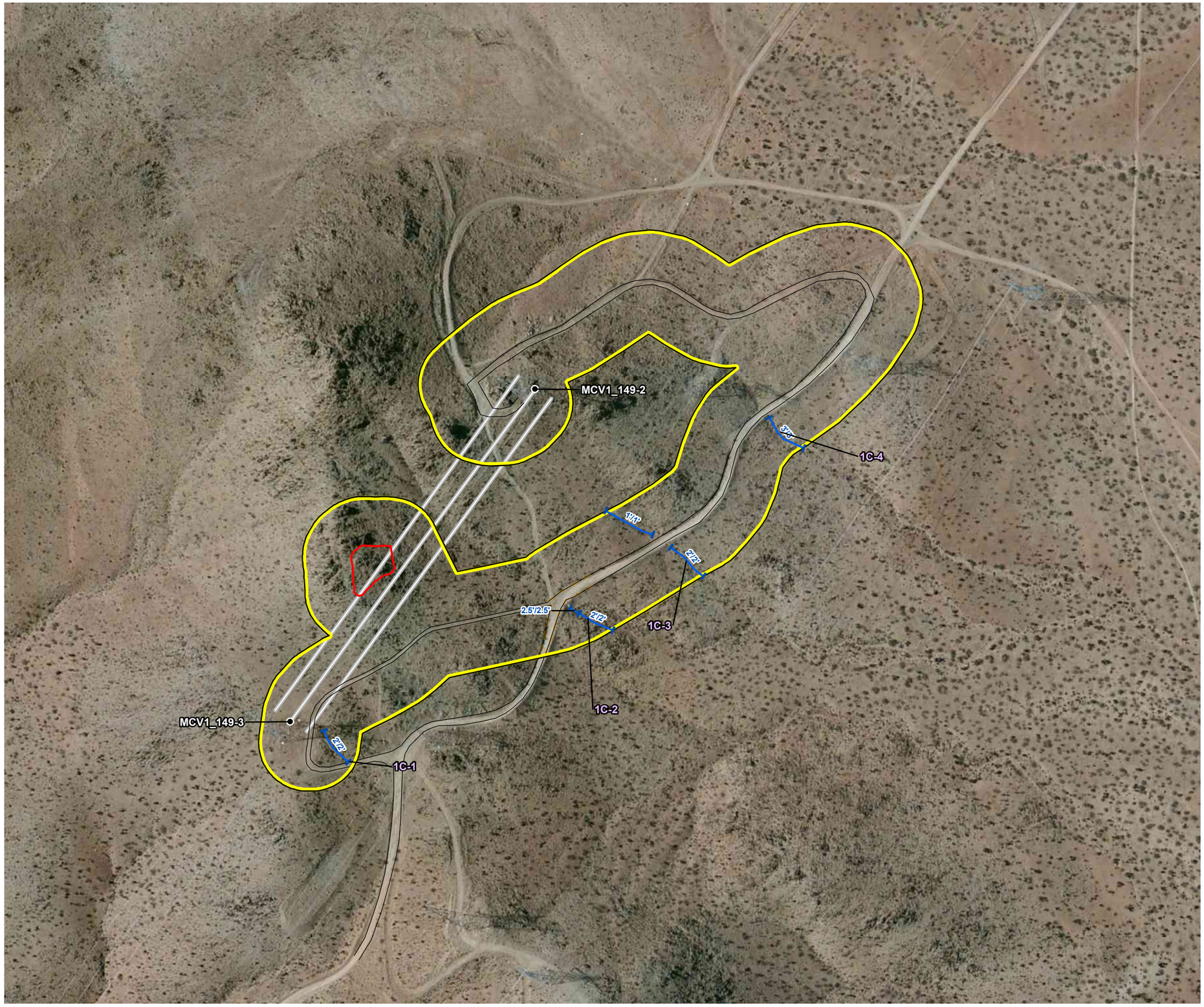

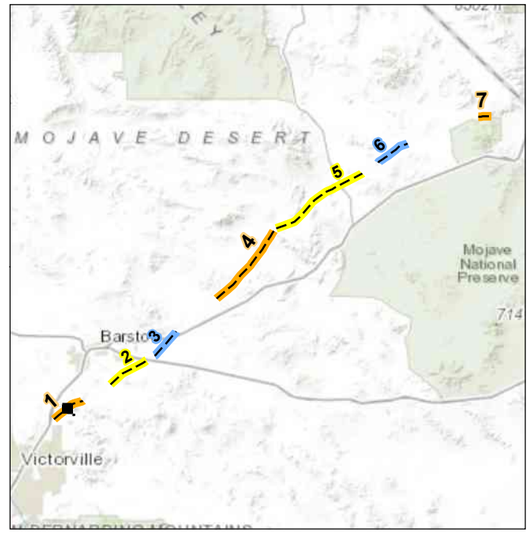

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 1c

Path 46 Transmission Line Clearances Project

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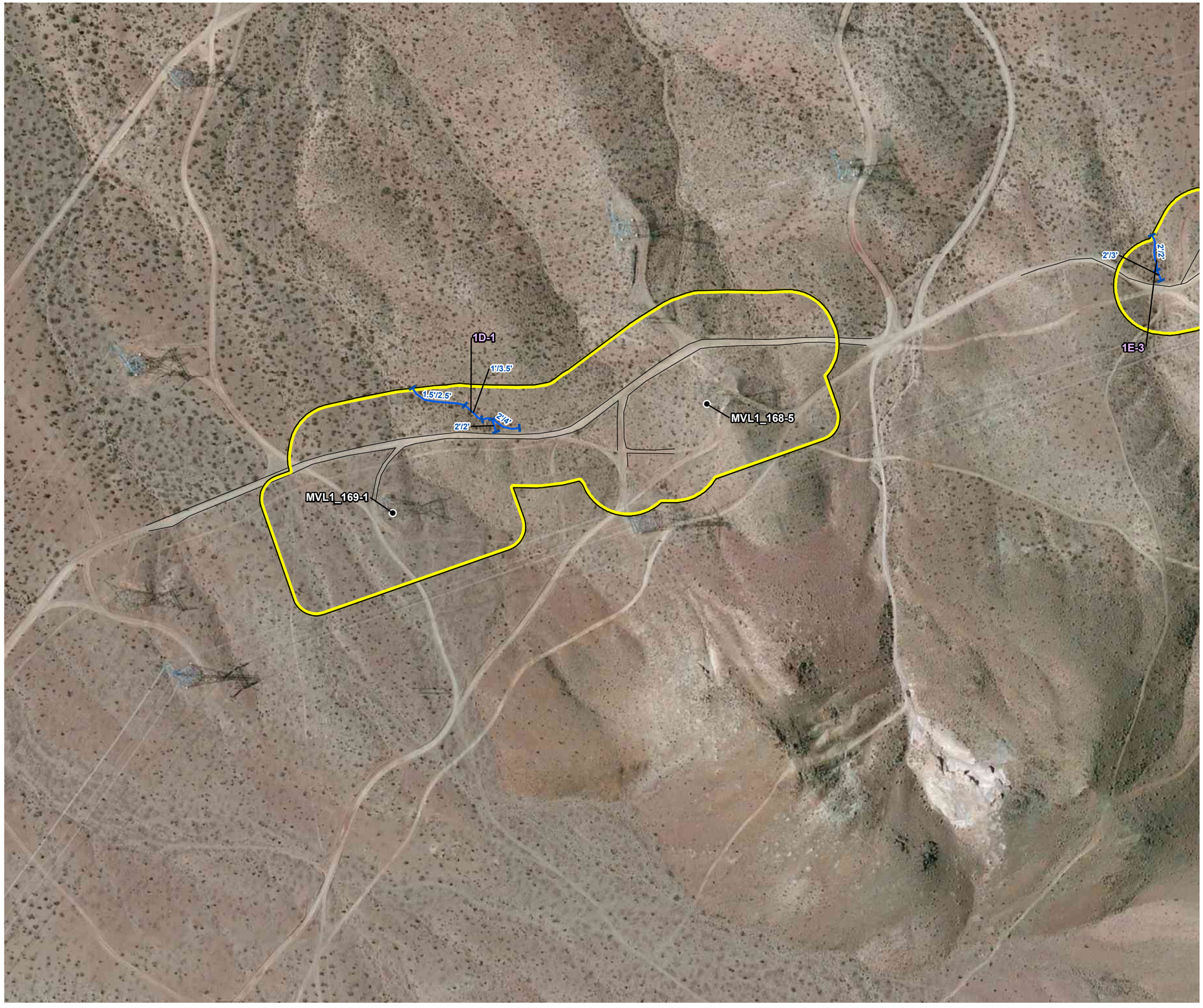

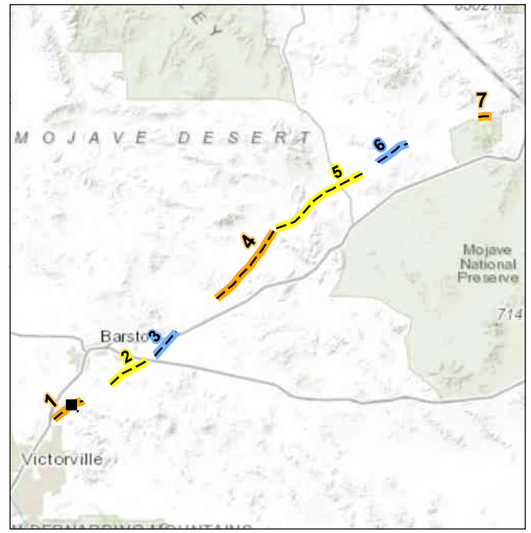

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 1d

Path 46 Transmission Line Clearances Project

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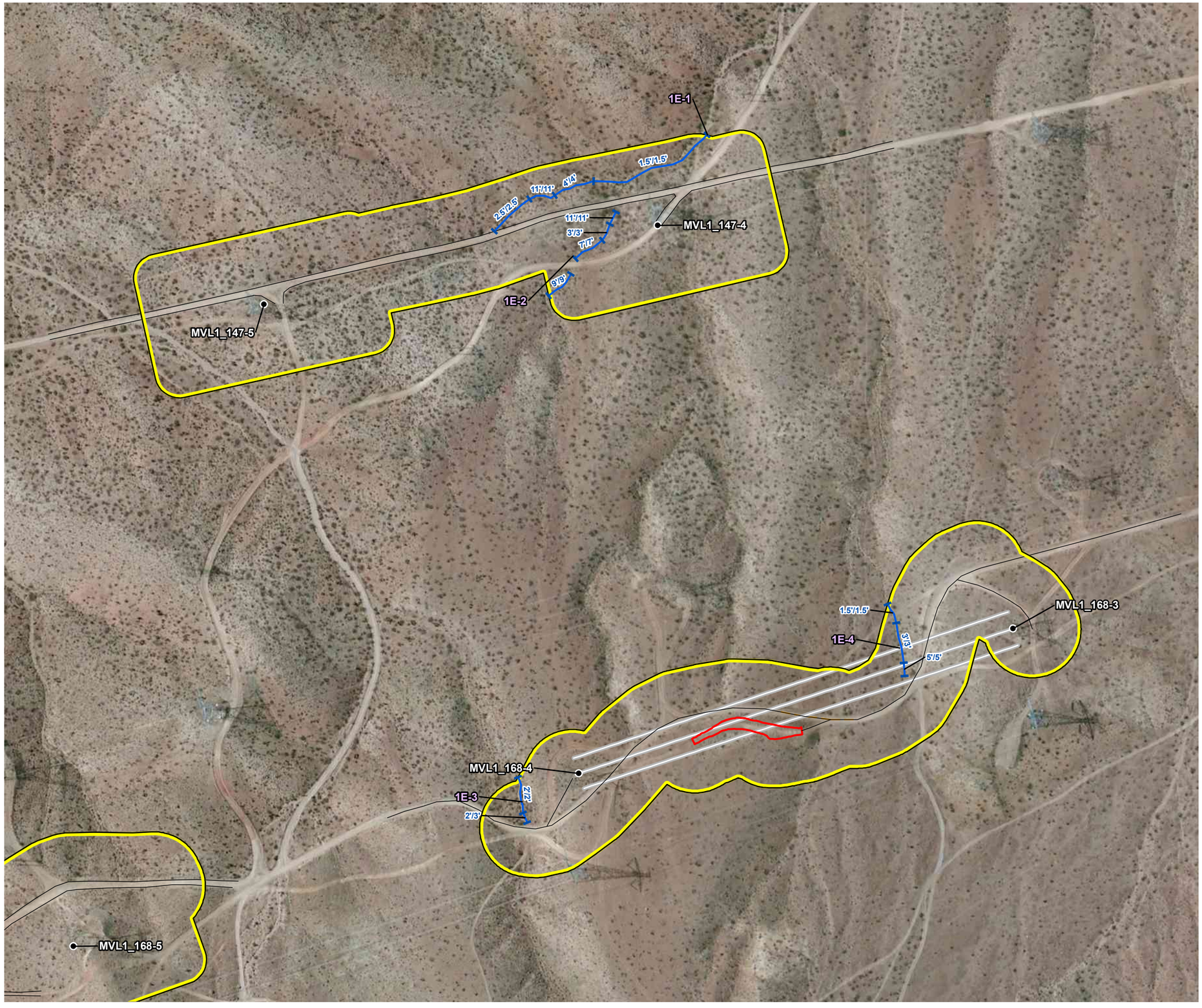

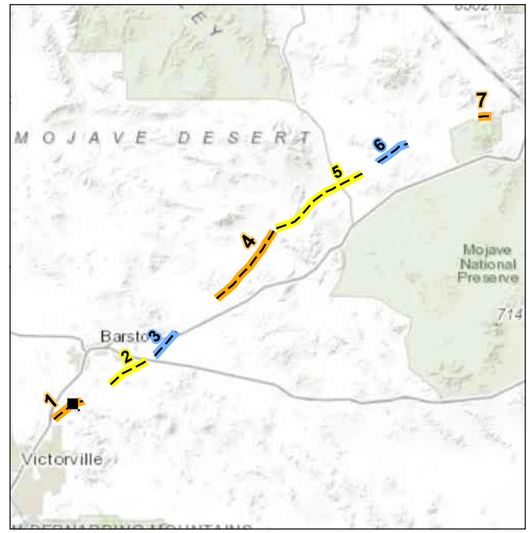

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 1e

Path 46 Transmission Line Clearances Project

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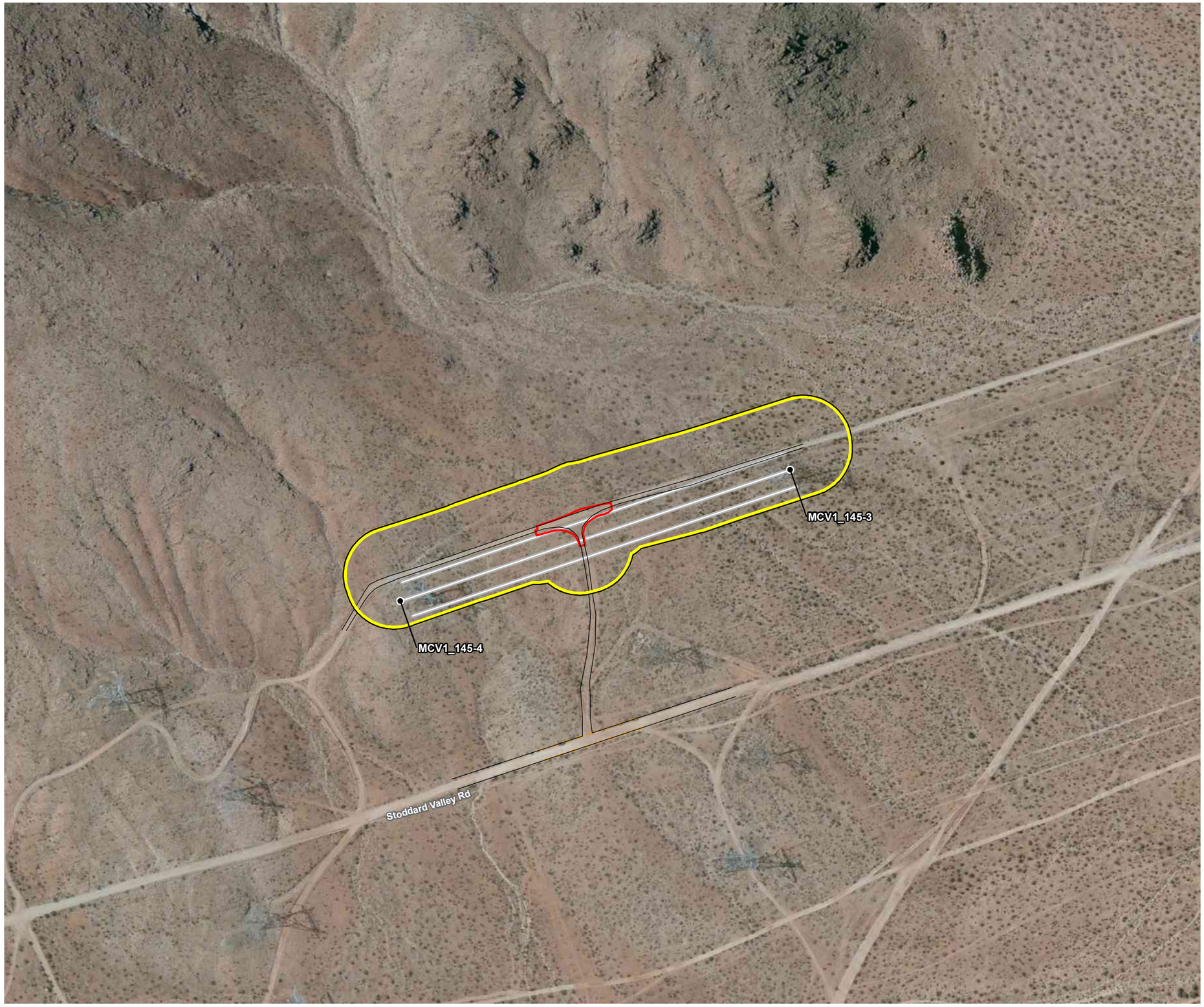

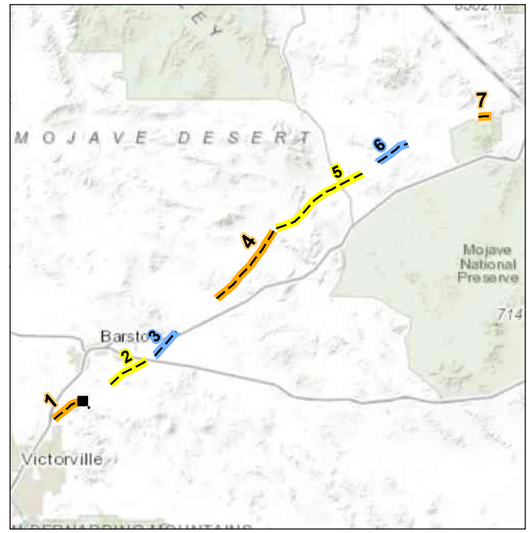

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 1f

Path 46 Transmission Line Clearances Project

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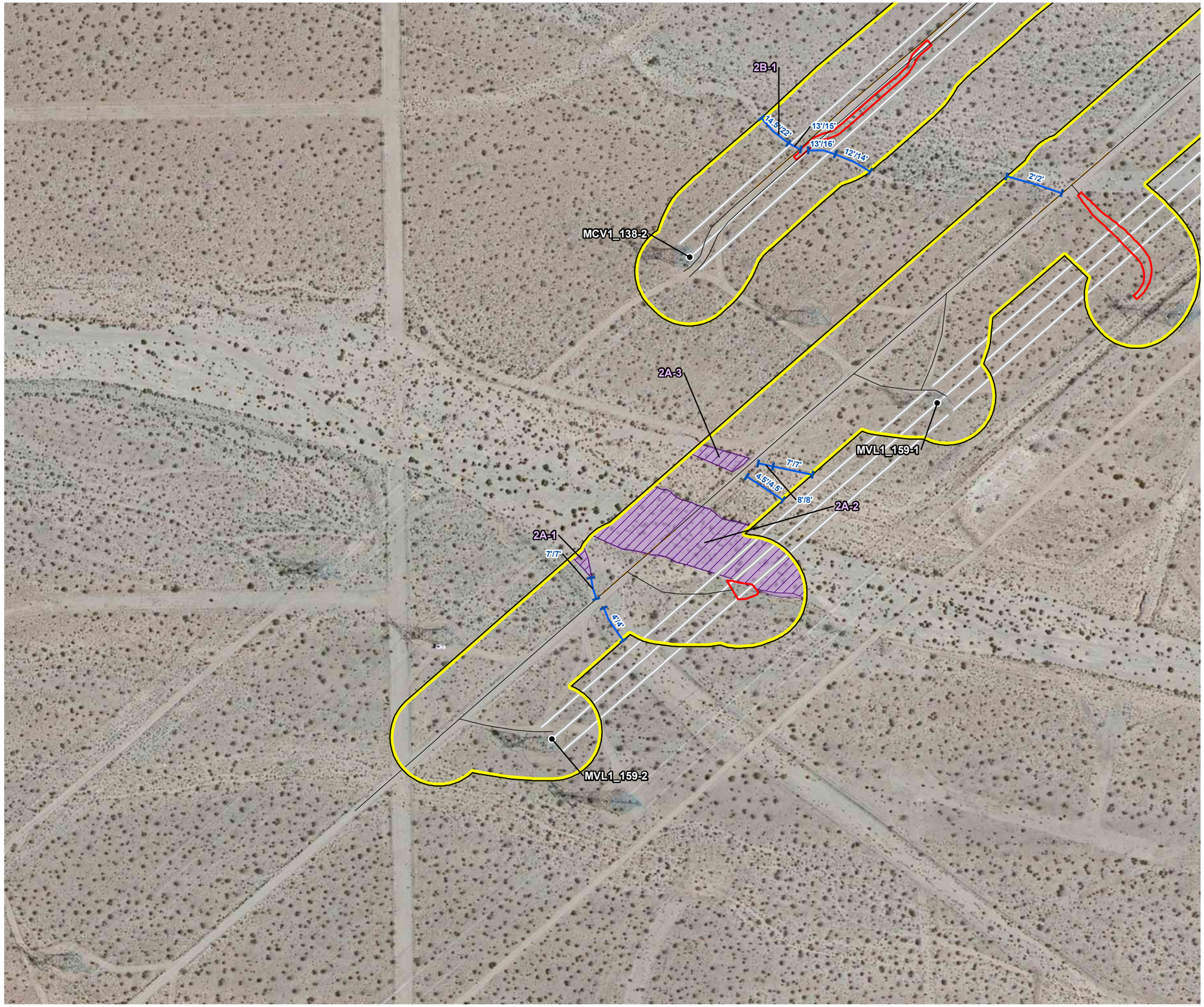

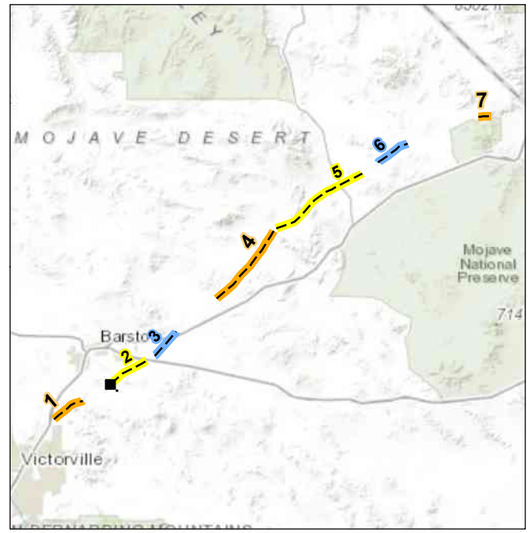

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 2a

Path 46 Transmission Line Clearances Project

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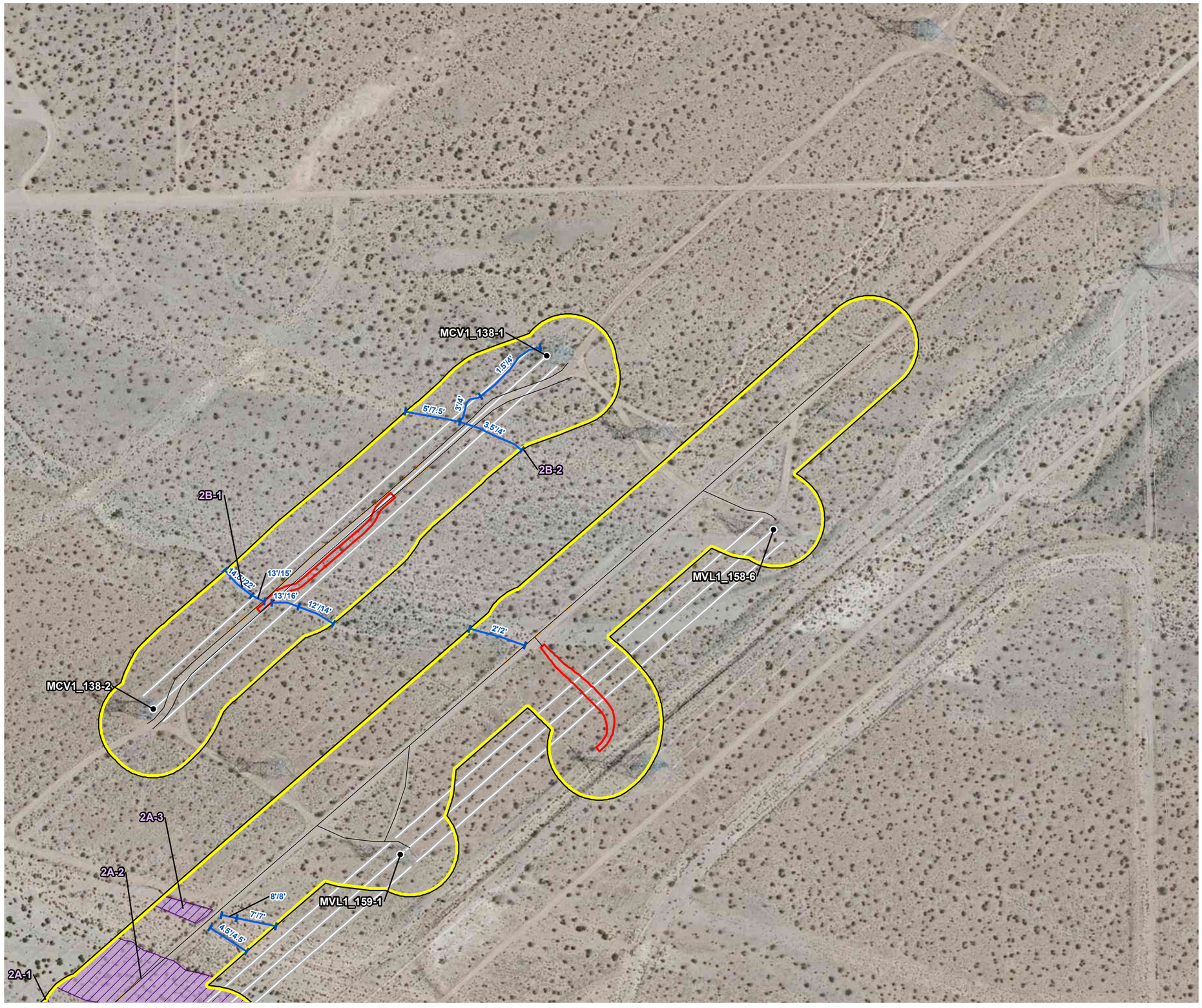

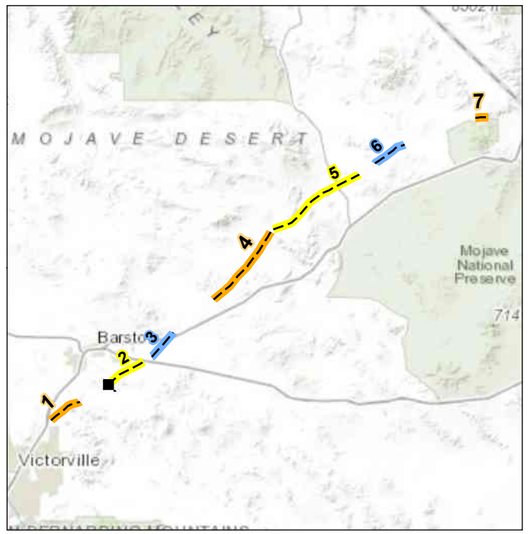

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 2b

Path 46 Transmission Line Clearances Project

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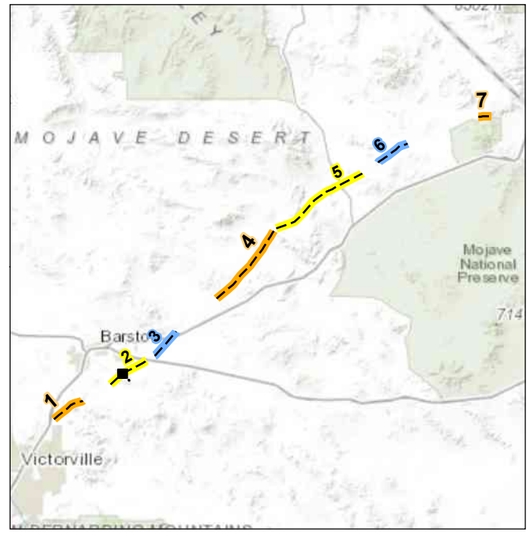

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 2c

Path 46 Transmission Line Clearances Project

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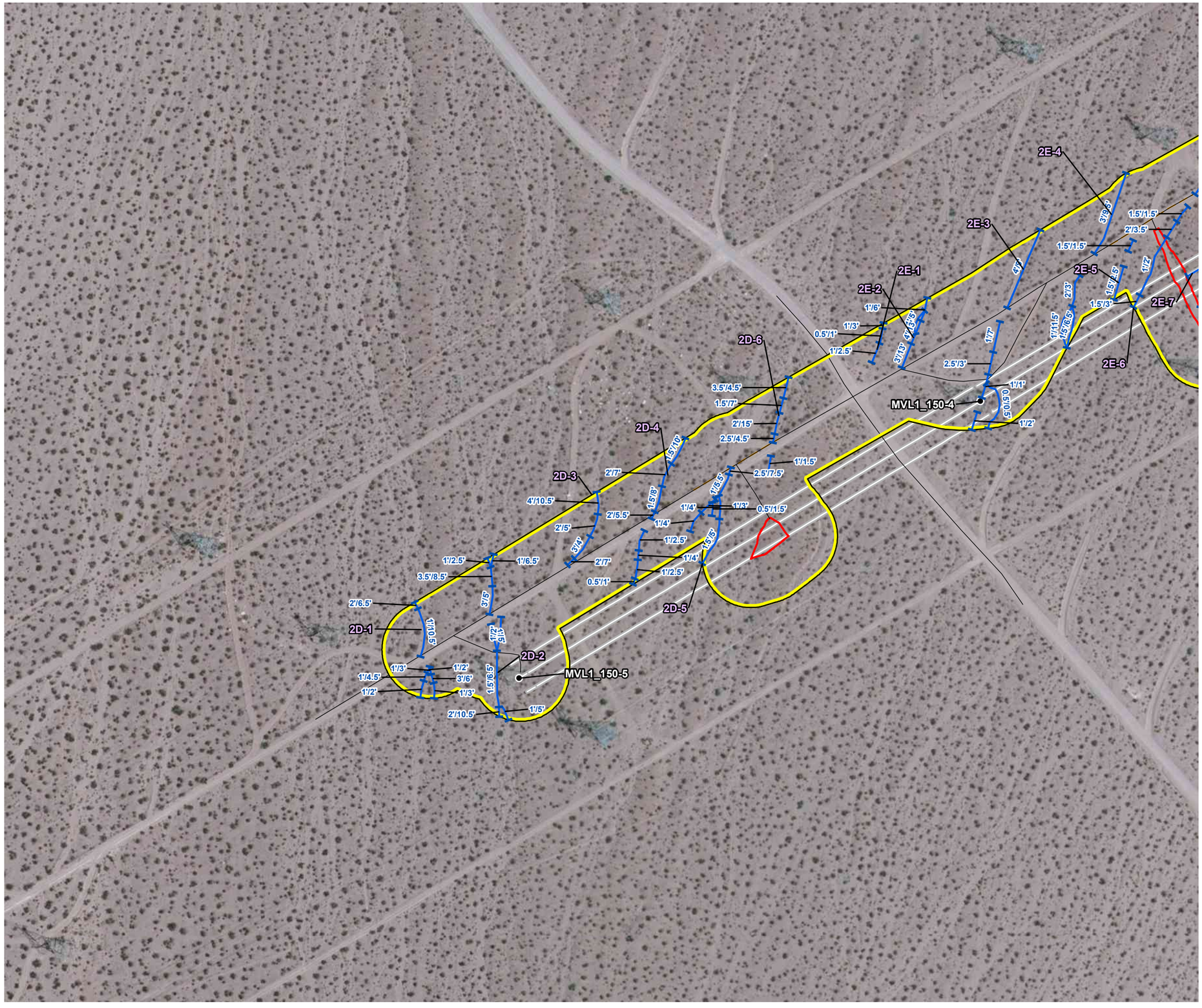

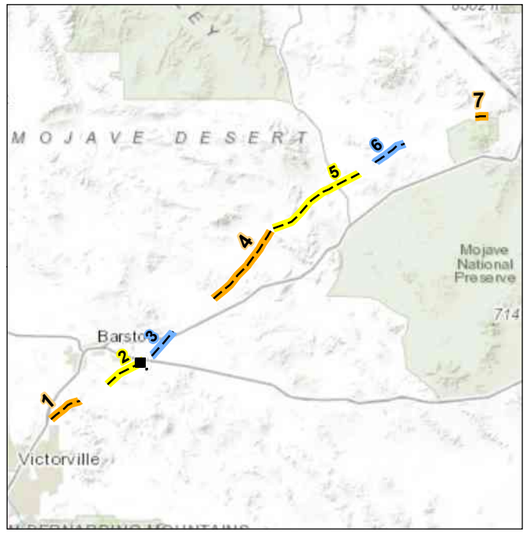

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 2d

Path 46 Transmission Line Clearances Project

(Rev: 01/12/2017 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\Ex7_Impacts_20160929.pdf

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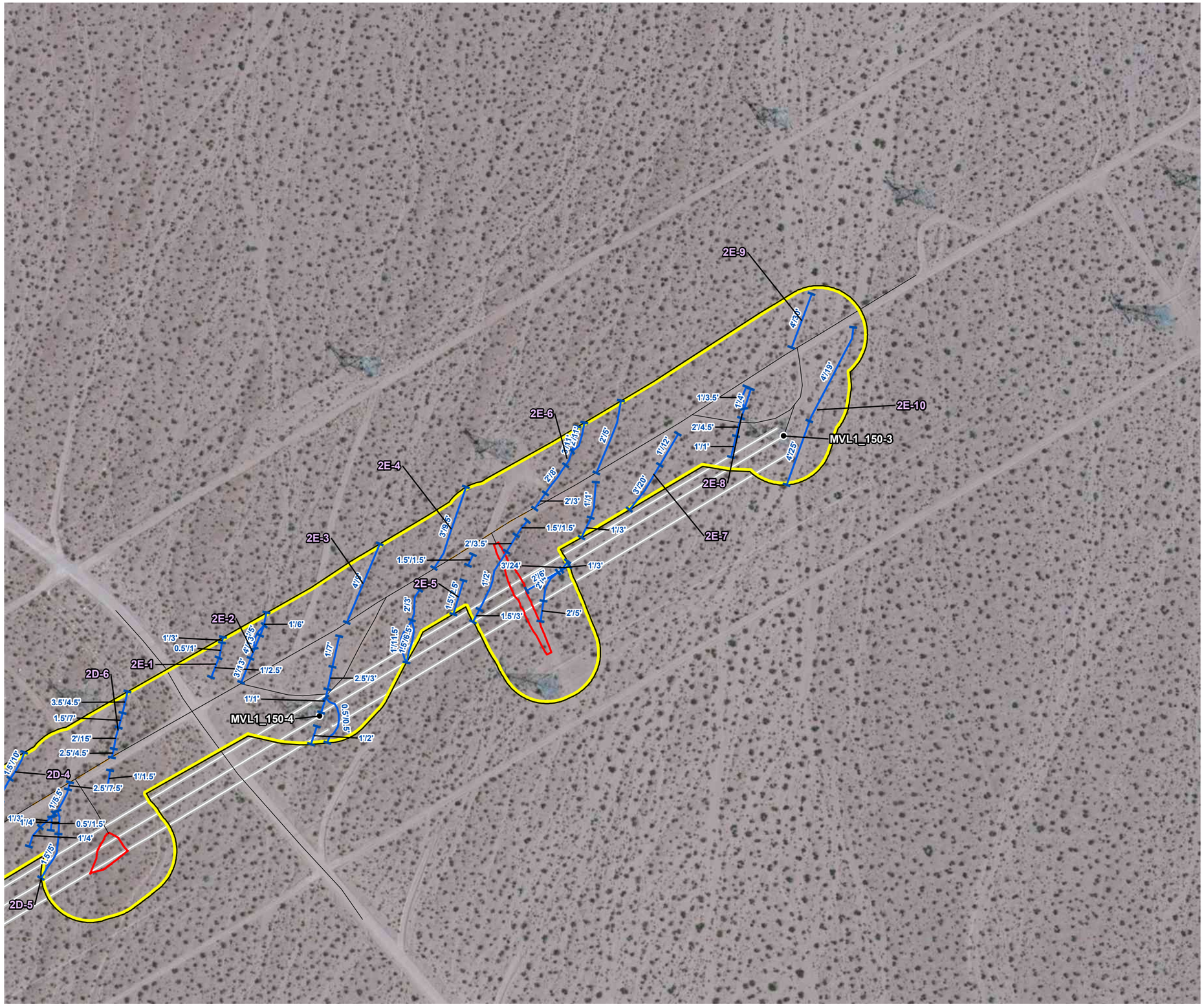

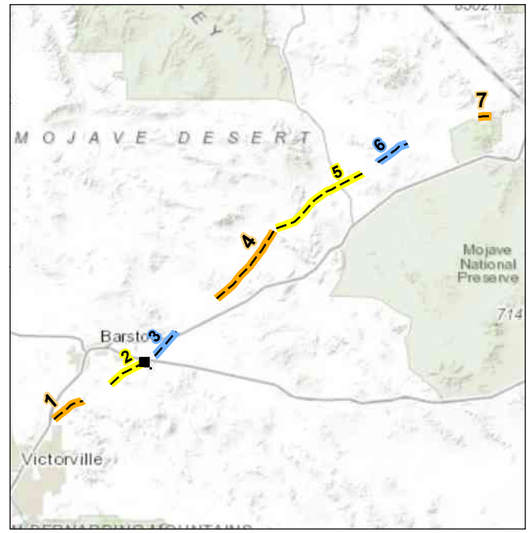

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 2e

Path 46 Transmission Line Clearances Project

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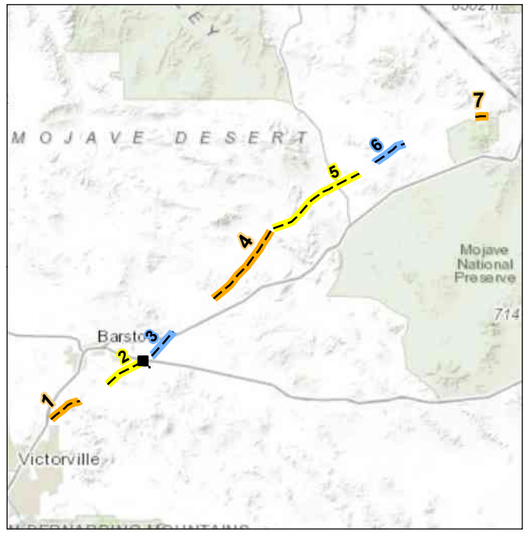

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 2f

Path 46 Transmission Line Clearances Project

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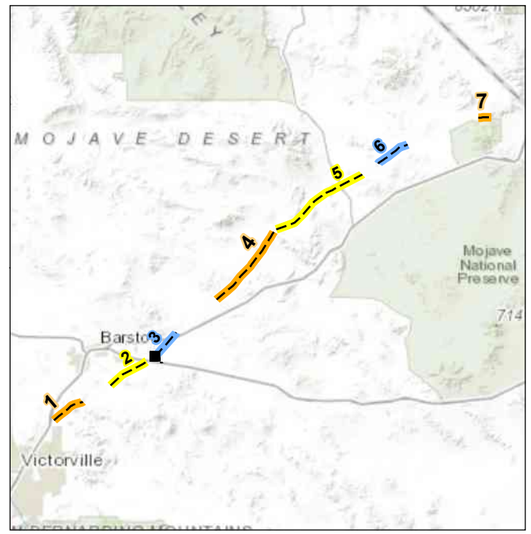

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 3a

Path 46 Transmission Line Clearances Project

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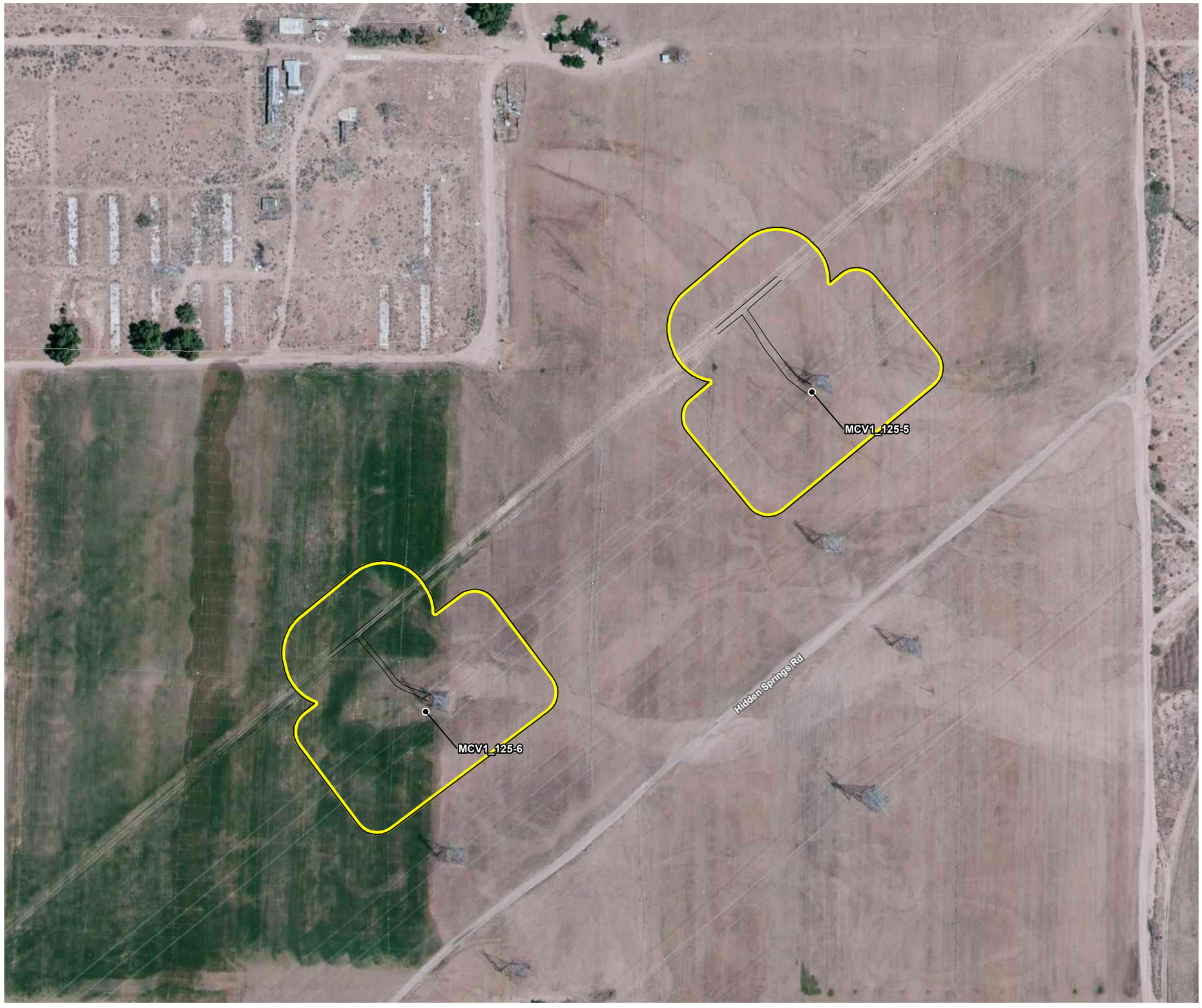

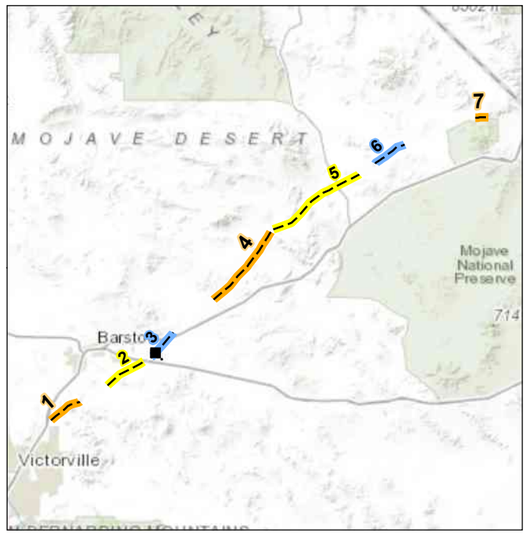

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

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PSOMAS

Exhibit 7
Project Impacts
Segment 3b

Path 46 Transmission Line Clearances Project

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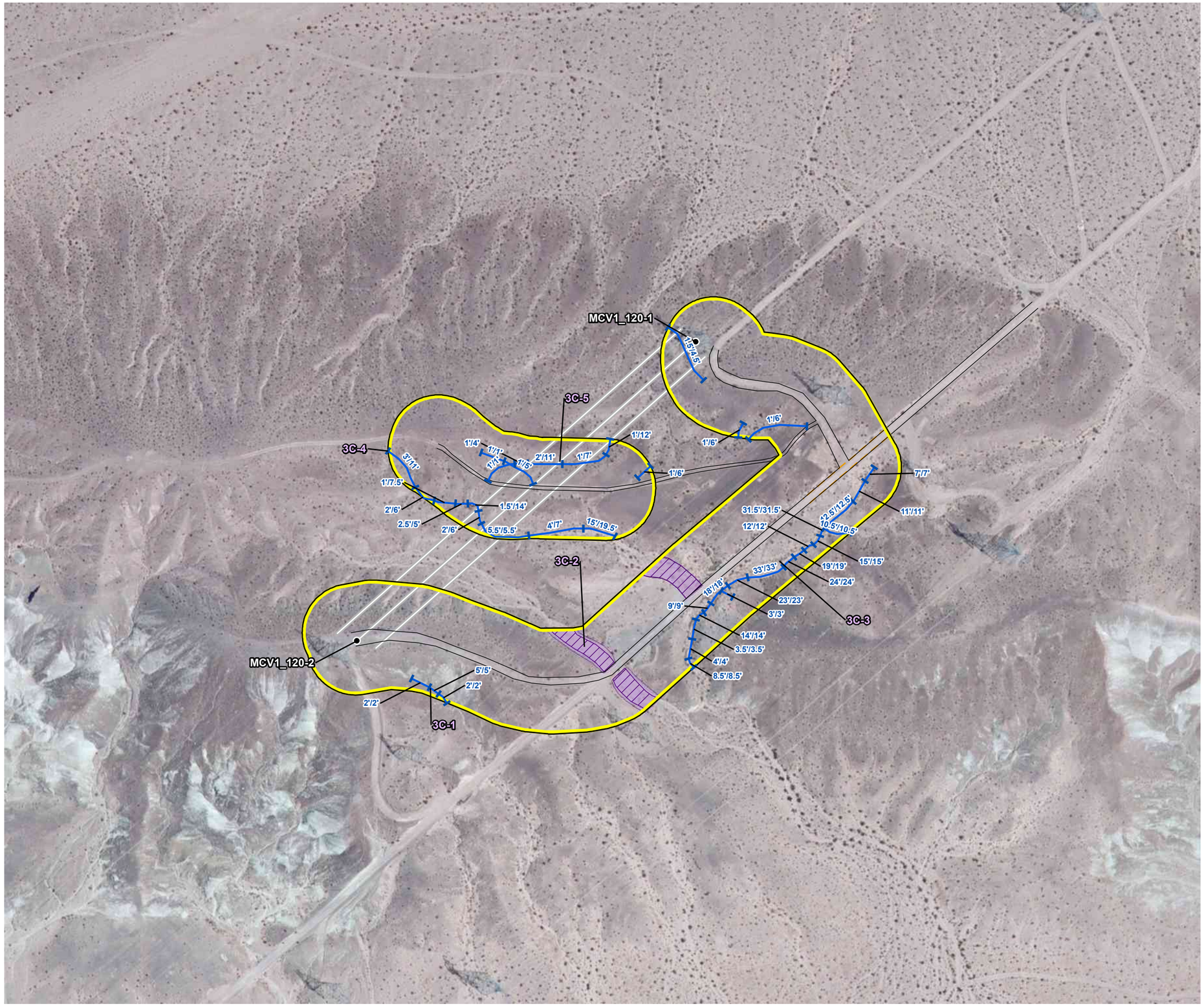

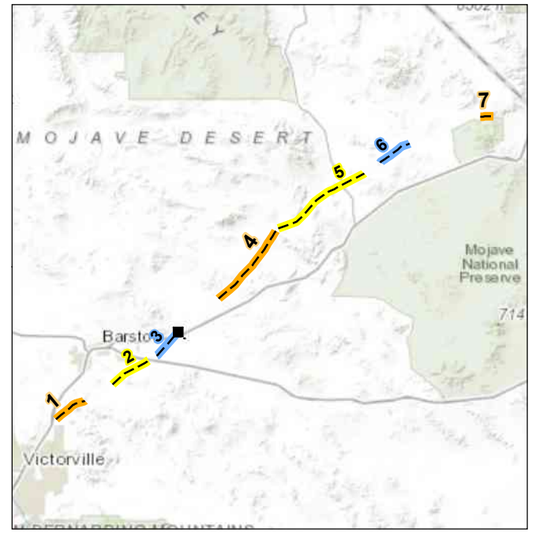

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 3c

Path 46 Transmission Line Clearances Project

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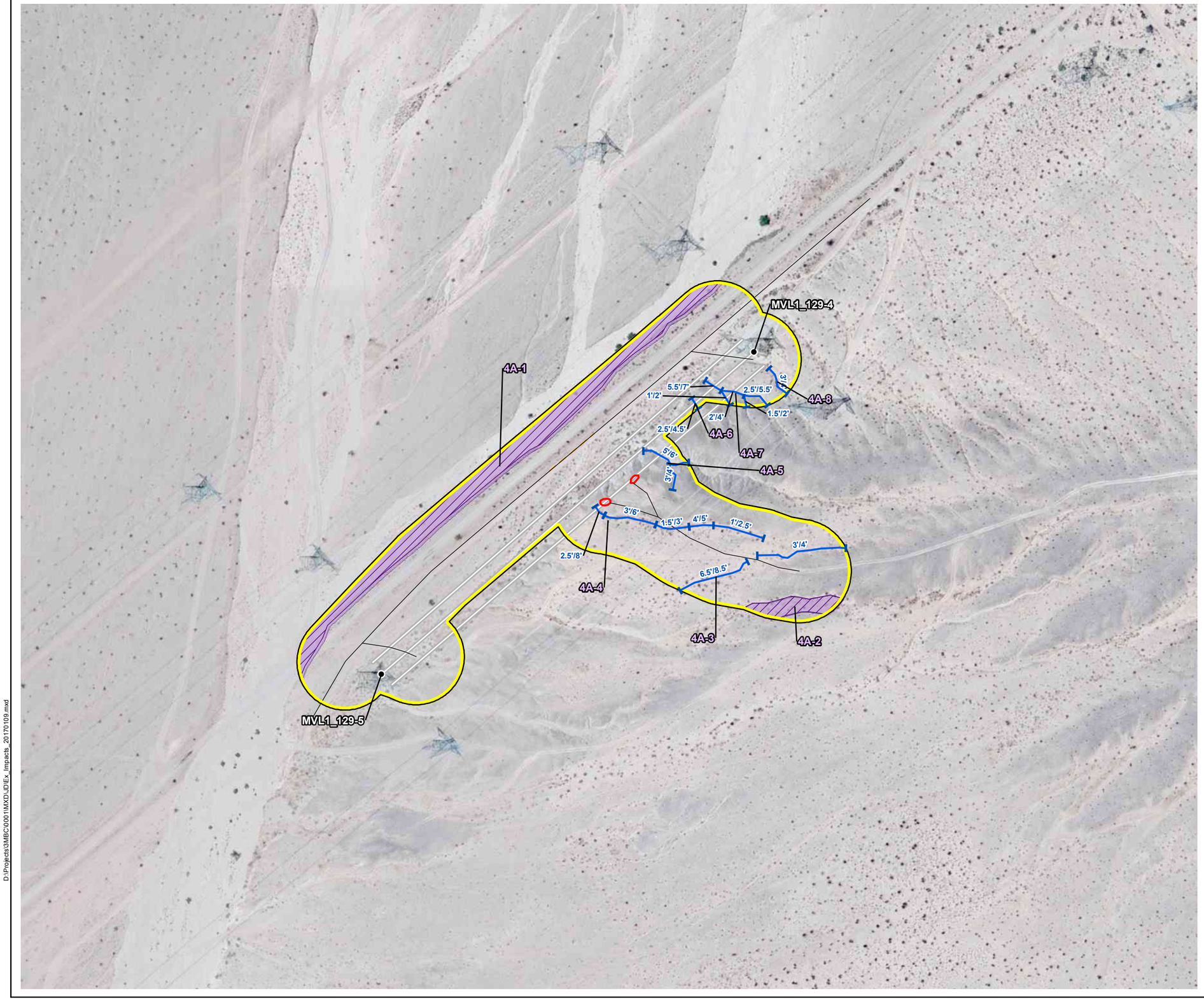

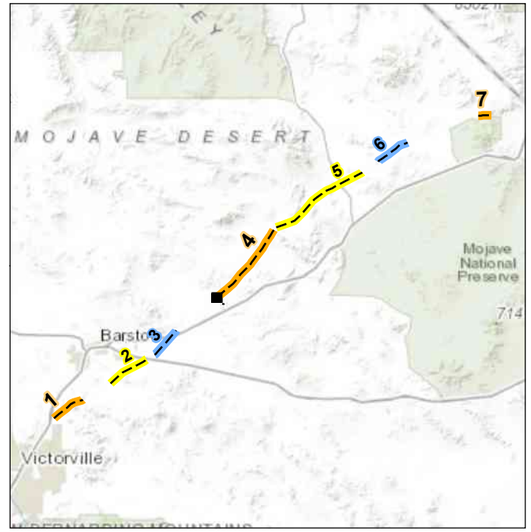

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4a

Path 46 Transmission Line Clearances Project

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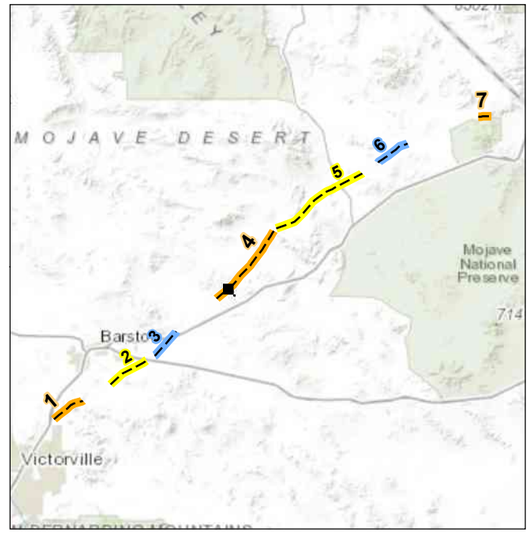

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4b

Path 46 Transmission Line Clearances Project

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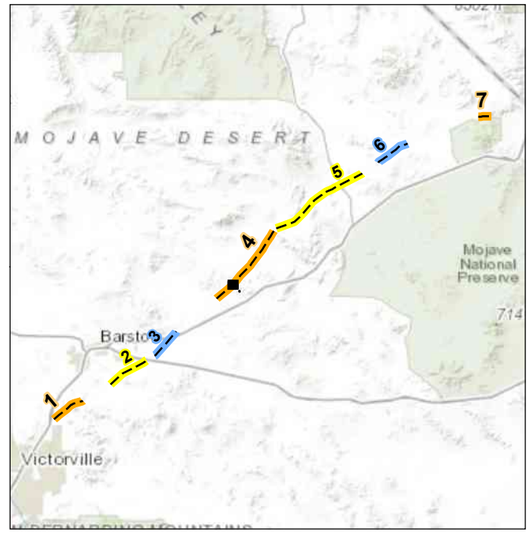

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4c

Path 46 Transmission Line Clearances Project

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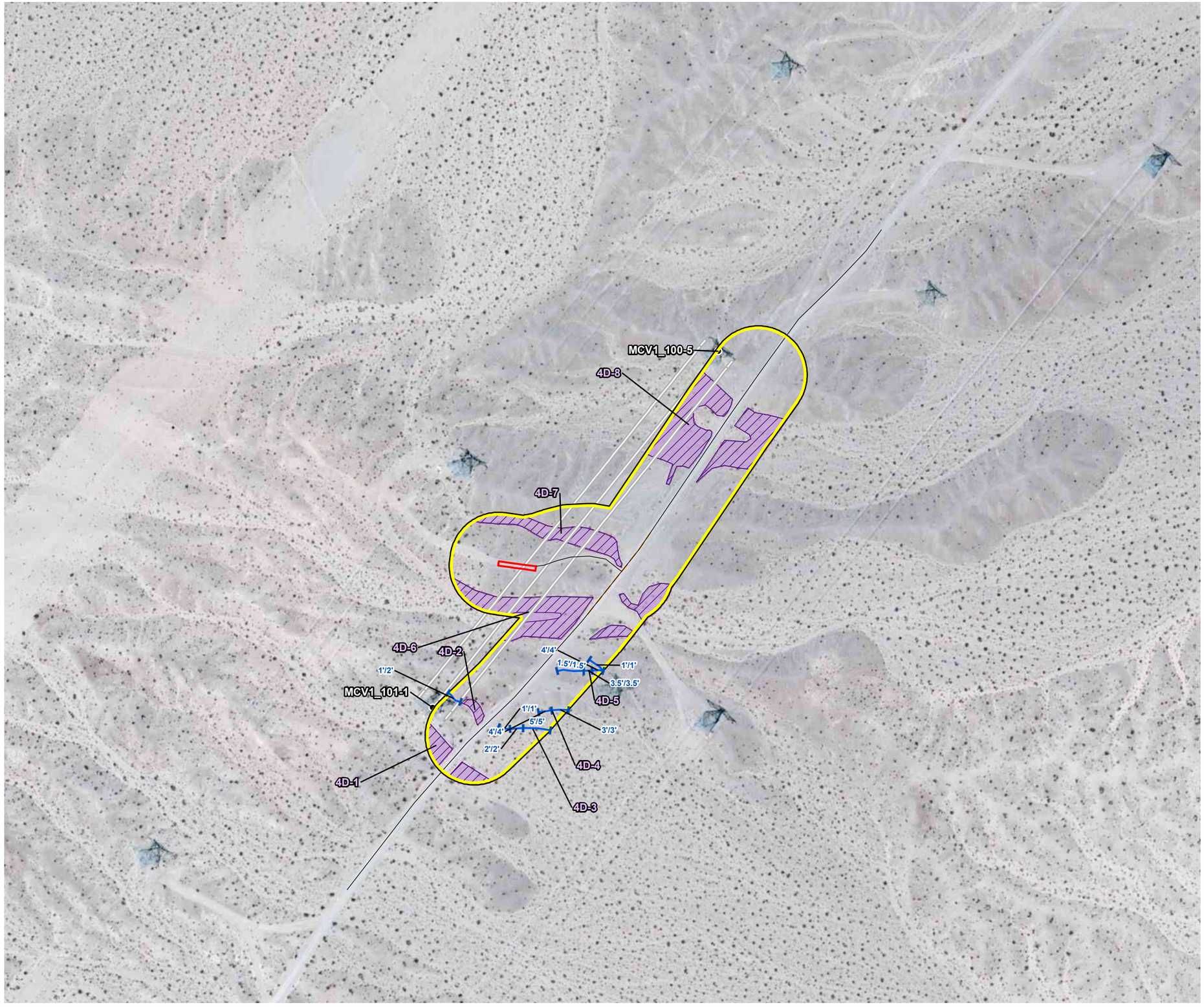

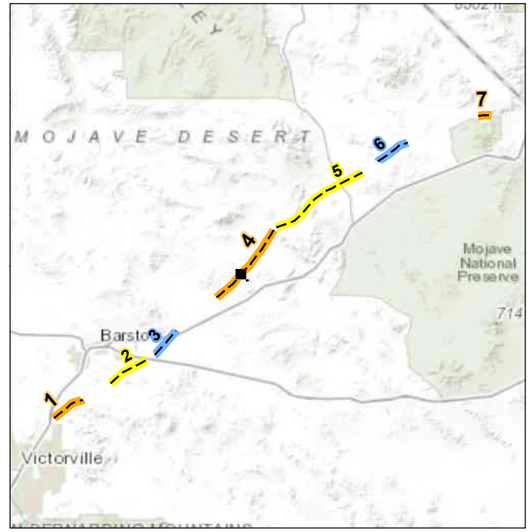

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4d

Path 46 Transmission Line Clearances Project

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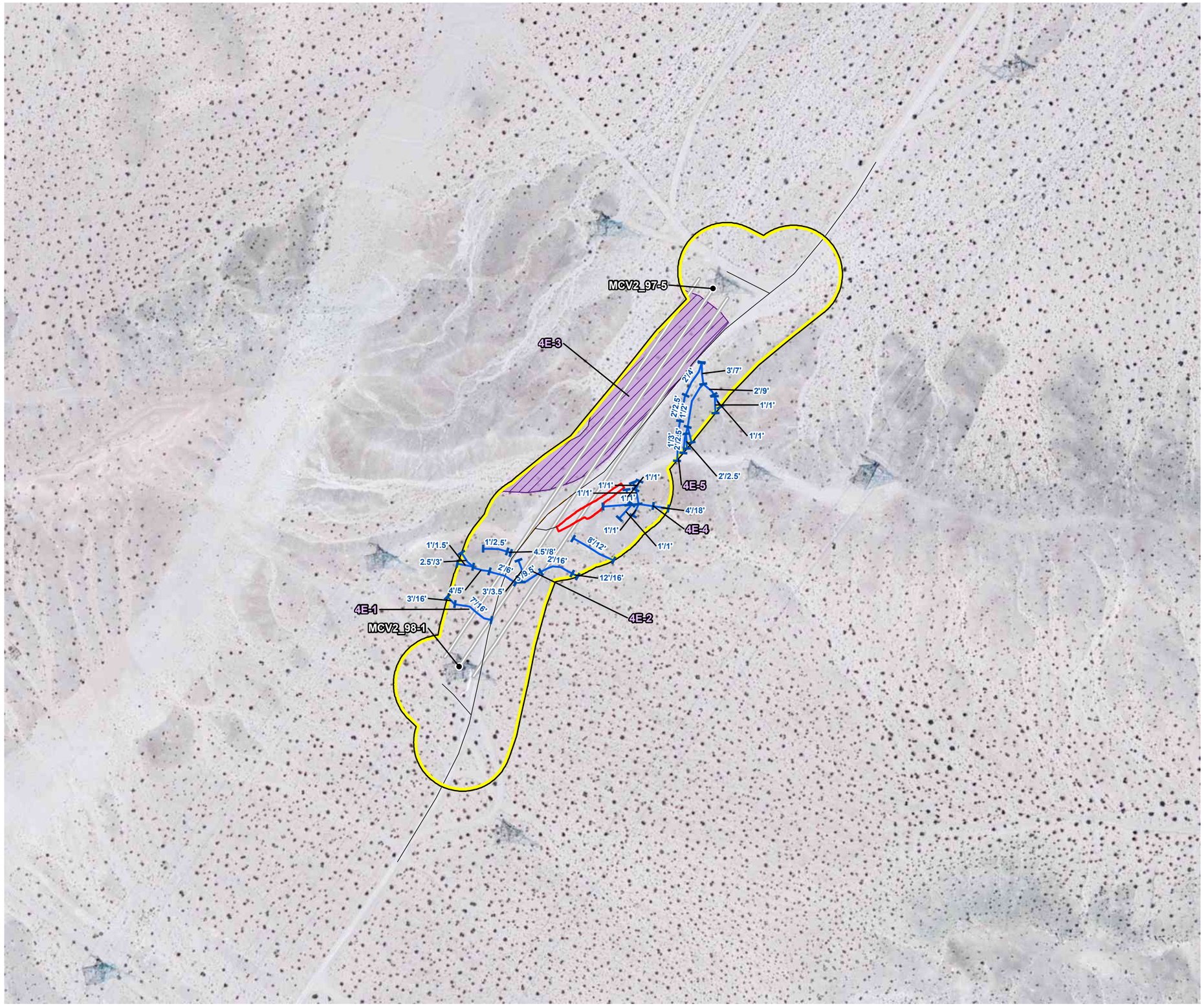

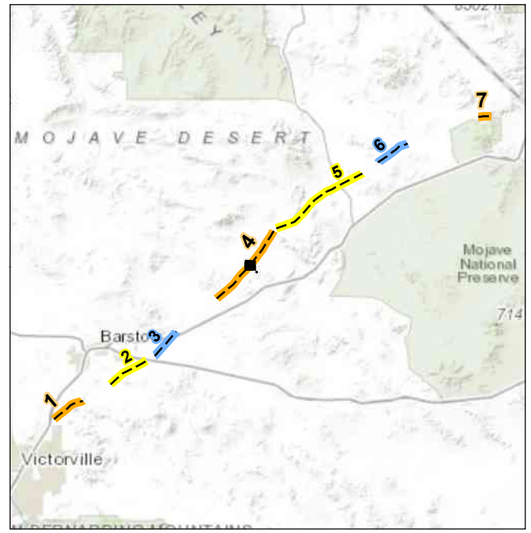

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4e

Path 46 Transmission Line Clearances Project

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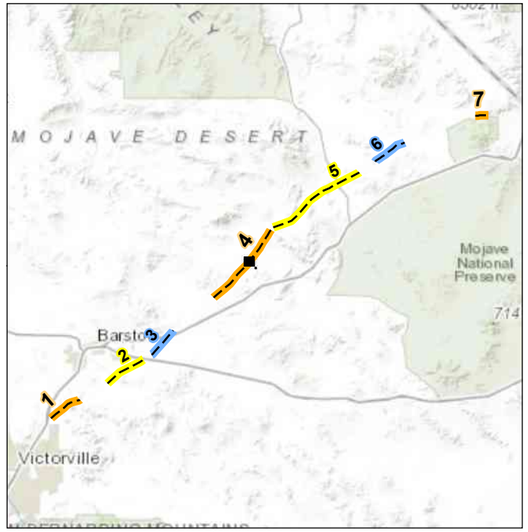

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4f

Path 46 Transmission Line Clearances Project

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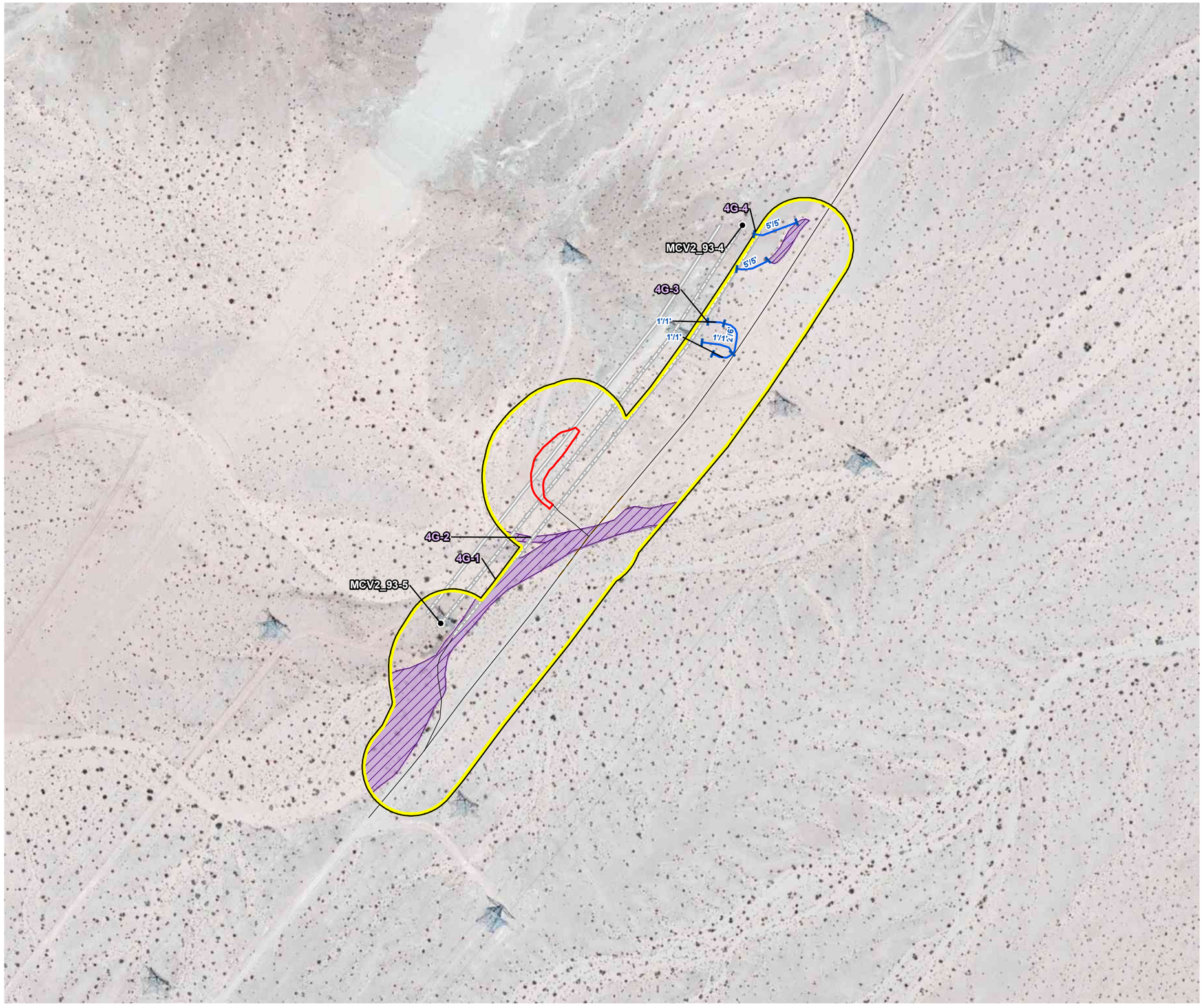

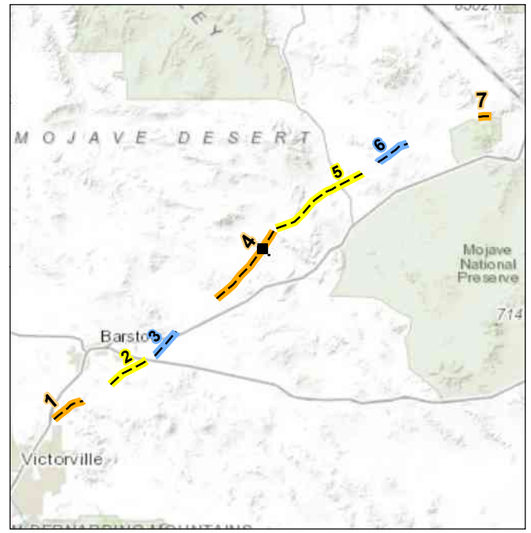

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4g

Path 46 Transmission Line Clearances Project

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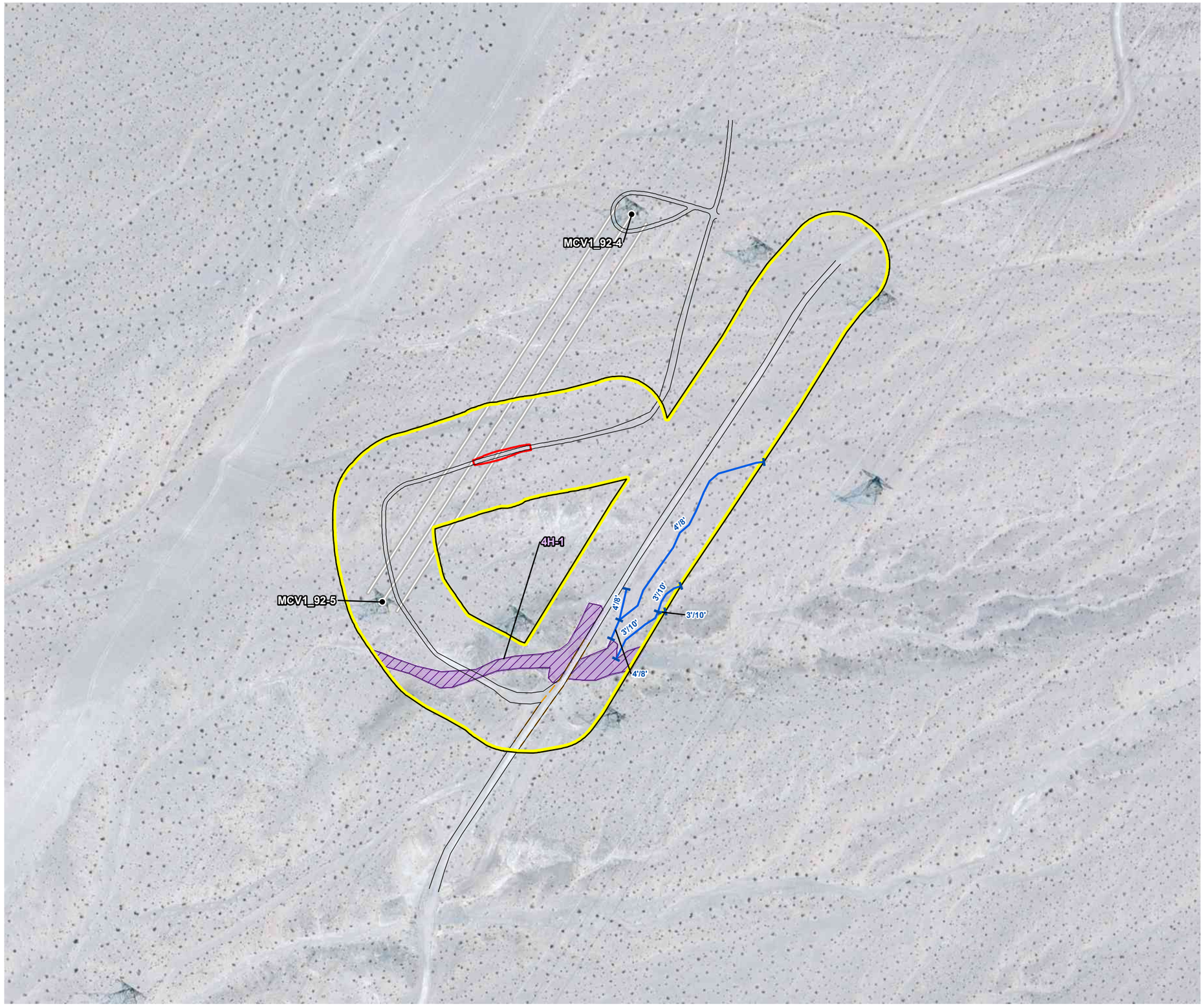

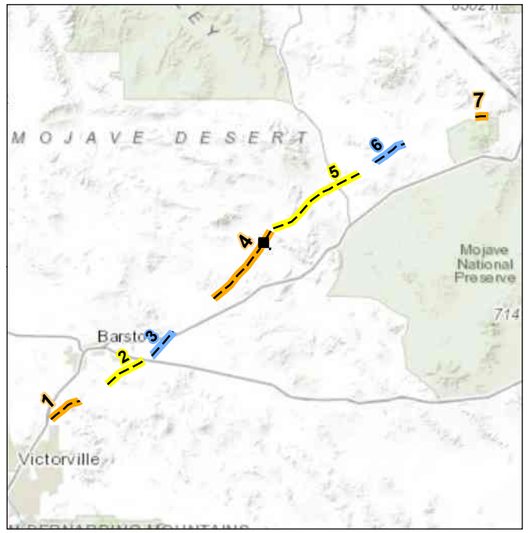

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4h

Path 46 Transmission Line Clearances Project

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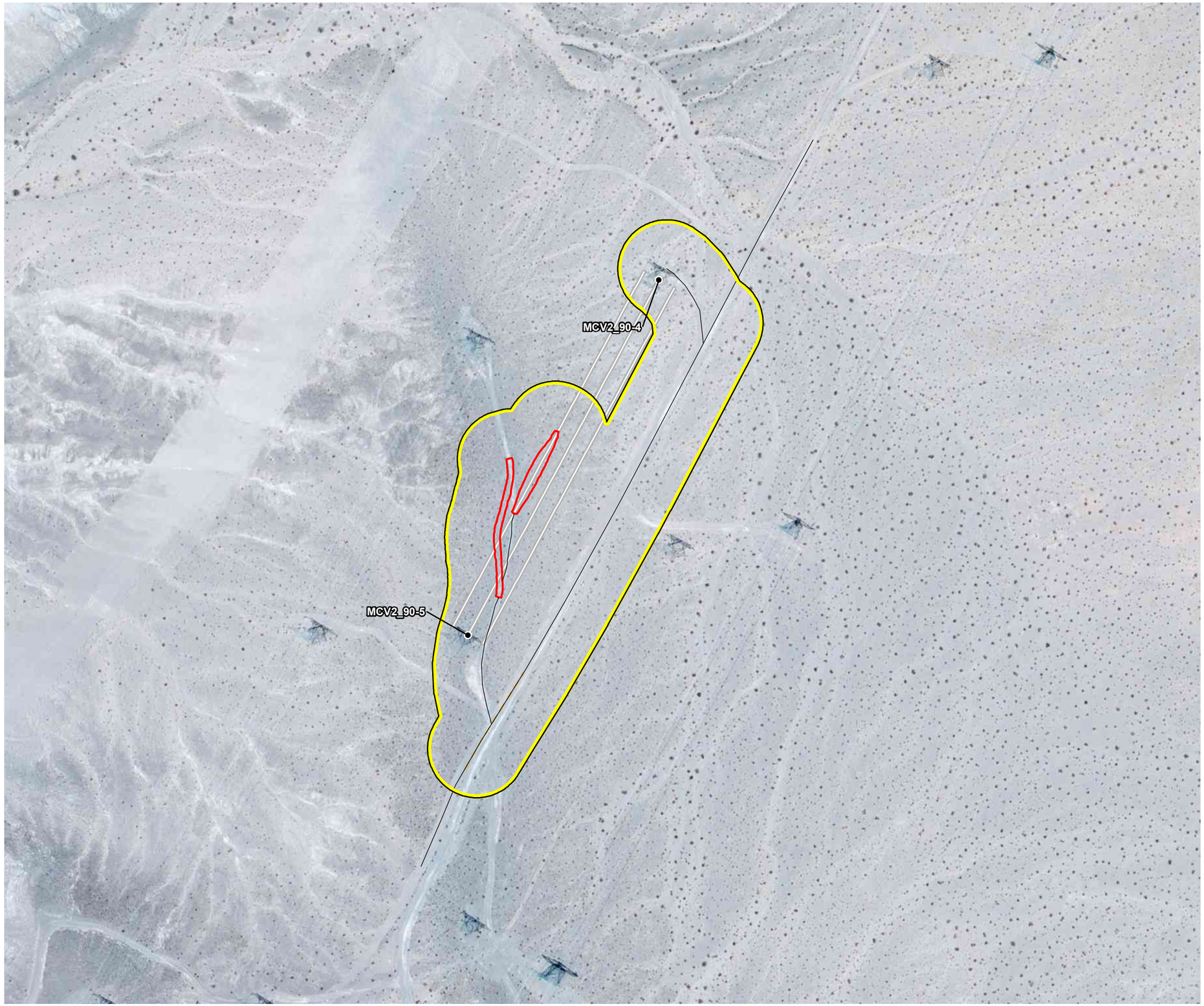

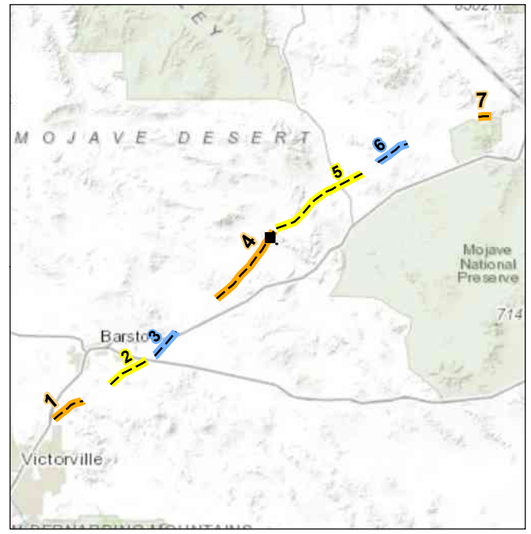

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4i

Path 46 Transmission Line Clearances Project

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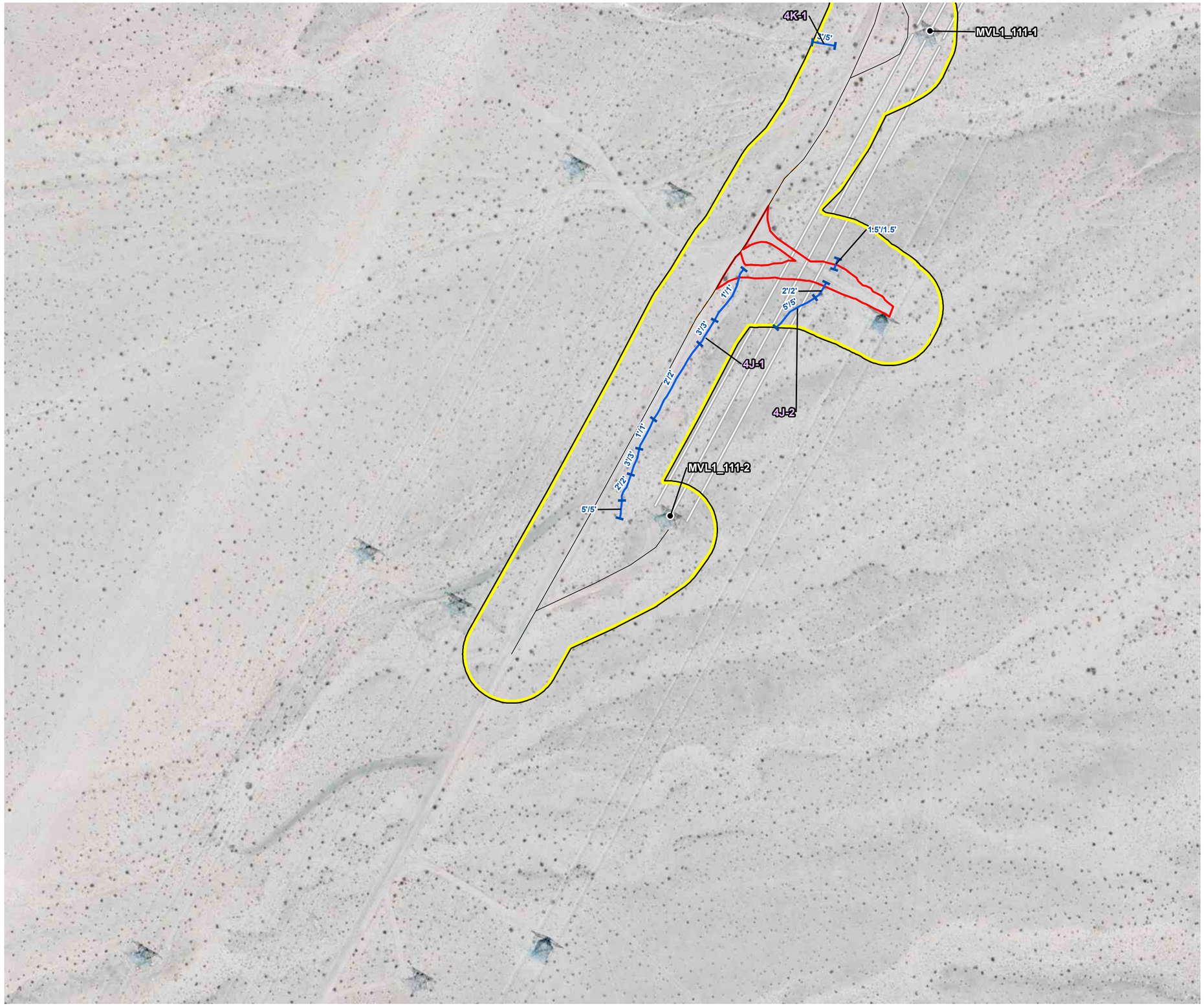

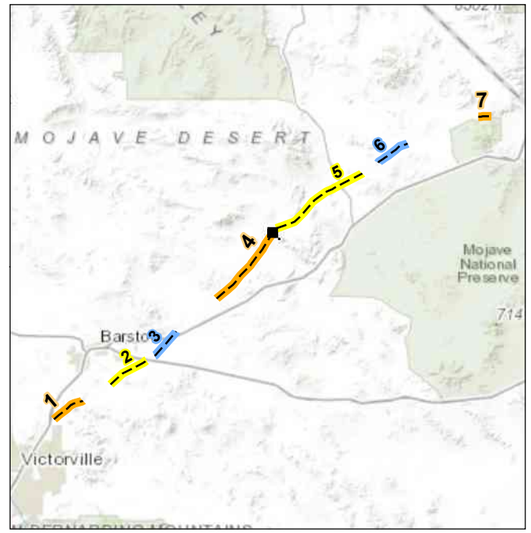

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4j

Path 46 Transmission Line Clearances Project

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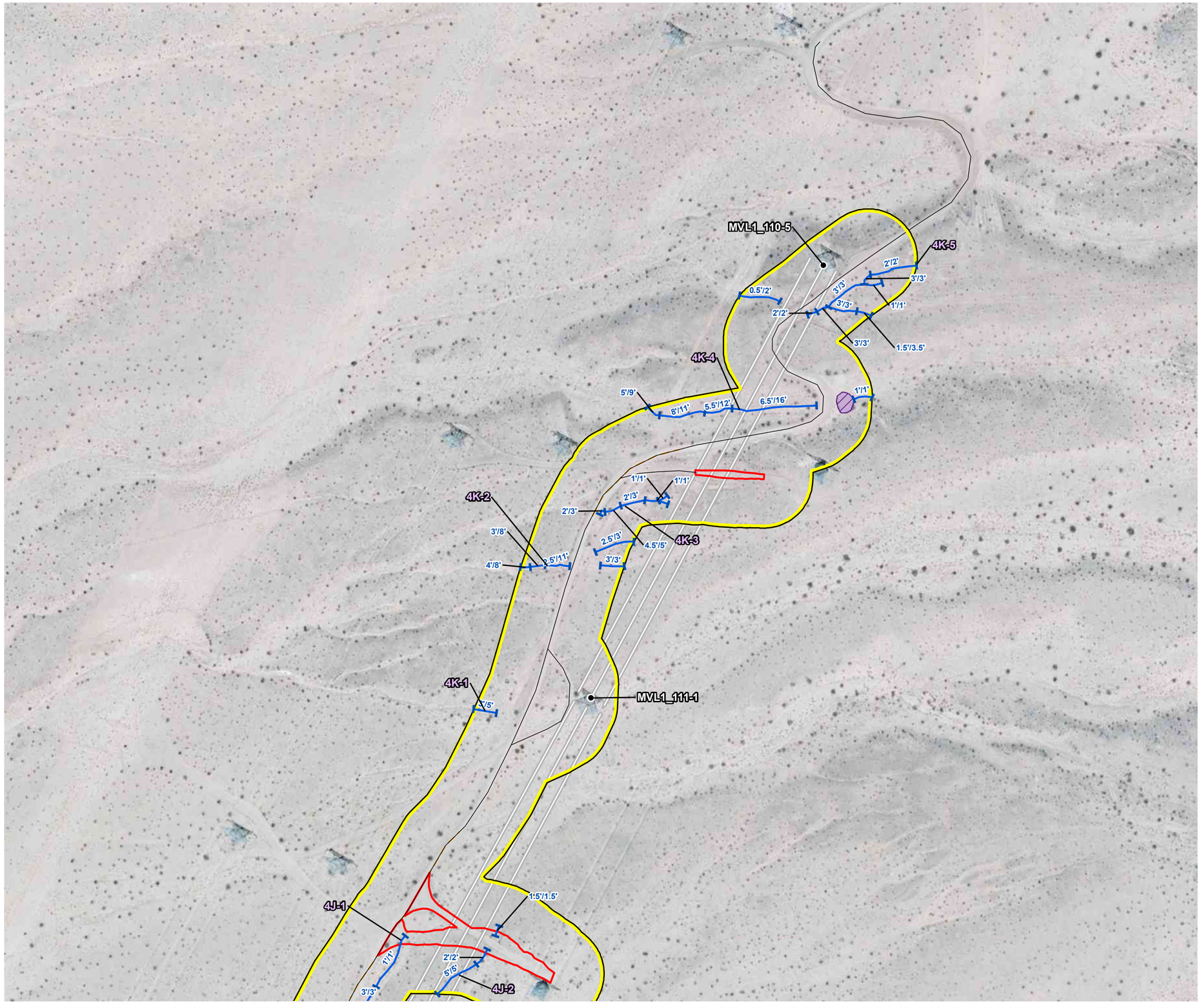

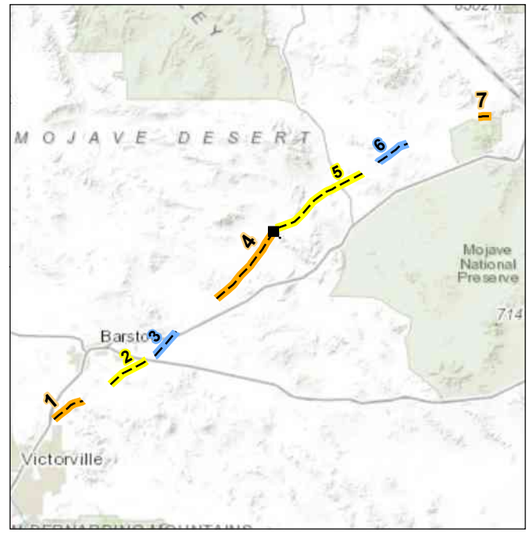

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 4k

Path 46 Transmission Line Clearances Project

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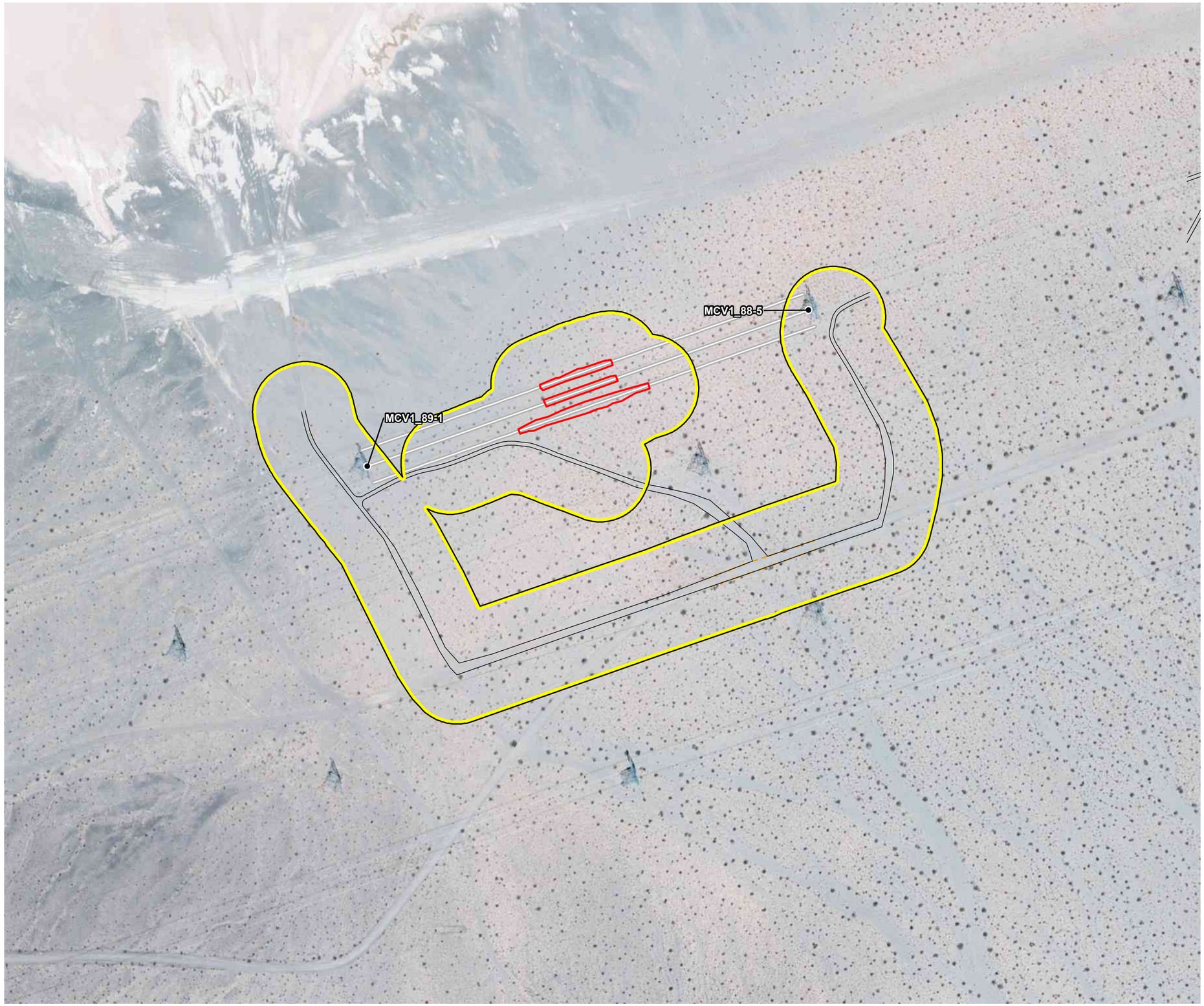

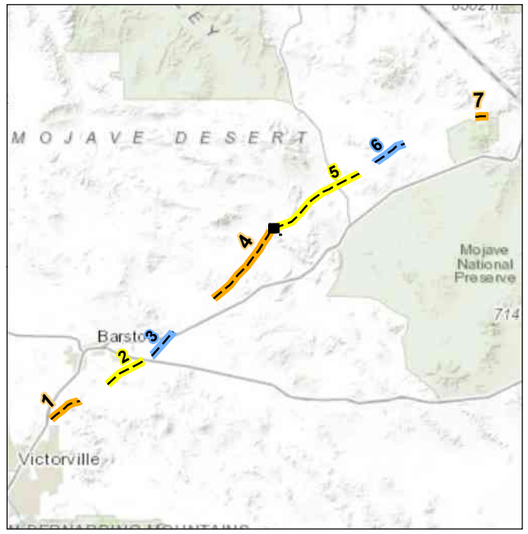

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5a

Path 46 Transmission Line Clearances Project

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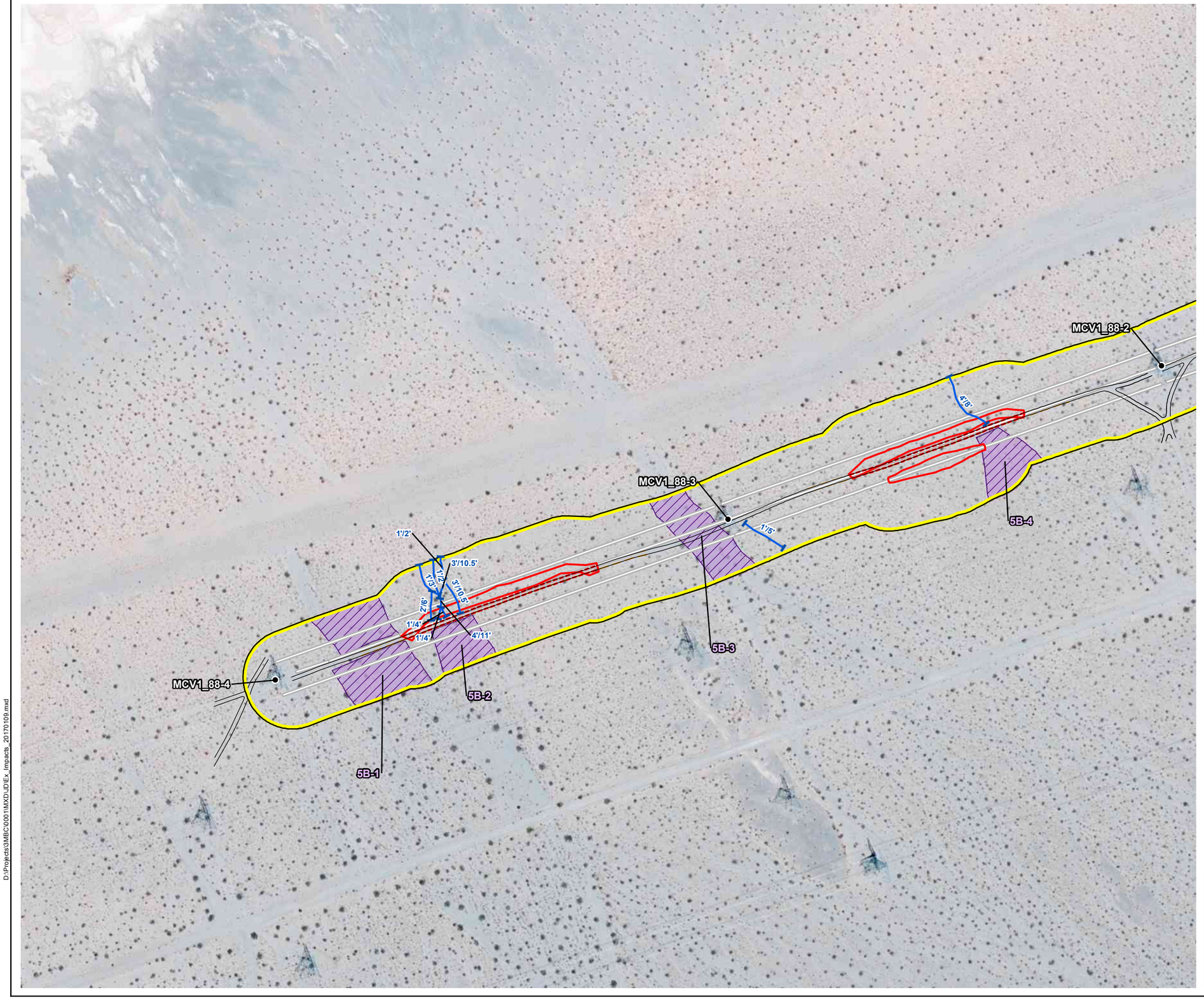

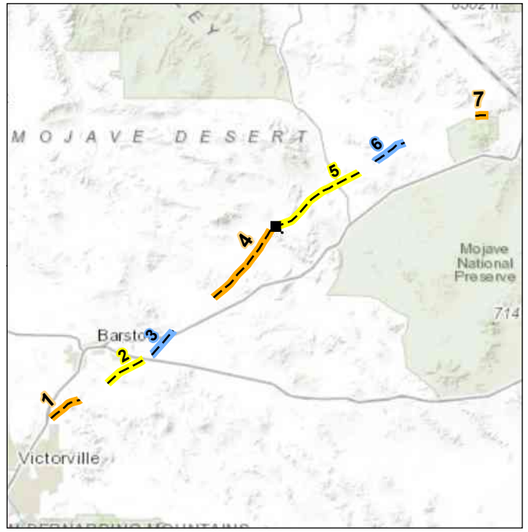

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5b

Path 46 Transmission Line Clearances Project

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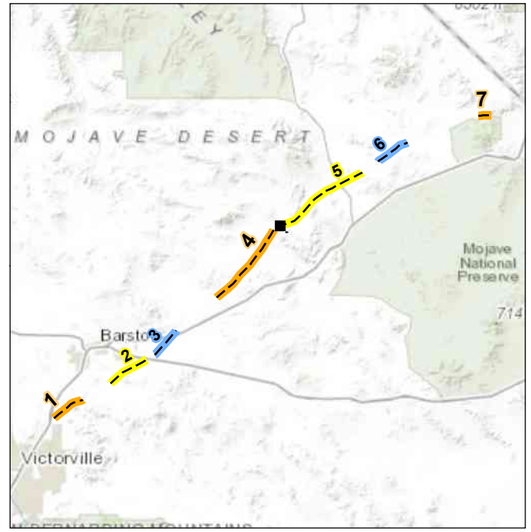

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5c

Path 46 Transmission Line Clearances Project

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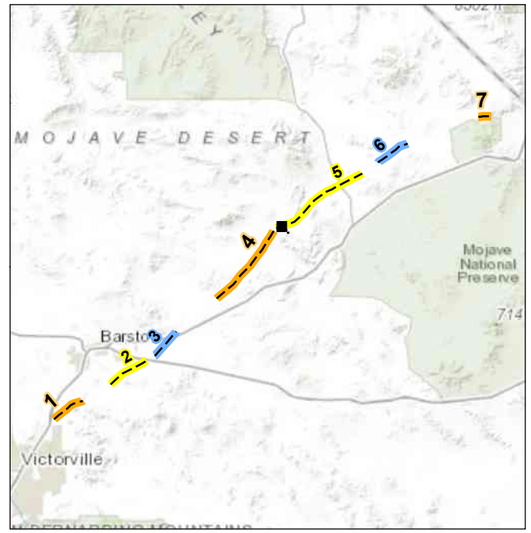

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5d

Path 46 Transmission Line Clearances Project

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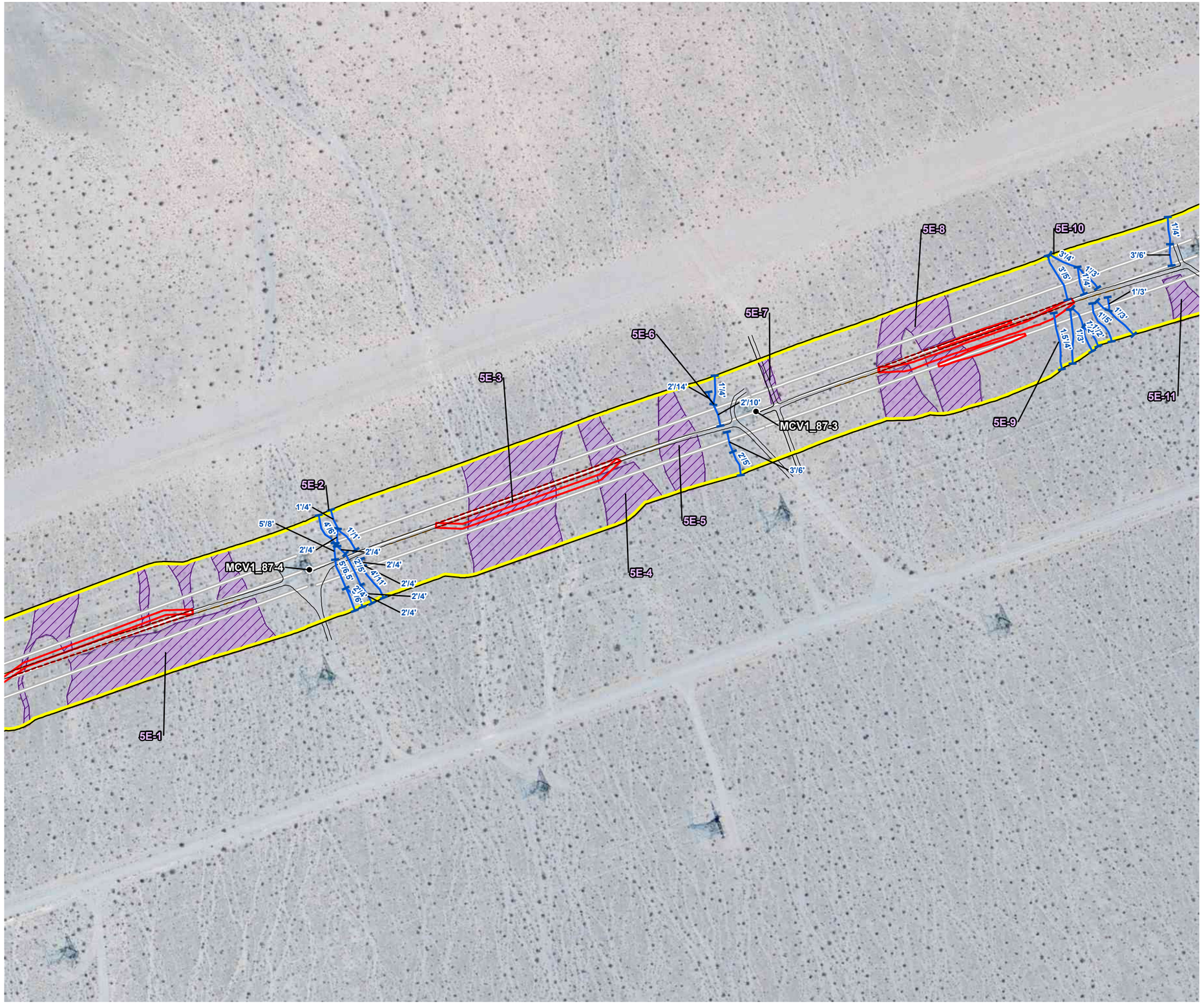

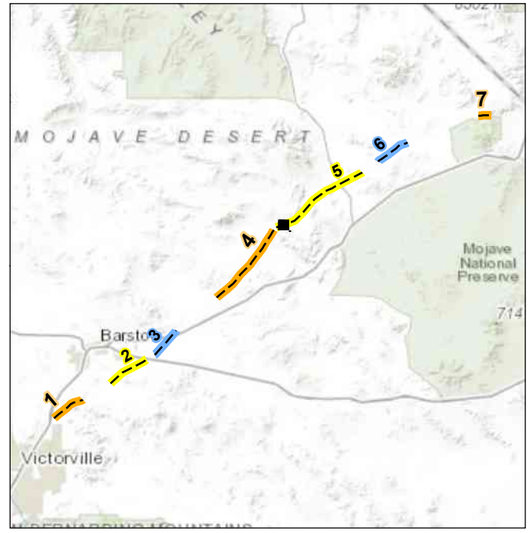

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5e

Path 46 Transmission Line Clearances Project

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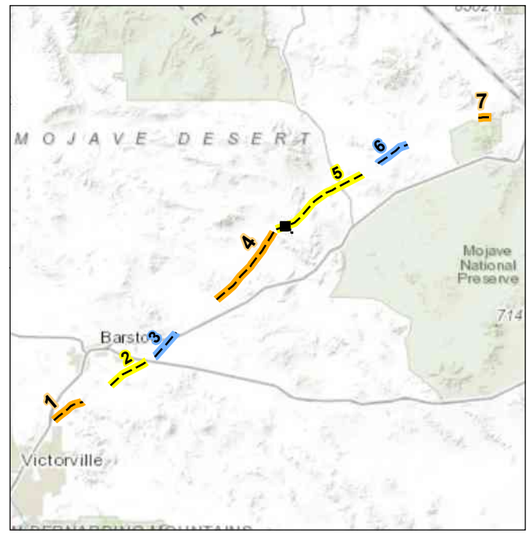

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5f

Path 46 Transmission Line Clearances Project

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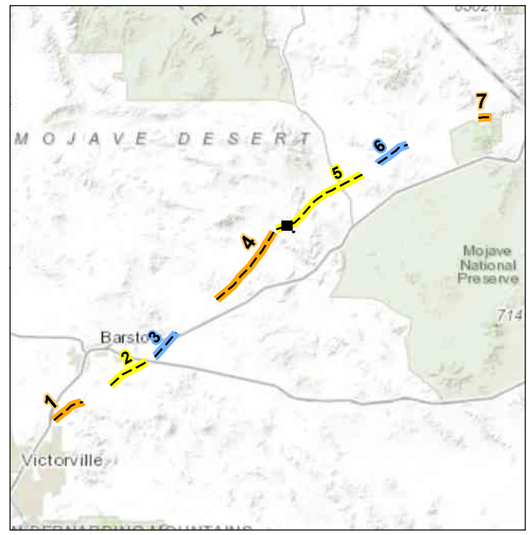

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5g

Path 46 Transmission Line Clearances Project

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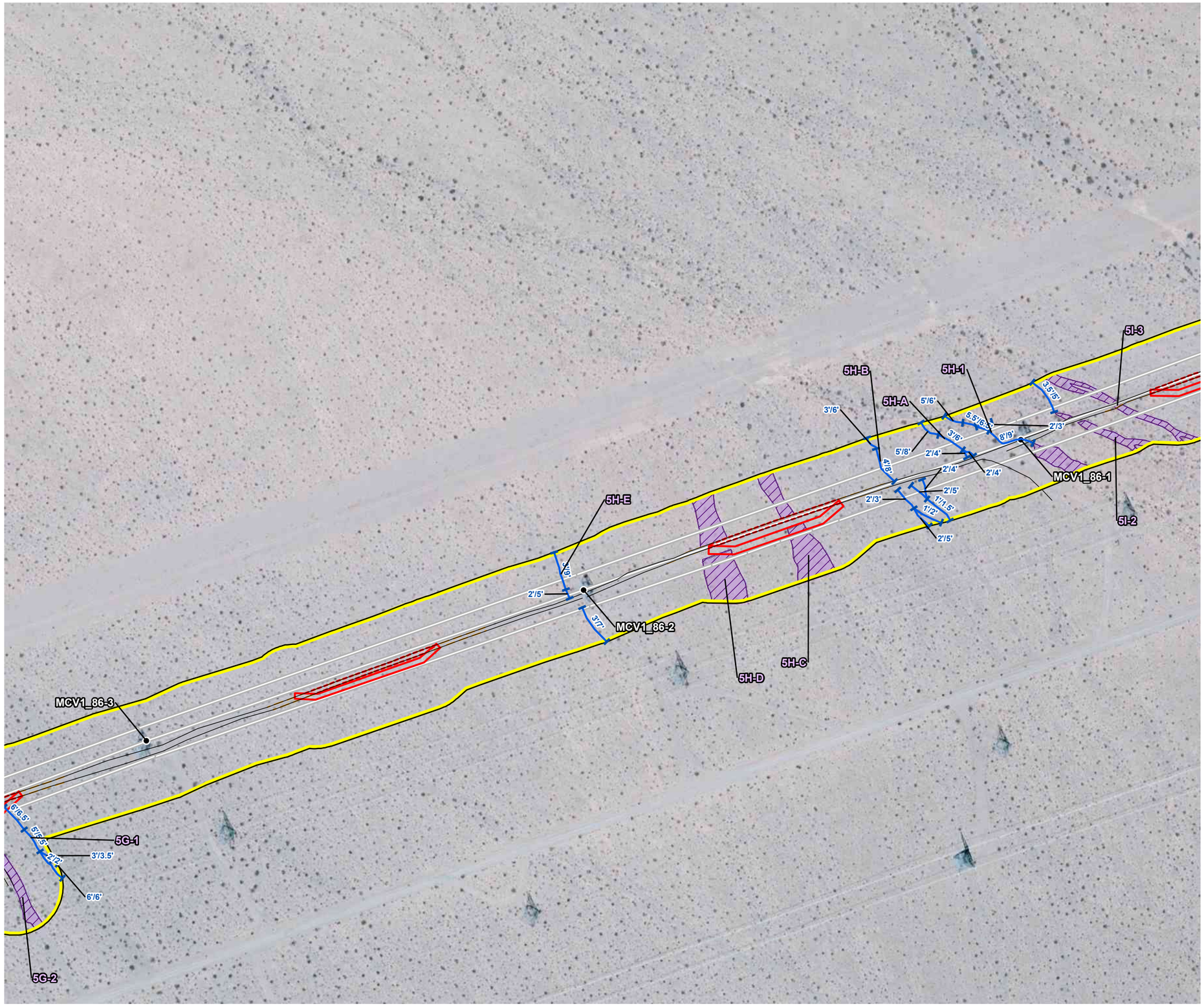

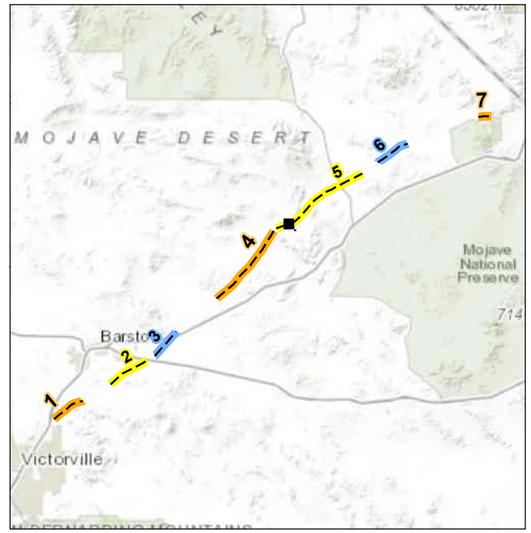

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5h

Path 46 Transmission Line Clearances Project

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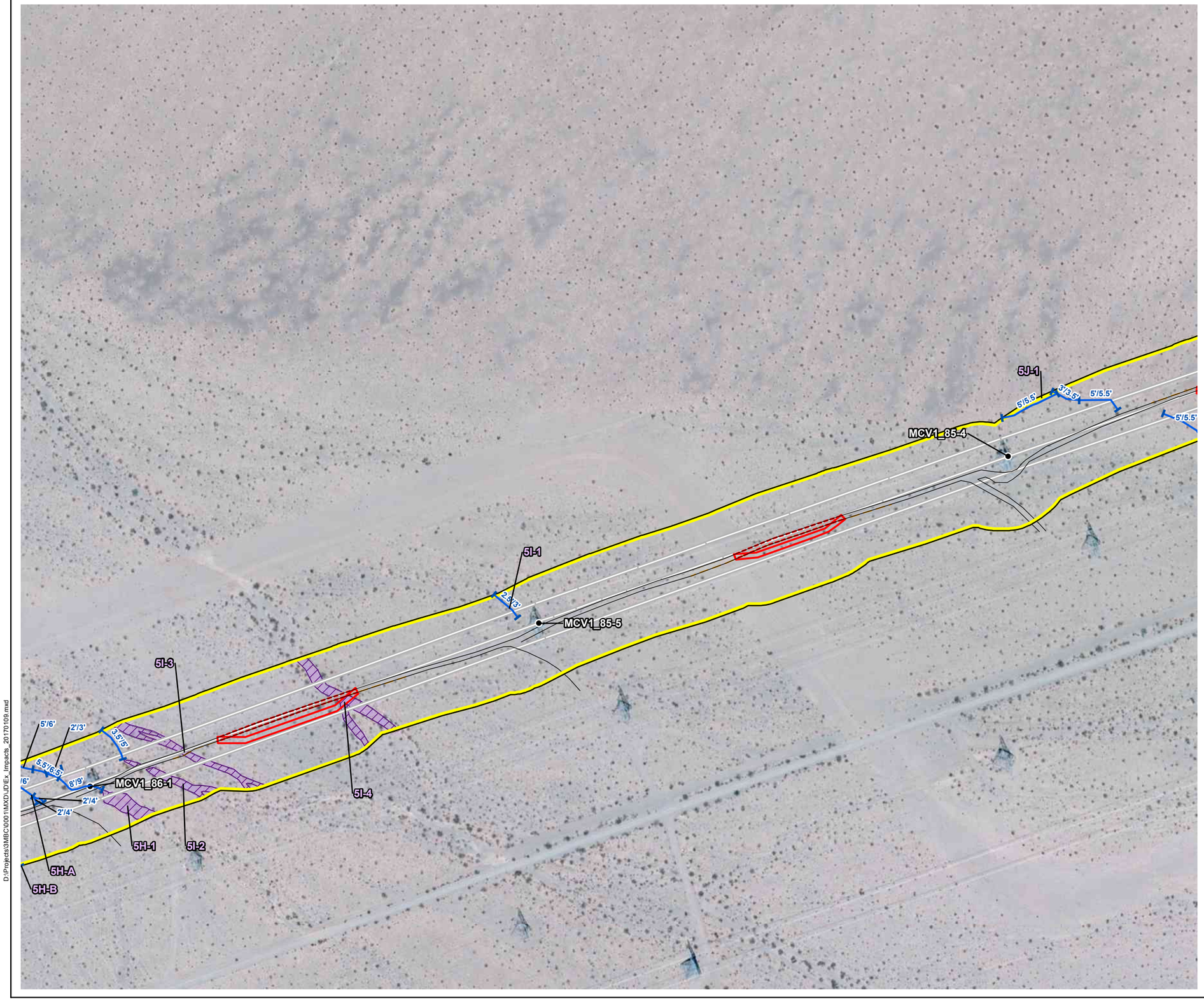

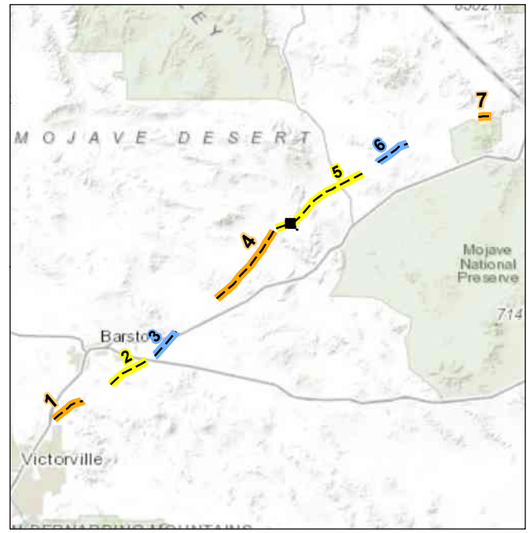

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5i

Path 46 Transmission Line Clearances Project

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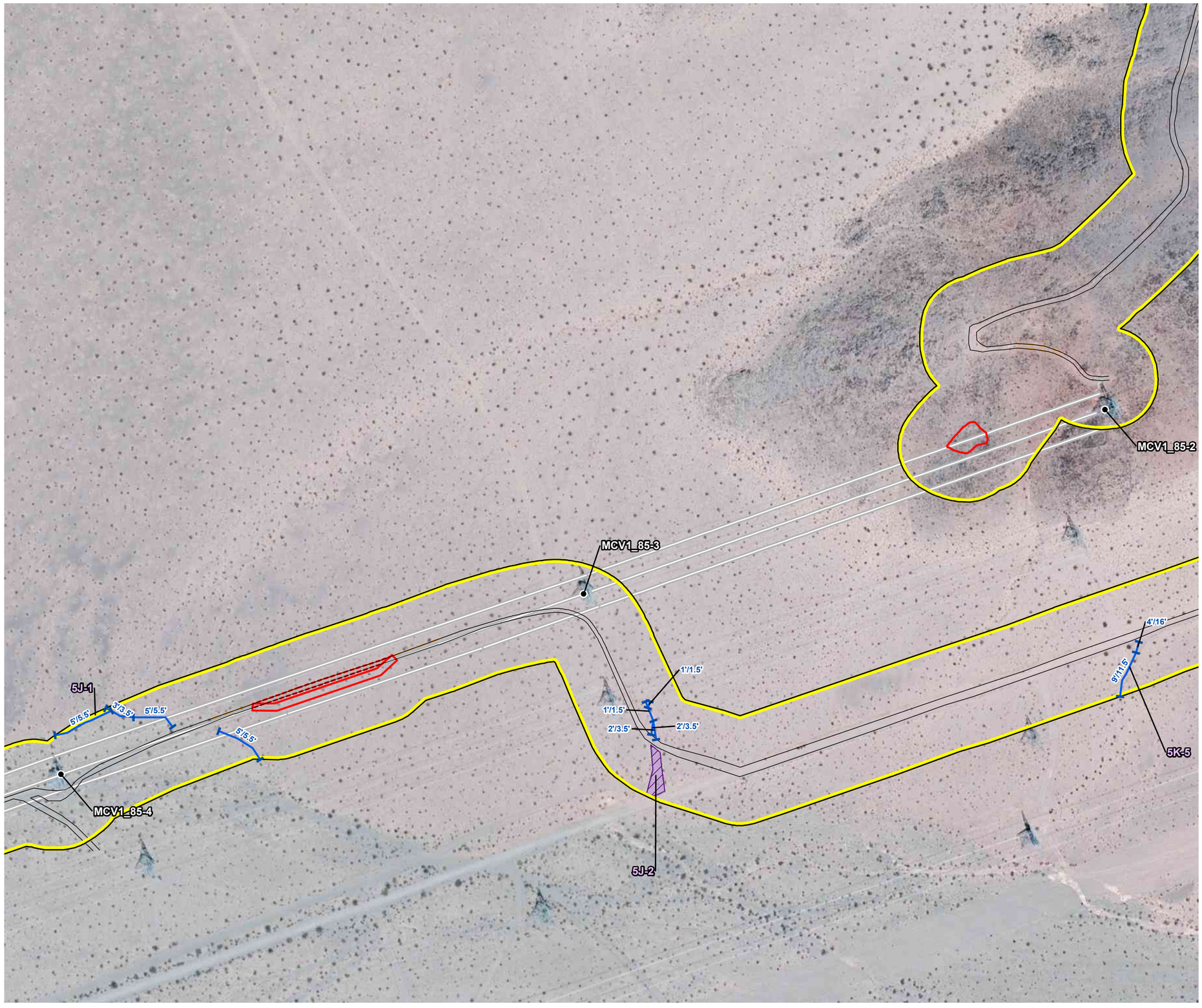

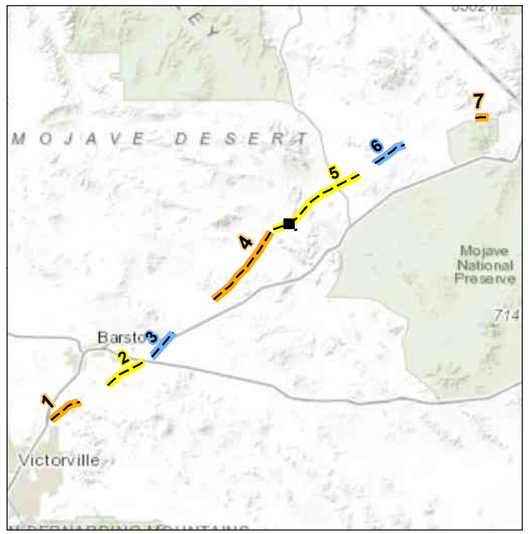

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5j

Path 46 Transmission Line Clearances Project

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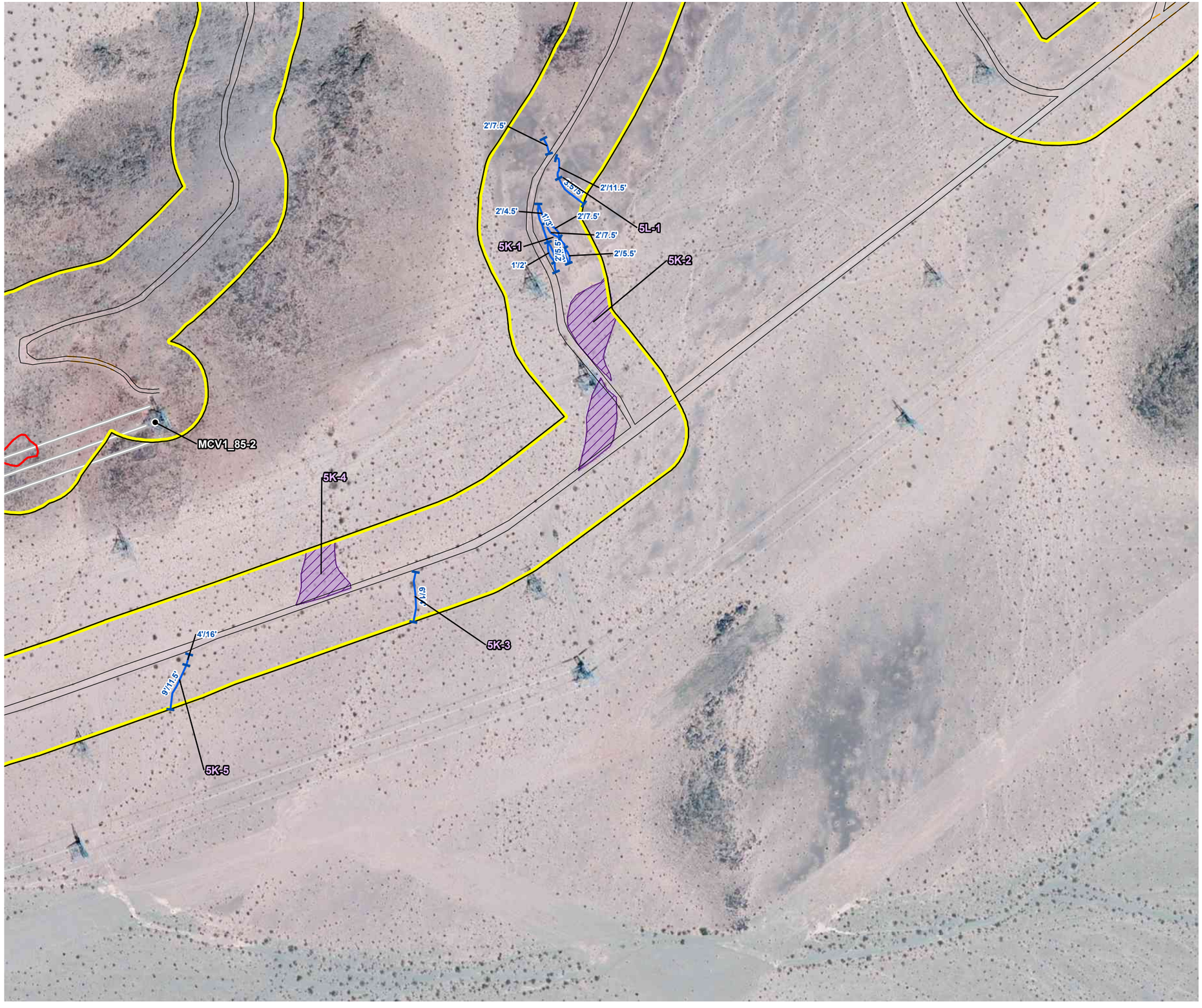

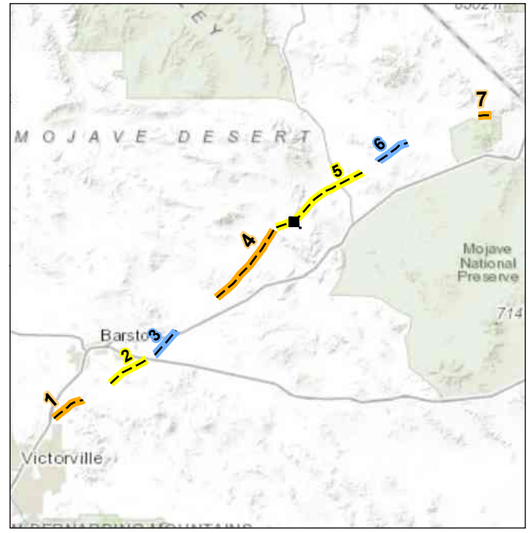

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5k

Path 46 Transmission Line Clearances Project

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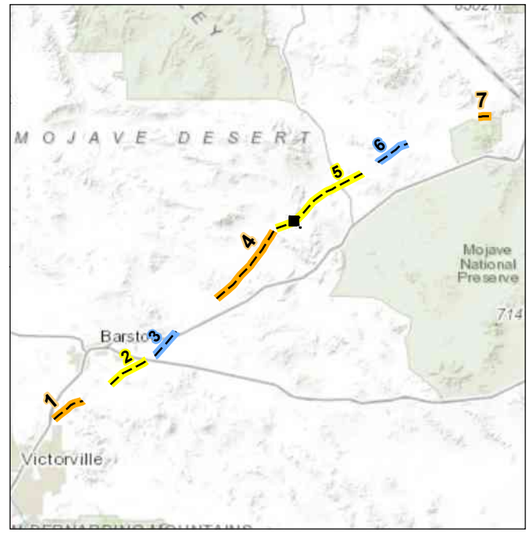

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5l

Path 46 Transmission Line Clearances Project

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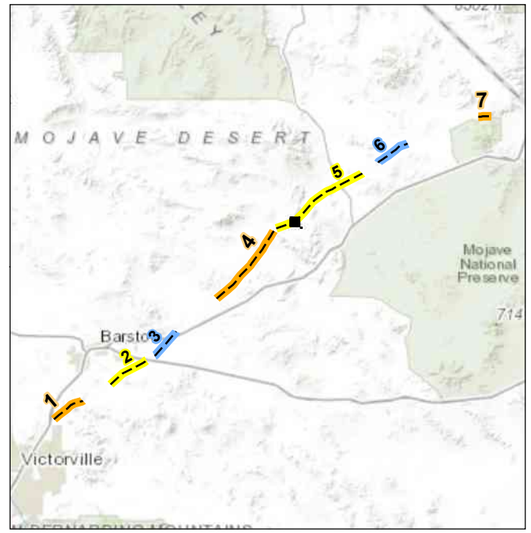

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5m

Path 46 Transmission Line Clearances Project

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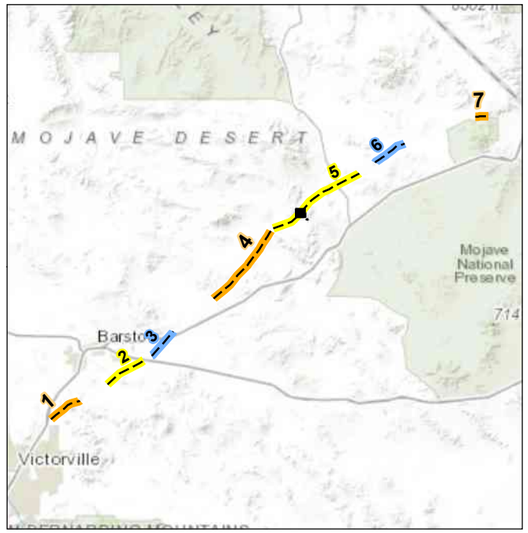

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5n

Path 46 Transmission Line Clearances Project

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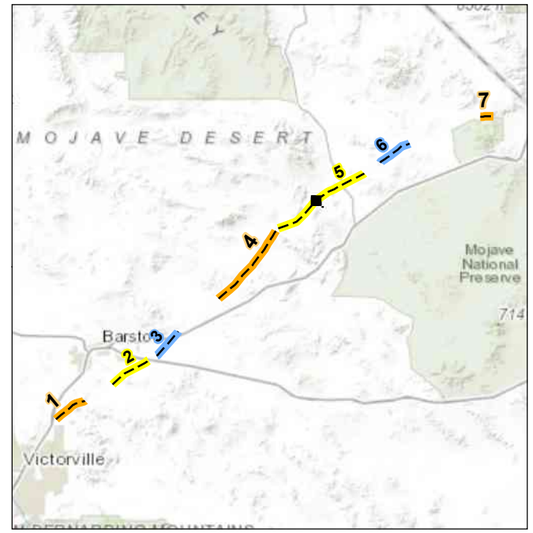

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5o

Path 46 Transmission Line Clearances Project

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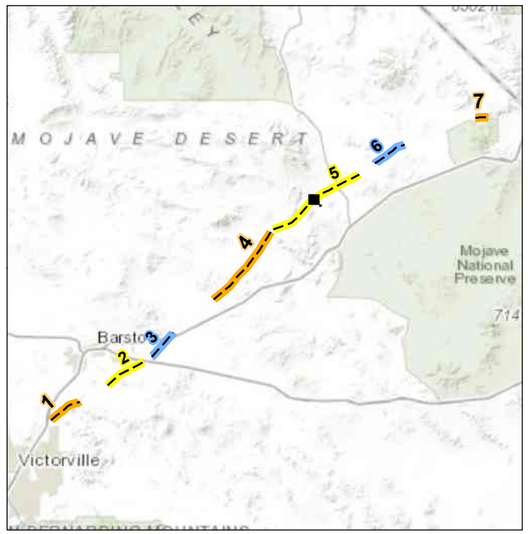

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5p

Path 46 Transmission Line Clearances Project

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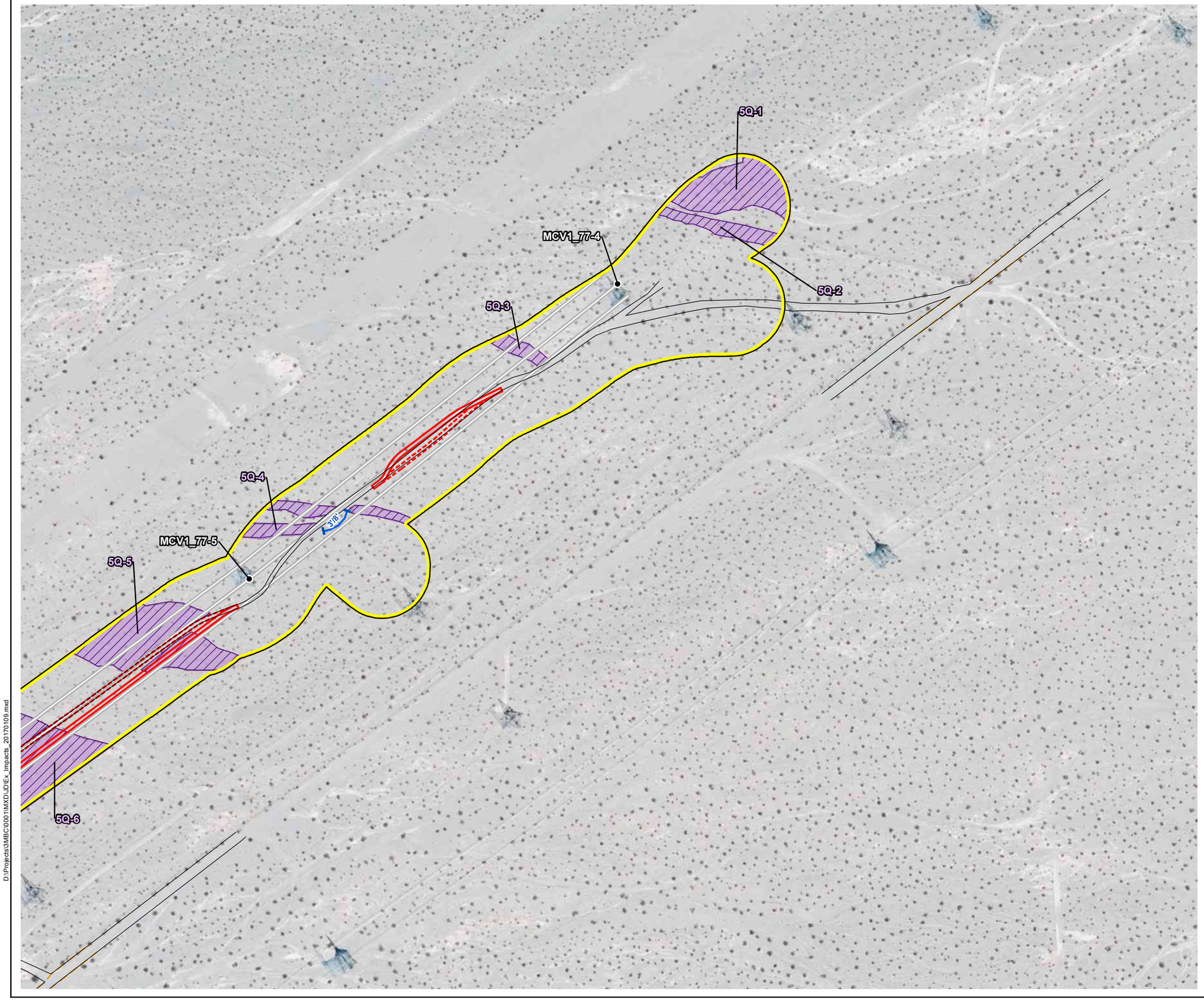

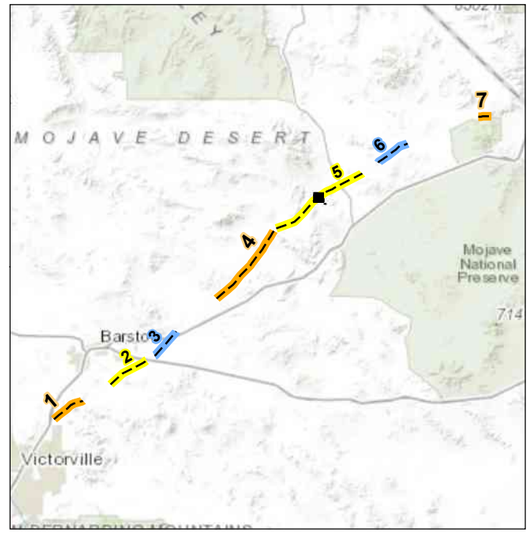

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5q

Path 46 Transmission Line Clearances Project

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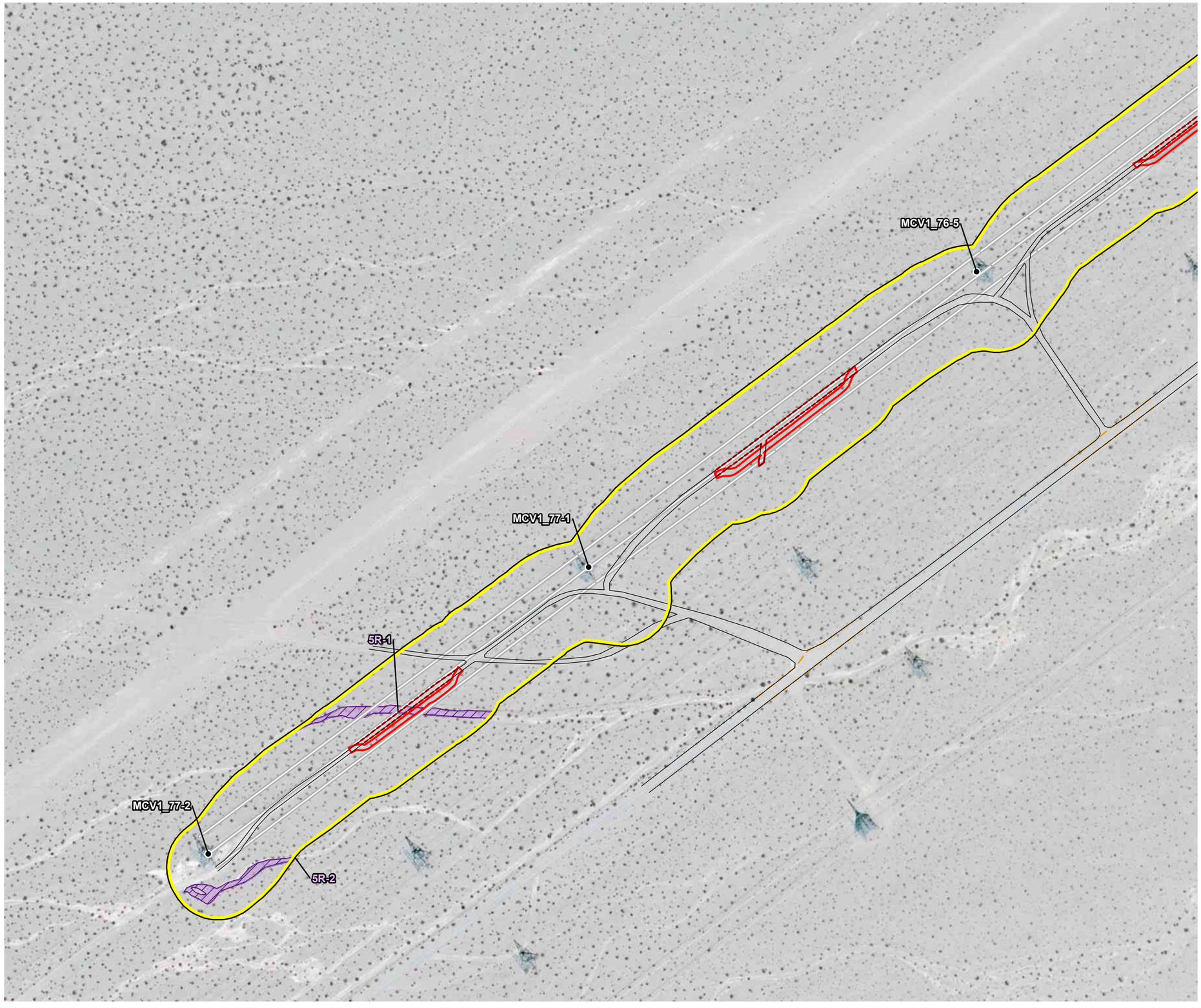

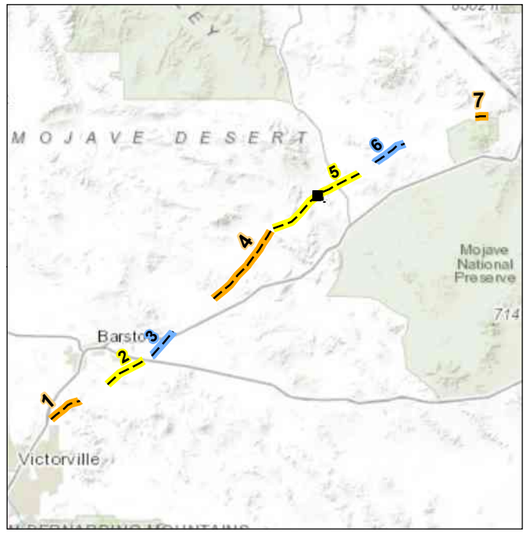

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5r

Path 46 Transmission Line Clearances Project

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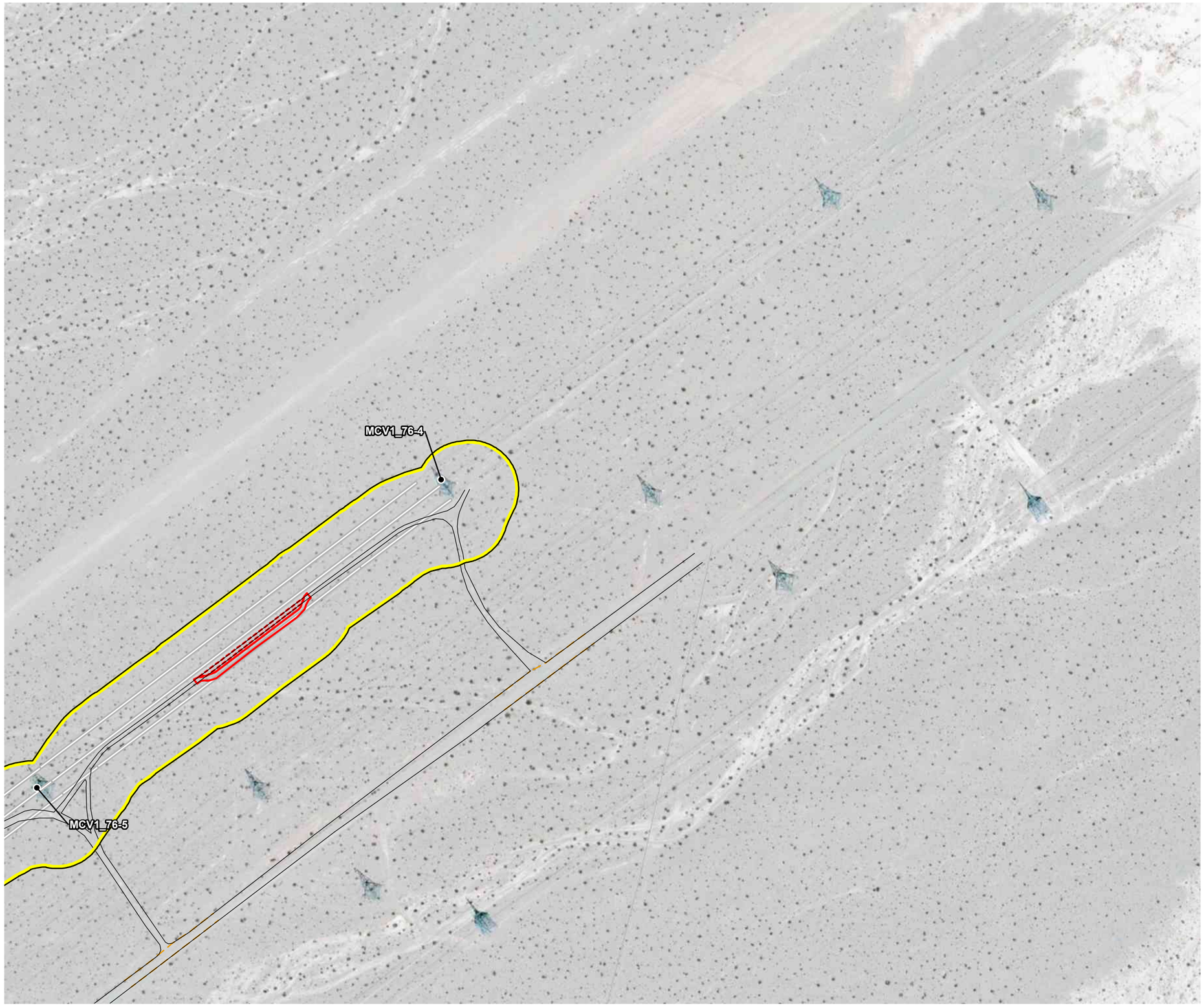

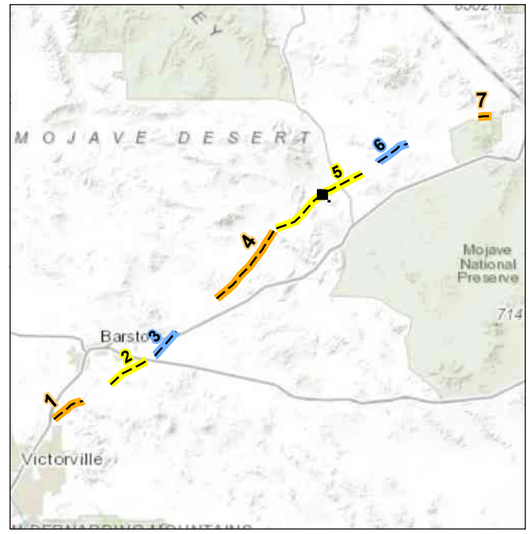

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5s

Path 46 Transmission Line Clearances Project

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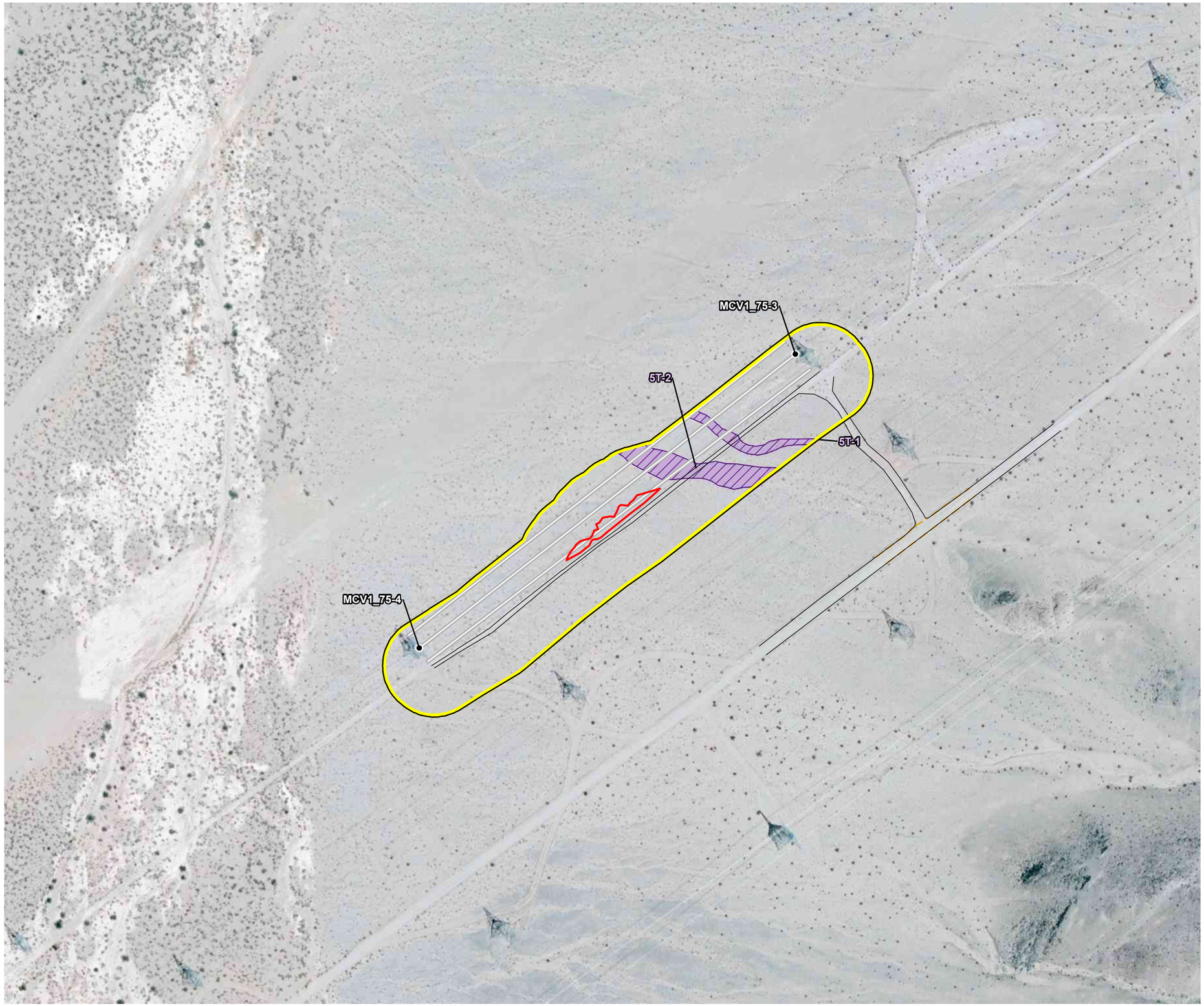

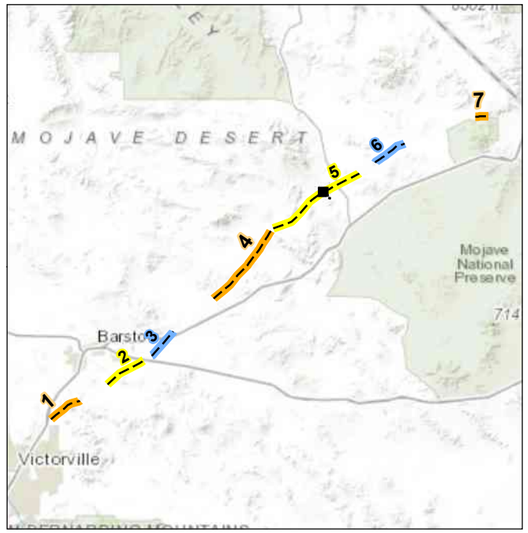

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5t

Path 46 Transmission Line Clearances Project

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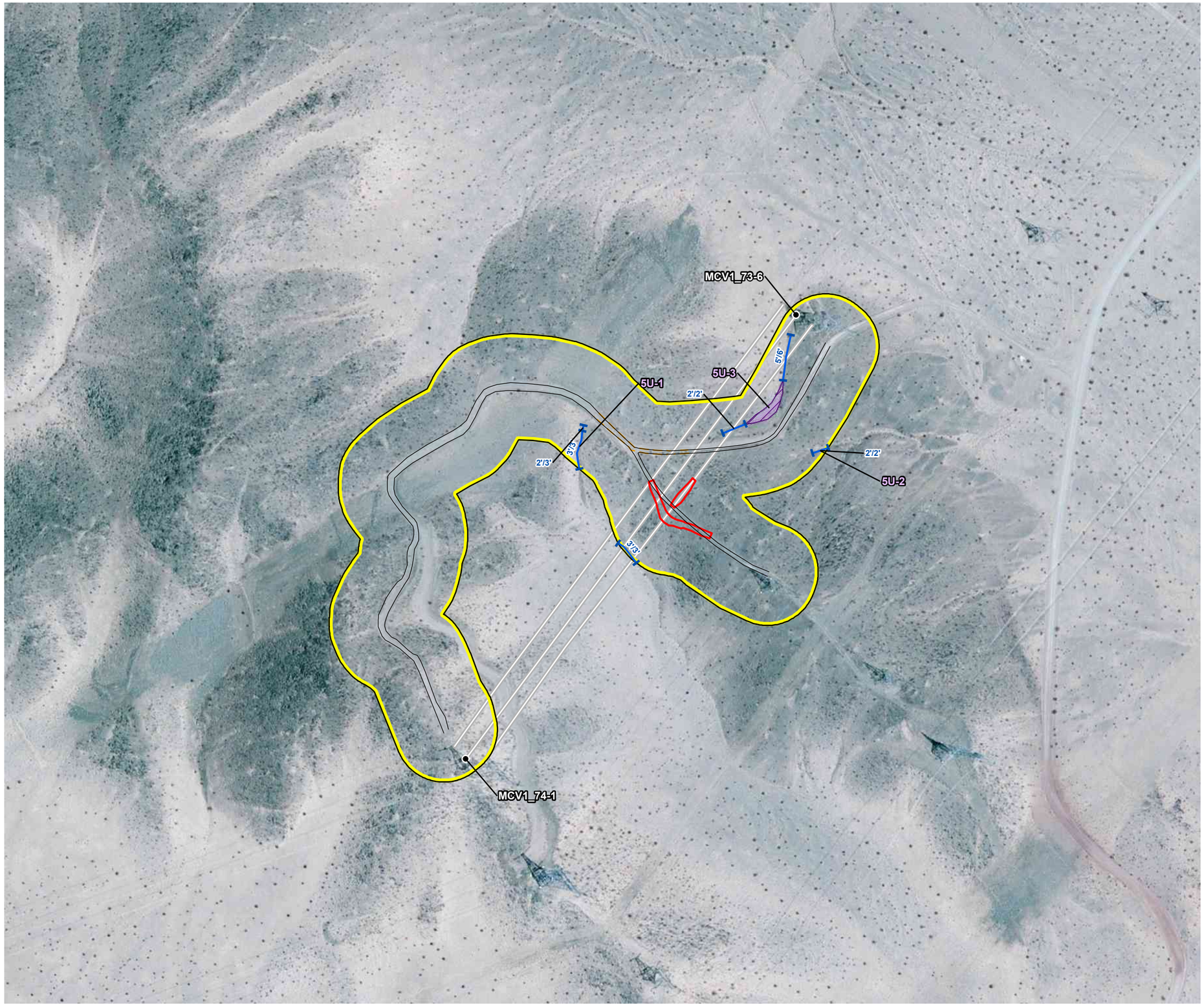

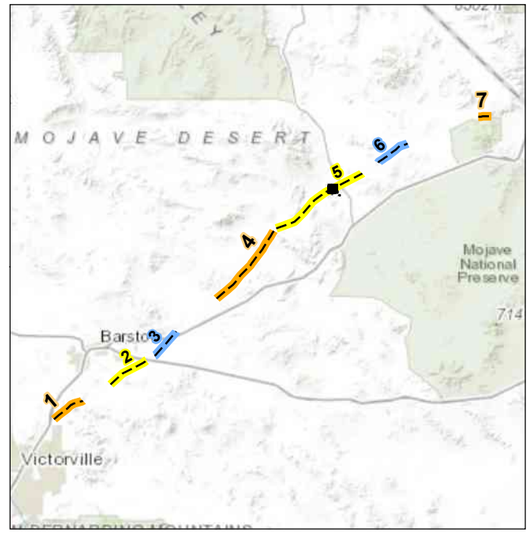

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5u

Path 46 Transmission Line Clearances Project

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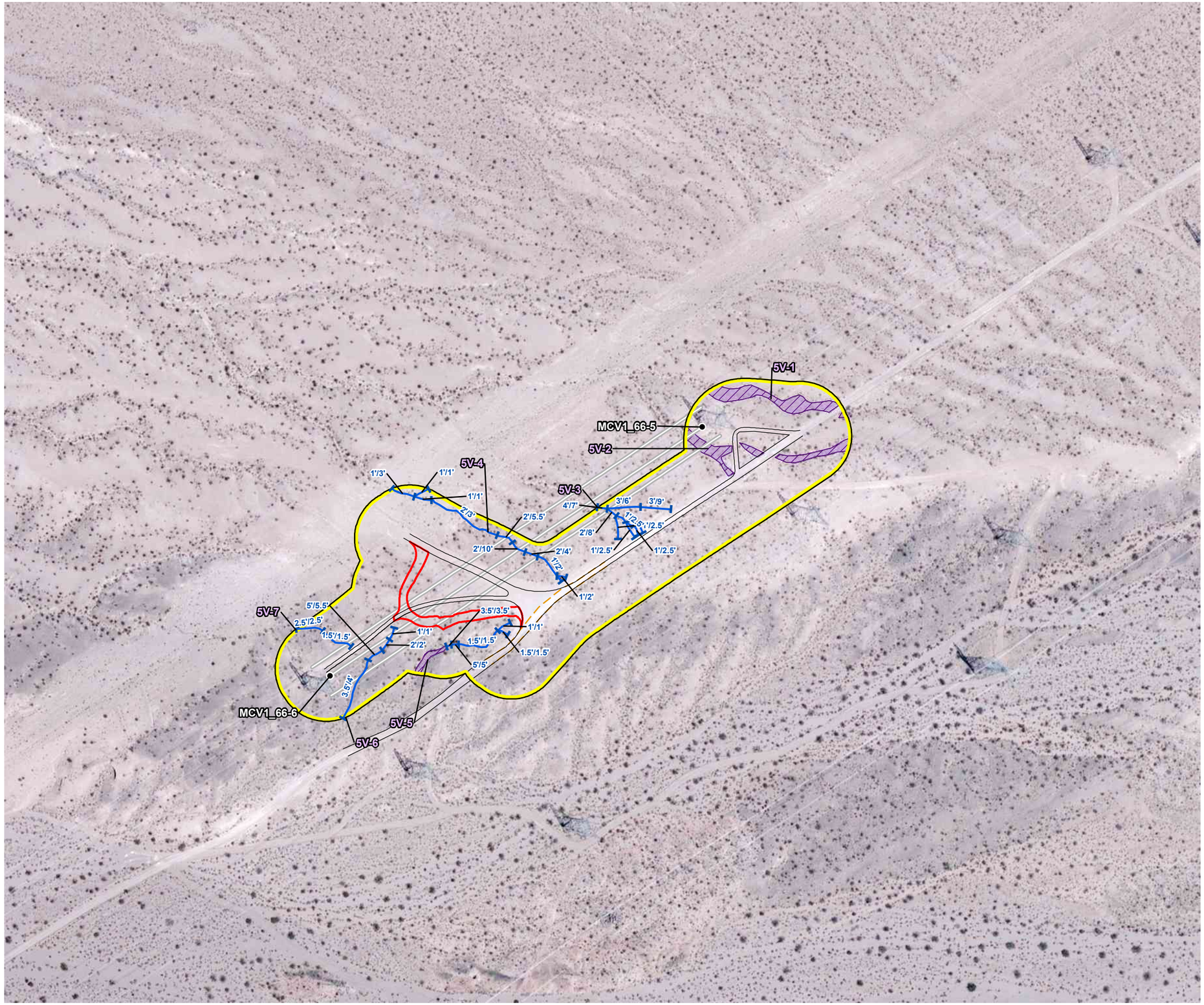

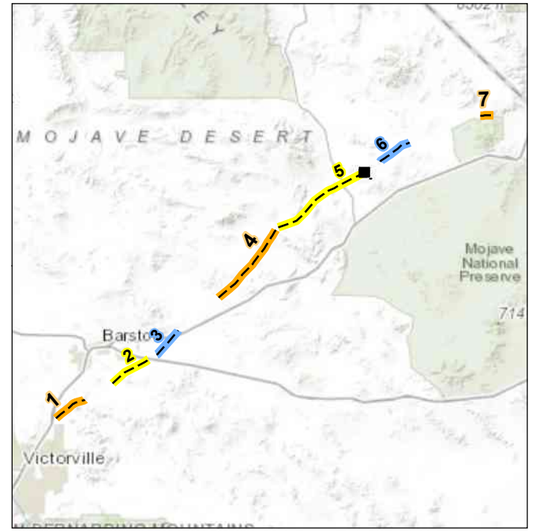

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 5v

Path 46 Transmission Line Clearances Project

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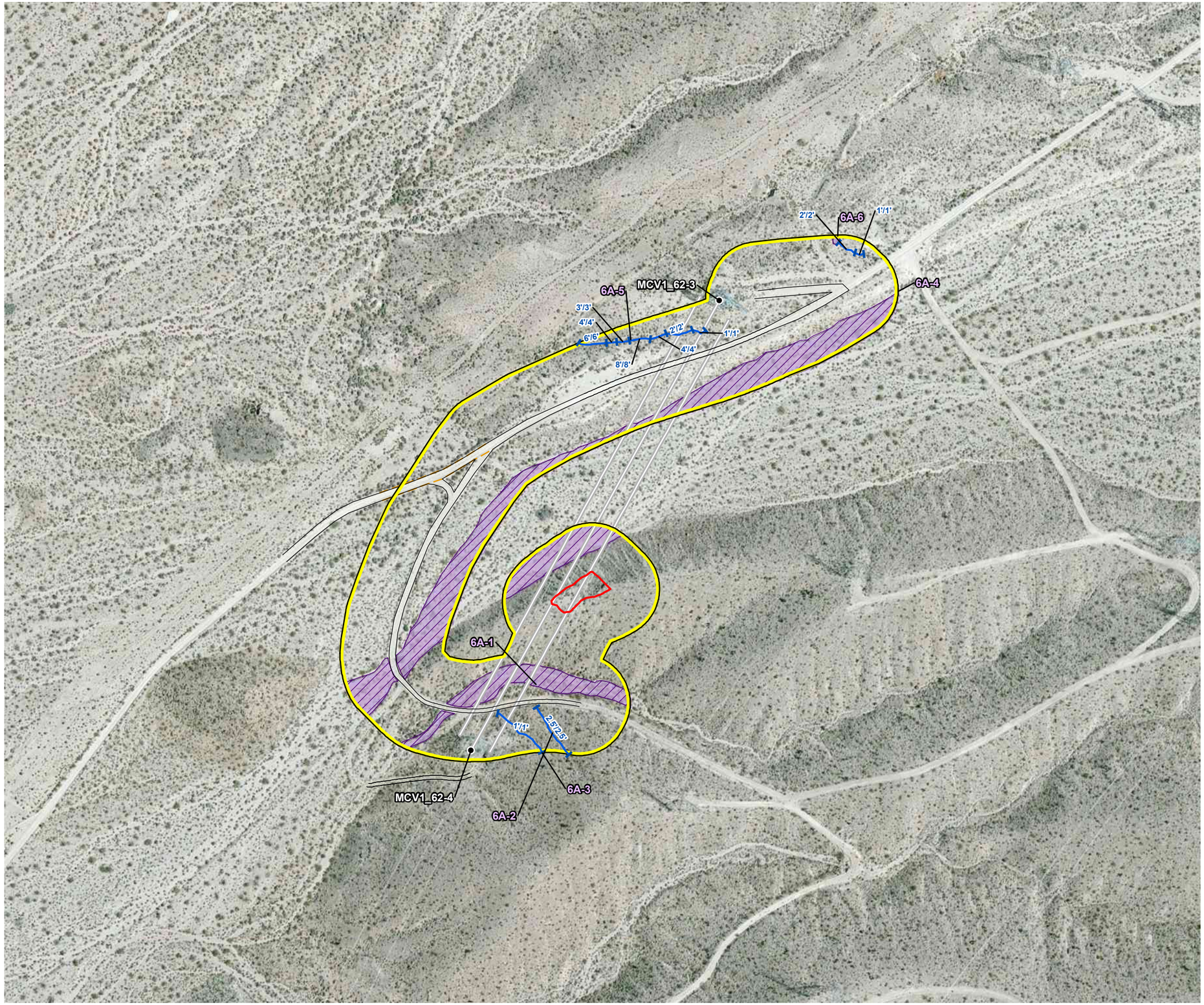

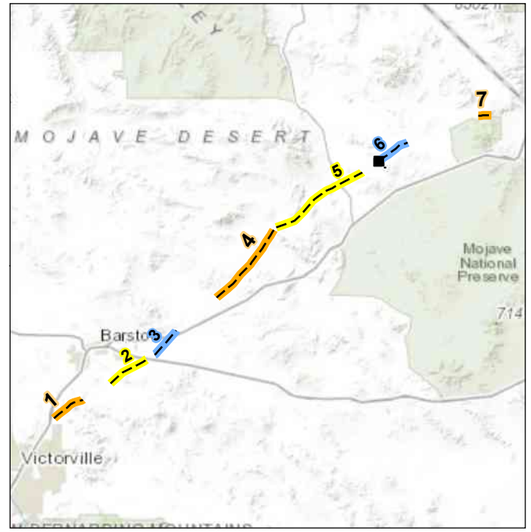

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 6a

Path 46 Transmission Line Clearances Project

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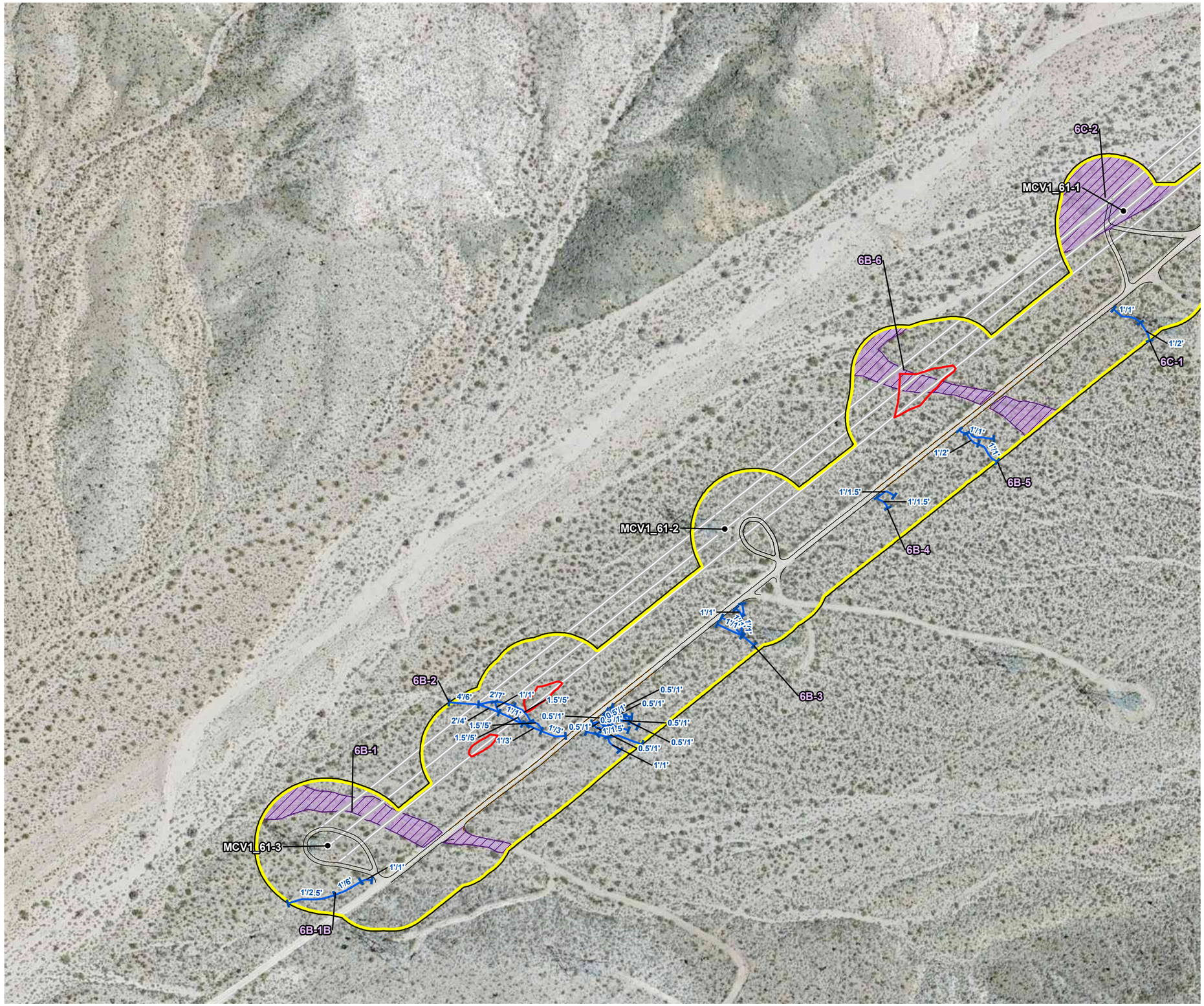

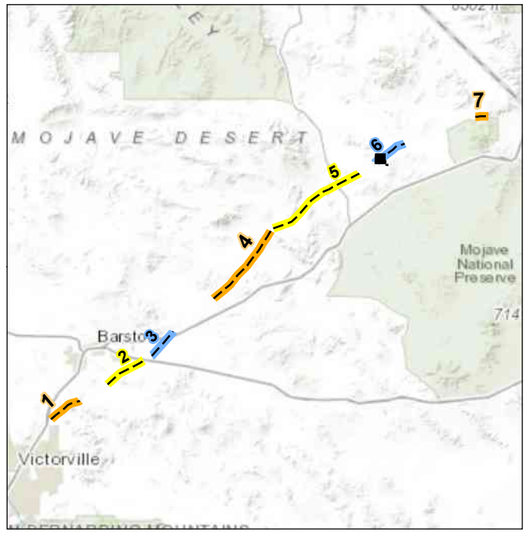

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 6b

Path 46 Transmission Line Clearances Project

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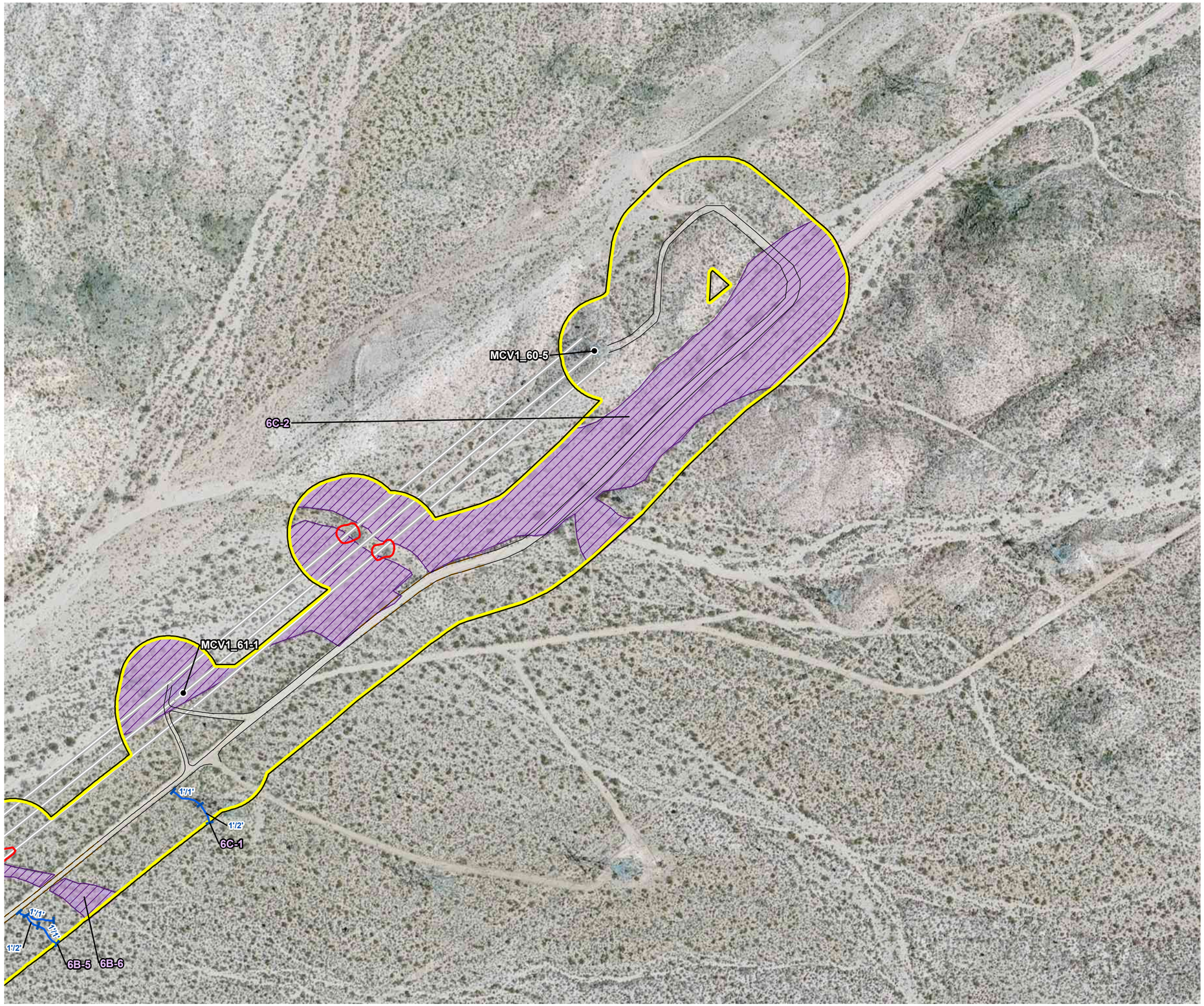

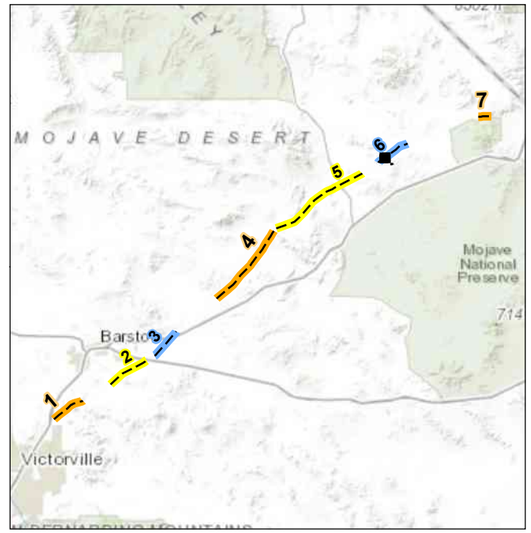

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 6c

Path 46 Transmission Line Clearances Project

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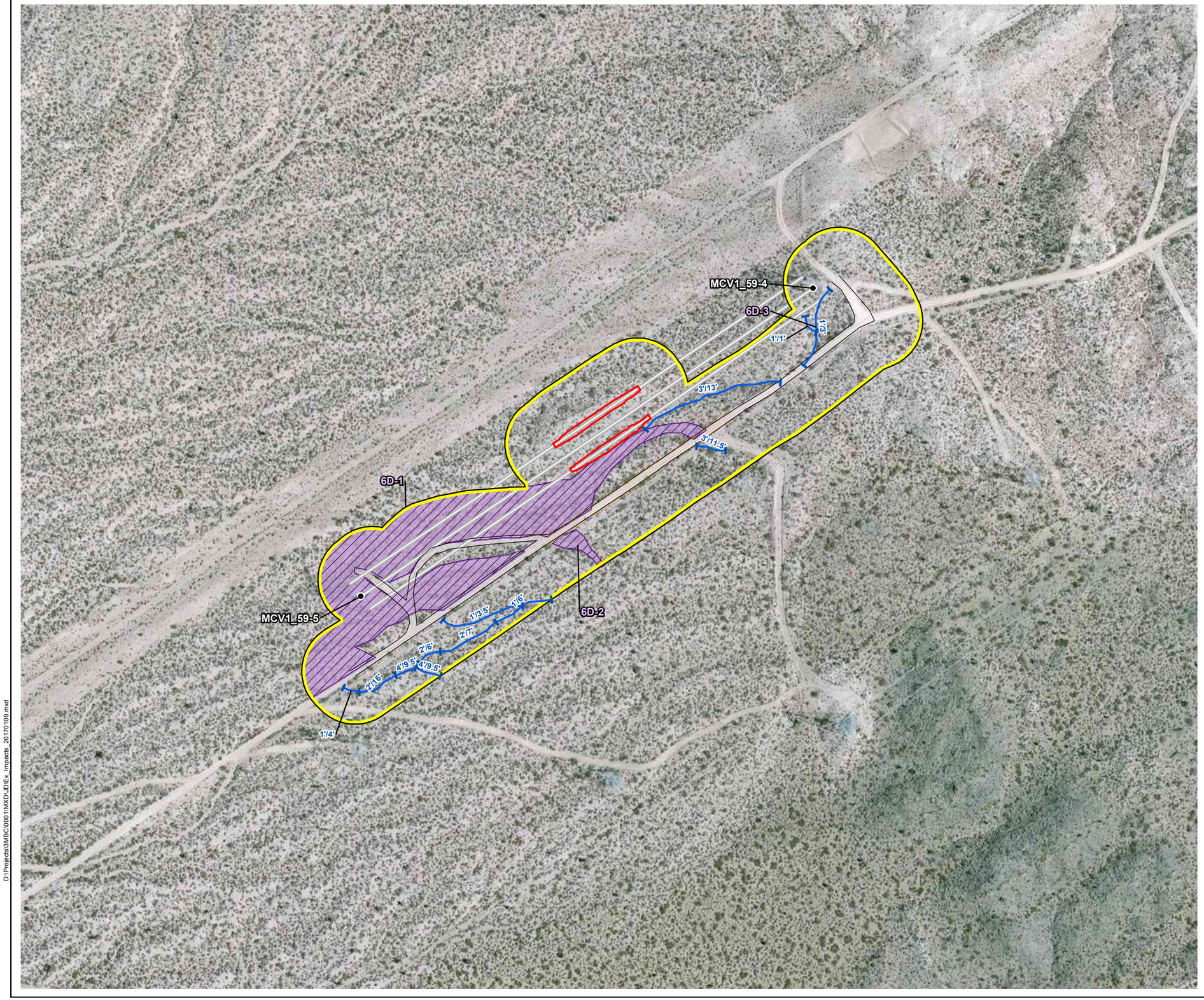

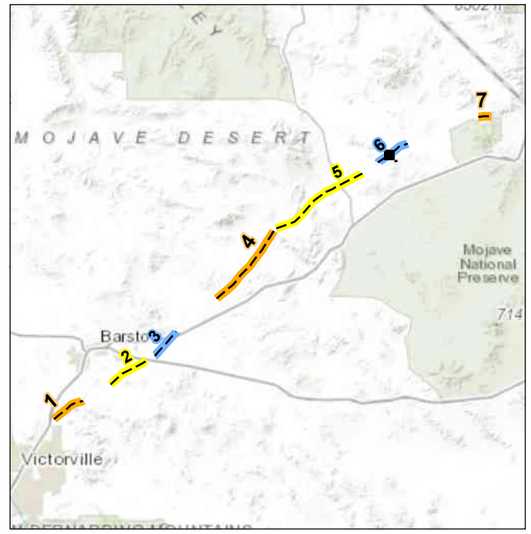

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 6d

Path 46 Transmission Line Clearances Project

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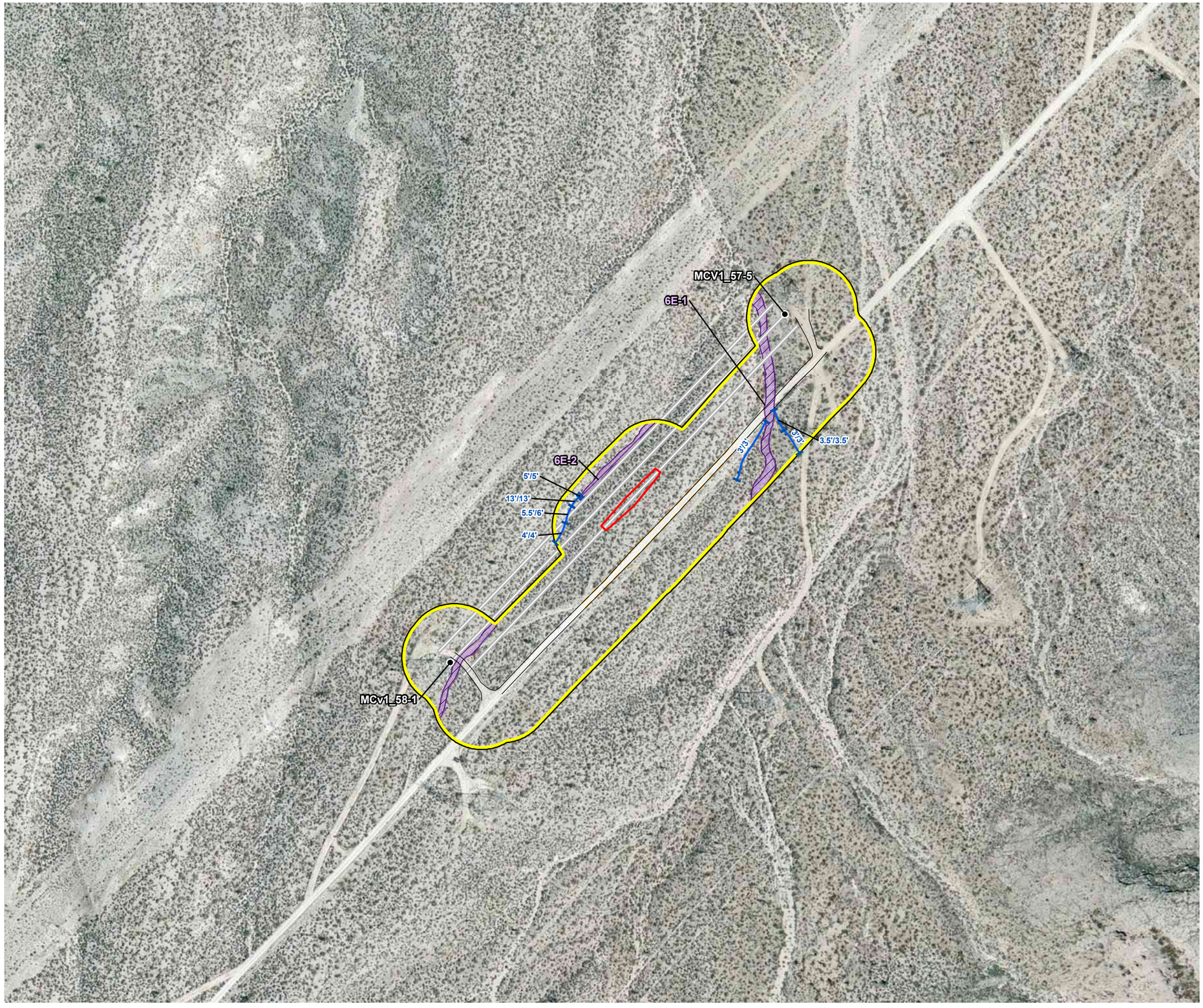

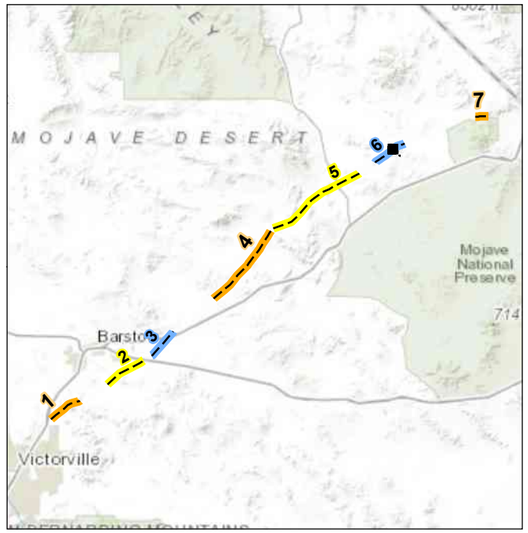

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 6e

Path 46 Transmission Line Clearances Project

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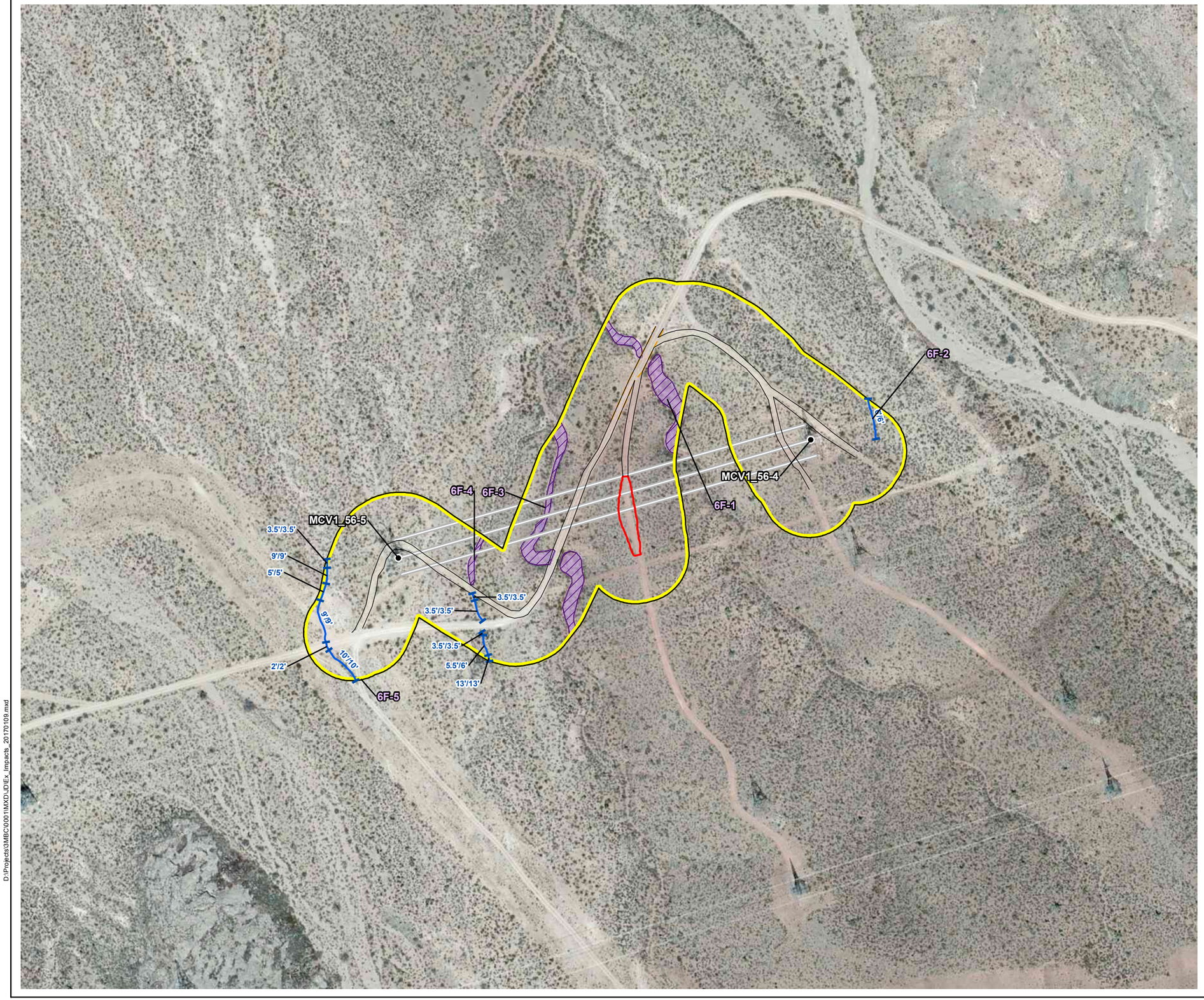

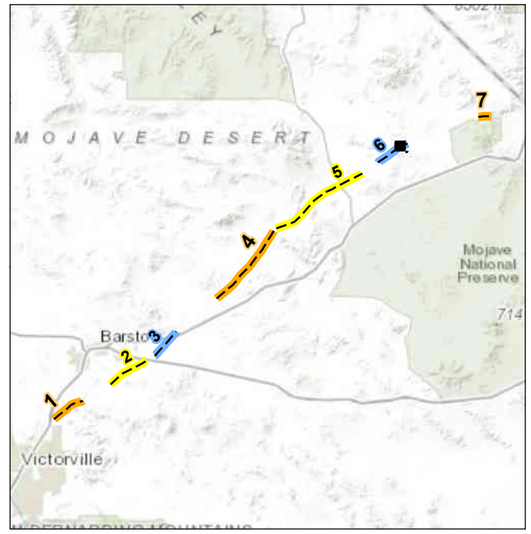

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 6f

Path 46 Transmission Line Clearances Project

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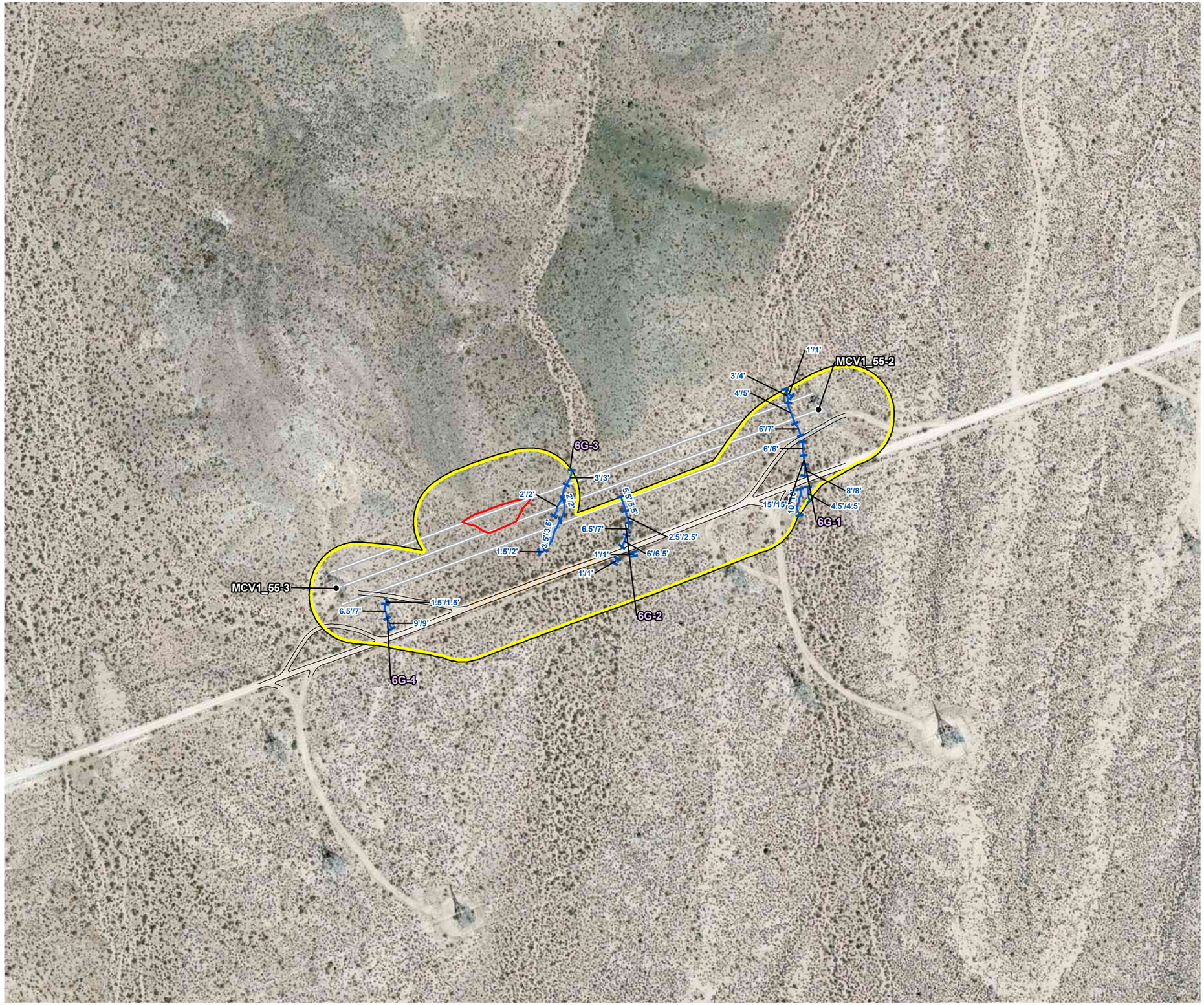

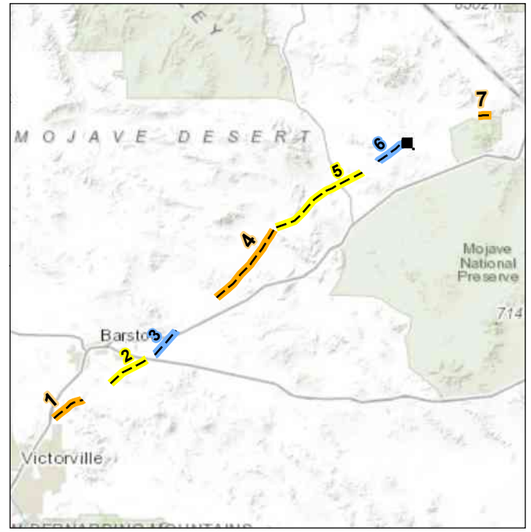

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 6g

Path 46 Transmission Line Clearances Project

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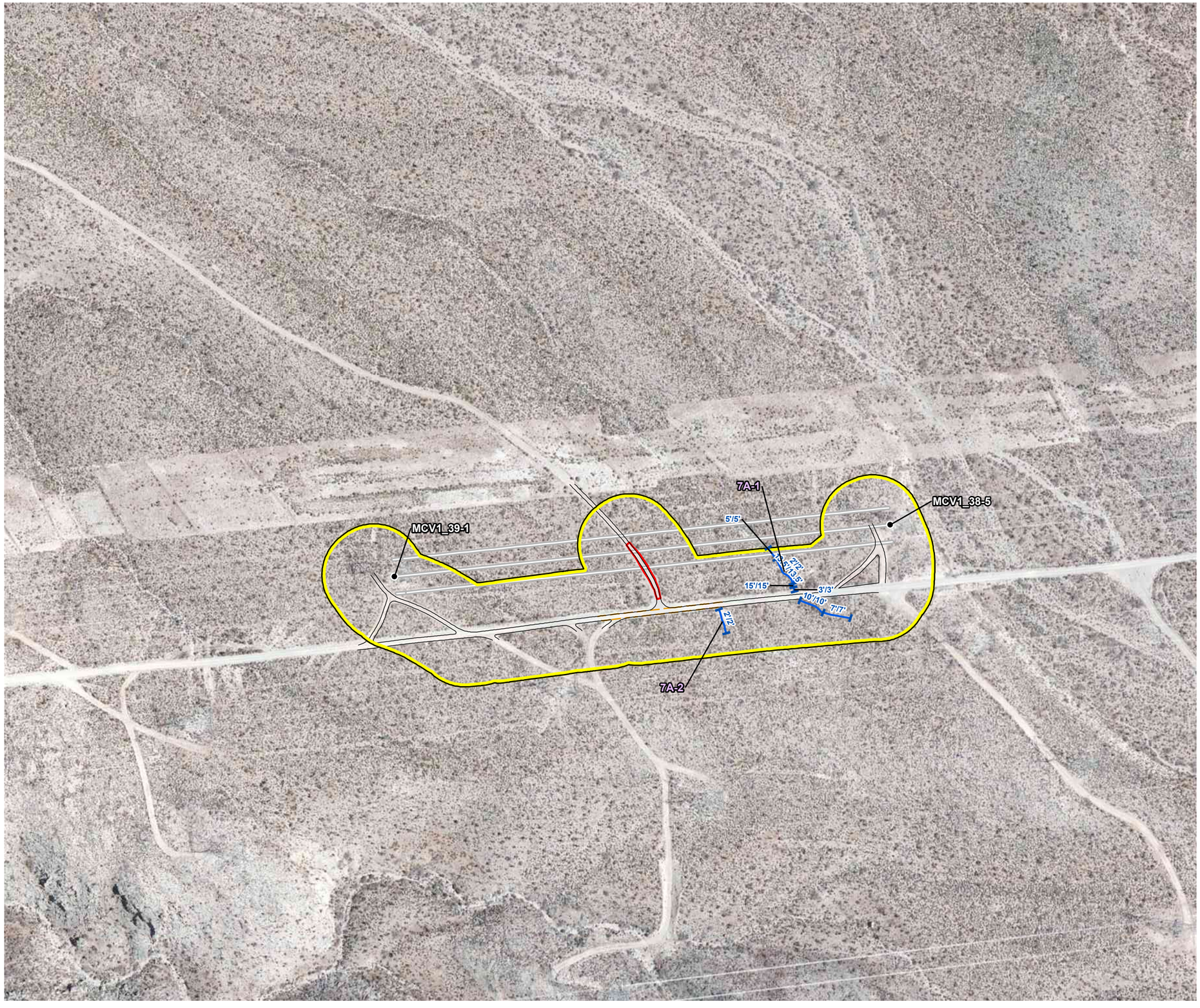

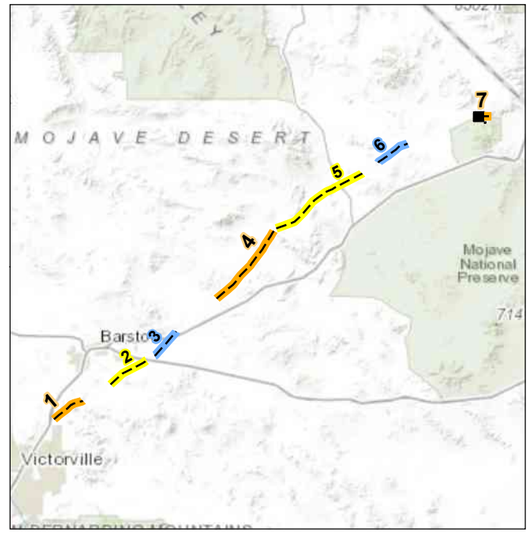

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 7a

Path 46 Transmission Line Clearances Project

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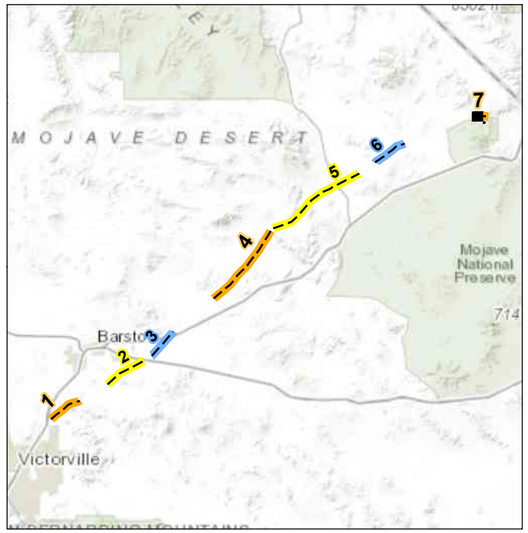

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 7b

Path 46 Transmission Line Clearances Project

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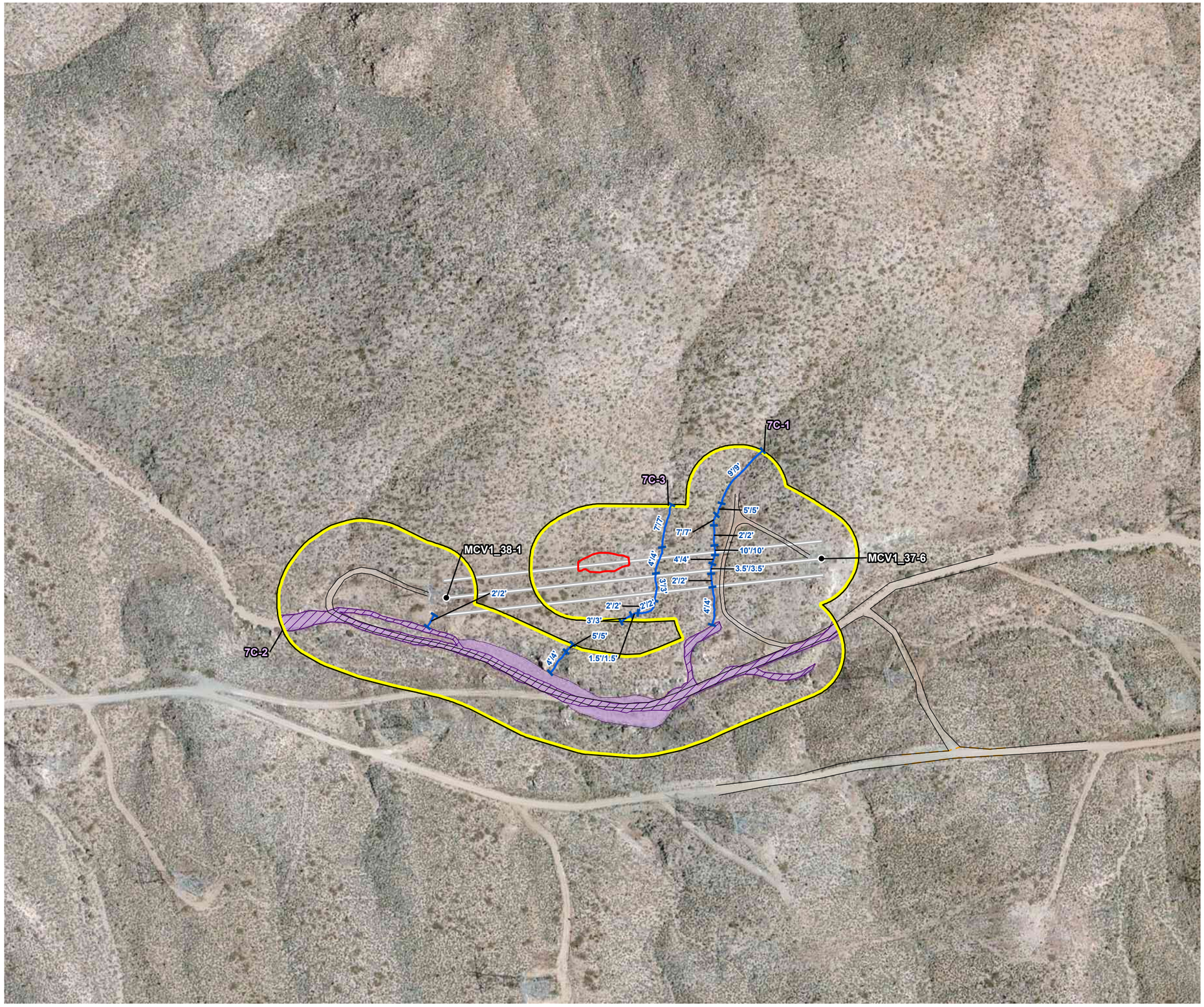

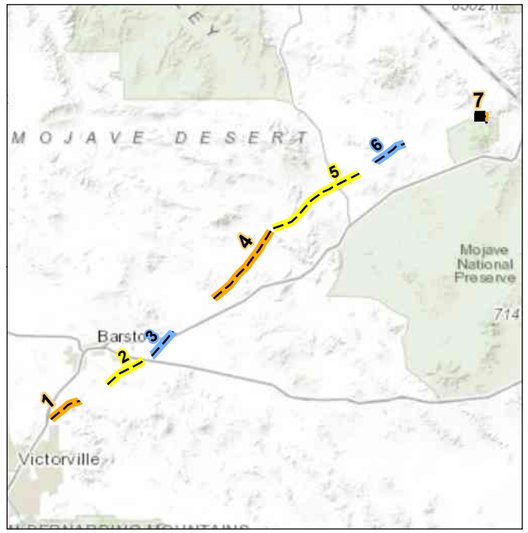

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N
W E
S

200 100 0 200
Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 7c

Path 46 Transmission Line Clearances Project

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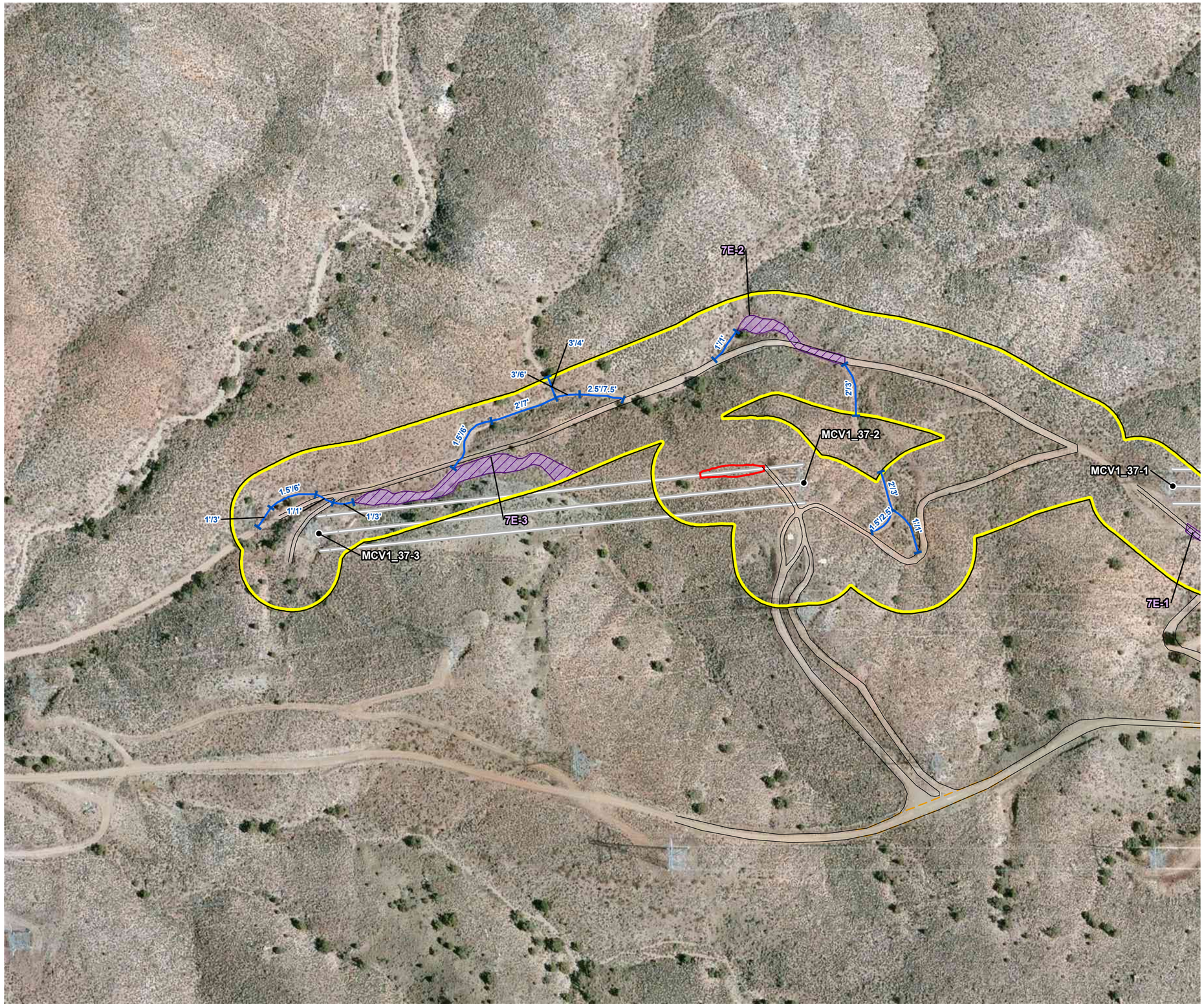

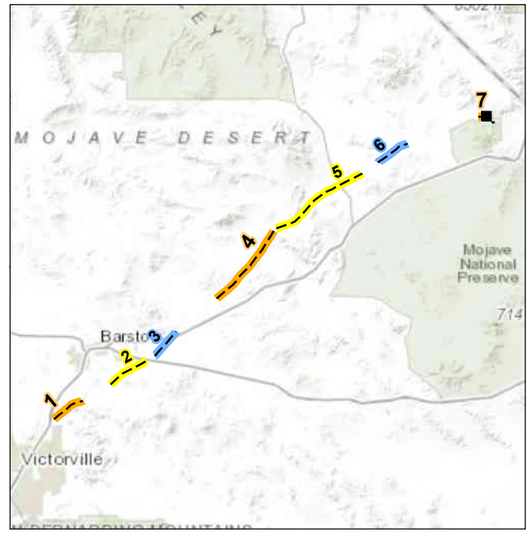

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 7d

Path 46 Transmission Line Clearances Project

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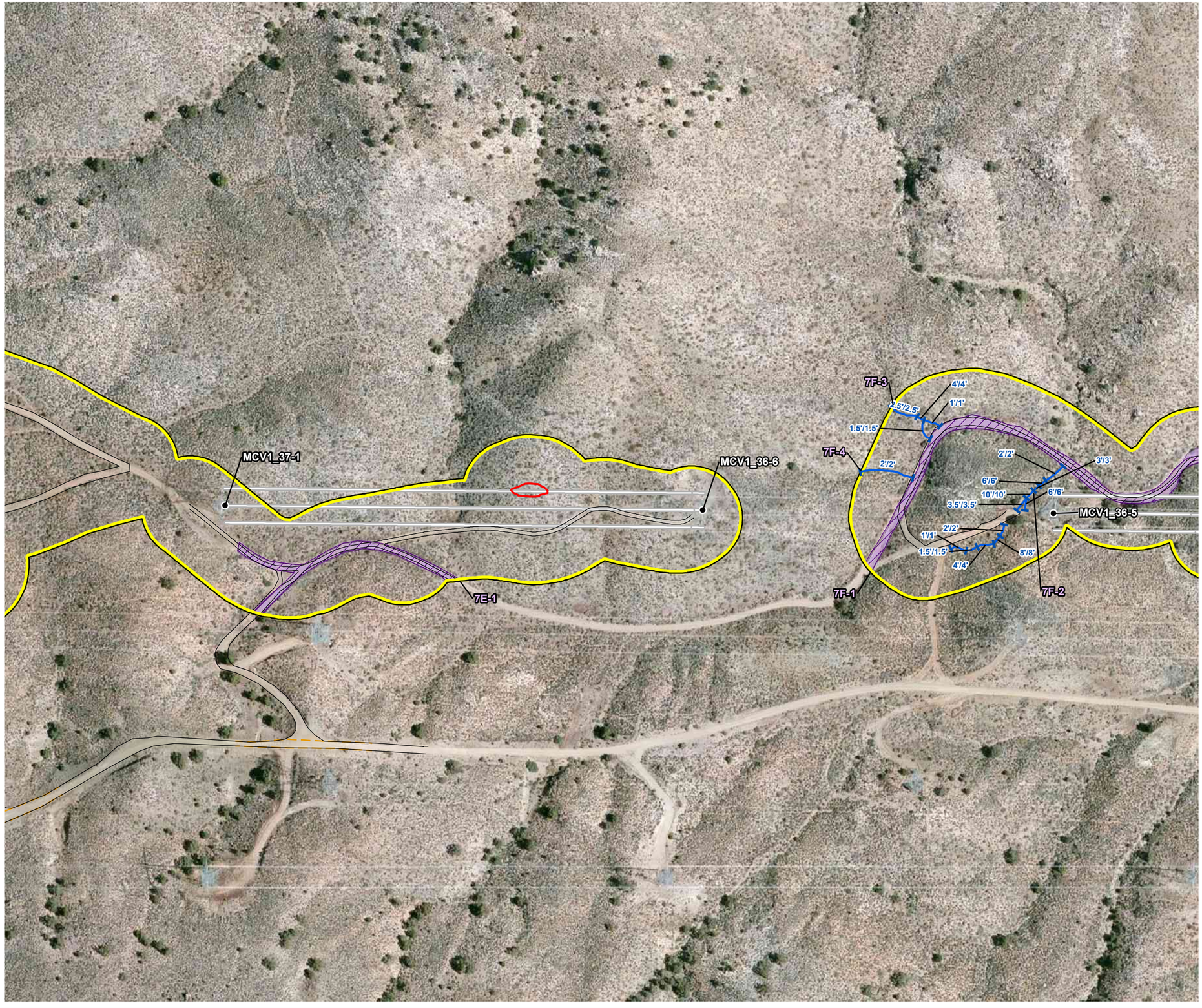

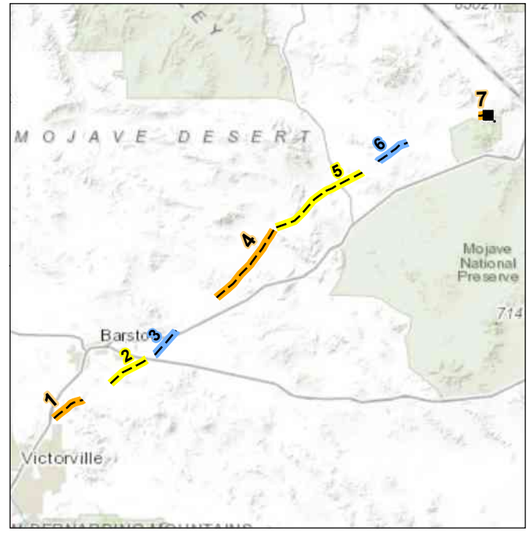

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 7e

Path 46 Transmission Line Clearances Project

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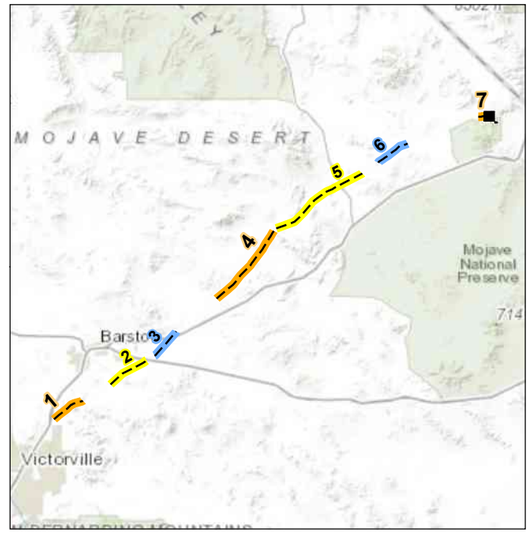

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 7f

Path 46 Transmission Line Clearances Project

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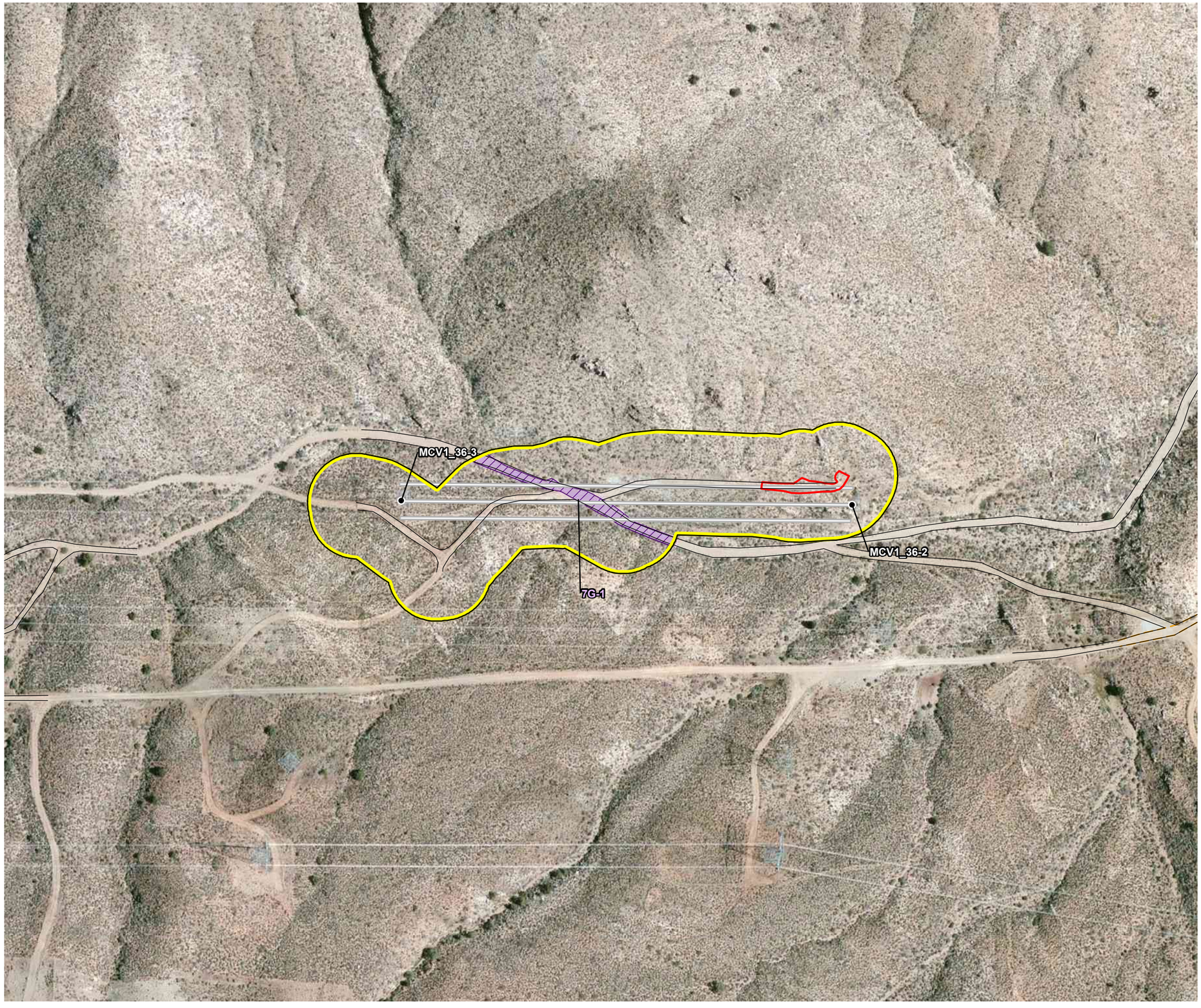

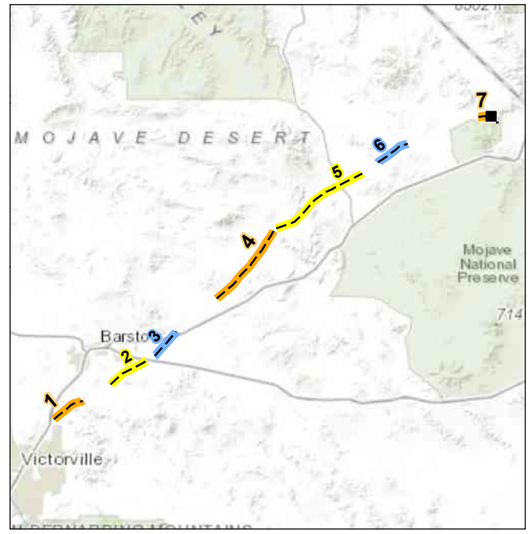

Biological Survey Area

Project Features

- Tower Location
- Access Roads
- Power Lines
- Potential Soil Spreading
- Compacted Soil Barricade
- Demolish
- Grading Limits

Jurisdictional Resources

- Centerline (OHWM/TOB width – feet)
- Ordinary High Water Mark (OHWM) Extent
- Top of Bank (TOB) Extent

N W E S

200 100 0 200 Feet

Aerial Source: ESRI, NAIP 2014

PSOMAS

Exhibit 7
Project Impacts
Segment 7g

Path 46 Transmission Line Clearances Project

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ATTACHMENT B

REGULATORY AUTHORITY

REGULATORY AUTHORITY

This attachment summarizes the regulatory authority of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW) over activities that have potential to impact jurisdictional resources.

U.S. Army Corps of Engineers

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into "waters of the U.S." under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. This permitting authority applies to all "waters of the U.S." where the material (1) replaces any portion of "waters of the U.S." with dry land or (2) changes the bottom elevation of any portion of any "waters of the U.S.". These fill materials would include sand, rock, clay, construction debris, wood chips, and materials used to create any structure or infrastructure in these waters.

Waters of the United States

"Waters of the U.S." can be divided into three categories: territorial seas, tidal waters, or non-tidal waters. The term "waters of the U.S." is defined by the *Code of Federal Regulations*[1] (CFR) and includes:

1. All waters that have, are, or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide (i.e., Traditional Navigable Waters [TNWs]).
2. All interstate waters including interstate wetlands.
3. All other waters such as intrastate lakes, rivers, or streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds where the use, degradation, or destruction of which could affect interstate or foreign commerce.
4. All impoundments of waters otherwise defined as "waters of the U.S." under the definition.
5. All tributaries of waters identified above.
6. The territorial seas.
7. All wetlands adjacent to waters (other than waters that are themselves wetlands) identified above.

The U.S. Supreme Court has issued three decisions that provide context and guidance in determining the appropriate scope of "waters of the U.S.". In *United States v. Riverside Bayview Homes*, the Court upheld the inclusion of adjacent wetlands in the regulatory definition of "waters of the U.S.". In *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC), the Court held that the use of "isolated" non-navigable intrastate ponds by migratory birds was not, by itself, sufficient basis for the exercise of federal regulatory authority under the CWA. In *Rapanos v. United States* (Rapanos),[2] a majority of the U.S. Supreme Court overturned two Sixth Circuit Court of Appeals decisions, finding that certain wetlands constituted "waters of the U.S." under the CWA. In his plurality opinion, Justice Scalia argued that "waters of the U.S." should not include channels through which water flows intermittently or ephemerally or channels

[1] Specifically, Title 33, Navigation and Navigable Waters; Part 328, Definition of waters of the United States; §328.3, Definitions.

[2] Consolidated cases: *Rapanos v. United States* and *Carabell v. United States* refer to the U.S. Supreme Court's decision concerning USACE jurisdiction over "waters of the U.S." under the CWA.

that periodically provide drainage for rainfall. He also stated that a wetland may not be considered "adjacent to" remote "waters of the U.S." based on a mere hydrologic connection. Justice Kennedy authored a separate concurring opinion concluding that wetlands are "waters of the U.S." if they, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as "navigable". Lacking a majority opinion, regulatory jurisdiction under the CWA exists over a water body if either the plurality's or Justice Kennedy's "significant nexus" standard is satisfied.

In summary, the USACE and the U.S. Environmental Protection Agency (USEPA) will assert jurisdiction over the following waters: (1) TNWs; (2) wetlands adjacent to a TNW; (3) relatively permanent, non-navigable tributaries of a TNW that typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and (4) wetlands that directly abut such tributaries.

The USACE and the USEPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW: (1) non-navigable tributaries that are not relatively permanent; (2) wetlands adjacent to non-navigable tributaries that are not relatively permanent; and (3) wetlands adjacent to, but that do not directly abut, a relatively permanent, non-navigable tributary.

The USACE and the USEPA will apply the significant nexus standard defined as follows:

1. A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs.
2. A significant nexus includes consideration of hydrologic and ecological factors.

The USACE and the USEPA generally will not assert jurisdiction over the following features: (1) swales or erosional features (e.g., gullies or small washes characterized by low volume, infrequent, or short duration flow) and (2) ditches (including roadside ditches) excavated wholly within and draining only uplands and that do not carry a relatively permanent flow of water.

Ordinary High Water Mark

The landward limit of tidal "waters of the U.S." is the high-tide line. In non-tidal waters where adjacent wetlands are absent, the lateral limits of USACE jurisdiction extend to the ordinary high water mark (OHWM).[3] The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas".[4] When wetlands are present, the lateral limits of USACE jurisdiction extend beyond the OHWM to the limits of the adjacent wetlands.[5]

[3] U.S. Army Corps of Engineers (USACE). 2005 (December 7). Regulatory Guidance Letter. Ordinary High Water Mark Identification. Washington, D.C.: USACE.

[4] *Code of Federal Regulations* (CFR), Title 33, §328.3(e)

[5] USACE 2005

Wetlands

A wetland is a subset of jurisdictional waters and is defined by the USACE and the USEPA as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions".[6] Wetlands generally include swamps, marshes, bogs, and areas containing similar features.

The definition and methods for identifying wetland resources can be found in the USACE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*,[7] a supplement to the 1987 *Corps of Engineers Wetlands Delineation Manual*.[8] Both the 1987 Wetlands Manual and the 2008 Arid West Supplement to the manual provide technical methods and guidelines for determining the presence of wetland "waters of the U.S.". Pursuant to these manuals, a three-parameter approach is used to identify wetlands and requires evidence of wetland hydrology, hydrophytic vegetation, and hydric soils. In order to be considered a wetland, an area must exhibit one or more indicators of all three of these parameters. However, problem areas may periodically or permanently lack certain indicators for reasons such as seasonal or annual variability of rainfall, vegetation, and other factors. Atypical wetlands lack certain indicators due to recent human activities or natural events. Guidance for determining the presence of wetlands in these situations is presented in the regional supplement.

Section 404 Permit

Except as specified in Section 323.4 of the CFR, impacts to "waters of the U.S." require a Section 404 Permit. Permit authorization may be in the form of (1) a "general permit" authorizing a category of activities in a specific geographical region or nationwide or (2) an "individual permit" (IP) following a review of an individual application form (to be obtained from the district office having jurisdiction over the waters in which the activity is proposed to be located).

Regulatory authorization in the form of a Nationwide Permit (NWP) is provided for certain categories of activities such as repair, rehabilitation, or replacement of a structure or fill which was previously authorized; utility line placement; or bank stabilization. The current set of NWPs became effective on March 19, 2012, and will expire in on March 18, 2017. NWPs authorize only those activities with minimal adverse effects on the aquatic environment and are valid only if the conditions applicable to the permits are met or waivers to these conditions are provided in writing from the USACE. Please note that waivers may require consultation with affected federal and State agencies, which can be a lengthy process with no mandated processing time frames. Certain activities do not require submission of an application form, but may require a separate notification. If the NWP conditions cannot be met, an IP will be required. "Waters of the U.S." temporarily filled, flooded, excavated, or drained but restored to pre-construction contours and elevations after construction are not included in the measurement of loss of "waters of the U.S.". The appropriate permit authorization will be based on the amount of impacts to "waters of the U.S.", as determined by the USACE. There is no filing fee for the Section 404 Permit.

Approximately three or four months are typically required to process a routine permit application; large or complex activities may take longer to process. When a permit application is received, it will be assigned an identification number and reviewed for completeness by the District Engineer. If an application is incomplete, additional information will be requested within 15 days of receipt

6 33 CFR §328.3(b)

7 USACE. 2008a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. (J.S. Wakeley, R.W. Lichvar, and C.V. Noble, Eds.). Vicksburg, MS: U.S. Army Engineer Research and Development Center.

8 Environmental Laboratory. 1987. Cor*ps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1)*. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

of the application. If an application is complete, the District Engineer will issue a public notice within 15 days unless specifically exempted by provisions of the CFR. Public comments will be accepted no more than 30 days but not less than 15 days from the date of public notice; these will become part of the administrative record of the application. Generally, the District Engineer will decide on the application no later than 60 days after receipt of the completed application. Additional permit situations may increase the permit processing time (e.g., projects involving a Section 401 Water Quality Certification, a coastal zone management consistency analysis, historic properties, a federal agency, and/or Endangered species). The Project Applicant will be given time, not to exceed 30 days, to respond to requests of the District Engineer.

On January 31, 2007, the USACE published a memorandum clarifying the Interim Guidance for Amendments to the National Historic Preservation Act and the Advisory Council on Historic Preservation (ACHP) implementing regulations.[9] The Interim Guidance applies to all Department of the Army requests for authorization/verification, including Individual Permits (IPs, i.e., standard permits and letters of permission) and all Regional General Permits (RGPs) and Nationwide Permits (NWPs). The State or Tribal Historic Preservation Officer (SHPO/THPO) has 30 days to respond to a determination that a proposed activity, which otherwise qualifies for an NWP or an RGP, has no effect or no adverse effect on a historic property. If the SHPO/THPO does not respond within 30 days of notification, the Los Angeles District may proceed with verification. If the SHPO/THPO disagrees with the District's determination, the District may work with the SHPO/THPO to resolve the disagreement or request an opinion from the ACHP. The USACE will submit the Draft Jurisdictional Delineation Report to the SHPO/THPO for review prior to initiating the actual regulatory process.

Please note that, if the USACE determines that the drainages/waterbodies are jurisdictional and would be impacted by project implementation, the Applicant will be required to obtain a CWA Section 401 Water Quality Certification from the RWQCB before the USACE will issue the Section 404 Permit. If the USACE determines that the impacted drainage/waterbody is not jurisdictional, the Applicant will be required to obtain RWQCB authorization under the provisions of a Report of Waste Discharge (ROWD).

Jurisdictional Determinations

Pursuant to USACE Regulatory Guidance Letter (RGL) 08-02 (dated June 26, 2008), the USACE can issue two types of jurisdictional determinations to implement Section 404 of the CWA: Approved Jurisdictional Determinations and Preliminary Jurisdictional Determinations.[10] An Approved Jurisdictional Determination is an official USACE determination that jurisdictional "waters of the U.S.", "Navigable Waters of the U.S.", or both are either present or absent on a site. An Approved Jurisdictional Determination also identifies the precise limits of jurisdictional waters on a project site.

The USACE will provide an Approved Jurisdictional Determination when (1) an Applicant requests an official jurisdictional determination; (2) an Applicant contests jurisdiction over a particular water body or wetland; or (3) when the USACE determines that jurisdiction does not exist over a particular water body or wetland. The Approved Jurisdictional Determination then becomes the USACE's official determination that can then be relied upon over a five-year period to request regulatory authorization as part of the permit application.

[9] USACE. 2007 (January 31). Memorandum: Interim Guidance for Amendments to the National Historic Preservation Act and the Advisory Council on Historic Preservation (ACHP) Implementing Regulations. Washington, D.C.: USACE.

[10] USACE. 2008b (June 26). Regulatory Guidance Letter. Jurisdictional Determinations. Washington, D.C.: USACE.

In addition, an Applicant may decline to request an Approved Jurisdictional Determination and instead obtain a USACE IP or General Permit Authorization based on a Preliminary Jurisdictional Determination or, in certain circumstances (e.g., authorizations by non-reporting nationwide general permits), with no Jurisdictional Determination.

Preliminary Jurisdictional Determinations are non-binding, advisory in nature, and may not be appealed. They indicate that there may be "waters of the U.S." on a project site. An Applicant may elect to use a Preliminary Jurisdictional Determination to voluntarily waive or set aside questions regarding CWA jurisdiction over a site, usually in the interest of expediting the permitting process. The USACE will determine what form of Jurisdictional Determination is appropriate for a particular project site.

The USACE Regulatory Branch Offices will coordinate with the USEPA Regional Office and USACE Headquarters (HQ), as outlined in its January 28, 2008, memorandum entitled "Process for Coordinating Jurisdictional Determinations Conducted Pursuant to Section 404 of the Clean Water Act in Light of the *Rapanos* and *SWANCC* Supreme Court Decisions".[11] The guidance provided in this memorandum is quoted as follows:

1. Effective immediately, unless and until paragraph 5(b) of the June 5, 2007, Rapanos guidance coordination memorandum is modified by a joint memorandum from Army and EPA, we will follow these procedures:
    a. For jurisdictional determinations involving significant nexus determinations, USACE districts will send copies of draft jurisdictional delineations via e-mail to appropriate EPA regional offices. The EPA regional office will have 15 calendar days to decide whether to take the draft jurisdictional delineation as a special case under the January 19, 1989, "Memorandum of Agreement Between the Department of the Army and the USEPA Concerning the Determination of the Section 404 Program and the Application of the Exceptions under Section 404(f) of the Clean Water Act." If the EPA regional office does not respond to the district within 15 days, the district will finalize the jurisdictional determination.
    b. For jurisdictional determinations involving isolated waters determinations, the agencies will continue to follow the procedure in paragraph 5(b) of June 5, 2007, coordination memorandum, until a new coordination memorandum is signed by USACE and EPA. (In accordance with paragraph 6 of the June 5, 2007, coordination memorandum, this is a 21-day timeline that can only be changed through a joint memorandum between agencies).
2. Approved JDs are not required for non-reporting NWPs, unless the project proponent specifically requests an approved JD. For proposed activities that may qualify for authorization under a State Programmatic General Permit (SPGP) or RGP, an approved JD is not required unless requested by the project proponent.
3. The USACE will continue to work with EPA to resolve the JDs involving significant nexus and isolated waters determinations that are currently in the elevation process.

[11] USACE. 2008c (January 28). *Memorandum for Commander, Major Subordinate Commands and District Commands. Process for Coordinating Jurisdictional Determinations Conducted Pursuant to Section 404 of the Clean Water Act in Light of the Rapanos and SWANCC Supreme Court Decisions.* Washington, D.C.: USACE.

4. USACE districts will continue posting completed Approved JD Forms on their web pages.

Regional Water Quality Control Board

The RWQCB is the primary agency responsible for protecting water quality in California through the regulation of discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The RWQCB's jurisdiction extends to all "waters of the State" and to all "waters of the U.S.", including wetlands (isolated and non-isolated).

Section 401 of the CWA provides the RWQCB with the authority to regulate, through a Water Quality Certification, any proposed, federally permitted activity that may affect water quality. Among such activities are discharges of dredged or fill material permitted by the USACE pursuant to Section 404 of the CWA. Section 401 requires the RWQCB to provide certification that there is reasonable assurance that an activity which may result in discharge to navigable waters will not violate water quality standards. Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, which contain numeric and narrative objectives that can be found in each of the nine RWQCBs' Basin Plans.

The Porter-Cologne Act provides the State with very broad authority to regulate "waters of the State" (which are defined as any surface water or groundwater, including saline waters). The Porter-Cologne Act has become an important tool in the post-SWANCC (Solid Waste Agency of Northern Cook Counties vs. Unites States Army Corps of Engineers) and Rapanos era with respect to the State's authority over isolated waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file an ROWD when there is no federal nexus, such as under Section 404(b)(1) of the CWA. Although "waste" is partially defined as any waste substance associated with human habitation, the RWQCB interprets this to include fill discharge into water bodies.

Section 401 Water Quality Certification

Issuance of the USACE Section 404 Permit would be contingent upon the approval of a Section 401 Water Quality Certification from the RWQCB. Also, the RWQCB requires certification of the project's California Environmental Quality Act (CEQA) documentation before it will approve the Section 401 Water Quality Certification or ROWD. The RWQCB, as a responsible agency, will use the project's CEQA document to satisfy its own CEQA-compliance requirements.

Upon acceptance of a complete permit application, the RWQCB has between 60 days and 1 year to make a decision regarding the permit request. This is compliant with USACE regulations, which indicate that the RWQCB has 60 days from the date of receipt of a completed application that requests water quality certification to make a decision.[12] The RWQCB has the option of issuing a "Denial Without Prejudice", which does not mean that the request is denied, but that it requires more information in order to make a decision. This effectively stops the processing clock until this information is provided.

The RWQCB is required under the *California Code of Regulations* (CCR) to have a "minimum 21 day public comment period" before any action can be taken on the Section 401 application.[13] This period closes when the RWQCB acts on the application. Since projects often change or are revised during the Section 401 permit process, the comment period can remain open. The public comment period starts as soon as an application has been received. Generally, the RWQCB Section 401, USACE Section 404, and CDFW Section 1602 permit applications are submitted at

[12] 33 CFR §325.2(b)(1)(ii)
[13] 23 CCR §3858(a)

the same time. However, the RWQCB Section 401 Water Quality Certification may take longer to process than the other two applications.

The RWQCB requires the Applicant to address urban storm water runoff during and after construction in the form of Best Management Practices (BMPs). These BMPs are intended to address the treatment of pollutants carried by storm water runoff and are required in all complete applications. The notification/application for a CWA Section 401 Water Quality Certification must also address compliance with the Basin Plan. Please note that filing an application would also require the payment of an application fee which would be based on project impacts. The fee schedule calculator is available at http://www.waterboards.ca.gov/santaana/water_issues/programs/401_certification/index.shtml.

California Department of Fish and Wildlife

The CDFW has jurisdictional authority over wetland resources associated with rivers, streams, and lakes pursuant to the *California Fish and Game Code*.[14] Activities of State and local agencies as well as public utilities that are project proponents are regulated by the CDFW under Section 1602 of the *California Fish and Game Code.* This section regulates any work that will (1) substantially divert or obstruct the natural flow of any river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. Section 1602 of the *California Fish and Game Code* applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State.

The CDFW jurisdictional limits are not as clearly defined by regulation as those of the USACE. While they closely resemble the limits described by USACE regulations, they include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric and saturated soils conditions. In general, the CDFW takes jurisdiction from the top of a stream bank or to the outer limits of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place within or in the vicinity of a river, stream, lake or within or in the vicinity of tributaries to a river, stream, or lake. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish and other aquatic plant and/or wildlife species. It also includes watercourses that have a surface or subsurface flow that support or have supported riparian vegetation.

Section 1602 Lake or Streambed Alteration Agreement

The CDFW enters into a Lake or Streambed Alteration (LSA) Agreement with a project proponent in order to ensure protection of wildlife and habitat values and acreages.

Prior to construction, a Notification of an LSA must be submitted to the CDFW that describes any proposed lake or streambed alteration that would occur with implementation of a project. The Notification of an LSA must address the initial construction and long-term operation and maintenance of any structures (such as a culvert or a desilting basin) included in the project design that are located within any river, stream, or lake and that may require periodic maintenance. In addition to the formal application materials and the fee, a copy of the appropriate environmental document (e.g., a Mitigated Negative Declaration) should be included in the submittal, consistent with CEQA requirements. The complete notification package must be submitted to the CDFW regional office that services the county where the activity will take place. This notification will serve as the basis for the CDFW's issuance of a Section 1602 LSA

[14] See §§1600–1616.

Agreement. Note that notification is not required before beginning emergency work, but the CDFW must be notified in writing within 14 days after beginning the work.

After receiving Notification of an LSA Agreement, the CDFW will determine whether an LSA Agreement will be required for the proposed activity. An LSA Agreement will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an LSA Agreement is required, the CDFW may want to conduct an on-site inspection.

If the CDFW does not respond in writing concerning the completeness of the Notification within 30 days of its submittal, the Notification automatically becomes complete. If the CDFW does not submit a draft LSA Agreement to the Applicant within 60 days of the determination of a completed Notification package, the CDFW will issue a letter that either (1) identifies the final date to transmit a draft LSA Agreement or (2) indicates that an LSA Agreement was not required. The CDFW will also indicate that it was unable to meet this mandated compliance date and that, by law, the Applicant is authorized to complete the project without an LSA Agreement as long as the Applicant constructs the project as proposed and complies with all avoidance, minimization, and mitigation measures described in the submitted Notification package. Please note that, if the project requires revisions to the design or project construction, the CDFW may require submittal of a new Notification/application with an additional 90-day permit process.

If determined to be necessary, the CDFW will prepare a draft LSA Agreement, which will include standard measures to protect fish and wildlife resources during project construction and during ongoing operation and maintenance of any project element that occurs within a CDFW jurisdictional area. The draft Agreement must be transmitted to the Applicant within 60 calendar days of the CDFW's determination that the notification is complete. It should be noted that the 60-day timeframe might not apply to long-range agreements.

Following receipt of a draft LSA Agreement from the CDFW, the Applicant has 30 calendar days to notify the CDFW concerning the acceptability of the proposed terms, conditions, and measures. If the Applicant agrees with these terms, conditions and measures, the Agreement must be signed and returned to the CDFW. The Agreement becomes final once the CDFW executes it and an LSA Agreement is issued. Please note that all application fees must be paid and the final certified CEQA documentation must be provided prior to the CDFW's execution of the Agreement.

ATTACHMENT C

SUMMARY OF POTENTIAL JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

SUMMARY OF POTENTIAL JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

Drainage	Total Length (ft)	Ultimate Discharge Point	"waters of the U.S." (ac)	Isolated Waters (ac)	CDFW Jurisdiction (ac)	MTRS[a]	USGS 7.5-Minute Topographic Quadrangle	Soil Type[b]
1A-1	173	Mojave River	0.039	–	0.055	S07N03W28	Turtle Valley	Sparkhule-rock outcrop complex, 15 to 50 percent slopes
1B-1	76	Mojave River	0.017	–	0.034	S07N03W27	Turtle Valley	Cajon-arizo complex, 2 to 15 percent slopes
1B-2	811	Mojave River	0.120	–	0.244	S07N03W27	Turtle Valley	Cajon-arizo complex, 2 to 15 percent slopes
1C-1	83	Mojave River	0.004	–	0.008	S07N03W13	Turtle Valley	Sparkhule-rock outcrop complex, 15 to 50 percent slopes
1C-2	99	Mojave River	0.005	–	0.010	S07N03W13	Turtle Valley	Sparkhule-rock outcrop complex, 15 to 50 percent slopes
1C-3	198	Mojave River	0.007	–	0.013	S07N03W13	Turtle Valley	Sparkhule-rock outcrop complex, 15 to 50 percent slopes
1C-4	98	Mojave River	0.007	–	0.013	S07N03W13	Turtle Valley	Sparkhule-rock outcrop complex, 15 to 50 percent slopes
1D-1	275	Mojave River	0.019	–	0.038	S07N02W07	Turtle Valley	Mirage sandy loam, 2 to 5 percent slopes; Sparkhule-rock outcrop complex, 15 to 50 percent slopes
1E-1	503	Mojave River	0.038	–	0.079	S07N02W07	Turtle Valley	Mirage sandy loam, 2 to 5 percent slopes
1E-2	197	Mojave River	0.035	–	0.071	S07N02W07	Turtle Valley	Mirage sandy loam, 2 to 5 percent slopes
1E-3	97	Mojave River	0.005	–	0.010	S07N02W07	Turtle Valley	Sparkhule-rock outcrop complex, 15 to 50 percent slopes
1E-4	154	Mojave River	0.010	–	0.021	S07N02W07	Turtle Valley	Mirage sandy loam, 2 to 5 percent slopes; Sparkhule-rock outcrop complex, 15 to 50 percent slopes
2A-1	193	Mojave River	0.040	–	0.054	S08N01W21	Daggett	Cajon-arizo complex, 2 to 15 percent slopes
2A-2	375	Mojave River	1.034	–	1.045	S08N01W21	Daggett	Cajon-arizo complex, 2 to 15 percent slopes
2A-3	295	Mojave River	0.101	–	0.129	S08N01W21	Daggett	Cajon-arizo complex, 2 to 15 percent slopes
2B-1	358	Mojave River	0.100	–	0.202	S08N01W21	Daggett	Cajon-arizo complex, 2 to 15 percent slopes
2B-2	490	Mojave River	0.054	–	0.107	S08N01W21	Daggett	Cajon-arizo complex, 2 to 15 percent slopes
2C-1	119	Mojave River	0.005	–	0.011	S08N01W01; S08N01W12	Daggett	**Yermo-kimberlina, cool, association, sloping**
2C-2	93	Mojave River	0.006	–	0.013	S08N01W01	Daggett	**Yermo-kimberlina, cool, association, sloping**
2C-3	939	Mojave River	0.157	–	0.316	S08N01W01; S08N01W12	Daggett	**Yermo-kimberlina, cool, association, sloping**
2D-1	249	Mojave River	0.037	–	0.075	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2D-2	443	Mojave River	0.054	–	0.105	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2D-3	169	Mojave River	0.025	–	0.051	S09N01E27	Minneola	**Nebona-cuddeback complex, 2 to 9 percent slopes**
2D-4	294	Mojave River	0.041	–	0.081	S09N01E27	Minneola	**Nebona-cuddeback complex, 2 to 9 percent slopes**
2D-5	334	Mojave River	0.033	–	0.066	S09N01E27	Minneola	**Nebona-cuddeback complex, 2 to 9 percent slopes**
2D-6	171	Mojave River	0.030	–	0.064	S09N01E27	Minneola	**Nebona-cuddeback complex, 2 to 9 percent slopes**
2E-1	85	Mojave River	0.004	–	0.008	S09N01E27	Minneola	**Nebona-cuddeback complex, 2 to 9 percent slopes**
2E-2	206	Mojave River	0.041	–	0.078	S09N01E27	Minneola	**Nebona-cuddeback complex, 2 to 9 percent slopes**
2E-3	485	Mojave River	0.054	–	0.107	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes; **Nebona-cuddeback complex, 2 to 9 percent slopes**
2E-4	428	Mojave River	0.079	–	0.154	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes; **Nebona-cuddeback complex, 2 to 9 percent slopes**
2E-5	95	Mojave River	0.005	–	0.010	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2E-6	496	Mojave River	0.063	–	0.116	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2E-7	691	Mojave River	0.122	–	0.239	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2E-8	192	Mojave River	0.014	–	0.028	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2E-9	118	Mojave River	0.081	–	0.162	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2E-10	351	Mojave River	0.172	–	0.343	S09N01E27	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2F-1	91	Mojave River	0.006	–	0.012	S09N01E26	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2F-2	77	Mojave River	0.004	–	0.007	S09N01E26	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2F-3	115	Mojave River	0.019	–	0.037	S09N01E26	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2F-4	68	Mojave River	0.002	–	0.005	S09N01E26	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2F-5	311	Mojave River	0.472	–	0.519	S09N01E26	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
2F-6	1,058	Mojave River	0.339	–	0.373	S09N01E26	Minneola	Cajon gravelly sand, 2 to 15 percent slopes
3C-1	89	dissipates at I-15	–	0.006	0.012	S10N02E26	Harvard Hill	Badland
3C-2	200	dissipates at I-15	–	0.164	0.225	S10N02E26	Harvard Hill	Badland

SUMMARY OF POTENTIAL JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

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3C-3	687	dissipates at I-15	–	0.252	0.526	S10N02E26	Harvard Hill	Badland; **Nebona-cuddeback complex, 2 to 9 percent slopes**
3C-4	704	dry lake bed or dissipates	–	0.226	0.347	S10N02E26	Harvard Hill	**Nebona-cuddeback complex, 2 to 9 percent slopes**
3C-5	752	dissipates at I-15	–	0.098	0.198	S10N02E26	Harvard Hill	**Nebona-cuddeback complex, 2 to 9 percent slopes**
4A-1	1,233	Mojave River	0.913	–	1.053	S11N04E17; S11N04E20	Alvord Mountain East	No digital data available
4A-2	205	Mojave River	0.139	–	0.139	S11N04E20	Alvord Mountain East	No digital data available
4A-3	346	dissipates at access road	–	0.048	0.095	S11N04E20	Alvord Mountain East	No digital data available
4A-4	366	dissipates at access road	–	0.037	0.074	S11N04E20	Alvord Mountain East	No digital data available
4A-5	166	dissipates at access road	–	0.020	0.039	S11N04E20	Alvord Mountain East	No digital data available
4A-6	25	dissipates at access road	–	0.003	0.005	S11N04E20	Alvord Mountain East	No digital data available
4A-7	207	dissipates at access road	–	0.021	0.041	S11N04E20	Alvord Mountain East	No digital data available
4A-8	68	dissipates at access road	–	0.006	0.012	S11N04E20	Alvord Mountain East	No digital data available
4B-1	174	Mojave River	0.102	–	0.102	S11N04E10	Alvord Mountain East	No digital data available
4B-2	1,311	Mojave River	0.182	–	0.346	S11N04E10	Alvord Mountain East	No digital data available
4B-3	112	Mojave River	0.018	–	0.036	S11N04E10	Alvord Mountain East	No digital data available
4C-1	95	dissipates	–	0.012	0.025	S11N04E02	Alvord Mountain East	No digital data available
4C-2	101	dissipates	–	0.020	0.040	S11N04E02	Alvord Mountain East	No digital data available
4C-3	554	Mojave River	0.124	–	0.245	S11N04E02	Alvord Mountain East	No digital data available
4D-1	137	dry lake bed or dissipates	–	0.114	0.114	S12N05E30	Dunn	No digital data available
4D-2	105	dry lake bed or dissipates	–	0.024	0.026	S12N05E30	Dunn	No digital data available
4D-3	107	dry lake bed or dissipates	–	0.008	0.017	S12N05E30	Dunn	No digital data available
4D-4	62	dry lake bed or dissipates	–	0.005	0.010	S12N05E30	Dunn	No digital data available
4D-5	131	dry lake bed or dissipates	–	0.006	0.012	S12N05E30	Dunn	No digital data available
4D-6	442	dry lake bed or dissipates	–	0.446	0.484	S12N05E30	Dunn	No digital data available
4D-7	338	dry lake bed or dissipates	–	0.200	0.200	S12N05E30	Dunn	No digital data available
4D-8	388	dry lake bed or dissipates	–	0.573	0.573	S12N05E30	Dunn	No digital data available
4E-1	105	dry lake bed or dissipates	–	0.038	0.075	S12N05E16	Bitter Spring	No digital data available
4E-2	502	dry lake bed or dissipates	–	0.093	0.185	S12N05E16	Bitter Spring	No digital data available
4E-3	569	dry lake bed or dissipates	–	1.085	1.085	S12N05E09; S12N05E16	Bitter Spring	No digital data available
4E-4	296	dry lake bed or dissipates	–	0.021	0.047	S12N05E16	Bitter Spring	No digital data available
4E-5	559	dry lake bed or dissipates	–	0.040	0.079	S12N05E16	Bitter Spring	No digital data available
4F-1	953	dry lake bed or dissipates	–	1.710	1.710	S12N05E09	Bitter Spring	No digital data available
4F-2	117	dry lake bed or dissipates	–	0.133	0.133	S12N05E09	Bitter Spring	No digital data available
4F-3	218	dry lake bed or dissipates	–	0.013	0.026	S12N05E09	Bitter Spring	No digital data available
4G-1	926	dry lake bed or dissipates	–	0.995	0.995	S13N05E26	Bitter Spring	No digital data available
4G-2	98	dry lake bed or dissipates	–	0.033	0.033	S13N05E26	Bitter Spring	No digital data available
4G-3	226	dry lake bed or dissipates	–	0.015	0.030	S13N05E26	Bitter Spring	No digital data available
4G-4	280	dry lake bed or dissipates	–	0.061	0.079	S13N05E26	Bitter Spring	No digital data available
4H-1	1,520	dry lake bed or dissipates	–	0.627	0.770	S13N05E24	Bitter Spring	No digital data available
4J-1	577	dry lake bed or dissipates	–	0.028	0.056	S13N06E08	Bitter Spring; Cronese Lakes	No digital data available
4J-2	164	dry lake bed or dissipates	–	0.014	0.029	S13N06E08	Cronese Lakes	No digital data available
4K-1	47	dry lake bed or dissipates	–	0.005	0.011	S13N06E05	Cronese Lakes	No digital data available
4K-2	233	dry lake bed or dissipates	–	0.031	0.063	S13N06E05	Cronese Lakes	No digital data available
4K-3	171	dry lake bed or dissipates	–	0.010	0.021	S13N06E05	Cronese Lakes	No digital data available
4K-4	396	dry lake bed or dissipates	–	0.138	0.250	S13N06E05	Cronese Lakes	No digital data available

SUMMARY OF POTENTIAL JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

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4K-5	469	dry lake bed or dissipates	–	0.026	0.052	S13N06E05	Cronese Lakes	No digital data available
5B-1	57	dry lake bed or dissipates	–	0.651	0.651	S13N06E04	Red Pass Lake	No digital data available
5B-2	460	dry lake bed or dissipates	–	0.290	0.343	S13N06E04	Red Pass Lake	No digital data available
5B-3	319	dry lake bed or dissipates	–	0.415	0.425	S13N06E04	Red Pass Lake	No digital data available
5B-4	133	dry lake bed or dissipates	–	0.293	0.317	S13N06E04; S14N06E33	Red Pass Lake	No digital data available
5C-1	337	dry lake bed or dissipates	–	0.072	0.140	S14N06E33	Red Pass Lake	No digital data available
5C-2	574	dry lake bed or dissipates	–	2.757	2.757	S14N06E33	Red Pass Lake	No digital data available
5D-1	587	dry lake bed or dissipates	–	2.384	2.384	S14N06E33	Red Pass Lake	No digital data available
5D-2	432	dry lake bed or dissipates	–	0.850	0.850	S14N06E33	Red Pass Lake	No digital data available
5D-3	252	dry lake bed or dissipates	–	0.036	0.073	S14N06E33	Red Pass Lake	No digital data available
5D-4	83	dry lake bed or dissipates	–	0.094	0.094	S14N06E33	Red Pass Lake	No digital data available
5D-5	347	dry lake bed or dissipates	–	0.137	0.157	S14N06E33	Red Pass Lake	No digital data available
5E-1	909	dry lake bed or dissipates	–	1.312	1.312	S14N06E34	Red Pass Lake	No digital data available
5E-2	689	dry lake bed or dissipates	–	0.084	0.163	S14N06E34	Red Pass Lake	No digital data available
5E-3	107	dry lake bed or dissipates	–	1.003	1.003	S14N06E34	Red Pass Lake	No digital data available
5E-4	153	dry lake bed or dissipates	–	0.369	0.369	S14N06E34	Red Pass Lake	No digital data available
5E-5	191	dry lake bed or dissipates	–	0.313	0.313	S14N06E34	Red Pass Lake	No digital data available
5E-6	227	dry lake bed or dissipates	–	0.036	0.070	S14N06E34	Red Pass Lake	No digital data available
5E-7	105	dry lake bed or dissipates	–	0.042	0.042	S14N06E34	Red Pass Lake	No digital data available
5E-8	266	dry lake bed or dissipates	–	0.766	0.766	S14N06E34	Red Pass Lake	No digital data available
5E-9	117	dry lake bed or dissipates	–	0.011	0.021	S14N06E34	Red Pass Lake	No digital data available
5E-10	760	dry lake bed or dissipates	–	0.060	0.119	S14N06E34	Red Pass Lake	No digital data available
5E-11	171	dry lake bed or dissipates	–	0.124	0.135	S14N06E34	Red Pass Lake	No digital data available
5F-1	1,349	dry lake bed or dissipates	–	0.317	0.317	S14N06E34	Red Pass Lake	No digital data available
5F-2	591	dry lake bed or dissipates	–	0.098	0.098	S14N06E34	Red Pass Lake	No digital data available
5F-3	170	dry lake bed or dissipates	–	0.010	0.020	S14N06E34	Red Pass Lake	No digital data available
5F-4	76	dry lake bed or dissipates	–	0.005	0.010	S14N06E34	Red Pass Lake	No digital data available
5F-5	426	dry lake bed or dissipates	–	0.124	0.124	S14N06E34	Red Pass Lake	No digital data available
5F-6	392	dry lake bed or dissipates	–	0.057	0.057	S14N06E34	Red Pass Lake	No digital data available
5F-7	104	dry lake bed or dissipates	–	0.024	0.024	S14N06E34	Red Pass Lake	No digital data available
5F-8	369	dry lake bed or dissipates	–	0.102	0.102	S14N06E34	Red Pass Lake	No digital data available
5F-9	688	dry lake bed or dissipates	–	0.167	0.173	S14N06E34	Red Pass Lake	No digital data available
5F-10	319	dry lake bed or dissipates	–	0.054	0.059	S14N06E34	Red Pass Lake	No digital data available
5F-11	136	dry lake bed or dissipates	–	0.016	0.025	S14N06E34	Red Pass Lake	No digital data available
5G-1	333	dry lake bed or dissipates	–	0.040	0.080	S14N06E35	Red Pass Lake	No digital data available
5G-2	466	dry lake bed or dissipates	–	0.248	0.247	S14N06E35	Red Pass Lake	No digital data available
5G-3	235	dry lake bed or dissipates	–	0.040	0.082	S14N06E35	Red Pass Lake	No digital data available
5G-4	124	dry lake bed or dissipates	–	0.011	0.022	S14N06E35	Red Pass Lake	No digital data available
5G-5	242	dry lake bed or dissipates	–	0.021	0.041	S14N06E35	Red Pass Lake	No digital data available
5G-6	232	dry lake bed or dissipates	–	0.022	0.043	S14N06E35	Red Pass Lake	No digital data available
5G-7	255	dry lake bed or dissipates	–	0.026	0.052	S14N06E34	Red Pass Lake	No digital data available
5G-8	119	dry lake bed or dissipates	–	0.009	0.018	S14N06E34	Red Pass Lake	No digital data available
5G-9	816	dry lake bed or dissipates	–	0.235	0.235	S14N06E34	Red Pass Lake	No digital data available
5G-10	560	dry lake bed or dissipates	–	0.205	0.205	S14N06E34	Red Pass Lake	No digital data available

SUMMARY OF POTENTIAL JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

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5H-1	356	dry lake bed or dissipates	–	0.108	0.145	S14N06E35	Red Pass Lake	No digital data available
5H-A	148	dry lake bed or dissipates	–	0.020	0.040	S14N06E35	Red Pass Lake	No digital data available
5H-B	425	dry lake bed or dissipates	–	0.041	0.082	S14N06E35	Red Pass Lake	No digital data available
5H-C	115	dry lake bed or dissipates	–	0.220	0.220	S14N06E35	Red Pass Lake	No digital data available
5H-D	122	dry lake bed or dissipates	–	0.278	0.278	S14N06E35	Red Pass Lake	No digital data available
5H-E	187	dry lake bed or dissipates	–	0.033	0.066	S14N06E35	Red Pass Lake	No digital data available
5I-1	69	dry lake bed or dissipates	–	0.005	0.009	S14N06E35	Red Pass Lake	No digital data available
5I-2	276	dry lake bed or dissipates	–	0.067	0.076	S14N06E35	Red Pass Lake	No digital data available
5I-3	437	dry lake bed or dissipates	–	0.109	0.109	S14N06E35	Red Pass Lake	No digital data available
5I-4	378	dry lake bed or dissipates	–	0.147	0.147	S14N06E35	Red Pass Lake	No digital data available
5J-1	506	dry lake bed or dissipates	–	0.045	0.089	S14N06E35	Red Pass Lake	No digital data available
5J-2	109	dry lake bed or dissipates	–	0.059	0.065	S14N06E36	Red Pass Lake	No digital data available
5K-1	413	dry lake bed or dissipates	–	0.039	0.070	S14N06E25	Red Pass Lake	No digital data available
5K-2	442	dry lake bed or dissipates	–	0.449	0.449	S14N06E25	Red Pass Lake	No digital data available
5K-3	104	dry lake bed or dissipates	–	0.033	0.065	S14N06E36	Red Pass Lake	No digital data available
5K-4	107	dry lake bed or dissipates	–	0.196	0.196	S14N06E36	Red Pass Lake	No digital data available
5K-5	120	dry lake bed or dissipates	–	0.034	0.069	S14N06E36	Red Pass Lake	No digital data available
5L-1	155	dry lake bed or dissipates	–	0.027	0.056	S14N06E25	Red Pass Lake	No digital data available
5M-1	100	dry lake bed or dissipates	–	0.015	0.015	S14N06E25	Red Pass Lake	No digital data available
5N-1	2,357	Amargosa River	1.475	–	1.475	S14N07E17	Red Pass Lake	No digital data available
5N-2	505	Amargosa River	0.233	–	0.233	S14N07E17	Red Pass Lake	No digital data available
5O-1	3,126	Amargosa River	3.092	–	3.092	S14N07E03; S15N07E34	West Of Baker	No digital data available
5Q-1	256	Amargosa River	0.470	–	0.470	S15N07E35	West Of Baker	No digital data available
5Q-2	236	Amargosa River	0.147	–	0.147	S15N07E35	West Of Baker	No digital data available
5Q-3	135	Amargosa River	0.080	–	0.080	S15N07E35	West Of Baker	No digital data available
5Q-4	517	Amargosa River	0.219	–	0.232	S15N07E35	West Of Baker	No digital data available
5Q-5	424	Amargosa River	0.663	–	0.663	S15N07E35	West Of Baker	No digital data available
5Q-6	1,167	Amargosa River	1.818	–	1.818	S15N07E35	West Of Baker	No digital data available
5Q-7	1,094	Amargosa River	4.790	–	4.790	S15N07E35	West Of Baker	No digital data available
5R-1	433	Amargosa River	0.129	–	0.129	S15N07E35; S15N07E36	West Of Baker	No digital data available
5R-2	305	Amargosa River	0.082	–	0.082	S15N07E35	West Of Baker	No digital data available
5T-1	295	Amargosa River	0.113	–	0.113	S15N08E30	West Of Baker	No digital data available
5T-2	359	Amargosa River	0.308	–	0.308	S15N08E30	West Of Baker	No digital data available
5U-1	148	dry lake bed or dissipates	–	0.010	0.020	S15N08E20	West Of Baker	No digital data available
5U-2	34	dry lake bed or dissipates	–	0.002	0.003	S15N08E20	West Of Baker	No digital data available
5U-3	271	dry lake bed or dissipates	–	0.052	0.067	S15N08E20	West Of Baker	No digital data available
5V-1	258	dry lake bed or dissipates	–	0.135	0.135	S15N09E04	North Of Baker	No digital data available
5V-2	393	dry lake bed or dissipates	–	0.119	0.119	S15N09E04	North Of Baker	No digital data available
5V-3	348	dry lake bed or dissipates	–	0.039	0.076	S15N09E04	North Of Baker	No digital data available
5V-4	466	dry lake bed or dissipates	–	0.036	0.073	S15N09E05	North Of Baker	No digital data available
5V-5	269	dry lake bed or dissipates	–	0.027	0.035	S15N09E05	North Of Baker	No digital data available
5V-6	220	dry lake bed or dissipates	–	0.018	0.037	S15N09E05	North Of Baker	No digital data available
5V-7	127	dry lake bed or dissipates	–	0.006	0.011	S15N09E05	North Of Baker	No digital data available
6A-1	528	Amargosa River	0.368	–	0.368	S16N09E23; S16N09E24	Turquoise Mountain	No digital data available

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6A-2	119	Amargosa River	0.007	–	0.014	S16N09E23	Turquoise Mountain	No digital data available
6A-3	125	Amargosa River	0.003	–	0.006	S16N09E23	Turquoise Mountain	No digital data available
6A-4	1,663	Amargosa River	1.650	–	1.650	S16N09E23; S16N09E24	Turquoise Mountain	No digital data available
6A-5	269	Amargosa River	0.027	–	0.055	S16N09E23; S16N09E24	Turquoise Mountain	No digital data available
6A-6	68	Amargosa River	0.006	–	0.009	S16N09E24	Turquoise Mountain	No digital data available
6B-1	490	Amargosa River	0.426	–	0.426	S16N09E24	Turquoise Mountain	No digital data available
6B-1B	182	Amargosa River	0.015	–	0.031	S16N09E24	Turquoise Mountain	No digital data available
6B-2	974	Amargosa River	0.059	–	0.113	S16N09E24; S16N10E19	Turquoise Mountain	No digital data available
6B-3	232	Amargosa River	0.005	–	0.010	S16N10E19	Turquoise Mountain	No digital data available
6B-4	76	Amargosa River	0.003	–	0.005	S16N10E19	Turquoise Mountain	No digital data available
6B-5	167	Amargosa River	0.005	–	0.009	S16N10E19	Turquoise Mountain	No digital data available
6B-6	513	Amargosa River	0.439	–	0.439	S16N10E19	Turquoise Mountain	No digital data available
6C-1	106	Amargosa River	0.003	–	0.007	S16N10E18; S16N10E19	Turquoise Mountain	No digital data available
6C-2	2,306	Amargosa River	5.833	–	5.833	S16N10E18	Turquoise Mountain	No digital data available
6D-1	2,560	Amargosa River	2.701	–	2.928	S16N10E17	Turquoise Mountain	No digital data available
6D-2	129	Amargosa River	0.060	–	0.060	S16N10E17	Turquoise Mountain	No digital data available
6D-3	217	Amargosa River	0.013	–	0.026	S16N10E17	Turquoise Mountain	No digital data available
6E-1	703	Amargosa River	0.194	–	0.211	S16N10E04; S16N10E09	Turquoise Mountain	No digital data available
6E-2	597	Amargosa River	0.142	–	0.164	S16N10E09	Turquoise Mountain	No digital data available
6F-1	359	Amargosa River	0.166	–	0.166	S16N10E03	Kingston Spring	No digital data available
6F-2	85	Amargosa River	0.012	–	0.023	S16N10E03	Kingston Spring	No digital data available
6F-3	522	Amargosa River	0.230	–	0.230	S16N10E03	Kingston Spring	No digital data available
6F-4	233	Amargosa River	0.039	–	0.056	S16N10E03	Kingston Spring	No digital data available
6F-5	283	Amargosa River	0.054	–	0.111	S16N10E03	Kingston Spring	No digital data available
6G-1	273	Amargosa River	0.045	–	0.095	S16N10E01	East Of Kingston Springs	No digital data available
6G-2	129	Amargosa River	0.014	–	0.029	S16N10E01	East Of Kingston Springs	No digital data available
6G-3	233	Amargosa River	0.014	–	0.028	S16N10E01	East Of Kingston Springs	No digital data available
6G-4	61	dissipates	–	0.010	0.021	S16N10E02	East Of Kingston Springs	No digital data available
7A-1	298	dry lake bed or dissipates	–	0.052	0.108	S17N13E05	Clark Mountain	Owlshead loam, 2 to 30 percent slopes
7A-2	51	dry lake bed or dissipates	–	0.002	0.005	S17N13E05	Clark Mountain	Owlshead loam, 2 to 30 percent slopes
7B-1	247	dry lake bed or dissipates	–	0.309	0.309	S17N13E05	Clark Mountain	Owlshead loam, 2 to 30 percent slopes
7B-2	199	dry lake bed or dissipates	–	0.207	0.207	S17N13E05	Clark Mountain	Owlshead loam, 2 to 30 percent slopes
7C-1	395	dry lake bed or dissipates	–	0.056	0.115	S17N13E04	Clark Mountain	Copperworld association, 30 to 60 percent slopes
7C-2	1,864	dry lake bed or dissipates	–	0.655	0.963	S17N13E04	Clark Mountain	Copperworld association, 30 to 60 percent slopes
7C-3	410	dry lake bed or dissipates	–	0.037	0.075	S17N13E04	Clark Mountain	Copperworld association, 30 to 60 percent slopes
7E-1	619	dry lake bed or dissipates	–	0.212	0.212	S17N13E03	Clark Mountain	Copperworld association, 30 to 60 percent slopes
7E-2	686	dry lake bed or dissipates	–	0.123	0.144	S17N13E03	Clark Mountain	Copperworld association, 30 to 60 percent slopes
7E-3	1,192	dry lake bed or dissipates	–	0.378	0.467	S17N13E03; S17N13E04	Clark Mountain	Copperworld association, 30 to 60 percent slopes
7F-1	1,544	dry lake bed or dissipates	–	0.610	0.680	S17N13E03	Clark Mountain	Copperworld association, 30 to 60 percent slopes
7F-2	296	dry lake bed or dissipates	–	0.028	0.058	S17N13E03	Clark Mountain	Copperworld association, 30 to 60 percent slopes
7F-3	158	dry lake bed or dissipates	–	0.007	0.015	S17N13E03	Clark Mountain	Copperworld association, 30 to 60 percent slopes

SUMMARY OF POTENTIAL JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

Drainage	Total Length (ft)	Ultimate Discharge Point	"waters of the U.S." (ac)	Isolated Waters (ac)	CDFW Jurisdiction (ac)	MTRS[a]	USGS 7.5-Minute Topographic Quadrangle	Soil Type[b]
7F-4	111	dry lake bed or dissipates	–	0.005	0.010	S17N13E03	Clark Mountain	Copperworld association, 30 to 60 percent slopes
7G-1	448	dry lake bed or dissipates	–	0.208	0.208	S17N13E02	Clark Mountain	Copperworld association, 30 to 60 percent slopes
Total	**85,994**		**31.130**	**26.603**	**63.529**			

ft: feet; ac: acre; CDFW: California Department of Fish and Wildlife; MTRS: Meridian, Township, Range, Section; USGS: U.S. Geological Survey; I: Interstate; "–" indicates the mapped drainage does not include this jurisdictional water; RWQCB: Regional Water Quality Control Board; USACE: U.S. Army Corps of Engineers.

RWQCB jurisdictional boundaries are defined as those determined for the USACE under "waters of the U.S."; however, the RWQCB also takes jurisdiction over isolated waters.

[a] The MTRS alphanumeric code provides the Meridian, Township, Range, and Section. The first character (S) represents the San Bernardino meridian; the next three characters (e.g., 01N or 01S) represent the Township and either north or south; the next three characters (e.g., 01E or 01W) represent the Range and either east or west; and the last two digits represent the Section.

[b] Soil types in **bold** are listed as hydric on the National Hydric Soils List (USDA NRCS 2015). "No digital data available" indicates that soil data is not available for the area.

ATTACHMENT D

DATASHEETS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: ~~3MCM~~ 3MBC000100
Stream: 1A-1
Investigator(s):

Date: 9/7/16 **Time:** 0800
Town: SB County **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

off road vehicles; road crossing

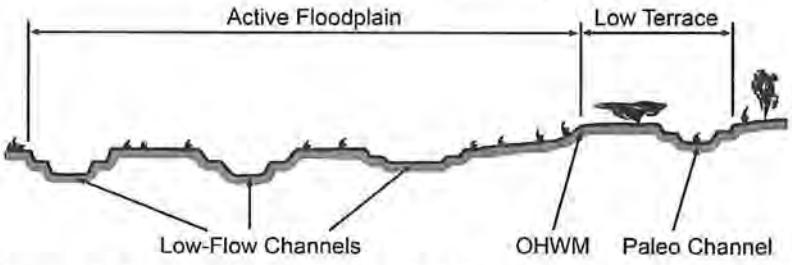
Brief site description:

dry desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

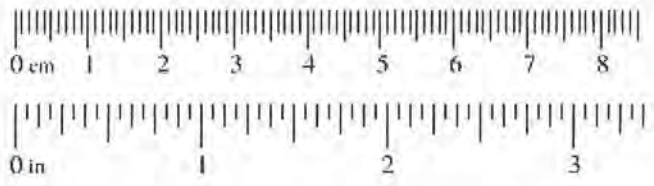


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

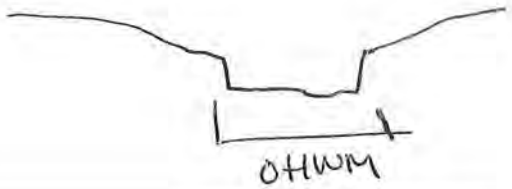
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156		Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 1A-1 **Date:** 9/7/16 **Time:** 0800

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: very coarse sand

Total veg cover: 2 % Tree: 0 % Shrub: <1 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ veg cover
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3mBC000100 **Cross section ID:** 1A-1 **Date:** 9/7/16 **Time:** 0800

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 4 % Tree: 0 % Shrub: <1 % Herb: 4 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARudalevige, I Cain, C Renfrew, C Conlogue	Date 9/7/16

Feature ID	1A-1
Preliminary Jurisdictional Status[1]	RWQCB, CDFW
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	bed/bank; Δ sediment texture
Wetland Plant Indicators	none
Preliminary Hydrologic Regime[3]	ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	4-6'
CDFW Width(s)	4-6'
Side Slope Estimate[4]	Vertical banks
Characteristic Vegetation[5]	Unvegetated in channel; surrounding by shrub/NNG (creosote)
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossing and banks broken down by off road vehicles; trash
Surrounding Load Use	open space w/ transmission lines
Other Notes	upstream of road water spreads out and possibly pools - surface soil cracks

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/7/16 **Time:** 900
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 1B-1 **Photo begin file#:** **Photo end file#:**
Investigator(s): CR IC

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

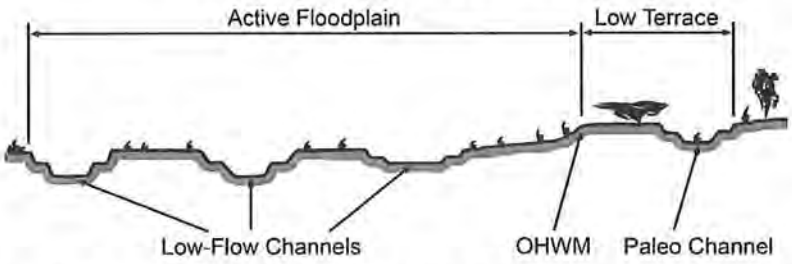
Potential anthropogenic influences on the channel system:

Brief site description:
Desert drainage

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

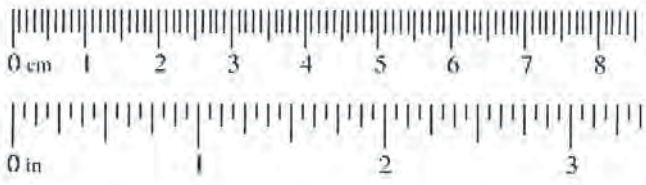


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

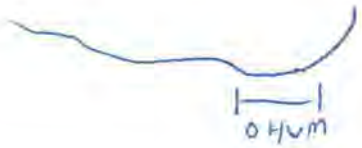
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3mBC000100 **Cross section ID:** 1B-1 **Date:** 9/7/16 **Time:** 900

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MB200100 **Cross section ID:** 1B-1 **Date:** 9/7/16 **Time:** 900

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Gravel

Total veg cover: ____ % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff IC CR	Date 9/7/16

Feature ID	1B-1
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	N
Wetland Plant Indicators	N
Preliminary Hydrologic Regime[3]	ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	3ft
CDFW Width(s)	10ft
Side Slope Estimate[4]	Shallow South 45° North
Characteristic Vegetation[5]	Scattered grasses
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	Nearby trailer camp Creosote Bush Scrub - mixed cactus

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Project Number:** 3MBC000100 **Stream:** 1B-2 **Investigator(s):** CR IC	**Date:** 9/7/16 **Town:** SB County	**Time:** **State:** CA **Photo end file#:**
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☒ / N ☐ Is the site significantly disturbed?	**Location Details:** Mojave Desert **Projection:** **Datum:** **Coordinates:**	

Potential anthropogenic influences on the channel system:

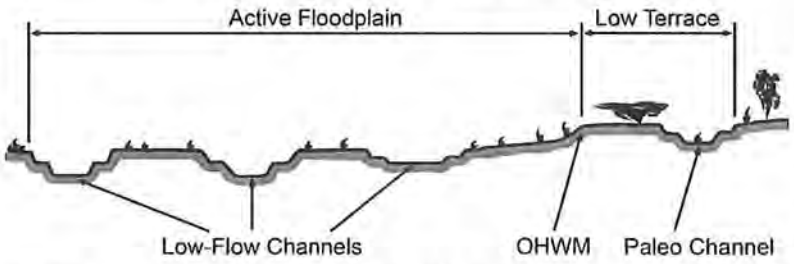
Tire trail

Brief site description:

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

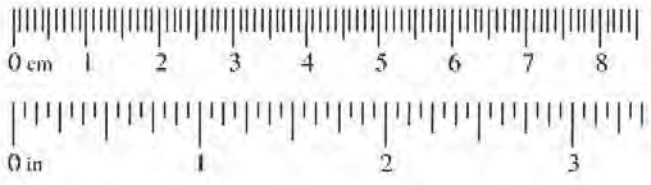


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 1B-2 **Date:** 9/7/16 **Time:**

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 3-4 % Tree: 0 % Shrub: 1 % Herb: 2-3 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC002102 **Cross section ID:** 1B-2 **Date:** 9/7/16 **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

Void

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff CR IC	Date 9/7/16

Feature ID	IB-2
Preliminary Jurisdictional Status[1]	RPC
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	variable
CDFW Width(s)	variable
Side Slope Estimate[4]	slight - 45°
Characteristic Vegetation[5]	intermittent grasses, rare cheesebush
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Tires Road cut southern 10% of stream
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 | **Date:** 9/7/16 | **Time:** 0900
Project Number: 3MBC000100 | **Town:** SB County | **State:** CA
Stream: ~~test~~ C1-1 | **Photo begin file#:** | **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

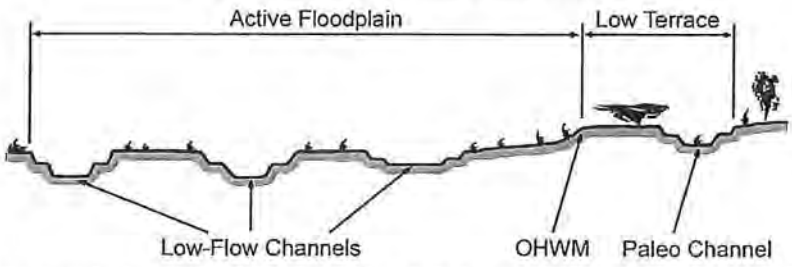
Potential anthropogenic influences on the channel system:
Off-road vehicles + Road crossings

Brief site description:
Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

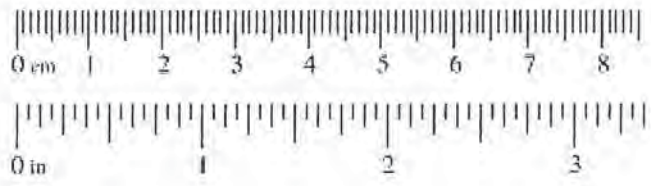


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	Silt
1/32 0.00061	0.0156		
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3mBC000100 **Cross section ID:** C1-1 **Date:** 9/7/16 **Time:** 0900

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

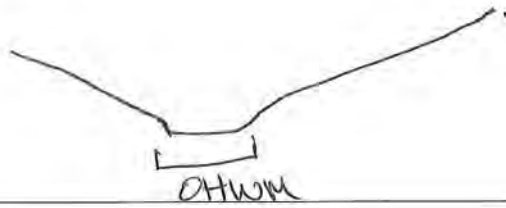
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Project ID: 3MBC000100 **Cross section ID:** C1-1 **Date:** 9/7/16 **Time:** 0900

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

bed

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR + CC	Date 9/7/16

Feature ID	~~HC-1~~ CI-1
Preliminary Jurisdictional Status[1]	RWQCB, CDFW
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank Slope, Δ sediment texture,
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2'
CDFW Width(s)	2'
Side Slope Estimate[4]	gently sloping
Characteristic Vegetation[5]	unveget in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossing + trash
Surrounding Load Use	Open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/7/16 **Time:** 0920
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: C1-2 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road crossings

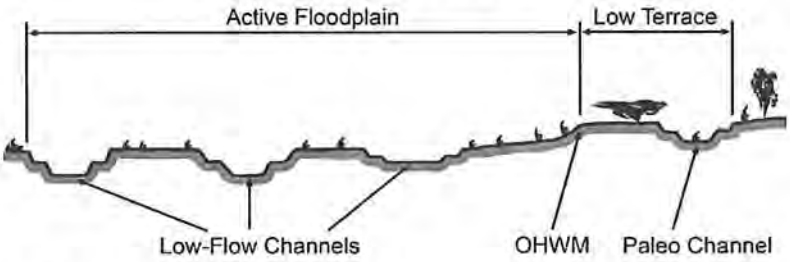
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

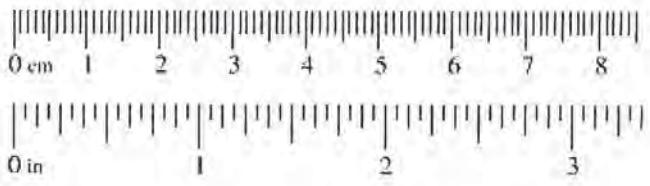


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

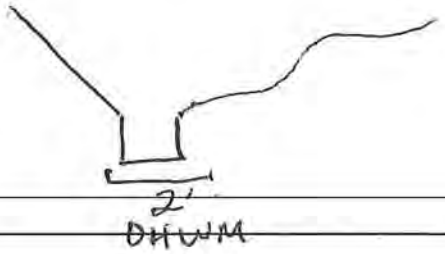
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
		Very fine sand	Sand
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
		Very fine silt	Silt
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** C1-2 **Date:** 9/7/16 **Time:** 0920

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** C1-2 **Date:** 9/7/16 **Time:** 0920

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR+CC	Date 9/7/16

Feature ID	C1-2
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank Slope, Δ sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2'
CDFW Width(s)	2'
Side Slope Estimate[4]	Steep
Characteristic Vegetation[5]	unvegetation in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossing
Surrounding Load Use	Open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 | **Date:** 9/7/16 | **Time:** 0930
Project Number: 3MBC000100 | **Town:** SB County | **State:** CA
Stream: C1-3 | **Photo begin file#:** | **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road crossings

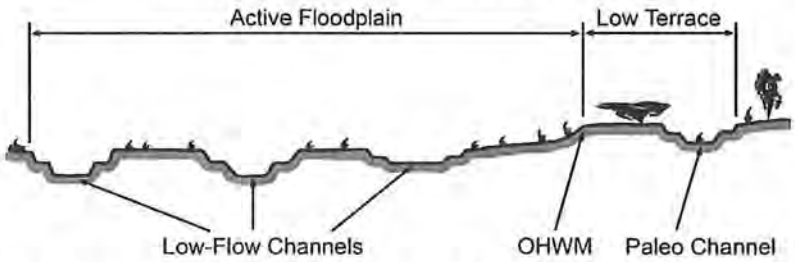
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

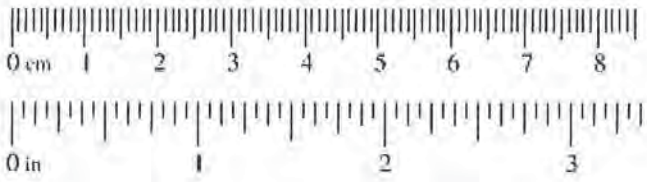


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



3MBC000100

Project ID: C1-3 **Cross section ID:** C1-3 **Date:** 9/7/16 **Time:** 0930

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand w/ cobble

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** C-3 **Date:** 9/7/16 **Time:** 0930

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC00D100	Task No. 00300
Field Staff AR + CC	Date 9/7/16

Feature ID	C1-3
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank Slope, A sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	~~2~~ 1'-2'
CDFW Width(s)	~~2~~ 1'-2'
Side Slope Estimate[4]	Steep
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	Unk
Anthropogenic Modifications[7]	Road crossing
Surrounding Load Use	Open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 | **Date:** 9/7/16 | **Time:** 0940
Project Number: 3MBC000100 | **Town:** SB County | **State:** CA
Stream: C1-4 | **Photo begin file#:** | **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road crossing

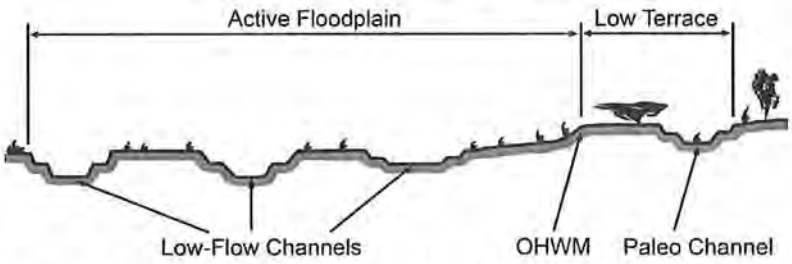
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

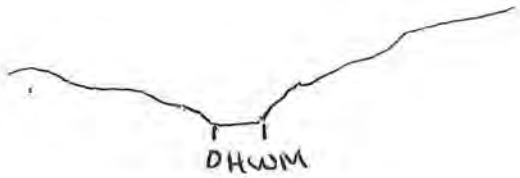
Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
0.0098	0.25	Medium sand	Sand
0.005	0.125	Fine sand	
0.0025	0.0625	Very fine sand	
0.0012	0.031	Coarse silt	
0.00061	0.0156	Medium silt	Silt
0.00031	0.0078	Fine silt	
0.00015	0.0039	Very fine silt	
		Clay	Mud

1/2 1/4 1/8 1/16 1/32 1/64 1/128

3MBC000100

Project ID: C1-4 **Cross section ID:** C1-4 **Date:** 9/7/16 **Time:** 0940

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBCU00102 **Cross section ID:** C1-4 **Date:** 9/7/16 **Time:** 0940

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR+CC	Date 9/7/16

Feature ID	C1-4
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank Slope, Δ sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	3'
CDFW Width(s)	3'
Side Slope Estimate[4]	moderate to steep
Characteristic Vegetation[5]	~~unknown~~ in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossing
Surrounding Load Use	open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: ID-1
Investigator(s): IC CR

Date: 9/7/16
Town: SB County
Photo begin file#:

Time: 1020
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

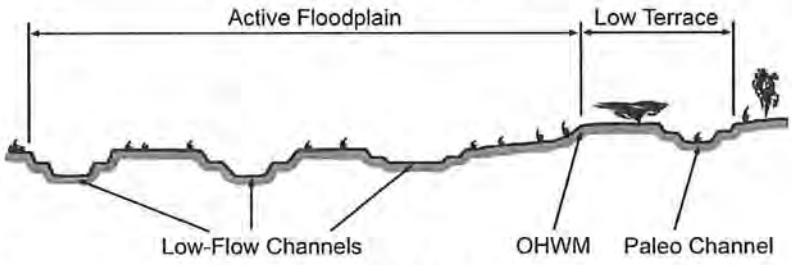
Brief site description:

Narrow channel partially buried under Sulsola

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

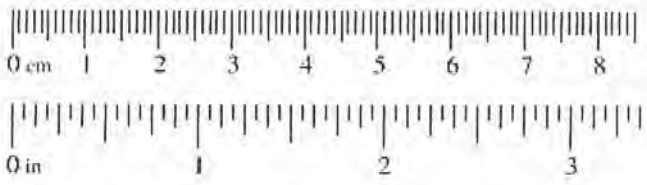


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** **Date:** 9/7/16 **Time:** 1020

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: <1 % Tree: 0 % Shrub: 0 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** **Date:** 9/7/16 **Time:** 1020

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff IC CR	Date 9/7/16

Feature ID	ID-1
Preliminary Jurisdictional Status[1]	R e C
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	0.5 ~~11~~ mostly
CDFW Width(s)	2.5
Side Slope Estimate[4]	near vertical
Characteristic Vegetation[5]	Dead Salsola
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	Sheet flow from road to start Partial burial under Salsola

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: 1E-1
Investigator(s): AR, CC

Date: 9/7/16
Town: SB County
Photo begin file#:

Time: 1005
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection:
Datum:
Coordinates:

Potential anthropogenic influences on the channel system:

ORV & Road crossing

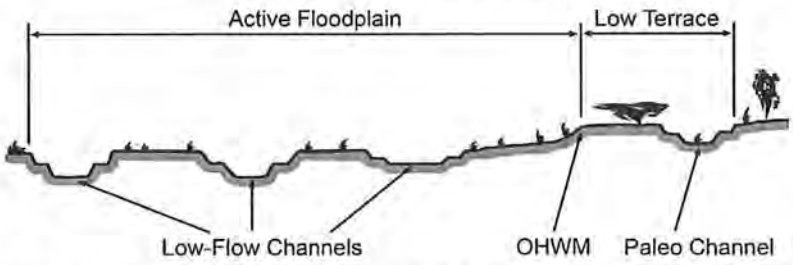
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

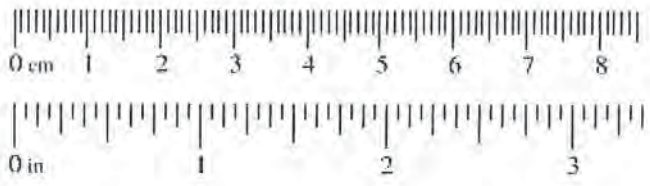


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 1E-1 **Date:** 9/7/16 **Time:** 1005

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 1E-1 **Date:** 9/7/16 **Time:** 1005

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ ~~Drift and/or debris~~
- ☑ Presence of bed and bank
- ☐ Benches
- ☑ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/7/16

Feature ID	1E-1
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Soil cracks, Bed/Bank slope + Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2.5'
CDFW Width(s)	2.5'
Side Slope Estimate[4]	gently sloping
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossing
Surrounding Load Use	open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/7/16 **Time:** 1025
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 1E-2 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossings

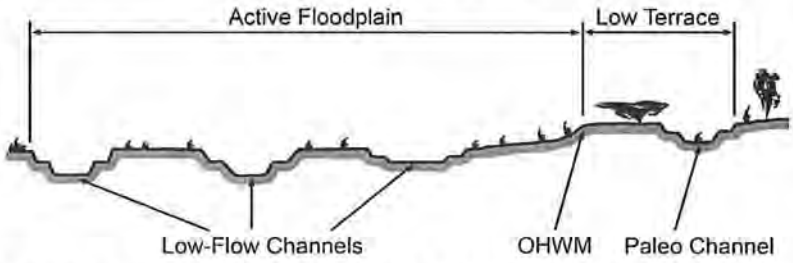
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

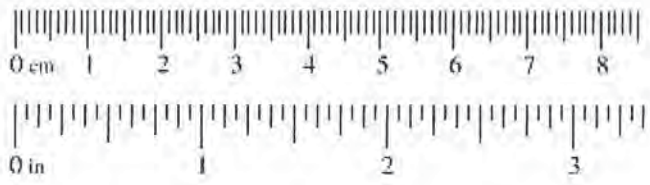


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

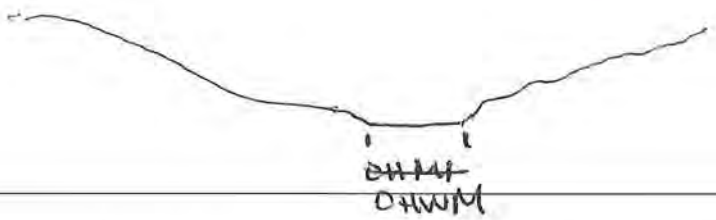
Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



3MBC000100

Project ID: 1E-2 **Cross section ID:** 1E-2 **Date:** 9/7/16 **Time:** 1025

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt

Total veg cover: _____ % Tree: 0 % Shrub: 2 % Herb: <1 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBCA00100 **Cross section ID:** 1E-2 **Date:** 9/7/16 **Time:** 1025

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: ≤1 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARICC	Date 9/7/16

Feature ID	IE-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank slope, Δ in sediment texture, soil cracks
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	3'-11'
CDFW Width(s)	3'-11'
Side Slope Estimate[4]	gently sloping
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossing + trash
Surrounding Load Use	open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path46 | **Date:** 9/7/16 | **Time:** 1040
Project Number: 3MBC000100 | **Town:** SBCounty | **State:** CA
Stream: 1E-3 | **Photo begin file#:** | **Photo end file#:**
Investigator(s): ARiCe

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road crossings

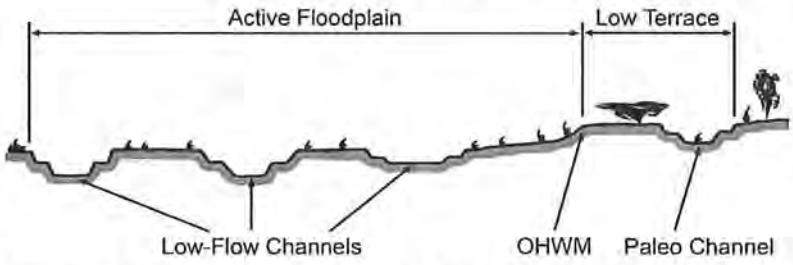
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

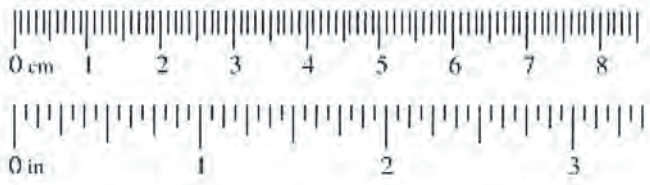


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



3MBC000100

Project ID: 1E-3 **Cross section ID:** 1E-3 **Date:** 9/7/16 **Time:** 1040

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MRC000100 **Cross section ID:** 1E-3 **Date:** 9/7/16 **Time:** 1040

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/7/16

Feature ID	1E-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank slope, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2'
CDFW Width(s)	2-3'
Side Slope Estimate[4]	moderate to steep
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossing & trash
Surrounding Load Use	open space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: 1E-4
Investigator(s): AR, CC

Date: 9/7/16
Town: SB County
Photo begin file#:

Time: 1050
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection:
Datum:
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road crossings

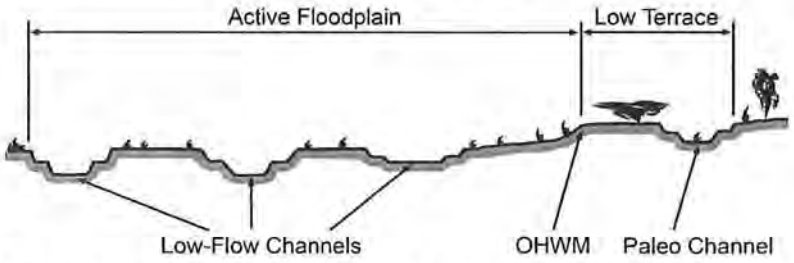
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

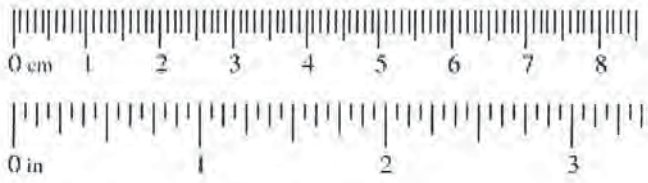


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

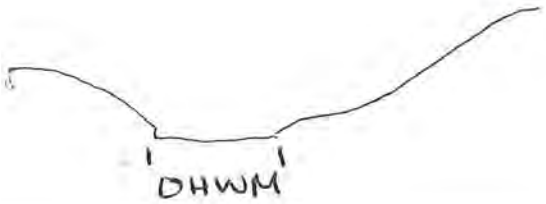
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
0.0098	0.25	Medium sand	Sand
0.005	0.125	Fine sand	
0.0025	0.0625	Very fine sand	
0.0012	0.031	Coarse silt	
0.00061	0.0156	Medium silt	Silt
0.00031	0.0078	Fine silt	
0.00015	0.0039	Very fine silt	
		Clay	Mud
1/2			
1/4			
1/8			
1/16			
1/32			
1/64			
1/128			



Project ID: 3MRC000100 **Cross section ID:** 1E-4 **Date:** 9/7/16 **Time:** 1050

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 0 % Tree: 0 % Shrub: 1 % Herb: 0 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

3MBL000100

Project ID: ~~LE-4~~ **Cross section ID:** LE-4 **Date:** 9/7/16 **Time:** 1050

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 0 % Tree: 0 % Shrub: 1 % Herb: 0 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR.CC	Date 9/7/16

Feature ID	1E-4
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank slope, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	3'-5'
CDFW Width(s)	3'-5'
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	UNVeg in channel
Chemical Indicators[6]	UNK
Anthropogenic Modifications[7]	Road crossing + trash
Surrounding Load Use	Open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Rock46
Project Number: 3MBC000100
Stream: 2A-1
Investigator(s): AR, CC

Date: 9/7/16 **Time:** 1256
Town: SB County **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road crossings

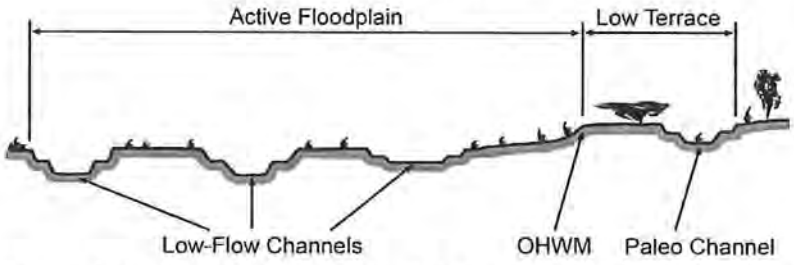
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

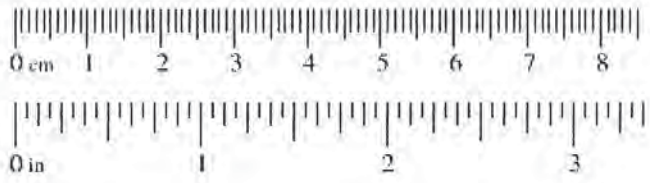


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

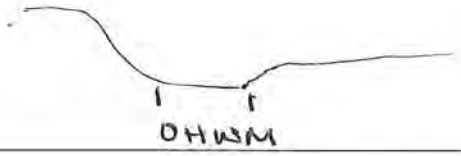
Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
		Very fine sand	
1/8 0.0025	0.0625		
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	Silt
1/32 0.00061	0.0156		
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



3MBC000100

Project ID: 2A-1 **Cross section ID:** 2A-1 **Date:** 9/7/16 **Time:** 1250

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: <1 % Tree: Ø % Shrub: Ø % Herb: <1 %

Community successional stage:

- [x] NA
- [x] ~~Early (herbaceous & seedlings)~~
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

3MBC000100

Project ID: 2A-1 **Cross section ID:** 2A-1 **Date:** 8/7/16 **Time:** ~~1240~~ 1250

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: ~~Medium Pebble~~

Total veg cover: 3 % Tree: 1 % Shrub: 1 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☑ ~~Mid (herbaceous, shrubs, saplings)~~
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/7/16

Feature ID	2A-1
Preliminary Jurisdictional Status[1]	CDFW,
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2'
CDFW Width(s)	2'
Side Slope Estimate[4]	gentle to moderate steep
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossings
Surrounding Load Use	open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/7/16 **Time:** 1255
Project Number: 3M0C000100 **Town:** SB County **State:** CA
Stream: 2A-2 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossings

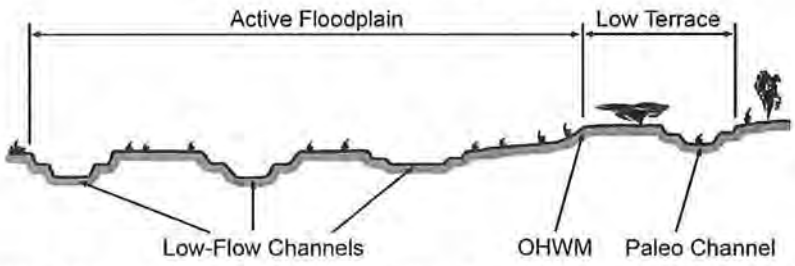
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

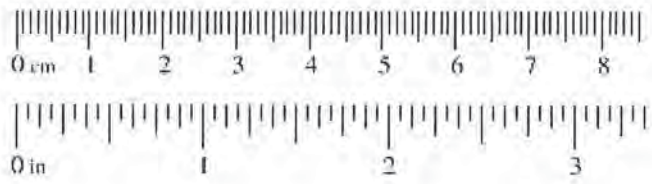


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000160 **Cross section ID:** 2A-2 **Date:** 9/7/16 **Time:** 1255

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

3mbc000100

Project ID: 2A-2 **Cross section ID:** 2A-2 **Date:** 9/7/16 **Time:** 1255

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand w/ pebble & cobble

Total veg cover: ~~20~~ 6 % Tree: ~~0~~ % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ ~~Early (herbaceous & seedlings)~~
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: Course sand w/ pebble & cobble

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 4 % Tree: ~~0~~ % Shrub: 3 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/7/16

Feature ID	2A-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Soil Cracks, Drainage Patterns, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	~~1.1~~
CDFW Width(s)	
Side Slope Estimate[4]	moderate slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	UNK
Anthropogenic Modifications[7]	Road crossings
Surrounding Load Use	open space + transmission lines
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: 2A-3
Investigator(s): ARCL

Date: 9/7/16
Town: SB County
Photo begin file#:

Time: 1330
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection:
Datum:
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossings

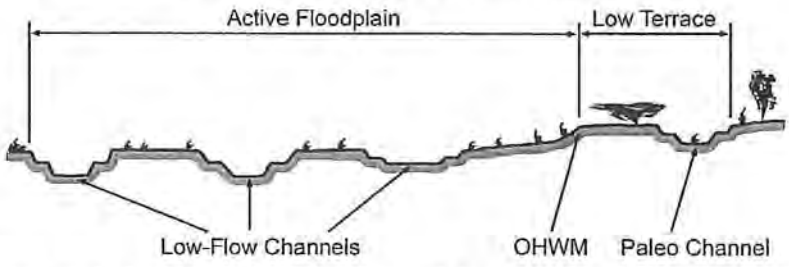
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

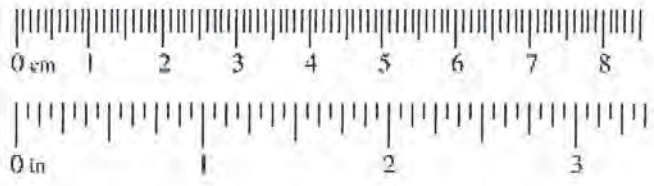


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

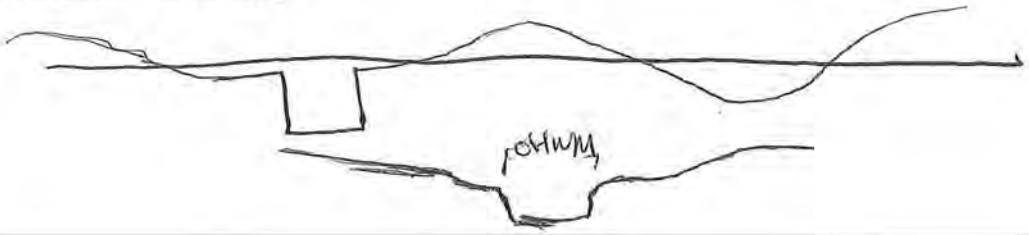
Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



3MBC080100

Project ID: 2A-3 **Cross section ID:** 2A-3 **Date:** 9/7/16 **Time:** 1330

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: <1 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 24-3 **Date:** 9/7/16 **Time:** 1330

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/7/16

Feature ID	2A-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Soil cracks, Bed/Bank, Δ in sediment
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1.5'
CDFW Width(s)	1.5'
Side Slope Estimate[4]	Steep
Characteristic Vegetation[5]	unveg in channel, veg around bottom
Chemical Indicators[6]	Unk
Anthropogenic Modifications[7]	Road crossings + trash
Surrounding Load Use	Open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: 2B-1
Investigator(s): AR, CC

Date: 9/7/16 **Time:** 1405
Town: SB County **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

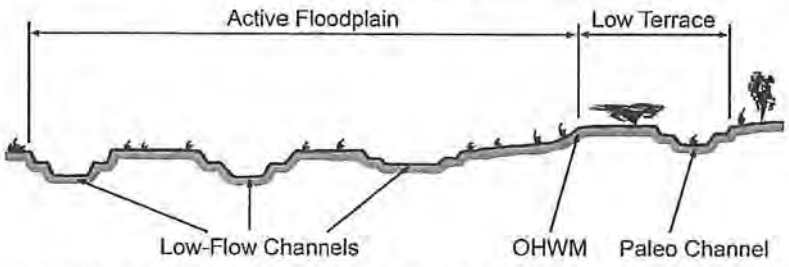
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

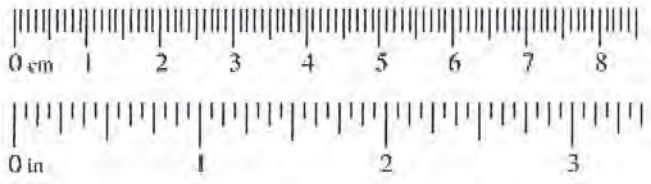


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

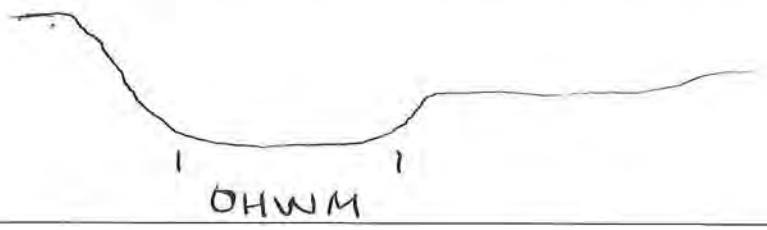
Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



3MBC000100

Project ID: 2B-1 **Cross section ID:** 2B-1 **Date:** 9/7/16 **Time:** 1405

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: <1 % Tree: 0 % Shrub: <1 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

3MBC000100

Project ID: 2B-1 **Cross section ID:** 2B-1 **Date:** 9/7/16 **Time:** 1405

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course sand

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: 0 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/7/16

Feature ID	2B-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	22.0
CDFW Width(s)	24.5'
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	Unk
Anthropogenic Modifications[7]	Road crossing
Surrounding Load Use	Open space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/7/16 **Time:** 1355
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 2B-2 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossings

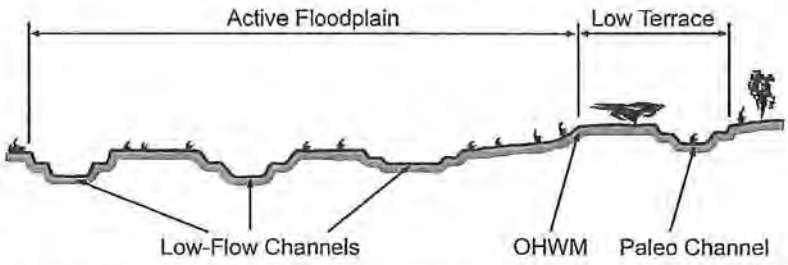
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

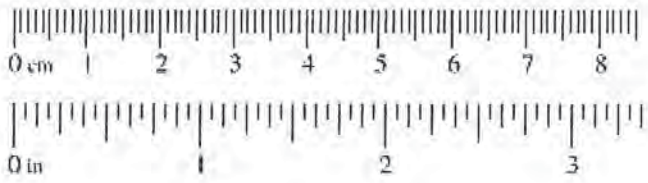


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

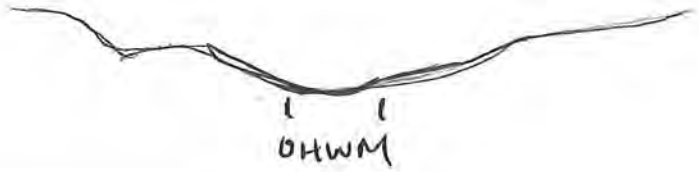
Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



3MBC050100

Project ID: 2B-2 **Cross section ID:** 2B-2 **Date:** 9/7/16 **Time:** 1355

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

3MBC000100

Project ID: 2B-2 **Cross section ID:** 2B-2 **Date:** 9/7/16 **Time:** 1355

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARICC	Date 9/7/16

Feature ID	2B-2
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1.5'
CDFW Width(s)	1.5'
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	UNK
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Openspace & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/7/16 **Time:** 1445
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 2C-1 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road crossing

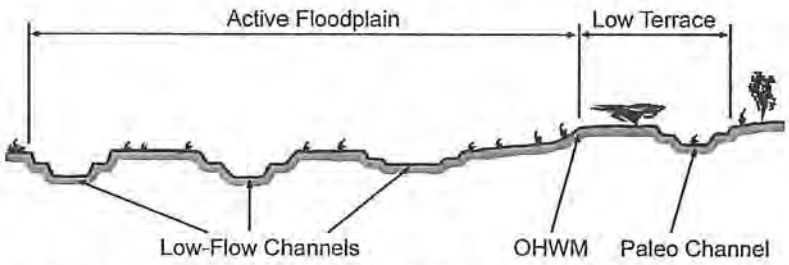
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

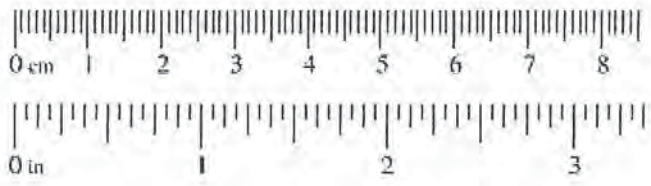


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: BMBC000100 **Cross section ID:** 2C-1 **Date:** 9/7/16 **Time:** 1445

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble - cobble

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 3mBC100100 **Cross section ID:** 2C-1 **Date:** 9/7/16 **Time:** 1445

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/7/16

Feature ID	2C-1
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2'
CDFW Width(s)	2'
Side Slope Estimate[4]	vertical
Characteristic Vegetation[5]	none
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	openspace & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/7/16 **Time:** 1450
Project Number: 3MP000100 **Town:** SB County **State:** CA
Stream: 2C-2 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

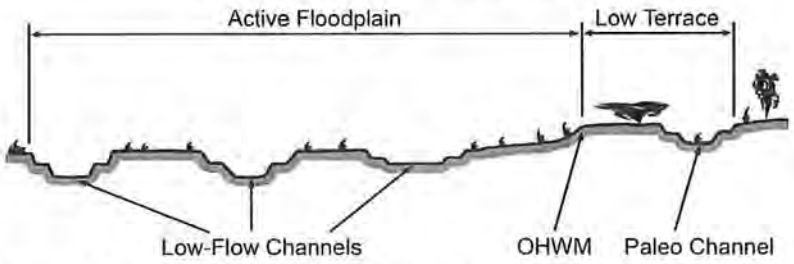
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

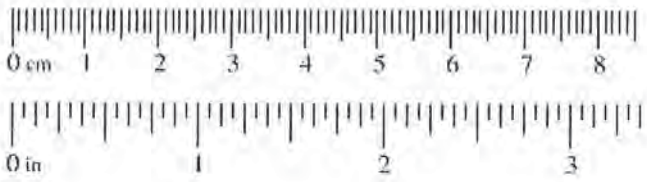


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBCU0100 **Cross section ID:** 2C-2 **Date:** 9/7/16 **Time:** 1450

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 2C-2 **Date:** 9/7/16 **Time:** 1450

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC 000100	Task No. 00300
Field Staff AR, CC	Date 9/7/16

Feature ID	2C-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	3'
CDFW Width(s)	3'
Side Slope Estimate[4]	moderate to steep slope
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	Unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/7/16 **Time:** 1455
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 2C-3 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossings

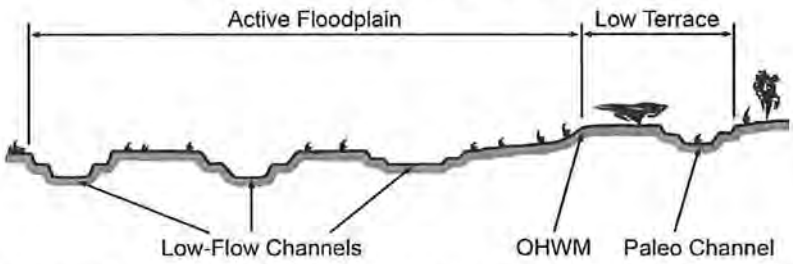
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

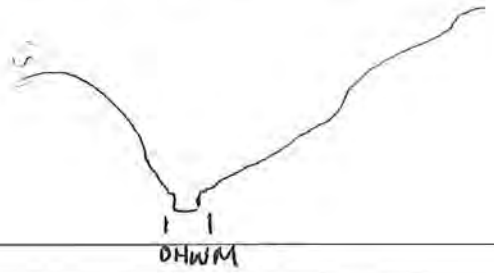
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Project ID: 3MBCU00100 **Cross section ID:** 2C-3 **Date:** 9/7/16 **Time:** 1455

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Course Sand w/Cobble

Total veg cover: 3 % Tree: 0 % Shrub: 1 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 2C-3 **Date:** 9/7/16 **Time:** 1455

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/7/16

Feature ID	2C-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1.5' - ~~13'~~ 12.5'
CDFW Width(s)	2' - 12.5'
Side Slope Estimate[4]	moderate to steep slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Load Use	open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: | **Date:** 9/27/16 | **Time:** 1300
Project Number: | **Town:** | **State:**
Stream: 2D-1 | **Photo begin file#:** | **Photo end file#:**
Investigator(s): JC CR

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

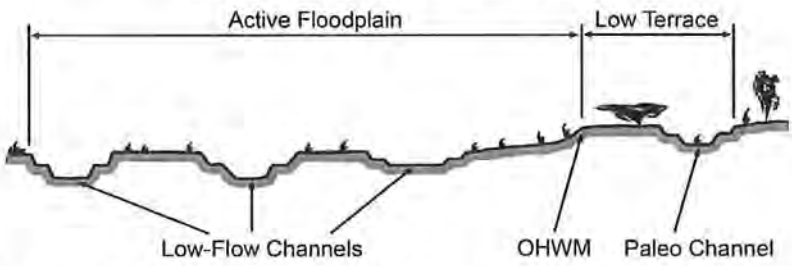
Brief site description:

Active floodplain in desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

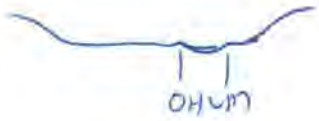
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud

Project ID: **Cross section ID:** 2D-1 **Date:** 9.7.16 **Time:** 1300

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 2D-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Gravel

Total veg cover: <1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/7/16

Feature ID	2D-1
Preliminary Jurisdictional Status[1]	E RoC
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	~~Varied~~ 1ft
CDFW Width(s)	10.5 ft
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	~~N/P~~ None
Chemical Indicators[6]	No
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	(Creosote - White burr sage scrub)

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 2D-2
Investigator(s): IC CR

Date: 9/7/16 **Time:** 1320
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

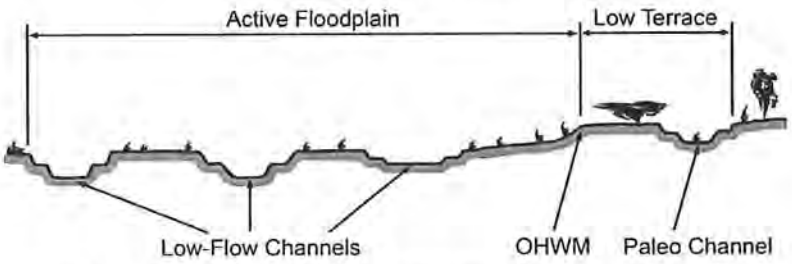
Brief site description:

Braided active floodplain, desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
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0.157	4	Granule	
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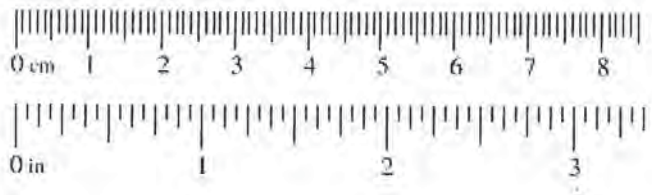
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: **Cross section ID:** 2D-2 **Date:** 9.7.16 **Time:** 1320

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** 2D-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Coarse Sand / Granule

Total veg cover: <1 % Tree: 0 % Shrub: <1 % Herb: 0 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/7/16

Feature ID	2D-2
Preliminary Jurisdictional Status[1]	D C9R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	"
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	Occasional Grass
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 9/7/16	**Time:** 1345
Project Number:	**Town:**	**State:**
Stream:	**Photo begin file#:**	**Photo end file#:**
Investigator(s): CR JC		

Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:**
Y ☒ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**

Potential anthropogenic influences on the channel system:

Road

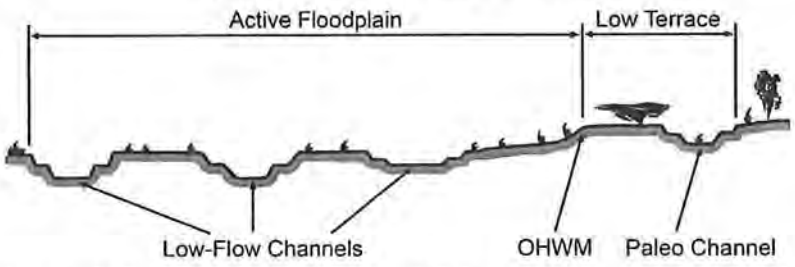
Brief site description:

Desert wash in Larrea / Ambrosia scrub

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

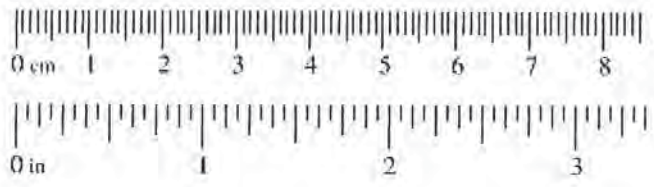


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 2D-3 **Date:** 9.7.16 **Time:** 1345

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/7/16

Feature ID	2D-3
Preliminary Jurisdictional Status[1]	C+R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2.0
CDFW Width(s)	5.0
Side Slope Estimate[4]	Vertical to slight
Characteristic Vegetation[5]	None
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 2D-4
Investigator(s): EC CR

Date: 9/7/16 **Time:** 1400
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

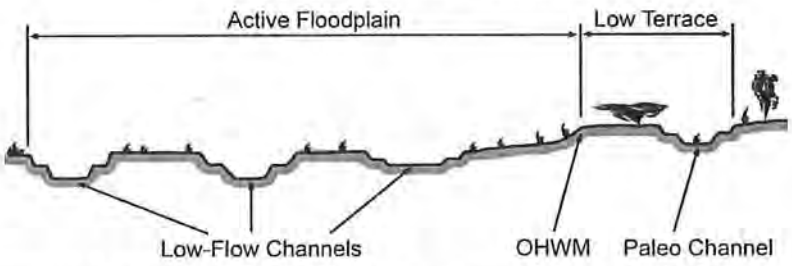
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

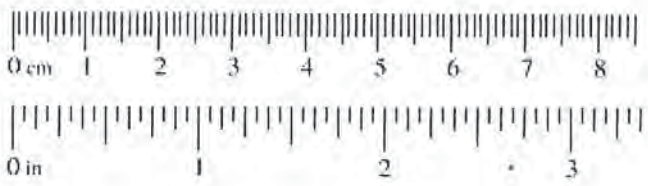


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: **Cross section ID:** 2D-4 **Date:** 9.7.16 **Time:** 1400

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: <1 % Tree: 0 % Shrub: 0 % Herb: <1 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 2D-4 **Date:** 9.7.16 **Time:** 1400

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff CR IC	Date 9/7/16

Feature ID	2D-4
Preliminary Jurisdictional Status[1]	C o R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2.0
CDFW Width(s)	7.0
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	Intermittent grass
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 2D-S
Investigator(s): CR IC

Date: 9/27/16 **Time:** 1410
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☒ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road blocks downstream flow

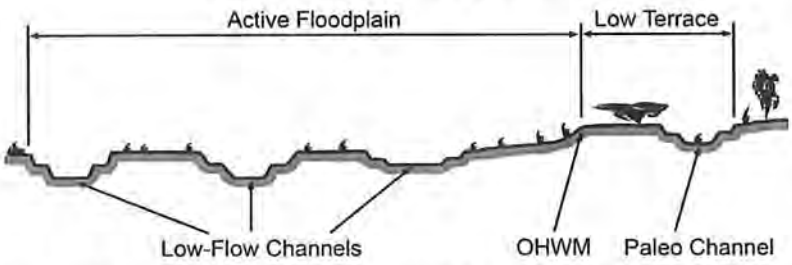
Brief site description:

Braided desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

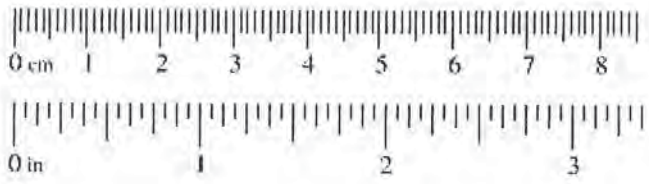


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 2D-5 **Date:** 9.7.16 **Time:** 1410

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: <1 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 2D-5 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/19/16

Feature ID	2D-5
Preliminary Jurisdictional Status[1]	EOR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Slight to ~~45~~ 45 %
Characteristic Vegetation[5]	None
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road stops drainage downstream
Surrounding Load Use	OS
Other Notes	Sheet flow upstream of drainage

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 20-6
Investigator(s): IC CR

Date: 9/7/16
Time: 1440
Town:
State:
Photo begin file#:
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

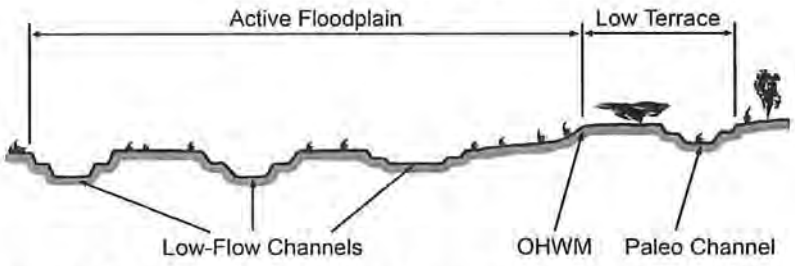
Brief site description:

Braided desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

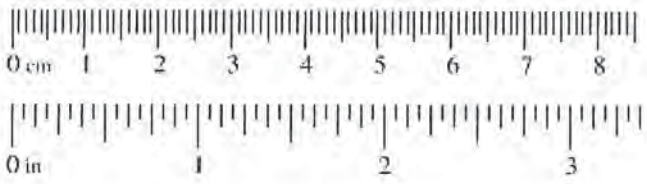


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: **Cross section ID:** 2D-6 **Date:** 9.7.16 **Time:** 1440

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 2D-6 **Date:** 9.7.16 **Time:** 1440

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: 0 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/7/16

Feature ID	2D-6
Preliminary Jurisdictional Status[1]	C or R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	"
Side Slope Estimate[4]	Vertical to slight
Characteristic Vegetation[5]	~~General~~ None
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 9/7/16	**Time:** 1540
Project Number:	**Town:**	**State:**
Stream: RE-1	**Photo begin file#:**	**Photo end file#:**
Investigator(s): JC CR		

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**

Coordinates:

Potential anthropogenic influences on the channel system:

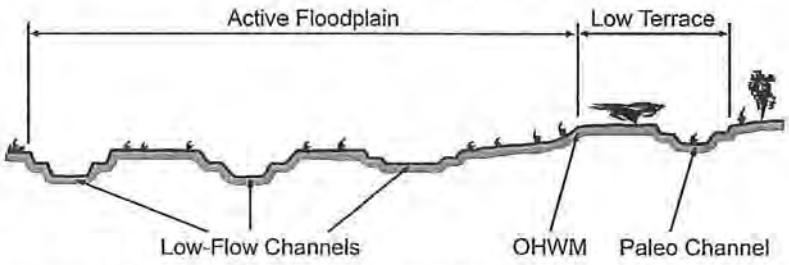
Road

Brief site description:

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud

Project ID: **Cross section ID:** 2E-1 **Date:** 9.7.16 **Time:** 1510

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: <1 % Tree: 0 % Shrub: <1 % Herb: 0 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 2E-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff CR IC	Date 9/7/16

Feature ID	2E-1
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1.0
CDFW Width(s)	2.5
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	Scattered chaparral
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Rural
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 9/7/16	**Time:** ~~1320~~ 1520
Project Number:	**Town:**	**State:**
Stream: 2E-2	**Photo begin file#:**	**Photo end file#:**
Investigator(s): JC CR		

Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:**
Y ☒ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**

Potential anthropogenic influences on the channel system:

Road

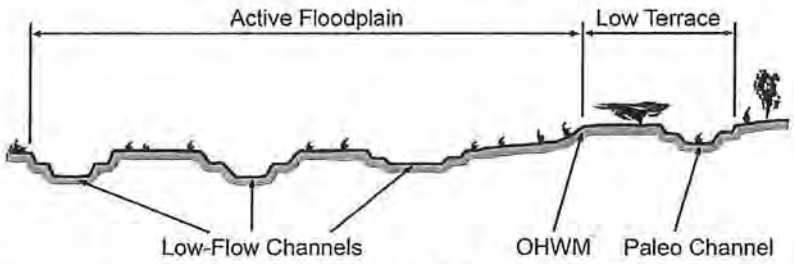
Brief site description:

Braided desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  - Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

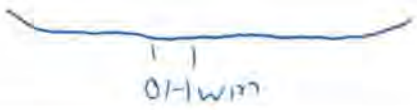
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud

Project ID: **Cross section ID:** 2E-2 **Date:** 9.7.16 **Time:** 1520

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 2E-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Gravel

Total veg cover: 1 % Tree: 0 % Shrub: 10 % Herb: 0 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff IC CR	Date 9/7/16

Feature ID	2E-2
Preliminary Jurisdictional Status[1]	CoR
Potential Wetland (y/n)[2]	
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	None
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 2E-3
Investigator(s):

Date: 9/8/16
Town:
Photo begin file#:

Time: 745
State:
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road Transmission tower

Brief site description:

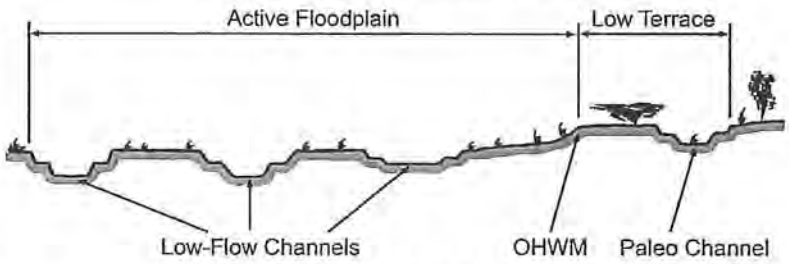
Brush/ desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

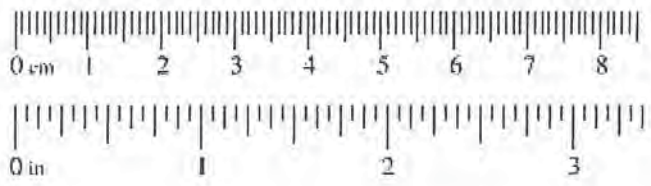


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	Silt
1/32 0.00061	0.0156	Fine silt	
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: **Cross section ID:** 2E-3 **Date:** 9.8.16 **Time:** 0745

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/8/16

Feature ID	2E-3
Preliminary Jurisdictional Status[1]	COR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	None
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road, ~~Tower~~ Transmission Tower
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 2E-5
Investigator(s): IC CR

Date: 4/8/16
Town:
Photo begin file#:

Time: ~~1300~~ 900
State:
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

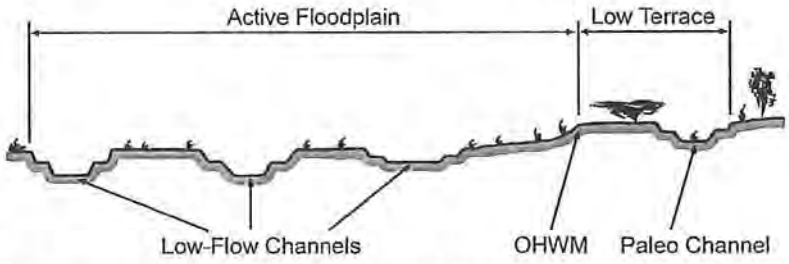
Brief site description:

Braided desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

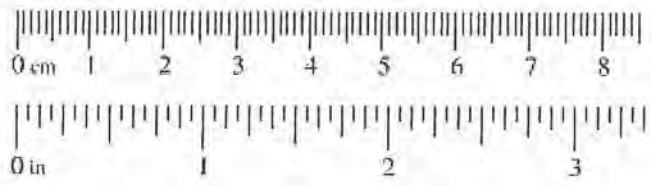


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

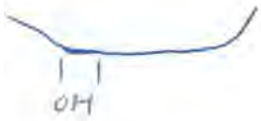
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: **Cross section ID:** 2E-4 **Date:** 9.8.16 **Time:** 0800

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course Sand

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 2E-4 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff CR IC	Date 9/8/16

Feature ID	2E-4
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	~~Bottom~~ 3.0
CDFW Width(s)	" 9.5
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	Occasional shrub
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: | **Date:** 4/18/16 | **Time:** 8:15
Project Number: | **Town:** | **State:**
Stream: 2E-5 | **Photo begin file#:** | **Photo end file#:**
Investigator(s): IC CR

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

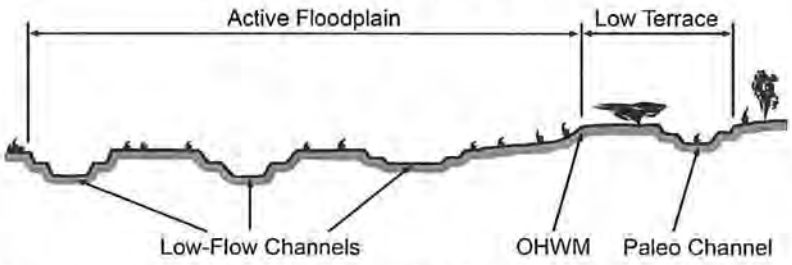
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

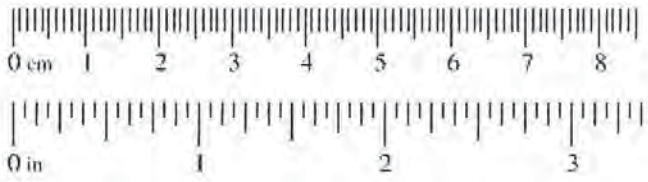


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

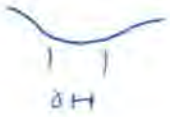
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: **Cross section ID:** 2E-5 **Date:** 9.8.16 **Time:** 0815

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 26-5 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff JC CR	Date 9/8.16

Feature ID	2E-05
Preliminary Jurisdictional Status[1]	COR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	V
CDFW Width(s)	V
Side Slope Estimate[4]	Moderate
Characteristic Vegetation[5]	None
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road stops down stream flow
Surrounding Load Use	OS
Other Notes Photos 2E-6	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 2E-7
Investigator(s): IC CR

Date: 9/8/16
Time: 830
Town:
State:
Photo begin file#:
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Roads

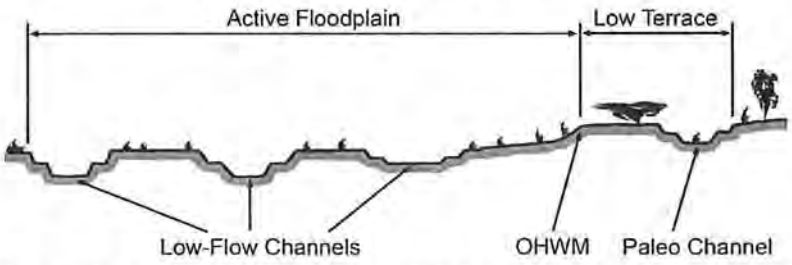
Brief site description:

Braided desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

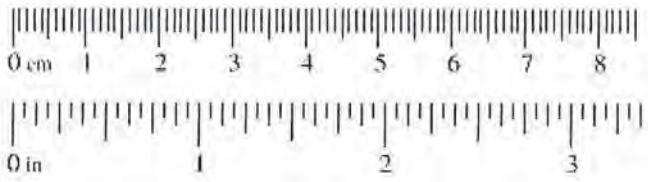


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

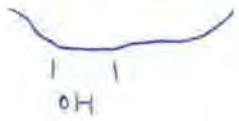
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 2E-6 **Date:** 9.9.16 **Time:** 0830

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☒ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** 2E-6 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/8/16

Feature ID	~~CR~~ 2F-06
Preliminary Jurisdictional Status[1]	CJR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	V
Side Slope Estimate[4]	Slight to steep
Characteristic Vegetation[5]	Occasional shrub
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Roads
Surrounding Load Use	OS
Other Notes Photo says 2F-7	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 25-7
Investigator(s): IC CR

Date: 9/13/16 **Time:** ~~9:55~~ 9:50
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Roads

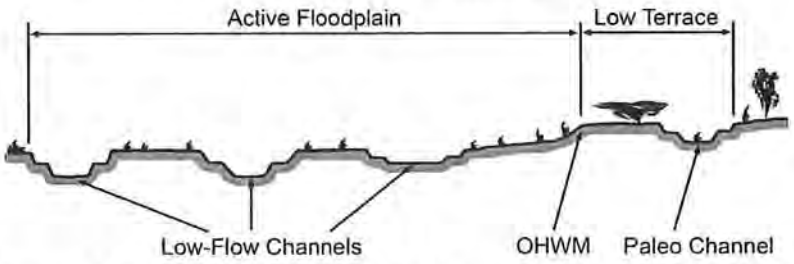
Brief site description:

Braided desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

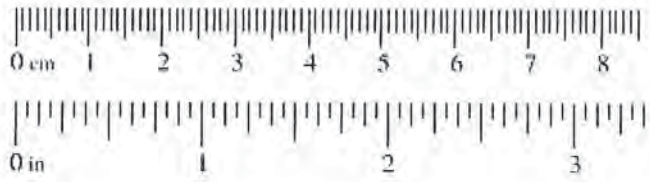


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 2E-7 **Date:** 9.8.16 **Time:** 0850

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 6

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☒ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** ZE-7 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble / Granule

Total veg cover: 0 % Tree: 0 % Shrub: 2 % Herb: 0 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff CR IC	Date 9/8/16

Feature ID	2E-7
Preliminary Jurisdictional Status[1]	COR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Va
CDFW Width(s)	V
Side Slope Estimate[4]	Slight to steep
Characteristic Vegetation[5]	Larrea / Ambrosia scrub
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Roads
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 9/8/16	**Time:** 915
Project Number:	**Town:**	**State:**
Stream: 25-8	**Photo begin file#:**	**Photo end file#:**
Investigator(s): TC CR		

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**

Coordinates:

Potential anthropogenic influences on the channel system:

Road

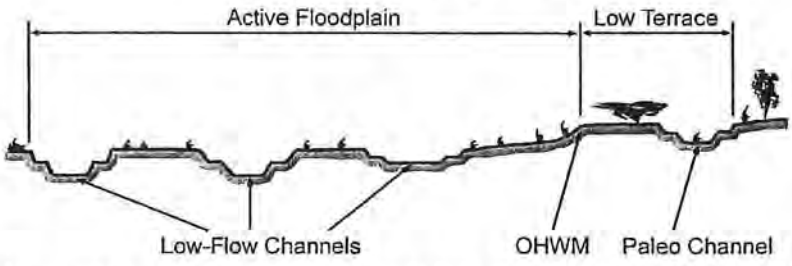
Brief site description:

Braided desert stream

Checklist of resources (if available):

- ☒ Aerial photography
  - Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

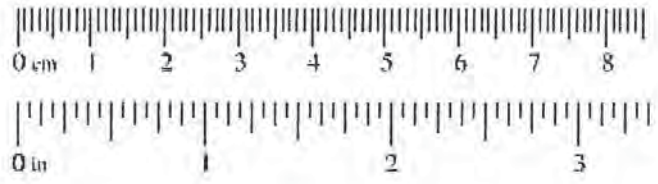


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 2E-3 **Date:** 9.8.16 **Time:** 0915

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: 0 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

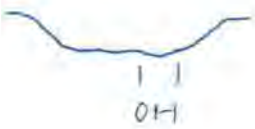
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** 2E-8 **Date:** **Time:**

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/8/16

Feature ID	2E-8
Preliminary Jurisdictional Status[1]	CoR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	V
CDFW Width(s)	V
Side Slope Estimate[4]	Slight to ~~45°~~ 45°
Characteristic Vegetation[5]	N
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road stops down stream flow
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: **Project Number:** **Stream:** 2E-9 **Investigator(s):** JC CR	**Date:** 9/8/16 **Town:** **Photo begin file#:**	**Time:** ~~10~~ 920 **State:** **Photo end file#:**
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☒ / N ☐ Is the site significantly disturbed?	**Location Details:** **Projection:** **Datum:** **Coordinates:**	

Potential anthropogenic influences on the channel system:

Road

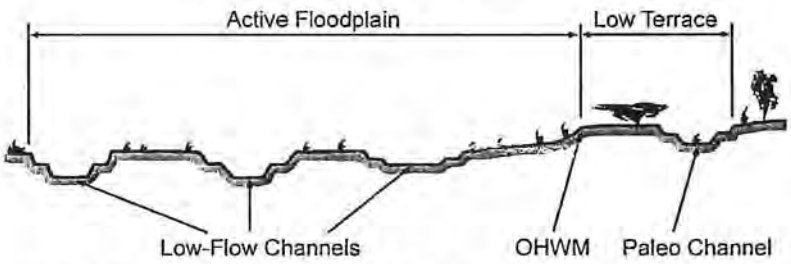
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

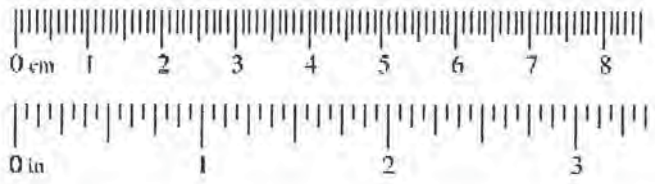


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

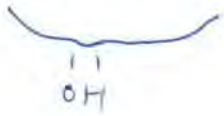
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 2E-9 **Date:** 9.8.16 **Time:** 0920

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☒ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** 2E-9 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebbl

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/8/16

Feature ID	2E-9
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	4.0
CDFW Width(s)	30.0
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	N
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road stops upstream flow
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 9/8/16	**Time:** 935
Project Number:	**Town:**	**State:**
Stream: 2E-10	**Photo begin file#:**	**Photo end file#:**
Investigator(s): CE JC		

Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:**
Y ☒ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**

Potential anthropogenic influences on the channel system:

Road

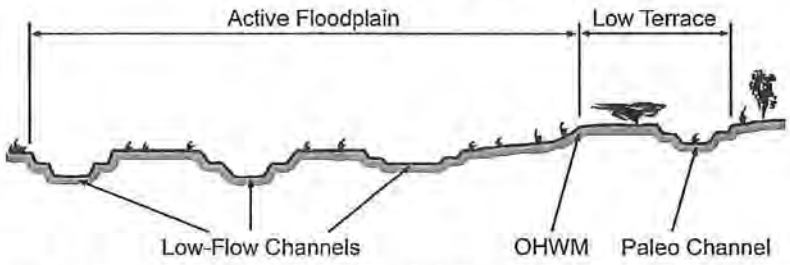
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

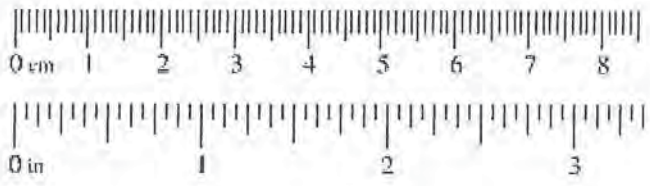


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

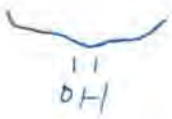
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		Sand
1/2 0.0098	0.25	Medium sand	
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 2E-10 **Date:** 09.08.16 **Time:** 0935

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: ~~Mud~~ Coarse sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 2E-1D **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Gravel

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff CR IC	Date 9/8/16

Feature ID	2E-10
Preliminary Jurisdictional Status[1]	C?R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	N
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/8/16 **Time:** 0740
Project Number: 3MB0000100 **Town:** SB County **State:** CA
Stream: 2F-1 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

OHV + Road Crossings

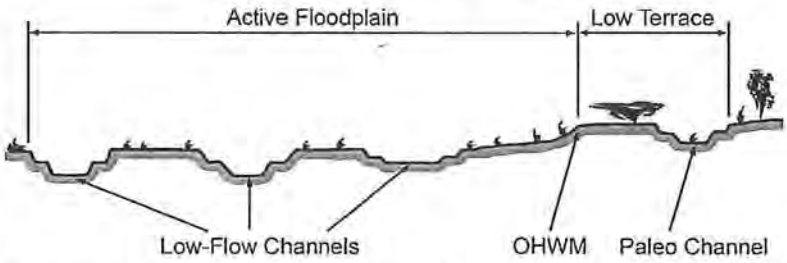
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

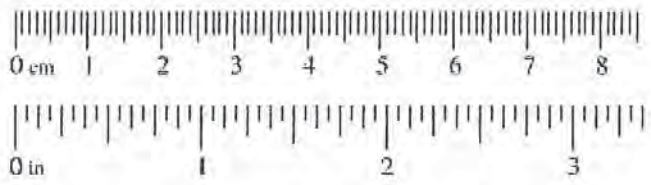


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		Sand
1/2 0.0098	0.25	Medium sand	
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	Silt
1/32 0.00061	0.0156		
		Fine silt	
1/64 0.00031	0.0078		
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MRC00108 **Cross section ID:** 2F-1 **Date:** 9/8/16 **Time:** 0740

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Course Sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 2F-1 **Date:** 9/8/16 **Time:** 0746

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARICE	Date 9/8/16

Feature ID	~~2C-4~~ 2F-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1.5'-4'
CDFW Width(s)	1.5'-4'
Side Slope Estimate[4]	gently sloping
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	UNK
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 | **Date:** 9/8/16 | **Time:** 0745
Project Number: BMBC00100 | **Town:** SB County | **State:** CA
Stream: 2F-2 | **Photo begin file#:** | **Photo end file#:**
Investigator(s):

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

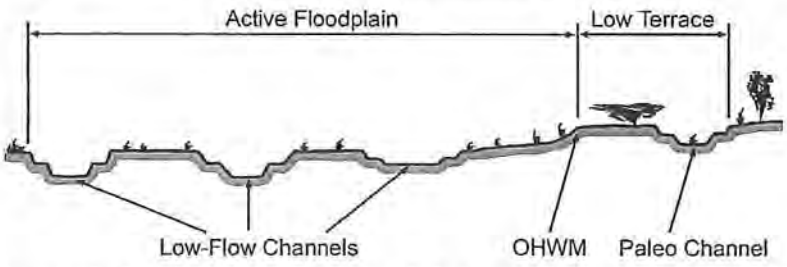
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

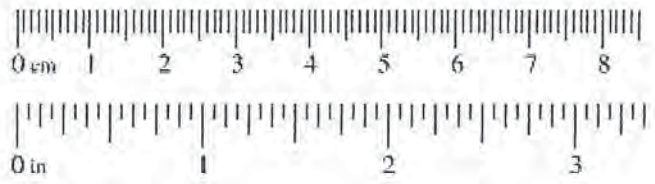


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3mbc000100 **Cross section ID:** 2F-2 **Date:** 9/8/16 **Time:** 0745

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Project ID: 3MBXC000100 **Cross section ID:** 2F-2 **Date:** 9/8/16 **Time:** 0745

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Coarse

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARice	Date 9/8/16

Feature ID	2F-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2'
CDFW Width(s)	2'
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 | **Date:** 9/8/16 | **Time:** 0750
Project Number: 3MBC000100 | **Town:** SB County | **State:** CA
Stream: 2F-3 | **Photo begin file#:** | **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road crossings

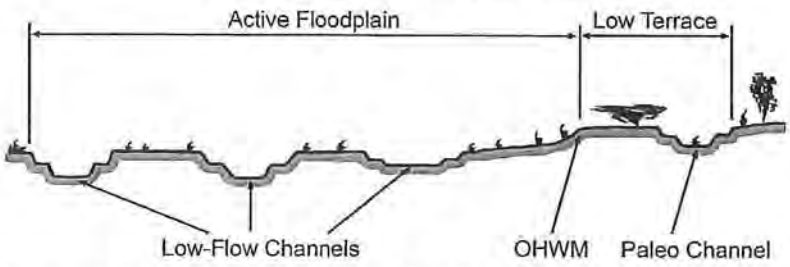
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

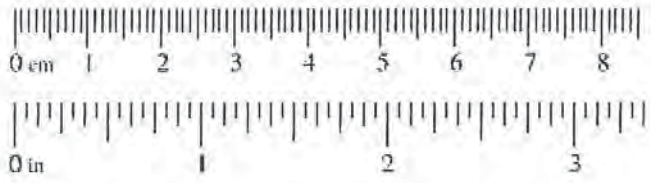


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 2F-3 **Date:** 9/8/16 **Time:** 0750

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MOC000100 **Cross section ID:** 2F-3 **Date:** 9/8/16 **Time:** 0750

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: <1 % Tree: 0 % Shrub: <1 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: △
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: △ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/8/16

Feature ID	2F-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1'-9'
CDFW Width(s)	1'-9'
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossing
Surrounding Load Use	Open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: 2F-4
Investigator(s): AR, EC

Date: 9/8/16
Town: SB County
Time: 0805
State: CA
Photo begin file#:
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection:
Datum:
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

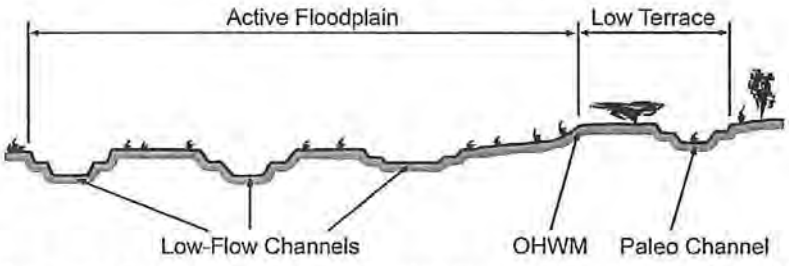
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

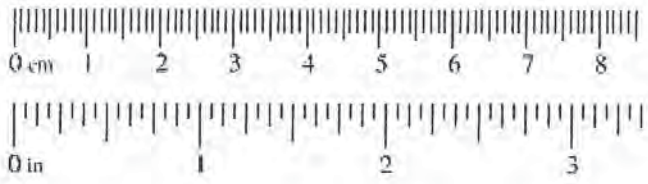


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

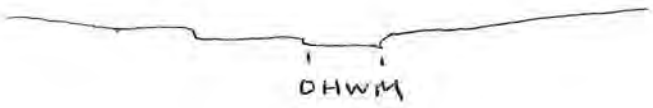
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 2F-4 **Date:** 9/8/16 **Time:** 0805

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3mpc000100 **Cross section ID:** 2F-4 **Date:** 9/8/16 **Time:** 0805

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/8/16

Feature ID	~~2H~~ 2F-4
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, ~~Drift~~
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1.5'
CDFW Width(s)	1.5'
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: 2F-5
Investigator(s): AR, CC

Date: 9/8/16
Town: SB County
Photo begin file#: 0

Time: 0825
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossings

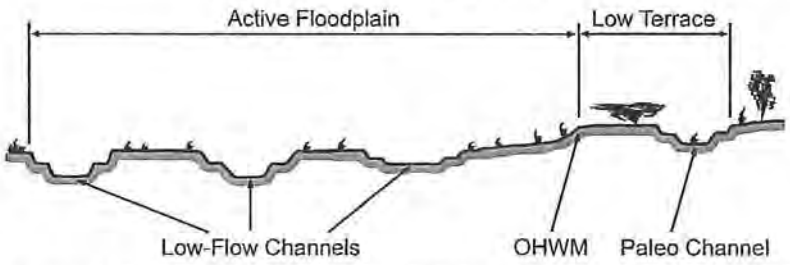
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

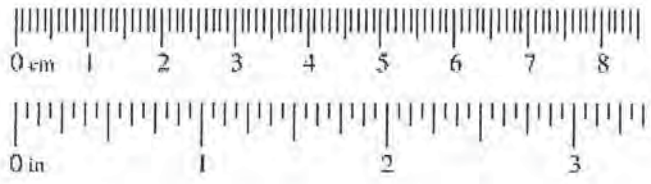


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

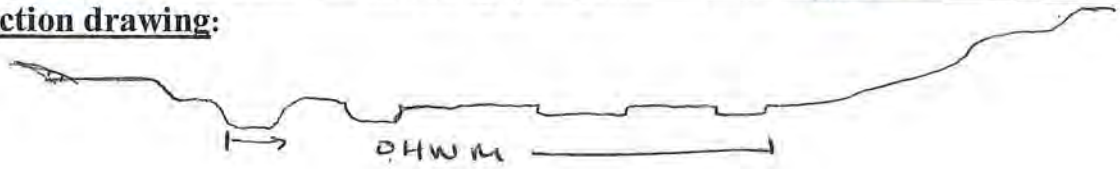
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3mbc000100 **Cross section ID:** 2F-5 **Date:** 9/8/16 **Time:** 0825

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course Sand w/ Some Silt

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 2F-5 **Date:** 9/8/16 **Time:** 0825

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 60 % Tree: 0 % Shrub: 5 % Herb: <1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble + Cobble

Total veg cover: 10 % Tree: 0 % Shrub: 8 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARICC	Date 9/8/16

Feature ID	2F-5
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	~~Ephemeral~~ → Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	veg in channels
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossings
Surrounding Load Use	Open Space + transmission lines
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/8/16 **Time:** 0840
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 2F-6 **Photo begin file#:** **Photo end file#:**
Investigator(s):

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

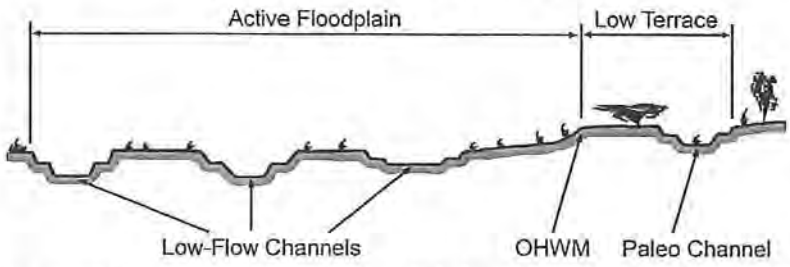
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

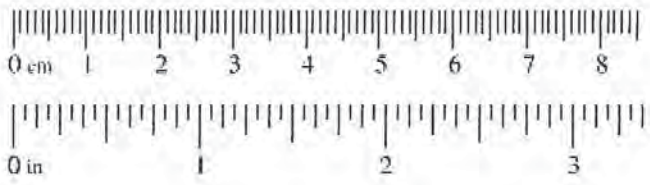


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

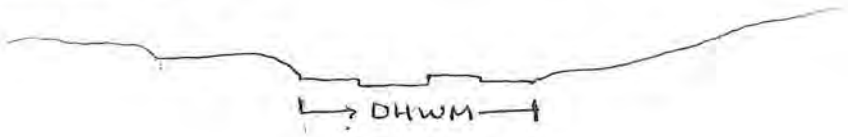
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC00010 **Cross section ID:** 2F-6 **Date:** 9/8/16 **Time:** 0840

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium + Course sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 2F-6 **Date:** 9/8/16 **Time:** 0840

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble & Cob Granule

Total veg cover: 6 % Tree: Ø % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/8/16

Feature ID	2F-4
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3M[illegible]000100
Stream: 3C-1
Investigator(s): ARice

Date: 9/8/16 **Time:** 1015
Town: SB County **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

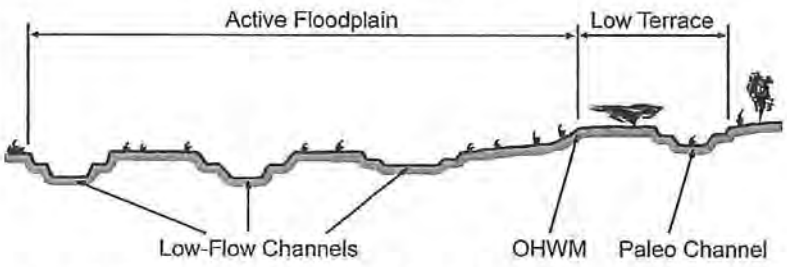
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

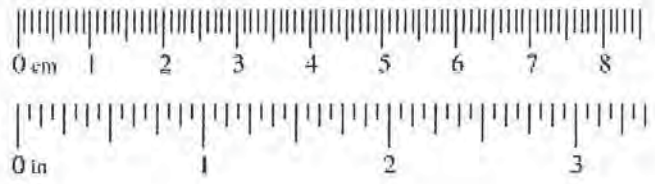


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 3C-1 **Date:** 9/8/16 **Time:** 1015

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

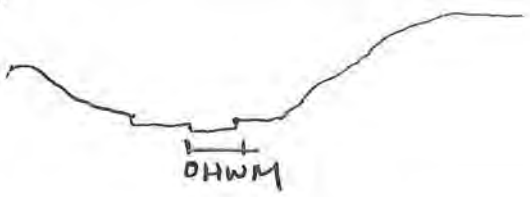
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Project ID: 3MACO00100 **Cross section ID:** 3C-1 **Date:** 9/8/16 **Time:** 1015

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt

Total veg cover: 0 % Tree: 0 % Shrub: 1 % Herb: 0 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment
- [ ] Other: _____
- [ ] Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/8/16

Feature ID	3C-1
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Soil Cracks
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2'-5'
CDFW Width(s)	2'-5'
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Load Use	Open space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: BC-2
Investigator(s): AR, CC

Date: 9/8/16 **Time:** 1025
Town: SB County **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

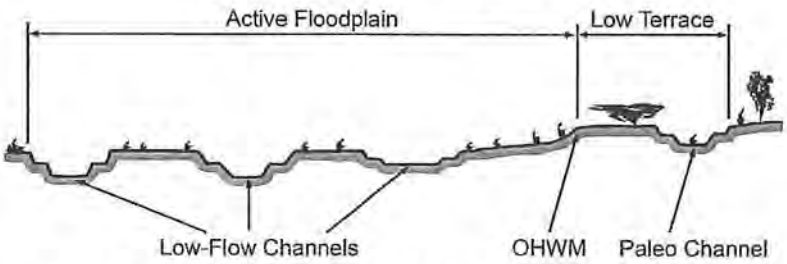
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

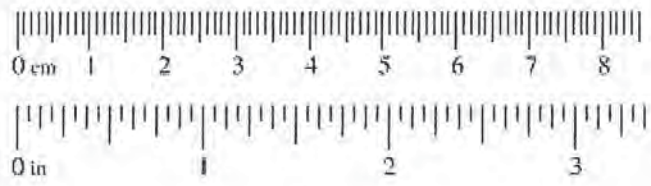


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MPC000100 **Cross section ID:** 3C-2 **Date:** 9/8/16 **Time:** 1025

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 7 % Tree: 0 % Shrub: 5 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Cobble

Total veg cover: 5 % Tree: 0 % Shrub: 4 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** BC-2 **Date:** 9/6/16 **Time:** 1025

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/8/16

Feature ID	3C-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank + Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	moderate
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossings + trash ← ~~debris~~ ORV driven onto drainage
Surrounding Load Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/8/16 **Time:** 1100
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 3C-3 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

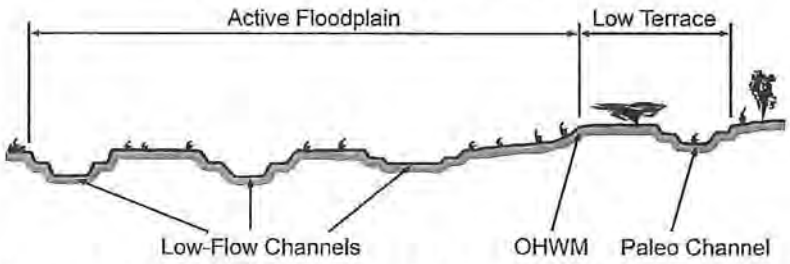
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

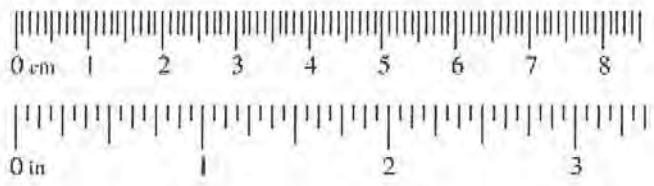


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

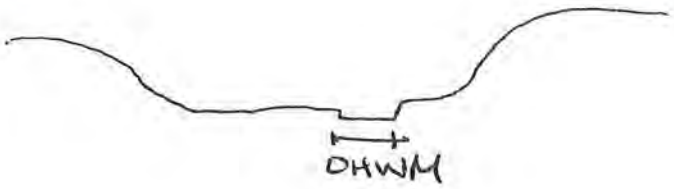
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 3C-3 **Date:** 9/8/16 **Time:** 1100

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine to Medium Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 3C-3 **Date:** 9/8/16 **Time:** 1100

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course to Granule

Total veg cover: 8 % Tree: Ø % Shrub: 8 % Herb: Ø %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000102	Task No. 00300
Field Staff ARCC	Date 9/8/16

Feature ID	3C-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment Sediment build-up texture,
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	Unk
Anthropogenic Modifications[7]	Road Crossing + Trash
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 9/8/16	**Time:** 1040
Project Number:	**Town:**	**State:**
Stream: 3C-4	**Photo begin file#:**	**Photo end file#:**
Investigator(s): CR, IC		

Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:**
Y ☒ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**

Potential anthropogenic influences on the channel system:

Road

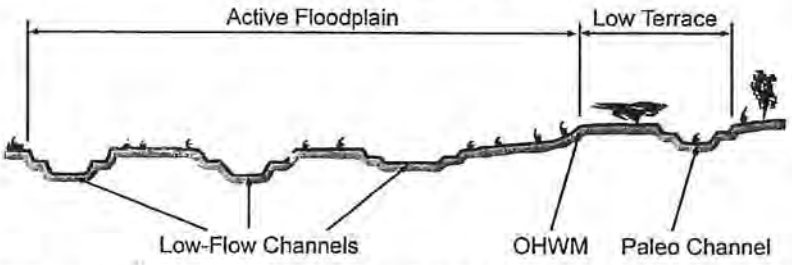
Brief site description:

Cobbly desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

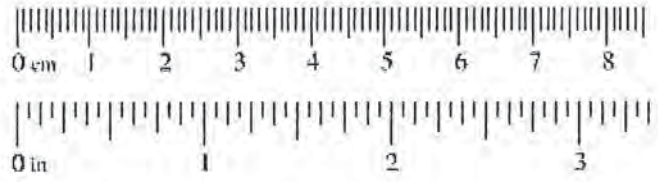


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 10 % Tree: Ø % Shrub: 5 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Cobble

Total veg cover: 10 % Tree: Ø % Shrub: 5 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/8/16

Feature ID	3C-4
Preliminary Jurisdictional Status[1]	CoR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Slight to vertical
Characteristic Vegetation[5]	Larrea & Amsinckia scrub
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 9/8/14	**Time:** 1105
Project Number:	**Town:**	**State:**
Stream: 3G-5	**Photo begin file#:**	**Photo end file#:**
Investigator(s): CR, IC		

Y ☐ / N ☐ Do normal circumstances exist on the site?	**Location Details:**
Y ☐ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**

Potential anthropogenic influences on the channel system:

Road

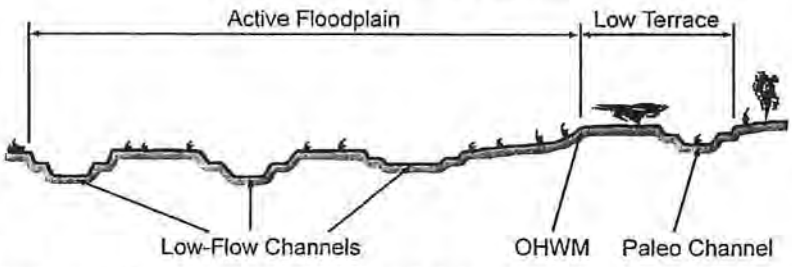
Brief site description:

Cobble dominated

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

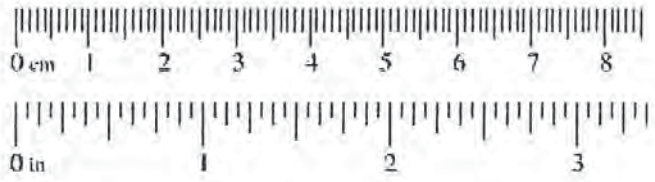


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

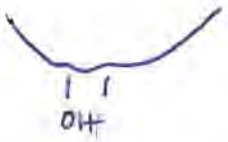
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625		
		Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: **Cross section ID:** 3C-5 **Date:** 09.08.16 **Time:** 1105

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Cobble

Total veg cover: 5 % Tree: 0 % Shrub: 5 % Herb: 0 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC, CR	Date 9/8/16

Feature ID	3C-05
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Moderate
Characteristic Vegetation[5]	Lemna + Azolla
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	CS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MB1000100
Stream: 4A-1
Investigator(s): AR, CC

Date: 9/8/16 **Time:** 1250
Town: SB County **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

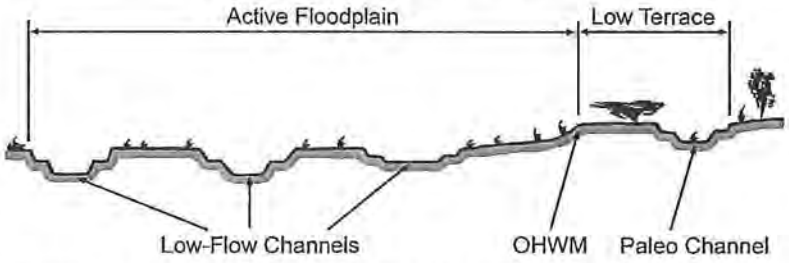
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

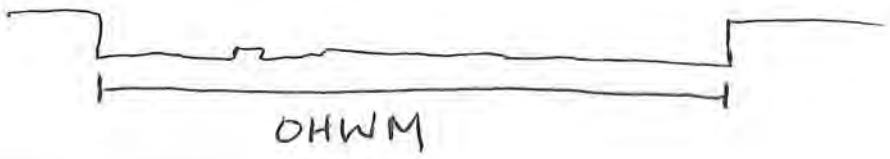
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		Sand
1/2 0.0098	0.25	Medium sand	
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	
1/32 0.00061	0.0156		Silt
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud

Project ID: 3MBC000100 **Cross section ID:** 4A-1 **Date:** 9/8/16 **Time:** 1250

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine to coarse sand

Total veg cover: 2 % Tree: 0 % Shrub: 0 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 4A-1 **Date:** 9/8/16 **Time:** 1250

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Coarse to Granule

Total veg cover: 7 % Tree: ~~Sand~~ 2 % Shrub: 1 % Herb: 4 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR.CC	Date 9/8/16

Feature ID	4A-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Drainage Patterns, Δ in sediment texture, Sediment deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	moderate slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC00D100
Stream: 4A-2
Investigator(s): AR, CC

Date: 9/8/16
Town: SB County
Photo begin file#: 0

Time: 1315
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

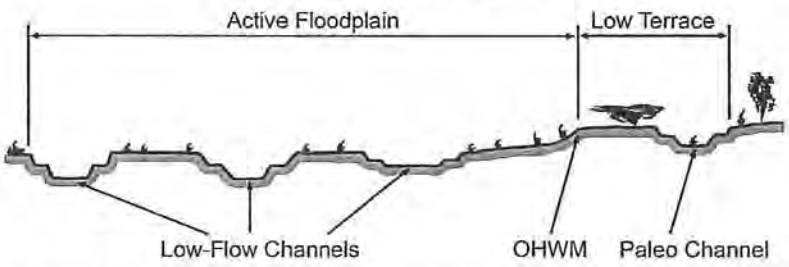
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

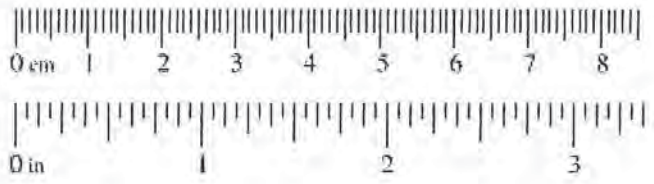


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3mrbc000102 **Cross section ID:** 4A-2 **Date:** 9/8/16 **Time:** 1315

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: 20 % Tree: 0 % Shrub: 0 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 4A-2 **Date:** 9/8/16 **Time:** 1315

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: very fine sand
Total veg cover: 9 % Tree: 0 % Shrub: 5 % Herb: 4 %
Community successional stage:
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: _____
Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %
Community successional stage:
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR.CC	Date 9/8/16

Feature ID	4A-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, drainage patterns
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle to moderate
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/8/16 **Time:** 1345
Project Number: 3MBC00D100 **Town:** SB County **State:** CA
Stream: 4A-3 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

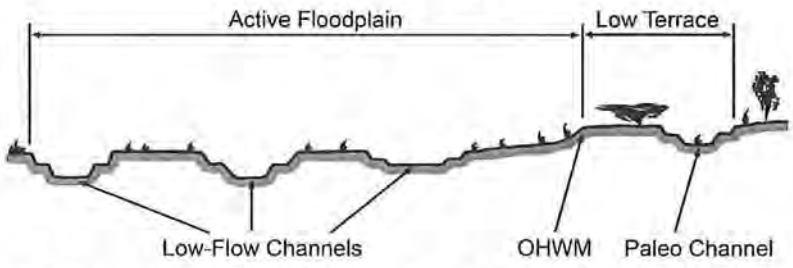
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

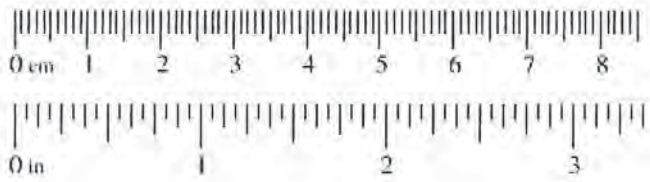


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	Silt
1/32 0.00061	0.0156		
		Fine silt	
1/64 0.00031	0.0078		
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 4A-3 **Date:** 9/8/16 **Time:** 1345

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Project ID: 3MBC000100 **Cross section ID:** 4A-3 **Date:** 9/8/16 **Time:** 1345

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARCC	Date 9/8/16

Feature ID	4A-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road crossing + trash
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/8/16 **Time:** 1345
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 4A-4 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossings

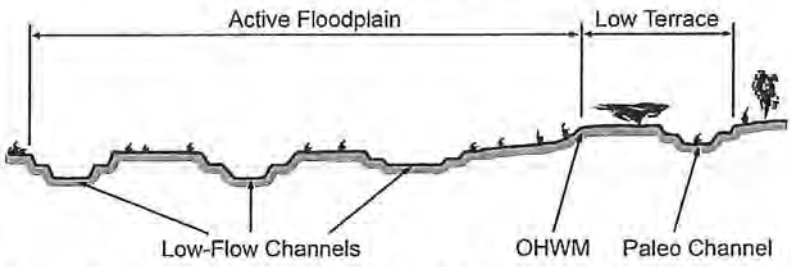
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

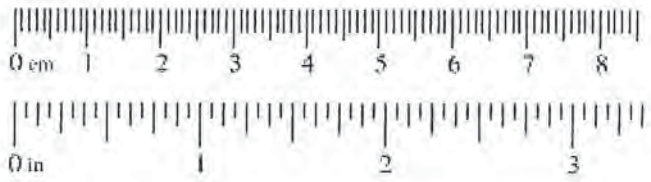


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 4A-4 **Date:** 9/8/16 **Time:** 1345

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: very fine sand

Total veg cover: <1 % Tree: 0 % Shrub: 0 % Herb: <1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

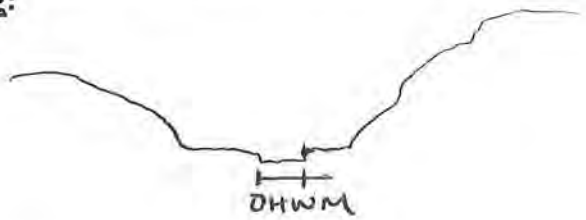
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Project ID: 3MBC000100 **Cross section ID:** 4A-4 **Date:** 9/8/16 **Time:** 1345

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/8/16

Feature ID	4A-4
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	~~AAAA~~
CDFW Width(s)	~~AAAA~~
Side Slope Estimate[4]	gentle slope w/ some steep slopes
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossings
Surrounding Load Use	Open Space + Transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/8/16 **Time:** 1355
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: HA-5 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

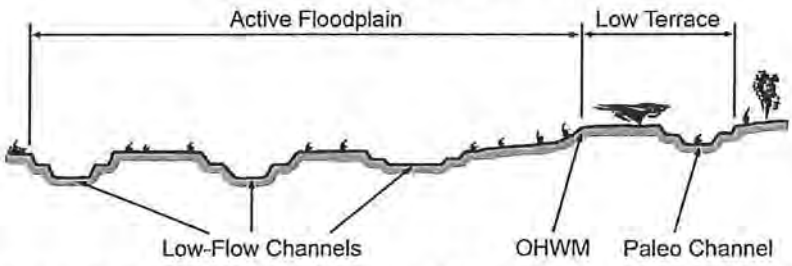
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

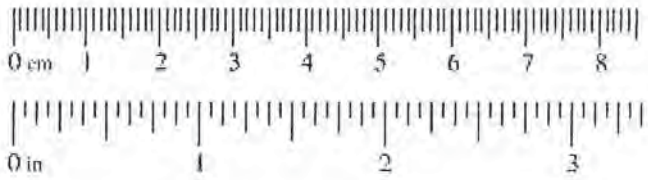


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000105 **Cross section ID:** 4A-5 **Date:** 9/8/16 **Time:** 1355

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 41 % Tree: 0 % Shrub: 0 % Herb: 41 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Project ID: 3mbc000100 **Cross section ID:** 4A-5 **Date:** 9/8/16 **Time:** 1355

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: 0 % / Tree: 0 % Shrub: 0 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/8/16

Feature ID	4A-5
Preliminary Jurisdictional Status[1]	CDFW
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2'
CDFW Width(s)	2'
Side Slope Estimate[4]	moderate to steep slope
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path46
Project Number: 3MRCA00100
Stream: 4A-6
Investigator(s): AR, CC

Date: 9/8/16
Town: SB County
Photo begin file#:

Time: 1400
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection:
Datum:
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

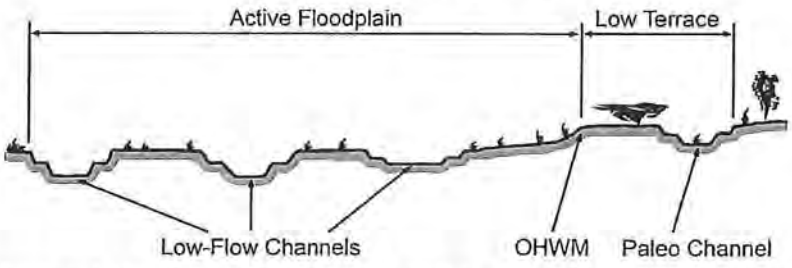
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

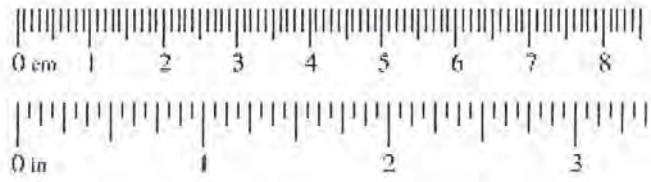


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

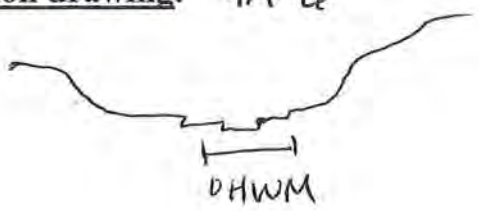
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

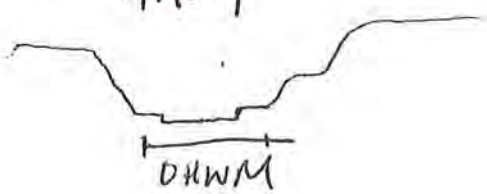


Project ID: 3MBC000100 **Cross section ID:** 4A-Le **Date:** 9/6/16 **Time:** 1400

Cross section drawing: 4A-Le



4A-M



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand w/cobble

Total veg cover: 0 % / Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** ~~4C~~ 4A-C **Date:** 9/8/16 **Time:** 1400

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course sand + cobble

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MRC000100	Task No. 00300
Field Staff AR, CL	Date 9/8/16

Feature ID	4A-6	4A-7
Preliminary Jurisdictional Status[1]	CDFW, RWQB	
Potential Wetland (y/n)[2]	N	N
Hydrologic Indicators	Bed/Bank, Δ in sediment tex.	Same
Wetland Plant Indicators	N/A	N/A
Preliminary Hydrologic Regime[3]	Ephemeral	
Surface Water Present (y/n), Depth	N	N
OHWM Width(s)	2.5'	1'-5.5'
CDFW Width(s)	4.5'	2'-7'
Side Slope Estimate[4]	moderate slope	gentle to moderate
Characteristic Vegetation[5]	unveg in channel	unveg in channel
Chemical Indicators[6]	unk	
Anthropogenic Modifications[7]	Road Crossing	
Surrounding Load Use	Open Space + transmission line	
Other Notes		

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 4A-6
Investigator(s): AR, CC

Date: 09.08.16 **Time:** 1415
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

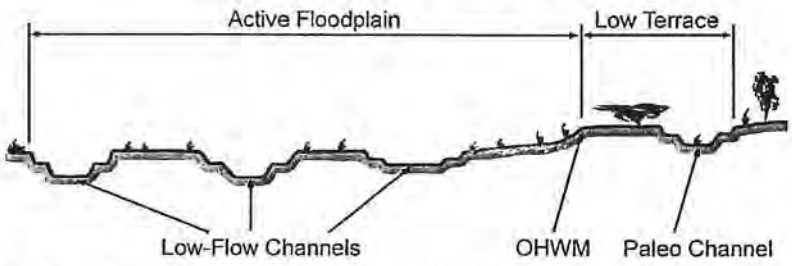
Brief site description:

Dry desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

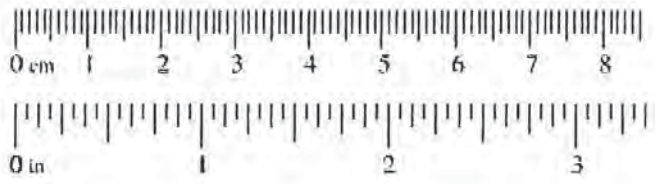


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

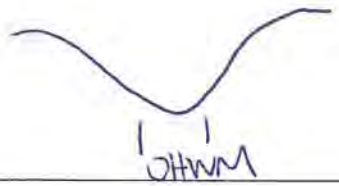
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: **Cross section ID:** 4A-B **Date:** 09.08.16 **Time:** 14.15

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

straw wattles in place up channel
D.S. end disturbed by grading for pylon.

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4A-B **Date:** 9.8.16 **Time:** 1415

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 9/8/16	**Time:** 1310
Project Number:	**Town:**	**State:**
Stream: 4B-1	**Photo begin file#:**	**Photo end file#:**
Investigator(s): TC CR		
Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:**	
Y ☒ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**	

Potential anthropogenic influences on the channel system:

Road

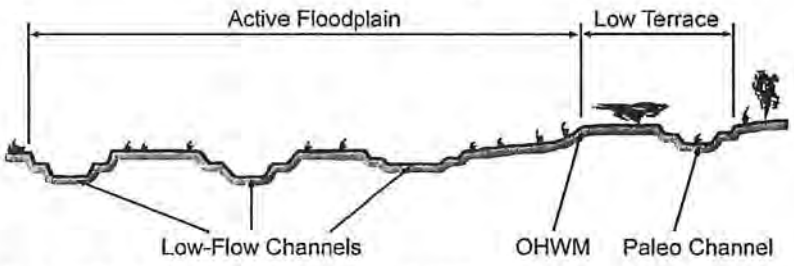
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

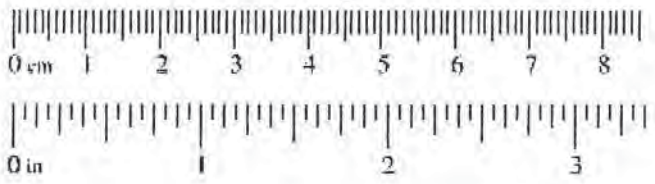


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: **Cross section ID:** 4B-1 **Date:** 9.8.16 **Time:** 1310

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4B-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 6 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC, CR	Date 9/8/16

Feature ID	4B-1
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	Saltbush, Atriplex lyn
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 9/6/16	**Time:**
Project Number:	**Town:**	**State:**
Stream: 4B-2	**Photo begin file#:**	**Photo end file#:**
Investigator(s): IC, CR		

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**

Coordinates:

Potential anthropogenic influences on the channel system:

Road

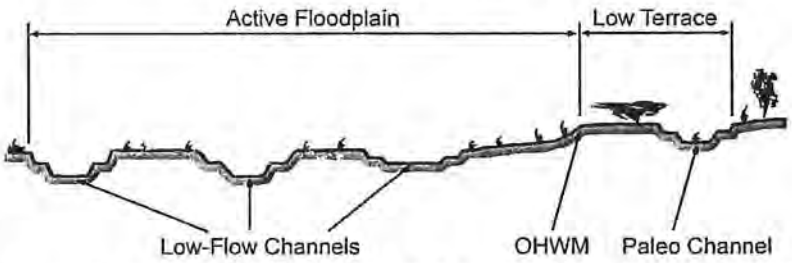
Brief site description:

desert wash, medium sand

Checklist of resources (if available):

- ☒ Aerial photography
  - Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
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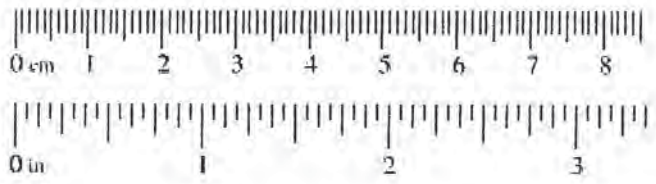
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

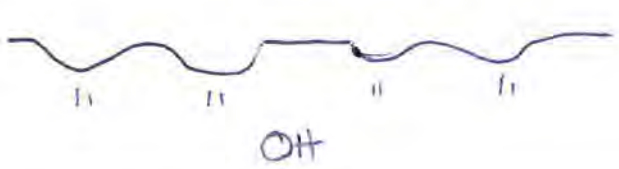
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: **Cross section ID:** 4B-2 **Date:** 9/3/16 **Time:** 1320

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [ ] Break in bank slope
- [x] Other: active bank ripple
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4B-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff C CR	Date 9/48

Feature ID	4B-2
Preliminary Jurisdictional Status[1]	C·R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	Amchum/Atriplex
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes OH	Normal, Dist, 1320, ~~[illegible]~~ Low flow Δ texture medium sand Active bank ripple in veg

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 4B-3
Investigator(s): IC, CR

Date: 9/8/16 **Time:** 1340
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

~~Dirt~~ Road

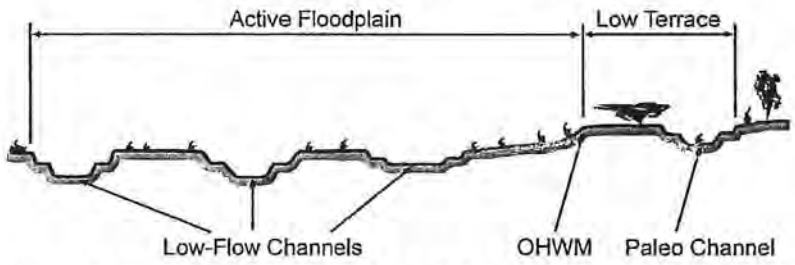
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
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   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
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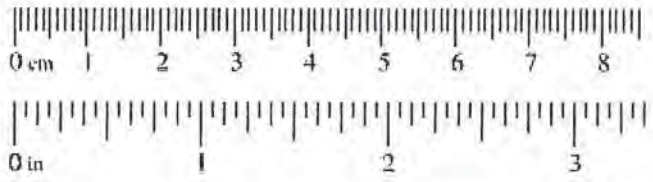
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: **Cross section ID:** 4B-3 **Date:** 9/8/16 **Time:** 1340

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4B-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC, CR	Date 9/8/16

Feature ID	4B-3
Preliminary Jurisdictional Status[1]	CoR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	4
CDFW Width(s)	7
Side Slope Estimate[4]	Moderate
Characteristic Vegetation[5]	Arundo
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	Desert wash 1340 normal flow OA texture cover Low flow bank ripple debris no veg

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: | **Date:** 09.08.16 | **Time:** 1400
Project Number: | **Town:** | **State:**
Stream: 4C-1 | **Photo begin file#:** | **Photo end file#:**
Investigator(s): IC, CR

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road blocks upstream

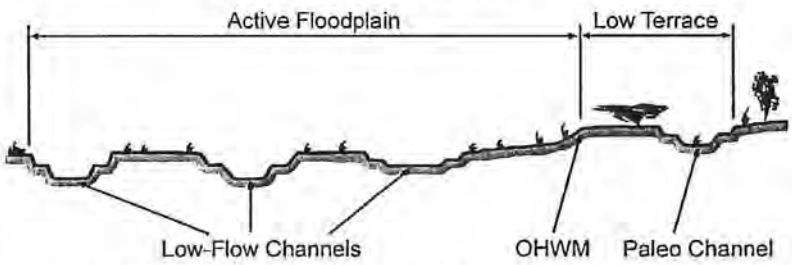
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

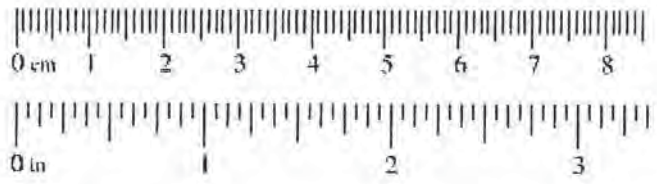


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: **Cross section ID:** 4C-1 **Date:** 09.03.16 **Time:** 1400

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4C-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/8

Feature ID	4C-1
Preliminary Jurisdictional Status[1]	CIR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	3
CDFW Width(s)	3
Side Slope Estimate[4]	Vertical
Characteristic Vegetation[5]	None
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road blocks upstream
Surrounding Load Use	OS
Other Notes	Normal Dist 1406 OH Δ texture & slope Low medium sand debris ripple bank no veg

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: **Date:** 09.08.16 **Time:** 1410
Project Number: **Town:** **State:**
Stream: 4C-2 **Photo begin file#:** **Photo end file#:**
Investigator(s): IC, CR

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road cuts upstream

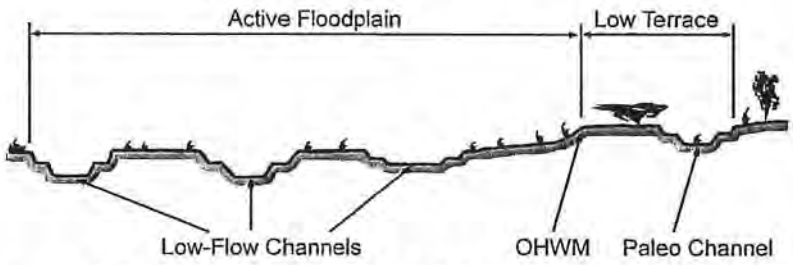
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

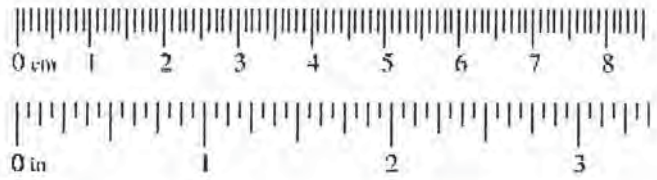


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
		Very fine sand	Sand
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
		Very fine silt	Silt
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: **Cross section ID:** 4C-2 **Date:** 09.08.16 **Time:** 1410

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: normal distribution

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4C-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

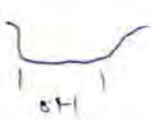
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff CR IC	Date 9/8/16

Feature ID	4C-2
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	7.5
CDFW Width(s)	8.5
Side Slope Estimate[4]	Vertical to steep
Characteristic Vegetation[5]	None
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road cuts upstream
Surrounding Load Use	OS
Other Notes 	OH Δ ~~sed~~ texture, slope no veg Desert wash normal Dist 9410 Low flow Medium sand debris, bank

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 4C-3
Investigator(s): IC, CR

Date: 09.08.16 **Time:** 1420
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road dissection

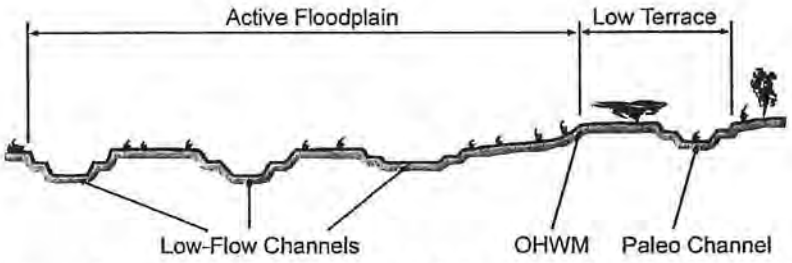
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

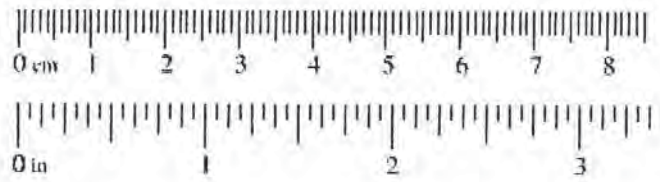


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 4C-3 **Date:** 09.08.16 **Time:** 1420

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4C-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/8/16

Feature ID	R4C-3
Preliminary Jurisdictional Status[1]	CoR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	~~1~~
Wetland Plant Indicators	~~1~~
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	11.5
CDFW Width(s)	14.5
Side Slope Estimate[4]	45° to vertical
Characteristic Vegetation[5]	Occasional shrub
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	1420 Normal Dist OHI texture, slope Low Mechanical ripple, bank debris 1% shrub

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/9/16 **Time:** 0600
Project Number: 3MBCU00100 **Town:** SB County **State:** CA
Stream: 410-1 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y [x] / N [ ] Do normal circumstances exist on the site?

Location Details: Mojave Desert

Y [ ] / N [x] Is the site significantly disturbed?

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

DRV + Road Crossing

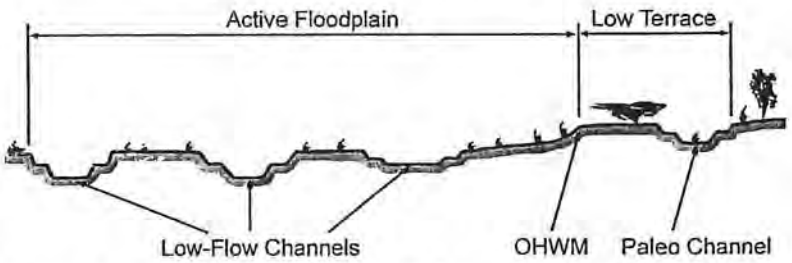
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

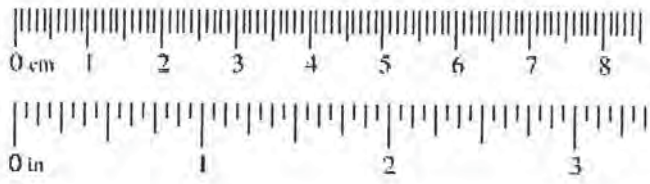


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

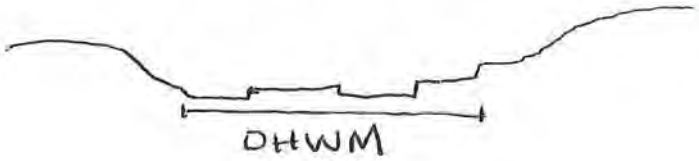
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3M8C000100 **Cross section ID:** 4P-1 **Date:** 9/9/16 **Time:** 0800

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 4RD-1 **Date:** 9/9/16 **Time:** 0800

Floodplain unit: ☑ ~~Low-Flow Channel~~ ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: ~~60~~ % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☑ ~~Active Floodplain~~ ☒ ~~Low Terrace~~

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 10 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARCC	Date 9/9/16

Feature ID	410-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	~~De~~ Bed/Bank, Δ in sediment texture, Drainage patterns
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle to moderate slop
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	Unk
Anthropogenic Modifications[7]	Road Crossing, ORV driven onto Drainage
Surrounding Load Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: 4D-2
Investigator(s): AR, CL

Date: 9/9/16
Town: SB County
Photo begin file#:

Time: 0805
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

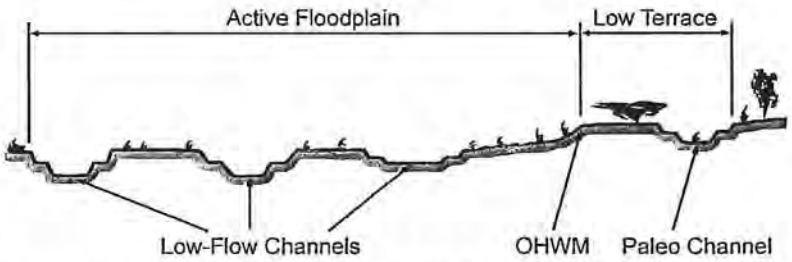
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

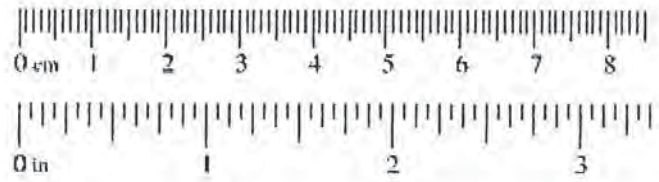


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3mecc00100 **Cross section ID:** 4D-2 **Date:** 9/9/16 **Time:** 0805

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt @ downstream w/ Fine sand

Total veg cover: 3 % Tree: Ø % Shrub: Ø % Herb: 3 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000108 **Cross section ID:** 4D-2 **Date:** 9/9/16 **Time:** 0805

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course sand w/Pebble

Total veg cover: 22 % Tree: 0 % Shrub: 20 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AK, CC	Date 9/9/16

Feature ID	410-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Soil Cracks, Drainage Patterns, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossings, Cement @ beginning of drainage
Surrounding Load Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/9/16 **Time:** 0810
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 40-37 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV & Road Crossing

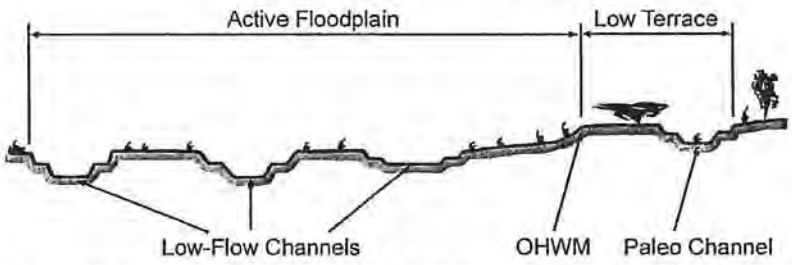
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

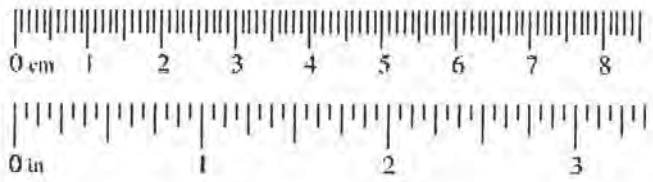


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MPC0001100 **Cross section ID:** 40-3 **Date:** 9/9/16 **Time:** 0810

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 4D-3 **Date:** 9/9/16 **Time:** 0810

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARICC	Date 9/9/16

Feature ID	4D-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1'-5'
CDFW Width(s)	1'-5'
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/9/16 **Time:** 0815
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: HO-4 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

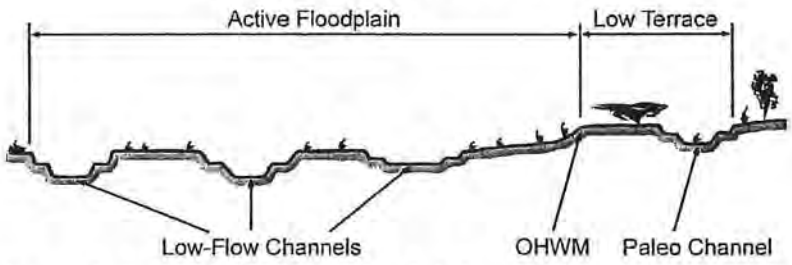
Brief site description:

Dry Deser + Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

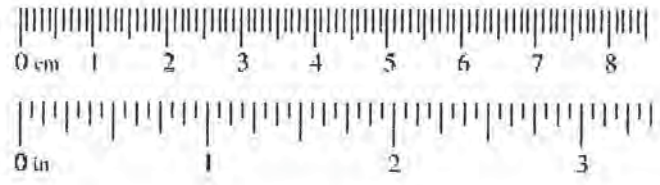


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000102 **Cross section ID:** 4D-4 **Date:** 9/9/16 **Time:** 0815

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 40-4 **Date:** 9/9/16 **Time:** 0815

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course sand to Pebble

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR.CC	Date 9/9/16

Feature ID	4D-4
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	~~Bed/Bank, Δ in sediment texture~~ N/A
Preliminary Hydrologic Regime[3]	~~N~~ Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1'-4'
CDFW Width(s)	1'-4'
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/9/16 **Time:** 0825
Project Number: 3MDC000100 **Town:** SB County **State:** CA
Stream: 40-15 **Photo begin file#:** 0 **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

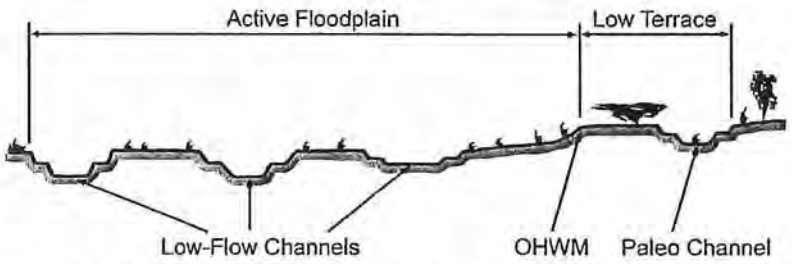
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

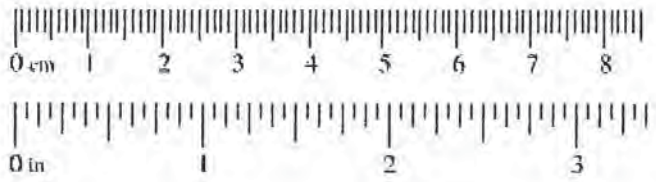


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MSC00010 **Cross section ID:** 40-5 **Date:** 9/9/16 **Time:** 0825

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble to Cobble

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Project ID: 3MPC000100 **Cross section ID:** 40-5 **Date:** 9/9/16 **Time:** 0825

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: 21 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MPC000100	Task No. 00300
Field Staff AR.CC	Date 9/9/16

Feature ID	HD-5
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, D in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	1'-4'
CDFW Width(s)	1'-4'
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + Trash
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MP1000100
Stream: 40-4
Investigator(s): AR, CC

Date: 9/9/16 **Time:** 0835
Town: SB County **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

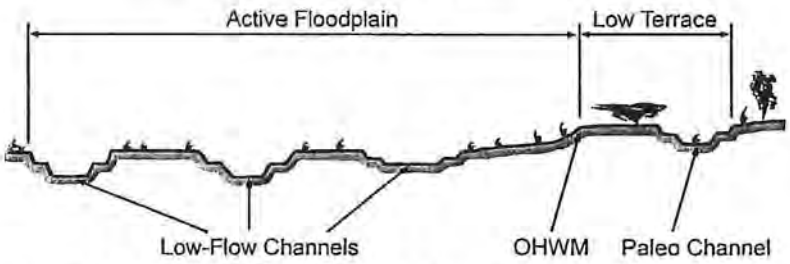
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

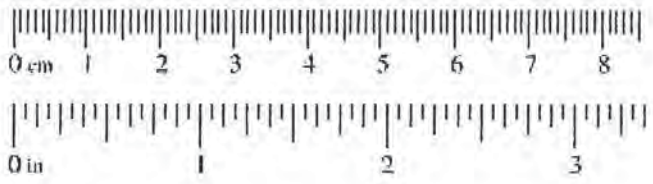


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 410-LP **Date:** 9/9/16 **Time:** 0835

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine to Course Sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MPCA00100 **Cross section ID:** 40-6 **Date:** 9/9/16 **Time:** 0835

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine to Course Sand

Total veg cover: 60 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebbles

Total veg cover: 10 % Tree: 0 % Shrub: 7 % Herb: 3 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR.CC	Date 9/9/16

Feature ID	4D-6
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Benches, Surface Relief
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + Road goes through drainage to transmission line
Surrounding Load Use	Open Space + transmission
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/9/16 **Time:** 0900
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 40-M **Photo begin file#:** **Photo end file#:**
Investigator(s): ARCL

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

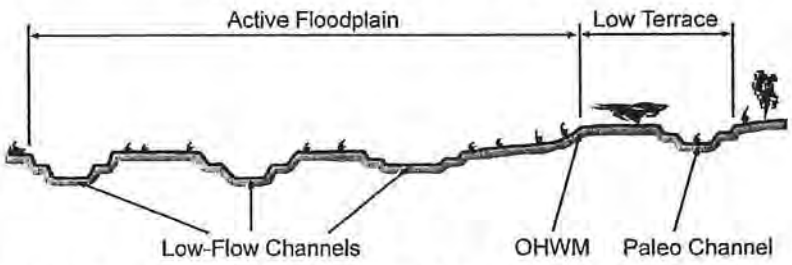
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

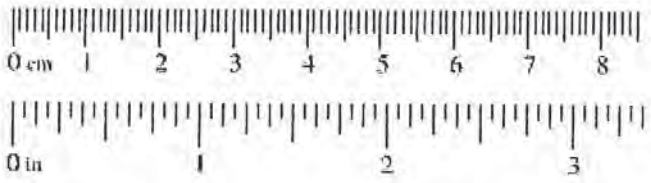


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** HD-4 **Date:** 9/9/16 **Time:** 0900

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine Sand w/Silt downstream

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [x] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000100 **Cross section ID:** 4D-7 **Date:** 9/9/16 **Time:** 0900

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule to Pebble

Total veg cover: 8 % Tree: 0 % Shrub: 5 % Herb: 3 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment relief
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Cobble

Total veg cover: 16 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR.CC	Date 9/9/16

Feature ID	4D-7
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Soil Crack, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + Road goes through drainage
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/9/16 **Time:** 0915
Project Number: 3MBLOOD100 **Town:** SB County **State:** CA
Stream: 40-96 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CC

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

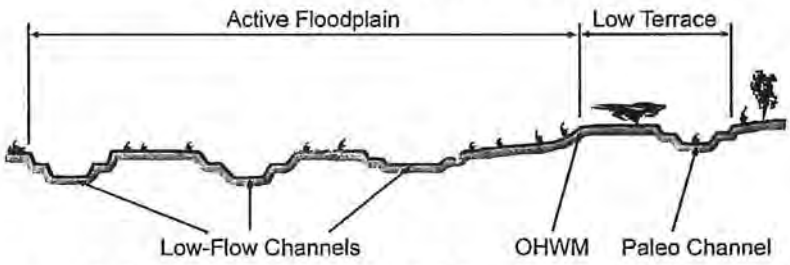
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

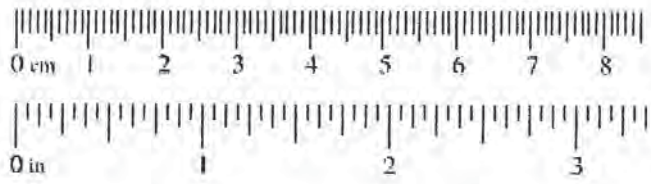


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

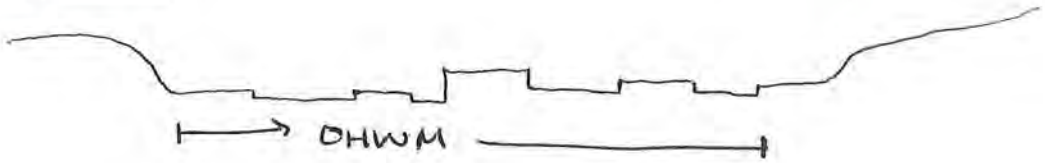
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBCW00100 **Cross section ID:** 4D-8 **Date:** 9/9/16 **Time:** 0915

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine to Fine Sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: A in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000010 **Cross section ID:** 4V0-8 **Date:** 9/9/16 **Time:** 0915

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand to Pebble

Total veg cover: 6 % Tree: 0 % Shrub: 7 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble to Cobble

Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☑ ~~Early (herbaceous & seedlings)~~
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/9/16

Feature ID	4D-8
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + Road (torn around) in drainage
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 4E-1
Investigator(s): IC, CR

Date: 09.09.16 **Time:** 0810
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

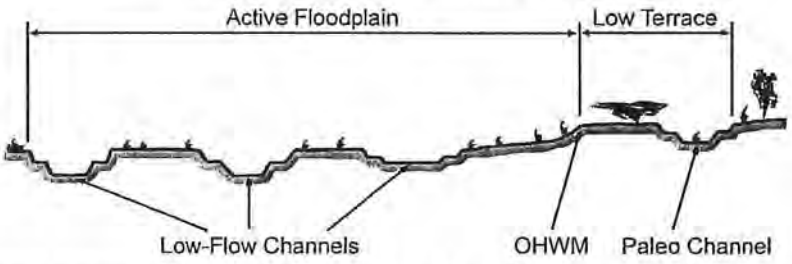
Road stops downstream flow

Brief site description:

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

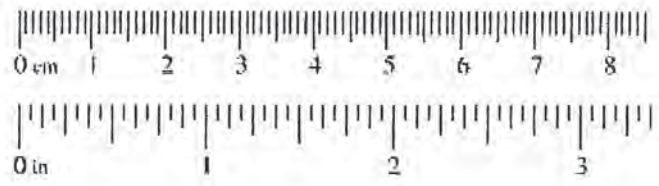


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 4E-1 **Date:** 09.09.16 **Time:** 0810

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4E-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: ~~Medium Sand~~ cobble

Total veg cover: 5 % Tree: ____% Shrub: 5 % Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

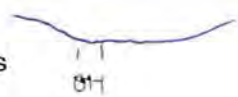
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date ~~4/13~~ 9/9

Feature ID	4E-1
Preliminary Jurisdictional Status[1]	COR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	E
Surface Water Present (y/n), Depth	N
OHWM Width(s)	3.0
CDFW Width(s)	16.0
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	Larrea, Am dum, Ephedra
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road slops downstream flow
Surrounding Load Use	OS
Other Notes 	Norm, Dist 810 Δ texture & cover Low Mechanical surface & bed m veg Active 5% shrub, cobble bench bank

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 09.09.16	**Time:** 0830
Project Number:	**Town:**	**State:**
Stream: 4E-2	**Photo begin file#:**	**Photo end file#:**
Investigator(s): IC, CR		

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**

Coordinates:

Potential anthropogenic influences on the channel system:

Road

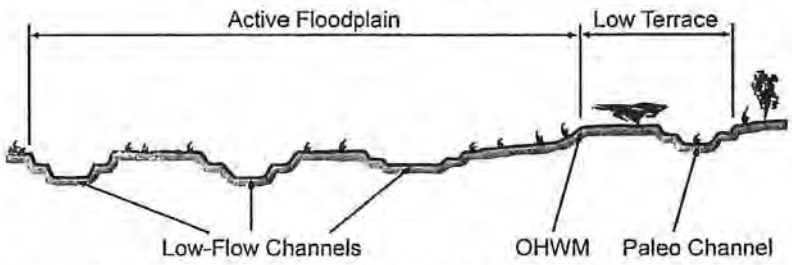
Brief site description:

desert-wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

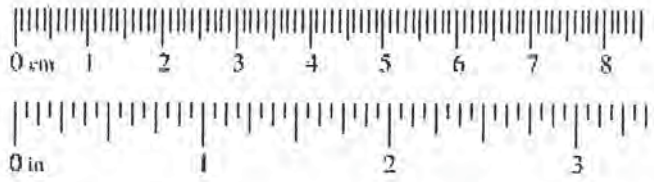


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: **Cross section ID:** 4E-2 **Date:** 09.09.16 **Time:** 0830

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: 1 % Tree: ____% Shrub: 1 % Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☒ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** 4E-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/9

Feature ID	4E-2
Preliminary Jurisdictional Status[1]	CUR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Moderate
Characteristic Vegetation[5]	Larrea & Amelum
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	Norm, Dist, 83° OH Δ texture erosion Low Fine sand, Blank, bank, debris, ripple

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: **Date:** 09.09.16 **Time:** 0850
Project Number: **Town:** **State:**
Stream: HE-3 **Photo begin file#:** **Photo end file#:**
Investigator(s): IC, CR

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road reduces lateral flow

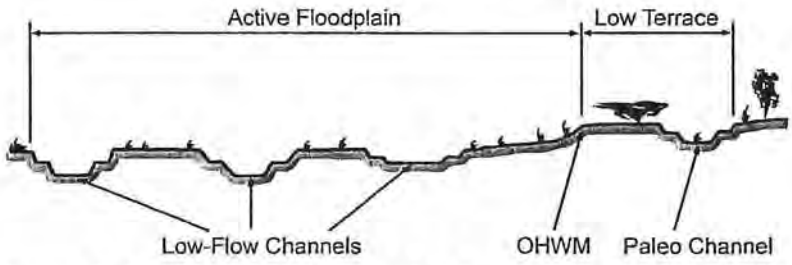
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

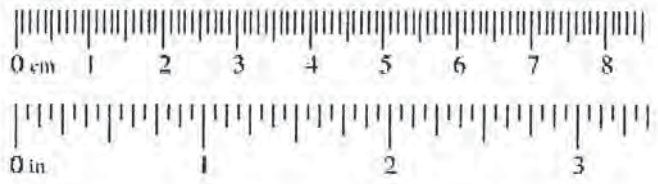


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: **Cross section ID:** 4E-3 **Date:** 09.09.16 **Time:** 0950

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4E-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: 10 % Tree: ____% Shrub: 10 % Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff CR IC	Date 9/9/16

Feature ID	4E-3
Preliminary Jurisdictional Status[1]	CDR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Moderate
Characteristic Vegetation[5]	Larrea Amelum, Ephedra
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road ~~[illegible]~~ reducing lateral flow
Surrounding Load Use	OS
Other Notes	OH Δ texture & cover Norm, ~~[illegible]~~ not Dist, 850 Low medium sand moving, ripple debris, bank Active 10% shrub, Granule, bench, bank

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 4E-4
Investigator(s): IC, CR

Date: 09.09.16 **Time:** 0900
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☐ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

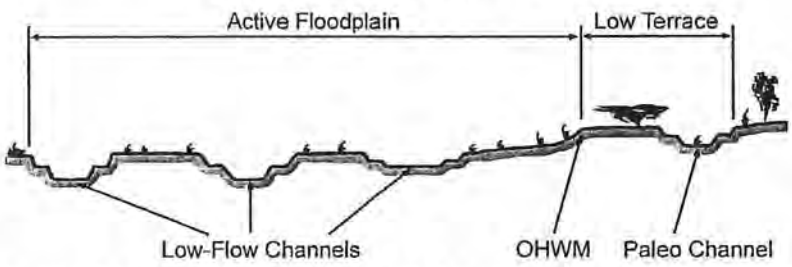
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

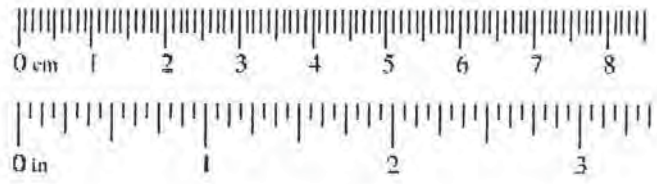


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 4E-4 **Date:** 09.09.16 **Time:** 0900

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: ____ % Tree: ____ % Shrub: 2 % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☒ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** 4E-4 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit; ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff CR IC	Date 9/9/16

Feature ID	4E-4
Preliminary Jurisdictional Status[1]	CoR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	Larrea + Am dum
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	Norm, Dist, 900 OH/Δ texture + rock Low Medium sand 2% shrub bank, ripple

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 09.09.16	**Time:** 0910
Project Number:	**Town:**	**State:**
Stream: 4E-5	**Photo begin file#:**	**Photo end file#:**
Investigator(s): IC, CR		
Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:**	
Y ☒ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**	

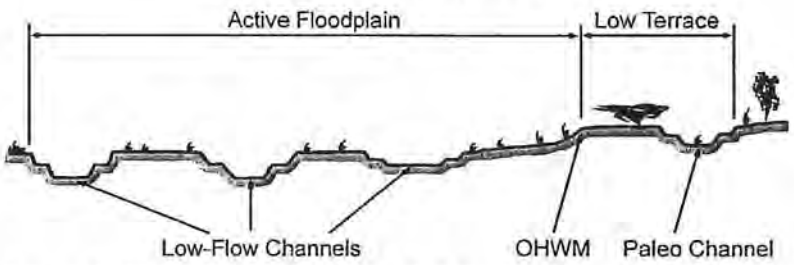
Potential anthropogenic influences on the channel system:

Brief site description:

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
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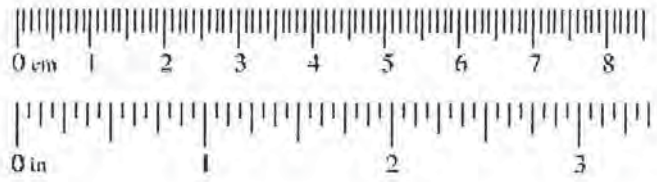
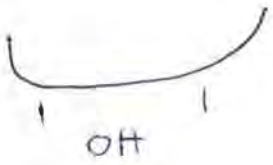
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: **Cross section ID:** 4E-5 **Date:** 09.09.16 **Time:** 0910

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☒ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** 4E-5 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff CR IC	Date 9/9/16

Feature ID	4E-5
Preliminary Jurisdictional Status[1]	CIR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Slight - Moderate
Characteristic Vegetation[5]	Am chem Atri hygm v Euphorbiaceae?
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	OH Atextures, cover Mem, Dist, 910 Low Mechan soil no veg ripple, bank

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100
Stream: 4F-1
Investigator(s): AR, CC

Date: 9/9/16
Town: SB County
Photo begin file#:

Time: 0945
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

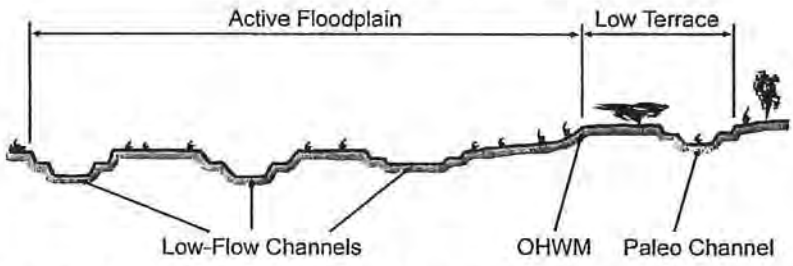
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

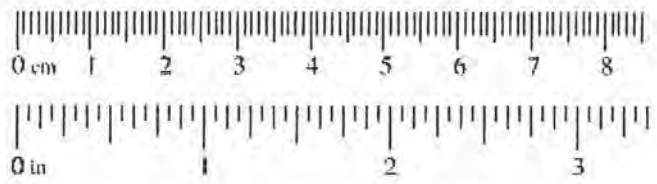


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MPC0001000 **Cross section ID:** 4F-1 **Date:** 9/9/16 **Time:** 0945

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Lower Course Sand w/ Pebble

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] ~~Other:~~ _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

* Grated to rock for road, covered w/ course sand + pebble

Project ID: 3MBC000100 **Cross section ID:** 4F-1 **Date:** 9/9/16 **Time:** 0945

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBE000100	Task No. 00300
Field Staff ARICC	Date 9/9/16

Feature ID	4F-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, sediment deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	←
CDFW Width(s)	—
Side Slope Estimate[4]	gentle ~~to~~ moderate slope
Characteristic Vegetation[5]	Unveg in Channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7] *	Heavy Road Crossing directly in drainage
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

* Grated road on drainage, grated to rock

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 9/9/16 **Time:** 1000
Project Number: 3MBC000100 **Town:** SB County **State:** CA
Stream: 4F-2 **Photo begin file#:** **Photo end file#:**
Investigator(s): AR, CL

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

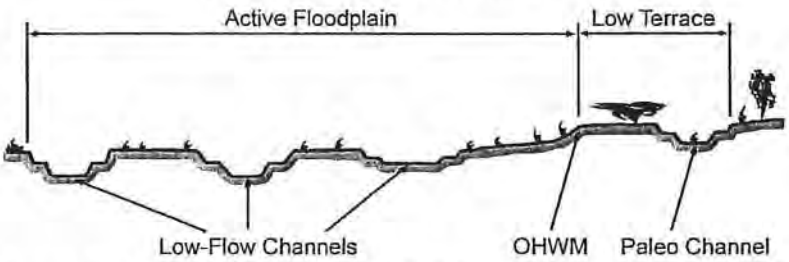
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

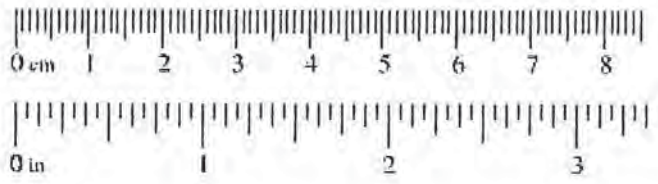


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000100 **Cross section ID:** 4F-2 **Date:** 9/9/16 **Time:** 1000

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Course Sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3mbc000100 **Cross section ID:** 4F-2 **Date:** 9/9/16 **Time:** 1000

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine Sand to Course

Total veg cover: ____ % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: ~~Very Fine~~ Course Sand

Total veg cover: 13-15% Tree: ____ % Shrub: 10-15% Herb: 3 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff AR, CC	Date 9/9/16

Feature ID	4F-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	moderate to vertical
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 09.09.16	**Time:** 1000
Project Number:	**Town:**	**State:**
Stream: 4F-3A	**Photo begin file#:**	**Photo end file#:**
Investigator(s): IC, CR		

Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:**
Y ☒ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**

Potential anthropogenic influences on the channel system:

Road

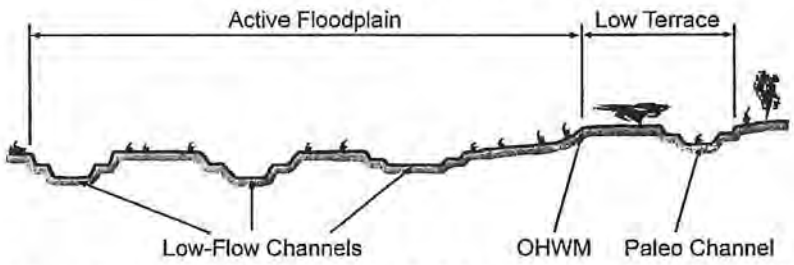
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  - Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

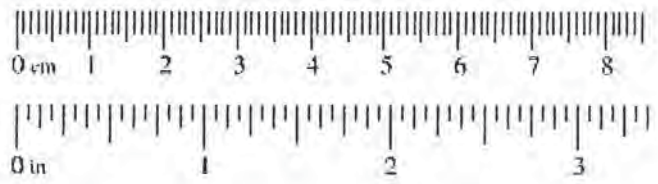


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

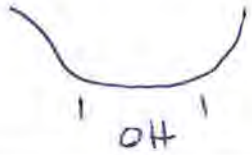
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 4F-3A **Date:** 09.09.16 **Time:** 1000

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: coarse sand

Total veg cover: ∅ % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: **Cross section ID:** 4F-3A **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC, CR	Date 9/9/16

Feature ID	4F-3A
Preliminary Jurisdictional Status[1]	CeR
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Moderate
Characteristic Vegetation[5]	Anchor
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	OH Δ texture & cover norm dist 1000 Low coarse sand no veg. bank

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:
Project Number:
Stream: 49-1
Investigator(s): IC, CR

Date: 09.09.16 **Time:** 1030
Town: **State:**
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road blocks lateral flow

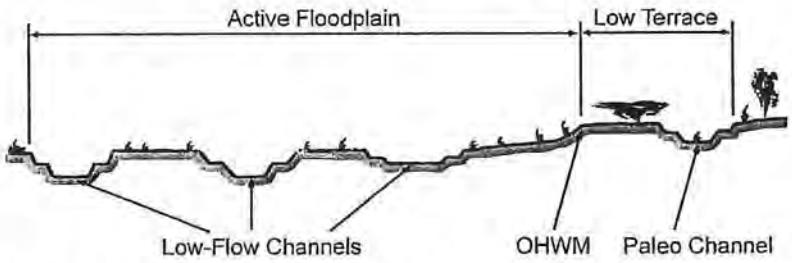
Brief site description:

desert wash - braided

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

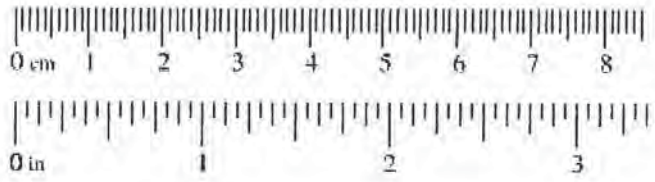


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

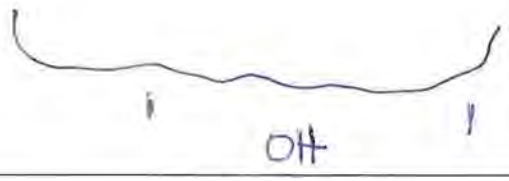
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 49-1 **Date:** 09.09.16 **Time:** 1030

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 49-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: Ø % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff JC CR	Date 9/9/16

Feature ID	4G-1
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	U
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Slight
Characteristic Vegetation[5]	Lass, Ephedra, Petal~~ong~~ Onyx, Ansal
Chemical Indicators[6]	U
Anthropogenic Modifications[7]	Road block lateral flow
Surrounding Load Use	OS
Other Notes	Dist, 12cm, 1030 Braided wash OH Δ texture cover Low Mobile sand ripple, ~~slope~~ bank Active granule bank bench

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 | **Date:** 9/9/16 | **Time:** 1030
Project Number: 3MBC000100 | **Town:** SB County | **State:** CA
Stream: 4Gr-2 | **Photo begin file#:** | **Photo end file#:**
Investigator(s): AR, CL

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV & Road Crossing

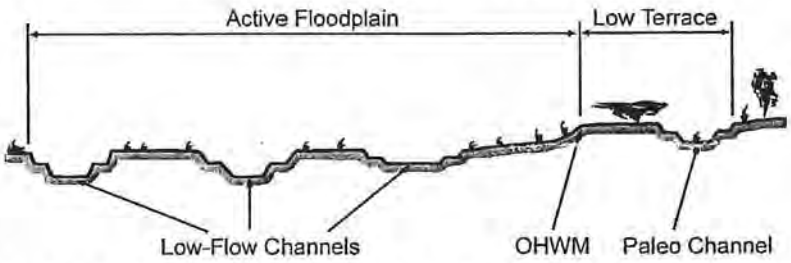
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

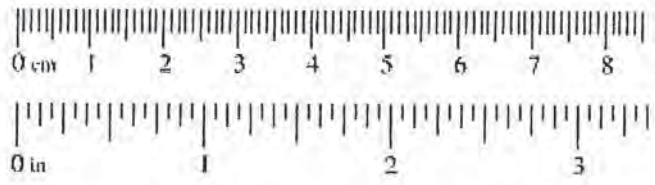


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	Silt
1/32 0.00061	0.0156	Fine silt	
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC00010 **Cross section ID:** 4Gr-2 **Date:** 9/9/16 **Time:** 1030

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine w/ Pebbles and Sand

Total veg cover: 5 % Tree: 0 % Shrub: 4 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 10 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 3MPCOOR100 **Cross section ID:** 4Gr-2 **Date:** 9/9/16 **Time:** 1030

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very fine sand to Course Sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff ARCC	Date 9/9/16

Feature ID	4G-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Banks, Δ in sediment Sediment deposit texture,
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle to moderate
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + Road in part of drainage
Surrounding Load Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 09.09.16	**Time:** 1050
Project Number:	**Town:**	**State:**
Stream: 49-3	**Photo begin file#:**	**Photo end file#:**
Investigator(s): IC, CR		

Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:**
Y ☒ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**

Potential anthropogenic influences on the channel system:

Road cuts downstream flow

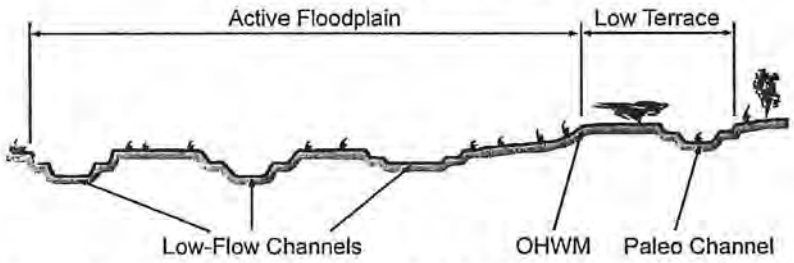
Brief site description:

desert-wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

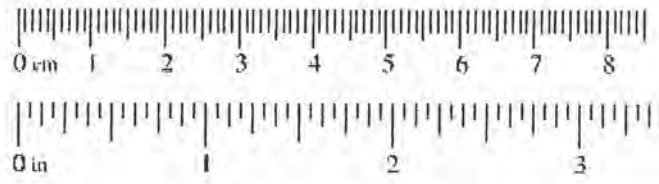


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: **Cross section ID:** 49-3 **Date:** 09.09.16 **Time:** 1050

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 49-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No.	Task No.
Field Staff IC CR	Date 9/9/16

Feature ID	46-3
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	Moderate
Characteristic Vegetation[5]	Lorrea
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road cuts downstream flow
Surrounding Load Use	OS
Other Notes	OH Texture • cover Dist, Norm, 1050 Low no veg debris bank medium sand

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Patt46
Project Number: 3MBC000100
Stream: 4Gr-4
Investigator(s): ARice

Date: 9/9/16 **Time:** 1050
Town: SB County **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

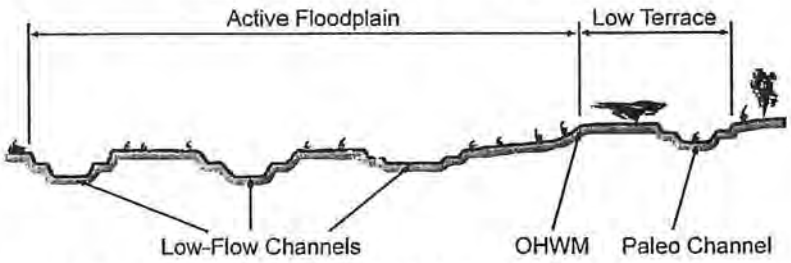
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

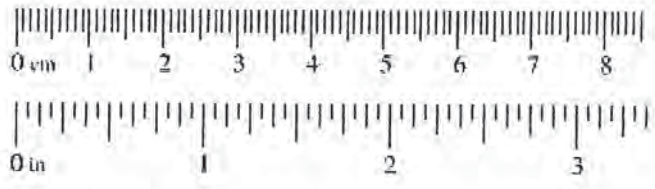


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

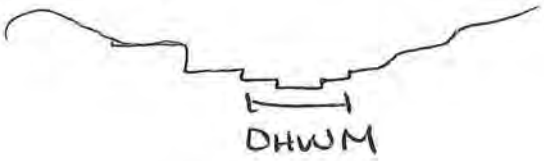
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3mBC000106 **Cross section ID:** 46-4 **Date:** 9/9/16 **Time:** 1050

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine Sand w/Cobble

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBCA00100 **Cross section ID:** 4G-4 **Date:** 9/9/16 **Time:** 1050

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebbles → Cobble

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC00000	Task No. 00300
Field Staff AR, CC	Date 9/9/16

Feature ID	~~4G-5~~ 4G-4
Preliminary Jurisdictional Status[1]	~~C~~ CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	—
CDFW Width(s)	—
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Load Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project:	**Date:** 09.09.16	**Time:** 1110
Project Number:	**Town:**	**State:**
Stream: 4H-1	**Photo begin file#:**	**Photo end file#:**
Investigator(s): IC, CR		

Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:**
Y ☒ / N ☐ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**

Potential anthropogenic influences on the channel system:

Road

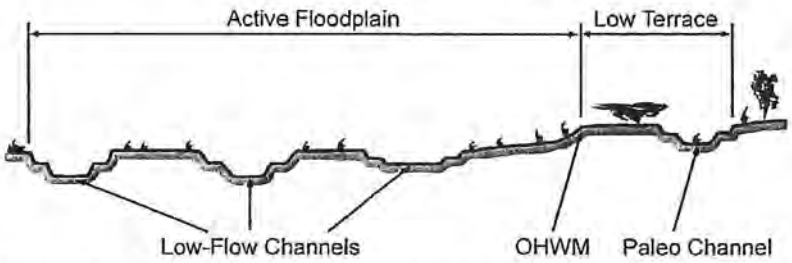
Brief site description:

desert- wash

Checklist of resources (if available):

- ☒ Aerial photography
  - Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

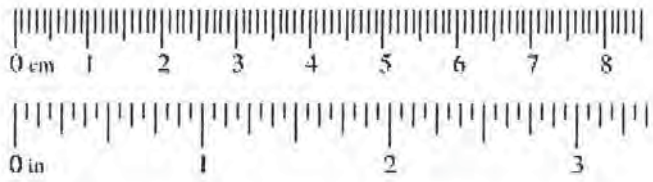


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: **Cross section ID:** 4H-1 **Date:** 09.09.16 **Time:** 1110

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 4H-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: _____% Tree: _____% Shrub: 2-3% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project No. 3MBC000100	Task No. 00300
Field Staff IC, CR	Date 9/9/16

Feature ID	4H-1
Preliminary Jurisdictional Status[1]	C&R
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	
Wetland Plant Indicators	
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	Variable
CDFW Width(s)	Variable
Side Slope Estimate[4]	45°
Characteristic Vegetation[5]	Atri can, Am dum
Chemical Indicators[6]	N
Anthropogenic Modifications[7]	Road
Surrounding Load Use	OS
Other Notes	OH Δ texture cover Norm Dist 1110 Low Coarse Sand debris bank no veg Active Pebble bank bench 2-3% scrub

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: ~~4F 2 4B 2~~ 4J-1
Investigator(s): CDC, AR

Date: 9/19/14
Town: Mojave Desert
Photo begin file#:

Time: 0845
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

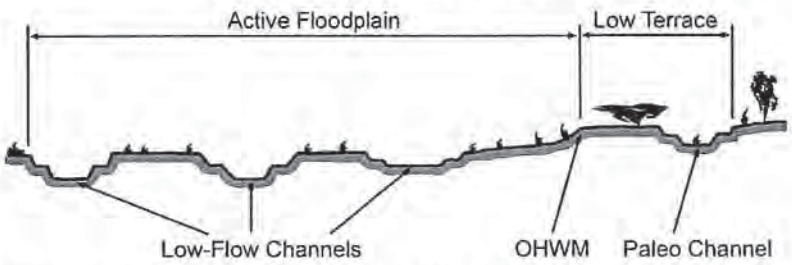
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

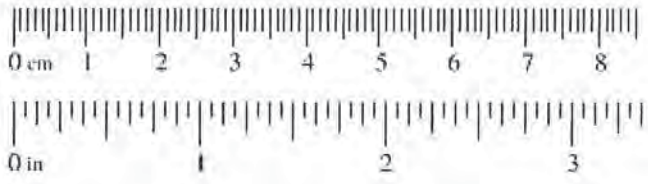


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** ~~HF-2~~ 4J-1 **Date:** 9/19/16 **Time:** 0845

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 11 % Tree: 0 % Shrub: 1 % Herb: 10 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** ~~4F-2~~ 4J-1 **Date:** 9/19/16 **Time:** 0845

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff CDC, AR	Date 19 Sep 16

Feature ID	~~HF-1~~ 4J-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	~~HVeg~~ veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission lines
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 4J-2
Investigator(s): CMC, AR

Date: 9/19/14
Town: Mojave Desert
Photo begin file#:

Time: 0900
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV & Road Crossing

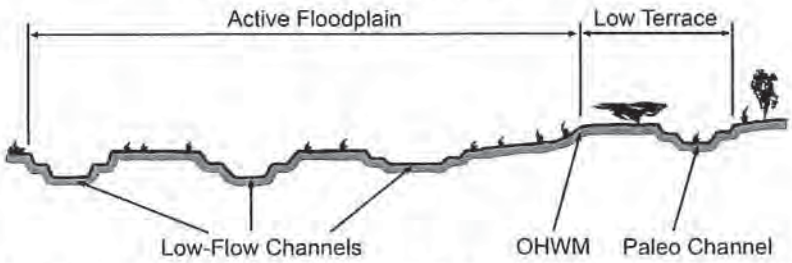
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

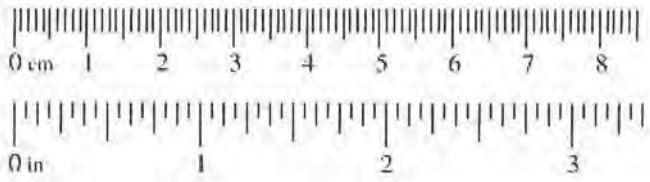


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

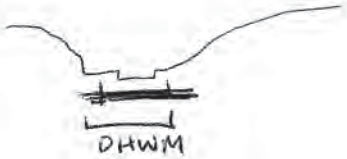
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 4J-2 **Date:** 9/19/14 **Time:** 0950

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 4 % Tree: 0 % Shrub: 1 % Herb: 5 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 4J-2 **Date:** 9/19/16 **Time:**

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 19 Sep 16

Feature ID	4J-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 4K-1
Investigator(s): AR, CRC

Date: 9/19/14 **Time:** 0920
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

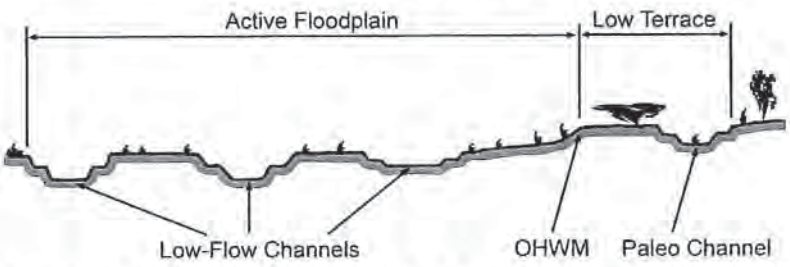
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

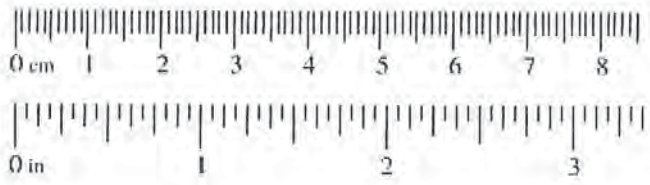


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

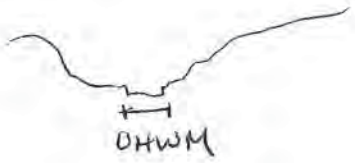
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 4K-1 **Date:** 09/19/16 **Time:** 0920

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 10 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 4K-1 **Date:** 09/19/16 **Time:** 0920

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 19 Sep 16

Feature ID	4K-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	A in sediment texture, B.ed/Bank
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	3'
CDFW Width(s)	3'
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Veg in channel
Chemical Indicators[6]	UNK
Anthropogenic Modifications[7]	Road Crossing & trash
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 4K-2
Investigator(s): ARC

Date: 9/19/14 **Time:** 0927
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

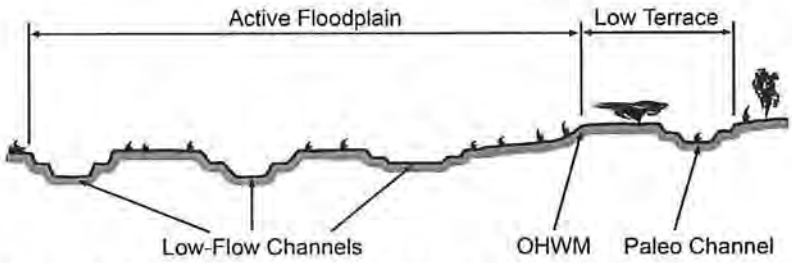
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

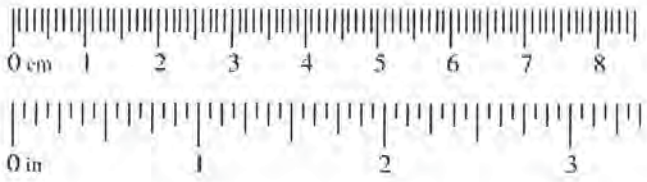


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

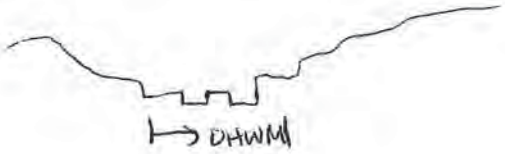
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 4K-2 **Date:** 9/19/16 **Time:** 0927

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine Sand w/ Cobble

Total veg cover: 4 % Tree: 0 % Shrub: 0 % Herb: 4 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 4IL-2 **Date:** 9/19/16 **Time:** 0927

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand w/Cobble

Total veg cover: 10 % Tree: 0 % Shrub: <1 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/Cobble

Total veg cover: 3 % Tree: 0 % Shrub: 1 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/19/11

Feature ID	HL-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 4K3
Investigator(s): AR, CC

Date: 9/19/16
Town: Mojave Desert
Photo begin file#:

Time: 0943
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Mojave Desert

Projection:
Coordinates:
Datum:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

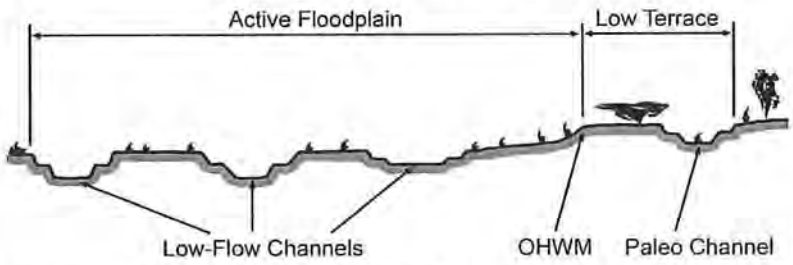
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

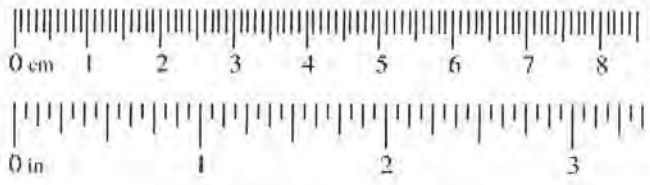


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

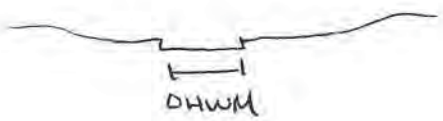
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 4K-3 **Date:** 9/19/14 **Time:** 0943

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt to Fine Sand

Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 4K-3 **Date:** 9/19/16 **Time:** 0943

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CC	Date 9/19/16

Feature ID	4K-3
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Δ in sediment texture, Bed/Bank
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	~~n/a~~
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 4K-4
Investigator(s): AR, CDC

Date: 7/19/14 **Time:** 0951
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV & Road Crossing

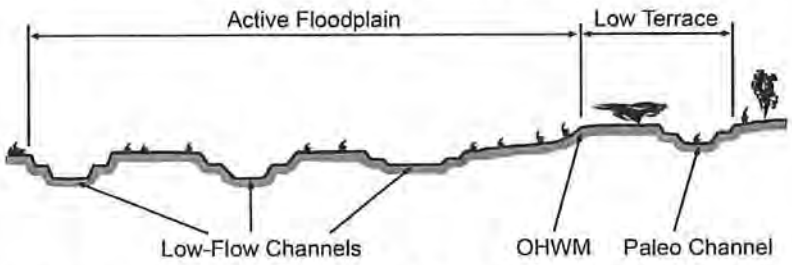
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

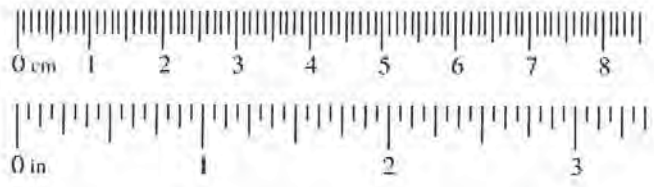


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

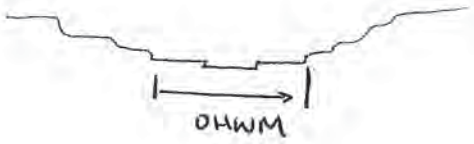
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 4K-4 **Date:** 9/19/16 **Time:** 0951

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 2 % Tree: ~~0~~ % Shrub: 0 % Herb: ~~0~~ 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 4K-4 **Date:** 9/19/16 **Time:** 0951

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/Pebble

Total veg cover: 12 % Tree: 0 % Shrub: 2 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/19/14

Feature ID	4K-4
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Δ in sediment texture, Bed/Bank, Soil Cracks
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: HL-5
Investigator(s): CDC, AR

Date: 9/12/14
Town: Mojave Desert
Photo begin file#:

Time: 1008
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

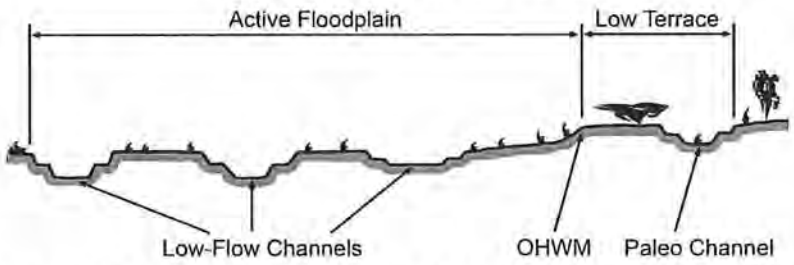
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

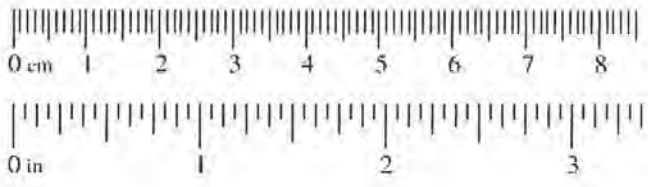


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

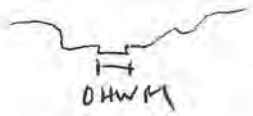
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 4L-5 **Date:** 9/12/14 **Time:** 1006

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 2 % Tree: 0 % Shrub: 01 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 4L-5 **Date:** 9/19/16 **Time:** 1008

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CC	Date 9/19/16

Feature ID	JK-5
Preliminary Jurisdictional Status[1]	CDFW, ~~&~~ RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SB-1
Investigator(s): I Cain, C Renfrew

Date: 09.26.16 **Time:** 0900
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

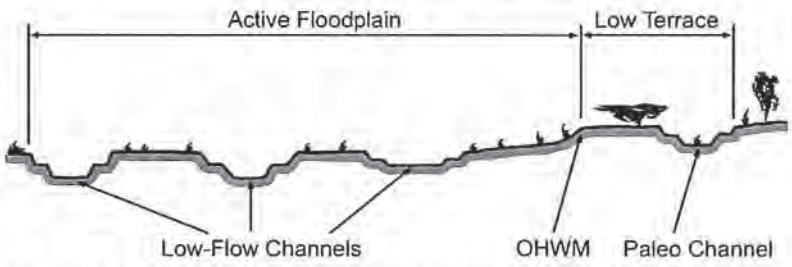
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

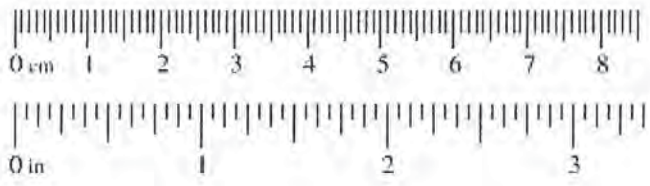


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

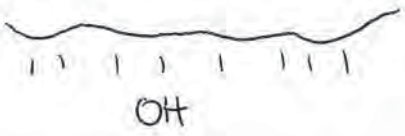
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SB-1 **Date:** 09.26.16 **Time:** 0900

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: _____ % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SB-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 10 % Tree: 0 % Shrub: 5 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 900
Path 46

Date: 9/22/2016 Feature ID: SB-1 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Planar

Veg Type(s) in Drainage: Larrea Ambrosia

Upstream Photo	X
Downstream Photo	
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

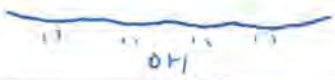
Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Stream Cross Section Drawing:



Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA X
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 5
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

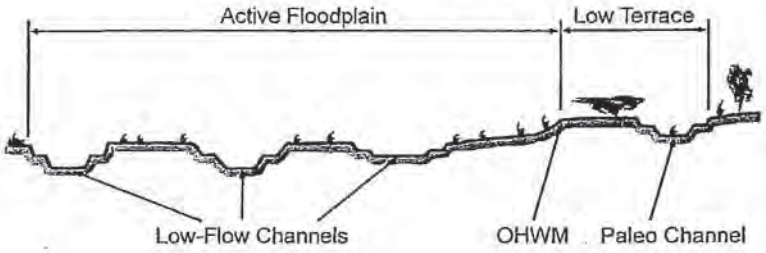
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

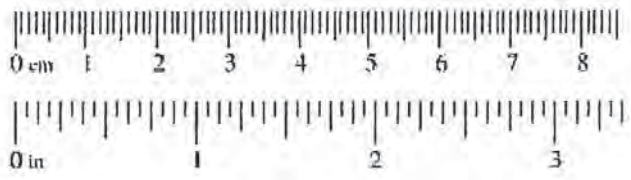
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5B-2
Investigator(s):

Date: 09.26.16 **Time:** 0910
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

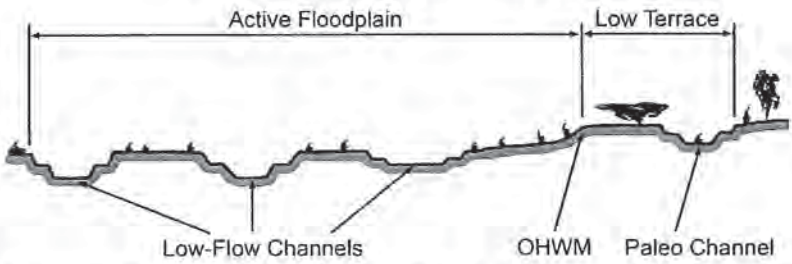
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
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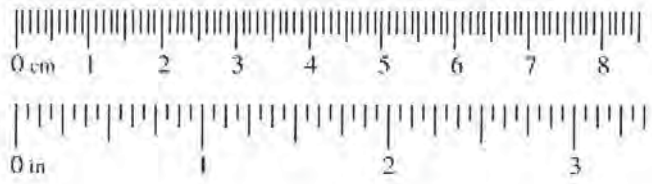
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SB-2 **Date:** 09.26.16 **Time:** 0910

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SB-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 10 % Tree: 0 % Shrub: 5 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 910
Path 46

Date: 9/26/2016 Feature ID: SB-2 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Planar

Veg Type(s) in Drainage: Larrea Ambrosia

Upstream Photo	X
Downstream Photo	
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Culvert Grazing Channel Channelized Riprap Other:

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples

Drift/Debris Presence of bed and bank

Benches Soil development Surface relief

Other:

Community succession: NA X

Early (herbs/seedlings)

Mid (herbs/shrubs/saplings)

Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover Shrub % Cover 5 Herb % Cover 5

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples

Drift/Debris Presence of bed and bank

Benches Soil development Surface relief

Other:

Community succession: NA

Early (herbs/seedlings)

Mid (herbs/shrubs/saplings) X

Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples

Drift/Debris Presence of bed and bank

Benches Soil development Surface relief

Other:

Community succession: NA

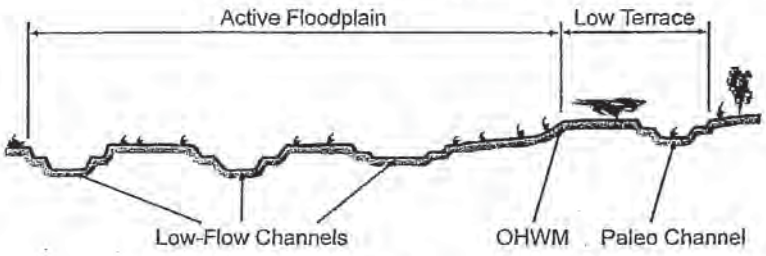
Early (herbs/seedlings)

Mid (herbs/shrubs/saplings)

Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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2.56	64	Cobble	Gravel
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0.020	0.50	Coarse sand	
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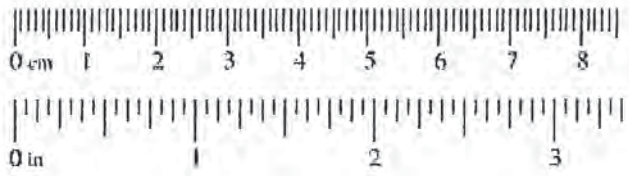
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SB-3
Investigator(s): ICain, CRenfrew

Date: 09.26.16 **Time:** 0920
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☐ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

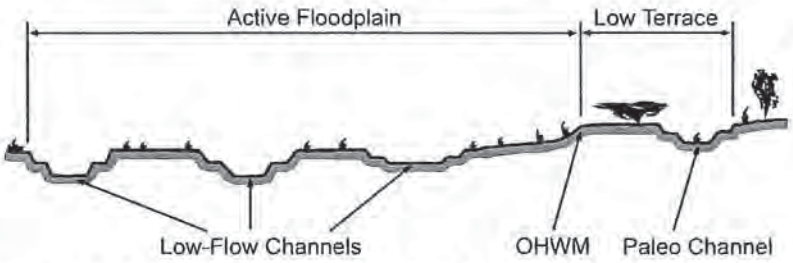
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
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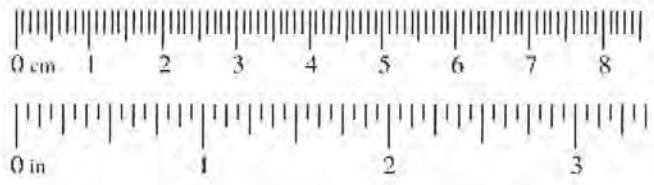
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SB-3 **Date:** 09.26.16 **Time:** 0920

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium Sand

Total veg cover: ____ % Tree: Ø % Shrub: Ø % Herb: 1 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SB-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: ____ % Tree: Ø % Shrub: 5 % Herb: 3 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 920
Path 46

Date: 9/26/2016 Feature ID: SB-3 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight

Veg Type(s) in Drainage: Larrea Ambrosia

Upstream Photo		
Downstream Photo		
Do Normal Conditions Exist?	X	
Significant Disturbance?	X	
Potential Wetland?		
Hydrology		
Wetland Plants		
Surface Water/Depth:		

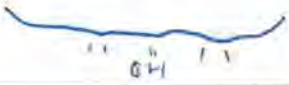
Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:	
NA	
Early (herbs/seedlings)	X
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 3
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:	
NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	X
Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:	
NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Site Description:
Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	

Vegetation % In Stream:

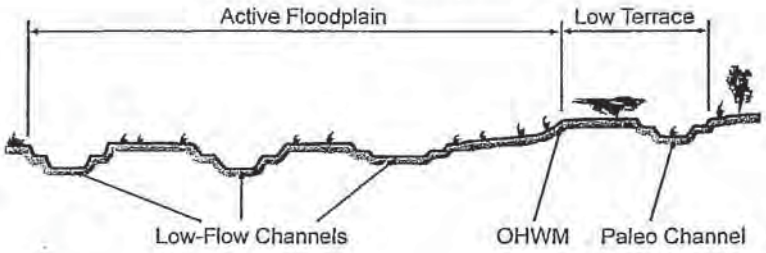
0-20	X
20-40	
40-60	
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

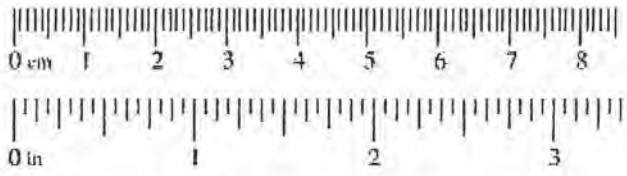
Additional Description:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5B-4
Investigator(s): ICain, CRenfrew

Date: 09.26.16 **Time:** 0930
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [X] / N [ ] Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

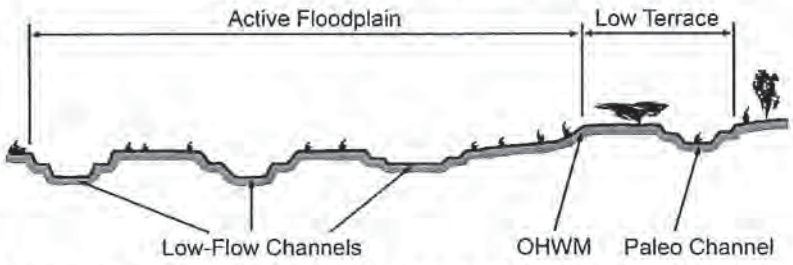
Brief site description:

desert wash

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

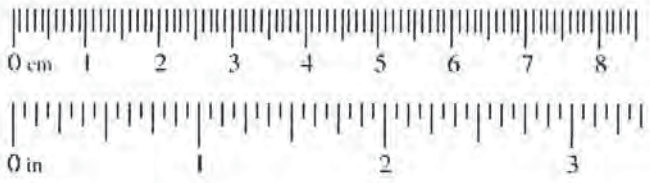


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SB-4 **Date:** 09.26.16 **Time:** 0930

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SB-4 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 15 % Tree: 0 % Shrub: 5 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 930	Upstream Photo / Downstream Photo: X
Date: 9/26/2016	Feature ID: SB-4	Location: Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?	X
		Significant Disturbance?	X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?	
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology	
		Wetland Plants	
		Surface Water/Depth:	
Side Slope Estimate: Planar			
Veg Type(s) in Drainage: Correa Amelia			

Site Description:	
Stream is:	
Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	
Additional Description:	

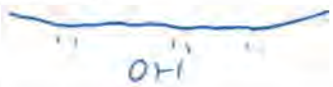
Anthropogenic Modifications: Road Grazing Channelized Culvert Channel Riprap Other:

Upstream Blocked	
Downstream Blocked	X
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession: NA X Early (herbs/seedlings) Mid (herbs/shrubs/saplings Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 10

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession: NA Early (herbs/seedlings) Mid (herbs/shrubs/saplings X Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

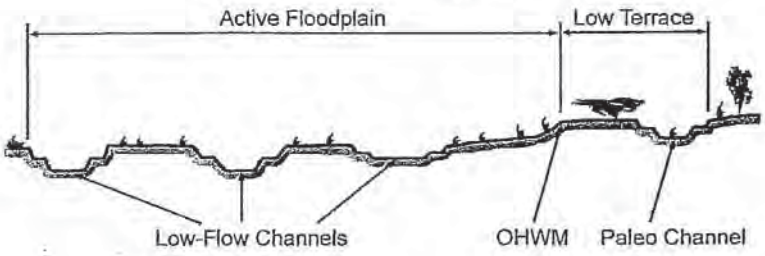
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession: NA Early (herbs/seedlings) Mid (herbs/shrubs/saplings Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
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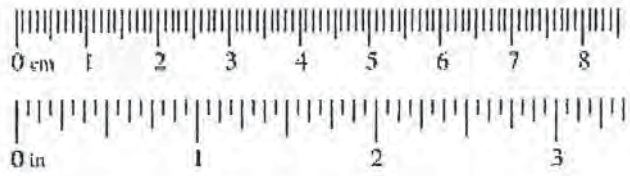
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SC-1
Investigator(s): ICain, CRenfrew

Date: 09.26.16 **Time:** 0935
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☐ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

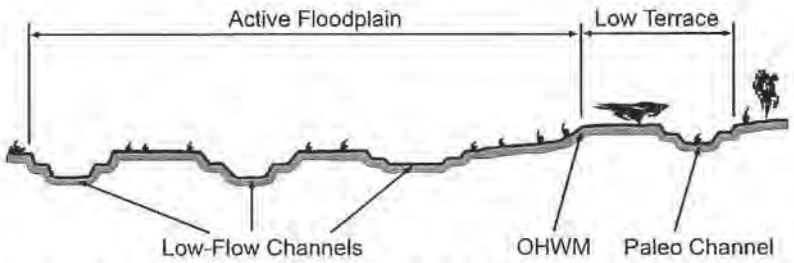
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
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	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
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1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
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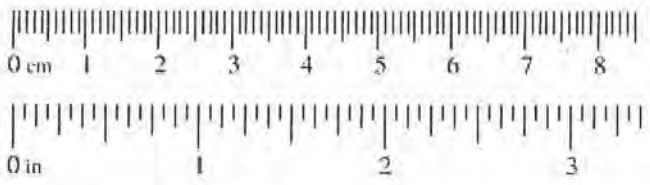
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SC-1 **Date:** 09.26.16 **Time:** 0935

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: _____ % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SC-1 **Date:** **Time:**

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: 0 % Shrub: 5 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 935
Path 46

Date: 9/26/2016 Feature ID: SC-1 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight

Veg Type(s) in Drainage: Larrea

Upstream Photo	X
Downstream Photo	
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:	
NA	X
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 10

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:	
NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	X
Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

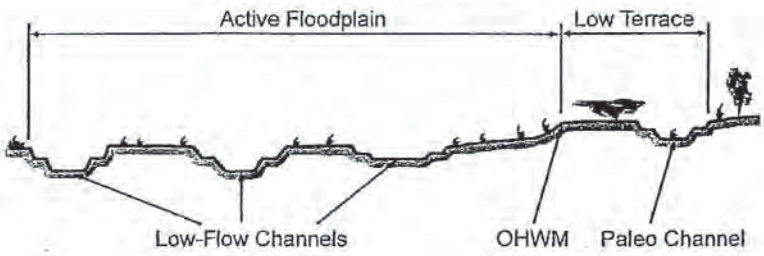
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:	
NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SC-2
Investigator(s): I Cain, C Renfrew

Date: 09.26.16 **Time:** 0945
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

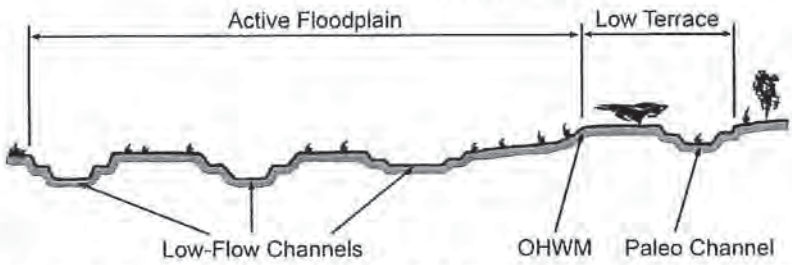
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

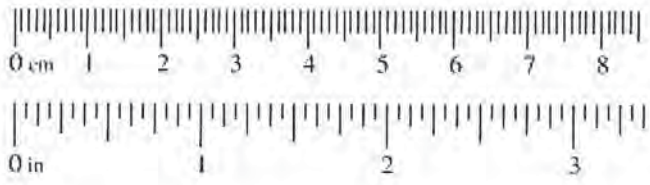


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

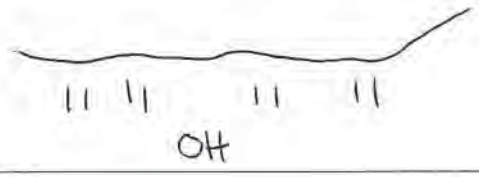
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SC-2 **Date:** 09.20.16 **Time:** 0945

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 2 % Tree: 0 % Shrub: 0 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SC-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 25 % Tree: 0 % Shrub: 15 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

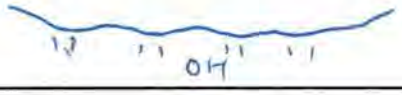
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 945	Upstream Photo		**Site Description:**
			Downstream Photo	X	Stream is:
Date: 9/26/2016	Feature ID: SC-2	Location: Mojave Desert			Braided X
					Sinuous
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved
		Significant Disturbance?		X	Straight
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched
		Hydrology			Bowl Shaped
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow X
		Surface Water/Depth:			Vegetation % In Stream:
Side Slope Estimate: Slight					0-20
Veg Type(s) in Drainage: Larrea Ambrosia					20-40 X
					40-60
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80
	Culvert Channel Riprap		Downstream Blocked		80-100
	Other:		Lateral Flow Blocked		Stream Type:
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel
	Roads Utility Lines Other:				Desert Wash X
Stream Cross Section Drawing:					Flowing River/Stream
					Dry Streambed



Additional Description:

Road impacts flow within polygon

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 2

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings) X
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 15 Herb % Cover 10

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other:	Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

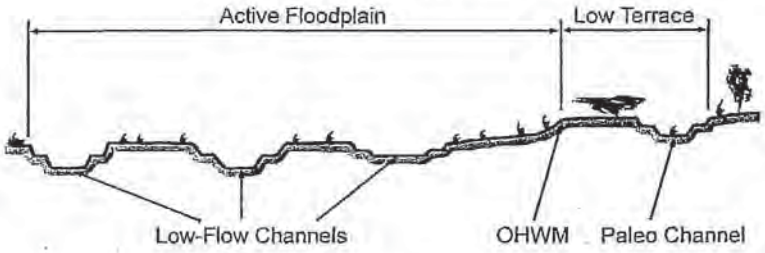
Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

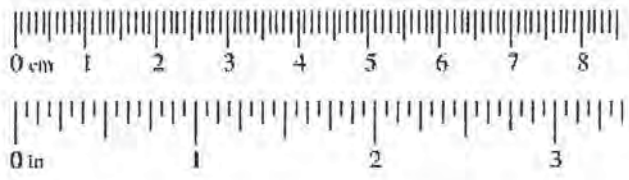
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SD-1
Investigator(s): ICain, CRenfrew

Date: 09.26.16 **Time:** 1000
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

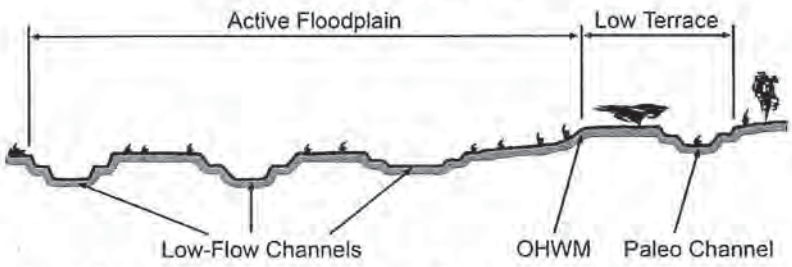
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

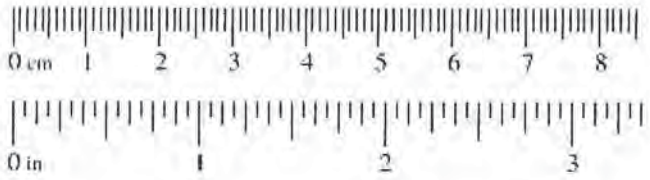


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SD-1 **Date:** 09.26.16 **Time:** 1000

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium Sand

Total veg cover: _____ % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SD-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: 7 % Tree: 10 % Shrub: 5 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

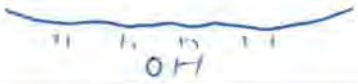
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

					√
Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1000	Upstream Photo		**Site Description:**
			Downstream Photo	>	Stream is:
Date: 9/26/2016	Feature ID: SD-1	Location: Mojave Desert			Braided X
					Sinuous
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved
		Significant Disturbance?		X	Straight
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched
		Hydrology			Bowl Shaped
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow X
		Surface Water/Depth:			Vegetation % In Stream:
Side Slope Estimate: Planar					0-20 X
Veg Type(s) in Drainage: Larrea Ambrosia					20-40
					40-60
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80
	Culvert Channel Riprap		Downstream Blocked		80-100
	Other:		Lateral Flow Blocked		Stream Type:
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel
	Roads Utility Lines Other:				Desert Wash X
					Flowing River/Stream
Stream Cross Section Drawing:					Dry Streambed
					Additional Description:



OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

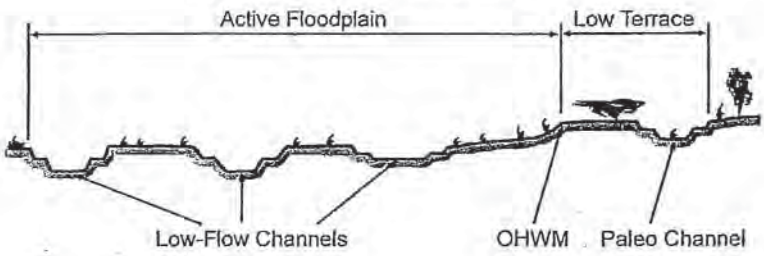
Comment:

Low-Flow Channel:	>	Tree % Cover	0	Shrub % Cover 0	Herb % Cover	0
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Silt: Fine Medium Coarse		Other:				
Circle Indicators: Mudcracks Ripples		Community succession:			NA	X
Drift/Debris Presence of bed and bank					Early (herbs/seedlings)	
Benches Soil development Surface relief					Mid (herbs/shrubs/saplings	
Other:					Late (herbs/shrubs/trees)	
Comments:						

Active Floodplain:	>	Tree % Cover	0	Shrub % Cover 5	Herb % Cover	2
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples		Community succession:			NA	
Drift/Debris Presence of bed and bank					Early (herbs/seedlings)	
Benches Soil development Surface relief					Mid (herbs/shrubs/saplings	X
Other:					Late (herbs/shrubs/trees)	
Comments:						

Low Terrace:		Tree % Cover		Shrub % Cover	Herb % Cover	
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples		Community succession:			NA	
Drift/Debris Presence of bed and bank					Early (herbs/seedlings)	
Benches Soil development Surface relief					Mid (herbs/shrubs/saplings	
Other:					Late (herbs/shrubs/trees)	
Comments:						

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 50-2
Investigator(s): I Cain, CRenfrew

Date: 09.26.16 **Time:** 1005
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

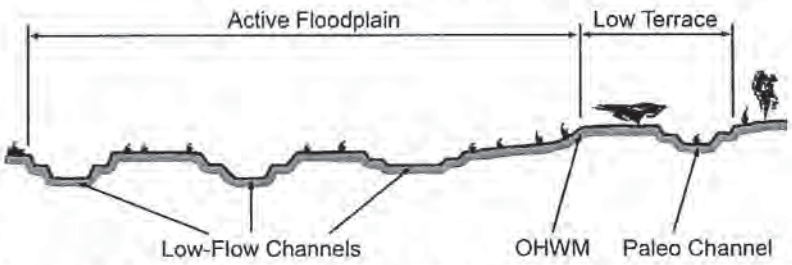
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

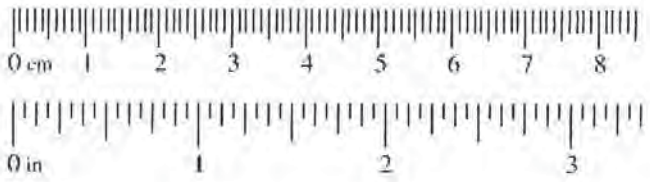


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

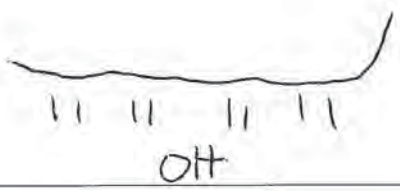
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SD-2 **Date:** 09.26.16 **Time:** 1005

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SD-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule/pebble

Total veg cover: 17 % Tree: 0 % Shrub: 15 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

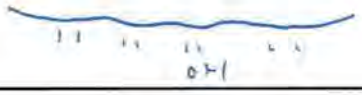
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1005	Upstream Photo	X	**Site Description:**	
			Downstream Photo		Stream is:	
Date: 9/26/2016	Feature ID: SD-2	Location: Mojave Desert			Braided	X
					Sinuous	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	
		Significant Disturbance?		X	Straight	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	
		Hydrology			Bowl Shaped	
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	X
		Surface Water/Depth:			Vegetation % In Stream:	
Side Slope Estimate: Slight					0-20	X
Veg Type(s) in Drainage: Larrea, Lycium					20-40	X
					40-60	
Anthropogenic Modifications: Road Grazing Channelized			Upstream Blocked		60-80	
Culvert Channel Riprap			Downstream Blocked		80-100	
Other:			Lateral Flow Blocked		Stream Type:	
Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:					V-Ditch w/ Sediment	
Circle Surrounding Land Use: Urban Rural Commercial Agriculture					Eroded Channel	
Roads Utility Lines Other:					Desert Wash	X
					Flowing River/Stream	
					Dry Streambed	

Stream Cross Section Drawing:



Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover 0 Shrub % Cover 15 Herb % Cover 2

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other: ,	Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

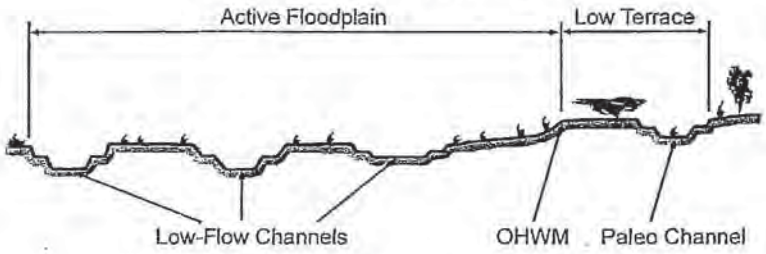
Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
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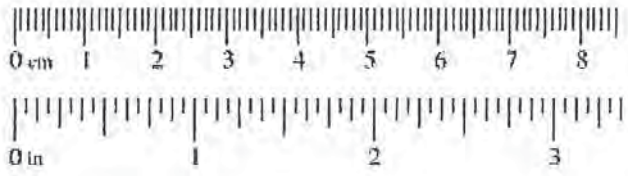
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SD-3
Investigator(s): ICain, CKenFrew

Date: 05.26.16 **Time:** 1010
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

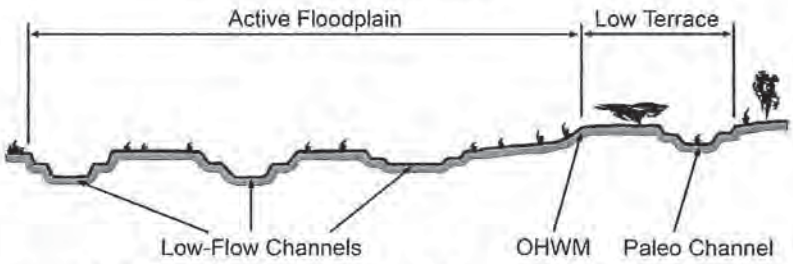
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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		Cobble	Gravel
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0.157	4	Pebble	
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0.079	2.00		
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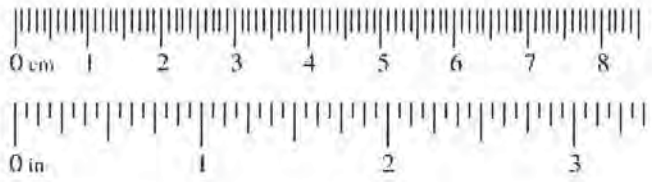
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SD-3 **Date:** 09.26.16 **Time:** 1010

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SD-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1010
Path 46

Date: 9/26/2016 Feature ID: SD-3 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight/Moderate

Veg Type(s) in Drainage:

Upstream Photo	X
Downstream Photo	
Do Normal Conditions Exist?	X
Significant Disturbance?	Y
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	
Sinuous	X
Curved	
Straight	
Entrenched	
Bowl Shaped	X
Shallow	

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA	X
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

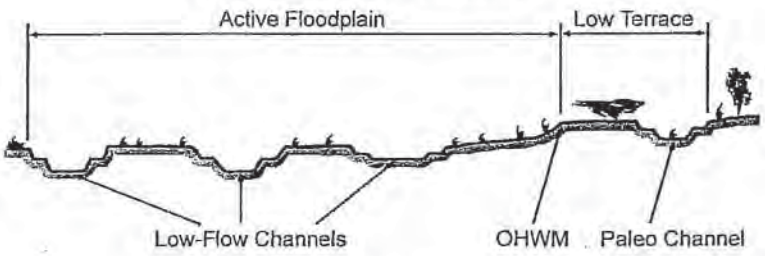
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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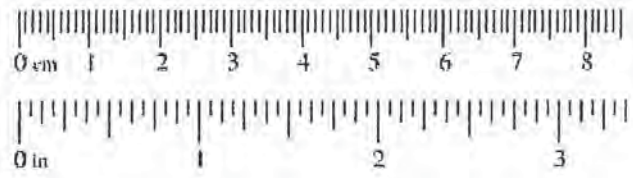
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SD-4
Investigator(s): I Cain, C Renfrew

Date: 09.26.16 **Time:** 1015
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

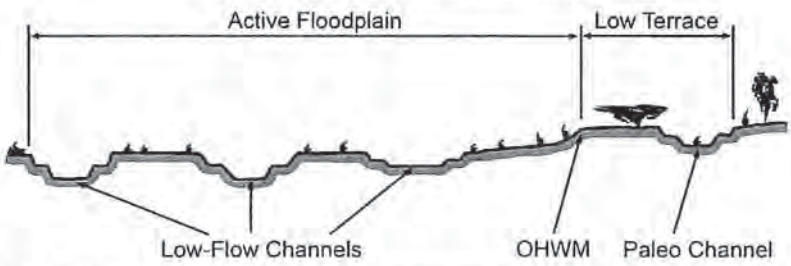
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

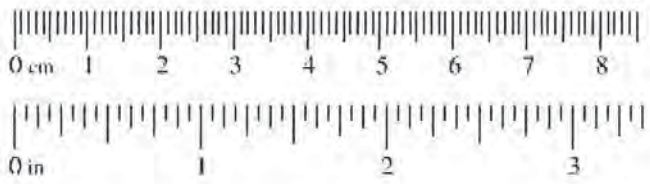


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

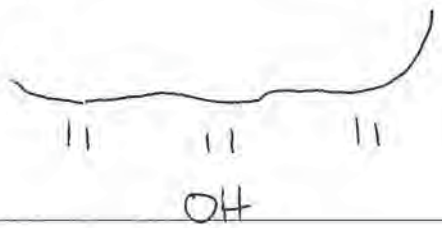
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SD-4 **Date:** 09.20.16 **Time:** 1015

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SD-4 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 11 % Tree: 0 % Shrub: 10 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1015
Path 46
Date: 9/26/2016 Feature ID: SD-4 Location: Mojave Desert

Upstream Photo
Downstream Photo X

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? X
Significant Disturbance? X

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: Slight
Veg Type(s) in Drainage: Creosote Bush

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Culvert Grazing Channel Channelized Riprap Other:

Upstream Blocked
Downstream Blocked X
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

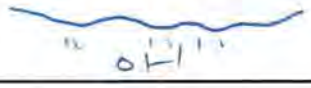
Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA X
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 10 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

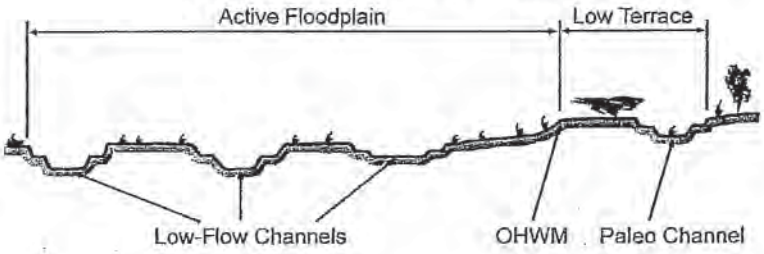
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
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0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
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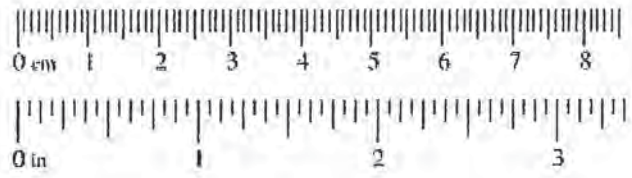
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SD-5
Investigator(s): I Cain, C Renfrew

Date: 09.26.16 **Time:** 1025
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

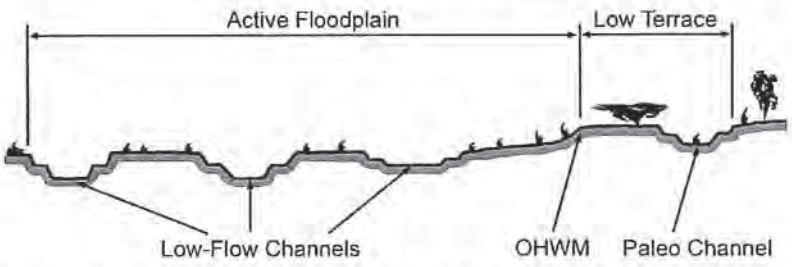
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
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5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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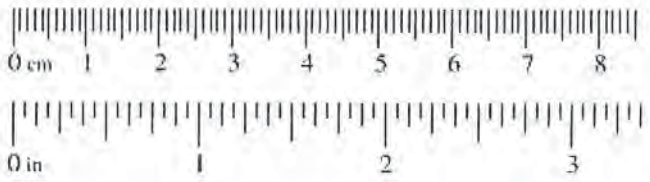
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	Silt
1/32 0.00061	0.0156	Fine silt	
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SD-5 **Date:** 09.26.16 **Time:** 1025

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SD-5 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1025
Path 46

Date: 9/26/2016 Feature ID: SD-5 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight

Veg Type(s) in Drainage: Larrea Ambrosia

Upstream Photo	
Downstream Photo	X
Do Normal Conditions Exist?	?
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	
Sinuous	X
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Culvert Grazing Channel Channelized Riprap Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: 0 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA X
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

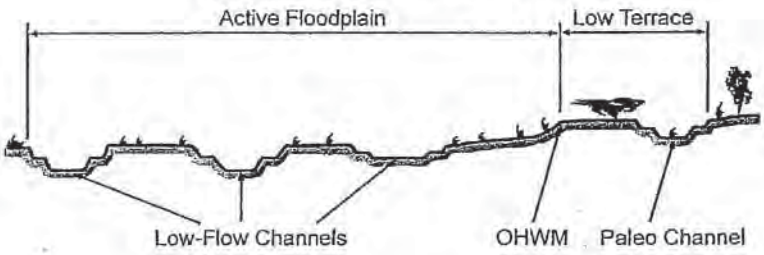
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
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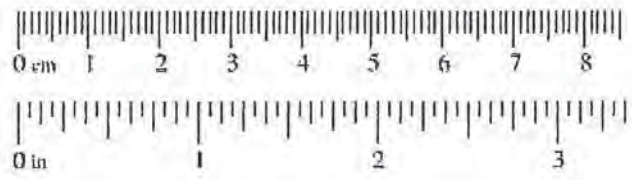
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 6E-1
Investigator(s): I Cain, C Renfrew

Date: 09.26.16 **Time:** 1035
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

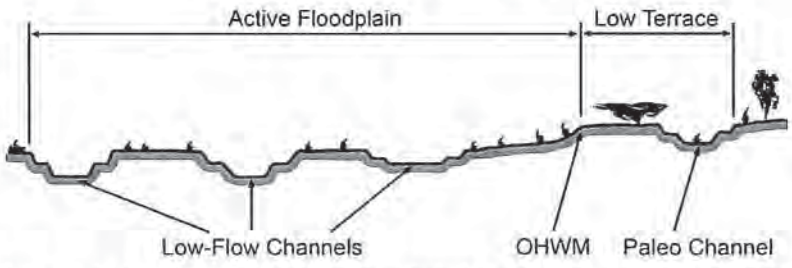
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
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   - ☐ GPS
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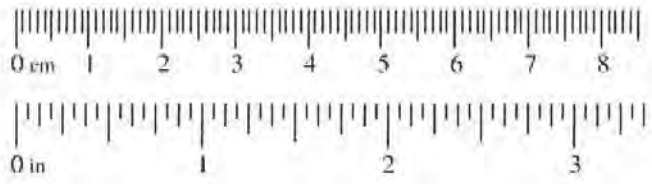
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SE-1 **Date:** 09.26.16 **Time:** 1035

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SE-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 16 % Tree: 0 % Shrub: 15 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1035	Upstream Photo		**Site Description:**
			Downstream Photo	X	Stream is:
Date: 9/26/2016	Feature ID: SE-1	Location: Mojave Desert			Braided X
					Sinuous
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved
		Significant Disturbance?		X	Straight
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched
		Hydrology			Bowl Shaped
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow X
		Surface Water/Depth:			Vegetation % In Stream:
Side Slope Estimate: Planar					0-20 X
Veg Type(s) in Drainage: Larrea Ambrosia					20-40
					40-60
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80
	Culvert Channel Riprap		Downstream Blocked	X	80-100
	Other:		Lateral Flow Blocked		Stream Type:
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel
	Roads Utility Lines Other:				Desert Wash X
Stream Cross Section Drawing:					Flowing River/Stream
					Dry Streambed
					Additional Description:

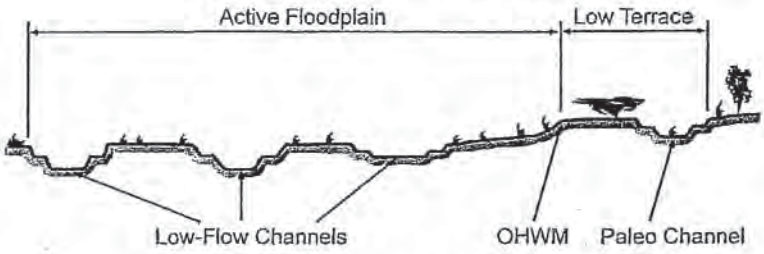
OHWM:			
Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		
Comment:			

Low-Flow Channel:	X	Tree % Cover 0	Shrub % Cover 0	Herb % Cover 0		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Silt: Fine Medium Coarse		Other:				
Circle Indicators: Mudcracks Ripples			Community succession:	NA	X	
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)		
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings		
Other:				Late (herbs/shrubs/trees)		
Comments:						

Active Floodplain:	X	Tree % Cover 0	Shrub % Cover 15	Herb % Cover 1		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples			Community succession:	NA		
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)		
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings	X	
Other:				Late (herbs/shrubs/trees)		
Comments:						

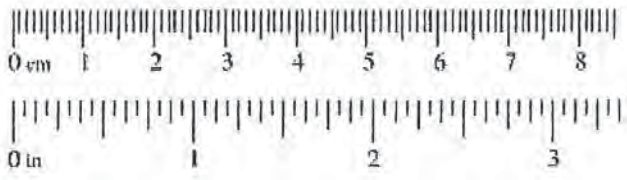
Low Terrace:		Tree % Cover	Shrub % Cover	Herb % Cover		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples			Community succession:	NA		
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)		
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings		
Other:				Late (herbs/shrubs/trees)		
Comments:						

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	Gravel
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	Gravel
	0.079	2.00	Granule	Gravel
	0.039	1.00	Very coarse sand	Sand
	0.020	0.50	Coarse sand	Sand
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	Sand
1/8	0.0025	0.0625	Very fine sand	Sand
1/16	0.0012	0.031	Coarse silt	Silt
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	Silt
1/128	0.00015	0.0039	Very fine silt	Silt
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SE-2
Investigator(s): I Cain, C Renfrew

Date: 09.26.16 **Time:** 1045
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

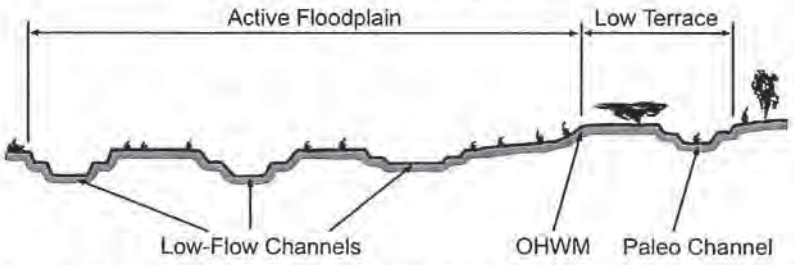
Brief site description:

Desert Wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

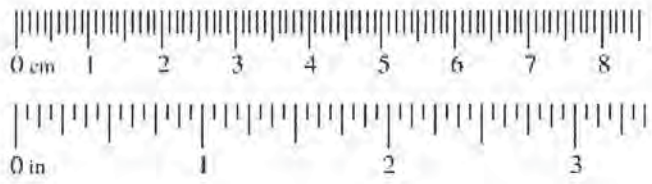


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

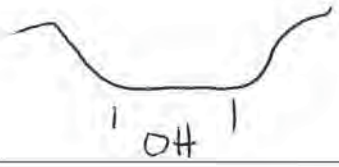
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
		Pebble	
0.157	4		
		Granule	
0.079	2.00		
		Very coarse sand	
0.039	1.00		
		Coarse sand	
0.020	0.50		
		Medium sand	Sand
1/2 0.0098	0.25		
		Fine sand	
1/4 0.005	0.125		
		Very fine sand	
1/8 0.0025	0.0625		
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	
1/32 0.00061	0.0156		Silt
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SE-2 **Date:** 09.26.16 **Time:** 1045

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SC-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

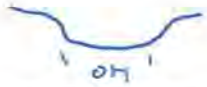
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1045	Upstream Photo	X	**Site Description:**		
			Downstream Photo		Stream is:		
Date: 9/26/2016	Feature ID: SE-2	Location: Mojave Desert			Braided		
					Sinuous		
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	X	
		Significant Disturbance?		X	Straight		
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	X	
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology			Bowl Shaped	X	
		Wetland Plants			Shallow		
		Surface Water/Depth:			Vegetation % In Stream:		
Side Slope Estimate: Moderate / Steep					0-20	X	
Veg Type(s) in Drainage: -					20-40		
					40-60		
Anthropogenic Modifications:	Road	Grazing	Channelized		Upstream Blocked		60-80
	Culvert	Channel	Riprap		Downstream Blocked		80-100
	Other:				Lateral Flow Blocked		Stream Type:
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:			V-Ditch w/ Sediment
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture			Eroded Channel
	Roads	Utility Lines	Other:				Desert Wash X
							Flowing River/Stream
							Dry Streambed

Stream Cross Section Drawing:



Additional Description: Some entrenching downstream

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture: Silt: Fine Medium Coarse | Sand: Fine Medium Course Very Coarse | Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover | Shrub % Cover | Herb % Cover

Circle average sediment texture: Granule Pebble Cobble Boulder | Sand: Fine Medium Course Very Coarse | Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

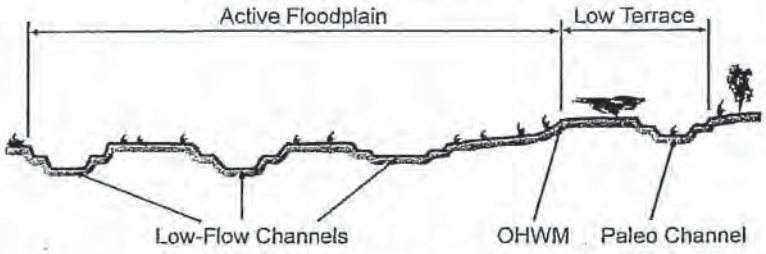
Low Terrace: Tree % Cover | Shrub % Cover | Herb % Cover

Circle average sediment texture: Granule Pebble Cobble Boulder | Sand: Fine Medium Course Very Coarse | Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

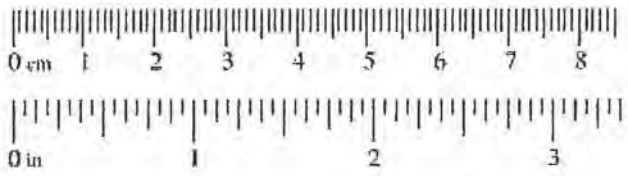
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5E-3
Investigator(s): J Cain, C Renfrew

Date: 09.26.16 **Time:** 1055
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

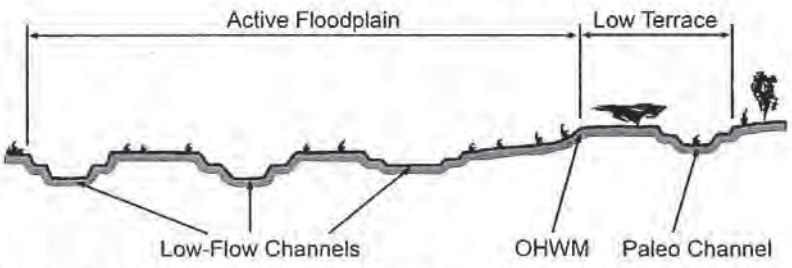
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

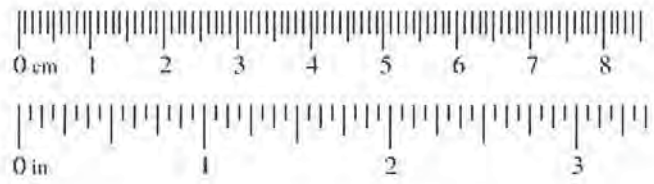


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

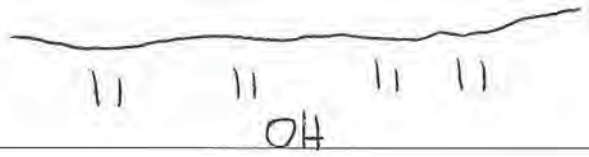
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SE-3 **Date:** 09.26.16 **Time:** 1055

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SE-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule/pebble

Total veg cover: 16 % Tree: 0 % Shrub: 15 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1055	Upstream Photo	X	**Site Description:**	
			Downstream Photo		Stream is:	
Date: 9/26/2016	Feature ID: SE-3	Location: Mojave Desert			Braided	X
					Sinuous	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	
		Significant Disturbance?		X	Straight	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	
		Hydrology			Bowl Shaped	
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	X
		Surface Water/Depth:			Vegetation % In Stream:	
Side Slope Estimate: Planar					0-20	X
Veg Type(s) in Drainage: Larrea / Ambrosia					20-40	
					40-60	
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80	
	Culvert Channel Riprap		Downstream Blocked		80-100	
	Other:		Lateral Flow Blocked		Stream Type:	
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment	
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel	
	Roads Utility Lines Other:				Desert Wash	X
Stream Cross Section Drawing:					Flowing River/Stream	
					Dry Streambed	
					Additional Description:	

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 15 Herb % Cover 1

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other:	Late (herbs/shrubs/trees)

Comments:

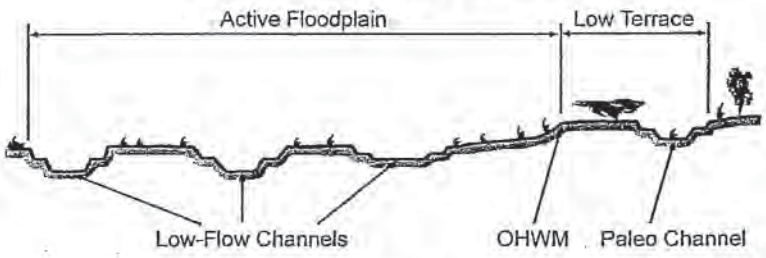
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

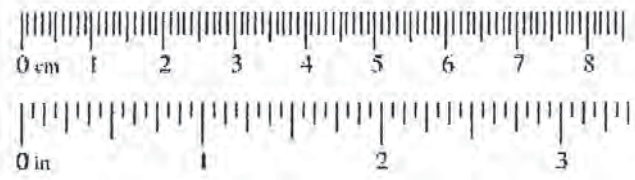
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SE-4
Investigator(s): I Cain, C Renfrew

Date: 09.20.16 **Time:** 1058
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

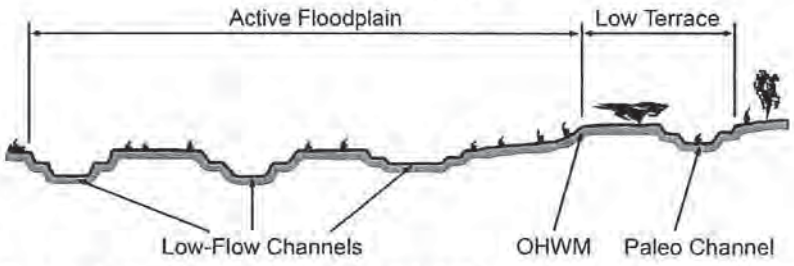
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

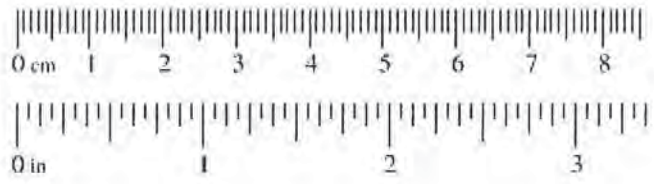


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

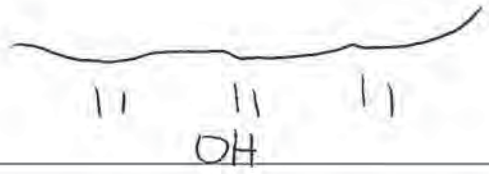
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SE-4 **Date:** 09.26.16 **Time:** 1058

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: coarse

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SC-4 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 16 % Tree: 0 % Shrub: 15 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1058
Path 46

Date: 9/26/2016 Feature ID: SE-4 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Planar

Veg Type(s) in Drainage: Larrea / Ambrosia

Upstream Photo	
Downstream Photo	X
Do Normal Conditions Exist?	
Significant Disturbance?	
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 6 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:	
NA	X
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 15 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:	
NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	X
Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

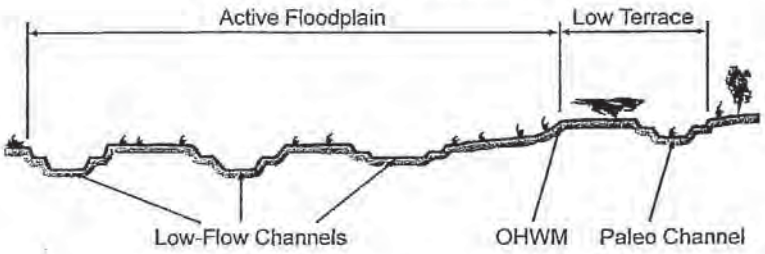
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:	
NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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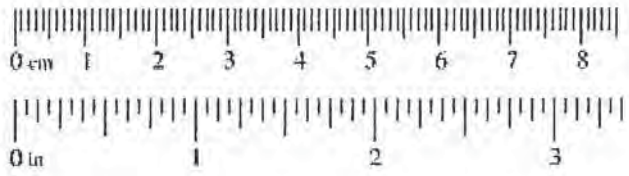
1/64	0.00031	0.0078	Fine silt	Silt
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SE-5
Investigator(s):

Date: 09.26.16 **Time:** 1108
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

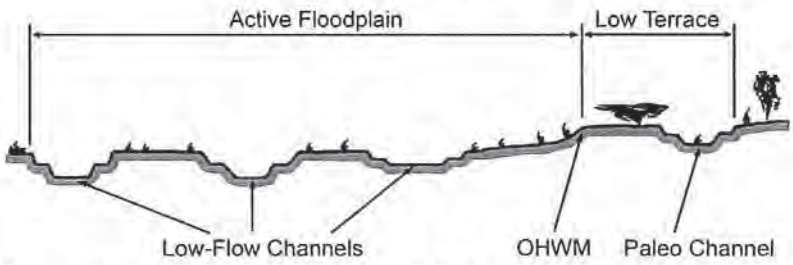
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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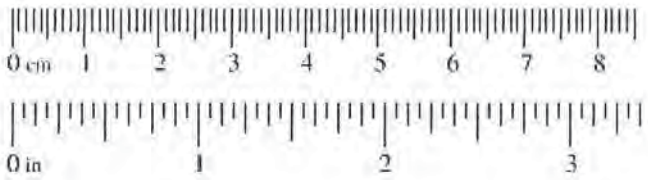
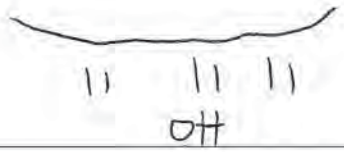
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SE-5 **Date:** 09.26.16 **Time:** 1108

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SE-5 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 10 % Tree: 0 % Shrub: 15 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time:
Path 46 1105

Date: 9/26/2016 Feature ID: SE-5 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Plane

Veg Type(s) in Drainage: Creosote/Ambrosia

Upstream Photo	
Downstream Photo	X
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Culvert Grazing Channel Channelized Riprap Other:

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA X
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 15 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings) X
Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

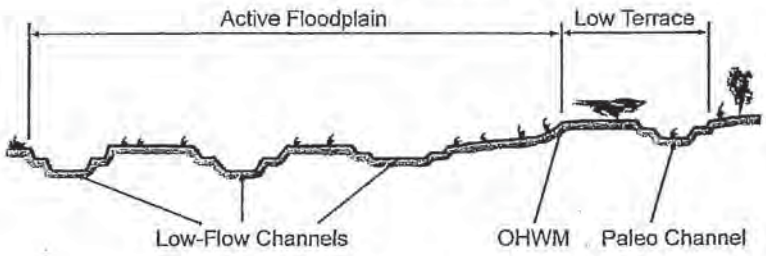
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

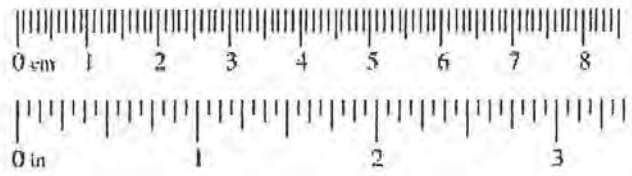
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	
1/64	0.00031	0.0078	Fine silt	Silt
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5E-6
Investigator(s): ICain, CRenfrew

Date: 09.26.16 **Time:** 1104
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [X] / N [ ] Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

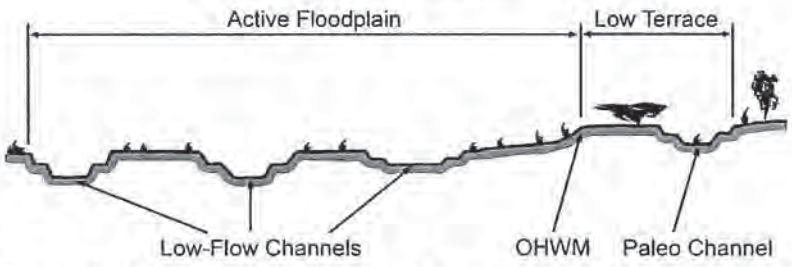
Brief site description:

Desert wash

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
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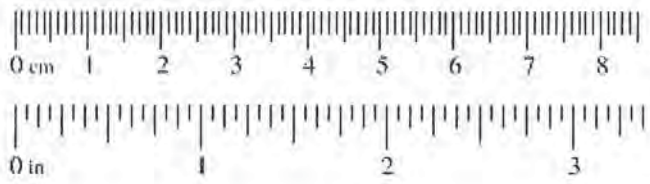
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SE-6 **Date:** 09.26.16 **Time:** 1104

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Gravel

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SE-6 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 10 % Tree: 0 % Shrub: 15 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1104	Upstream Photo		**Site Description:**
			Downstream Photo	X	Stream is:
Date: 9/26/2016	Feature ID: SE-6	Location: Mojave Desert			Braided X
					Sinuous
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved
		Significant Disturbance?		X	Straight
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched
		Hydrology			Bowl Shaped
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow X
		Surface Water/Depth:			Vegetation % In Stream:
Side Slope Estimate: Plane					0-20 X
Veg Type(s) in Drainage: Larrea/Ambrosia					20-40
					40-60
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80
	Culvert Channel Riprap		Downstream Blocked		80-100
	Other:		Lateral Flow Blocked		Stream Type:
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel
	Roads Utility Lines Other:				Desert Wash X
					Flowing River/Stream
					Dry Streambed

Stream Cross Section Drawing:

Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 15 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other:	Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

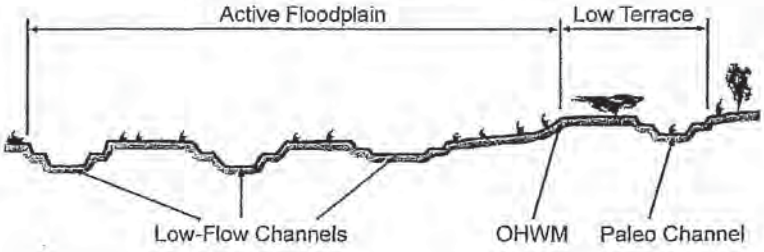
Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
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1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SE7
Investigator(s): I Cain, C Renfrew

Date: 09.26.16 **Time:** 1111
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

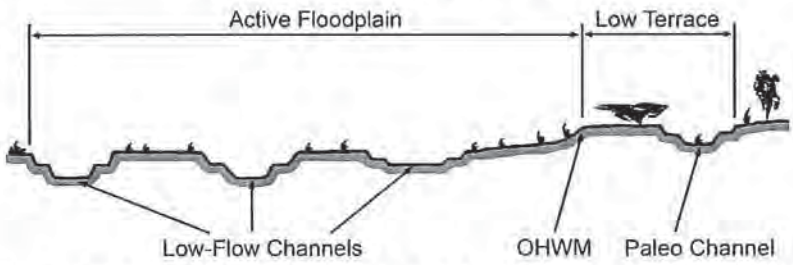
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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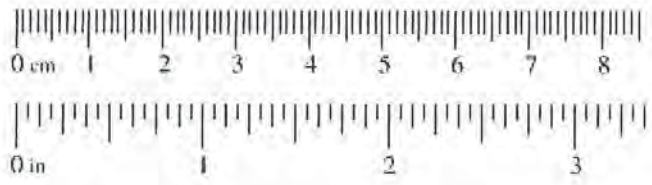
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

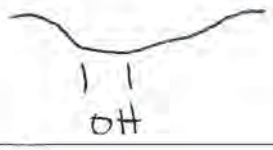
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 5E-7 **Date:** 09.26.16 **Time:** 1111

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium Sand

Total veg cover: ____ % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SE-7 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: ____ % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1111	Upstream Photo	X	**Site Description:**	
			Downstream Photo		Stream is:	
Date: 9/26/2016	Feature ID: SE-7	Location: Mojave Desert			Braided	
					Sinuous	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	
		Significant Disturbance?		X	Straight	X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	
		Hydrology			Bowl Shaped	
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	
		Surface Water/Depth:			Vegetation % In Stream:	
Side Slope Estimate: Slight					0-20	X
Veg Type(s) in Drainage:					20-40	
					40-60	
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked	X	60-80	
	Culvert Channel Riprap		Downstream Blocked		80-100	
	Other:		Lateral Flow Blocked		Stream Type:	
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment	
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel	
	Roads Utility Lines Other:				Desert Wash	X
Stream Cross Section Drawing:					Flowing River/Stream	
					Dry Streambed	
					Additional Description:	

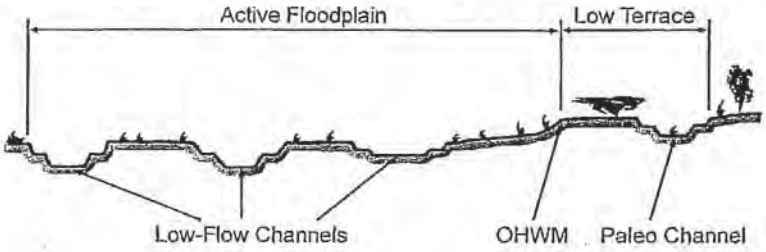
OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			

Comment:

Low-Flow Channel:	X	Tree % Cover 0	Shrub % Cover 5	Herb % Cover 0		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Silt: Fine Medium Coarse		Other:				
Circle Indicators: Mudcracks Ripples					Community succession:	NA X
Drift/Debris Presence of bed and bank						Early (herbs/seedlings)
Benches Soil development Surface relief						Mid (herbs/shrubs/saplings
Other:						Late (herbs/shrubs/trees)
Comments:						
Active Floodplain:	X	Tree % Cover 0	Shrub % Cover 0	Herb % Cover 0		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples					Community succession:	NA X
Drift/Debris Presence of bed and bank						Early (herbs/seedlings)
Benches Soil development Surface relief						Mid (herbs/shrubs/saplings
Other:						Late (herbs/shrubs/trees)
Comments:						
Low Terrace:		Tree % Cover	Shrub % Cover	Herb % Cover		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples					Community succession:	NA
Drift/Debris Presence of bed and bank						Early (herbs/seedlings)
Benches Soil development Surface relief						Mid (herbs/shrubs/saplings
Other:						Late (herbs/shrubs/trees)
Comments:						

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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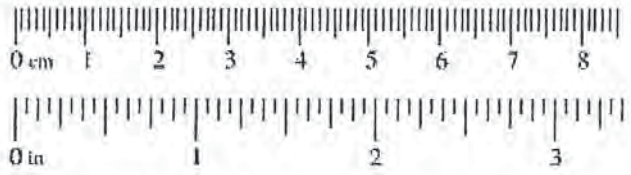


Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SE-3
Investigator(s): I Cain, C Renfrew

Date: 09.26.16 **Time:** 1118
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [X] / N [ ] Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

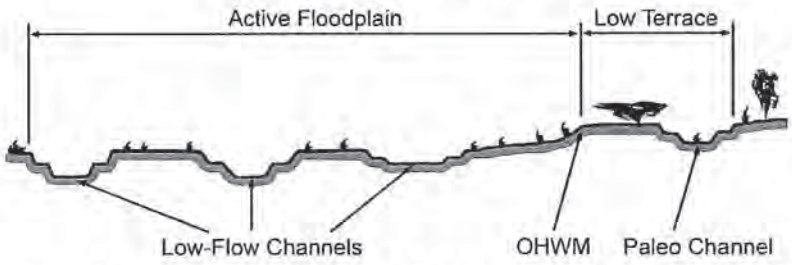
Brief site description:

Desert wash

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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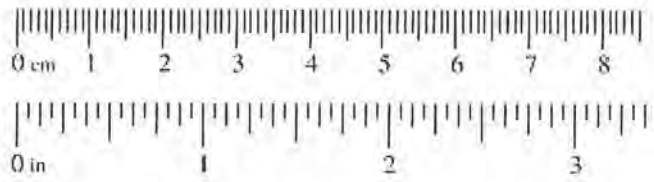
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SE-3 **Date:** 09.26.16 **Time:** 1118

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 5C-8 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 60 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

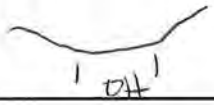
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1119	Upstream Photo		**Site Description:**		
			Downstream Photo	X	Stream is:		
Date: 9/26/2016	Feature ID: SE-8	Location: Mojave Desert			Braided	X	
					Sinuous		
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved		
		Significant Disturbance?		X	Straight		
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched		
		Hydrology			Bowl Shaped		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	X	
		Surface Water/Depth:			Vegetation % In Stream:		
Side Slope Estimate: Planar					0-20	X	
Veg Type(s) in Drainage: Creosote/Ambrosia					20-40		
					40-60		
Anthropogenic Modifications: Road Grazing Channelized			Upstream Blocked		60-80		
Culvert Channel Riprap			Downstream Blocked	X	80-100		
Other:			Lateral Flow Blocked		Stream Type:		
Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:					V-Ditch w/ Sediment		
Circle Surrounding Land Use: Urban Rural Commercial Agriculture					Eroded Channel		
Roads Utility Lines Other:					Desert Wash	X	
					Flowing River/Stream		
					Dry Streambed		

Stream Cross Section Drawing:



Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 1

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	X
Other:	Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

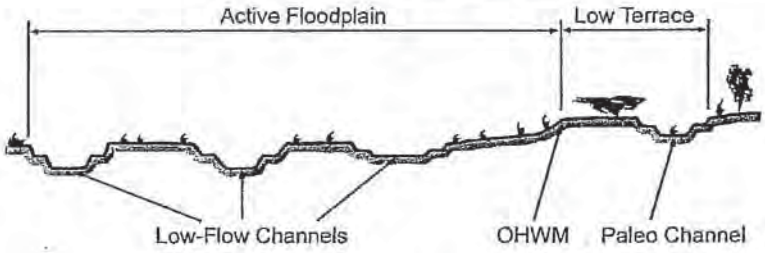
Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

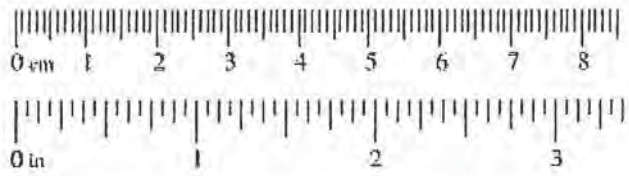
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SE-9
Investigator(s): ICain, CPenfrew

Date: 09.26.16 **Time:** 1124
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

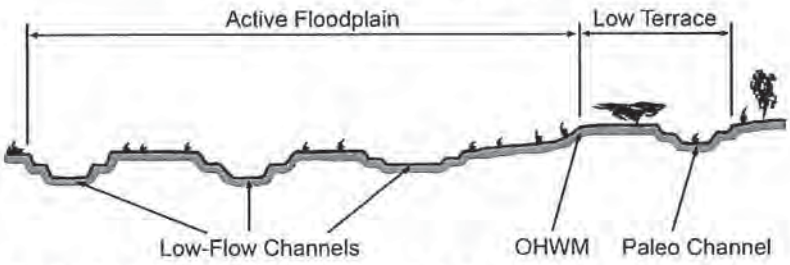
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

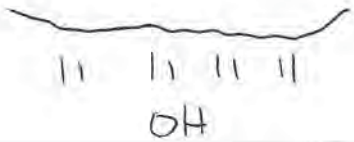
1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** SE-9 **Date:** 09.26.16 **Time:** 1124

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** XS-9 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1124
Path 46

Date: 9/20/2016 Feature ID: SF-9 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: 5 1:, 4

Veg Type(s) in Drainage: —

Upstream Photo	
Downstream Photo	X
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	
Sinuous	X
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Cross Section Drawing:

Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA X
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

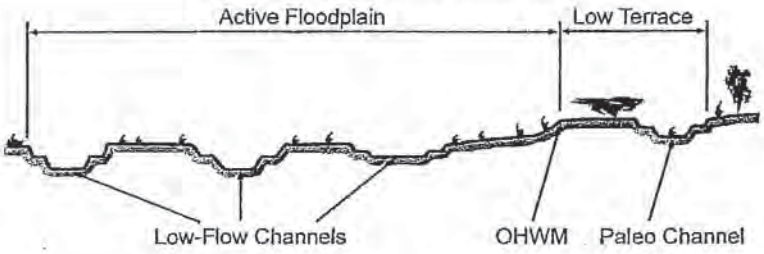
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
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1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
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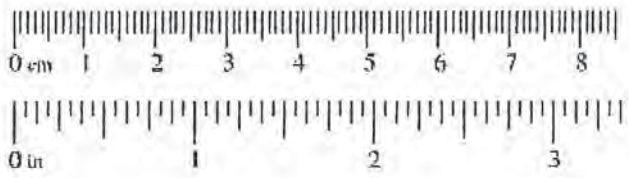
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5E-10
Investigator(s): J Cain, C Renfrew

Date: 09.26.16 **Time:** 1127
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

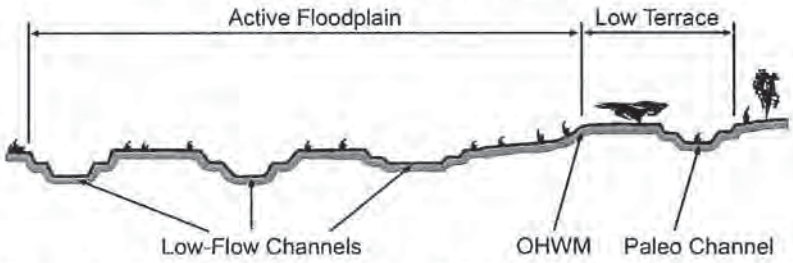
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
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5. Identify the OHWM and record the indicators. Record the OHWM position via:
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   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

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		Granule	
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1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
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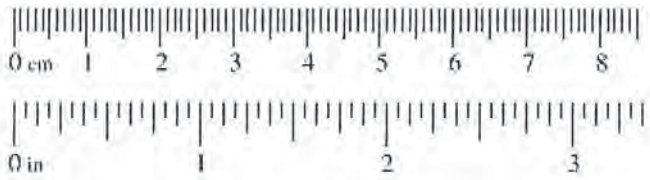
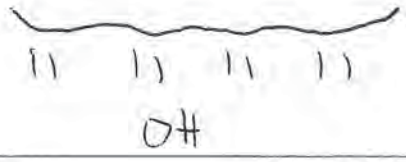
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SE-10 **Date:** 09.26.16 **Time:** 1127

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SE-10 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 16 % Tree: 0 % Shrub: 15 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1127
Path 46

Date: 9/26/2016 Feature ID: SE-10 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Planar

Veg Type(s) in Drainage: Larrea / Ambrosia

Upstream Photo	
Downstream Photo	X
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Culvert Other: Grazing Channel Channelized Riprap

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

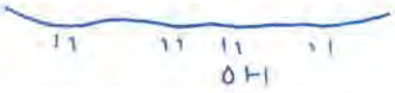
Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples

Drift/Debris Presence of bed and bank

Benches Soil development Surface relief

Other:

Community succession: NA X

Early (herbs/seedlings)

Mid (herbs/shrubs/saplings

Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 15 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples

Drift/Debris Presence of bed and bank

Benches Soil development Surface relief

Other:

Community succession: NA

Early (herbs/seedlings)

Mid (herbs/shrubs/saplings X

Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples

Drift/Debris Presence of bed and bank

Benches Soil development Surface relief

Other:

Community succession: NA

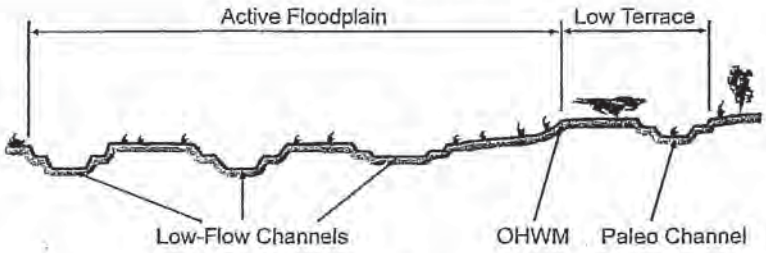
Early (herbs/seedlings)

Mid (herbs/shrubs/saplings

Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
10.08		256	Boulder	
2.56		64	Cobble	Gravel
0.157		4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	
1/64	0.00031	0.0078	Fine silt	Silt
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SE-11
Investigator(s): I Cain, C Renfrew

Date: 09.26.16
Town: Mojave Desert
Time: 1134
State: CA
Photo begin file#:
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

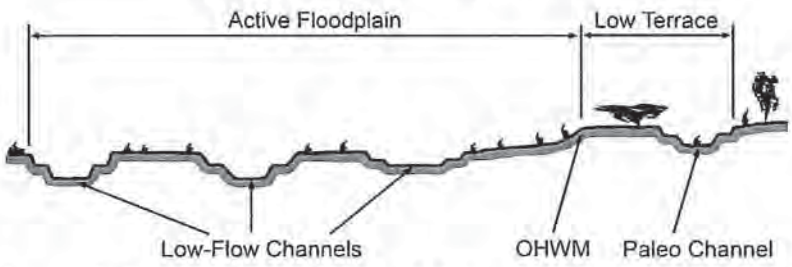
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

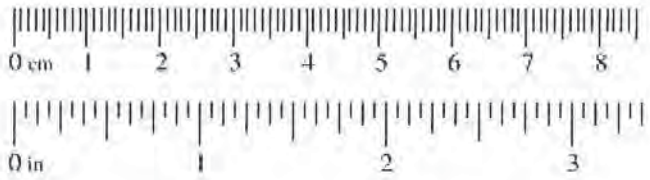


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SE-11 **Date:** 09.26.16 **Time:** 1134

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SE-11 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 10 % Tree: 0 % Shrub: 15 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☒ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1134	Upstream Photo	
			Downstream Photo	X
Date: 9/26/2016	Feature ID: SE-11	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: Planar				
Veg Type(s) in Drainage: Lorrain / Amelia				

Site Description:	
Stream is:	
Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other:	

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 15 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	X
Other:	Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

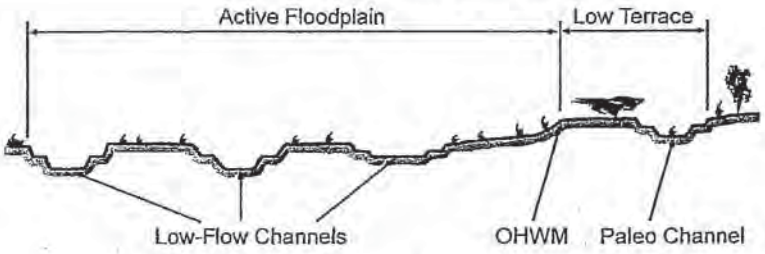
Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1030
Path 46

Date: 9/21/2016 Feature ID: SF-1 Location: Mojave Desert

Circle Preliminary Status: USACE (CDFW) RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character (Ephemeral) Intermittent Perennial

OHWM Recorded by: (Field Map) GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: unveg in channel

Anthropogenic Modifications: (Road) Grazing Channelized
Culvert Channel Riprap
Other: Trash

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads (Utility Lines) Other: Open Space

Stream Cross Section Drawing:

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Comment:

Break in bank slope X
Other:

Low-Flow Channel: X 1 Tree % Cover 0 Shrub % Cover <1 Herb % Cover <1
Circle average sediment texture
Silt: Fine Medium Coarse
Sand: (Fine) Medium Course Very Coarse
Other:

Circle Indicators: (Mudcracks) Ripples
Drift/Debris (Presence of bed and bank)
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 7 Tree % Cover Shrub % Cover 5 Herb % Cover 2
Circle average sediment texture
Granule Pebble) Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris (Presence of bed and bank)
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture
Granule (Pebble) Cobble Boulder
Sand: (Fine) Medium Course Very Coarse
Other: Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris (Presence of bed and bank)
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

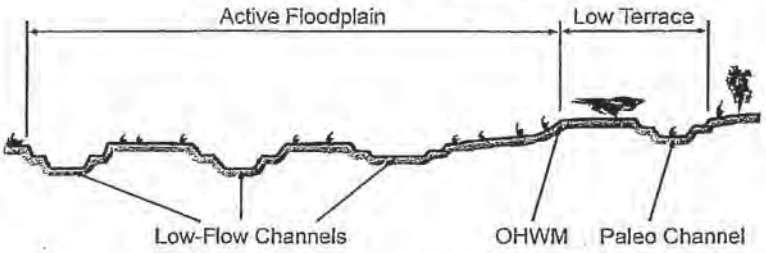
Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Additional Description:
Hydro Indicators
Bed/Bank, Δ in sediment texture, Rift deposits, Soil Cracks

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
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	0.039	1.00	Very coarse sand	
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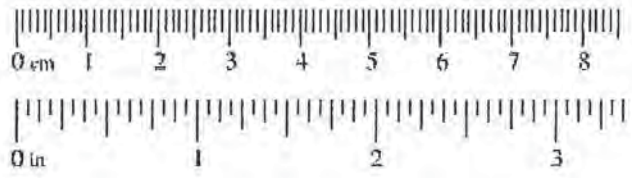
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1045
Path 46

Date: 9/20/2016 Feature ID: SF-2 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: converging slope

Upstream Photo
Downstream Photo

Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100

Anthropogenic Modifications: Road Culvert Other: Grazing Channel Channelized Riprap
Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open space

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Stream Cross Section Drawing:

Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture,
Soil Cracks

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Break in bank slope X
Other:
Comment:

Low-Flow Channel: X 1 Tree % Cover 0 Shrub % Cover <1 Herb % Cover <1
Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other: Very Fine Sand

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 7 Tree % Cover 0 Shrub % Cover 5 Herb % Cover 2
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: ~~Fine Medium Course Very Coarse~~
Other: Very Fine Granule + Pebbles

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

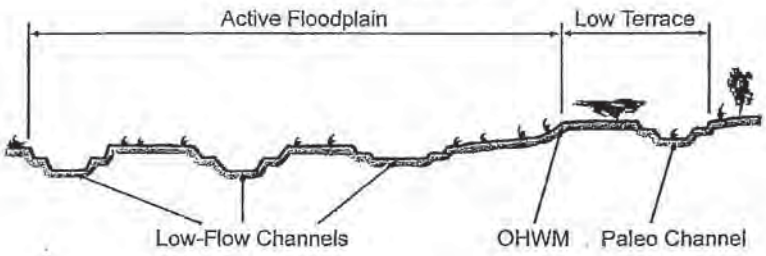
Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: ~~Fine~~ Very Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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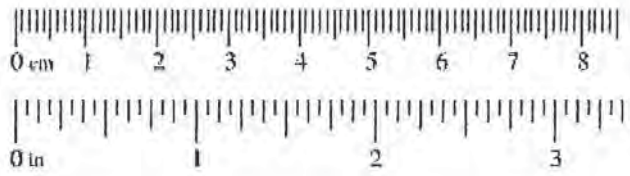
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: AR and CC	Time: 1055	Upstream Photo / Downstream Photo
Date: 9/24/2016	Feature ID: 5F-3	Location: Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist? Y	Significant Disturbance? N
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland? Hydrology Wetland Plants	Surface Water/Depth:
OHWM Recorded by: Field Map GPS GIS Digitizing			
Side Slope Estimate: gentle slope			
Veg Type(s) in Drainage: veg in channel			

Anthropogenic Modifications: Road Grazing Channelized Culvert Channel Riprap Other:

Upstream Blocked / Downstream Blocked / Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		
Comment:			

Low-Flow Channel: X 1 Tree % Cover Ø Shrub % Cover Ø Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other: Coarse Silt w/ Granule

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other: Δ in sediment texture

Community succession: NA / Early (herbs/seedlings) X / Mid (herbs/shrubs/saplings / Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 2 Tree % Cover Ø Shrub % Cover Ø Herb % Cover 2

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other: Δ in sediment texture

Community succession: NA / Early (herbs/seedlings) X / Mid (herbs/shrubs/saplings / Late (herbs/shrubs/trees)

Comments:

Low Terrace: X Tree % Cover Ø Shrub % Cover 10 Herb % Cover 5

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other: Coarse Silt w/ Pebble + Cobble

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other: Δ in sediment texture

Community succession: NA / Early (herbs/seedlings) / Mid (herbs/shrubs/saplings / Late (herbs/shrubs/trees) X

Comments:

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	
20-40	
40-60	
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

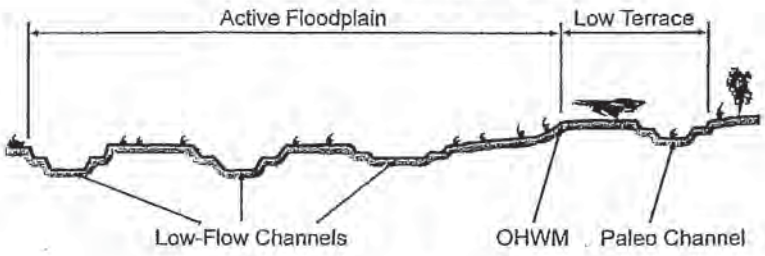
Additional Description:

Hydro Indicators

Bed/Bank,

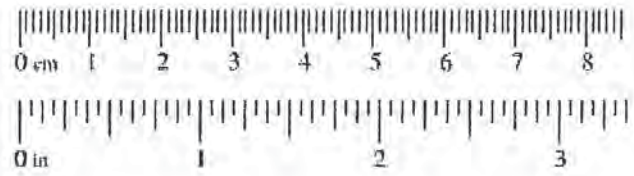
Δ in sediment texture

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1105
Path 46

Date: 9/20/2016 Feature ID: ~~SF-3~~ SF-4 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

Potential Wetland?
Hydrology
Wetland Plants

OHWM Recorded by: Field Map GPS GIS Digitizing

Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: veg in channel

Upstream Photo
Downstream Photo

Site Description:

Stream is:

Braided	
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Culvert Grazing Channel Channelized Riprap Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

Additional Description:
Hydro Indicators
Bed/Bank,
Dim sediment texture

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			

Comment:

Low-Flow Channel: X 1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other: Fine to Medium Sand

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments: N/A

Low Terrace: X Tree % Cover Shrub % Cover Herb % Cover

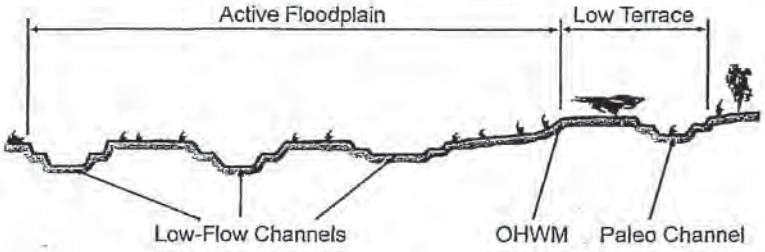
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments: N/A

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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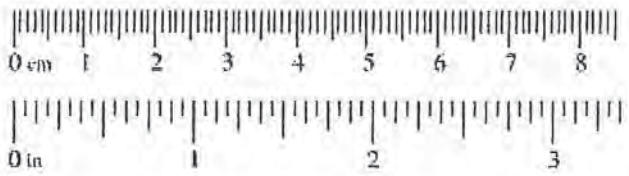
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1110
Path 46

Date: 9/26/2016 Feature ID: SF-4 SF-5 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage:

Upstream Photo
Downstream Photo

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	✓
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Culvert Other: Grazing Channel Channelized Riprap

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Stream Cross Section Drawing:

Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture
Soil Cracks

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X <1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover <1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other: ~~Very Sm~~ Very Fine Sand

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 10 Tree % Cover Shrub % Cover 8 Herb % Cover 2
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

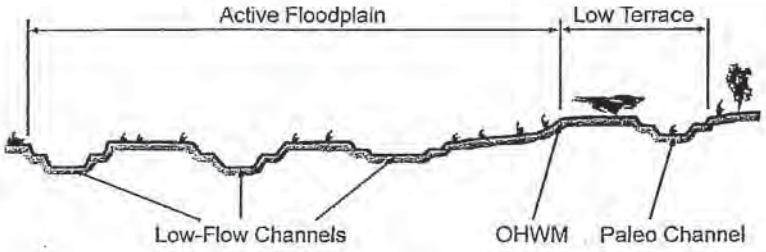
Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Fine Sand w/ Pebbles

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

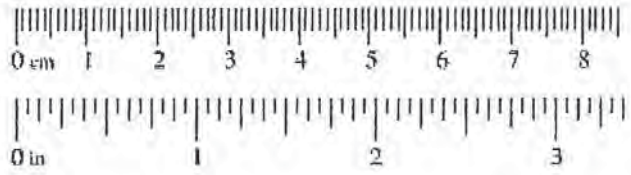
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1110
Path 46
Date: 9/ 21/2016 Feature ID: SF-6 Location: Mojave Desert
Circle Preliminary Status: USACE CDFW RWQCB
Circle Flow Character: Ephemeral Intermittent Perennial
OHWM Recorded by: Field Map GPS GIS Digitizing
Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: Unveg in channel

Upstream Photo
Downstream Photo
Do Normal Conditions Exist? Y
Significant Disturbance? N
Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X
Vegetation % In Stream:
0-20
20-40
40-60
60-80 X
80-100

Anthropogenic Modifications: Road Culvert Grazing Channel Channelized Riprap Upstream Blocked Downstream Blocked Lateral Flow Blocked Other:

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Stream Cross Section Drawing:

Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture
Drift deposit

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Break in bank slope X
Other:
Comment:

Low-Flow Channel: X 2 Tree % Cover 0 Shrub % Cover 0 Herb % Cover <1
Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 4 Tree % Cover 0 Shrub % Cover 3 Herb % Cover 1
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

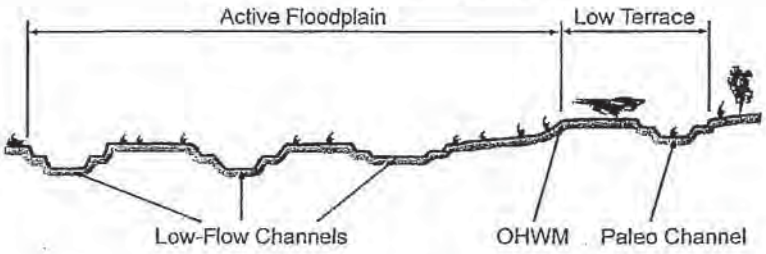
Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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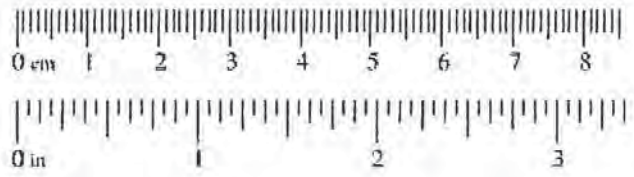
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1115
Path 46

Date: 9/20/2016 Feature ID: SF-7 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: gentle slope

Veg Type(s) in Drainage: ~~veg in~~ unveg in channel

Upstream Photo
Downstream Photo

Do Normal Conditions Exist? Y
Significant Disturbance? N

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

~~0-20~~	
20-40	
40-60	
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Anthropogenic Modifications: Road Grazing Channelized Upstream Blocked
Culvert Channel Riprap Downstream Blocked
Other: Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture,

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: 1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: ~~Mudcracks~~ Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: 1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Pebble

Circle Indicators: ~~Mudcracks~~ Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

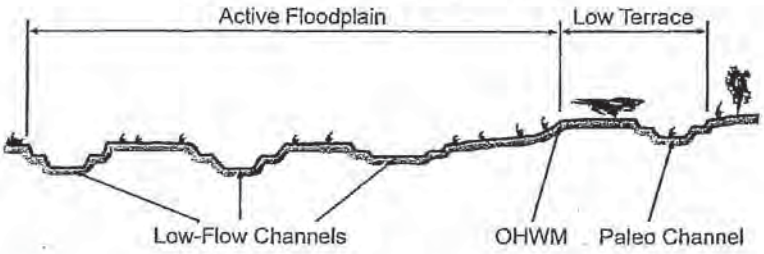
Low Terrace: 15 Tree % Cover Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris ~~Presence~~ of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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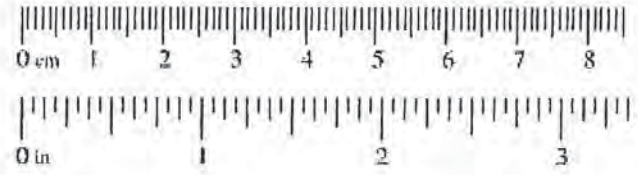
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1120		Upstream Photo	
Path 46		Downstream Photo	
Date: 9/26/2016	Feature ID: ~~USF-8~~ USF-9	Location: Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist? Y	
		Significant Disturbance? N	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?	
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology	
		Wetland Plants	
		Surface Water/Depth:	
Side Slope Estimate: gentle slope			
Veg Type(s) in Drainage: unveg in channel			

Site Description:

Stream is:

Braided	X
Sinuous	X
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

~~0-20~~	
20-40	
40-60	
~~60-80~~	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	X
Dry Streambed	

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other: Open Space	

Stream Cross Section Drawing:

Additional Description:

Hydro Indicators

Bed/Bank, Δ in sediment texture

Soil Cracks

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X 2 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 2

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings) X
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other: Δ in sediment texture	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 7 Tree % Cover 0 Shrub % Cover 5 Herb % Cover 2

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder — Other: Medium Sand w/ Pebble

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other: Δ in sediment texture	Late (herbs/shrubs/trees)

Comments:

Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5

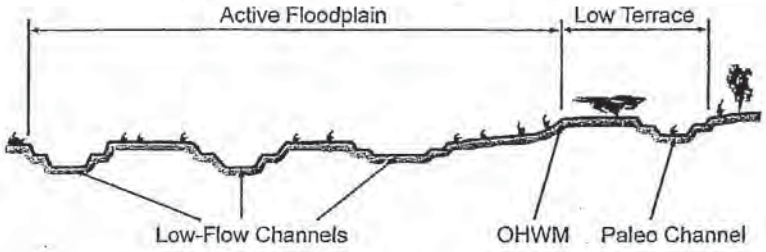
Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder — Other: Medium Sand w/ Pebble + Cobble

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other: Δ in sediment texture	Late (herbs/shrubs/trees)

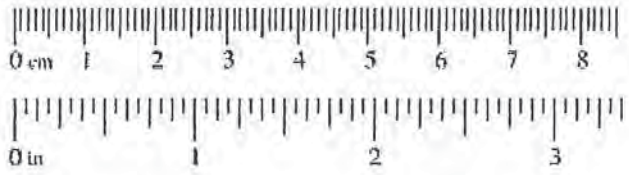
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1125
Path 46

Date: 9/21/2016 Feature ID: SF-9 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: Ornveg in channel

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Δ Tree % Cover 0 Shrub % Cover 0 Herb % Cover <1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other: Medium Sand w/ Coarse Silt

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover Shrub % Cover 2 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Coarse Silt w/ Pebbles on top

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Pebble + Cobble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Site Description:
Stream is:

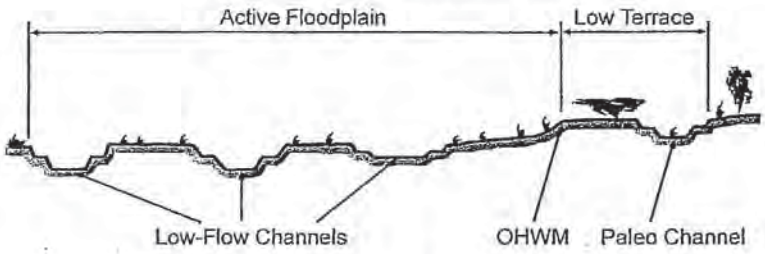
		Vegetation % In Stream:	
Braided	X	0-20	
Sinuous		20-40	
Curved		40-60	
Straight		60-80	
Entrenched		80-100	
Bowl Shaped			
Shallow	X		

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

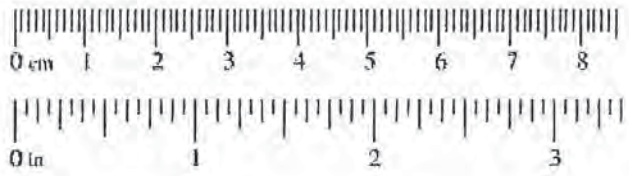
Additional Description:
Hydro indicators
Bed/Bank, Δ in sediment texture
Drift deposits

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1130
Path 46

Date: 9/26/2016 Feature ID: SF-10 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: unveg in channel

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X <1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover <1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: ~~Mudcracks~~ Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 5 Tree % Cover 0 Shrub % Cover 3 Herb % Cover 2
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments:

Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Coarse Sand w/ Pebbles

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Site Description:
Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

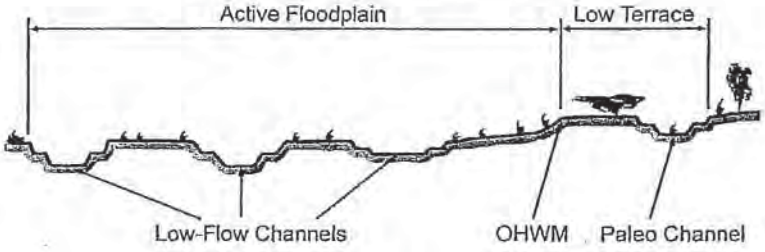
0-20	X
20-40	
40-60	
60-80	
80-100	X

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

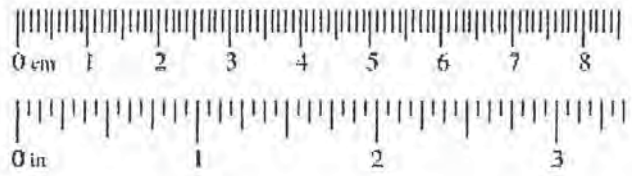
Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture
Soil cracks,
Rift deposits

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1130
Path 46

Date: 9/20/2016 Feature ID: SF-11 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle to moderate slope
Veg Type(s) in Drainage: invas in channel

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other: Trash

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X <1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover <1

Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other: Very Fine to Fine Sand

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 3 Tree % Cover 0 Shrub % Cover 2 Herb % Cover 1

Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover <5

Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Site Description:

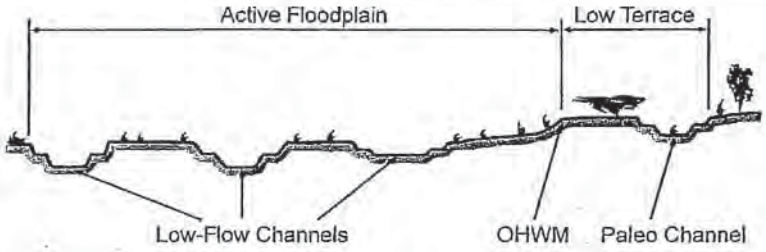
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

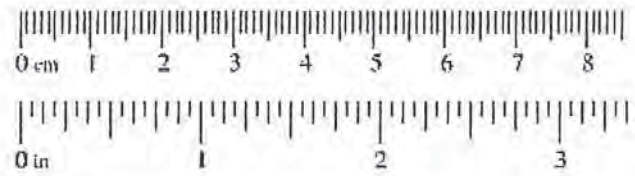
Additional Description:
Hydro Indicators
Bed/Bank, Δ in sediment texture, Rust deposit

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 0835
Path 46

Date: 9/20/2016 Feature ID: SG-1 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: unveg in channel

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			

Comment:

Low-Flow Channel: 50 2 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture Sand Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other: Fine to Coarse Sand

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 2 Tree % Cover 0 Shrub % Cover 1 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Low Terrace: Y Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments: N/A

Site Description:
Stream is:

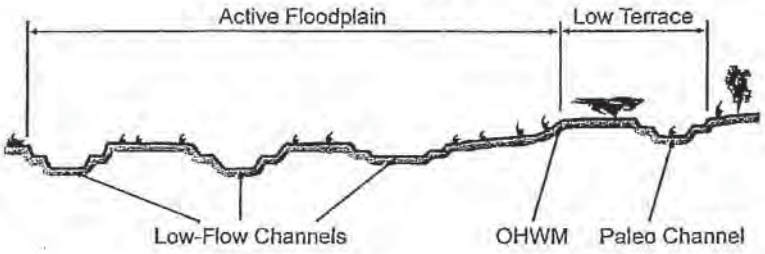
Braided	X	Vegetation % In Stream:	
Sinuous		0-20	X
Curved		20-40	
Straight		40-60	
Entrenched		60-80	
Bowl Shaped		80-100	
Shallow	X		

Stream Type:

V-Ditch w/ Sediment		Desert Wash	X
Eroded Channel		Flowing River/Stream	
		Dry Streambed	

Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture,
Soil Cracks

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
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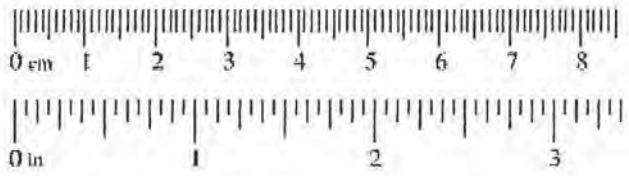
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 0950
Path 46

Date: 9/26/2016 Feature ID: SG-2 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: veg in channel

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Comment:

Break in bank slope X
Other:

Low-Flow Channel: Y 1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments: ← Δ in sediment texture

Active Floodplain: Y 13 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 3
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Low Terrace: Y 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Medium Sand w/Cobble

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

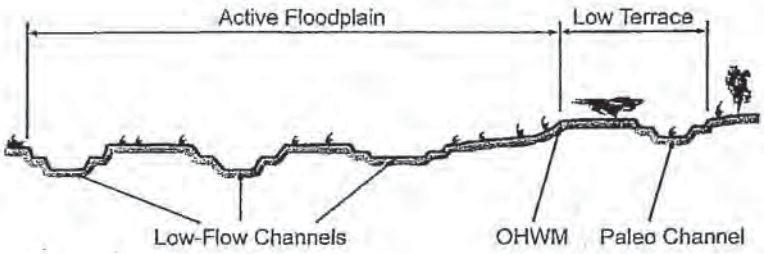
Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture,

Hydrogeomorphic Floodplain Units



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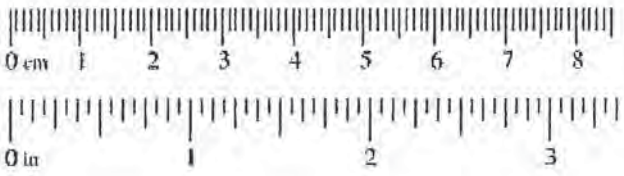
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 0900
Path 46

Date: 9/21/2016 Feature ID: SA-5G-3 Location: Mojave Desert

Upstream Photo
Downstream Photo

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: veg in channel

Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % in Stream:
0-20
20-40
40-60
60-80
80-100

Anthropogenic Modifications: Road Culvert Other: Grazing Channel Channelized Riprap
Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

Additional Description:
Hydro Indicators
Bed/Bank, Δ in sediment texture

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Break in bank slope X
Other:
Comment:

Low-Flow Channel: X <1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover <1
Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other: Very Fine Sand

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 5 Tree % Cover 0 Shrub % Cover 3 Herb % Cover 2
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

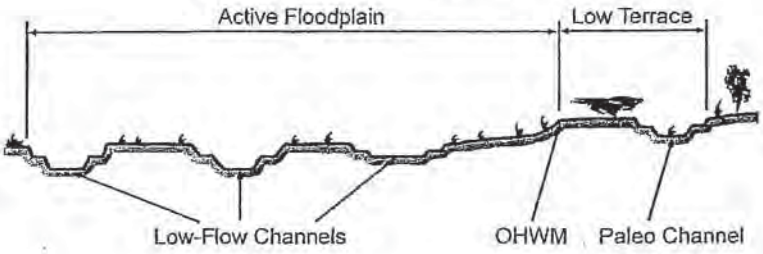
Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

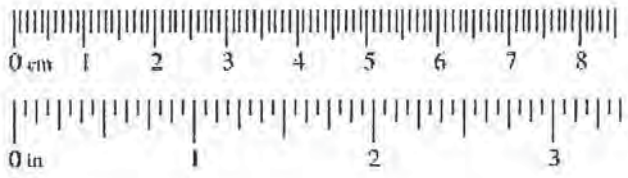
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 0715
Path 46

Date: 9/26/2016 Feature ID: SG-4 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: trees in channel

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover
Comment:

Break in bank slope X
Other:

Low-Flow Channel: Y <1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover <1
Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Y 2 Tree % Cover 0 Shrub % Cover 1 Herb % Cover 1
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Very Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Low Terrace: Y Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments: N/A

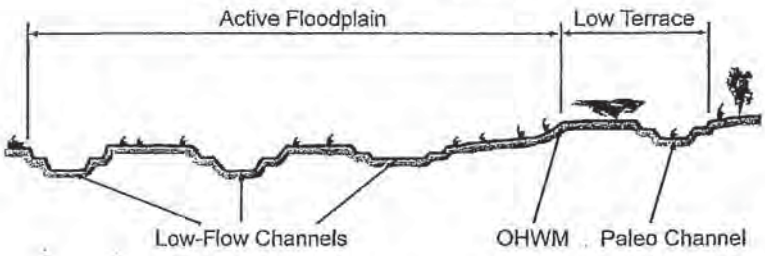
Site Description:
Stream is:
Braided Y
Sinuous Y
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % in Stream:
0-20
20-40
40-60
60-80
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

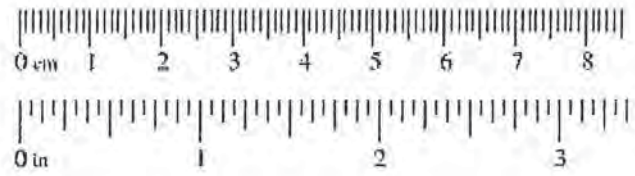
Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture,
Drift deposit

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 0915
Path 46

Date: 9/21/2016 Feature ID: SG-5 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: veg unveg in channel

Anthropogenic Modifications: Road Culvert Grazing Channel Channelized Riprap Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X 4 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other: Medium to Coarse Sand

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 4 Tree % Cover 0 Shrub % Cover 1 Herb % Cover 3
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments:

Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Very Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings) X
Late (herbs/shrubs/trees)

Comments:

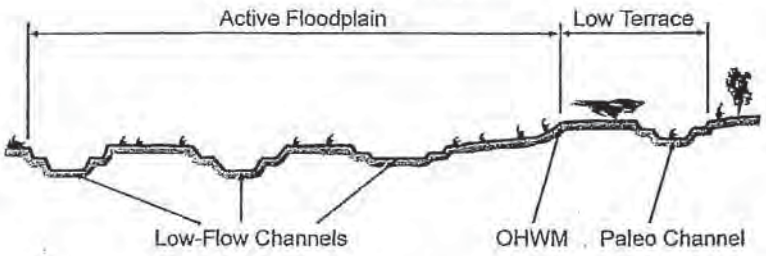
Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20 /
20-40
40-60
60-80
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

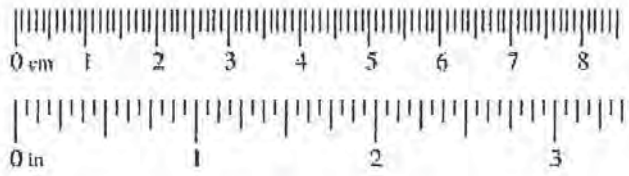
Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture
Drift deposit

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 0935
Path 46

Date: 9/ 26/2016 Feature ID: FG-6 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: unveg in channel

Upstream Photo
Downstream Photo

Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100

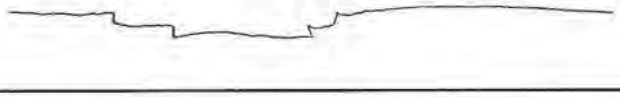
Anthropogenic Modifications: Road Culvert Grazing Channel Channelized Riprap Other:
Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:



Additional Description:
Hydro Indicators
Bed/Bank, Δ in sediment texture
Drift deposit

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Comment:
Break in bank slope X
Other:

Low-Flow Channel: X <1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover <1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other: Very Fine Sand

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 2 Tree % Cover 0 Shrub % Cover 1 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

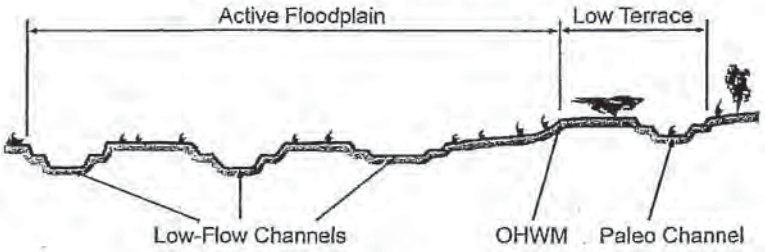
Low Terrace: X Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

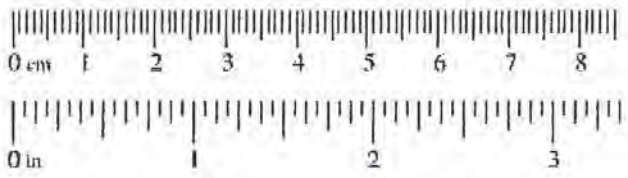
Comments: N/A

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: AR and CC	Time: 0950	Upstream Photo / Downstream Photo
Date: 9/26/2016	Feature ID: 5G-7 ~~5G~~	Location: Mojave Desert	
Circle Preliminary Status: USACE (CDFW RWQCB)		Do Normal Conditions Exist? Y / Significant Disturbance? N	
Circle Flow Character: (Ephemeral) Intermittent Perennial		Potential Wetland? Hydrology / Wetland Plants / Surface Water/Depth:	
OHWM Recorded by: (Field Map) GPS GIS Digitizing			
Side Slope Estimate: gentle slope			
Veg Type(s) in Drainage: unveg in channel			

Anthropogenic Modifications: (Road) Grazing Channelized Culvert Channel Riprap Other: — Upstream Blocked / Downstream Blocked / Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads (Utility Lines) Other: Open Space

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X <1 Tree % Cover Ø Shrub % Cover Ø Herb % Cover <1

Circle average sediment texture — Sand: (Fine) Medium Course Very Coarse

Silt: Fine Medium Coarse — Other:

Circle Indicators: Mudcracks Ripples — Drift/Debris (Presence of bed and bank) — Benches Soil development Surface relief — Other: Δ in sediment texture

Community succession: NA / Early (herbs/seedlings) X / Mid (herbs/shrubs/saplings / Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 2 Tree % Cover Ø Shrub % Cover 1 Herb % Cover 1

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

(Granule Pebble) Cobble Boulder — Other: Granule to Pebble

Circle Indicators: Mudcracks Ripples — Drift/Debris (Presence of bed and bank) — Benches Soil development Surface relief — Other: Δ in sediment texture

Community succession: NA / Early (herbs/seedlings) X / Mid (herbs/shrubs/saplings / Late (herbs/shrubs/trees)

Comments:

Low Terrace: X 15 Tree % Cover Ø Shrub % Cover 10 Herb % Cover 5

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Granule (Pebble) Cobble Boulder — Other: Slit w/ Pebble

Circle Indicators: Mudcracks Ripples — Drift/Debris (Presence of bed and bank) — Benches Soil development Surface relief — Other: Δ in sediment texture

Community succession: NA / Early (herbs/seedlings) / Mid (herbs/shrubs/saplings X / Late (herbs/shrubs/trees)

Comments:

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	
20-40	
40-60	
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

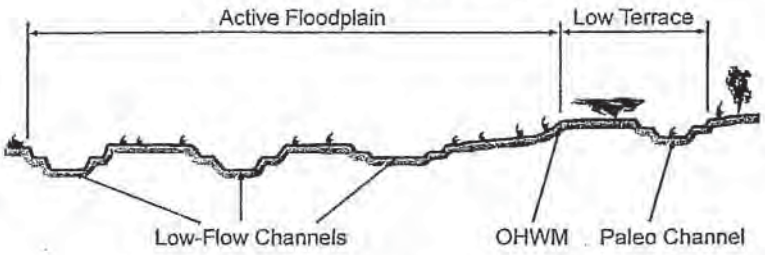
Additional Description:

Hydro Indicators

Bed/Bank,

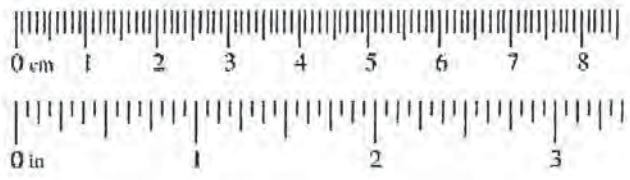
Δ in sediment texture

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1000
Path 46

Date: 9/26/2016 Feature ID: 5G-8 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map, GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: Unveg in channel

Upstream Photo
Downstream Photo

Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100

Anthropogenic Modifications: Road Culvert Other: Grazing Channel Channelized Riprap
Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

Additional Description:
Hydro Indicators
Bed/Bank, Δ in sediment texture, Drift deposit

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Comment:
Break in bank slope X
Other:

Low-Flow Channel: X 0 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0
Circle average sediment texture Sand Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA X
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 1 Tree % Cover 0 Shrub % Cover <1 Herb % Cover <1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments:

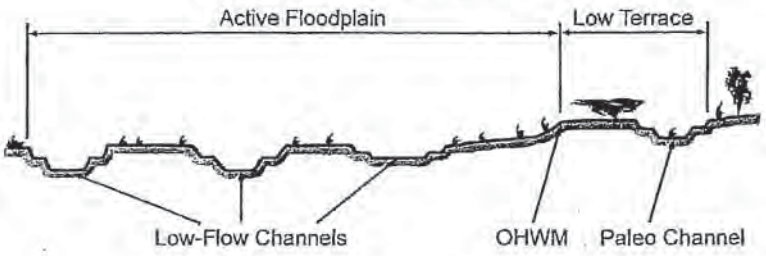
Low Terrace: X Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

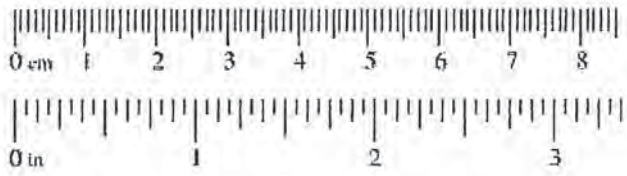
Comments: N/A

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1010
Path 46

Date: 9/26/2016 Feature ID: SG-9 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: Unveg in Channel

Upstream Photo
Downstream Photo

Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

Additional Description:
Hydro Indicators
Bed/Bank, Δ in sediment texture
Soil Cracks

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Break in bank slope X
Other:
Comment:

Low-Flow Channel: X 41 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 41
Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other: Medium Sand w/ Coarse Silt

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 10 Tree % Cover 0 Shrub % Cover 5 Herb % Cover 1
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Fine Sand w/ Pebble

Circle Indicators: ~~Mudcracks~~ Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

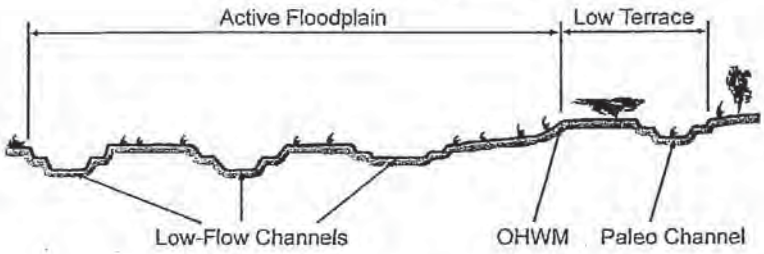
Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

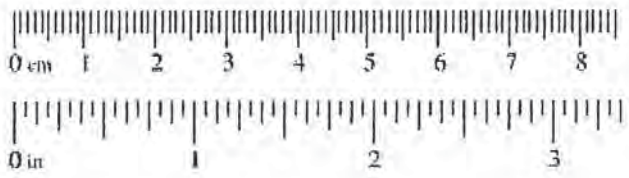
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1015 Upstream Photo
Path 46 Downstream Photo

Date: 9/21/2016 Feature ID: SG-10 Location: Mojave Desert

Circle Preliminary Status: USACE (CDFW) RWQCB Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: (Ephemeral) Intermittent Perennial Potential Wetland?
Hydrology
OHWM Recorded by: (Field Map) GPS GIS Digitizing Wetland Plants
Surface Water/Depth:

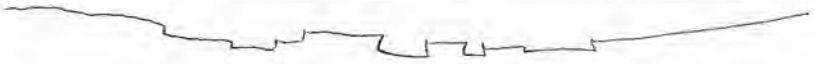
Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: Unveg in channel

Anthropogenic Modifications: (Road) Grazing Channelized Upstream Blocked
Culvert Channel Riprap Downstream Blocked
Other: Trash Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads (Utility Lines) Other: Open Space

Stream Cross Section Drawing:



OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Comment:
Break in bank slope X
Other:

Low-Flow Channel: X 4 Tree % Cover Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium (Coarse) Other:
Circle Indicators: (Mudcracks) Ripples
(Drift/Debris) (Presence of bed and bank)
Benches Soil development Surface relief
Other: Δ in sediment texture
Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)
Comments:

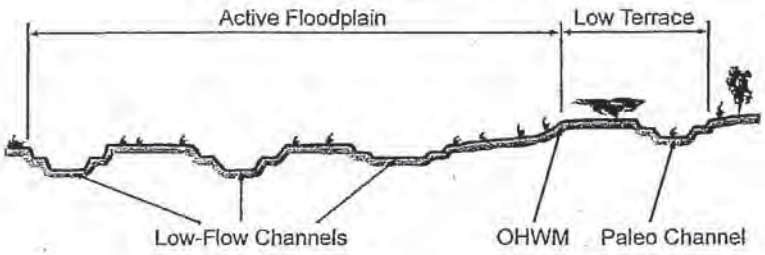
Active Floodplain: X 4 Tree % Cover 0 Shrub % Cover 3 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium (Course) Very Coarse
(Granule) Pebble Cobble Boulder Other: Coarse to Granule
Circle Indicators: Mudcracks Ripples
Drift/Debris (Presence of bed and bank)
Benches Soil development Surface relief
Other: Δ in sediment texture
Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)
Comments:

Low Terrace: X 15 Tree % Cover 10 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule (Pebble) Cobble Boulder Other:
Circle Indicators: Mudcracks Ripples
Drift/Debris (Presence of bed and bank)
Benches Soil development Surface relief
Other: Δ in sediment texture
Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)
Comments:

Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X
Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100
Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

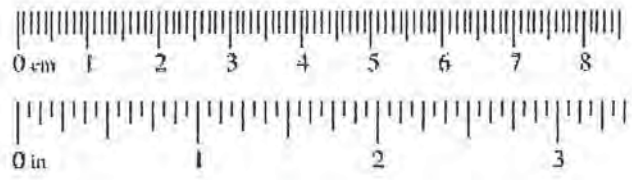
Additional Description:
Hydro Indic.
Bed/Bank,
Δ in sediment texture,
Soil Cracks,
Drift deposits

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
10.08		256	Boulder	
2.56		64	Cobble	Gravel
0.157		4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SH A
Investigator(s): J. Cain, C. Renfrew

Date: 09.22.14 **Time:** 1035
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

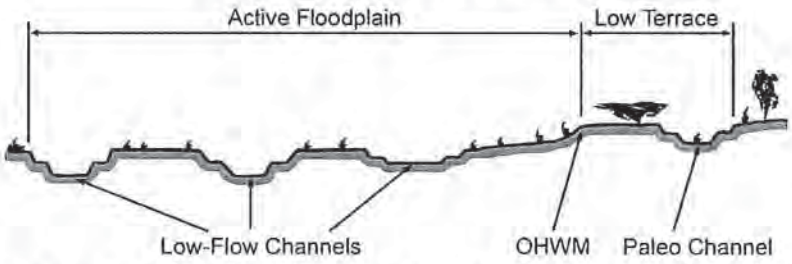
Brief site description:

Desert Wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

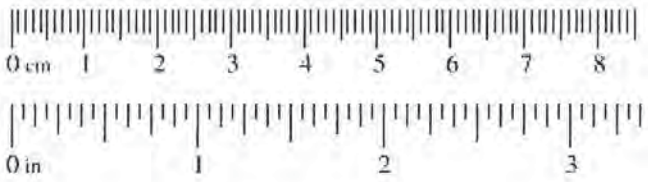


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SH-A **Date:** 09.22.16 **Time:** 1035

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: coarse

Total veg cover: ____ % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 5H-A **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: ____% Tree: 10 % Shrub: 2 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1035	Upstream Photo	X	**Site Description:**	
			Downstream Photo		Stream is:	
Date: 9/22/2016	Feature ID: SH-A	Location: Mojave Desert			Braided	X
					Sinuous	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	
		Significant Disturbance?		X	Straight	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	
		Hydrology			Bowl Shaped	X
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	
		Surface Water/Depth:			Vegetation % In Stream:	
Side Slope Estimate: Moderate					0-20	X
Veg Type(s) in Drainage: Larrea Ambrosia					20-40	
					40-60	
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked	X	60-80	
	Culvert Channel Riprap		Downstream Blocked		80-100	
	Other:		Lateral Flow Blocked		Stream Type:	
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment	
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel	
	Roads Utility Lines Other:				Desert Wash	X
Stream Cross Section Drawing:					Flowing River/Stream	
					Dry Streambed	
'OH'					Additional Description:	

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators:	Community succession:	
Mudcracks Ripples	NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	X
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 2 Herb % Cover 1

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators:	Community succession:	
Mudcracks Ripples	NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	X
Other:	Late (herbs/shrubs/trees)	

Comments:

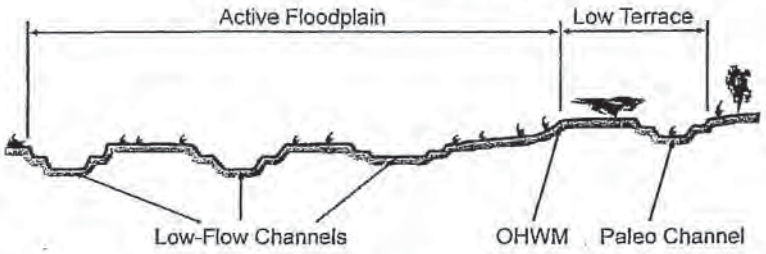
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators:	Community succession:	
Mudcracks Ripples	NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
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	0.079	2.00	Granule	
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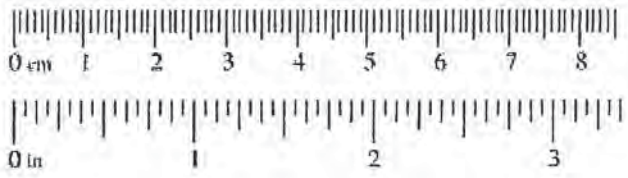


Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SH-13
Investigator(s): I Cain, C Renfrew

Date: 09.22.16 **Time:** 1050
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

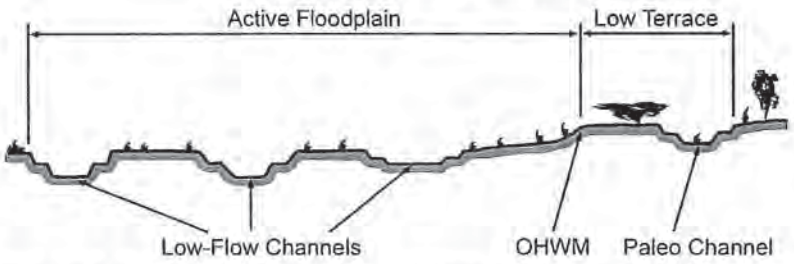
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
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   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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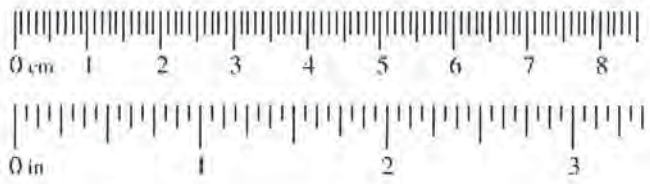
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 5H-B **Date:** 9.22.16 **Time:** 1050

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse

Total veg cover: ____ % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** S4-B **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

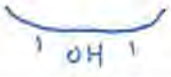
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1050	Upstream Photo X Downstream Photo
Date: 9/22/2016	Feature ID: SH-B	Location: Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist? X Significant Disturbance? X	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland? Hydrology Wetland Plants Surface Water/Depth:	
OHWM Recorded by: Field Map GPS GIS Digitizing			
Side Slope Estimate: Slight			
Veg Type(s) in Drainage: —			

Anthropogenic Modifications:	Road Grazing Channelized Culvert Channel Riprap Other:	Upstream Blocked Downstream Blocked Lateral Flow Blocked	
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:		
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture Roads Utility Lines Other:		
Stream Cross Section Drawing:	OH		



OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		
Comment:			

Low-Flow Channel: ✓ Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA Early (herbs/seedlings) Mid (herbs/shrubs/saplings Late (herbs/shrubs/trees)	X

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA Early (herbs/seedlings) Mid (herbs/shrubs/saplings Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

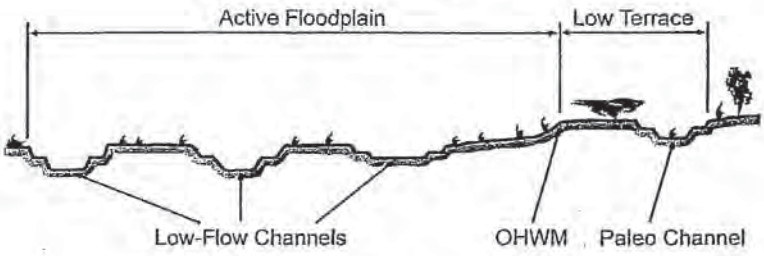
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA Early (herbs/seedlings) Mid (herbs/shrubs/saplings Late (herbs/shrubs/trees)	

Comments:

Site Description:	
Stream is:	
Braided	
Sinuous	
Curved	X
Straight	
Entrenched	
Bowl Shaped	
Shallow	X
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	
Additional Description:	

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SH-C
Investigator(s): I Cain, C Renfrew

Date: 09.22.16 **Time:** 1105
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

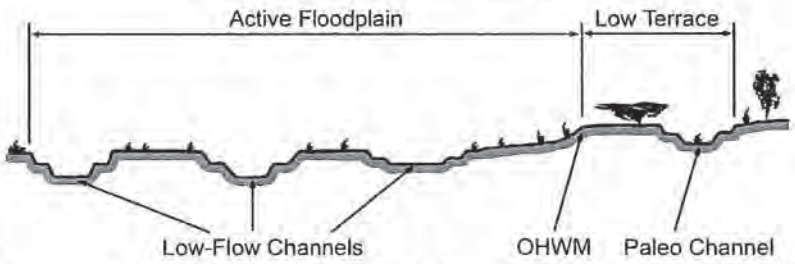
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

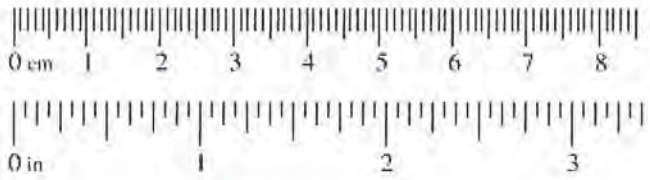


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SH-C **Date:** 09.22.16 **Time:** 1105

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: very coarse

Total veg cover: ____ % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SH-C **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule/pebble

Total veg cover: 20 % Tree: 0 % Shrub: 10 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1105	Upstream Photo	X	**Site Description:**	
			Downstream Photo		Stream is:	
Date: 9/22/2016	Feature ID: SH-C	Location: Mojave Desert			Braided	X
					Sinuous	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	
		Significant Disturbance?		X	Straight	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	
		Hydrology			Bowl Shaped	
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	X
		Surface Water/Depth:			Vegetation % In Stream:	
Side Slope Estimate: Slight					0-20	X
Veg Type(s) in Drainage: Creosote/Ambrosia					20-40	
					40-60	
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80	
	Culvert Channel Riprap		Downstream Blocked		80-100	
	Other:		Lateral Flow Blocked		Stream Type:	
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment	
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel	
	Roads Utility Lines Other:				Desert Wash	X
Stream Cross Section Drawing:					Flowing River/Stream	
					Dry Streambed	
					Additional Description:	

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel:	X	Tree % Cover 0	Shrub % Cover 0	Herb % Cover 0
Circle average sediment texture		Sand: Fine Medium Course Very Coarse		
Silt: Fine Medium Coarse		Other:		

Circle Indicators: Mudcracks Ripples	Community succession: NA X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain:	X	Tree % Cover 0	Shrub % Cover 10	Herb % Cover 10
Circle average sediment texture		Sand: Fine Medium Course Very Coarse		
Granule Pebble Cobble Boulder		Other:		

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other:	Late (herbs/shrubs/trees)

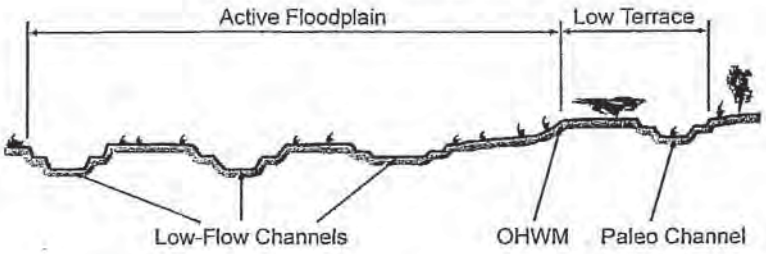
Comments:

Low Terrace:		Tree % Cover	Shrub % Cover	Herb % Cover
Circle average sediment texture		Sand: Fine Medium Course Very Coarse		
Granule Pebble Cobble Boulder		Other:		

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

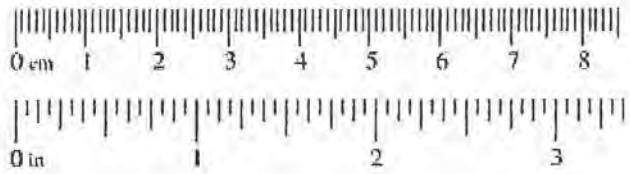
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SH-D
Investigator(s): I Cain, C Renfrew

Date: 09.22.16 **Time:** 1110
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

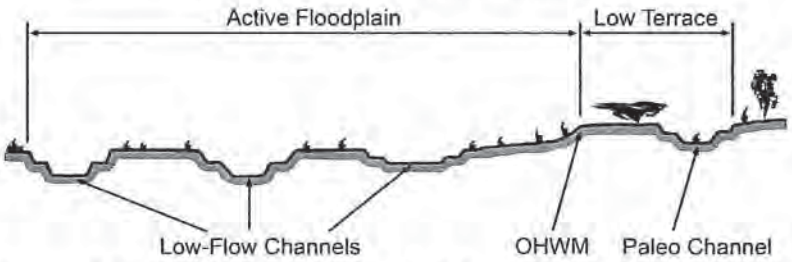
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

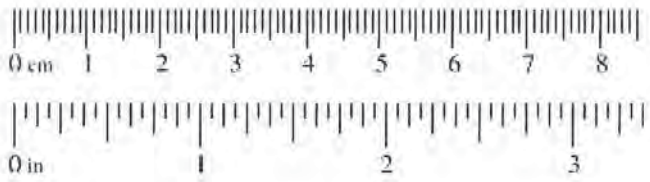


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

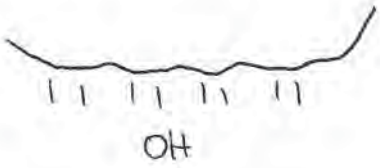
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 5H-D **Date:** 09.22.16 **Time:** 1110

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: ____ % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SH-D **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: _____ % Tree: 0 % Shrub: 20 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: ~~pebble~~

Total veg cover: _____ % ~~Tree: 0 % Shrub: 20 % Herb: 5 %~~

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ ~~Mid (herbaceous~~, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1110
Path 46

Date: 9/22/2016 Feature ID: SH-D Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight

Veg Type(s) in Drainage: Larrea Ambrosia

Upstream Photo X
Downstream Photo

Do Normal Conditions Exist? X
Significant Disturbance? X

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Site Description:

Stream is:
- Braided X
- Sinuous
- Curved
- Straight
- Entrenched
- Bowl Shaped
- Shallow X

Vegetation % In Stream:
- 0-20
- 20-40 X
- 40-60
- 60-80
- 80-100

Stream Type:
- V-Ditch w/ Sediment
- Eroded Channel
- Desert Wash X
- Flowing River/Stream
- Dry Streambed

Additional Description:

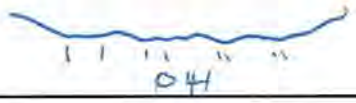
Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA X
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 20 Herb % Cover 5
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

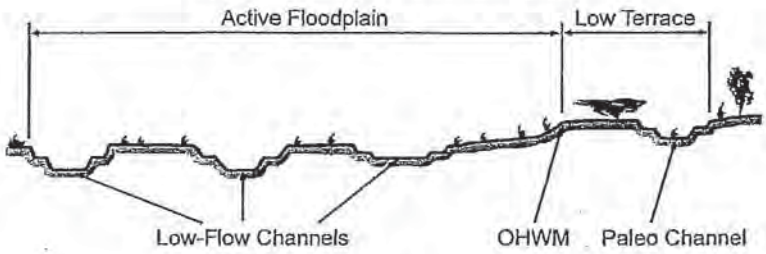
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

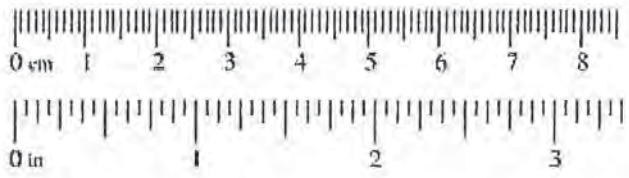
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SH-E
Investigator(s): I Cain, C Renfrew

Date: 09.22.16
Town: Mojave Desert
Photo begin file#:

Time: 1115
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

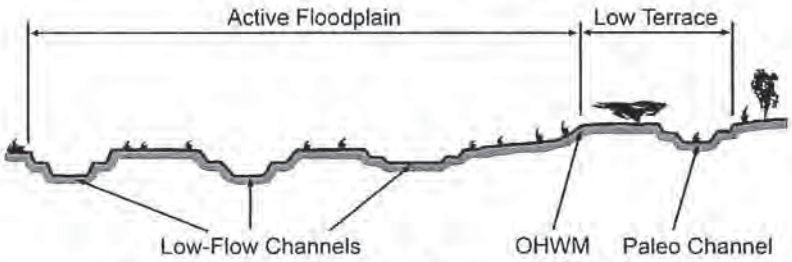
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

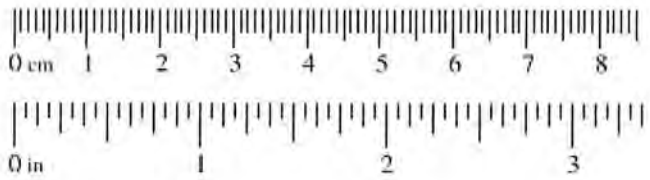


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 5H-E **Date:** 09.22.16 **Time:** 1115

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 5H-E **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1115	Upstream Photo	X	**Site Description:**	
			Downstream Photo		Stream is:	
Date: 9/~~29~~/2016	Feature ID: SH-E	Location: Mojave Desert			Braided	
					Sinuous	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	
		Significant Disturbance?		?	Straight	X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	
		Hydrology			Bowl Shaped	?
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	
		Surface Water/Depth:			Vegetation % In Stream:	
Side Slope Estimate: Moderate					0-20	X
Veg Type(s) in Drainage:					20-40	
					40-60	
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80	
	Culvert Channel Riprap		Downstream Blocked		80-100	
	Other:		Lateral Flow Blocked		Stream Type:	
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment	
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel	
	Roads Utility Lines Other:				Desert Wash	X
Stream Cross Section Drawing:					Flowing River/Stream	
					Dry Streambed	
					Additional Description:	

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture: Silt: Fine Medium Coarse — Sand: Fine Medium Course Very Coarse — Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA X; Early (herbs/seedlings); Mid (herbs/shrubs/saplings); Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Granule Pebble Cobble Boulder — Sand: Fine Medium Course Very Coarse — Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA; Early (herbs/seedlings); Mid (herbs/shrubs/saplings); Late (herbs/shrubs/trees)

Comments:

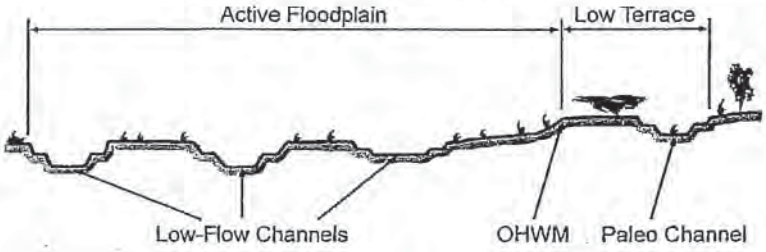
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Granule Pebble Cobble Boulder — Sand: Fine Medium Course Very Coarse — Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA; Early (herbs/seedlings); Mid (herbs/shrubs/saplings); Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
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	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
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1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
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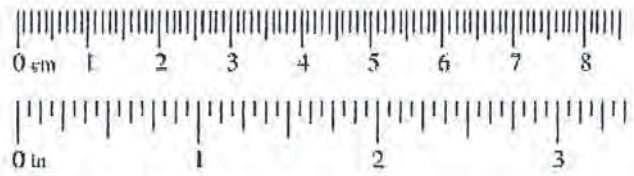
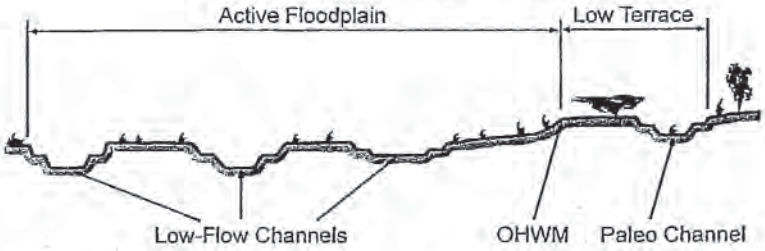


Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: AR and CC	Time: 1030	Upstream Photo Downstream Photo		**Site Description:** Stream is:
Date: 9/22/2016	Feature ID: ~~SH~~ SH-1	Location: Mojave Desert			Braided X Sinuous Curved Straight Entrenched Bowl Shaped Shallow
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist? Y Significant Disturbance? N			
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology Wetland Plants Surface Water/Depth:			
Side Slope Estimate: gentle to moderate slope Veg Type(s) in Drainage: unveg in channel					Vegetation % In Stream: 0-20 20-40 40-60 60-80 80-100
Anthropogenic Modifications: Road Culvert Other:	Grazing Channel	Channelized Riprap	Upstream Blocked Downstream Blocked Lateral Flow Blocked		Stream Type: V-Ditch w/ Sediment Eroded Channel Desert Wash X Flowing River/Stream Dry Streambed
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:	
Circle Surrounding Land Use: Urban Roads	Rural	Commercial Utility Lines	Agriculture Other: Open Space		
Stream Cross Section Drawing:					Additional Description: Hydro Indicators Bed/Bank, A in sediment texture Drift deposit
OHWM: Change in sediment texture X Change in vegetation species Change in vegetation cover X Comment:		Break in bank slope X Other:			
Low-Flow Channel: X ~~X~~ 1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1 Circle average sediment texture Silt: Fine Medium Coarse		Sand: Fine Medium Course Very Coarse Other: Very Fine to Medium Sand w/Pebble			
Circle Indicators: Mudcracks Ripples ~~Drift/Debris~~ Presence of bed and bank Benches Soil development Surface relief Other: A in		Community succession: NA Early (herbs/seedlings) Mid (herbs/shrubs/saplings Late (herbs/shrubs/trees)			
Comments:					
Active Floodplain: X ~~X~~ 3 Tree % Cover 0 Shrub % Cover 1 Herb % Cover 2 Circle average sediment texture Granule Pebble Cobble Boulder		Sand: Fine Medium Course Very Coarse Other: ~~Very Fine~~ Very Fine Sand			
Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other: A in sediment texture		Community succession: NA Early (herbs/seedlings) Mid (herbs/shrubs/saplings Late (herbs/shrubs/trees)			
Comments:					
Low Terrace: X ~~X~~ 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5 Circle average sediment texture Granule Pebble Cobble Boulder		Sand: Fine Medium Course Very Coarse Other: Very Fine Sand w/Pebble			
Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other: A in sediment texture		Community succession: NA Early (herbs/seedlings) Mid (herbs/shrubs/saplings Late (herbs/shrubs/trees)			
Comments:					

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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1/32	0.00061	0.0156	Medium silt	Silt
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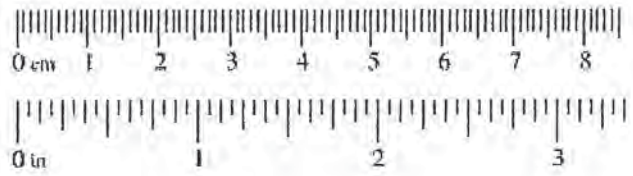


Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: ~~ER and IC~~ CDC, AR Time: 1012
Path 46
Date: 9/22/2016 Feature ID: S1-1 Location: Mojave Desert

Circle Preliminary Status: USACE (CDFW) RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: (Ephemeral) Intermittent Perennial

Potential Wetland?
Hydrology
Wetland Plants

OHWM Recorded by: (Field Map) GPS GIS Digitizing

Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: Veg in Channel

Anthropogenic Modifications: (Road) Grazing Channelized
Culvert Channel Riprap
Other: Trash

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads (Utility Lines) Other: Open Space

Stream Cross Section Drawing:

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover
Comment:

Break in bank slope X
Other:

Low-Flow Channel: 0 2 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 2
Circle average sediment texture
Silt: Fine Medium Coarse
Sand: (Very) Fine Medium (Course) Very Coarse
Other: Very Fine to Coarse Sand

Circle Indicators: Mudcracks Ripples
Drift/Debris (Presence of bed and bank)
Benches Soil development Surface relief
Other: Δ in sediment

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: 0 Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments: N/A

Low Terrace: 0 Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings)
Late (herbs/shrubs/trees)

Comments: N/A

√

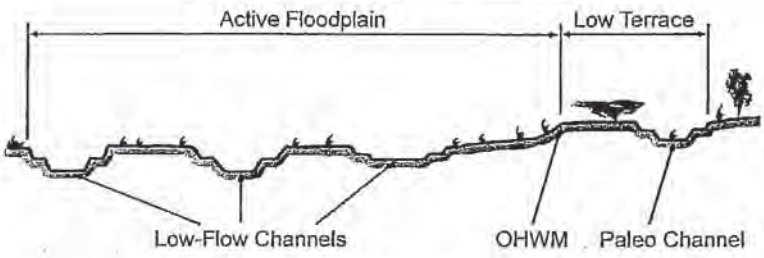
Site Description:
Stream is:
Braided
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Additional Description:
Hydro Indicators
Bed/Bank
Δ in sediment

Hydrogeomorphic Floodplain Units



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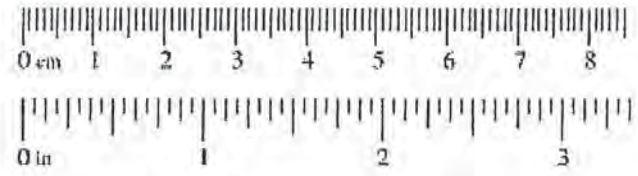


Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1040
Path 46
Date: 9/22/2016 Feature ID: S1-2 Location: Mojave Desert

Upstream Photo
Downstream Photo

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

Potential Wetland?
Hydrology
~~Wetland Plants~~

OHWM Recorded by: Field Map GPS GIS Digitizing

Surface Water/Depth:

Side Slope Estimate: gentle to moderate slope
Veg Type(s) in Drainage: veg in channel

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Comment:

Break in bank slope X
Other:

Low-Flow Channel: X ~~1~~ Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture
~~Silt: Fine Medium Coarse~~ Sand Fine Medium Course Very Coarse
Other: Very Fine Sand w/Pebble

Circle Indicators: ~~Mudcracks~~ Ripples
Drift/Debris Presence of bed and bank
Benches Soil development ~~Surface relief~~
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X ~~3~~ Tree % Cover 0 Shrub % Cover 1 Herb % Cover 2
Circle average sediment texture
~~Granule Pebble Cobble Boulder~~ ~~Sand Fine Medium Course Very Coarse~~ *Coarse Silt w/ Granule
Other: ~~Very Fine Sand w/Pebble~~

Circle Indicators: ~~Mudcracks~~ Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Low Terrace: X ~~15~~ Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture
Granule Pebble Cobble Boulder Sand: Fine Medium Course Very Coarse
Other: ~~Coarse~~ Silt w/Cobble

Circle Indicators: ~~Mudcracks~~ Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

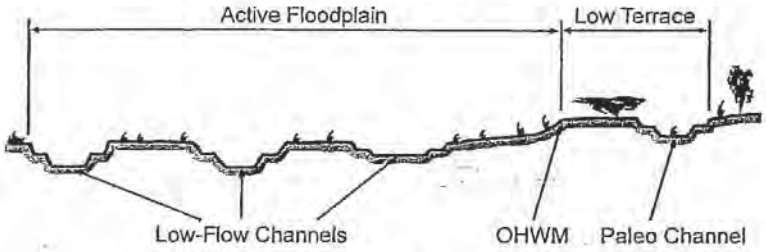
Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100 J

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

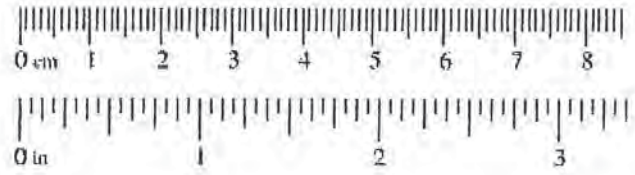
Additional Description:
Hydrology Indicators
Bed/Bank,
Δ in sediment texture

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: AR and CC Time: 1050
Path 46

Date: 9/22/2016 Feature ID: S1-3 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? N Y
Significant Disturbance? N Y

Circle Flow Character: Ephemeral Intermittent Perennial

Potential Wetland?
Hydrology
Wetland Plants

OHWM Recorded by: Field Map GPS GIS Digitizing

Surface Water/Depth:

Side Slope Estimate: moderate slope

Veg Type(s) in Drainage: veg in channel

Anthropogenic Modifications: Road Grazing Channelized
~~Culvert~~ Channel Riprap
Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: ~~1~~ 10 Tree % Cover 0 Shrub % Cover Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other: Medium to Very Coarse

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings) X
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other: Δ in sediment	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 30 Tree % Cover 0 Shrub % Cover 1 Herb % Cover 2

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Coarse Silt w/Pebble

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other: Δ in sediment	Late (herbs/shrubs/trees)

Comments:

Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Silt w/Cobble

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other: Δ in sediment texture	Late (herbs/shrubs/trees)

Comments:

Site Description:

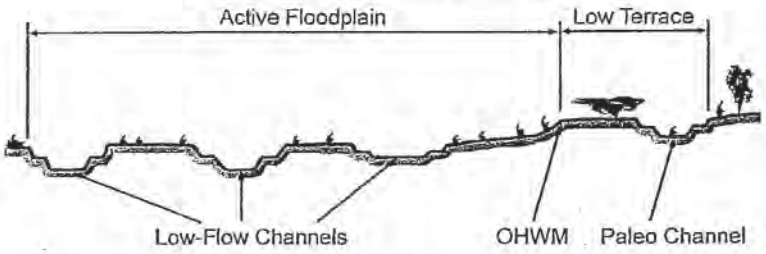
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow

Vegetation % in Stream:
0-20
20-40
40-60 X
60-80
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

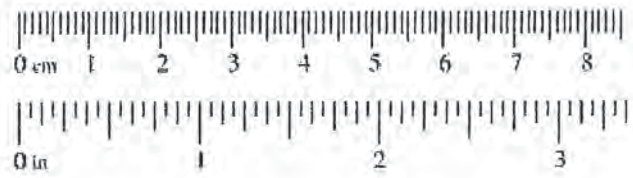
Additional Description:
Hydro Indicators
Bed/Bank, Δ in sediment texture

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: ~~CR and IC~~ CRC, AR Time:
Path 46

Date: 9/22/2016 Feature ID: 51-4 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: gentle slope + moderate

Veg Type(s) in Drainage: on veg in channel

Upstream Photo
Downstream Photo

Do Normal Conditions Exist? Y
Significant Disturbance? N

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Site Description:

Stream is:
- Braided X
- Sinuous
- Curved
- Straight X
- Entrenched
- Bowl Shaped
- Shallow X

Vegetation % In Stream:
- 0-20
- 20-40
- 40-60
- 60-80
- 80-100

Stream Type:
- V-Ditch w/ Sediment
- Eroded Channel
- Desert Wash X
- Flowing River/Stream
- Dry Streambed

Additional Description:
Hydro Indictors
Bed/Bank, Δ in sediment texture, Drift deposit

Anthropogenic Modifications: Road Culvert Other: Grazing Channel Channelized Riprap
Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:
- Change in sediment texture X
- Change in vegetation species
- Change in vegetation cover
- Break in bank slope X
- Other:

Comment:

Low-Flow Channel: 1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other: Medium Sand w/Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession:
- NA
- Early (herbs/seedlings) X
- Mid (herbs/shrubs/saplings
- Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 4 Tree % Cover 0 Shrub % Cover 2 Herb % Cover 2
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Coarse Silt w/Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank
Benches: Soil development Surface relief
Other: Δ in sediment texture

Community succession:
- NA
- Early (herbs/seedlings)
- Mid (herbs/shrubs/saplings X
- Late (herbs/shrubs/trees)

Comments:

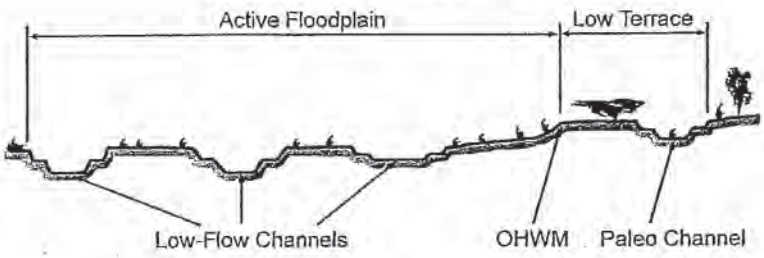
Low Terrace: 15 Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Silt w/ Cobble

Circle Indicators: Mudcracks Ripples
Drift/Debris: Presence of bed and bank X
Benches: Soil development Surface relief
Other: Δ in sediment texture

Community succession:
- NA
- Early (herbs/seedlings)
- Mid (herbs/shrubs/saplings
- Late (herbs/shrubs/trees) X

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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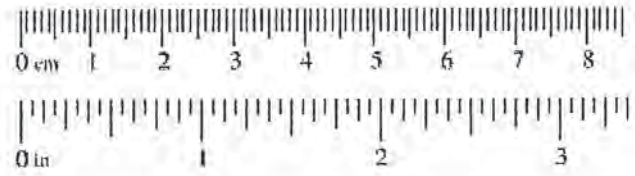
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: ~~CR and IC~~ CRC, AR Time: 0950
Path 46
Date: 9/22/2016 Feature ID: SJ-1 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: veg in channel

Anthropogenic Modifications: Road Culvert Grazing Channel Channelized Riprap Other:

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X 1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA / Early (herbs/seedlings) X / Mid (herbs/shrubs/saplings) / Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X 3 Tree % Cover 0 Shrub % Cover 1 Herb % Cover 2
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Fine Sand w/ Pebble

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA / Early (herbs/seedlings) / Mid (herbs/shrubs/saplings) / Late (herbs/shrubs/trees)

Comments:

Low Terrace: X 15 Tree % Cover 0 Shrub % Cover 5 Herb % Cover 10
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other: Fine Sand w/ Granule

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA / Early (herbs/seedlings) / Mid (herbs/shrubs/saplings) X / Late (herbs/shrubs/trees)

Comments:

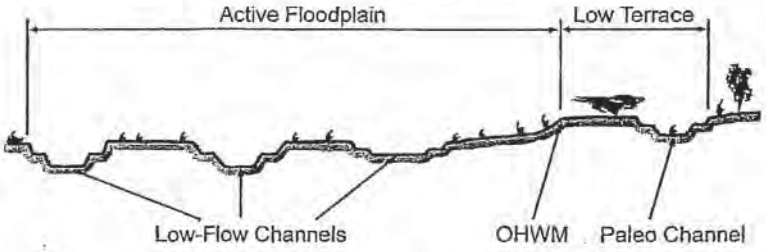
Site Description:
Stream is:
Braided
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow X

Vegetation % In Stream:
0-20
20-40
40-60
60-80 X
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

Additional Description:
Hydro Indicators
Bed/Bank,
Δ in sediment texture

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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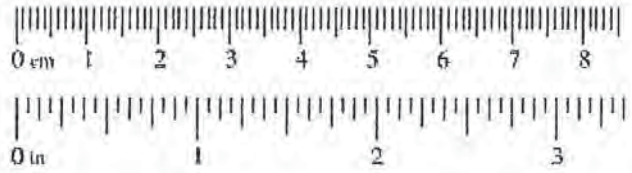
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 | **Date:** 09.22.16 | **Time:** 1020
Project Number: 3MBC000100 Task 00300 | **Town:** Mojave Desert | **State:** CA
Stream: 5J-A | **Photo begin file#:** | **Photo end file#:**
Investigator(s): I Cain, C Renfrew

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

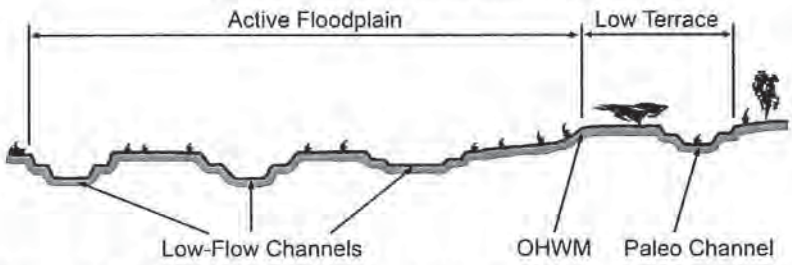
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

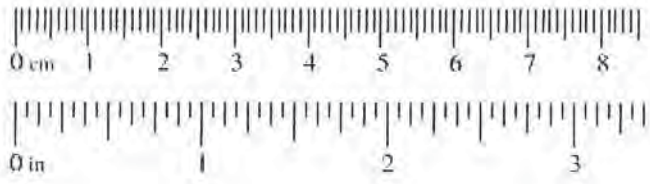


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

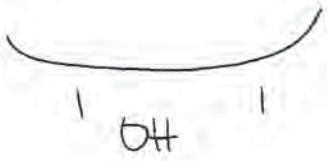
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	
		Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SJ-A **Date:** 09.22.16 **Time:** 1020

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SJ-A **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: ____ % Tree: Ø % Shrub: 3 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1020	Upstream Photo	X	**Site Description:**		
			Downstream Photo		Stream is:		
Date: 9/22/2016	Feature ID: SJ-A	Location: Mojave Desert			Braided	X	
					Sinuous		
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved		
		Significant Disturbance?		X	Straight		
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched		
		Hydrology			Bowl Shaped		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	X	
		Surface Water/Depth:			Vegetation % In Stream:		
Side Slope Estimate: Slight / Plain					0-20	X	
Veg Type(s) in Drainage: Larrea					20-40		
					40-60		
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80		
	Culvert Channel Riprap		Downstream Blocked	X	80-100		
	Other:		Lateral Flow Blocked		Stream Type:		
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment		
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel		
	Roads Utility Lines Other:				Desert Wash	X	
Stream Cross Section Drawing:					Flowing River/Stream		
					Dry Streambed		
					Additional Description:		

OH

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 3 Herb % Cover 5

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other:	Late (herbs/shrubs/trees)

Comments:

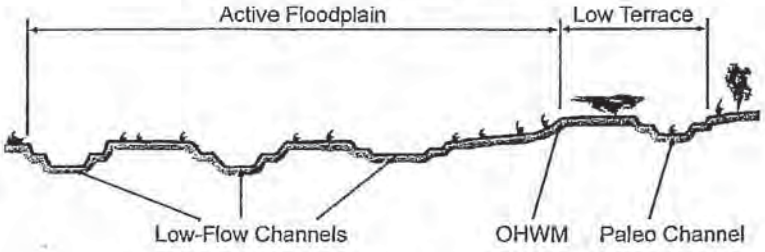
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

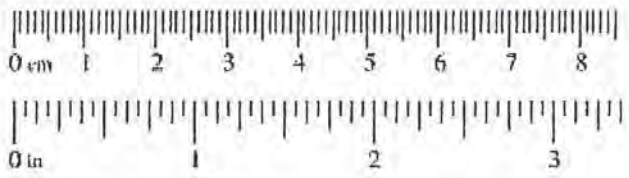
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5K-1
Investigator(s): I Cain, C Renfrew

Date: 09.22.16 **Time:** 0930
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

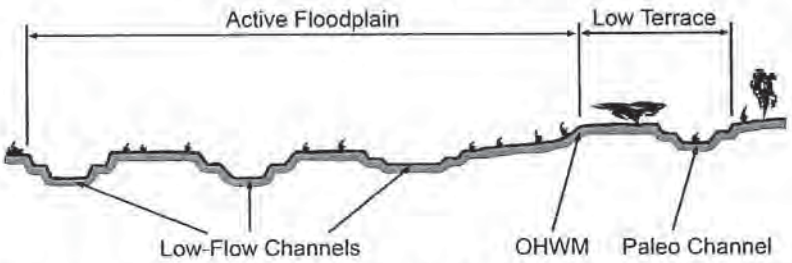
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

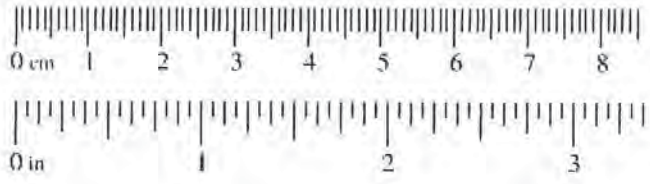


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SK-1 **Date:** 09.22.16 **Time:** 0930

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: Ø % Tree: Ø % Shrub: 1 % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 5K-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

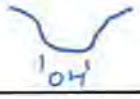
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 930	Upstream Photo	X	**Site Description:**
			Downstream Photo		Stream is:
Date: 9/22/2016	Feature ID: ~~2~~ SK-1	Location: Mojave Desert			Braided
					Sinuous X
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved
		Significant Disturbance?			Straight
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched X
		Hydrology			Bowl Shaped
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow
		Surface Water/Depth:			Vegetation % In Stream:
Side Slope Estimate:					0-20 X
Veg Type(s) in Drainage:					20-40
					40-60
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80
	Culvert Channel Riprap		Downstream Blocked		80-100
	Other:		Lateral Flow Blocked	X	Stream Type:
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel
	Roads Utility Lines Other:				Desert Wash X
Stream Cross Section Drawing:					Flowing River/Stream
					Dry Streambed
					Additional Description:



OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			

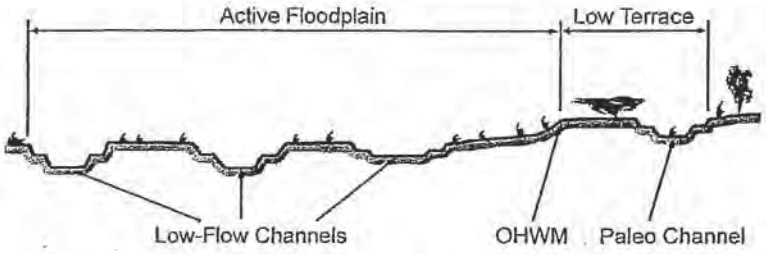
Comment:

Low-Flow Channel:	X	Tree % Cover 0	Shrub % Cover 1	Herb % Cover 0	
Circle average sediment texture		Sand: Fine Medium Course Very Coarse			
Silt: Fine Medium Coarse		Other:			
Circle Indicators: Mudcracks Ripples			Community succession:	NA	
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)	
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings	X
Other:				Late (herbs/shrubs/trees)	
Comments:					

Active Floodplain:		Tree % Cover	Shrub % Cover	Herb % Cover	
Circle average sediment texture		Sand: Fine Medium Course Very Coarse			
Granule Pebble Cobble Boulder		Other:			
Circle Indicators: Mudcracks Ripples			Community succession:	NA	
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)	
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings	
Other:				Late (herbs/shrubs/trees)	
Comments:					

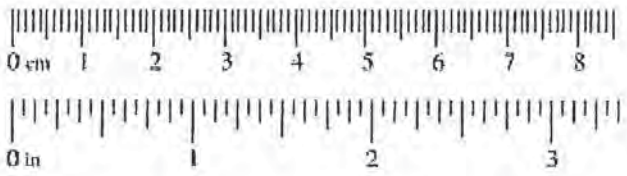
Low Terrace:		Tree % Cover	Shrub % Cover	Herb % Cover	
Circle average sediment texture		Sand: Fine Medium Course Very Coarse			
Granule Pebble Cobble Boulder		Other:			
Circle Indicators: Mudcracks Ripples			Community succession:	NA	
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)	
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings	
Other:				Late (herbs/shrubs/trees)	
Comments:					

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5K-2
Investigator(s): I Cain, C Renfrew

Date: 09.22.16 **Time:** 0940
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

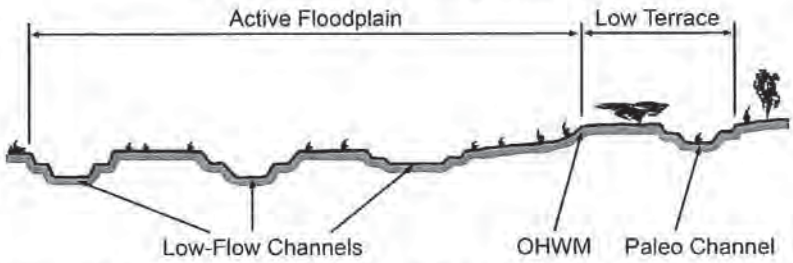
Brief site description:

Desert Wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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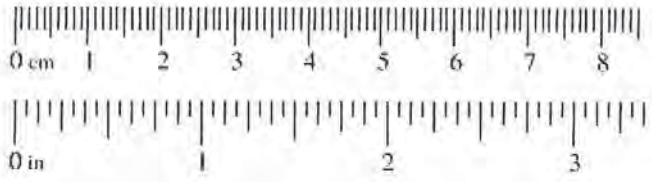
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SK-2 **Date:** 09.22.16 **Time:** 0940

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SK-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule/pebble

Total veg cover: 25 % Tree: 0 % Shrub: 5 % Herb: 20 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 940 Path 46	Upstream Photo	X	**Site Description:**
	Downstream Photo		Stream is:
Date: 9/20/2016 Feature ID: SK-2 Location: Mojave Desert			Braided X
			Sinuous
Circle Preliminary Status: USACE CDFW RWQCB	Do Normal Conditions Exist?	X	Curved
	Significant Disturbance?	X	Straight
Circle Flow Character: Ephemeral Intermittent Perennial	Potential Wetland?		Entrenched
	Hydrology		Bowl Shaped X
OHWM Recorded by: Field Map GPS GIS Digitizing	Wetland Plants		Shallow
	Surface Water/Depth:		Vegetation % In Stream:
Side Slope Estimate: Moderate			0-20
Veg Type(s) in Drainage: Larrea/Ambrosia			20-40 X
			40-60
Anthropogenic Modifications: Road Grazing Channelized	Upstream Blocked		60-80
Culvert Channel Riprap	Downstream Blocked		80-100
Other:	Lateral Flow Blocked		Stream Type:
Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:			V-Ditch w/ Sediment
Circle Surrounding Land Use: Urban Rural Commercial Agriculture			Eroded Channel
Roads Utility Lines Other:			Desert Wash X
Stream Cross Section Drawing:			Flowing River/Stream
			Dry Streambed
			Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

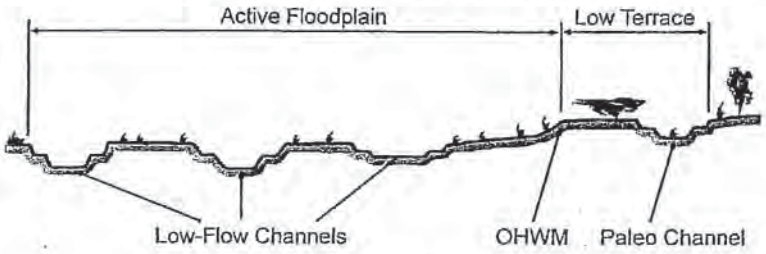
Comment:

Low-Flow Channel: 60X Tree % Cover 0	Shrub % Cover 1	Herb % Cover 1	
Circle average sediment texture	Sand: Fine Medium Course Very Coarse		
Silt: Fine Medium Coarse	Other:		
Circle Indicators: Mudcracks Ripples	Community succession:	NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	X
Other:		Late (herbs/shrubs/trees)	
Comments:			

Active Floodplain: X Tree % Cover 6	Shrub % Cover 5	Herb % Cover 20	
Circle average sediment texture	Sand: Fine Medium Course Very Coarse		
Granule Pebble Cobble Boulder	Other:		
Circle Indicators: Mudcracks Ripples	Community succession:	NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	X
Other:		Late (herbs/shrubs/trees)	
Comments:			

Low Terrace: Tree % Cover	Shrub % Cover	Herb % Cover	
Circle average sediment texture	Sand: Fine Medium Course Very Coarse		
Granule Pebble Cobble Boulder	Other:		
Circle Indicators: Mudcracks Ripples	Community succession:	NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	
Comments:			

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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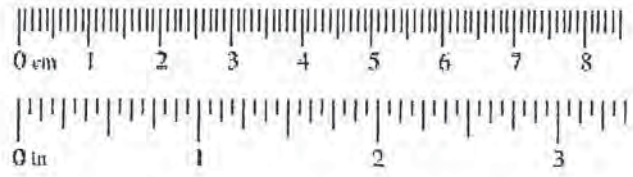
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5K-3
Investigator(s): J Cain, C Renfrow

Date: 09.22.16 **Time:** 1000
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

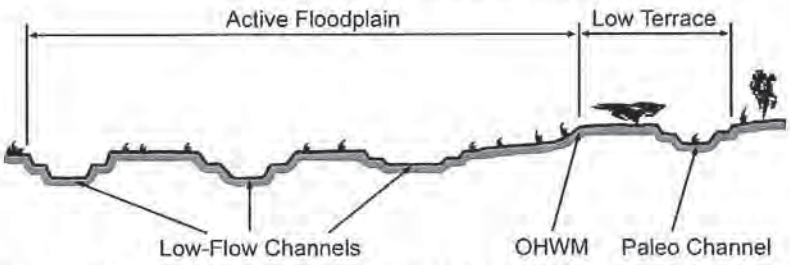
Brief site description:

Desert Wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

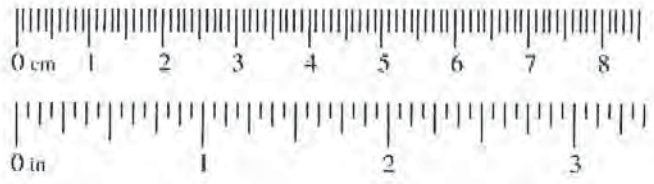


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SK-3 **Date:** 09.22.16 **Time:** 1000

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 3 % Tree: Ø % Shrub: 2 % Herb: 1 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 5k-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: 7 % Tree: 0 % Shrub: 5 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1000	Upstream Photo	✓
			Downstream Photo	
Date: 9/22/2016	Feature ID: SK-3	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: Vertical				
Veg Type(s) in Drainage: Cerrec / Ambr				

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked	X
	Culvert	Channel	Riprap	Downstream Blocked	
	Other:			Lateral Flow Blocked	
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture	
	Roads	Utility Lines	Other:		

Stream Cross Section Drawing:

OH

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		
Comment:			

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 2 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples		Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	X
Other:		Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 2

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples		Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	X
Other:		Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

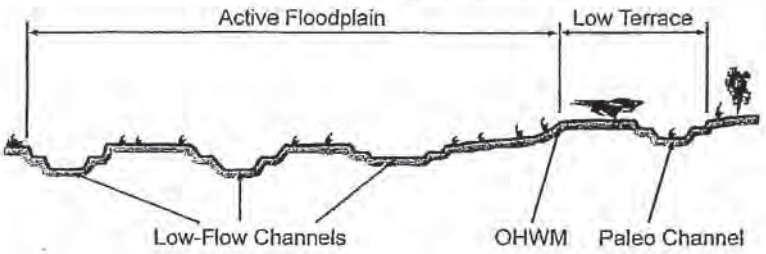
Circle Indicators: Mudcracks Ripples		Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

Comments:

Site Description:	
Stream is:	
Braided	
Sinuous	
Curved	X
Straight	
Entrenched	X
Bowl Shaped	
Shallow	
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
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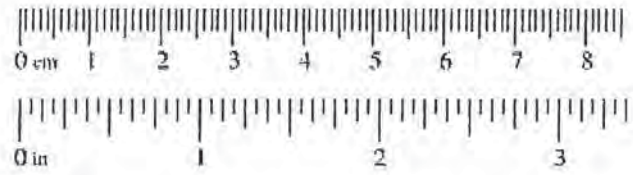


Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SK-4
Investigator(s): I Cain, C Renfrew

Date: 09.22.16 **Time:** 1005
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [X] / N [ ] Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

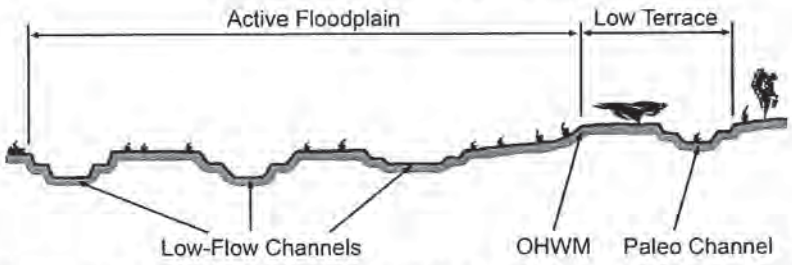
Brief site description:

Desert wash

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
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4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
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   - [X] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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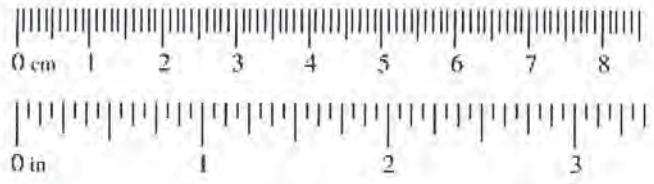
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SK-4 **Date:** 09.22.16 **Time:** 1005

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 1 % Tree: Ø % Shrub: Ø % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SK4 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble/Cobble

Total veg cover: 40 % Tree: 0 % Shrub: 10 % Herb: 30 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1005
Path 46

Date: 9/22/2016 Feature ID: SK-4 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight

Veg Type(s) in Drainage: Larrea tridentata

Upstream Photo	
Downstream Photo	X
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	
20-40	X
40-60	
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

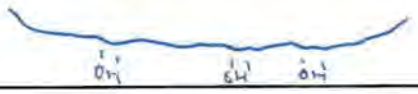
Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked	
Downstream Blocked	X
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 10 Herb % Cover 30

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

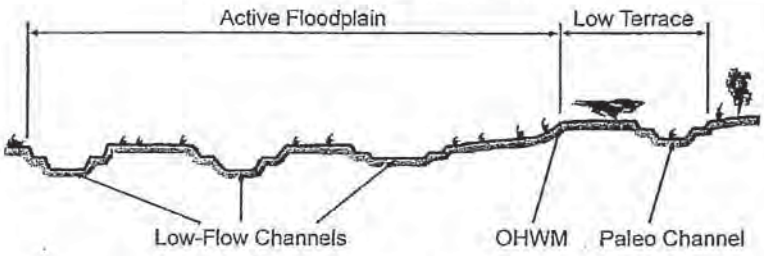
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



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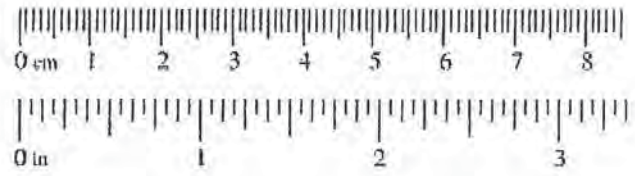


Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5K-5
Investigator(s): I Cain, C Renfrew

Date: 09.22.16 **Time:** 1010
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

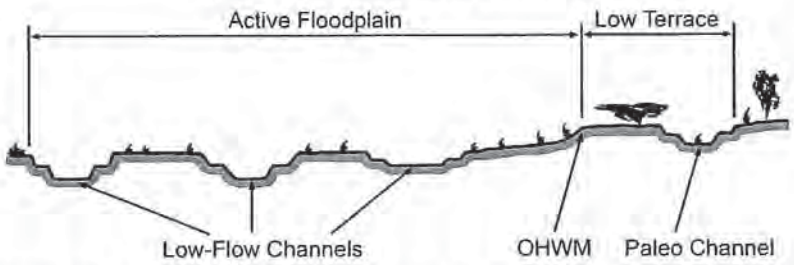
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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   - ☐ GPS
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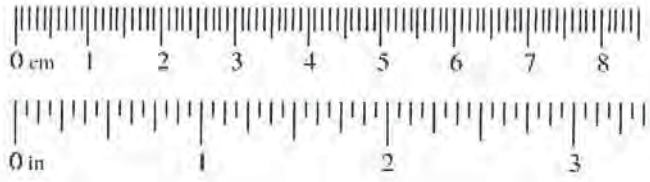
		Coarse sand	
0.020	0.50		Sand
1/2 0.0098	0.25	Medium sand	
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
		Medium silt	
1/32 0.00061	0.0156		Silt
1/64 0.00031	0.0078	Fine silt	
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SK-5 **Date:** 09.22.16 **Time:** 1010

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 5K-5 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1010	Upstream Photo	X	**Site Description:**
			Downstream Photo		Stream is:
Date: 9/22/2016	Feature ID: SK-5	Location: Mojave Desert			Braided / Sinuous / Curved (X) / Straight
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Entrenched (X) / Bowl Shaped (X) / Shallow
		Significant Disturbance?		X	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Vegetation % In Stream:
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology / Wetland Plants			0-20 (X) / 20-40 / 40-60 / 60-80 / 80-100
		Surface Water/Depth:			
Side Slope Estimate: Vertical, then moderate					
Veg Type(s) in Drainage: —					

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked	X
	Culvert	Channel	Riprap	Downstream Blocked	
	Other:			Lateral Flow Blocked	
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture	
	Roads	Utility Lines	Other:		

Stream Type: V-Ditch w/ Sediment / Eroded Channel / Desert Wash (X) / Flowing River/Stream / Dry Streambed

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X — Tree % Cover 0 — Shrub % Cover 0 — Herb % Cover 0

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse — Other:

Circle Indicators: Mudcracks Ripples / Drift/Debris Presence of bed and bank / Benches Soil development Surface relief / Other:

Community succession: NA (X) / Early (herbs/seedlings) / Mid (herbs/shrubs/saplings) / Late (herbs/shrubs/trees)

Comments:

Active Floodplain: — Tree % Cover — Shrub % Cover — Herb % Cover

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder — Other:

Circle Indicators: Mudcracks Ripples / Drift/Debris Presence of bed and bank / Benches Soil development Surface relief / Other:

Community succession: NA / Early (herbs/seedlings) / Mid (herbs/shrubs/saplings) / Late (herbs/shrubs/trees)

Comments:

Low Terrace: — Tree % Cover — Shrub % Cover — Herb % Cover

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

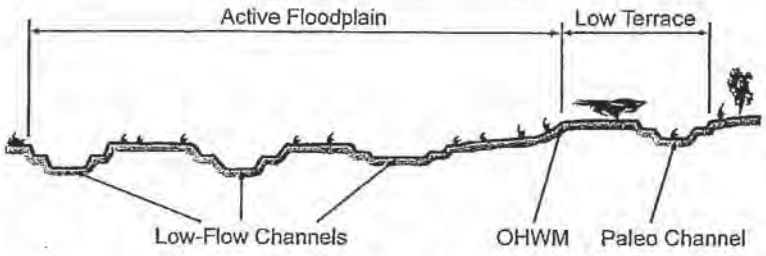
Granule Pebble Cobble Boulder — Other:

Circle Indicators: Mudcracks Ripples / Drift/Debris Presence of bed and bank / Benches Soil development Surface relief / Other:

Community succession: NA / Early (herbs/seedlings) / Mid (herbs/shrubs/saplings) / Late (herbs/shrubs/trees)

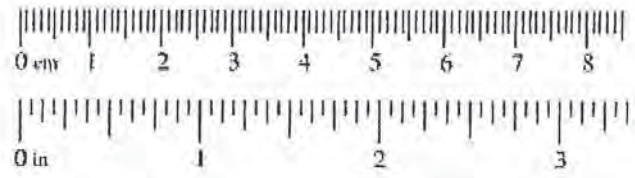
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SL-1
Investigator(s): I Cain, C Renfrew

Date: 09.22.16 **Time:** 0920
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

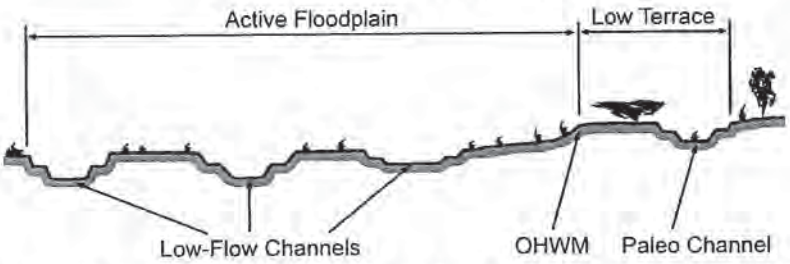
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

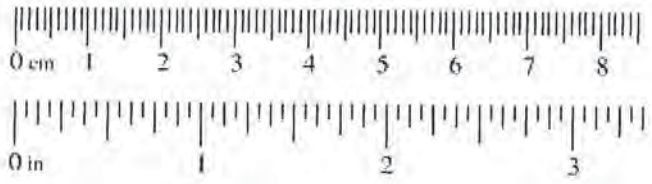


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SL-1 **Date:** 09.22.16 **Time:** 0920

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: 1 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SL-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 920	Upstream Photo	X	**Site Description:**	
			Downstream Photo		Stream is:	
Date: 9/22/2016	Feature ID: SL-1	Location: Mojave Desert			Braided	
					Sinuous	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	X
		Significant Disturbance?		X	Straight	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	
		Hydrology			Bowl Shaped	
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	X
		Surface Water/Depth:			Vegetation % In Stream:	
Side Slope Estimate: Slight					0-20	X
Veg Type(s) in Drainage: Larrea tridentata					20-40	
					40-60	
					60-80	
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		80-100	
	Culvert Channel Riprap		Downstream Blocked		Stream Type:	
	Other:		Lateral Flow Blocked		V-Ditch w/ Sediment	
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				Eroded Channel	
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Desert Wash	X
	Roads Utility Lines Other:				Flowing River/Stream	
Stream Cross Section Drawing:					Dry Streambed	
					Additional Description:	

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 2 Herb % Cover 1

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

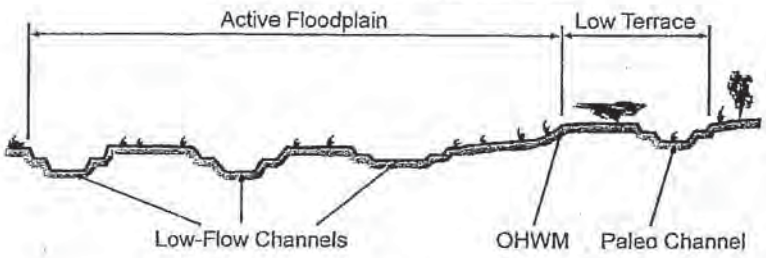
Circle average sediment texture — Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SM-1
Investigator(s): ICain, CRenfrew

Date: 09.22.16 **Time:** 0900
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

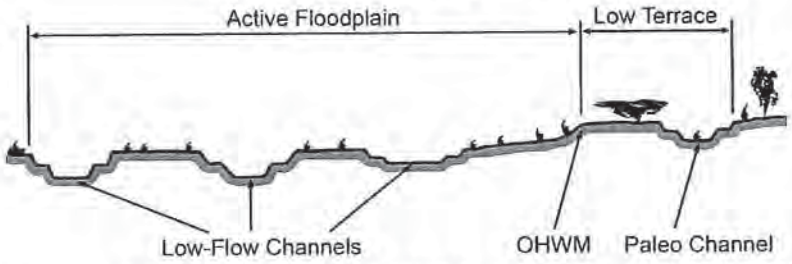
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

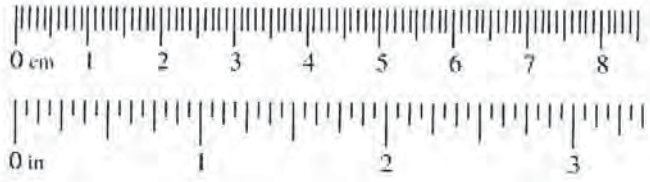


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SM-1 **Date:** 09.22.16 **Time:** 0900

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SM-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 15 % Tree: 0 % Shrub: 10 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: ~~[illegible]~~ 900	Upstream Photo / Downstream Photo: X
Date: 9/22/2016	Feature ID: SM-1	Location: Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?	X
		Significant Disturbance?	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?	
		Hydrology	
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants	
		Surface Water/Depth:	
Side Slope Estimate: Slight			
Veg Type(s) in Drainage: Larrea / Amelum			

Site Description:	
Stream is:	
Braided	
Sinuous	
Curved	
Straight	X
Entrenched	
Bowl Shaped	
Shallow	X
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Anthropogenic Modifications:	Road Grazing Channelized	Upstream Blocked	
	Culvert Channel Riprap	Downstream Blocked	X
	Other:	Lateral Flow Blocked	
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:		
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture		
	Roads Utility Lines Other:		

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	X
Other:	Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

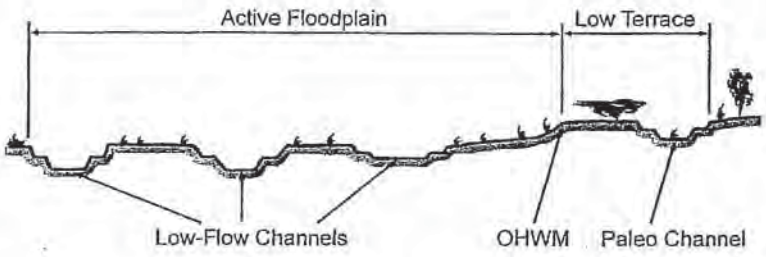
Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

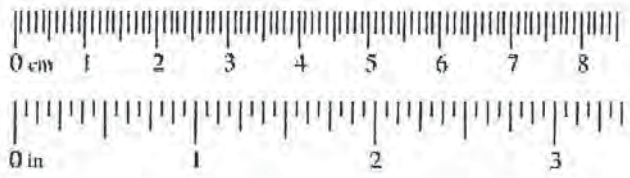
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SN-1
Investigator(s): AR, CRC

Date: 9/22/16
Town: Mojave Desert
Photo begin file#:

Time: 0850
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

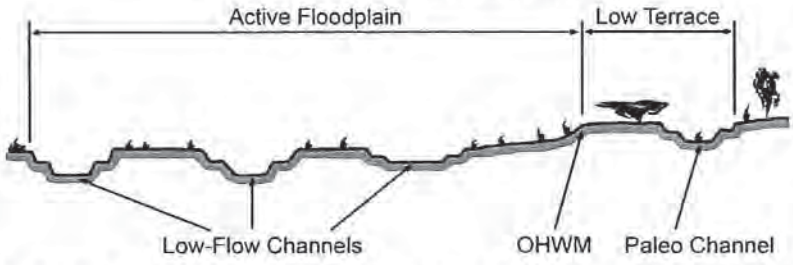
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

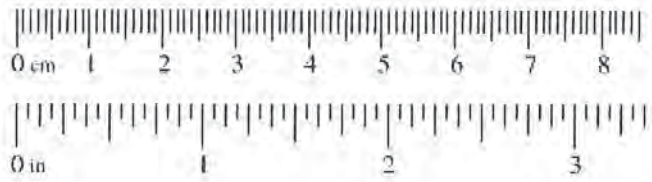


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

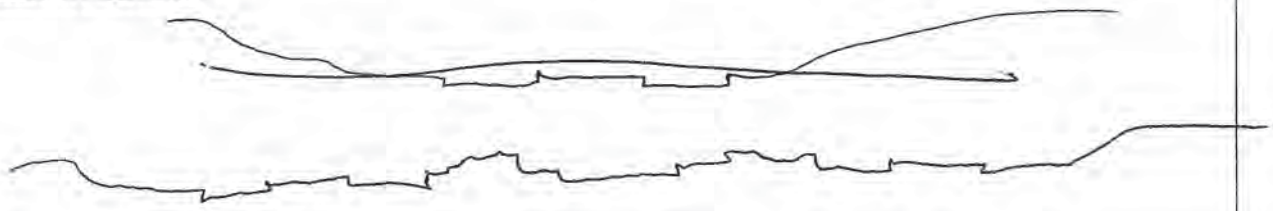
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
1/32 0.00061	0.0156	Medium silt	Silt
		Fine silt	
1/64 0.00031	0.0078		
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 5N-1 **Date:** 9/22/14 **Time:** 0850

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand to Medium Sand

Total veg cover: 1 % Tree: Ø % Shrub: Ø % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SN-1 **Date:** 9/22/16 **Time:** 0850

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule to Pebble

Total veg cover: 10 % Tree: 0 % Shrub: 8 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/ Pebbles

Total veg cover: 15 % Tree: 0 % Shrub: 10 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

D65D

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/22/14

Feature ID	SN-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle ~~slope~~ slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: ~~ER and IC~~ Time: Upstream Photo
Path 46 CMC, AR 0925 Downstream Photo

Date: 9/22/2016 Feature ID: SN-2 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? Y
Significant Disturbance? N

Circle Flow Character: Ephemeral Intermittent Perennial

Potential Wetland?
Hydrology
Wetland Plants

OHWM Recorded by: Field Map GPS GIS Digitizing

Surface Water/Depth:

Side Slope Estimate: gentle slope
Veg Type(s) in Drainage: unveg in channel

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other: Can Scatter + Trash

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other: Open Space

Stream Cross Section Drawing:

OHWM:
Change in sediment texture X
Change in vegetation species
Change in vegetation cover X
Comment:

Break in bank slope X
Other:

Low-Flow Channel: X ~~0~~ 1 Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1
Circle average sediment texture
~~Silt: Fine Medium Coarse~~
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings) X
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X ~~0~~ 15 Tree % Cover Shrub % Cover 3 Herb % Cover 2
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

Low Terrace: X ~~0~~ 15 Tree % Cover Shrub % Cover 10 Herb % Cover 5
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other: Fine Sand w/ Pebbles

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
~~Benches~~ Soil development Surface relief
Other: Δ in sediment texture

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings X
Late (herbs/shrubs/trees)

Comments:

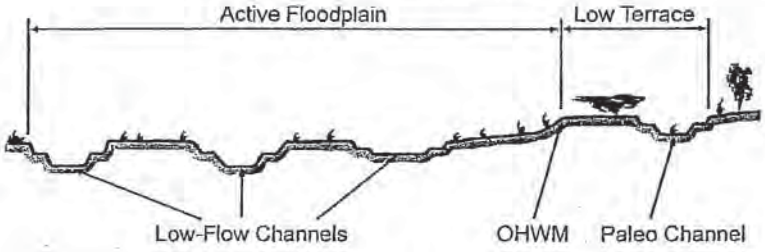
Site Description:
Stream is:
Braided X
Sinuous
Curved
Straight
Entrenched
Bowl Shaped
Shallow

Vegetation % In Stream:
0-20
20-40
40-60
60-80
80-100

Stream Type:
V-Ditch w/ Sediment
Eroded Channel
Desert Wash X
Flowing River/Stream
Dry Streambed

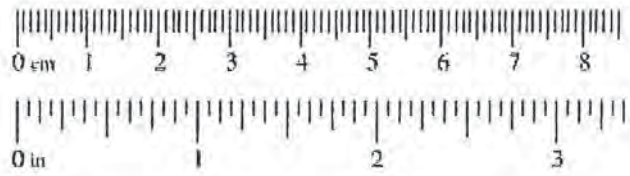
Additional Description:
Hydro Indicators
Bed/Bank, Δ in sediment texture

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 50-1
Investigator(s): AR, CDC

Date: 9/21/16 **Time:** 1450
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

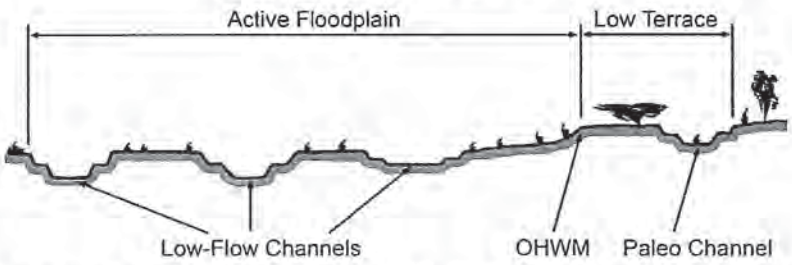
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

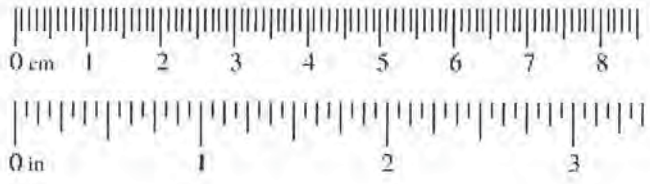


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SD-1 **Date:** 9/21/16 **Time:** 1950

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine Sand w/ Granule

Total veg cover: 4 % Tree: 0 % Shrub: 0 % Herb: 4 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 50-1 **Date:** 9/21/11e **Time:** 1450

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: Very Fine Sand w/ Cobble & Boulders
Total veg cover: 8 % Tree: 0 % Shrub: 5 % Herb: 3 %
Community successional stage:
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☒ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: Coarse Silt w/ Boulders
Total veg cover: 11 % Tree: 0 % Shrub: 8 % Herb: 3 %
Community successional stage:
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

1450

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CBC	Date 9/21/16

Feature ID	50-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Soil cracks, Sediment + Drift deposit, Drainage patterns
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle to moderate slope (w/ some vertical slopes)
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	UNK
Anthropogenic Modifications[7]	Road Crossing,* + trash
Surrounding Land Use	Open Space + transmission line
Other Notes	* Road gets through drainage @ multiple pts.

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SW-1
Investigator(s): I Cain, C Renfrow

Date: 09.21.16 **Time:** 1410
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

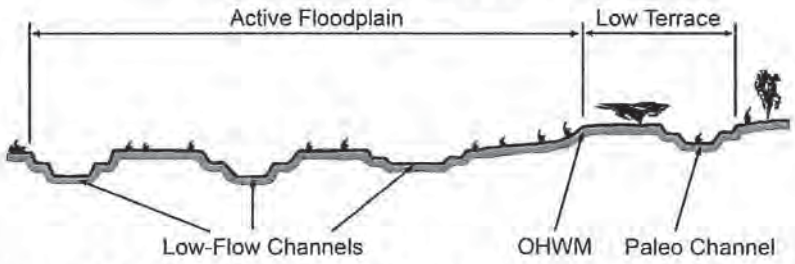
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

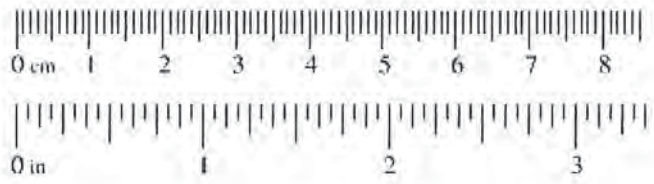


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SQ-1 **Date:** 09.21.16 **Time:** 1410

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 1 % Tree: Ø % Shrub: 1 % Herb: Ø %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** S01 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46 | Staff: CR and IC | Time: 1410 | Upstream Photo [X] | Downstream Photo [ ]

Date: 9/21/2016 | Feature ID: SQ-1 | Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB | Do Normal Conditions Exist? [X] | Significant Disturbance? [X]

Circle Flow Character: Ephemeral Intermittent Perennial | Potential Wetland? [ ]

OHWM Recorded by: Field Map GPS GIS Digitizing | Hydrology [ ] | Wetland Plants [ ] | Surface Water/Depth:

Side Slope Estimate: Slight

Veg Type(s) in Drainage: Larrea

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Culvert Other: | Grazing Channel | Channelized Riprap

Upstream Blocked [ ] | Downstream Blocked [ ] | Lateral Flow Blocked [ ]

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: [X] Tree % Cover 0 Shrub % Cover 1 Herb % Cover 0

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse | Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession: NA [ ] | Early (herbs/seedlings) [X] | Mid (herbs/shrubs/saplings [ ] | Late (herbs/shrubs/trees) [ ]

Comments:

Active Floodplain: [ ] Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder | Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession: NA [ ] | Early (herbs/seedlings) [ ] | Mid (herbs/shrubs/saplings [ ] | Late (herbs/shrubs/trees) [ ]

Comments:

Low Terrace: [ ] Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

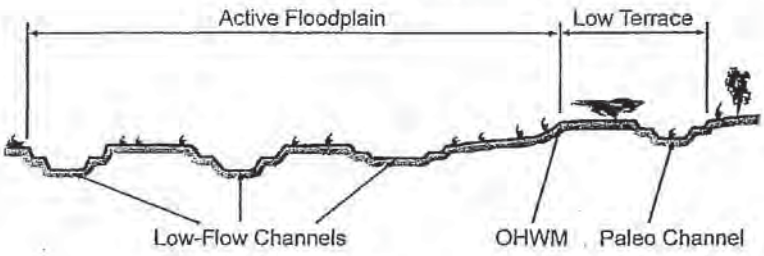
Granule Pebble Cobble Boulder | Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession: NA [ ] | Early (herbs/seedlings) [ ] | Mid (herbs/shrubs/saplings [ ] | Late (herbs/shrubs/trees) [ ]

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
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0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
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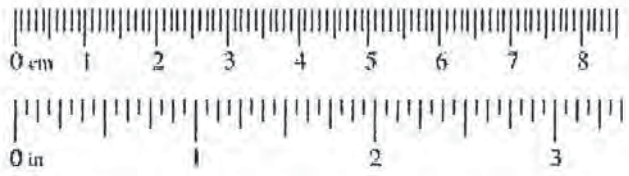
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 52-2
Investigator(s): I Cain, C Renfrow

Date: 09.21.16 **Time:** 1415
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

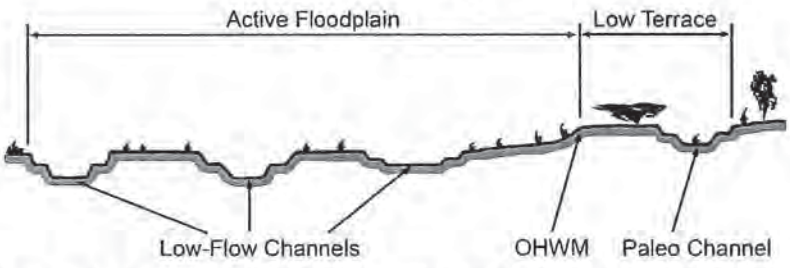
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
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5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
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0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
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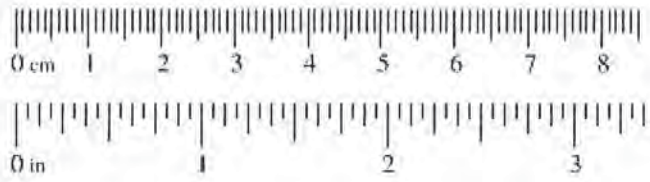
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 5Q-2 **Date:** 09.21.16 **Time:** 1415

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: 1 % Tree: Ø % Shrub: 1 % Herb: Ø %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SQ-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

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- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1415	Upstream Photo	X
			Downstream Photo	
Date: 9/21/2016	Feature ID: SQ-2	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: ~~Lower~~ Slight				
Veg Type(s) in Drainage: Lower				

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other:	

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			
Comment:			

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 1 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	X
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

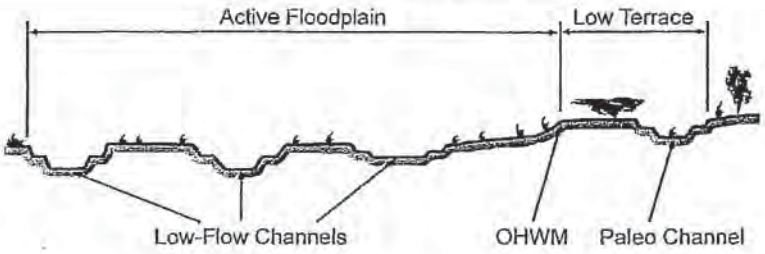
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Site Description:	
Stream is:	
Braided	
Sinuous	
Curved	
Straight	X
Entrenched	
Bowl Shaped	
Shallow	X
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	
Additional Description:	

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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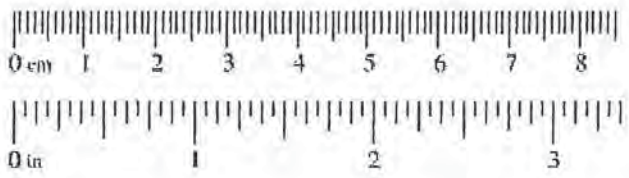


Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SR-3
Investigator(s): ICain, CRenfrew

Date: 09.21.16 **Time:** 1420
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [X] / N [ ] Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

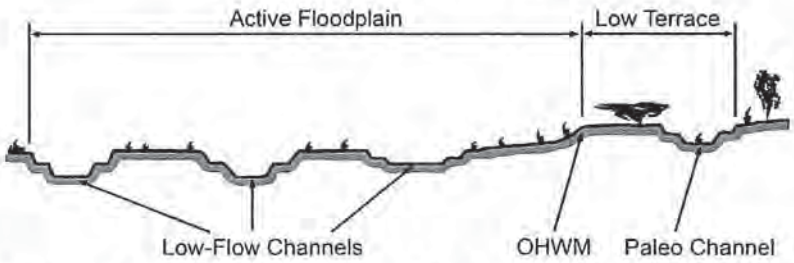
Brief site description:

desert wash

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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		Coarse sand	
0.020	0.50		Sand
1/2 0.0098	0.25	Medium sand	
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
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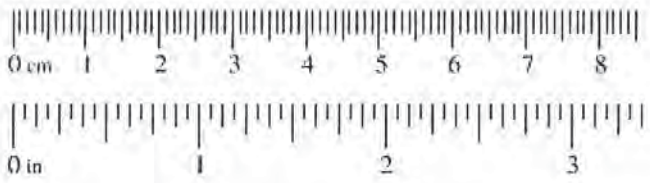
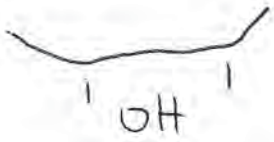
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 52-3 **Date:** 09.21.16 **Time:** 1420

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 1 % Tree: Ø % Shrub: 1 % Herb: Ø %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SQ-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1420
Path 46

Date: 9/21/2016 Feature ID: SQ-3 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight

Veg Type(s) in Drainage: Larrea

Upstream Photo ✓
Downstream Photo

Do Normal Conditions Exist? ✓
Significant Disturbance? ✓

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Site Description:

Stream is:

Braided	
Sinuous	
Curved	
Straight	✓
Entrenched	
Bowl Shaped	
Shallow	✓

Vegetation % in Stream:

0-20	✓
20-40	
40-60	
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	✓
Flowing River/Stream	
Dry Streambed	

Additional Description:

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked ✓
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	✓	Break in bank slope	✓
Change in vegetation species		Other:	
Change in vegetation cover	✓		

Comment:

Low-Flow Channel: ✓ Tree % Cover 0 Shrub % Cover 1 Herb % Cover 0
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings) ✓
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

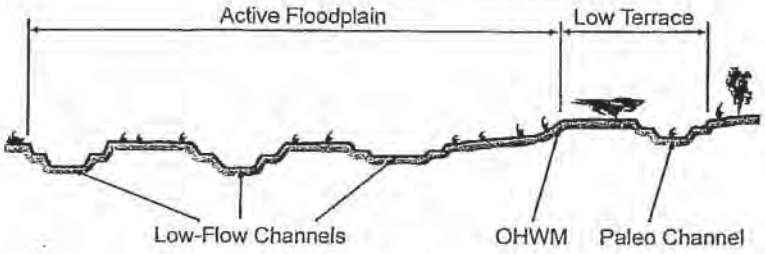
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

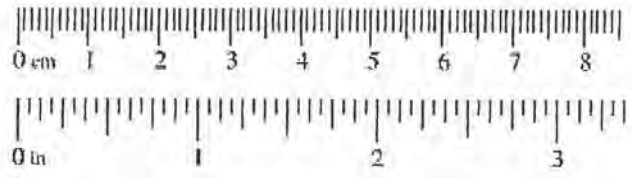
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 52-4
Investigator(s): ICain, CRenfrew

Date: 09.21.16 **Time:** 1430
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

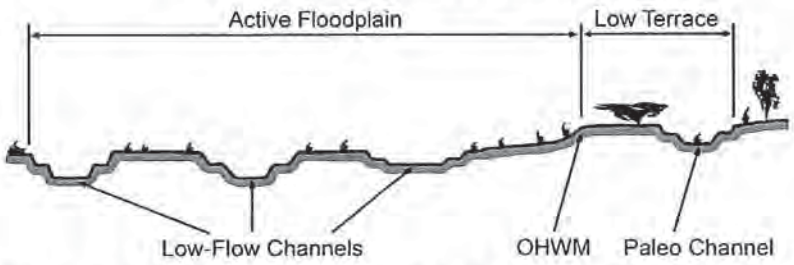
Brief site description:

Desert Wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

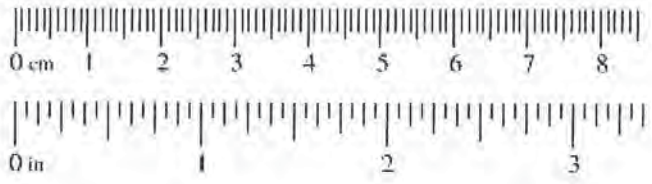


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 50-4 **Date:** 09.21.16 **Time:** 1430

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine Sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SQ-4 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

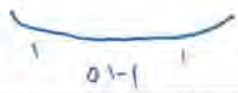
Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1430	Upstream Photo	X
			Downstream Photo	
Date: 9/21/2016	Feature ID: SQ-4	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: Slight				
Veg Type(s) in Drainage: Larrea				

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other:	

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

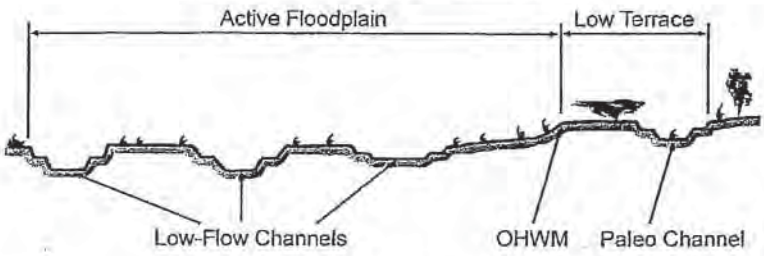
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

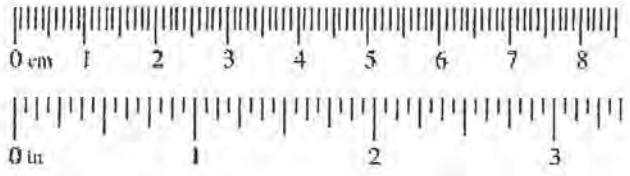
Site Description:	
Stream is:	
Braided	
Sinuous	
Curved	X
Straight	
Entrenched	
Bowl Shaped	
Shallow	X
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	
Additional Description:	

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
10.08		256	Boulder	
2.56		64	Cobble	Gravel
0.157		4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SD-5
Investigator(s): I Cain, C Renfrew

Date: 09.21.16 **Time:** 1500
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

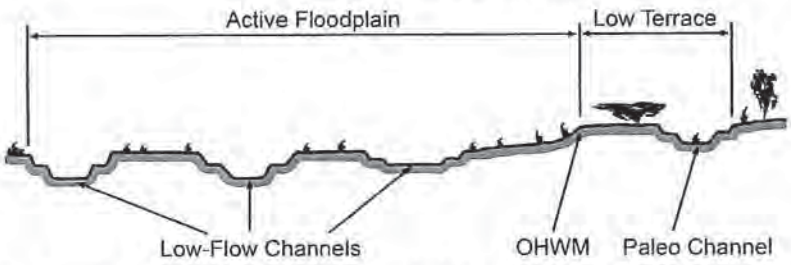
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

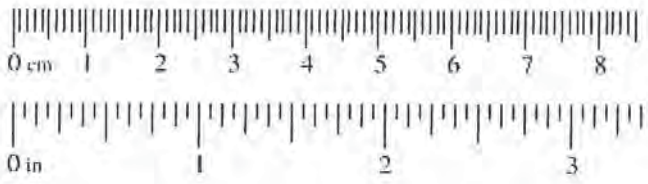


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 52-5 **Date:** 09.21.16 **Time:** 1500

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SQ-5 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble/cobble

Total veg cover: 10 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1500	Upstream Photo	X
			Downstream Photo	
Date: 9/21/2016	Feature ID: SQ-J	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: Planar almost				
Veg Type(s) in Drainage: Larrea / Amaranthus				

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other:	

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators:	Mudcracks Ripples	Community succession: NA	X
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators:	Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	X
Other:		Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators:	Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

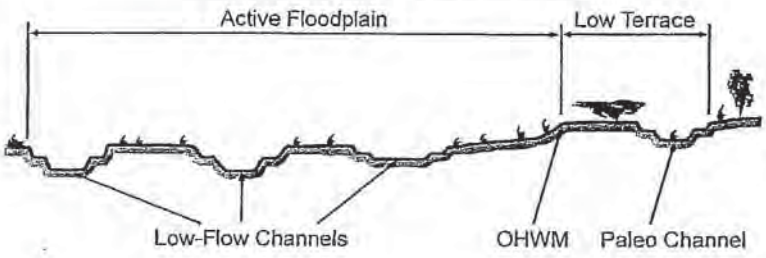
Comments:

Site Description:	
Stream is:	
Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	
Vegetation % In Stream:	
0-20	
20-40	X
40-60	X
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

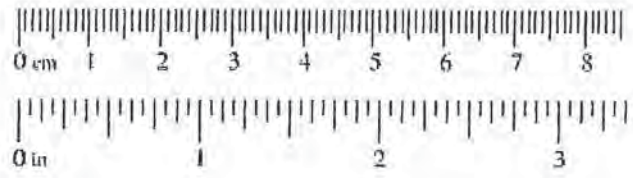
near planar

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5D-6
Investigator(s): I Cain, C Renfrew

Date: 09.21.16 **Time:** 1510
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

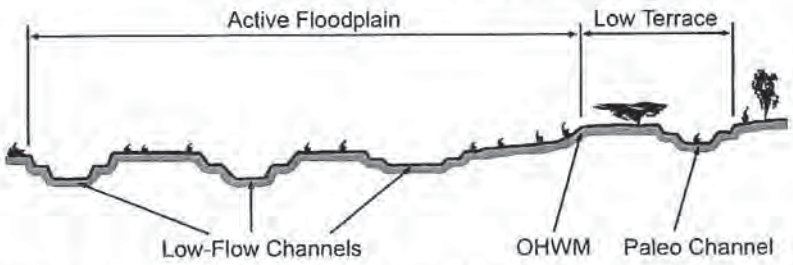
Brief site description:

desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

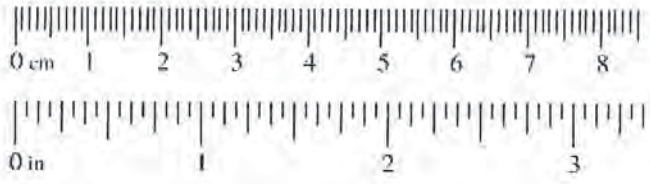


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble/cobble

Total veg cover: 6 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

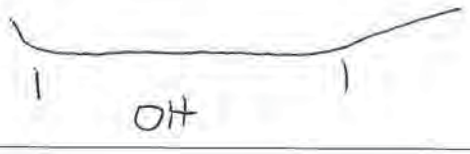
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 52-6 **Date:** 09.21.16 **Time:** 1510

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

[x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine Sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1510	Upstream Photo	X	**Site Description:**
Date: 9/21/2016	Feature ID: SQ-6	Location: Mojave Desert	Downstream Photo		Stream is:
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Braided X / Sinuous
		Significant Disturbance?		X	Curved / Straight
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched / Bowl Shaped
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology / Wetland Plants			Shallow X
		Surface Water/Depth:			Vegetation % In Stream:
Side Slope Estimate: Flat					0-20 X / 20-40 / 40-60 / 60-80 / 80-100
Veg Type(s) in Drainage: Larrea / Ambrosia					

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked	
	Culvert	Channel	Riprap	Downstream Blocked	
	Other:			Lateral Flow Blocked	
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture	
	Roads	Utility Lines	Other:		

Stream Type: V-Ditch w/ Sediment / Eroded Channel / Desert Wash X / Flowing River/Stream / Dry Streambed

Stream Cross Section Drawing:

Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other:	Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

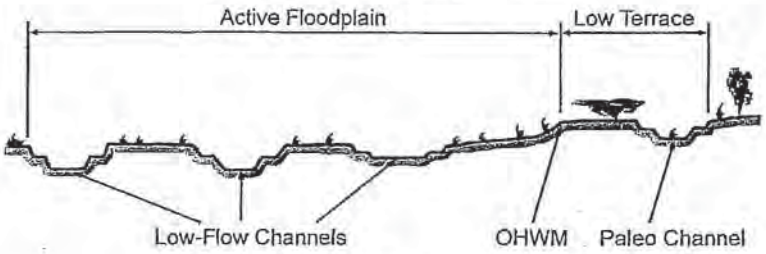
Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

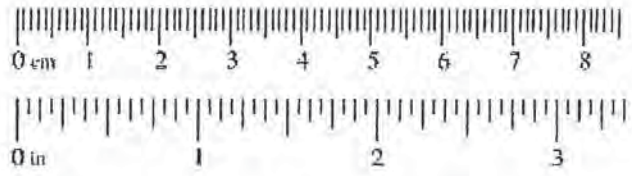
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
10.08		256	Boulder	
2.56		64	Cobble	Gravel
0.157		4	Pebble	
	0.079	2.00	Granule	
0.039		1.00	Very coarse sand	
0.020		0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
	1/8 — 0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
	1/128 — 0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 52-7
Investigator(s): I Cain, C Renteas

Date: 09.21.16 **Time:** 1515
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [X] / N [ ] Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

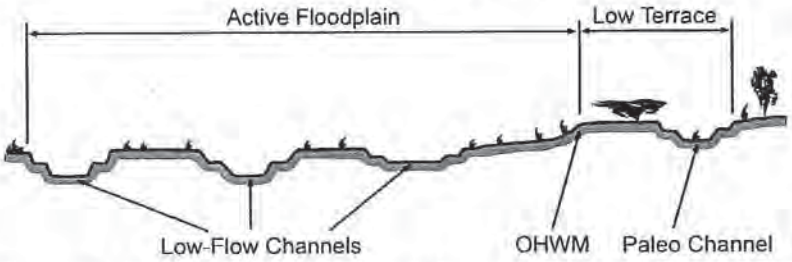
Brief site description:

desert wash

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

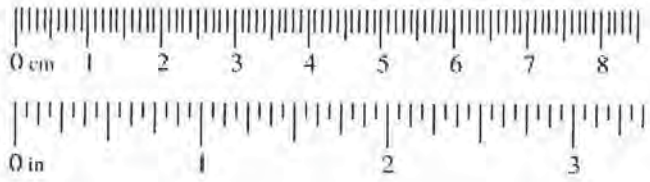


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 50-7 **Date:** 09.21.16 **Time:** 1515

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 527 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

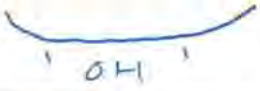
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1515	Upstream Photo	X	**Site Description:**
			Downstream Photo		Stream is:
Date: 9/21/2016	Feature ID: SQ-7	Location: Mojave Desert			Braided ☐
					Sinuous ☐
Circle Preliminary Status: USACE COFW RWQCB		Do Normal Conditions Exist?		Y	Curved X
		Significant Disturbance?		X	Straight ☐
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched ☐
		Hydrology			Bowl Shaped ☐
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow X
		Surface Water/Depth:			Vegetation % In Stream:
Side Slope Estimate: Slight					0-20 X
Veg Type(s) in Drainage: —					20-40 ☐
					40-60 ☐

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked	60-80 ☐
	Culvert	Channel	Riprap	Downstream Blocked	80-100 ☐
	Other:			Lateral Flow Blocked	Stream Type:
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:	V-Ditch w/ Sediment ☐
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture	Eroded Channel ☐
	Roads	Utility Lines	Other:		Desert Wash ☐
Stream Cross Section Drawing:					Flowing River/Stream ☐
					Dry Streambed ☐



Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings) ☐
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings ☐
Other:	Late (herbs/shrubs/trees) ☐

Comments:

Active Floodplain: ☐ Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA ☐
Drift/Debris Presence of bed and bank	Early (herbs/seedlings) ☐
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings ☐
Other:	Late (herbs/shrubs/trees) ☐

Comments:

Low Terrace: ☐ Tree % Cover Shrub % Cover Herb % Cover

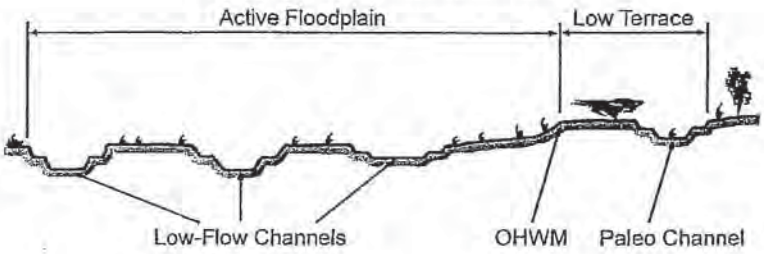
Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA ☐
Drift/Debris Presence of bed and bank	Early (herbs/seedlings) ☐
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings ☐
Other:	Late (herbs/shrubs/trees) ☐

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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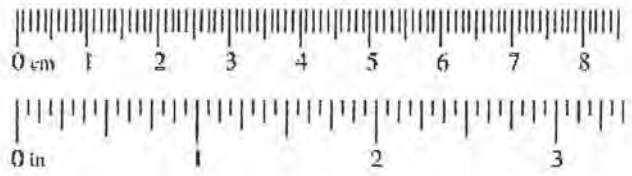
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SR-1
Investigator(s): AR, CRC

Date: 9/21/16
Town: Mojave Desert
Time: 1420
State: CA
Photo begin file#:
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

OHV + Road Crossing

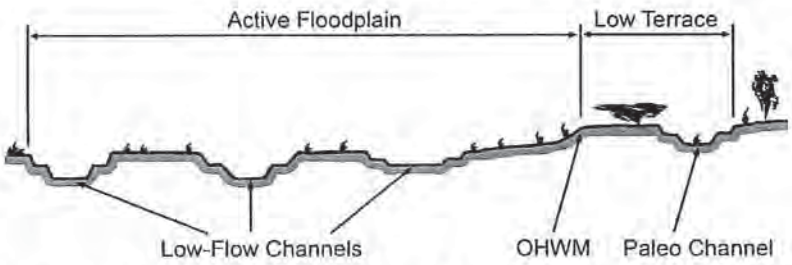
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

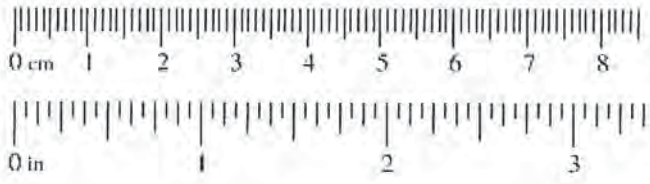


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** CSR-1 **Date:** 9/21/16 **Time:** 1420

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt to Coarse Sand

Total veg cover: <1 % Tree: 0 % Shrub: 0 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SR-1 **Date:** 9/21/16 **Time:** 1420

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 10 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

1420

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/24/14

Feature ID	5R-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Soil Cracks, Δ in sediment
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	very gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SR-2
Investigator(s): AR, CRC

Date: 9/21/14 **Time:** 1430
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

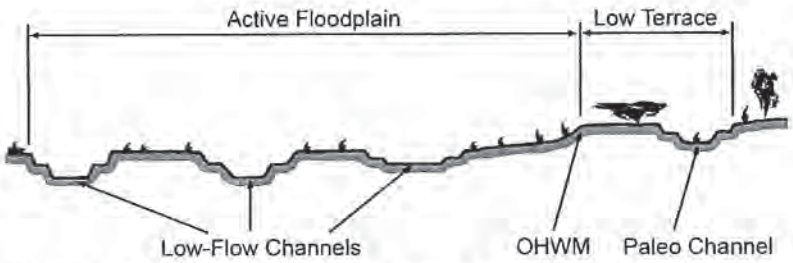
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

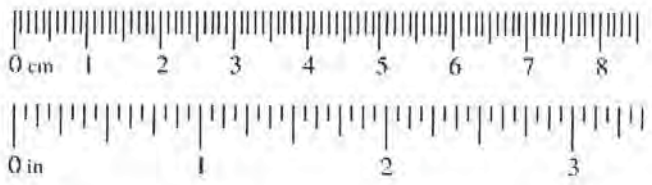


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SR-2 **Date:** 9/21/16 **Time:** 1430

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [x] ~~Soil development~~
- [ ] Surface relief
- [x] Other: Δ in sediment
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 5R-2 **Date:** 9/21/14 **Time:** 1430

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt w/ Pebble

Total veg cover: 5 % Tree: 0 % Shrub: 5 % Herb: 0 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

1430

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/16

Feature ID	SR-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Soil Crack
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	very gentle slope
Characteristic Vegetation[5]	Unveg in Channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: ST-1
Investigator(s): ICain, CRenfrew

Date: 09.21.16 **Time:** 1340
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

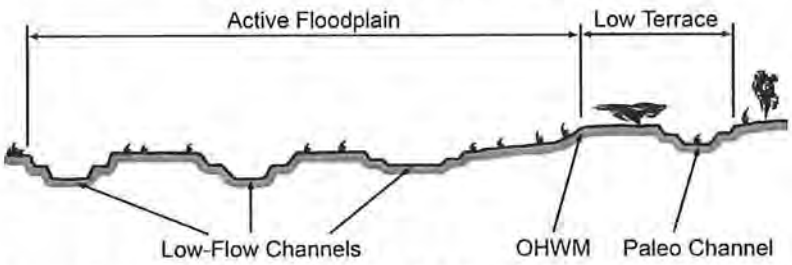
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
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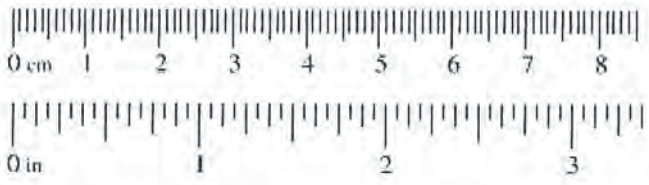
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

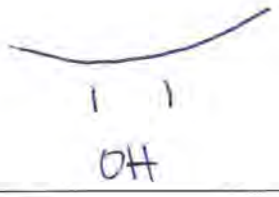
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** ST-1 **Date:** 09.21.16 **Time:** 1340

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 5T-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

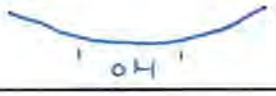
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1340	Upstream Photo	X	**Site Description:**		
			Downstream Photo		Stream is:		
Date: 9/21/2016	Feature ID: ST-1	Location: Mojave Desert			Braided		
					Sinuous		
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	X	
		Significant Disturbance?			Straight		
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched		
		Hydrology			Bowl Shaped		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow	X	
		Surface Water/Depth:			Vegetation % In Stream:		
Side Slope Estimate: Slight					0-20	X	
Veg Type(s) in Drainage: Shrubs					20-40		
					40-60		
Anthropogenic Modifications:	Road	Grazing	Channelized		Upstream Blocked		60-80	
	Culvert	Channel	Riprap		Downstream Blocked		80-100	
	Other:				Lateral Flow Blocked		Stream Type:	
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:			V-Ditch w/ Sediment	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture			Eroded Channel	
	Roads	Utility Lines	Other:				Desert Wash	X
Stream Cross Section Drawing:							Flowing River/Stream	
							Dry Streambed	
							Additional Description:	



OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	?		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 1 Herb % Cover 1

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	X
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

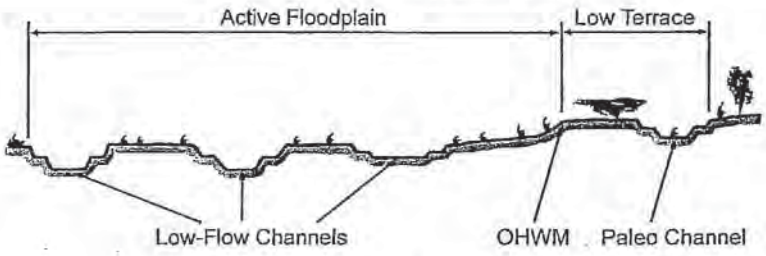
Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

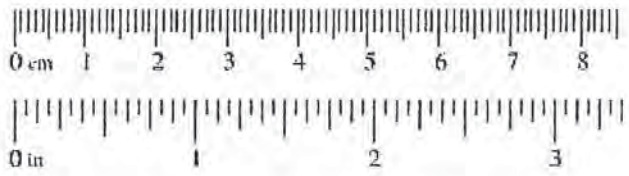
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: ST-2
Investigator(s): Cain, Cranfield

Date: 09.21.16 **Time:** 1350
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☐ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

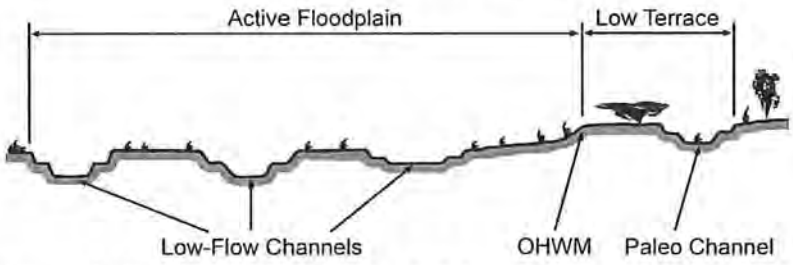
Brief site description:

Desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

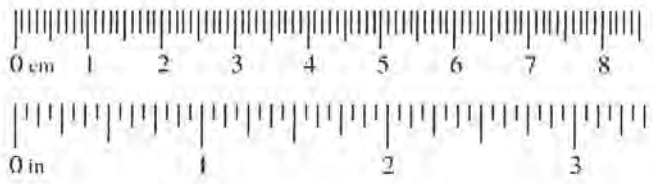


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

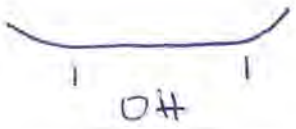
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** ST-2 **Date:** 09.21.16 **Time:** 1350

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** ST-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46 Staff: CR and IC Time: 1350

Date: 9/21/2016 Feature ID: ST-2 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight

Veg Type(s) in Drainage: Saltbush

Upstream Photo: X
Downstream Photo:

Do Normal Conditions Exist? X
Significant Disturbance? X

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Site Description:

Stream is:

Braided	
Sinuous	
Curved	X
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

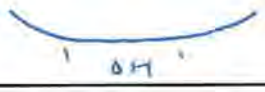
Anthropogenic Modifications: Road Culvert Other: Grazing Channel Channelized Riprap

Upstream Blocked: X
Downstream Blocked:
Lateral Flow Blocked:

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 1 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:

NA	
Early (herbs/seedlings)	X
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

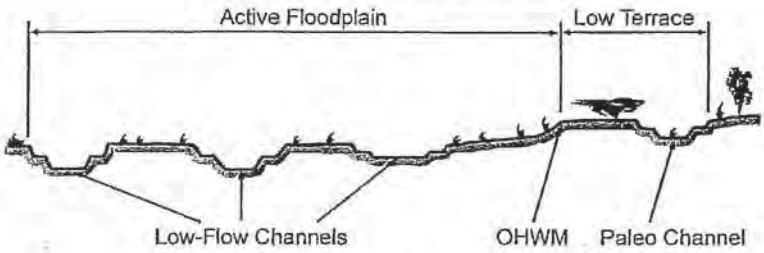
Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

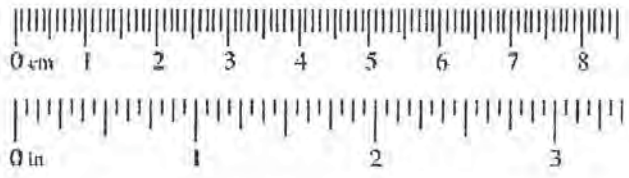
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 5U-1
Investigator(s): AR, CDR

Date: 9/21/16
Town: Mojave Desert
Time: 1327
State: CA
Photo begin file#:
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

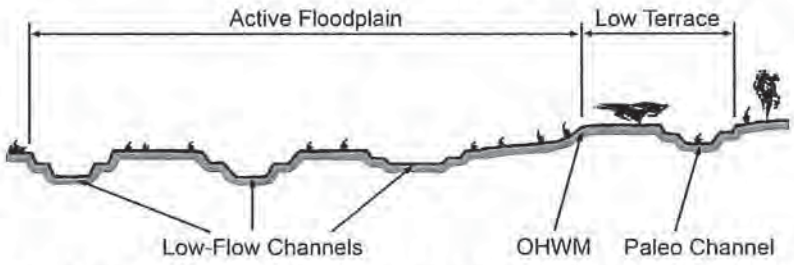
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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0.157	4	Pebble	Gravel
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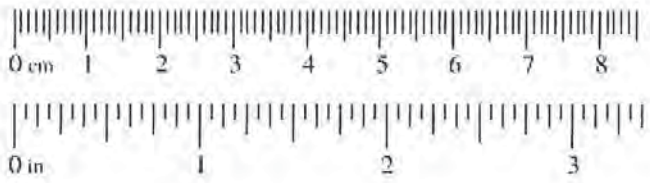
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SU-1 **Date:** 7/21/16 **Time:** 1322

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand over Boulder

Total veg cover: 1 % Tree: Ø % Shrub: 1 % Herb: Ø %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SU-1 **Date:** 9/21/16 **Time:** 1322

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDL	Date 9/21/14

Feature ID	SD-1 + SD-2 (Exactly the Same Data as SD-1)
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture,
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SU-3
Investigator(s): AR, CDC

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 1340
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

DRV + Road Crossing

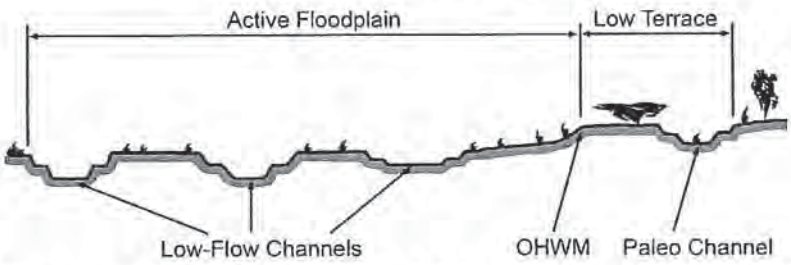
Brief site description:

Dry Desert + Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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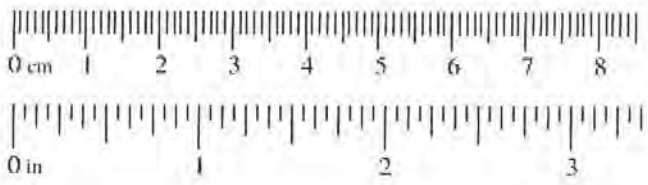
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SU-3 **Date:** 9/21/14 **Time:** 1340

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine Sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- [x] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: A in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SU-3 **Date:** 9/21/16 **Time:** 1340

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: Pebble w/ Very Fine Sand
Total veg cover: 4 % Tree: 0 % Shrub: 3 % Herb: 1 %
Community successional stage:
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: ~~Very~~ _____

Characteristics of the floodplain unit:
Average sediment texture: Very Fine Sand on top of Boulder
Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: <1 %
Community successional stage:
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/13

Feature ID	~~50-2~~ 54-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Drift deposit, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: FV-1
Investigator(s): ICairn, CRenfrew

Date: 09.21.16 **Time:** 1220
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

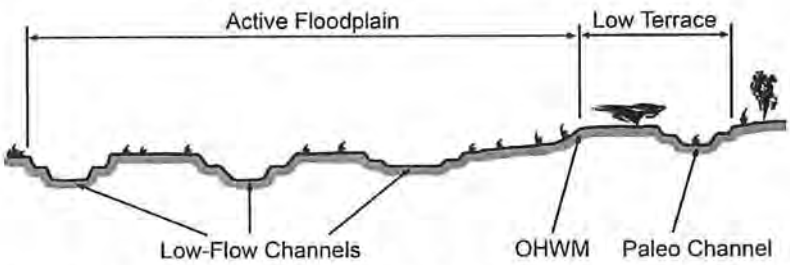
Brief site description:

Desert wash, straight, bowl-shaped ~~sinuous, entrenched~~

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

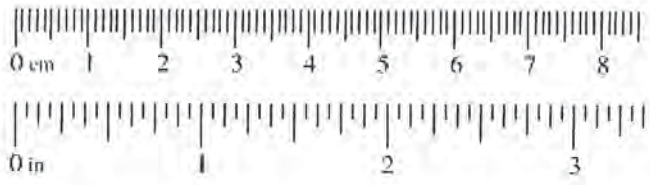


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

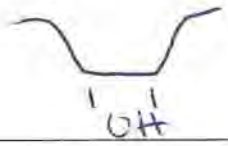
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SV-1 **Date:** 09.21.16 **Time:** 1220

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SV-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 10 % Tree: 0 % Shrub: 8 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46 | Staff: CR and IC | Time: 1215 | Upstream Photo: X | Downstream Photo:

Date: 9/21/2016 | Feature ID: ~~SV-A~~ SV-1 | Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Do Normal Conditions Exist? X

Significant Disturbance? X

Circle Flow Character: Ephemeral Intermittent Perennial

Potential Wetland?

OHWM Recorded by: Field Map GPS GIS Digitizing

Hydrology

Wetland Plants

Surface Water/Depth:

Side Slope Estimate: Moderate

Veg Type(s) in Drainage: American Sage

Site Description:

Stream is:

Braided		Curved	
Sinuous		Straight	X
Entrenched		Bowl Shaped	X
Shallow			

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Culvert Other: | Grazing Channel | Channelized Riprap

Upstream Blocked | Downstream Blocked | Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment		Desert Wash	X
Eroded Channel		Flowing River/Stream	
		Dry Streambed	

Stream Cross Section Drawing:

Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 1 Herb % Cover 1

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession: NA | Early (herbs/seedlings) | Mid (herbs/shrubs/saplings X | Late (herbs/shrubs/trees)

Comments:

Active Floodplain: 7 Tree % Cover 0 Shrub % Cover 8 Herb % Cover 2

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession: NA | Early (herbs/seedlings) | Mid (herbs/shrubs/saplings X | Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

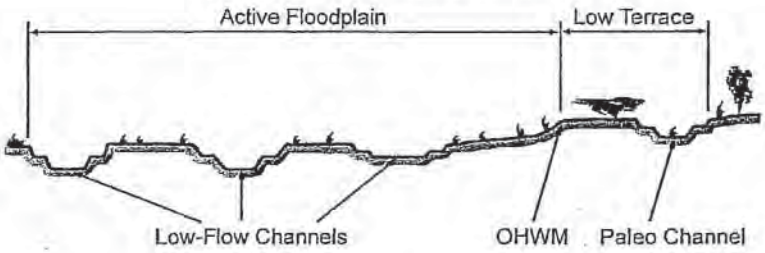
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession: NA | Early (herbs/seedlings) | Mid (herbs/shrubs/saplings | Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
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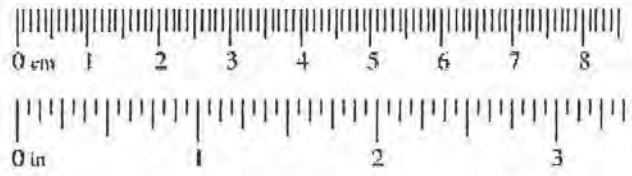
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SV-2
Investigator(s): ICain, CRenfrew

Date: 09.21.16
Town: Mojave Desert
Photo begin file#:

Time: 1220
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

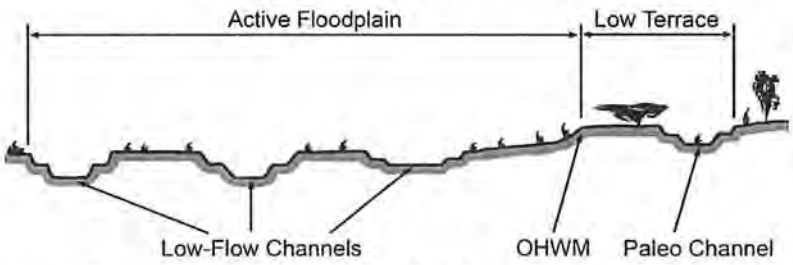
Brief site description:

Sinuous, entrenched desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

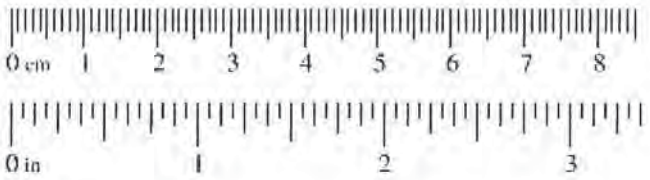


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SV-2 **Date:** 09.21.16 **Time:** 1220

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SV-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble/cobble

Total veg cover: 60 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

mix of large rocks & stones on banks/plain

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1220 ~~1230~~	Upstream Photo	X	**Site Description:**	
			Downstream Photo		Stream is:	
Date: 9/21/2016	Feature ID: ~~SV-1~~ SV-2	Location: Mojave Desert			Braided	
					Sinuous	X
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	
		Significant Disturbance?		X	Straight	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	X
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology			Bowl Shaped	
		Wetland Plants			Shallow	
		Surface Water/Depth:			Vegetation % In Stream:	
Side Slope Estimate: Steep					0-20	X
Veg Type(s) in Drainage: Am dum Sage					20-40	
					40-60	
Anthropogenic Modifications: Road Grazing Channelized			Upstream Blocked		60-80	
Culvert Channel Riprap			Downstream Blocked		80-100	
Other:			Lateral Flow Blocked		Stream Type:	
Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:					V-Ditch w/ Sediment	
Circle Surrounding Land Use: Urban Rural Commercial Agriculture					Eroded Channel	
Roads Utility Lines Other:					Desert Wash	X
					Flowing River/Stream	
					Dry Streambed	

Stream Cross Section Drawing:

Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA X
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover 0 Shrub % Cover 5 Herb % Cover 1

Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings X
Other:	Late (herbs/shrubs/trees)

Comments: Mix of large rocks & stones on banks / plain

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

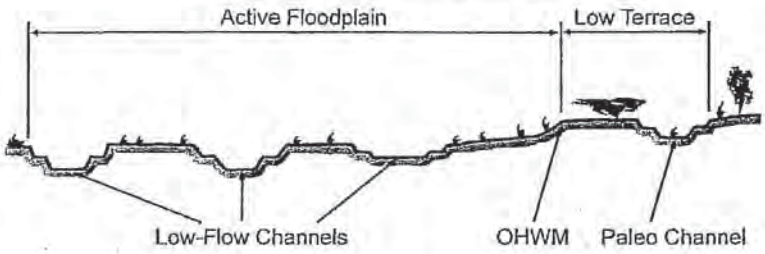
Circle average sediment texture: Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

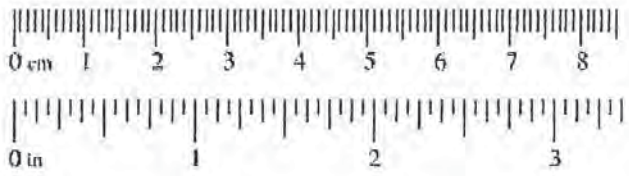
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
10.08		256	Boulder	
			Cobble	Gravel
2.56		64		
0.157		4	Pebble	
			Granule	
	0.079	2.00		
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SV-3
Investigator(s): JCain, CRentfrew

Date: 09.21.16 **Time:** 1230
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

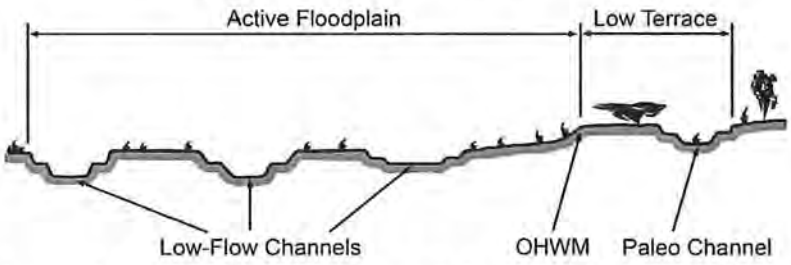
Brief site description:

sinuous, bowl-shaped desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

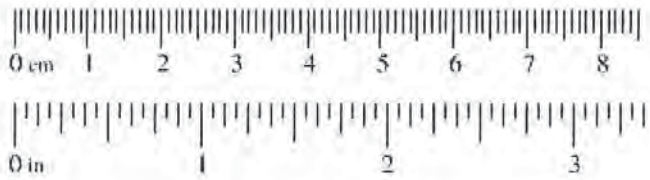


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

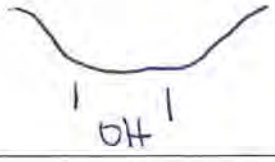
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SV-3 **Date:** 09.21.16 **Time:** 1230

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SV-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble/cobble

Total veg cover: 6 % Tree: 0 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

large rocks & stones in plain

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

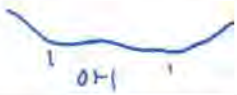
Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1230	Upstream Photo	X
			Downstream Photo	
Date: 9/21/2016	Feature ID: ~~SV-E~~ SV-3	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: Moderate				
Veg Type(s) in Drainage: Am dum sage				

Site Description:	
Stream is:	
Braided	
Sinuous	X
Curved	
Straight	
Entrenched	
Bowl Shaped	X
Shallow	
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other:	

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		
Comment:			

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples		Community succession: NA	X
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples		Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	X
Other:		Late (herbs/shrubs/trees)	

Comments: Large rocks & stones in plain

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

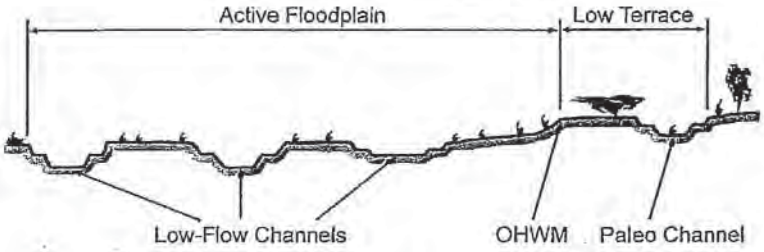
Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples		Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

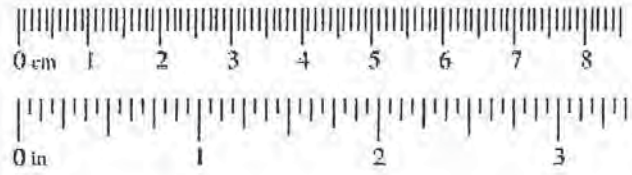
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SV-4
Investigator(s): I Cain, CRenfrew

Date: 09.21.16 **Time:** 1235
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

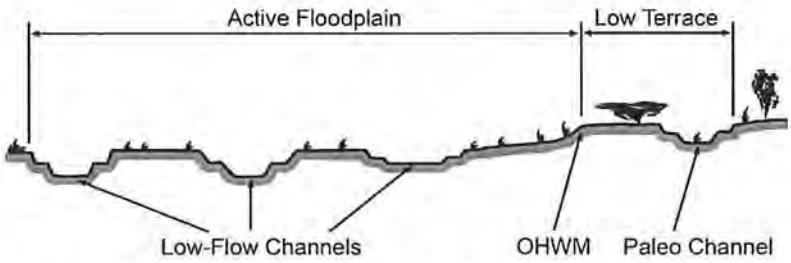
Brief site description:

Curved, entrenched, bowl shaped desert wash. Upstream blocked (downstream) (upstream)

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

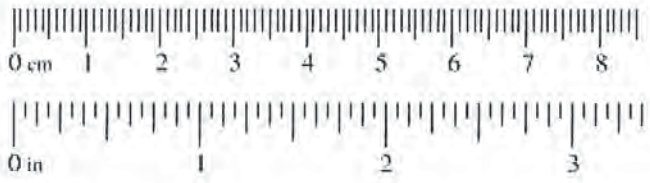


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

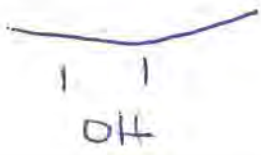
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SV-4 **Date:** 09.21.16 **Time:** 1235

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 1 % Tree: Ø % Shrub: 1 % Herb: Ø %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SV-4 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1233	Upstream Photo	X
			Downstream Photo	
Date: 9/21/2016	Feature ID: ~~5V-ED~~ 5V-4	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: Moderate/Steep				
Veg Type(s) in Drainage: Larrea, Krameria				

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked X
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other:	

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		
Comment:			

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 1 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	X
Other:	Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)	
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings	
Other:	Late (herbs/shrubs/trees)	

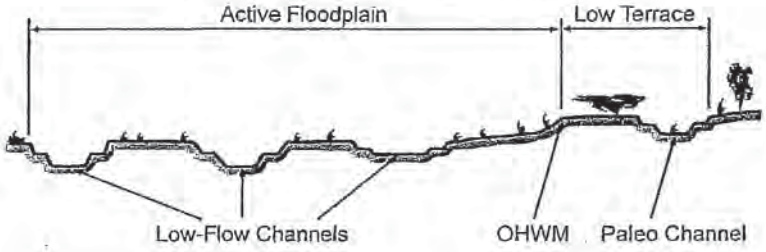
Comments:

Site Description:	
Stream is:	
Braided	
Sinuous	
Curved	X
Straight	
Entrenched	X
Bowl Shaped	X
Shallow	
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

upstream bowl
downstream trenched

Hydrogeomorphic Floodplain Units



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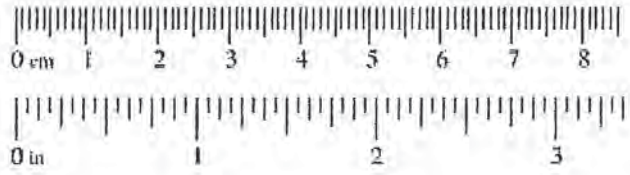
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: EV-S
Investigator(s): AR, CRC

Date: 9/21/14
Town: Mojave Desert
Photo begin file#:

Time: 1206
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

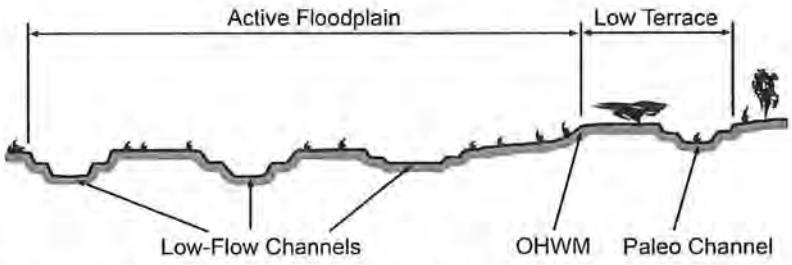
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

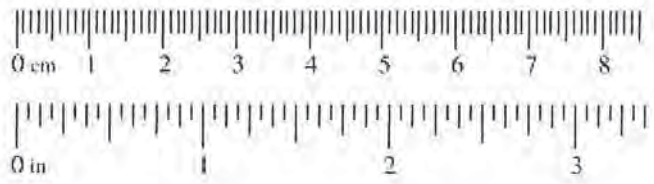


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		Sand
1/2 0.0098	0.25	Medium sand	
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 5V-5 **Date:** 09/21/16 **Time:** 1208

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/Pebbles

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SV-5 **Date:** 9/21/16 **Time:** 1208

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/16

Feature ID	5V-5
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment,
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Land Use	~~Open~~ Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SV-6
Investigator(s): AR, CBB

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 1218
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

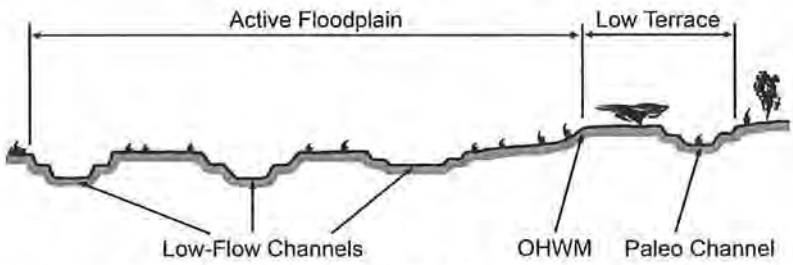
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

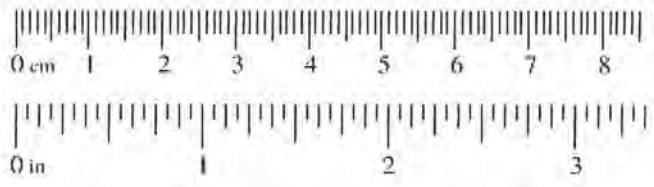


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** SV-6 **Date:** 9/21/16 **Time:** 1218

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine to Medium Sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** SV-6 **Date:** 9/21/18 **Time:** 1218

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/ Cobble

Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/16

Feature ID	5V-6
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture,
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	~~Ephemeral~~ Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: SV-7
Investigator(s): AR, CAC

Date: 9/21/16 **Time:** 1225
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

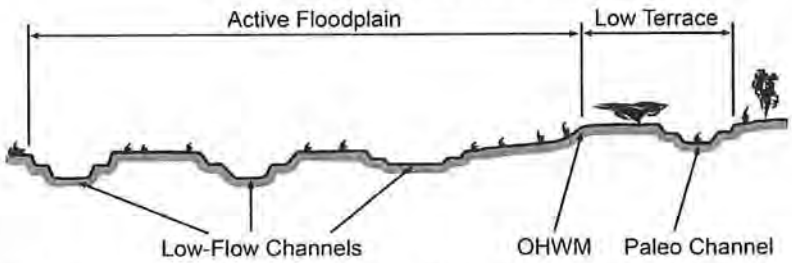
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

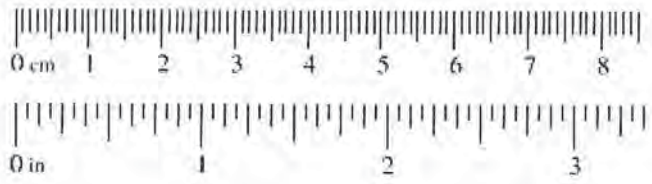


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

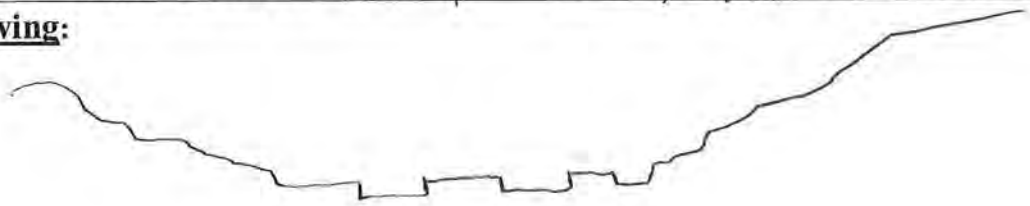
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 5V-7 **Date:** 9/21/16 **Time:** 1228

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 5V-7 **Date:** 9/21/16 **Time:** 1228

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble w/ Fine Sand

Total veg cover: 7 % Tree: 0 % Shrub: 5 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CRC	Date 9/21/16

Feature ID	5V-7
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Drainage Patterns
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: WA-1
Investigator(s): AR, CRC

Date: 9/20/16
Town: Mojave Desert
Photo begin file#:

Time: 1400
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

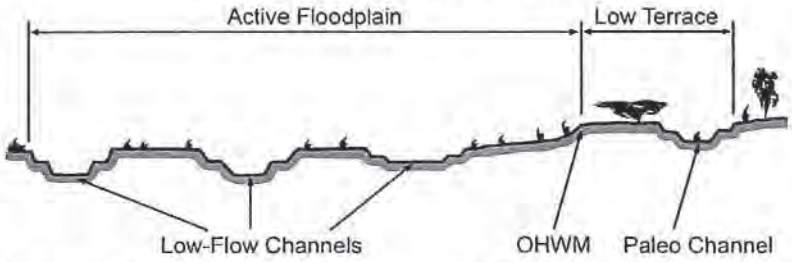
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

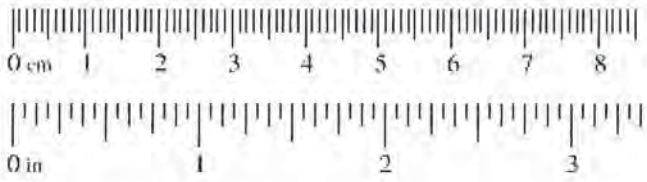


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		Sand
1/2 0.0098	0.25	Medium sand	
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	
1/32 0.00061	0.0156		Silt
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000800 **Cross section ID:** LoA-1 **Date:** 9/20/14 **Time:** 1400

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium to Coarse Sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6A-1 **Date:** 9/20/14 **Time:** 1400

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule + Pebble

Total veg cover: 65 % Tree: 0 % Shrub: 40 % Herb: 25 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/20/16

Feature ID	6A-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Drainage Patterns, Drift Deposit, Δ in sediment texture, Bed/Bank
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 6A-2
Investigator(s): AR, CRC

Date: 9/20/16 **Time:** 1420
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

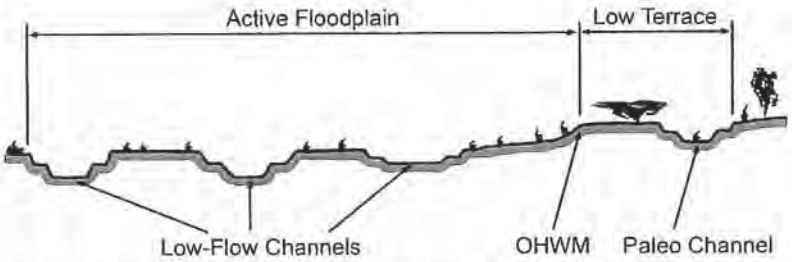
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

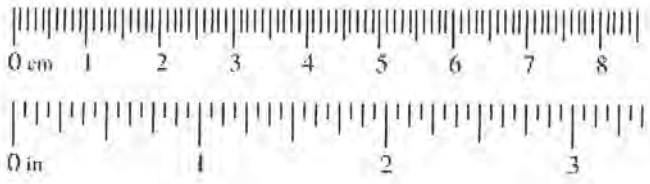


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6A-2 **Date:** 9/20/14 **Time:** 1420

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____ Same as 6A-3

Characteristics of the floodplain unit:

Average sediment texture: Cobble

Total veg cover: 2 % Tree: 0 % Shrub: <1 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6A-2 **Date:** 9/20/16 **Time:** 1420

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

1420

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/20/16

Feature ID	6A-2 & 6A-3
Preliminary Jurisdictional Status[1]	CDFW & RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	2.5' & 1'
CDFW Width(s)	2.5' & 1'
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 6A-4
Investigator(s): AR, CDC

Date: 9/20/16
Town: Mojave Desert
Photo begin file#:

Time: 1435
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

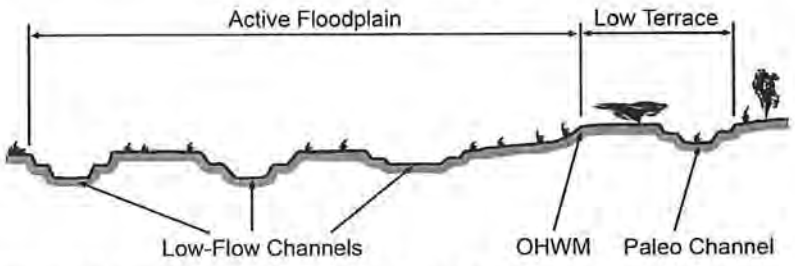
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

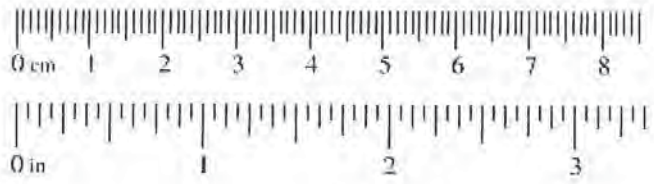


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

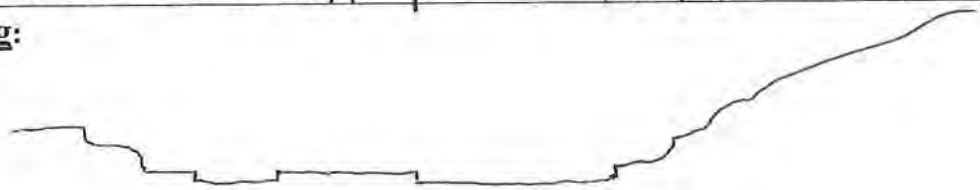
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	Sand
0.020	0.50		
1/2 0.0098	0.25	Medium sand	
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
		Medium silt	Silt
1/32 0.00061	0.0156		
1/64 0.00031	0.0078	Fine silt	
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6A-4 **Date:** 7/20/16 **Time:** 1435

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt to Fine Sand

Total veg cover: 10 % Tree: 0 % Shrub: 4 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6A-4 **Date:** 9/20/10 **Time:** 1435

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebbles

Total veg cover: 12 % Tree: 0 % Shrub: 8 % Herb: 4 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 26 % Tree: 1 % Shrub: 15 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☑ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, COC	Date 9/20/16

Feature ID	LOA-24
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Drainage Patterns, Soil Cracks
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + Trash
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: UA-5
Investigator(s): AR, CRC

Date: 9/20/10
Town: Mojave Desert
Photo begin file#:

Time: 1445
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

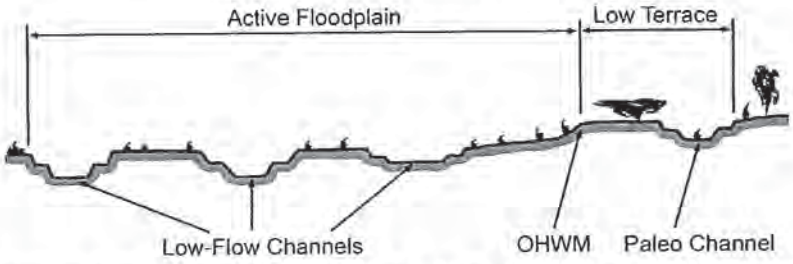
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

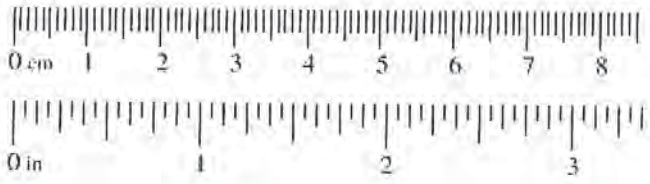


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6A-5 **Date:** 9/20/14 **Time:** 1445

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine sand w/ Granule

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** ~~LoA-2~~ LoA-5 **Date:** 9/20/16 **Time:** 1445

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 7 % Tree: 0 % Shrub: 5 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

1445

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/20/16

Feature ID	6A-5
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Banks, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + Trash
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: UA-4
Investigator(s): AR, CDC

Date: 9/20/14
Town: Mojave Desert
Photo begin file#:

Time: 1500
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

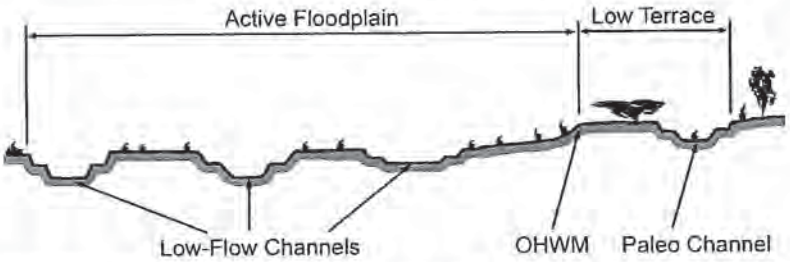
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
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4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
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   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
0.0098	0.25	Medium sand	Sand
0.005	0.125	Fine sand	
0.0025	0.0625	Very fine sand	
0.0012	0.031	Coarse silt	
0.00061	0.0156	Medium silt	Silt
0.00031	0.0078	Fine silt	
0.00015	0.0039	Very fine silt	
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** 6A-6 **Date:** 9/20/16 **Time:** 1500

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: ~~Gravel~~ Medium to Coarse Sand

Total veg cover: 1 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6A-6 **Date:** 9/20/16 **Time:** 1500

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 4 % Tree: 0 % Shrub: 2 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

1500

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 7/20/16

Feature ID	LA-Lp
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Soil Crack
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 6B-1
Investigator(s): ICain, CRenfrow

Date: 09.20.16 **Time:** 1420
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

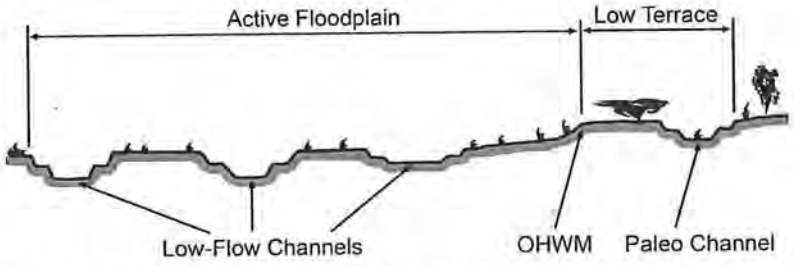
Brief site description:

braided, shallow desert-wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
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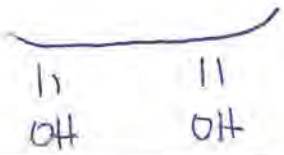
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** LOB-1 **Date:** 09.20.14 **Time:** 1420

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** LoB-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: 17 % Tree: 0 % Shrub: 15 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1420	Upstream Photo [X] Downstream Photo [ ]
Date: 9/20/2016	Feature ID: 6B-1	Location: Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?	[X]
		Significant Disturbance?	[X]
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?	[ ]
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology	[ ]
		Wetland Plants	[ ]
		Surface Water/Depth:	
Side Slope Estimate: Slight			
Veg Type(s) in Drainage: Cheese bush / Lorrea			

Site Description:	
Stream is:	
Braided	[X]
Sinuous	[ ]
Curved	[ ]
Straight	[ ]
Entrenched	[ ]
Bowl Shaped	[ ]
Shallow	[X]
Vegetation % In Stream:	
0-20	[X]
20-40	[ ]
40-60	[ ]
60-80	[ ]
80-100	[ ]
Stream Type:	
V-Ditch w/ Sediment	[ ]
Eroded Channel	[ ]
Desert Wash	[X]
Flowing River/Stream	[ ]
Dry Streambed	[ ]
Additional Description:	

Anthropogenic Modifications: Road Grazing Channelized Culvert Channel Riprap Other:

Upstream Blocked [ ]
Downstream Blocked [ ]
Lateral Flow Blocked [ ]

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	[X]	Break in bank slope	[ ]
Change in vegetation species	[ ]	Other:	
Change in vegetation cover	[X]		

Comment:

Low-Flow Channel: [✓] Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA [ ]
Early (herbs/seedlings) [X]
Mid (herbs/shrubs/saplings [ ]
Late (herbs/shrubs/trees) [ ]

Comments:

Active Floodplain: [✓] Tree % Cover 0 Shrub % Cover 15 Herb % Cover 2

Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA [ ]
Early (herbs/seedlings) [ ]
Mid (herbs/shrubs/saplings [X]
Late (herbs/shrubs/trees) [ ]

Comments:

Low Terrace: [ ] Tree % Cover Shrub % Cover Herb % Cover

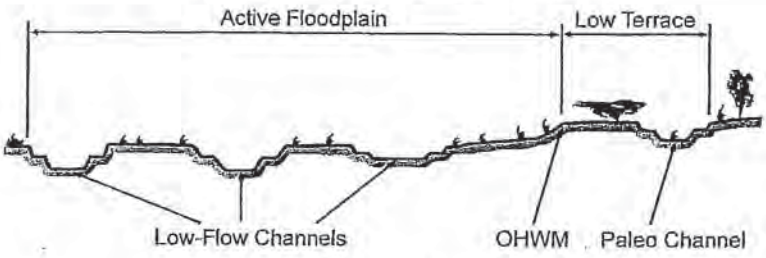
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA [ ]
Early (herbs/seedlings) [ ]
Mid (herbs/shrubs/saplings [ ]
Late (herbs/shrubs/trees) [ ]

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

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0.157	4	Pebble	Gravel
		Granule	Gravel
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0.039	1.00	Very coarse sand	Sand
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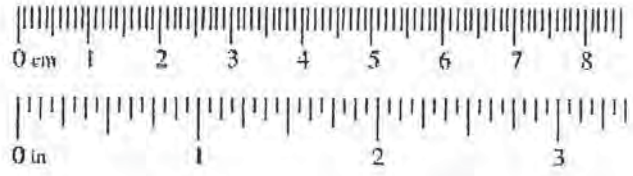
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: UBS-113
Investigator(s): ICain, CRenfrew

Date: 09.20.16 **Time:** 1430
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

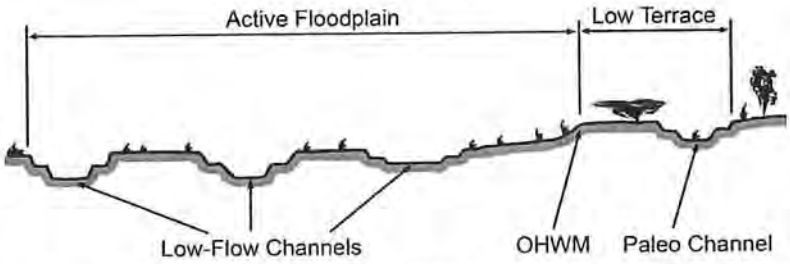
Brief site description:

curved, shallow desert wash - upstream blocked

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
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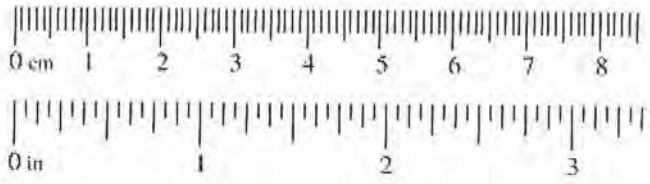
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** LOB-1B **Date:** 09.20.16 **Time:** 1430

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** GB-1B **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
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- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1430
Path 46
Date: 9/20/2016 Feature ID: 6B-1B Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate:

Veg Type(s) in Drainage:

		V
Upstream Photo		✓
Downstream Photo		
Do Normal Conditions Exist?		✓
Significant Disturbance?		✓
Potential Wetland?		
Hydrology		
Wetland Plants		
Surface Water/Depth:		

Site Description:

Stream is:

Braided	
Sinuous	
Curved	✓
Straight	
Entrenched	
Bowl Shaped	
Shallow	✓

Vegetation % In Stream:

0-20	✓
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked	✓
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	✓
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			

Comment:

Low-Flow Channel: ✓ Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA X
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

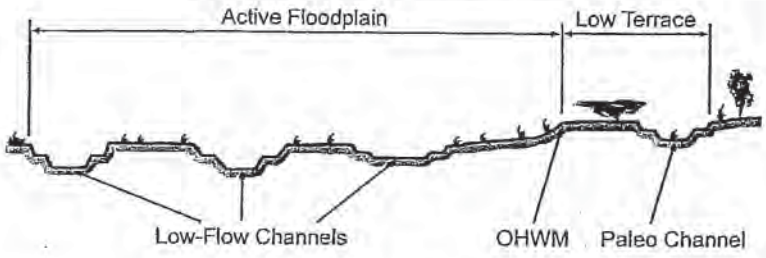
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



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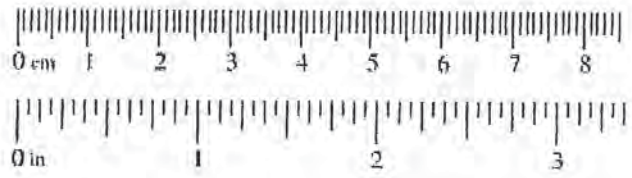


Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: LB-2
Investigator(s): ICain, CRenfrew

Date: 09.2016 **Time:** 1440
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

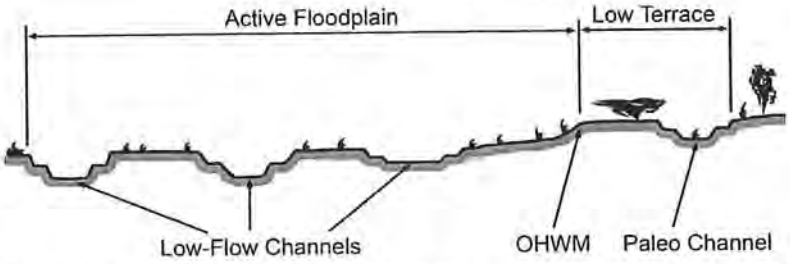
Brief site description:

Braided, shallow desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

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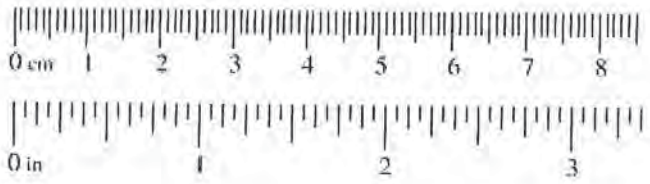
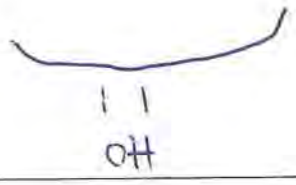
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** GB-2 **Date:** 09.20.16 **Time:** 1440

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: coarse sand

Total veg cover: 1 % Tree: Ø % Shrub: Ø % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6B-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: 25 % Tree: 0 % Shrub: 20 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

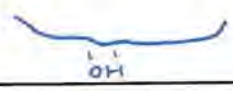
Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1440	Upstream Photo ✓ / Downstream Photo
Date: 9/20/2016	Feature ID: 6B-2	Location: Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?	✓
		Significant Disturbance?	✓
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?	
		Hydrology	
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants	
		Surface Water/Depth:	
Side Slope Estimate: Slight			
Veg Type(s) in Drainage: Larrea / Amdum			

Site Description:	
Stream is:	
Braided	✓
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	✓
Vegetation % In Stream:	
0-20	
20-40	✓
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	✓
Flowing River/Stream	
Dry Streambed	

Additional Description:

Anthropogenic Modifications:	Road Grazing Channelized Culvert Channel Riprap Other:	Upstream Blocked / Downstream Blocked / Lateral Flow Blocked	
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:		
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture Roads Utility Lines Other:		

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	✓	Break in bank slope	~~✓~~
Change in vegetation species		Other:	
Change in vegetation cover	✓		

Comment:

Low-Flow Channel: ✓ Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA	
	Early (herbs/seedlings)	✓
	Mid (herbs/shrubs/saplings	
	Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: ✓ Tree % Cover 0 Shrub % Cover 20 Herb % Cover 5

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA	
	Early (herbs/seedlings)	
	Mid (herbs/shrubs/saplings	✓
	Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA	
	Early (herbs/seedlings)	
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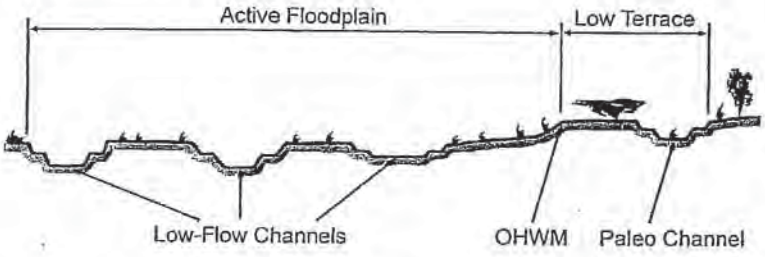
Comments:

Hydrogeomorphic Floodplain Units



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Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: UB3-3
Investigator(s): ICain, CRenfrow

Date: 09.20.16 **Time:** 1500
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

Brief site description:

Sinuous, bowlshaped desert wash - downstream blocked.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
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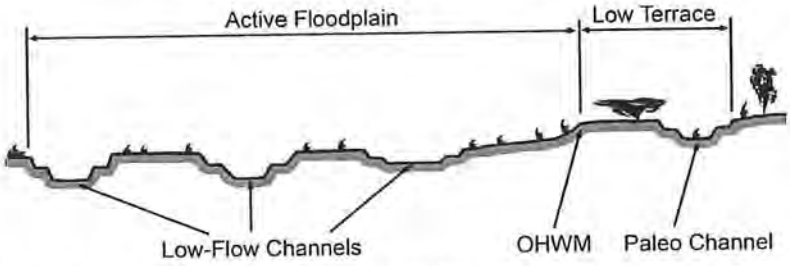
Hydrogeomorphic Floodplain Units



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1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** 6B-3 **Date:** 09.20.16 **Time:** 1500

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6B-3 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1506
Path 46

Date: 9/20/2016 Feature ID: 6D-3 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Moderate

Veg Type(s) in Drainage: —

Upstream Photo ✓
Downstream Photo

Do Normal Conditions Exist? ✓
Significant Disturbance? ✓

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Site Description:

Stream is:

Braided	
Sinuous	✓
Curved	
Straight	
Entrenched	
Bowl Shaped	✓
Shallow	

Vegetation % in Stream:

0-20	✓
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Grazing Channelized Culvert Channel Riprap Other:

Upstream Blocked
Downstream Blocked ✓
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

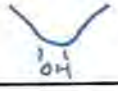
Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	✓
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	✓	Break in bank slope	✓
Change in vegetation species		Other:	
Change in vegetation cover	✓		

Comment:

Low-Flow Channel: ✓ Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA ✓
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

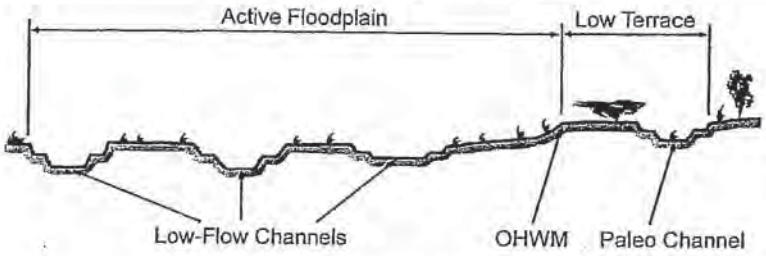
Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

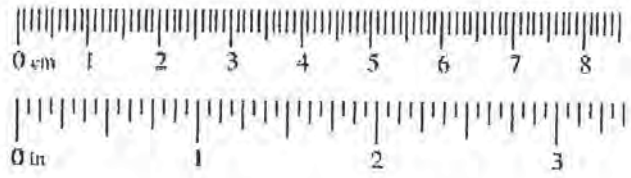
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: LPB-4
Investigator(s): I Cain, CRenfrew

Date: 09.21.16 **Time:** 0910
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

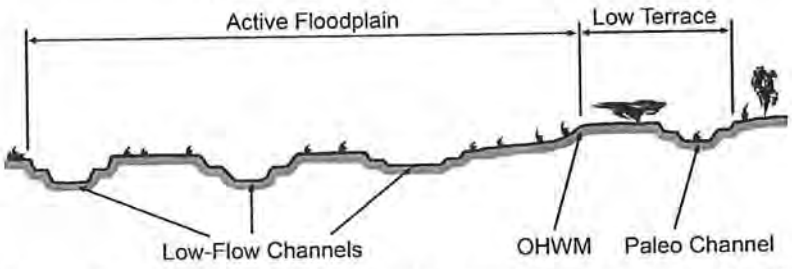
Brief site description:

curved, shallow desertwash - downstream braided

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** OB-4 **Date:** 09.21.16 **Time:** 0910

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6B-4 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 910			Upstream Photo	X	**Site Description:**
Path 46			Downstream Photo		Stream is:
Date: 9/21/2016	Feature ID: ~~GB-6~~ GB-4	Location: Mojave Desert			Braided
					Sinuous
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved X
		Significant Disturbance?		X	Straight
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched
		Hydrology			Bowl Shaped
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow X
		Surface Water/Depth:			Vegetation % In Stream:
Side Slope Estimate: Slight					0-20 X
Veg Type(s) in Drainage: -					20-40
					40-60
					60-80
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		80-100
	Culvert Channel Riprap		Downstream Blocked	X	Stream Type:
	Other:		Lateral Flow Blocked		V-Ditch w/ Sediment
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				Eroded Channel
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Desert Wash X
	Roads Utility Lines Other:				Flowing River/Stream
Stream Cross Section Drawing:					Dry Streambed
					Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: ✓ Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples

Drift/Debris Presence of bed and bank

Benches Soil development Surface relief

Other:

Community succession: NA ☐ / Early (herbs/seedlings) X / Mid (herbs/shrubs/saplings ☐ / Late (herbs/shrubs/trees) ☐

Comments:

Active Floodplain: ☐ Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples

Drift/Debris Presence of bed and bank

Benches Soil development Surface relief

Other:

Community succession: NA ☐ / Early (herbs/seedlings) ☐ / Mid (herbs/shrubs/saplings ☐ / Late (herbs/shrubs/trees) ☐

Comments:

Low Terrace: ☐ Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples

Drift/Debris Presence of bed and bank

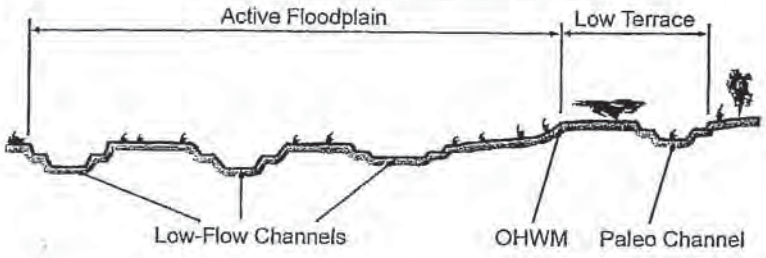
Benches Soil development Surface relief

Other:

Community succession: NA ☐ / Early (herbs/seedlings) ☐ / Mid (herbs/shrubs/saplings ☐ / Late (herbs/shrubs/trees) ☐

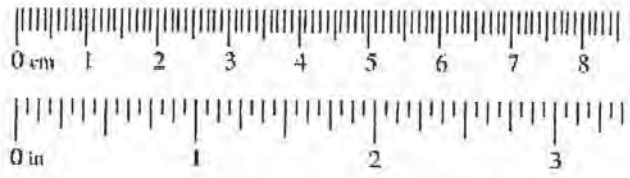
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
		Very fine sand	Sand
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
		Very fine silt	Silt
1/128 0.00015	0.0039		
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: UPB-5
Investigator(s): JCain, CRenfrew

Date: 09.21.16 **Time:** 0920
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

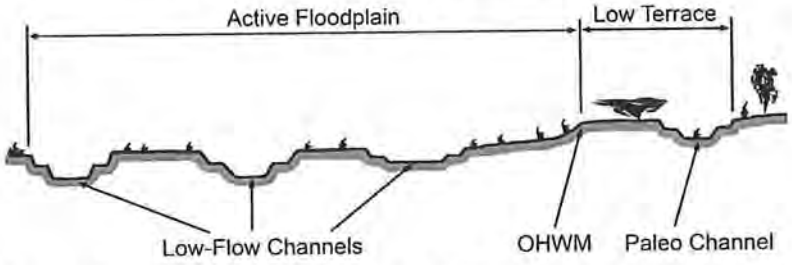
Brief site description:

Sinuous shallow desert wash, downstream blocked.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** 6B-5 **Date:** 09.21.16 **Time:** 0920

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium Sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6B-5 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 9:20
Path 46

Date: 9/21/2016 Feature ID: GB-5 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight

Veg Type(s) in Drainage: -

Upstream Photo	X
Downstream Photo	
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	
Sinuous	X
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road, Culvert, Grazing, Channel, Channelized, Riprap, Other:

Upstream Blocked	
Downstream Blocked	X
Lateral Flow Blocked	

Circle Chemical Issues: Pollution, Oil Slick, Eutrophication, Other:

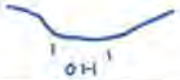
Circle Surrounding Land Use: Urban, Rural, Commercial, Agriculture, Roads, Utility Lines, Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			

Comment:

Low-Flow Channel: ✓ Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA X, Early (herbs/seedlings), Mid (herbs/shrubs/saplings), Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA, Early (herbs/seedlings), Mid (herbs/shrubs/saplings), Late (herbs/shrubs/trees)

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

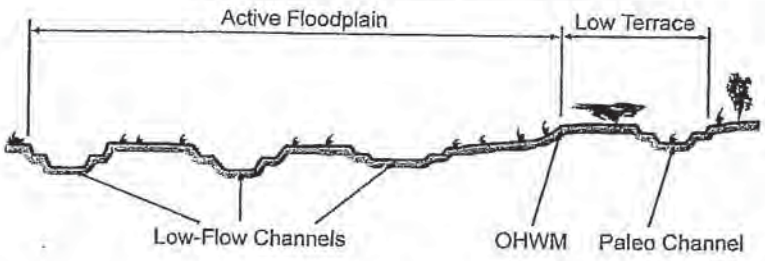
Circle average sediment texture: Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA, Early (herbs/seedlings), Mid (herbs/shrubs/saplings), Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: GB-6
Investigator(s): ICain, CRenfrew

Date: 09.21.16 **Time:** 0930
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

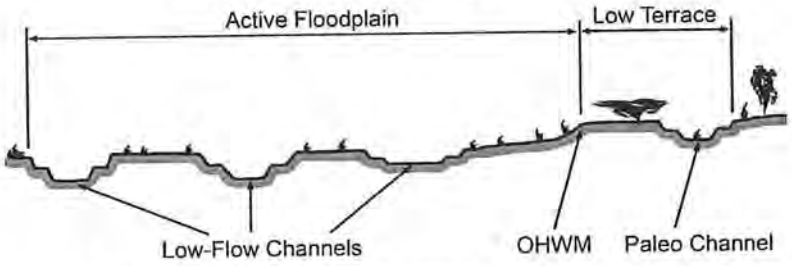
Brief site description:

Desert Wash — North of road, straight & bowl shaped
South of road, braided & shallow

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** GB-6 **Date:** 09.21.16 **Time:** 0930

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 3 % Tree: 0 % Shrub: 1 % Herb: 2 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6B-6 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 15 % Tree: 0 % Shrub: 10 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 930
Path 46

Date: 9/21/2016 Feature ID: 6B-6 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight to moderate

Veg Type(s) in Drainage: Creosote scrub

Upstream Photo	X
Downstream Photo	
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	X
Entrenched	
Bowl Shaped	X
Shallow	X

Vegetation % In Stream:

0-20	X
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Grazing Channelized Culvert Channel Riprap Other:

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Stream Cross Section Drawing:

Additional Description:

N of road straight + bowl

S of road braid. shallow

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 1 Herb % Cover 2

Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	X
Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 0 Shrub % Cover 10 Herb % Cover 5

Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	X
Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

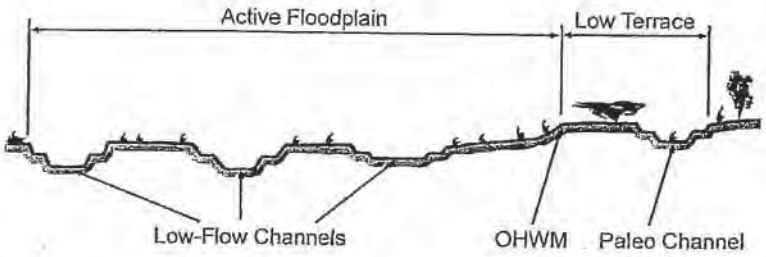
Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
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1/2	0.0098	0.25	Medium sand	Sand
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1/64	0.00031	0.0078	Fine silt	Silt
1/128	0.00015	0.0039	Very fine silt	Silt
			Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46 **Date:** 09.21.16 **Time:** 0940
Project Number: 3MB5000100 Task 00300 **Town:** Mojave **State:** CA
Stream: LC-1 **Photo begin file#:** **Photo end file#:**
Investigator(s): ICain, CRenfrew

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

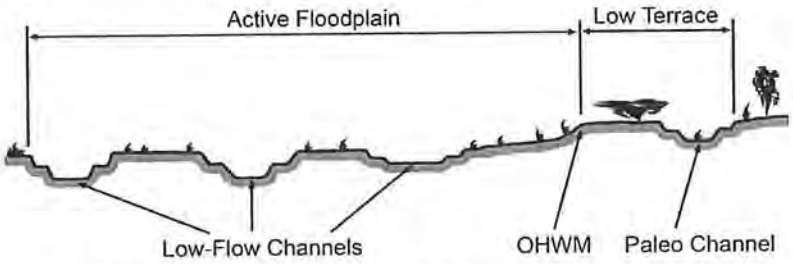
Brief site description:

Sinuous, bowl-shaped desert-wash - downstream braided.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
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5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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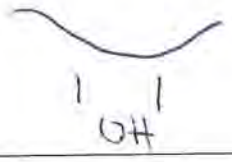
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

3MBC000300

Project ID: ~~GBC-1~~ **Cross section ID:** 6C-1 **Date:** 09.21.16 **Time:** 0940

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 3 % Tree: 0 % Shrub: 1 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: **Cross section ID:** 6C-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

☐ NA
☐ Early (herbaceous & seedlings)
☐ Mid (herbaceous, shrubs, saplings)
☐ Late (herbaceous, shrubs, mature trees)

Indicators:

☐ Mudcracks
☐ Ripples
☐ Drift and/or debris
☐ Presence of bed and bank
☐ Benches
☐ Soil development
☐ Surface relief
☐ Other: _____
☐ Other: _____
☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

☐ NA
☐ Early (herbaceous & seedlings)
☐ Mid (herbaceous, shrubs, saplings)
☐ Late (herbaceous, shrubs, mature trees)

Indicators:

☐ Mudcracks
☐ Ripples
☐ Drift and/or debris
☐ Presence of bed and bank
☐ Benches
☐ Soil development
☐ Surface relief
☐ Other: _____
☐ Other: _____
☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

				√	
Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 940	Upstream Photo	X	**Site Description:**
			Downstream Photo		Stream is:
Date: 9/21/2016	Feature ID: 6C-1	Location: Mojave Desert			Braided
					Sinuous X
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved
		Significant Disturbance?		X	Straight
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched
		Hydrology			Bowl Shaped X
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow
		Surface Water/Depth:			Vegetation % In Stream:
Side Slope Estimate: Moderate					0-20 X
Veg Type(s) in Drainage: Larrea / Krameria					20-40
					40-60
					60-80
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		80-100
	Culvert Channel Riprap		Downstream Blocked	X	Stream Type:
	Other:		Lateral Flow Blocked		V-Ditch w/ Sediment
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				Eroded Channel
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Desert Wash X
	Roads Utility Lines Other:				Flowing River/Stream
Stream Cross Section Drawing:					Dry Streambed
					Additional Description:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 1 Herb % Cover 2

Circle average sediment texture: Silt: Fine Medium Coarse; Sand: Fine Medium Course Very Coarse; Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings) X
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Granule Pebble Cobble Boulder; Sand: Fine Medium Course Very Coarse; Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

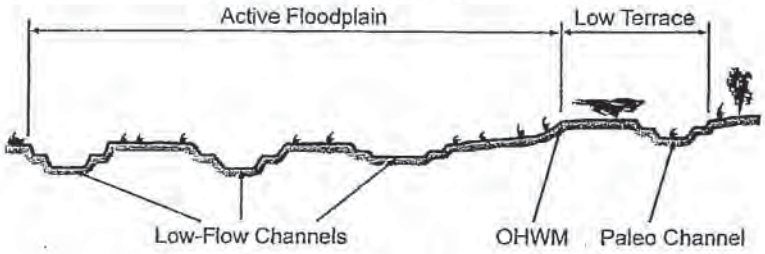
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Granule Pebble Cobble Boulder; Sand: Fine Medium Course Very Coarse; Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



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1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: LOC-2
Investigator(s): ICain, CRenfrow

Date: 09.21.16 **Time:** 0950
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

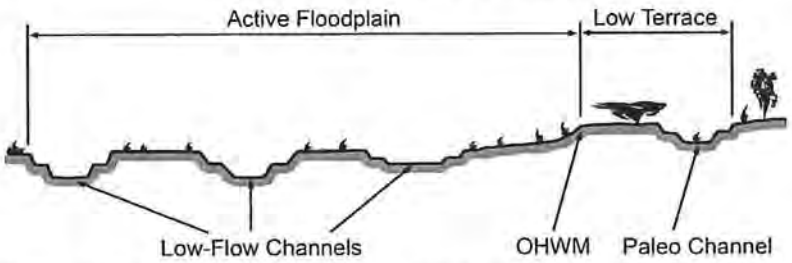
Brief site description:

braided, shallow desert wash
— low road built near middle of feature.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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Wentworth Size Classes

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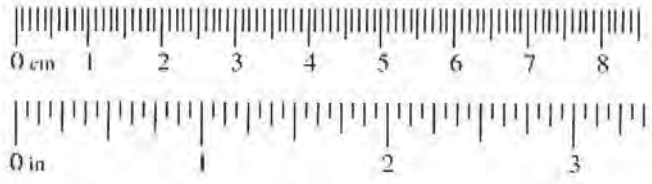
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6C-2 **Date:** 09.21.16 **Time:** 0950

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

No grasses

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6C-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: 12-17 % Tree: 1 % Shrub: 10-15% Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 950	Upstream Photo		**Site Description:**	
			Downstream Photo	X	Stream is:	
Date: 9/21/2016	Feature ID: 6C-2	Location: Mojave Desert			Braided	X
					Sinuous	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	
		Significant Disturbance?			Straight	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched	
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology			Bowl Shaped	
		Wetland Plants			Shallow	X
		Surface Water/Depth:			Vegetation % In Stream:	
Side Slope Estimate: Slight					0-20	
Veg Type(s) in Drainage: Am salsola scrub					20-40	X
					40-60	
					60-80	
					80-100	

Anthropogenic Modifications: Road, Culvert, Other: | Grazing, Channel | Channelized, Riprap

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked X

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Circle Chemical Issues: Pollution, Oil Slick, Eutrophication, Other:

Circle Surrounding Land Use: Urban, Rural, Commercial, Agriculture, Roads, Utility Lines, Other:

Stream Cross Section Drawing:

Additional Description:
Low road built near middle of feature in survey area

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species	X	Other:	
Change in vegetation cover	X		

Comment: No grasses

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1

Circle average sediment texture — Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings) X
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Active Floodplain: X Tree % Cover 1 Shrub % Cover 10-15 Herb % Cover 0

Circle average sediment texture — Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees) X

Comments:

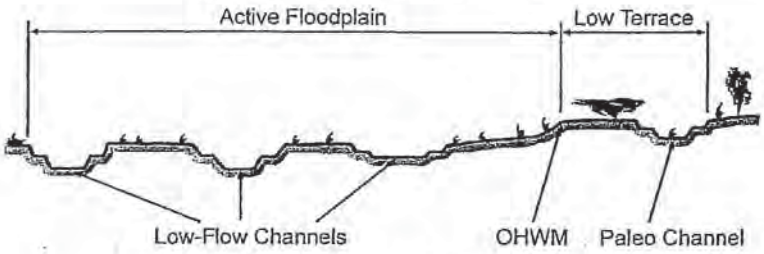
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture — Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder — Other:

Circle Indicators: Mudcracks Ripples	Community succession: NA
Drift/Debris Presence of bed and bank	Early (herbs/seedlings)
Benches Soil development Surface relief	Mid (herbs/shrubs/saplings
Other:	Late (herbs/shrubs/trees)

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: LD-1
Investigator(s): JCain, CRenfrew

Date: 09.21.16 **Time:** 1030
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

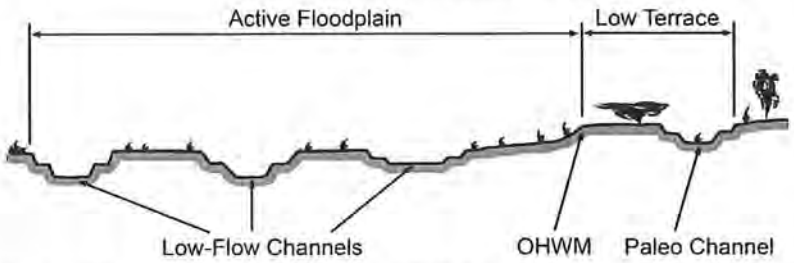
Brief site description:

Braided bowl shaped desert wash - upstream blocked

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

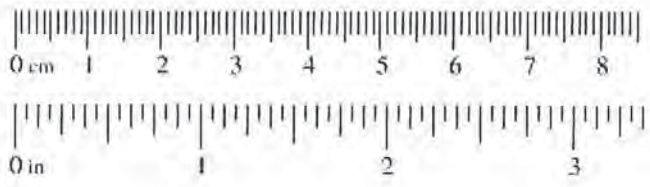


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** LOD-1 **Date:** 09.21.16 **Time:** 1030

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: coarse sand

Total veg cover: 3 % Tree: 0 % Shrub: 1 % Herb: 2 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6D-1 **Date:** 09.21.16 **Time:** 1030

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 26-31% Tree: 1 % Shrub: 20 % Herb: 5-10%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1030
Path 46

Date: 9/21/2016 Feature ID: 6D-1 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Moderate

Veg Type(s) in Drainage: J tree, Larrea, Krumeria

Upstream Photo	X
Downstream Photo	
Do Normal Conditions Exist?	X
Significant Disturbance?	X
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	X
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	X
Shallow	

Vegetation % In Stream:

0-20	
20-40	
40-60	X
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

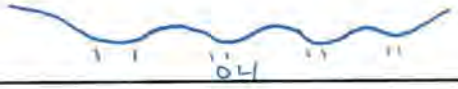
Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked	X
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 3 Herb % Cover 2
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	X
Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 1 Shrub % Cover 20 Herb % Cover 5-10
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	X

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

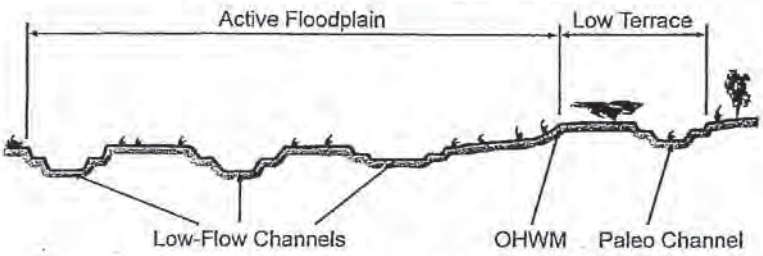
Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
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1/4 0.005	0.125	Fine sand	
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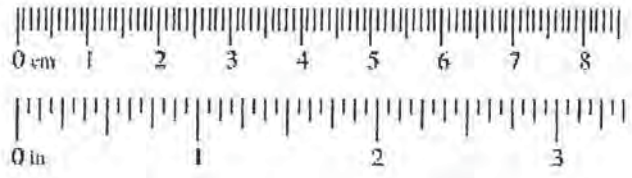


Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 6D-2
Investigator(s): I Cain, C Renfrew

Date: 09.21.16
Time: 1100
Town: Mojave Desert
State: CA
Photo begin file#:
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

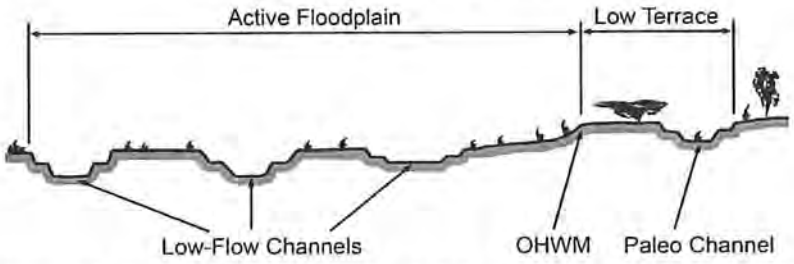
Brief site description:

Braided shallow desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
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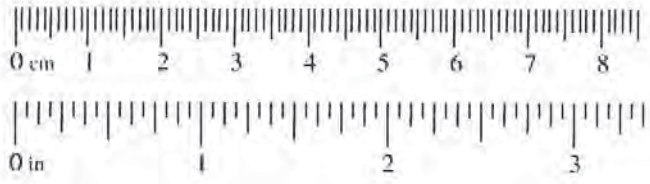
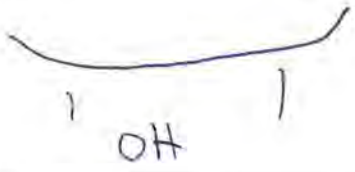
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6D-2 **Date:** 09.21.16 **Time:** 1100

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: med/coarse sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6D-2 **Date:** 09.21.16 **Time:** 1100

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: granule

Total veg cover: 6-11 % Tree: 0 % Shrub: 5-10 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1100
Path 46

Date: 9/21/2016 Feature ID: 6D-2 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Slight

Veg Type(s) in Drainage: Krameria Lycium

Upstream Photo	✓
Downstream Photo	
Do Normal Conditions Exist?	✓
Significant Disturbance?	✓
Potential Wetland?	
Hydrology	
Wetland Plants	
Surface Water/Depth:	

Site Description:

Stream is:

Braided	✓
Sinuous	
Curved	
Straight	
Entrenched	
Bowl Shaped	
Shallow	✓

Vegetation % in Stream:

0-20	✓
20-40	
40-60	
60-80	
80-100	

Anthropogenic Modifications: Road Grazing Channelized
Culvert Channel Riprap
Other:

Upstream Blocked	
Downstream Blocked	
Lateral Flow Blocked	

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture
Roads Utility Lines Other:

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	✓
Flowing River/Stream	
Dry Streambed	

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	✓	Break in bank slope	✓
Change in vegetation species		Other:	
Change in vegetation cover	✓		

Comment:

Low-Flow Channel: ✓ Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Silt: Fine Medium Coarse Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA ✓
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

Comments:

Active Floodplain: ✓ Tree % Cover 0 Shrub % Cover 5-10 Herb % Cover 1
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings ✓
Late (herbs/shrubs/trees)

Comments:

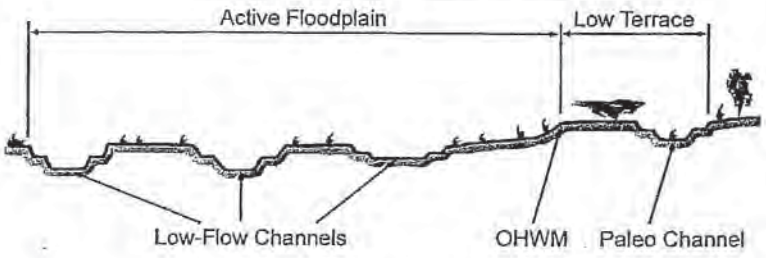
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover
Circle average sediment texture Sand: Fine Medium Course Very Coarse
Granule Pebble Cobble Boulder Other:

Circle Indicators: Mudcracks Ripples
Drift/Debris Presence of bed and bank
Benches Soil development Surface relief
Other:

Community succession: NA
Early (herbs/seedlings)
Mid (herbs/shrubs/saplings
Late (herbs/shrubs/trees)

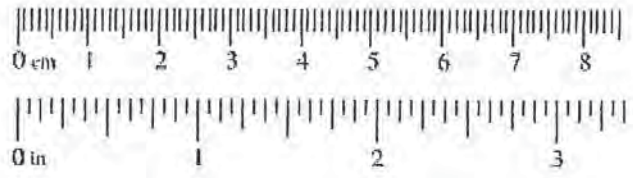
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 6D-3
Investigator(s): ICain, CKenfield

Date: 09.21.16 **Time:** 1110
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

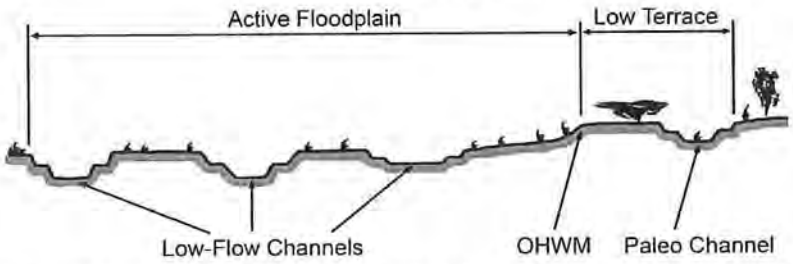
Brief site description:

curved shallow desert wash — lateral flow blocked.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

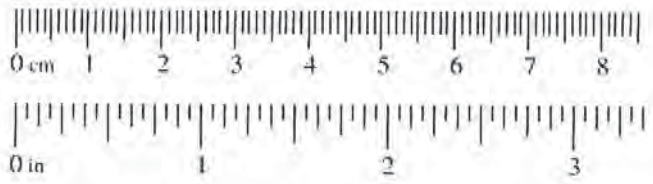


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

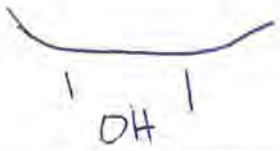
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6D-3 **Date:** 09.21.16 **Time:** 1110

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: med. sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1110	Upstream Photo	X	**Site Description:**
Date: 9/21/2016	Feature ID: 6D-3	Location: Mojave Desert	Downstream Photo		Stream is:
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Braided / Sinuous / Curved / Straight
		Significant Disturbance?		X	
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched / Bowl Shaped / Shallow
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology			
		Wetland Plants			
		Surface Water/Depth:			
Side Slope Estimate: Slight					Vegetation % In Stream:
Veg Type(s) in Drainage: Annual sage					0-20 X / 20-40 / 40-60 / 60-80 / 80-100

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked	
	Culvert	Channel	Riprap	Downstream Blocked	
	Other:			Lateral Flow Blocked	X
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture	
	Roads	Utility Lines	Other:		

Stream Type: V-Ditch w/ Sediment / Eroded Channel / Desert Wash X / Flowing River/Stream / Dry Streambed

Additional Description:

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 1

Circle average sediment texture: Silt: Fine Medium Coarse; Sand: Fine Medium Course Very Coarse; Granule Pebble Cobble Boulder; Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA / Early (herbs/seedlings) X / Mid (herbs/shrubs/saplings / Late (herbs/shrubs/trees)

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Silt: Fine Medium Coarse; Sand: Fine Medium Course Very Coarse; Granule Pebble Cobble Boulder; Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA / Early (herbs/seedlings) / Mid (herbs/shrubs/saplings / Late (herbs/shrubs/trees)

Comments:

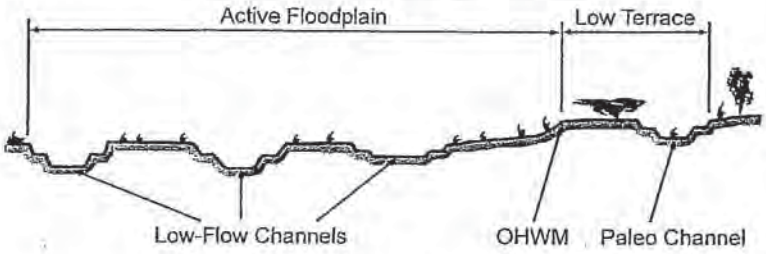
Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture: Silt: Fine Medium Coarse; Sand: Fine Medium Course Very Coarse; Granule Pebble Cobble Boulder; Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:	Community succession: NA / Early (herbs/seedlings) / Mid (herbs/shrubs/saplings / Late (herbs/shrubs/trees)

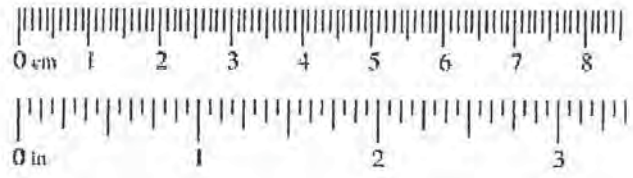
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: WE-1
Investigator(s): AR, CVSC

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 1110
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

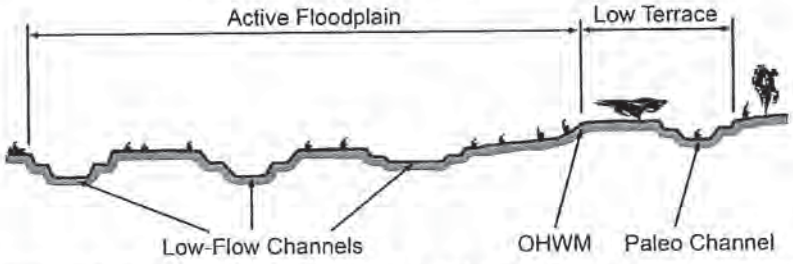
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

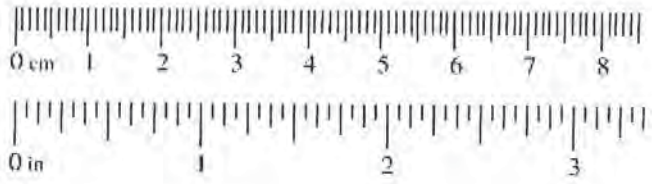


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6E-1 **Date:** 9/21/16 **Time:** 1110

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6E-1 **Date:** 9/21/16 **Time:** 1116

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt w/Pebble

Total veg cover: 30 % Tree: <1 % Shrub: 15 % Herb: 15 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ ~~Mid (herbaceous, shrubs, saplings)~~
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment textur
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/16

Feature ID	6E-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Drift deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash +
Surrounding Land Use	Open Space + transmission line
Other Notes	mound of sediment pushed into drainage

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: UE-2
Investigator(s): AR, CDC

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 1125
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

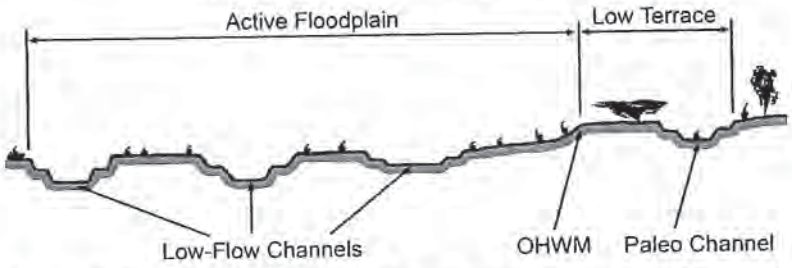
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** XE-1 **Date:** 9/21/16 **Time:** 1125

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine to Medium Sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** LoE-2 **Date:** 9/21/16 **Time:** 1125

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt w/Pebble

Total veg cover: 15 % Tree: 0 % Shrub: 10 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/2/14

Feature ID	6E-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Drift deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 6F-1
Investigator(s): AR, CDC

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 0945
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

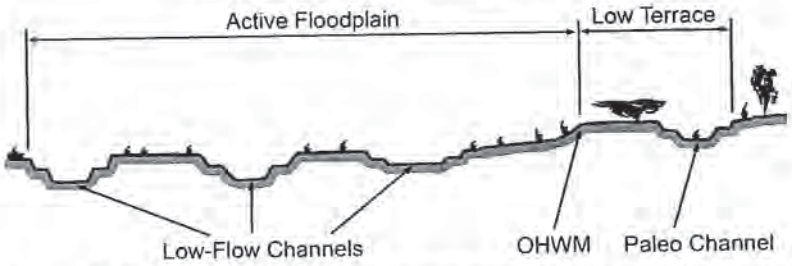
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

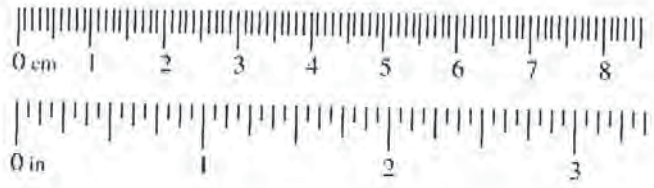


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** LOF-1 **Date:** 9/21/16 **Time:** 0945

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very Fine Sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** LoF-1 **Date:** 9/21/16 **Time:** 0945

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand w/Pebble

Total veg cover: 32 % Tree: 2 % Shrub: 10 % Herb: 20 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

0945

Project/Task No. 3MBC000100/00300	Project Name Path 46	9/21/16
Field Staff AR, CDC		Date 9/30

Feature ID	~~C-6F-1~~
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Drainage Patterns, Δ in sediment texture, Soil Cracks
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody -- herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: LOF-2
Investigator(s): AR, CRC

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 0945
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

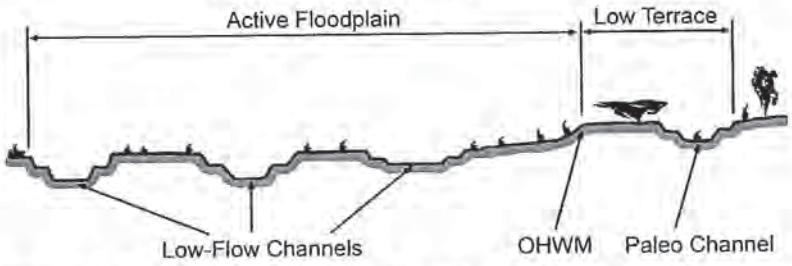
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

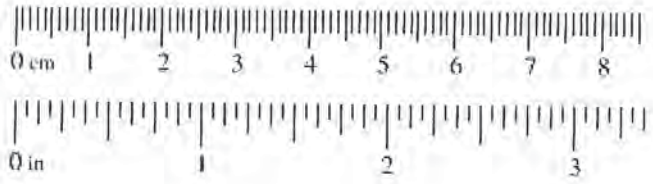


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** LF-2 **Date:** 9/21/16 **Time:** 0955

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule to Cobble

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6F-2 **Date:** 9/24/14 **Time:** 0955

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: Pebble
Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: 1 %
Community successional stage:
- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: Pebble
Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: 1 %
Community successional stage:
- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet 0955

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CC	Date 9/21/16

Feature ID	6F-2
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Land Use	Open Space + transmission line
Other Notes	*Trash → can scatter

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: LF-3
Investigator(s): AR, CC

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 1020
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

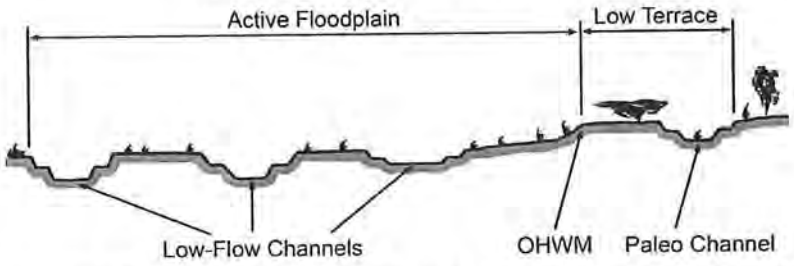
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

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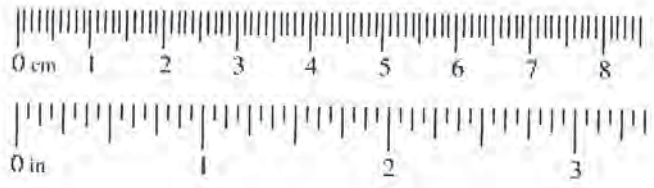
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6F-3 **Date:** 9/21/14 **Time:** 1020

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Silt to Very Fine Sand

Total veg cover: 4 % Tree: 0 % Shrub: 2 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] ~~Surface relief~~
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6F-3 **Date:** 9/21/16 **Time:** 1020

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/Pebble

Total veg cover: ____ % Tree: 1 % Shrub: 20 % Herb: 50 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/24/14

Feature ID	LOF-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Soil Crack, Drift Deposit, Bed/Bank, A in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: UF-4
Investigator(s): AR, CRC

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 1035
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

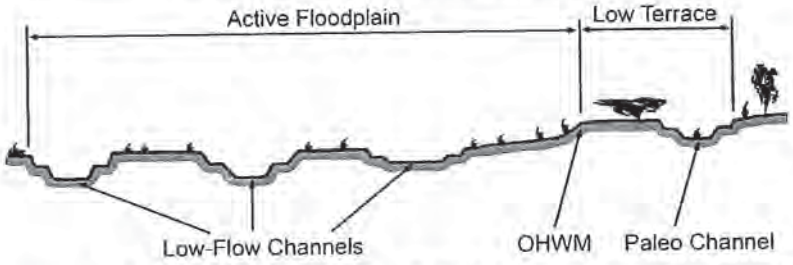
Brief site description:

Dry Reser + Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	Gravel
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	Gravel
	0.079	2.00	Granule	Gravel
	0.039	1.00	Very coarse sand	Sand
	0.020	0.50	Coarse sand	Sand
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	Sand
1/8	0.0025	0.0625	Very fine sand	Sand
1/16	0.0012	0.031	Coarse silt	Silt
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	Silt
1/128	0.00015	0.0039	Very fine silt	Silt
			Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** LeF-4 **Date:** 9/21/14 **Time:** 1035

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand w/Pebble

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: A in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6F-4 **Date:** 9/21/16 **Time:** 1035

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/ Pebble + Cobble

Total veg cover: 25 % Tree: 0 % Shrub: 15 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/14

Feature ID	6F-4
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment, Soil Cracks, Drift Deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 6F-5
Investigator(s): AR, CDC

Date: 9/30/14
Town: Mojave Desert
Photo begin file#:

Time: 1044
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

DRV + Road Crossing

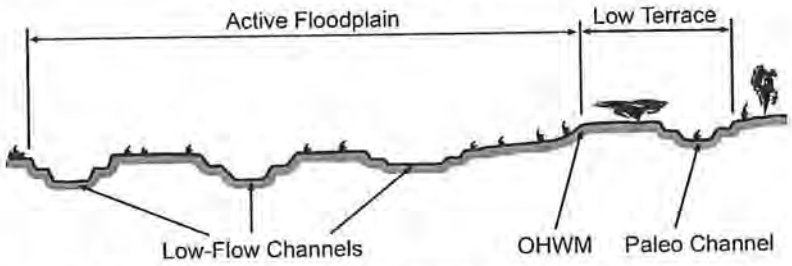
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

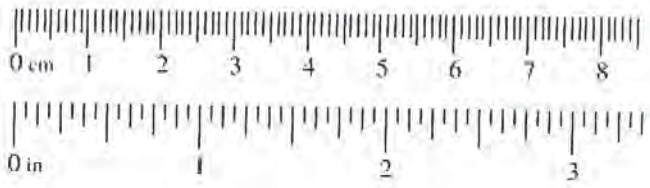


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6F-5 **Date:** 9/21/16 **Time:** 1048

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6F-5 **Date:** 7/21/16 **Time:** 1045

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble w/Cobble

Total veg cover: 5 % Tree: 0 % Shrub: 4 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CRC	Date 9/21/16

Feature ID	LOF-5
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture,
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing & trash
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 6G-1
Investigator(s): AR, CBC

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 0900
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossings

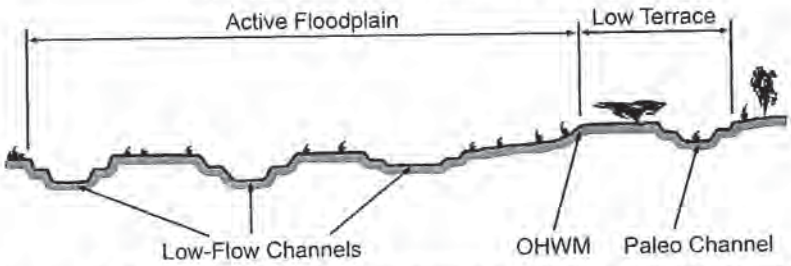
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
		Pebble	
0.157	4		
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
		Medium sand	Sand
1/2 0.0098	0.25		
		Fine sand	
1/4 0.005	0.125		
		Very fine sand	
1/8 0.0025	0.0625		
1/16 0.0012	0.031	Coarse silt	
		Medium silt	
1/32 0.00061	0.0156		Silt
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** LeGr-2 **Date:** 9/21/14 **Time:** 0900

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: ~~4~~

Characteristics of the floodplain unit:

Average sediment texture: Medium

Total veg cover: <1 % Tree: 0 % Shrub: 0 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6G-1 **Date:** 9/21/16 **Time:** 0900

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 50 % Tree: 0 % Shrub: 10 % Herb: 40 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/14

Feature ID	DG-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Drift deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	~~bve~~ unveg in channel
Chemical Indicators[6]	un/L
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: LGR-2
Investigator(s): AR, CDC

Date: 9/21/16
Town: Mojave Desert
Time: 0915
State: CA
Photo begin file#:
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

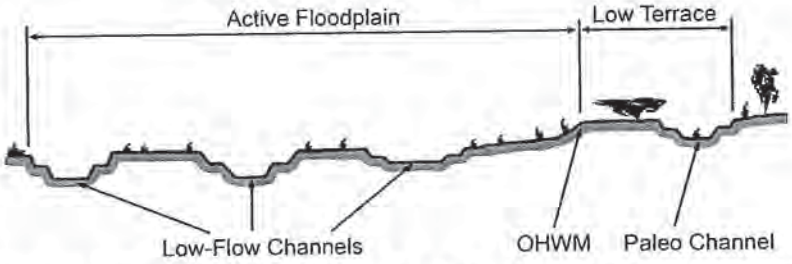
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

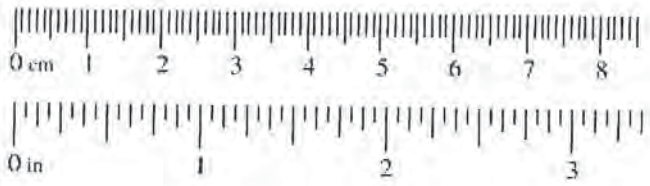


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6Gr-2 **Date:** 9/21/16 **Time:** 0915

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine to Medium Sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: A in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** LoGr-2 **Date:** 9/21/16 **Time:** 0915

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 3 % Tree: 0 % Shrub: 2 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/Pebble

Total veg cover: 32 % Tree: 0 % Shrub: 2 % Herb: 30 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/16

Feature ID	6G-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Drift deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: LG-3
Investigator(s): AR, CRC

Date: 9/21/16
Town: Mojave Desert
Photo begin file#:

Time: 0916
State: CA
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

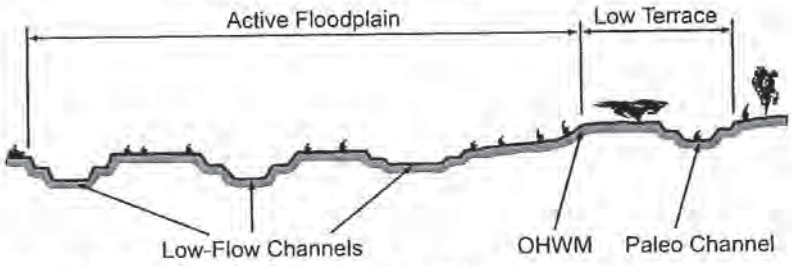
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Project ID: 3MBC000300 **Cross section ID:** LeGr-3 **Date:** 09/21/16 **Time:** 0916

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand

Total veg cover: 2 % Tree: 0 % Shrub: 0 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** LoGr-3 **Date:** 9/21/16 **Time:** 1021

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 4 % Tree: 0 % Shrub: 1 % Herb: 3 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/Pebble

Total veg cover: 12 % Tree: 0 % Shrub: 2 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/11

Feature ID	6G-3
Preliminary Jurisdictional Status[1]	CDFW, RWQCB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Sediment deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: LOG-4
Investigator(s): AR, CDC

Date: 9/21/16 **Time:** 0930
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

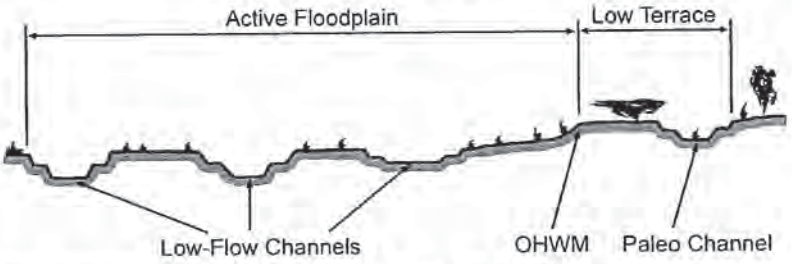
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

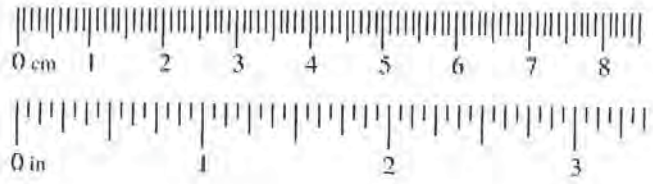


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 6G-4 **Date:** 9/21/16 **Time:** 0930

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: <1 % Tree: 0 % Shrub: 0 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 6G-4 **Date:** 7/21/16 **Time:** 0930

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 3 % Tree: 0 % Shrub: 1 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Pebble

Total veg cover: 20 % Tree: 0 % Shrub: 5 % Herb: 15 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

0930

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/21/14

Feature ID	LoG-4
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	Unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7A-1
Investigator(s): AR, CRC

Date: 9/20/14
Town: Mojave Desert
Time: 1113
State: CA
Photo begin file#:
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

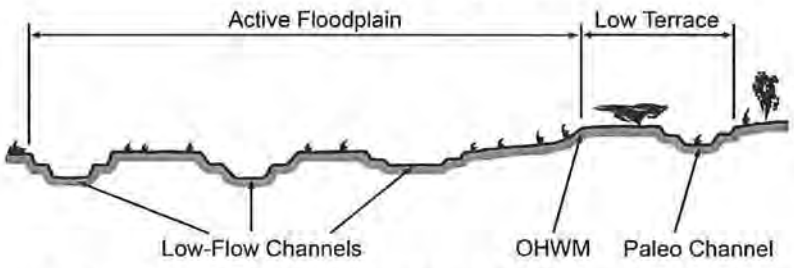
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

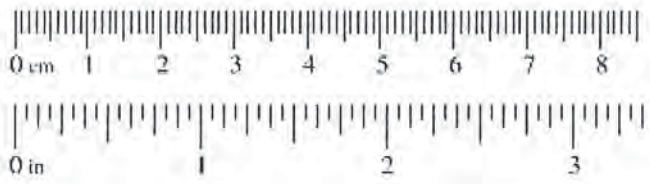


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7A-1 **Date:** 9/20/14 **Time:** 1113

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Silt

Total veg cover: 7 % Tree: 0 % Shrub: 5 % Herb: 2 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** MA-1 **Date:** 9/20/14 **Time:** 1113

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: Pebble w/Coarse Sand
Total veg cover: 43 % Tree: 0 % Shrub: 40 % Herb: 3 %
Community successional stage:
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:
Average sediment texture: Pebbles w/Cobble
Total veg cover: 31 % Tree: 1 % Shrub: 10 % Herb: 20 %
Community successional stage:
- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:
- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/20/16

Feature ID	7A-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Drift deposit, Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7A-2
Investigator(s): AR, CDC

Date: 9/20/14
Town: Mojave Desert
Time: 1129
State: CA
Photo begin file#:
Photo end file#:

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

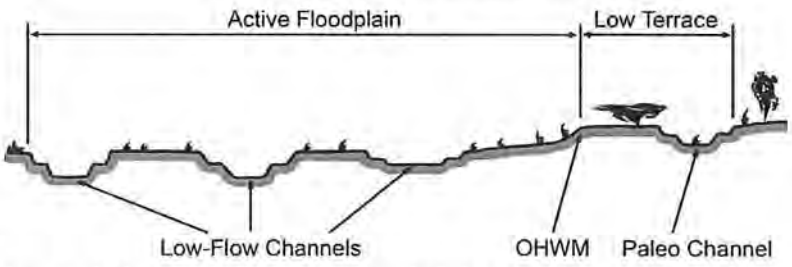
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

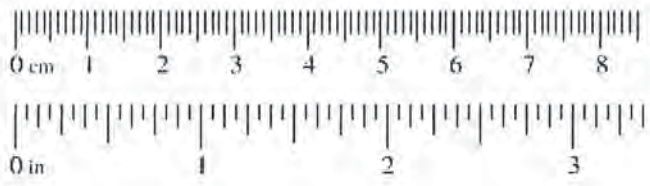


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
		Medium sand	Sand
1/2 0.0098	0.25		
		Fine sand	
1/4 0.005	0.125		
		Very fine sand	
1/8 0.0025	0.0625		
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	
1/32 0.00061	0.0156		Silt
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7A-2 **Date:** 7/20/16 **Time:** 1129

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Cobble to Boulder

Total veg cover: <1 % Tree: 0 % Shrub: 0 % Herb: <1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000800 **Cross section ID:** 7A-2 **Date:** 9/20/16 **Time:** 1129

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/20/14

Feature ID	7A-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment (barely texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7B-1
Investigator(s): ICain, C Renfrew

Date: 09.20.16 **Time:** 1125
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road, culvert

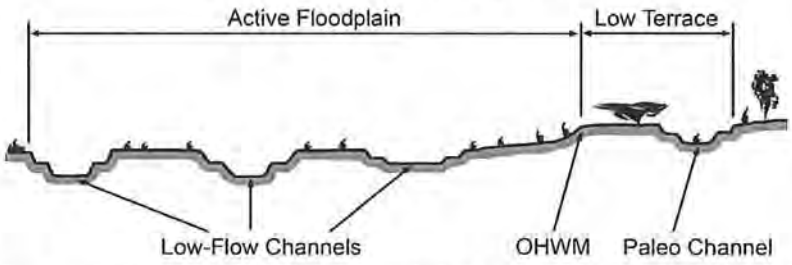
Brief site description:

Shivas bowl-shaped desert-wash — failed culvert.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

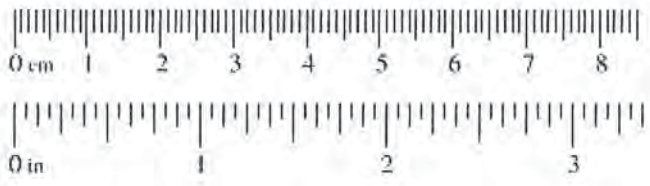


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	Silt
1/32 0.00061	0.0156		
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** TB-1 **Date:** 09.20.16 **Time:** 1125

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 10 % Tree: 0 % Shrub: 5 % Herb: 5 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** TB-1 **Date:** 09.20.16 **Time:** 1125

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 57 % Tree: 2 % Shrub: 50 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Staff: CR and IC Time: 1125
Path 46
Date: 9/20/2016 Feature ID: 7B-1 Location: Mojave Desert

Circle Preliminary Status: USACE CDFW RWQCB

Circle Flow Character: Ephemeral Intermittent Perennial

OHWM Recorded by: Field Map GPS GIS Digitizing

Side Slope Estimate: Moderate

Veg Type(s) in Drainage: J tree, Gutierrezia, Lycium

Upstream Photo: X
Downstream Photo:

Do Normal Conditions Exist? X
Significant Disturbance? X

Potential Wetland?
Hydrology
Wetland Plants
Surface Water/Depth:

Site Description:

Stream is:

Braided	
Sinuous	X
Curved	
Straight	
Entrenched	
Bowl Shaped	X
Shallow	

Vegetation % In Stream:

0-20	
20-40	
40-60	X
60-80	
80-100	

Stream Type:

V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Anthropogenic Modifications: Road, Culvert, Other: failed; Grazing, Channel, Channelized, Riprap

Upstream Blocked
Downstream Blocked
Lateral Flow Blocked

Circle Chemical Issues: Pollution Oil Slick Eutrophication Other:

Circle Surrounding Land Use: Urban Rural Commercial Agriculture Roads Utility Lines Other: OS

Stream Cross Section Drawing:

Additional Description:

Failed culvert

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 5

Circle average sediment texture
Silt: Fine Medium Coarse
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	X
Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 2 Shrub % Cover 50 Herb % Cover 5

Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	X

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture
Granule Pebble Cobble Boulder
Sand: Fine Medium Course Very Coarse
Other:

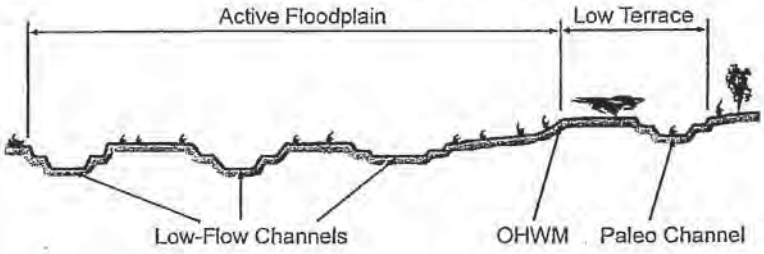
Circle Indicators: Mudcracks Ripples Drift/Debris Presence of bed and bank Benches Soil development Surface relief Other:

Community succession:

NA	
Early (herbs/seedlings)	
Mid (herbs/shrubs/saplings	
Late (herbs/shrubs/trees)	

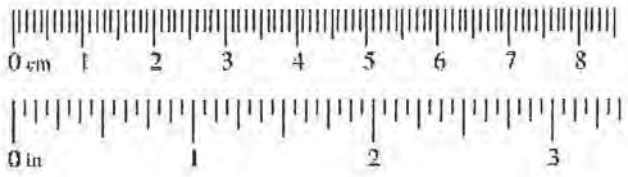
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: TB-2
Investigator(s): I Cain, CRenfrew

Date: 09.20.16 **Time:** 1140
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road, culvert

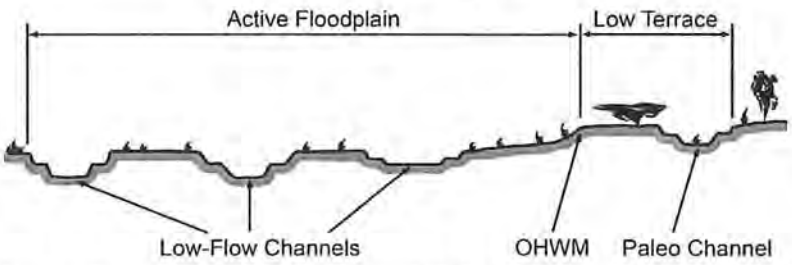
Brief site description:

straight shallow desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
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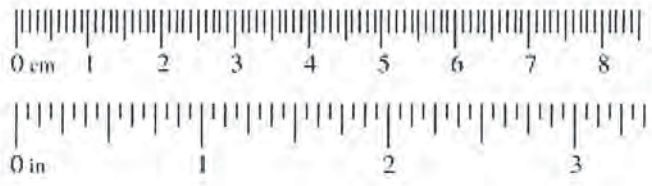
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7B-2 **Date:** 09.20.16 **Time:** 1140

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: med/coarse sand

Total veg cover: 7 % Tree: 0 % Shrub: 5 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** TB-2 **Date:** 09.20.16 **Time:** 1140

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Cobble

Total veg cover: 47 % Tree: 2 % Shrub: 40 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1140	Upstream Photo	X
			Downstream Photo	
Date: 9/20/2016	Feature ID: 7B-2	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: Slight				
Veg Type(s) in Drainage: Itrae, Larrea, Gutierrizia, Lycium				

Site Description:	
Stream is:	
Braided	
Sinuous	
Curved	
Straight	X
Entrenched	
Bowl Shaped	
Shallow	X
Vegetation % In Stream:	
0-20	
20-40	
40-60	X
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other:	

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 5 Herb % Cover 2

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators:	Mudcracks Ripples	Community succession:	NA
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	X
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: X Tree % Cover 2 Shrub % Cover 40 Herb % Cover 5

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators:	Mudcracks Ripples	Community succession:	NA
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	X

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

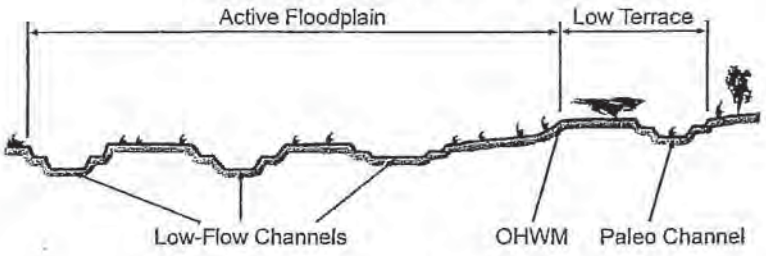
Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators:	Mudcracks Ripples	Community succession:	NA
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
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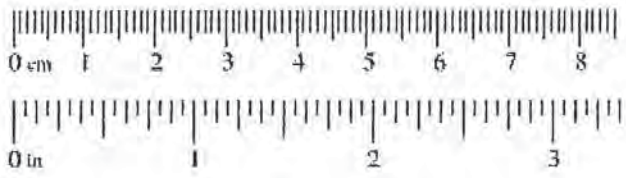
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7C-1
Investigator(s): AR, CRC

Date: 7/20/14 **Time:** 0945
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

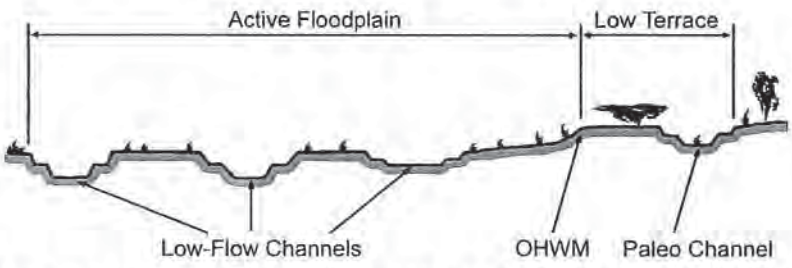
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
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   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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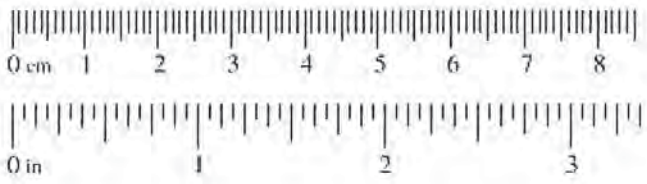
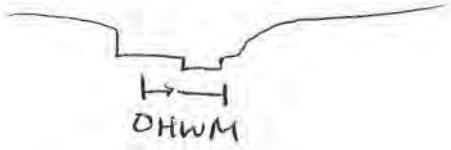
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7C-1 **Date:** 9/20/16 **Time:** 0945

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 1 % Tree: 0 % Shrub: <1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** TC-1 **Date:** 9/20/14 **Time:** 0945

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand w/Pebbles

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: A in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, COC	Date 9/20/16

Feature ID	7C-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, ∆ in sediment texture, Drift
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	unveg in
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7C-2
Investigator(s): AR, CRC

Date: 9/20/14 **Time:** 0945
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV & Road Crossing

Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
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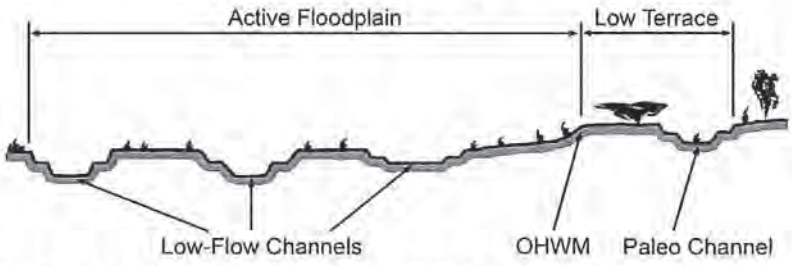
Hydrogeomorphic Floodplain Units



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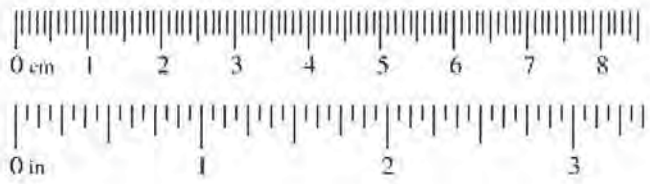
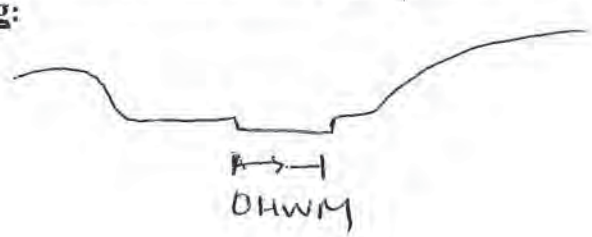
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** ~~7C-1~~ 7C-2 **Date:** 9/20/16 **Time:** 0945

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 2 % Tree: 0 % Shrub: 0 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 7C-1 **Date:** 9/20/16 **Time:** 0945

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: ~~Ve~~ Fine Sand w/ Pebble + Cobble

Total veg cover: 0 % Tree: 0 % Shrub: + % Herb: 15 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 9/20/14

Feature ID	MC-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Drift Deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Inveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: ~~2~~ 7C-3
Investigator(s): AR, CRC

Date: 9/20/14 **Time:** 1015
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

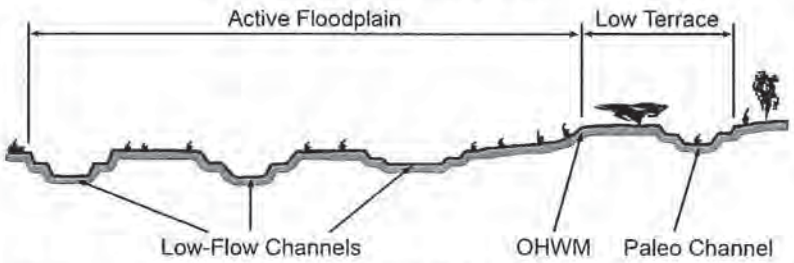
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

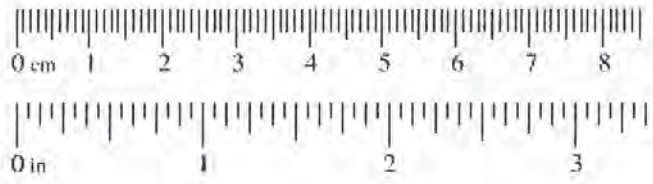


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

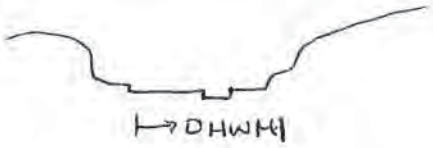
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
0.0098	0.25	Medium sand	Sand
		Fine sand	
0.005	0.125		
0.0025	0.0625	Very fine sand	
		Coarse silt	
0.0012	0.031		
0.00061	0.0156	Medium silt	Silt
		Fine silt	
0.00031	0.0078		
0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7C-3 **Date:** ~~9~~ 9/20/16 **Time:** 1015

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** ~~2~~ 7C-3 **Date:** 9/20/16 **Time:** 1015

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: ~~B~~ Pebble to Cobble

Total veg cover: 7 % Tree: 0 % Shrub: 5 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☑ ~~Other:~~ Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

1015

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CC	Date 09/20/16

Feature ID	MC-3
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Drift Deposit
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	moderate slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7E-1
Investigator(s): I Cain, C Renfrew

Date: 09.20.16 **Time:** 0950
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

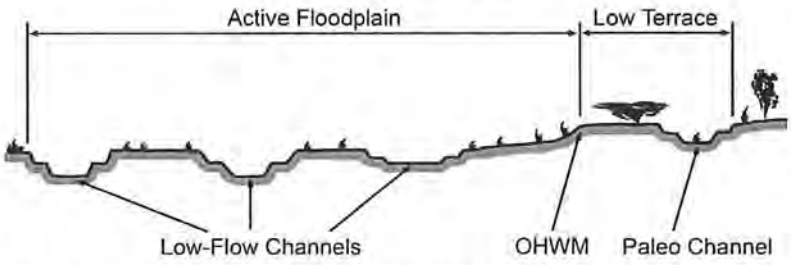
Brief site description:

Curved shallow desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

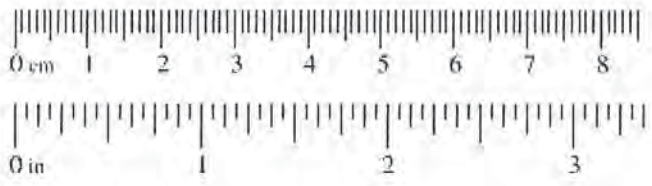


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

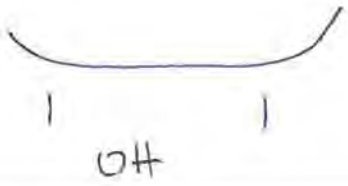
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
1/32 0.00061	0.0156	Medium silt	Silt
		Fine silt	
1/64 0.00031	0.0078		
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7E-1 **Date:** 09.20.16 **Time:** 0950

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: coarse sand

Total veg cover: 2 % Tree: 0 % Shrub: 0 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 950	Upstream Photo	X
			Downstream Photo	
Date: 9/20/2016	Feature ID: 7E-1	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: Slight				
Veg Type(s) in Drainage: Herbs				

Site Description:	
Stream is:	
Braided	
Sinuous	
Curved	X
Straight	
Entrenched	
Bowl Shaped	
Shallow	X
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	
Additional Description:	

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other: OS	

Stream Cross Section Drawing:

OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 2

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators:	Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	X
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators:	Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

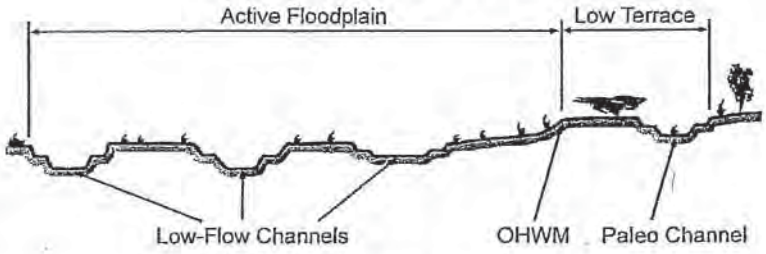
Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators:	Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

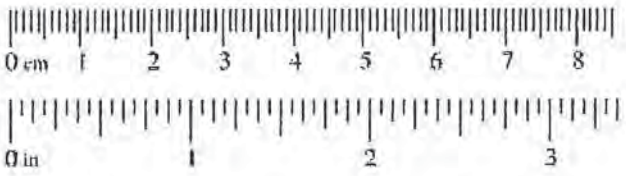
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7E-2
Investigator(s): ICain, CRenfrew

Date: 09.20.16 **Time:** 1005
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

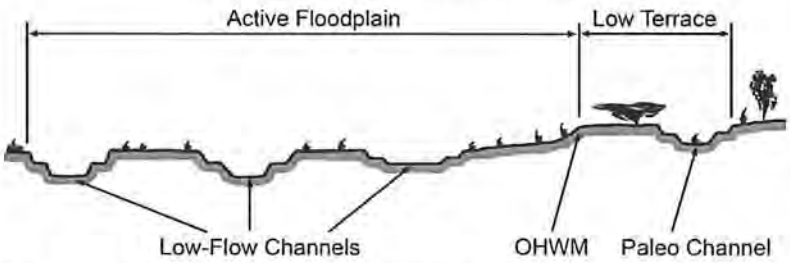
Brief site description:

Sinuous bowl-shaped desertwash – downstream bedrock

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

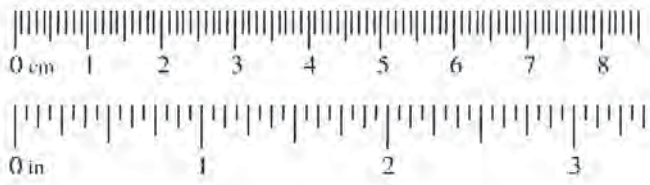


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	Silt
1/32 0.00061	0.0156		
		Fine silt	
1/64 0.00031	0.0078		
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7E-2 **Date:** 09.20.16 **Time:** 1005

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: coarse sand

Total veg cover: 22 % Tree: 0 % Shrub: 20 % Herb: 2 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 7E-2 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1005	Upstream Photo		Site Description:		
			Downstream Photo		Stream is:		
Date: 9/20/2016	Feature ID: 7E-2	Location: Mojave Desert			Braided		
					Sinuous	X	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved		
		Significant Disturbance?			Straight		
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched		
		Hydrology			Bowl Shaped	X	
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants			Shallow		
		Surface Water/Depth:			Vegetation % In Stream:		
Side Slope Estimate: Slight-Moderate					0-20		
Veg Type(s) in Drainage: Lycium Acacia					20-40	X	
					40-60		
Anthropogenic Modifications:	Road	Grazing	Channelized		Upstream Blocked		60-80		
	Culvert	Channel	Riprap		Downstream Blocked	X	80-100		
	Other:				Lateral Flow Blocked		Stream Type:		
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication	Other:			V-Ditch w/ Sediment		
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture			Eroded Channel		
	Roads	Utility Lines	Other: OS				Desert Wash	X	
Stream Cross Section Drawing:							Flowing River/Stream		
							Dry Streambed		
							Additional Description:		

OHWM:

Change in sediment texture	X	Break in bank slope	X
Change in vegetation species		Other:	
Change in vegetation cover			

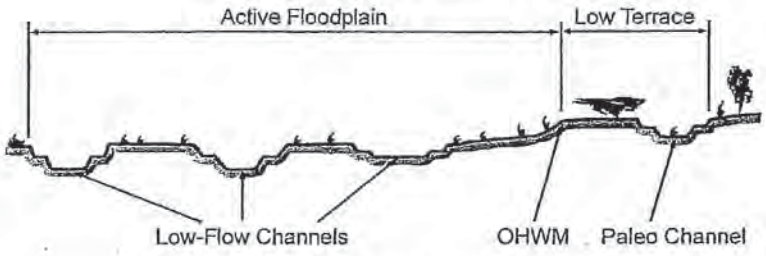
Comment:

Low-Flow Channel:	X	Tree % Cover 0	Shrub % Cover 20	Herb % Cover 2		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Silt: Fine Medium Coarse		Other:				
Circle Indicators: Mudcracks Ripples			Community succession:	NA		
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)		
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings	X	
Other:				Late (herbs/shrubs/trees)		
Comments:						

Active Floodplain:		Tree % Cover	Shrub % Cover	Herb % Cover		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples			Community succession:	NA		
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)		
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings		
Other:				Late (herbs/shrubs/trees)		
Comments:						

Low Terrace:		Tree % Cover	Shrub % Cover	Herb % Cover		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples			Community succession:	NA		
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)		
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings		
Other:				Late (herbs/shrubs/trees)		
Comments:						

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
	0.079	2.00	Granule	
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
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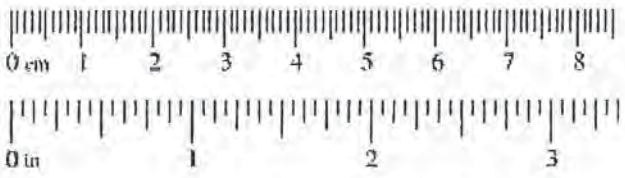
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7E-3
Investigator(s): ICain, CRenfrew

Date: 09.20.16 **Time:** 1030
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

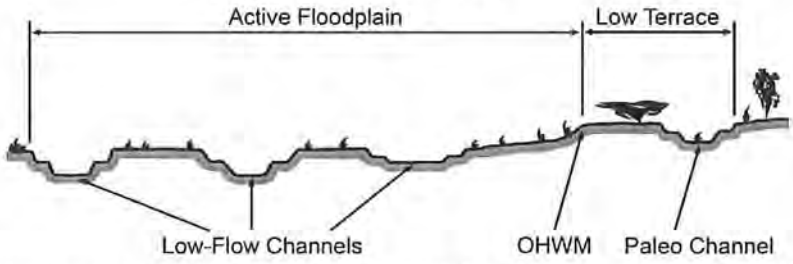
Brief site description:

curved bowl shaped desert wash - downstream blocked

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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   a) Record the floodplain unit and GPS position.
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5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
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		Cobble	Gravel
2.56	64		
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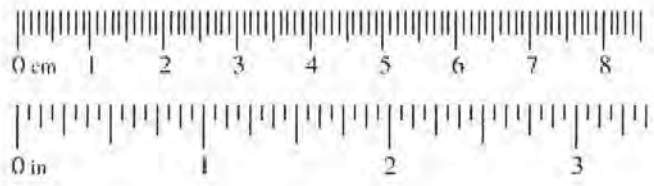
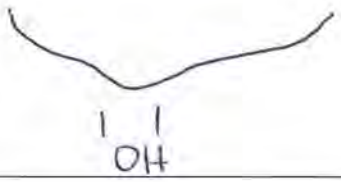
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
1/32 0.00061	0.0156	Medium silt	Silt
		Fine silt	
1/64 0.00031	0.0078		
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7E-3 **Date:** 09.20.16 **Time:** 1030

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [ ] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 30 % Tree: 0 % Shrub: 10 % Herb: 20 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 7E-3 **Date:** 09.20.16 **Time:** 1030

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: pebble

Total veg cover: 55 % Tree: 0 % Shrub: 50 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 1030	Upstream Photo	X	**Site Description:**		
			Downstream Photo		Stream is:		
Date: 9/20/2016	Feature ID: ~~E-3~~ 7E-3	Location: Mojave Desert			Braided		
					Sinuous		
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X	Curved	X	
		Significant Disturbance?		X	Straight		
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?			Entrenched		
OHWM Recorded by: Field Map GPS GIS Digitizing		Hydrology			Bowl Shaped	X	
		Wetland Plants			Shallow		
		Surface Water/Depth:			Vegetation % In Stream:		
Side Slope Estimate: Moderate					0-20		
Veg Type(s) in Drainage: ~~Sagebrush~~ Blue sagebrush - Ephedra					20-40		
					40-60	X	
Anthropogenic Modifications:	Road Grazing Channelized		Upstream Blocked		60-80		
	Culvert Channel Riprap		Downstream Blocked	X	80-100		
	Other:		Lateral Flow Blocked		Stream Type:		
Circle Chemical Issues:	Pollution Oil Slick Eutrophication Other:				V-Ditch w/ Sediment		
Circle Surrounding Land Use:	Urban Rural Commercial Agriculture				Eroded Channel		
	Roads Utility Lines Other:				Desert Wash	X	
Stream Cross Section Drawing:					Flowing River/Stream		
					Dry Streambed		
					Additional Description:		

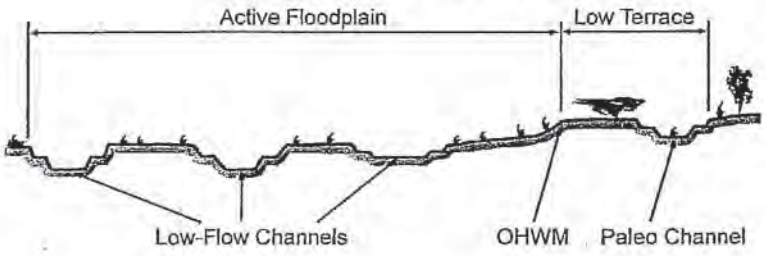
OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species	X	Other:	
Change in vegetation cover			

Comment:

Low-Flow Channel:	X	Tree % Cover 0	Shrub % Cover 10	Herb % Cover 20		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Silt: Fine Medium Coarse		Other:				
Circle Indicators: Mudcracks Ripples			Community succession:	NA		
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)		
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings	X	
Other:				Late (herbs/shrubs/trees)		
Comments:						
Active Floodplain:	X	Tree % Cover	Shrub % Cover 70-80	Herb % Cover)		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples			Community succession:	NA		
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)		
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings	X	
Other:				Late (herbs/shrubs/trees)		
Comments:						
Low Terrace:		Tree % Cover	Shrub % Cover	Herb % Cover		
Circle average sediment texture		Sand: Fine Medium Course Very Coarse				
Granule Pebble Cobble Boulder		Other:				
Circle Indicators: Mudcracks Ripples			Community succession:	NA		
Drift/Debris Presence of bed and bank				Early (herbs/seedlings)		
Benches Soil development Surface relief				Mid (herbs/shrubs/saplings		
Other:				Late (herbs/shrubs/trees)		
Comments:						

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
10.08		256	Boulder	
2.56		64	Cobble	Gravel
0.157		4	Pebble	
0.079		2.00	Granule	
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0.020		0.50	Coarse sand	
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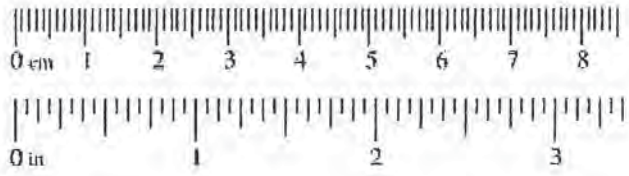


Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: FF-1
Investigator(s): AR, CDE

Date: 9/20/14 **Time:** 0834
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

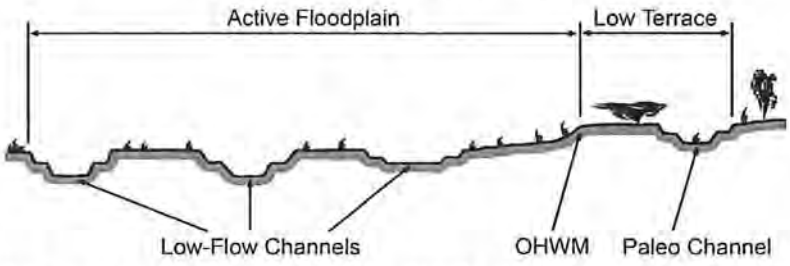
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



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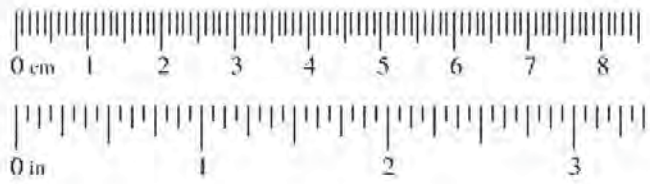
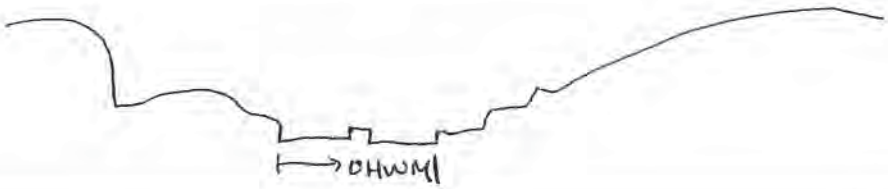
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** MF-1 **Date:** 9/20/14 **Time:** 0834

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 7F-1 **Date:** 9/20/16 **Time:** 0834

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Granule

Total veg cover: 3 % Tree: 0 % Shrub: 1 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☑ Surface relief
- ☑ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse Sand to Pebble

Total veg cover: 24 % Tree: 1 % Shrub: 20 % Herb: 3 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ ~~Drift and/or debris~~
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Δ in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CDC	Date 7/20/14

Feature ID	7F-1
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Drainage Patterns, Bed/Bank Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	veg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7F-2
Investigator(s): AR, CRC

Date: 9/20/14
Town: Mojave Desert
Time: 0905
State: CA
Photo begin file#:
Photo end file#:

Y [✓] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [✓] Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

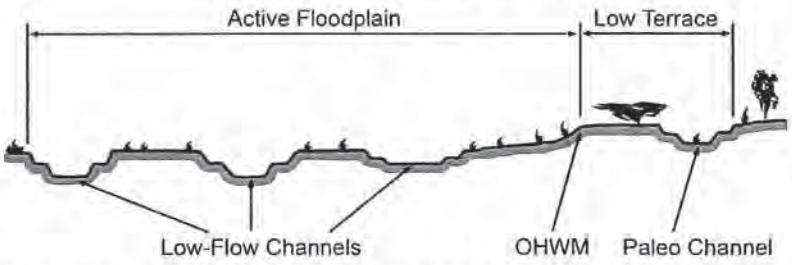
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- [ ] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

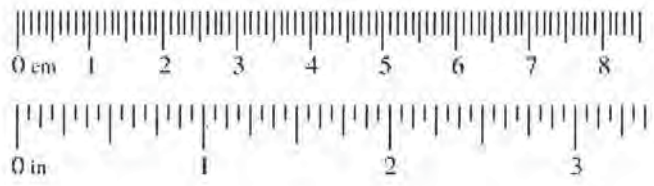


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [ ] GPS
   - [ ] Other:

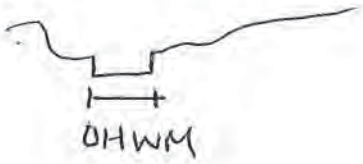
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
0.0098 (1/2)	0.25	Medium sand	Sand
0.005 (1/4)	0.125	Fine sand	
0.0025 (1/8)	0.0625	Very fine sand	
0.0012 (1/16)	0.031	Coarse silt	
0.00061 (1/32)	0.0156	Medium silt	Silt
0.00031 (1/64)	0.0078	Fine silt	
0.00015 (1/128)	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** TF-2 **Date:** 9/20/14 **Time:** 0905

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: Very _____

Characteristics of the floodplain unit:

Average sediment texture: Very Coarse Sand + Medium Sand

Total veg cover: 1 % Tree: 0 % Shrub: 0 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** ~~7F~~ 7F-2 **Date:** 9/20/16 **Time:** 0905

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Cobble to Boulder

Total veg cover: 7 % Tree: 0 % Shrub: 5 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: D in sediment texture
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AB, CBC	Date 9/20/16

Feature ID	TF-2
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	~~N~~ Bed/Bank, Δ in sediment texture
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	moderate to steep
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	UNK
Anthropogenic Modifications[7]	Road Crossing + trash
Surrounding Land Use	Open Space + transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: MF-3
Investigator(s): AR, CDC

Date: 9/20/14 **Time:** 0920
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

ORV + Road Crossing

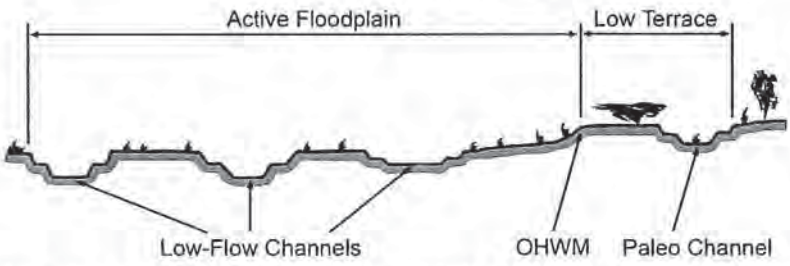
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

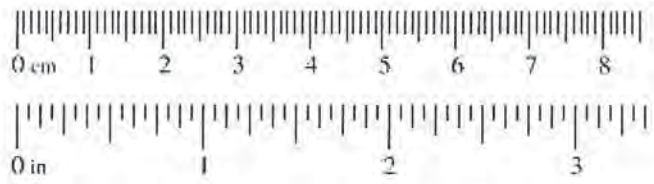


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

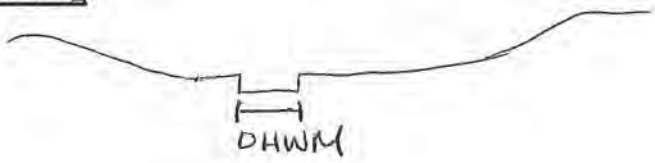
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7F-3 **Date:** 9/20/16 **Time:** 0920

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium to Coarse Sand

Total veg cover: 3 % Tree: 0 % Shrub: <1 % Herb: 2 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** TF-3 **Date:** 9/20/14 **Time:** 0920

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AB, CDC	Date 9/20/16

Feature ID	7F-3
Preliminary Jurisdictional Status[1]	CDFW + RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank, Δ in sediment texture, Drift deposits
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle to moderate slope
Characteristic Vegetation[5]	unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space + transmission
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 7F-4
Investigator(s): AB, COE

Date: 9/20/14 **Time:** 0927
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

DRV + Road Crossing

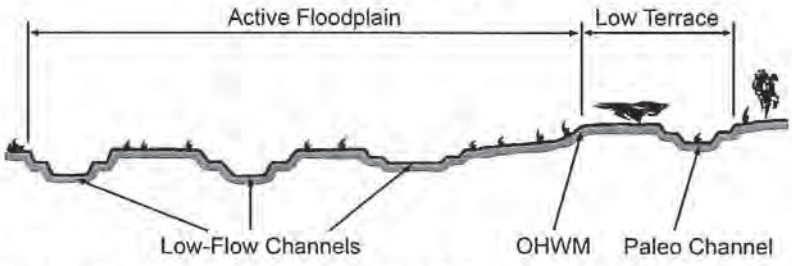
Brief site description:

Dry Desert Wash

Checklist of resources (if available):

- ☐ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

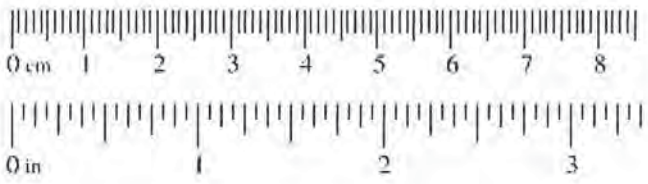


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

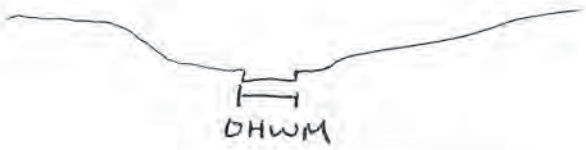
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
2.56	64	Cobble	Gravel
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7F-4 **Date:** 9/20/14 **Time:** 0927

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 2 % Tree: 0 % Shrub: 1 % Herb: 1 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: Δ in sediment texture
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 7F-4 **Date:** 9/20/16 **Time:** 0927

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

N/A

Jurisdictional Delineation Summary Datasheet

Project/Task No. 3MBC000100/00300	Project Name Path 46
Field Staff AR, CRC	Date 9/20/16

Feature ID	7F-4
Preliminary Jurisdictional Status[1]	CDFW, RWQB
Potential Wetland (y/n)[2]	N
Hydrologic Indicators	Bed/Bank
Wetland Plant Indicators	N/A
Preliminary Hydrologic Regime[3]	Ephemeral
Surface Water Present (y/n), Depth	N
OHWM Width(s)	
CDFW Width(s)	
Side Slope Estimate[4]	gentle slope
Characteristic Vegetation[5]	Unveg in channel
Chemical Indicators[6]	unk
Anthropogenic Modifications[7]	Road Crossing
Surrounding Land Use	Open Space & transmission line
Other Notes	

[1] USACE/Isolated Water/CDFW.
[2] Note if wetland plants/hydrology present; if both present, proceed to dig soil test pit and fill out Wetland Determination Data Form.
[3] Hydrology is **ephemeral** when it occurs only during and immediately following precipitation; **intermittent** if occurs for extended period of time, e.g., due to groundwater influence; and **perennial** if flow is year-round. **Nuisance** flow varies and is a function of anthropogenic influences; can be in addition to natural flow.
[4] Percent slope, degrees, rise over run, or qualitative description.
[5] Describe vegetation within and surrounding drainage/waterbody – herbaceous wetland/shrubland, riparian woodland/forest, upland, etc.
[6] Describe any chemical influences on waters – e.g., potential toxics from road, oil film observed.
[7] Describe any anthropogenic modifications to channel – e.g., artificial channel, riprap, concrete banks, culverts, storm drains.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Path 46
Project Number: 3MBC000100 Task 00300
Stream: 79-1
Investigator(s): ICain, CRenfrew

Date: 09.20.16 **Time:** 0850
Town: Mojave Desert **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:

Road

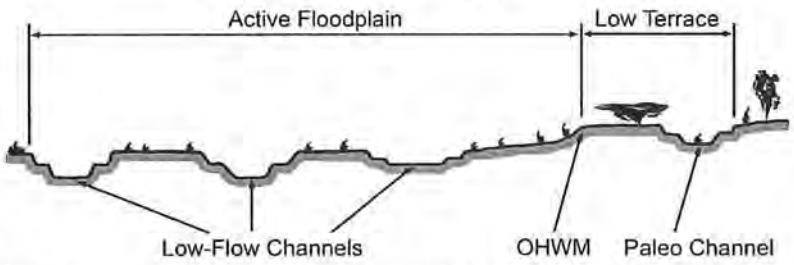
Brief site description:

Straight shallow desert wash

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

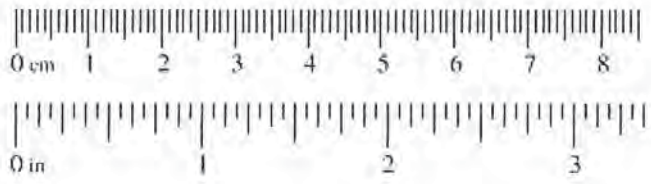


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
1/8 0.0025	0.0625	Very fine sand	
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	Silt
1/32 0.00061	0.0156		
		Fine silt	
1/64 0.00031	0.0078		
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud



Project ID: 3MBC000300 **Cross section ID:** 7g-1 **Date:** 09.20.16 **Time:** 0850

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: very coarse sand

Total veg cover: Ø % Tree: Ø % Shrub: Ø % Herb: Ø %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [x] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Project ID: 3MBC000300 **Cross section ID:** 79-1 **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Jurisdictional Delineation Data Sheet

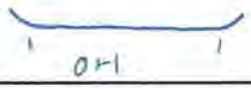
Project/Task: 3MBC000100 T 300 Path 46	Staff: CR and IC	Time: 850	Upstream Photo	X
			Downstream Photo	
Date: 9/20/2016	Feature ID: 7G-1	Location:	Mojave Desert	
Circle Preliminary Status: USACE CDFW RWQCB		Do Normal Conditions Exist?		X
		Significant Disturbance?		X
Circle Flow Character: Ephemeral Intermittent Perennial		Potential Wetland?		
		Hydrology		
OHWM Recorded by: Field Map GPS GIS Digitizing		Wetland Plants		
		Surface Water/Depth:		
Side Slope Estimate: Slight				
Veg Type(s) in Drainage: Unveg				

Site Description:	
Stream is:	
Braided	
Sinuous	
Curved	
Straight	X
Entrenched	
Bowl Shaped	
Shallow	X
Vegetation % In Stream:	
0-20	X
20-40	
40-60	
60-80	
80-100	
Stream Type:	
V-Ditch w/ Sediment	
Eroded Channel	
Desert Wash	X
Flowing River/Stream	
Dry Streambed	

Additional Description:

Anthropogenic Modifications:	Road	Grazing	Channelized	Upstream Blocked
	Culvert	Channel	Riprap	Downstream Blocked
	Other:			Lateral Flow Blocked
Circle Chemical Issues:	Pollution	Oil Slick	Eutrophication Other:	
Circle Surrounding Land Use:	Urban	Rural	Commercial	Agriculture
	Roads	Utility Lines	Other: OS	

Stream Cross Section Drawing:



OHWM:

Change in sediment texture	X	Break in bank slope	
Change in vegetation species		Other:	
Change in vegetation cover	X		

Comment:

Low-Flow Channel: X Tree % Cover 0 Shrub % Cover 0 Herb % Cover 0

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Silt: Fine Medium Coarse Other:

Circle Indicators:	Mudcracks Ripples	Community succession: NA	X
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

Comments:

Active Floodplain: Tree % Cover Shrub % Cover Herb % Cover

Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators:	Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

Comments:

Low Terrace: Tree % Cover Shrub % Cover Herb % Cover

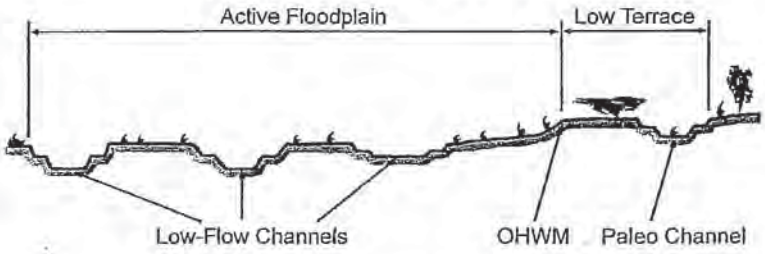
Circle average sediment texture Sand: Fine Medium Course Very Coarse

Granule Pebble Cobble Boulder Other:

Circle Indicators:	Mudcracks Ripples	Community succession: NA	
Drift/Debris Presence of bed and bank		Early (herbs/seedlings)	
Benches Soil development Surface relief		Mid (herbs/shrubs/saplings	
Other:		Late (herbs/shrubs/trees)	

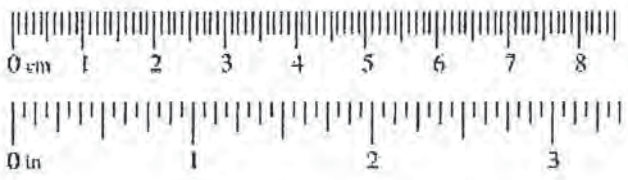
Comments:

Hydrogeomorphic Floodplain Units



Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



ATTACHMENT E

REPRESENTATIVE PHOTOGRAPHS

Drainage 1A-1

Drainage 1B-1

Drainage 1B-2

Drainage 1C-1

Drainage 1C-2

Drainage 1C-3

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Representative Photographs

Attachment E-1

Path 46 Transmission Line Clearances Project

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 1C-4

Drainage 1D-1

Drainage 1E-1

Drainage 1E-2

Drainage 1E-3

Drainage 1E-4

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Representative Photographs

Attachment E-2

Path 46 Transmission Line Clearances Project

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Drainage 2A-1

Drainage 2A-2

Drainage 2A-3

Drainage 2B-1

Drainage 2B-2

Drainage 2C-1

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Representative Photographs

Attachment E-3

Path 46 Transmission Line Clearances Project

PSOMAS

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Drainage 2C-2

Drainage 2D-1

Drainage 2D-2

Drainage 2D-3

Drainage 2D-4

Drainage 2D-5

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Representative Photographs

Attachment E-4

Path 46 Transmission Line Clearances Project

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Drainage 2D-6

Drainage 2E-1

Drainage 2E-2

Drainage 2E-3

Drainage 2E-4

Drainage 2E-5

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Representative Photographs

Attachment E-5

Path 46 Transmission Line Clearances Project

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Drainage 2E-6

Drainage 2E-7

Drainage 2E-8

Drainage 2E-9

Drainage 2F-1

Drainage 2F-2

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Representative Photographs

Attachment E-6

Path 46 Transmission Line Clearances Project

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Drainage 2F-3

Drainage 2F-4

Drainage 2F-5

Drainage 3C-1

Drainage 3C-2

Drainage 3C-3

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Representative Photographs

Attachment E-7

Path 46 Transmission Line Clearances Project

PSOMAS

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Drainage 3C-4

Drainage 3C-5

Drainage 4A-1

Drainage 4A-2

Drainage 4A-3

Drainage 4A-4

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Representative Photographs

Attachment E-8

Path 46 Transmission Line Clearances Project

PSOMAS

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Drainage 4A-5

Drainage 4A-6

Drainage 4B-7

Drainage 4B-1

Drainage 4B-2

Drainage 4B-3

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Representative Photographs

Path 46 Transmission Line Clearances Project

Attachment E-9

PSOMAS

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Drainage 4C-1

Drainage 4C-2

Drainage 4C-3

Drainage 4D-1

Drainage 4D-2

Drainage 4D-3

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Representative Photographs

Path 46 Transmission Line Clearances Project

Attachment E-10

PSOMAS

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Drainage 4D-4

Drainage 4D-5

Drainage 4D-6

Drainage 4D-7

Drainage 4D-8

Drainage 4E-1

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Representative Photographs

Attachment E-11

Path 46 Transmission Line Clearances Project

PSOMAS

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Drainage 4E-2

Drainage 4E-3

Drainage 4E-4

Drainage 4E-5

Drainage 4F-2

Drainage 4F-3A

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Representative Photographs

Path 46 Transmission Line Clearances Project

Attachment E-12

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 4G-1

Drainage 4G-2

Drainage 4G-3

Drainage 4G-4

Drainage 4H-1

Drainage 4J-1

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Representative Photographs

Attachment E-13

Path 46 Transmission Line Clearances Project

PSOMAS

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Drainage 4J-2

Drainage 4K-1

Drainage 4K-2

Drainage 4K-4

Drainage 4K-5

Drainage 5B-1

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Representative Photographs

Attachment E-14

Path 46 Transmission Line Clearances Project

PSOMAS

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Drainage 5B-2

Drainage 5B-3

Drainage 5B-4

Drainage 5C-1

Drainage 5C-2

Drainage 5D-1

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Representative Photographs

Attachment E-15

Path 46 Transmission Line Clearances Project

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5D-2

Drainage 5D-3

Drainage 5D-4

Drainage 5D-5

Drainage 5E-1

Drainage 5E-10

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Representative Photographs

Attachment E-16

Path 46 Transmission Line Clearances Project

PSOMAS

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Drainage 5E-11

Drainage 5E-2

Drainage 5E-3

Drainage 5E-4

Drainage 5E-5

Drainage 5E-6

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Drainage 5E-7

Drainage 5E-8

Drainage 5E-9

Drainage 5F-1

Drainage 5F-10

Drainage 5F-11

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Representative Photographs

Path 46 Transmission Line Clearances Project

Attachment E-18

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5F-2

Drainage 5F-3

Drainage 5F-4

Drainage 5F-5

Drainage 5F-6

Drainage 5F-7

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Representative Photographs

Attachment E-19

Path 46 Transmission Line Clearances Project

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5F-8

Drainage 5F-9

Drainage 5G-1

Drainage 5G-10

Drainage 5G-2

Drainage 5G-3

D:\Projects\3MBC\00011MXD\JD\Ex_SP_20160929.mxd

Representative Photographs

Attachment E-20

Path 46 Transmission Line Clearances Project

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5G-4

Drainage 5G-5

Drainage 5G-6

Drainage 5G-7

Drainage 5G-8

Drainage 5G-9

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Representative Photographs

Path 46 Transmission Line Clearances Project

Attachment E-21

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5H-1

Drainage 5H-A

Drainage 5H-B

Drainage 5H-C

Drainage 5H-D

Drainage 5H-E

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Representative Photographs

Attachment E-22

Path 46 Transmission Line Clearances Project

PSOMAS

Drainage 5I-1

Drainage 5I-2

Drainage 5I-3

Drainage 5I-4

Drainage 5J-1

Drainage 5J-A

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Representative Photographs

Attachment E-23

Path 46 Transmission Line Clearances Project

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5K-1

Drainage 5K-2

Drainage 5K-3

Drainage 5K-4

Drainage 5K-5

Drainage 5L-1

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Representative Photographs

Attachment E-24

Path 46 Transmission Line Clearances Project

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5M-1

Drainage 5N-1

Drainage 5N-2

Drainage 5O-1

Drainage 5Q-1

Drainage 5Q-2

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Representative Photographs

Attachment E-25

Path 46 Transmission Line Clearances Project

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5Q-3

Drainage 5Q-4

Drainage 5Q-5

Drainage 5Q-6

Drainage 5Q-7

Drainage 5R-1

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Representative Photographs

Attachment E-26

Path 46 Transmission Line Clearances Project

PSOMAS

Drainage 5R-2

Drainage 5T-1

Drainage 5T-2

Drainage 5U-1

Drainage 5U-2

Drainage 5U-3

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Representative Photographs

Attachment E-27

Path 46 Transmission Line Clearances Project

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5V-1

Drainage 5V-2

Drainage 5V-3

Drainage 5V-A

Drainage 5V-B

Drainage 5V-C

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Representative Photographs

Path 46 Transmission Line Clearances Project

Attachment E-28

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 5V-D

Drainage 6A-1

Drainage 6A-2

Drainage 6A-3

Drainage 6A-4

Drainage 6A-5

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Representative Photographs

Attachment E-29

Path 46 Transmission Line Clearances Project

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 6A-6

Drainage 6B-1

Drainage 6B-1B

Drainage 6B-2

Drainage 6B-3

Drainage 6B-4

Drainage 6B-5

Drainage 6B-6

Drainage 6C-1

Drainage 6C-2

Drainage 6D-1

Drainage 6D-2

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Representative Photographs

Attachment E-31

Path 46 Transmission Line Clearances Project

PSOMAS

Drainage 6D-3

Drainage 6F-1

Drainage 6F-2

Drainage 6F-3

Drainage 6F-4

Drainage 6F-5

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Representative Photographs

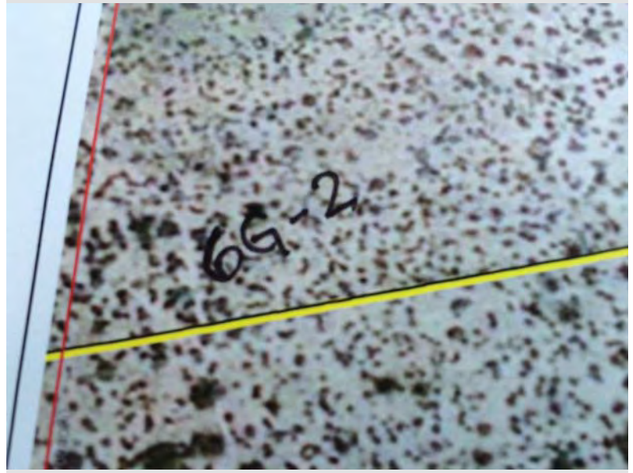
Path 46 Transmission Line Clearances Project

Attachment E-32

PSOMAS

(Rev: 09/29/2016 LEW) R:\Projects\MBC\3MBC000100\Graphics\JD\AttE_SP_20160929.pdf

Drainage 6G-1



Drainage 6G-2

Drainage 6G-3

Drainage 6G-4

Drainage 7A-1

Drainage 7A-2

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Representative Photographs

Attachment E-33

Path 46 Transmission Line Clearances Project

PSOMAS

Drainage 7B-1

Drainage 7B-2

Drainage 7C-1

Drainage 7C-2

Drainage 7C-3

Drainage 7E-1

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Representative Photographs

Attachment E-34

Path 46 Transmission Line Clearances Project

PSOMAS

Drainage 7E-2

Drainage 7E-3

Drainage 7F-1

Drainage 7F-2

Drainage 7F-3

Drainage 7F-4

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Drainage 7G-1

Desert tortoise observed in Segment 2 near tower MCV1-129-2.

Desert bighorn sheep carcass observed east of Segment 7.

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Representative Photographs

Path 46 Transmission Line Clearances Project

Attachment E-36

PSOMAS

ATTACHMENT F

CALIFORNIA NATURAL DIVERSITY DATABASE FORMS

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDB@wildlife.ca.gov

Date of Field Work (mm/dd/yyyy): 09/08/2016

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Gopherus agassizii*

Common Name: desert tortoise

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: 1 Subsequent Visit? ( ) Yes (●) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # [ ] No [X] Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Allison Rudalevige, Psomas
Address: 3 Hutton Centre Drive, Suite 200
Santa Ana, CA 92707
E-mail Address: Allison.Rudalevige@psomas.com
Phone: 714-481-8024

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

1 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

[ ] wintering [ ] breeding [ ] nesting [ ] rookery [ ] burrow site [ ] lek [ ] other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Mojave desert west of Daggett approximately 1/4 mile south of Interstate 40 near tower MCV1-129-2

County: San Bernardino Landowner / Mgr: _____

Quad Name: Minneola Elevation: 2,227 ft

T 09N R 01E Sec 26 , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S (●)

T ___ R ___ Sec ___ , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( )

DATUM: **NAD27** ( ) **NAD83** (●) **WGS84** ( )

Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (●)

Coordinates: 34.843889, -116.854389

Source of Coordinates (GPS, topo. map & type): GPS

GPS Make & Model: Garmin eTrex Vista

Horizontal Accuracy: 10ft meters/feet

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*

Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Individual observed in open, creosote bush scrub dominated by Larrea tridentata with Ambrosia dumosa.

Please fill out separate form for other rare taxa seen at this site.

Site Information

Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor

Immediate AND surrounding land use: undeveloped open space and transmission lines with associated access roads

Visible disturbances: _____

Threats: transmission line maintenance

Comments:

Determination: *(check one or more, and fill in blanks)*

[ ] Keyed (cite reference): _____
[ ] Compared with specimen housed at: _____
[ ] Compared with photo / drawing in: _____
[ ] By another person (name): _____
[X] Other: familiarity with species

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	[ ]	[ ]	[X]
Habitat	[ ]	[ ]	[X]
Diagnostic feature	[ ]	[ ]	[ ]

May we obtain duplicates at our expense? (●) yes ( ) no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDB@wildlife.ca.gov

Date of Field Work (mm/dd/yyyy): 09/20/2016

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Ovis canadensis nelsoni*

Common Name: desert bighorn sheep

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: 1 Subsequent Visit? ( ) Yes (●) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ No ☒ Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Allison Rudalevige, Psomas
Address: 3 Hutton Centre Drive, Suite 200
Santa Ana, CA 92707
E-mail Address: Allison.Rudalevige@psomas.com
Phone: 714-481-8024

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses 1 # unknown

☐ wintering ☐ breeding ☐ nesting ☐ rookery ☐ burrow site ☐ lek ☒ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Mojave desert approximately 8.5 miles west of Primm, Nevada.

County: San Bernardino Landowner / Mgr: _____

Quad Name: Clark Mountain Elevation: 4,186 ft

T 17N R 13E Sec 01 , ____ 1/4 of ____ 1/4, Meridian: H ( ) M ( ) S (●) Source of Coordinates (GPS, topo. map & type): GPS

T ____ R ____ Sec ____ , ____ 1/4 of ____ 1/4, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: Garmin eTrex Vista

DATUM: **NAD27** ( ) **NAD83** (●) **WGS84** ( ) Horizontal Accuracy: 10ft meters/feet

Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (●)

Coordinates: 35.593186, -115.536972

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

One individual carcass (partially decomposed) observed at edge of a dirt transmission line access road. Cause of death is unknown.

Please fill out separate form for other rare taxa seen at this site.

Site Information

Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor

Immediate AND surrounding land use: undeveloped open space and transmission lines with associated access roads

Visible disturbances: _____

Threats: transmission line maintenance

Comments:

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☒ By another person (name): Dr. Brad Blood, Psomas
☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☒
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? (●) yes ( ) no

ATTACHMENT G

DETAILED PROJECT IMPACTS

IMPACTS ON JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

Drainage	"waters of the U.S." (ac)		Isolated Waters (ac)		CDFW Jurisdiction (ac)	
	Road Demolition	Grading	Road Demolition	Grading	Road Demolition	Grading
1A-1	0.000	0.000	–	–	0.000	0.000
1B-1	0.000	0.000	–	–	0.000	0.000
1B-2	0.000	0.000	–	–	0.000	0.000
1C-1	0.000	0.000	–	–	0.000	0.000
1C-2	0.000	0.000	–	–	0.000	0.000
1C-3	0.000	0.000	–	–	0.000	0.000
1C-4	0.000	0.000	–	–	0.000	0.000
1D-1	0.000	0.000	–	–	0.000	0.000
1E-1	0.000	0.000	–	–	0.000	0.000
1E-2	0.000	0.000	–	–	0.000	0.000
1E-3	0.000	0.000	–	–	0.000	0.000
1E-4	0.000	0.000	–	–	0.000	0.000
2A-1	0.000	0.000	–	–	0.000	0.000
2A-2	0.000	0.001	–	–	0.000	0.001
2A-3	0.000	0.000	–	–	0.000	0.000
2B-1	0.000	0.001	–	–	0.000	0.004
2B-2	0.000	0.000	–	–	0.000	0.000
2C-1	0.000	0.000	–	–	0.000	0.000
2C-2	0.000	0.000	–	–	0.000	0.000
2C-3	0.000	0.000	–	–	0.000	0.000
2D-1	0.000	0.000	–	–	0.000	0.000
2D-2	0.000	0.000	–	–	0.000	0.000
2D-3	0.000	0.000	–	–	0.000	0.000
2D-4	0.000	0.000	–	–	0.000	0.000
2D-5	0.000	0.000	–	–	0.000	0.000
2D-6	0.000	0.000	–	–	0.000	0.000
2E-1	0.000	0.000	–	–	0.000	0.000
2E-2	0.000	0.000	–	–	0.000	0.000
2E-3	0.000	0.000	–	–	0.000	0.000
2E-4	0.000	0.000	–	–	0.000	0.000
2E-5	0.000	0.000	–	–	0.000	0.000
2E-6	0.000	0.001	–	–	0.000	0.001
2E-7	0.000	0.000	–	–	0.000	0.000*
2E-8	0.000	0.000	–	–	0.000	0.000
2E-9	0.000	0.000	–	–	0.000	0.000
2E-10	0.000	0.000	–	–	0.000	0.000
2F-1	0.000	0.000	–	–	0.000	0.000
2F-2	0.000	0.000	–	–	0.000	0.000
2F-3	0.000	0.000	–	–	0.000	0.000
2F-4	0.000	0.000	–	–	0.000	0.000
2F-5	0.000	0.005	–	–	0.000	0.007
2F-6	0.000	0.028	–	–	0.000	0.030
3C-1	–	–	0.000	0.000	0.000	0.000
3C-2	–	–	0.000	0.000	0.000	0.000

IMPACTS ON JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

Drainage	"waters of the U.S." (ac)		Isolated Waters (ac)		CDFW Jurisdiction (ac)	
	Road Demolition	Grading	Road Demolition	Grading	Road Demolition	Grading
3C-3	–	–	0.000	0.000	0.000	0.000
3C-4	–	–	0.000	0.000	0.000	0.000
3C-5	–	–	0.000	0.000	0.000	0.000
4A-1	0.000	0.000	–	–	0.000	0.000
4A-2	0.000	0.000	–	–	0.000	0.000
4A-3	–	–	0.000	0.000	0.000	0.000
4A-4	–	–	0.000	0.000	0.000	0.000
4A-5	–	–	0.000	0.000	0.000	0.000
4A-6	–	–	0.000	0.000	0.000	0.000
4A-7	–	–	0.000	0.000	0.000	0.000
4A-8	–	–	0.000	0.000	0.000	0.000
4B-1	0.000	0.000	–	–	0.000	0.000
4B-2	0.000	0.000	–	–	0.000	0.000
4B-3	0.000	0.000	–	–	0.000	0.000
4C-1	–	–	0.000	0.000	0.000	0.000
4C-2	–	–	0.000	0.000	0.000	0.000
4C-3	0.000	0.000	–	–	0.000	0.000
4D-1	–	–	0.000	0.000	0.000	0.000
4D-2	–	–	0.000	0.000	0.000	0.000
4D-3	–	–	0.000	0.000	0.000	0.000
4D-4	–	–	0.000	0.000	0.000	0.000
4D-5	–	–	0.000	0.000	0.000	0.000
4D-6	–	–	0.000	0.000	0.000	0.000
4D-7	–	–	0.000	0.000	0.000	0.000
4D-8	–	–	0.000	0.000	0.000	0.000
4E-1	–	–	0.000	0.000	0.000	0.000
4E-2	–	–	0.000	0.000	0.000	0.000
4E-3	–	–	0.000	0.000	0.000	0.000
4E-4	–	–	0.000	0.000	0.000	0.000
4E-5	–	–	0.000	0.000	0.000	0.000
4F-1	–	–	0.000	0.000	0.000	0.000
4F-2	–	–	0.000	0.000	0.000	0.000
4F-3	–	–	0.000	0.000	0.000	0.000
4G-1	–	–	0.000	0.000	0.000	0.000
4G-2	–	–	0.000	0.000	0.000	0.000
4G-3	–	–	0.000	0.000	0.000	0.000
4G-4	–	–	0.000	0.000	0.000	0.000
4H-1	–	–	0.000	0.000	0.000	0.000
4J-1	–	–	0.000	0.000*	0.000	0.001
4J-2	–	–	0.000	0.001	0.000	0.001
4K-1	–	–	0.000	0.000	0.000	0.000
4K-2	–	–	0.000	0.000	0.000	0.000
4K-3	–	–	0.000	0.000	0.000	0.000
4K-4	–	–	0.000	0.000	0.000	0.000

IMPACTS ON JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

Drainage	"waters of the U.S." (ac)		Isolated Waters (ac)		CDFW Jurisdiction (ac)	
	Road Demolition	Grading	Road Demolition	Grading	Road Demolition	Grading
4K-5	–	–	0.000	0.000	0.000	0.000
5B-1	–	–	0.000	0.000	0.000	0.000
5B-2	–	–	0.000	0.010	0.000*	0.021
5B-3	–	–	0.000	0.000	0.000	0.000
5B-4	–	–	0.000	0.005	0.000	0.009
5C-1	–	–	0.000	0.000	0.000	0.000
5C-2	–	–	0.039	0.092	0.039	0.092
5D-1	–	–	0.004	0.011	0.004	0.011
5D-2	–	–	0.007	0.106	0.007	0.106
5D-3	–	–	0.000	0.001	0.000	0.003
5D-4	–	–	0.000	0.000	0.000	0.000
5D-5	–	–	0.000	0.000	0.000	0.000
5E-1	–	–	0.003	0.010	0.003	0.010
5E-2	–	–	0.000	0.000	0.000	0.000
5E-3	–	–	0.034	0.043	0.034	0.043
5E-4	–	–	0.000	0.005	0.000	0.005
5E-5	–	–	0.000	0.000	0.000	0.000
5E-6	–	–	0.000	0.000	0.000	0.000
5E-7	–	–	0.000	0.000	0.000	0.000
5E-8	–	–	0.000	0.042	0.000	0.042
5E-9	–	–	0.000	0.001	0.000	0.002
5E-10	–	–	0.000	0.000	0.000	0.000
5E-11	–	–	0.000	0.000	0.000	0.000
5F-1	–	–	0.010	0.048	0.010	0.048
5F-2	–	–	0.000	0.000	0.000	0.000
5F-3	–	–	0.000	0.000	0.000	0.000
5F-4	–	–	0.000	0.000	0.000	0.000
5F-5	–	–	0.000	0.000	0.000	0.000
5F-6	–	–	0.000	0.000	0.000	0.000
5F-7	–	–	0.000	0.003	0.000	0.003
5F-8	–	–	0.000	0.010	0.000	0.010
5F-9	–	–	0.000	0.000	0.000	0.000
5F-10	–	–	0.000	0.000	0.000	0.000
5F-11	–	–	0.000	0.000	0.000	0.000
5G-1	–	–	0.000*	0.001	0.000*	0.002
5G-2	–	–	0.023	0.016	0.023	0.016
5G-3	–	–	0.000	0.001	0.000*	0.002
5G-4	–	–	0.000	0.000	0.000	0.000
5G-5	–	–	0.000	0.001	0.000	0.002
5G-6	–	–	0.000	0.000	0.000	0.000
5G-7	–	–	0.000	0.000	0.000	0.000
5G-8	–	–	0.000	0.000	0.000	0.000
5G-9	–	–	0.000	0.000	0.000	0.000
5G-10	–	–	0.000	0.027	0.000	0.027

IMPACTS ON JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

Drainage	"waters of the U.S." (ac)		Isolated Waters (ac)		CDFW Jurisdiction (ac)	
	Road Demolition	Grading	Road Demolition	Grading	Road Demolition	Grading
5H-1	–	–	0.000	0.000	0.000	0.000
5H-A	–	–	0.000	0.000	0.000	0.000
5H-B	–	–	0.000	0.000	0.000	0.000
5H-C	–	–	0.004	0.012	0.004	0.012
5H-D	–	–	0.004	0.003	0.004	0.003
5H-E	–	–	0.000	0.000	0.000	0.000
5I-1	–	–	0.000	0.000	0.000	0.000
5I-2	–	–	0.000	0.000	0.000	0.000
5I-3	–	–	0.000	0.000	0.000	0.000
5I-4	–	–	0.005	0.008	0.005	0.008
5J-1	–	–	0.000	0.000	0.000	0.000
5J-2	–	–	0.000	0.000	0.000	0.000
5K-1	–	–	0.000	0.000	0.000	0.000
5K-2	–	–	0.000	0.000	0.000	0.000
5K-3	–	–	0.000	0.000	0.000	0.000
5K-4	–	–	0.000	0.000	0.000	0.000
5K-5	–	–	0.000	0.000	0.000	0.000
5L-1	–	–	0.000	0.000	0.000	0.000
5M-1	–	–	0.000	0.000	0.000	0.000
5N-1	0.000	0.010	–	–	0.000	0.010
5N-2	0.000	0.000	–	–	0.000	0.000
5O-1	0.000	0.044	–	–	0.000	0.044
5Q-1	0.000	0.000	–	–	0.000	0.000
5Q-2	0.000	0.000	–	–	0.000	0.000
5Q-3	0.000	0.000	–	–	0.000	0.000
5Q-4	0.000	0.000	–	–	0.000	0.000
5Q-5	0.000	0.024	–	–	0.000	0.024
5Q-6	0.002	0.072	–	–	0.002	0.072
5Q-7	0.053	0.068	–	–	0.053	0.068
5R-1	0.005	0.006	–	–	0.005	0.006
5R-2	0.000	0.000	–	–	0.000	0.000
5T-1	0.000	0.000	–	–	0.000	0.000
5T-2	0.000	0.000	–	–	0.000	0.000
5U-1	–	–	0.000	0.000	0.000	0.000
5U-2	–	–	0.000	0.000	0.000	0.000
5U-3	–	–	0.000	0.000	0.000	0.000
5V-1	–	–	0.000	0.000	0.000	0.000
5V-2	–	–	0.000	0.000	0.000	0.000
5V-3	–	–	0.000	0.000	0.000	0.000
5V-4	–	–	0.000	0.000	0.000	0.000
5V-5	–	–	0.000	0.000	0.000	0.000
5V-6	–	–	0.000	0.000	0.000	0.000
5V-7	–	–	0.000	0.000	0.000	0.000
6A-1	0.000	0.000	–	–	0.000	0.000

IMPACTS ON JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

Drainage	"waters of the U.S." (ac)		Isolated Waters (ac)		CDFW Jurisdiction (ac)	
	Road Demolition	Grading	Road Demolition	Grading	Road Demolition	Grading
6A-2	0.000	0.000	–	–	0.000	0.000
6A-3	0.000	0.000	–	–	0.000	0.000
6A-4	0.000	0.000	–	–	0.000	0.000
6A-5	0.000	0.000	–	–	0.000	0.000
6A-6	0.000	0.000	–	–	0.000	0.000
6B-1	0.000	0.000	–	–	0.000	0.000
6B-1B	0.000	0.000	–	–	0.000	0.000
6B-2	0.000	0.000	–	–	0.000	0.000*
6B-3	0.000	0.000	–	–	0.000	0.000
6B-4	0.000	0.000	–	–	0.000	0.000
6B-5	0.000	0.000	–	–	0.000	0.000
6B-6	0.000	0.059	–	–	0.000	0.059
6C-1	0.000	0.000	–	–	0.000	0.000
6C-2	0.000	0.017	–	–	0.000	0.017
6D-1	0.000	0.001	–	–	0.000	0.003
6D-2	0.000	0.000	–	–	0.000	0.000
6D-3	0.000	0.000	–	–	0.000	0.000
6E-1	0.000	0.000	–	–	0.000	0.000
6E-2	0.000	0.000	–	–	0.000	0.000
6F-1	0.000	0.000	–	–	0.000	0.000
6F-2	0.000	0.000	–	–	0.000	0.000
6F-3	0.000	0.000	–	–	0.000	0.000
6F-4	0.000	0.000	–	–	0.000	0.000
6F-5	0.000	0.000	–	–	0.000	0.000
6G-1	–	–	0.000	0.000	0.000	0.000
6G-2	–	–	0.000	0.000	0.000	0.000
6G-3	–	–	0.000	0.000	0.000	0.000
6G-4	–	–	0.000	0.000	0.000	0.000
7A-1	–	–	0.000	0.000	0.000	0.000
7A-2	–	–	0.000	0.000	0.000	0.000
7B-1	–	–	0.000	0.000	0.000	0.000
7B-2	–	–	0.000	0.000	0.000	0.000
7C-1	–	–	0.000	0.000	0.000	0.000
7C-2	–	–	0.000	0.000	0.000	0.000
7C-3	–	–	0.000	0.000	0.000	0.000
7E-1	–	–	0.000	0.000	0.000	0.000
7E-2	–	–	0.000	0.000	0.000	0.000
7E-3	–	–	0.000	0.000	0.000	0.000
7F-1	–	–	0.000	0.000	0.000	0.000
7F-2	–	–	0.000	0.000	0.000	0.000
7F-3	–	–	0.000	0.000	0.000	0.000

IMPACTS ON JURISDICTIONAL WATER RESOURCES IN THE SURVEY AREA

Drainage	"waters of the U.S." (ac)		Isolated Waters (ac)		CDFW Jurisdiction (ac)	
	Road Demolition	Grading	Road Demolition	Grading	Road Demolition	Grading
7F-4	–	–	0.000	0.000	0.000	0.000
7G-1	–	–	0.000	0.000	0.000	0.000
Total	**0.060**	**0.337**	**0.133**	**0.457**	**0.193**	**0.825**

ac: acre; CDFW: California Department of Fish and Wildlife; "–" indicates the mapped drainage does not include this jurisdictional water; a value of "0.000*" indicates that less than 0.0005 acre of that jurisdictional water was impacted RWQCB: Regional Water Quality Control Board; USACE: U.S. Army Corps of Engineers.

(RWQCB) jurisdictional boundaries are defined as those determined for the USACE under "waters of the U.S."; however, the RWQCB also takes jurisdiction over isolated waters.

ATTACHMENT H

NATIONWIDE PERMIT SUMMARY

The following is a summary of Nationwide Permit 12 (Utility Line Activities).

NWP 12. Utility Line Activities. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead

utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 31.) (Sections 10 and 404).

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

Note 4: For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

General Condition 31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not

commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments.

The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where

there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

APPENDIX D3

Ground Disturbance Mitigation Plan

DRAFT
GROUND DISTURBANCE MITIGATION PLAN
FOR THE PATH 46 TRANSMISSION LINE CLEARANCE PROJECT

PREPARED BY

Los Angeles Department of Water & Power

Environmental Affairs

111 North Hope Street, Room 1044

Los Angeles, California 90012

WITH ASSISTANCE FROM

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TABLE OF CONTENTS

SECTION PAGE

SUMMARY III

1 INTRODUCTION AND BACKGROUND 1

2 MITIGATION AREA EXISTING SETTING 17
- 2.1 Site Descriptions/Conditions 17
- 2.2 Topography and Soils 17
- 2.3 Vegetation Communities 21
- 2.4 Special-Status Plant and Wildlife 23

3 GROUND DISTURBANCE MITIGATION GOALS 25

4 IMPLEMENTATION PLAN 27
- 4.1 Project Biologist 27
- 4.2 Installation and Maintenance Contractor 28
- 4.3 Preliminary Schedule 28
- 4.4 Site Access 28
- 4.5 Sensitive Species Protection Measures 29
- 4.6 Site Preparation 29
  - 4.6.1 Native Plant Salvage and Seed Collection 29
  - 4.6.2 Equipment and Materials 31
  - 4.6.3 Soil Preparation and Grading 31
  - 4.6.4 Vertical Mulching Techniques 33
- 4.7 Seeding and Planting Techniques 34
  - 4.7.1 Seed Pits 34
  - 4.7.2 Broadcast Seeding 34
- 4.8 Erosion and Sedimentation Control Measures 35

5 SITE MAINTENANCE PLAN 37
- 5.1 Maintenance Activities and Schedule 37
- 5.2 Maintenance Guidelines 37

6 MONITORING PLAN 39
- 6.1 Success Criteria 39
- 6.2 Monitoring Methods 39
  - 6.2.1 Field Evaluations 39
  - 6.2.2 Aerial Survey and Map Evaluation 40
- 6.3 Monitoring Schedule 40
- 6.4 Annual Reports 40

7 CONTINGENCY MEASURES 43
8 MITIGATION COMPLETION 45
9 REFERENCES 47

FIGURES

1 Restoration Sites Overview Map 3
2 Dagger Ridge Monkey Flower ACEC - Proposed Restoration Site 5
3 Northern Lucerne Wildlife Linkage ACEC - Proposed Restoration Site 7
4 Ord-Rodman ACEC - Proposed Restoration Site 9
5 Shadow Valley ACEC - Proposed Restoration Site 11
6 Superior-Cronese ACEC - Proposed Restoration Site 13
7 Ivanpah ACEC - Proposed Restoration Site 15

TABLES

1 Impacts and Mitigation with BLM Land Designations iii
2 Elevation Ranges Among Mitigation Sites by Land Designation 17
3 Soil Types 17
4 Vegetation Community Distribution Among Mitigation Sites 21
5 Ground Disturbance Mitigation Program Schedule 28
6 Example Native Seed Mix 34
7 Mitigation Maintenance Program Schedule 37

SUMMARY

This Ground Disturbance Mitigation Plan is intended to provide details on the conceptual approach to mitigating the effects of the Path 46 Transmission Line Clearance Project (proposed project) on Bureau of Land Management (BLM) conservation designations (Areas of Critical Environmental Concern [ACECs] and National Conservation Lands [NCLs]) pursuant to MM-BIO-2 of the Draft Environmental Assessment (Case File Number CACA-055592). Ground disturbance mitigation is necessary because the proposed project would impact BLM-administered lands within ACEC and NCL units that are cumulatively over their ground disturbance caps established by the BLM's Desert Renewable Energy Conservation Plan Land Use Plan Amendment (DRECP LUPA). This Ground Disturbance Mitigation Plan specifically addresses the proposed approach to remediating the effects of previous land disturbance effects (i.e., pre-existing ground disturbances) within the ACEC and NCL units. This plan does not address habitat restoration activities that would be implemented to restore areas affected during construction of the proposed project.

As shown in Table 1 (Table 3.5-1 in the EA document) in the Environmental Assessment for the proposed project (copied below), a minimum total of 11.19 acres of total nested mitigation is expected to be required to offset both the impacts to desert tortoise (*Gopherus agassizii*) critical habitat and the ground disturbance impacts in ACEC and NCL units. (The final mitigation amount shall be determined once the status of the unit disturbance cap for all applicable ACECs and NCLs is established by BLM.)

Table 1. Impacts and Mitigation with BLM Land Designations

Land Designation		Area to be Impacted within Designation (acres)	Desert Tortoise Critical Habitat	Overall Mitigation Ratio	Total Nested Mitigation Required (acres)
BLM Area of Critical Environmental Concern (ACEC)	Daggett Ridge Monkey Flower*^	0.42	Yes	5-to-1	2.10
	Ivanpah^	0.38	No	3-to-1	1.14
	Northern Lucerne Wildlife Linkage^	0.07	No	3-to-1	0.21
	Ord-Rodman*^	0.52	Yes	5-to-1	2.60
	Shadow Valley*	0.98	No	3-to-1	2.94
	Superior-Cronese	0.44	Yes	5-to-1	2.20
California Desert National Conservation Lands (NCL)	Kingston-Amargosa*	0.98	No	NA	--
	Mojave and Silurian Valley*	0.41	Yes	NA	--
	Pinto Lucerne Valley and Eastern Slopes	0.52	Yes	NA	--

Notes: Impact acreages based on the ESA Biological Assessment (February 2017). Status of Unit Disturbance Cap based on the BLM Disturbance Cap Tracking data (February 2017). * indicates where ACEC units overlap with NCL units; see Table 3.4-1 of the ESA Biological Assessment for unit overlap details. ^ indicates units that are or are assumed to be cumulatively at or above their

respective ground disturbance caps. Overall required mitigation ratio considers the overlap of units and the co-occurrence of impacts to determine the final required ratio.

The following Ground Disturbance Mitigation Plan provides:

1. A quantitative summary and mapping of the existing non-authorized ground disturbance areas within each ACEC and NCL unit (based on the BLM Disturbed Lands mapping GIS data) in the vicinity the proposed project components that are available to be restored/rehabilitated
2. A description of the approach to restoring/rehabilitating the areas of previous ground disturbance, including a discussion of:
    a. The types of disturbance to be rehabilitated/restored. Based on preliminary review of the BLM Disturbed Lands mapping, the majority of the disturbed lands available to the rehabilitated in the vicinity of the proposed project are infrastructure-related (i.e., disturbances associated with roadways and pipelines).
    b. Mobilization and site preparation, including a discussion of access, equipment, staffing, timing, and approaches to address soil compaction and erosion.
    c. Rehabilitation techniques, including a discussion of appropriate seed mixes and sources (e.g., species composition, certified weed-free, native, locally appropriate), vertical mulching (i.e., creating structure with live vegetation, rocks, dead shrubs, snags, and other woody materials), and other techniques to reclaim and disguise roadways and other ground disturbances.
    d. Success criteria, monitoring, and contingency measures.

The draft outline for the Ground Disturbance Mitigation Plan is provided below.

1 INTRODUCTION AND BACKGROUND

The Path 46 Transmission Line Clearance Project (proposed project) would restore ground-to-conductor clearances that are out of compliance with transmission line safety and reliability standards. The location of the proposed project is along three existing overhead transmission lines located in San Bernardino County near Victorville, Barstow, and Baker, California: the 500-kilovolt (kV) McCullough–Victorville Lines 1 and 2 (MCV1 and MCV2) and the 287 kV Mead–Victorville Line 1 (MVL1).

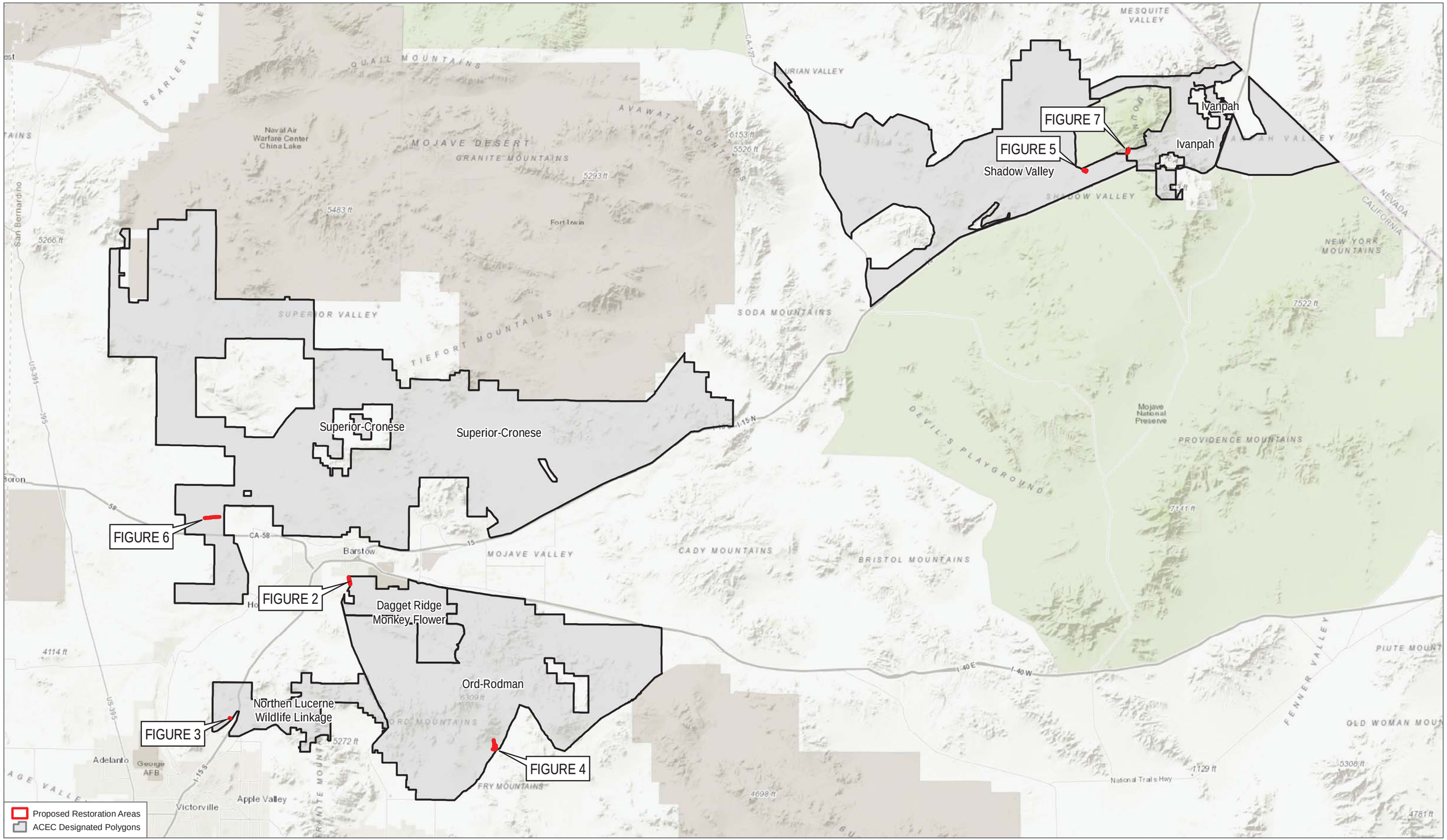
The proposed project involves ensuring that the distance between the transmission line conductors and the ground or road surface below is sufficient to meet code requirements guiding the safe and reliable operation of transmission lines. The Los Angeles Department of Water and Power (LADWP) proposes to comply with the code clearances by grading the ground surface of the area underneath the transmission lines at 68 work areas to achieve height consistency per North American Electric Reliability Corporation (NERC) requirements. Additionally, LADWP has identified two locations where grading is infeasible due to topography. In these locations, LADWP proposes to raise existing transmission line towers to achieve height consistency. Two additional locations will involve the installation of compacted soil barricades or other similar barrier system to eliminate vehicle access to areas underneath a conductor where a clearance issue exists. The project, as proposed, would also involve improvements to portions of existing access roads to be used for site access, equipment staging and storage, and distribution of excavated soils. The project would primarily be located on federal land, but some work sites would be located within LADWP property or on private property.

Ground disturbance mitigation is necessary because the proposed project would impact BLM-administered lands within Areas of Critical Environmental Concern (ACECs) and National Conservation Lands (NCLs) that are cumulatively over their ground disturbance caps established by the Bureau of Land Management (BLM) Desert Renewable Energy Conservation Plan Land Use Plan Amendment (DRECP LUPA).

A minimum total of 11.19 acres of mitigation is proposed for ground disturbance, as shown in Table 1, and is proposed to be located at the sites shown in Figures 1 through 7. This acreage for ground disturbance mitigation may be "nested" (i.e., combined) with other resource mitigation site, when appropriate. For example, a parcel restored for desert tortoise habitat mitigation may also satisfy the disturbance mitigation requirement under appropriate conditions (BLM 2016).

The proposed mitigation sites shown in Figures 1 through 7 are based on current knowledge of the project areas, but may be modified by the Project Biologist in the field, based on existing specific site conditions. Should modifications to the location or shape of the mitigation sites be necessary, the Project Biologist will record the modified sites with a sub-meter accuracy Global Positioning System (GPS) unit, and the updated mitigation site footprint will be utilized for planning and reporting purposes going forward. In the event that mitigation site locations/ shapes are modified, the Project Biologist shall ensure that the required mitigation acreage shown in Table 1 is met.

The ultimate goal of the ground disturbance mitigation is to ensure that ground disturbance can no longer be seen at a 1:10,000 scale using aerial imagery. This goal is proposed to be accomplished through a combination of soil recontouring, grade modifications, vertical mulching, and appropriate native seed installation.



SOURCE: BLM 2018; Bing Maps 2018

DUDEK

0 5 10 Miles

FIGURE 1

Restoration Sites Overview Map

Path 46

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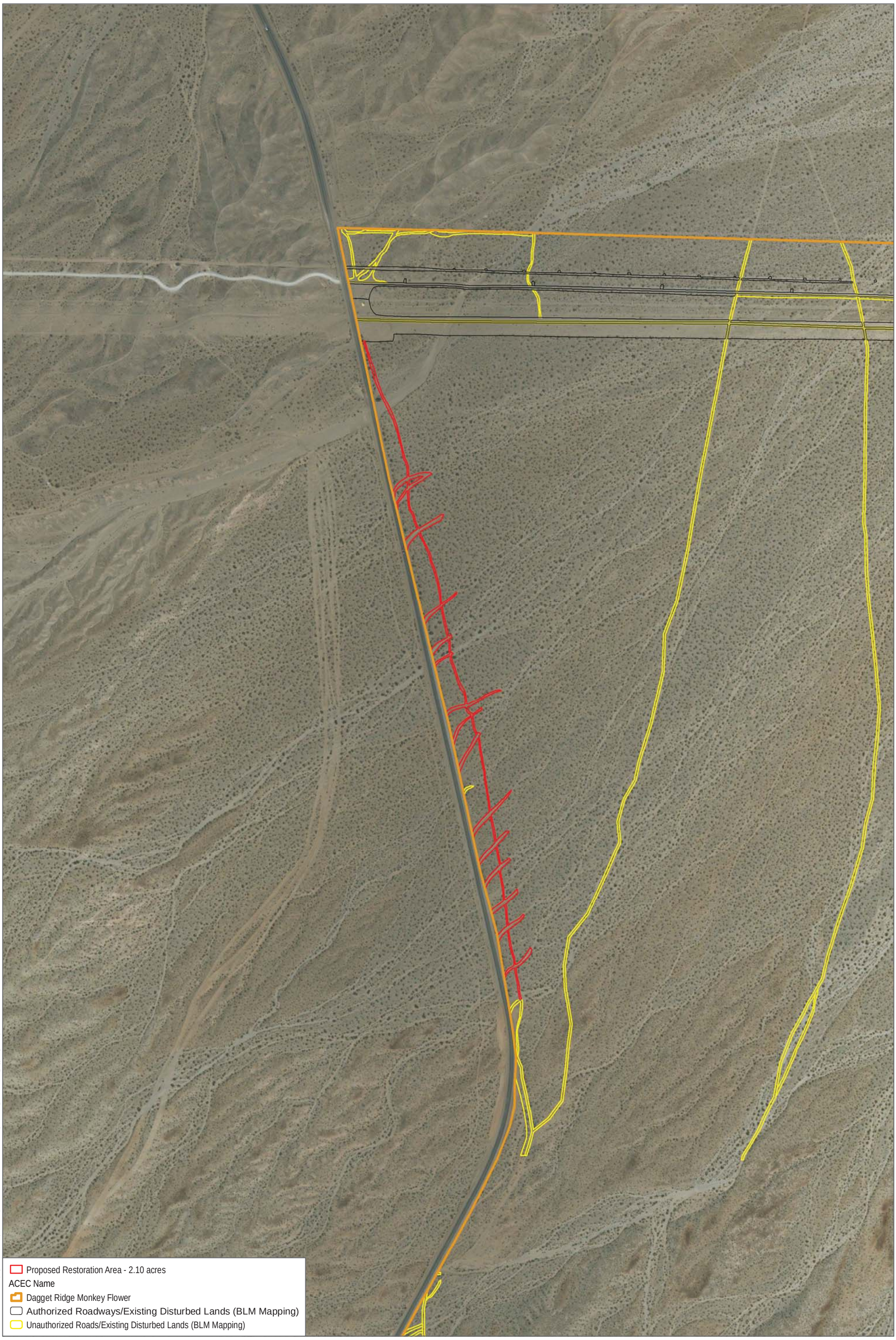

SOURCE: BLM 2018; USDA 2018; County San Bernardino 2018; Bing Maps 2018

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FIGURE 2

Dagger Ridge Monkey Flower ACEC - Proposed Restoration Site

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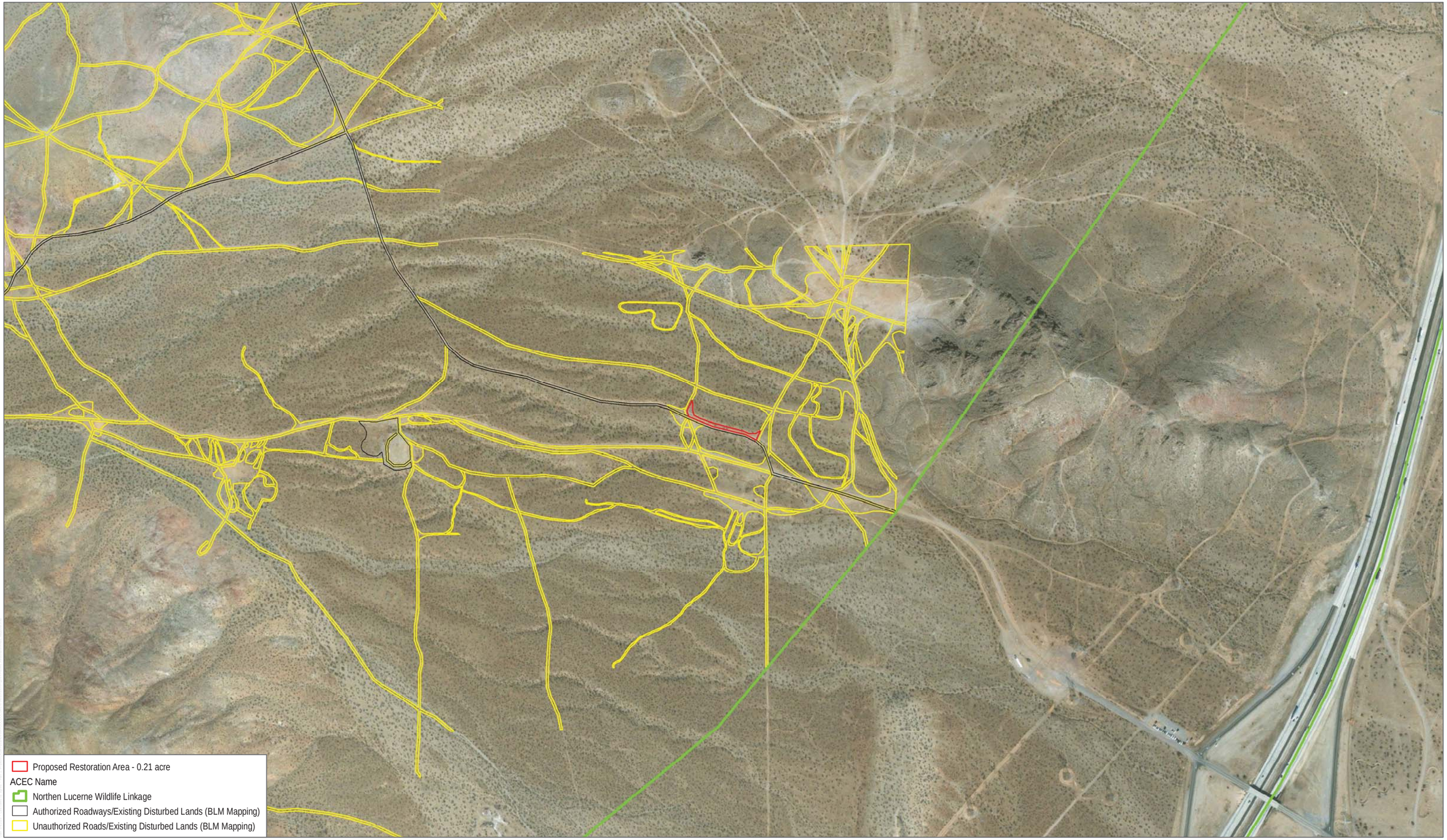

SOURCE: BLM 2018; USDA 2018; County San Bernardino 2018; Bing Maps 2018

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FIGURE 3

Northern Lucerne Wildlife Linkage ACEC - Proposed Restoration Site

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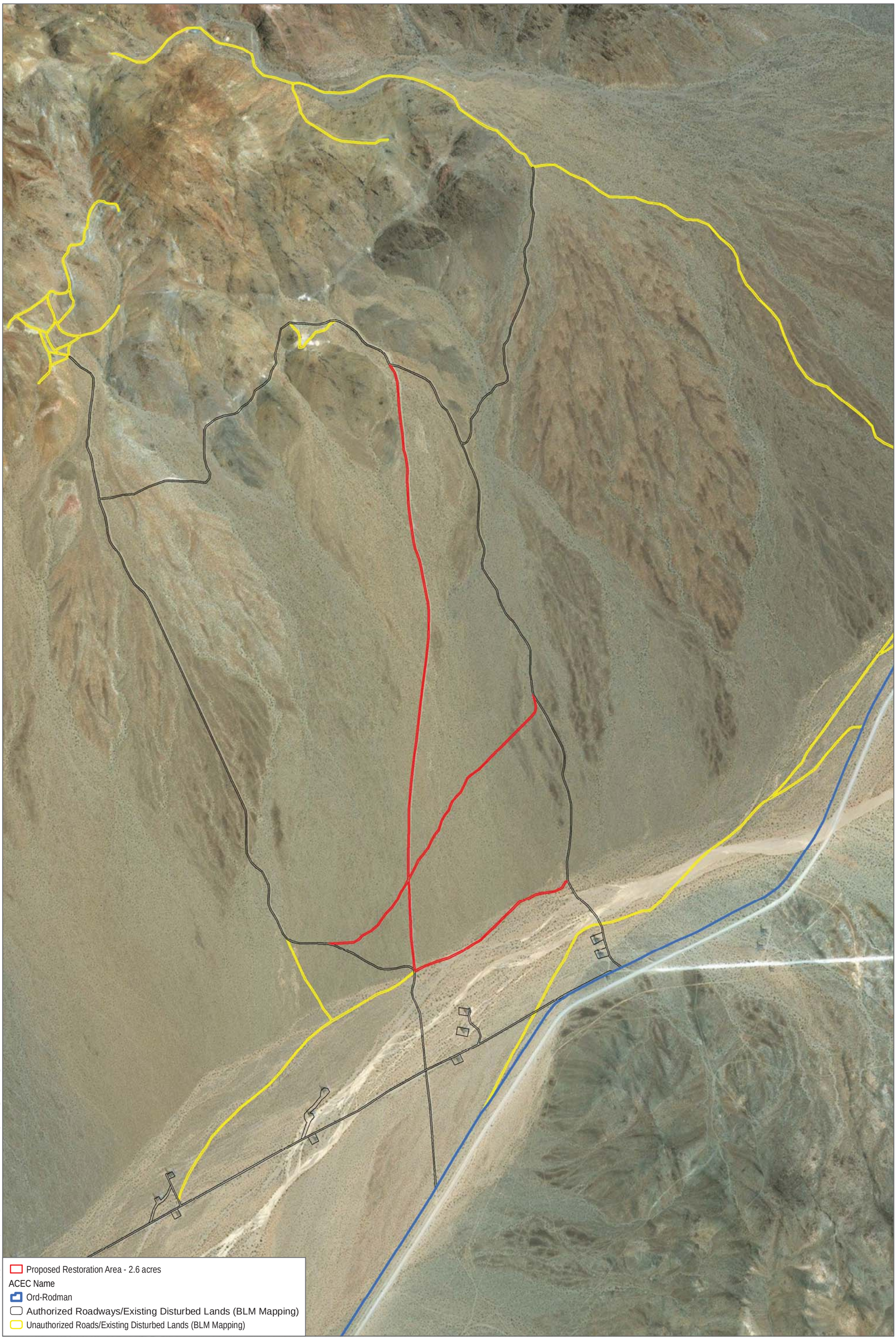

SOURCE: BLM 2018; USDA 2018; County San Bernardino 2018; Bing Maps 2018

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FIGURE 44

Ord-Rodman ACEC - Proposed Restoration Site

Path 46

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SOURCE: BLM 2018; USDA 2018; County San Bernardino 2018; Bing Maps 2018

DUDEK

0 150 300 Feet

FIGURE 5

Shadow Valley ACEC - Proposed Restoration Site

Path 46

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SOURCE: BLM 2018; USDA 2018; County San Bernardino 2018; Bing Maps 2018

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0 150 300 Feet

FIGURE 6

Superior-Cronese ACEC - Proposed Restoration Site

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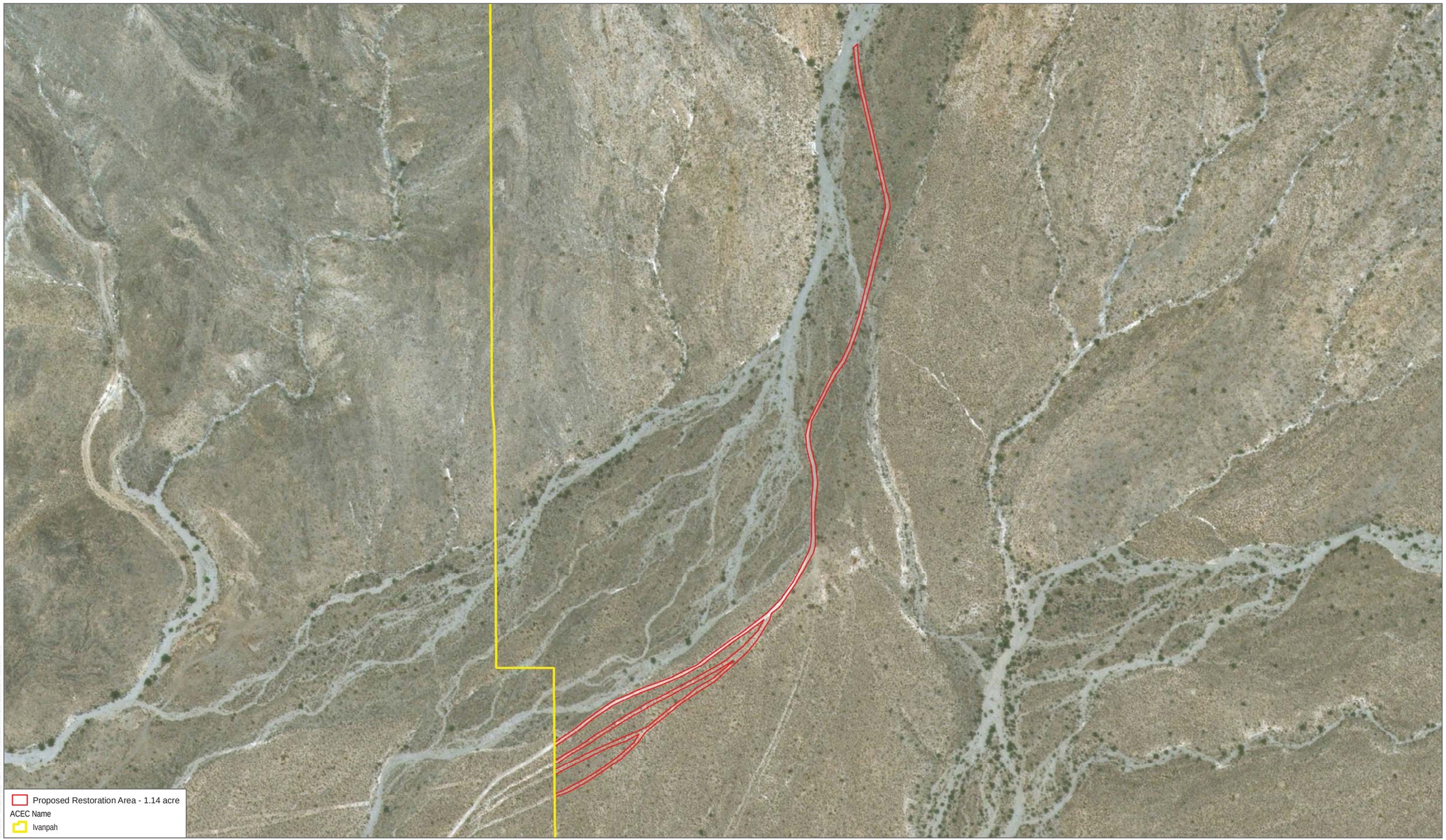

SOURCE: BLM 2018; USDA 2018; County San Bernardino 2018; Bing Maps 2018

DUDEK

0 150 300 Feet

FIGURE 7

Ivanpah ACEC - Proposed Restoration Site

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2 MITIGATION AREA EXISTING SETTING

The ground disturbance mitigation sites are located in the Mojave Desert, throughout an area extending from Victorville northeast to the California–Nevada border, as shown in Figure 1. Each mitigation site is located within the land designation unit where the impacts occur. All sites are within a BLM ACEC.

2.1 Site Descriptions/Conditions

All proposed mitigation sites consist of disturbed habitats where vegetation, topsoil, and organic detritus have been disturbed through unauthorized vehicle and other anthropogenic use, and are visible on aerial imagery based on BLM mapping of ground disturbance in each ACEC unit. Areas proposed for mitigation are largely non-vegetated, but may contain isolated native plant individuals.

2.2 Topography and Soils

The topography and landforms vary throughout the mitigation sites, and are described in this section below. Elevations throughout the mitigation sites range from 1,925 to 5,025 feet above mean sea level (AMSL), as shown in Table 2.

Table 2. Elevation Ranges Among Mitigation Sites by Land Designation

Land Designation (ACEC Unit)	Feet Above Mean Sea Level
Daggett Ridge Monkey Flower	2,575–2,675
Ivanpah	4,750–5,025
Northern Lucerne Wildlife Linkage	3,250–3,300
Ord-Rodman	3,500–3,925
Shadow Valley	3,625–3,725
Superior-Cronese	2,175–2,225

Soil types found within the mitigation sites are shown in Table 3.

Table 3. Soil Types

Land Designation	Soil Type	Acres
Daggett Ridge Monkey Flower	Cajon gravelly sand, 2% to 15% slopes	2.10
	Typic Haplargids-Yermo complex, 8% to 30% slopes	0.01
Ivanpah	Unmapped area	1.13
Northern Lucerne Wildlife Linkage	Helendale-Bryman loamy sands, 2% to 5% slopes	0.21
Ord-Rodman	Unmapped Area	2.66
Shadow Valley	Unmapped area	3.11

Table 3. Soil Types

Land Designation	Soil Type	Acres
Superior-Cronese	Cajon loamy sand, loamy substratum, 0% to 2% slopes	0.08
	Norob-Halloran complex, 0% to 5% slopes	2.14
	Grand Total	**11.44**

Soil types found within the mitigation areas are described below.

Cajon Series

The Cajon series consists of very deep, somewhat excessively drained soils that formed in sandy alluvium from dominantly granitic rocks throughout southeastern California, southern Nevada, and Arizona. The Cajon soils typically have gradients of 0% to 15% and are located on recent fans, fan skirts, fan aprons, inset fans, and river terraces at elevations between 200 to 4,300 feet above mean sea level. The lower elevations commonly occur in the San Joaquin Valley. They formed in sandy alluvium, mostly granitic rock sources, but a variety of sources are included. The climate is arid with hot dry summers and somewhat moist winters. Frost-free season is 150 to 340 days. The average annual precipitation is about 6 inches, and the mean annual temperature is about 65°F. The soil is usually dry from mid-March to mid-December and is not continuously moist for as long as 90 days in the winter (NRCS 2018).

Common textures include coarse sand, loamy coarse sand, sand, loamy sand, fine sand, or loamy fine sand or their gravelly or cobbly equivalents. Some pedons have a sandy loam horizon at a depth of more than 40 inches. The soils are somewhat excessively drained with negligible to low runoff and rapid permeability. Cajon soils with sandy loam surface textures have moderately rapid over rapid permeability. Flooding is none to rare (NRCS 2018).

Common land uses for this soil series include rangeland, watershed, and recreation. A few areas are irrigated and are used for growing alfalfa and other crops. Vegetation is mostly desert shrubs, including creosote bush (*Larrea tridentata*), saltbush (*Atriplex* spp.), Mormon tea (*Ephedra viridis*), Joshua tree (*Yucca brevifolia*), Indian rice grass (*Stipa hymenoides*), annual grasses, and forbs (NRCS 2018).

Yermo Series

The Yermo series consists of deep, well-drained soils that formed in mixed, moderately coarse textured, calcareous, gravelly or cobbly alluvium found throughout the uplands and alluvial fans of Mojave Desert. Yermo soils are located on broad, alluvial fans and on older, faulted or uplifted uplands or valley floors at elevations of about 2,300 to 4,200 feet, with slopes ranging from 0% to 50%. The soils formed in mixed, moderately coarse textured gravelly or cobbly alluvium. The soil is well drained, with medium to rapid runoff and moderately rapid permeability (NRCS 2018).

The climate is arid, with hot, dry summers and cool, somewhat moist winters. The mean annual precipitation is 4 to 6 inches, most of which occurs as rain in the winter. Some moisture falls occasionally as snow. The mean annual soil

temperature is 59°F–63°F, and the soil temperature usually is not below 47°F at any time. The soil between the depths of about 8 and 24 inches is consistently dry from mid-spring to early winter and is not continuously moist for as long as 60 days. The frost-free season is 210 to 255 days (NRCS 2018).

Common land use for this soil series include wildlife habitat and home sites. Vegetation is typically creosote bush, white bursage (*Ambrosia dumosa*), scattered yucca (*Yucca schidigera*) and Joshua tree, and annual grasses and forbs (NRCS 2018).

For the proposed mitigation sites located within the Yermo series, the subgroup is Typic Haplargids. The Typic subgroup is centered on soils that are moderately deep or deeper and have a soil moisture regime that borders on neither ustic nor xeric. These soils do not have a high shrink-swell potential. Typical saturation occurs within 100 centimeters of the soil surface for 1 month or more in normal years. Typical horizons have a sandy or sandy-skeletal particlesize class from the soil surface to a depth of approximately 50 centimeters; or horizons with significant accumulations of durinodes, concretions, nodules, volcanic glass, pumice, cinders, or pumicelike fragments (NRCS 2018).

Helendale Series

The Helendale series consists of deep, well-drained soils that formed in alluvium from granitoid rocks. Helendale soils are located on fan piedmonts, fan remnants, alluvial fans, and terraces within the Mojave Desert of southeastern California. Helendale soils are on fan piedmonts, fan remnants, alluvial fans and terraces, with coarse-loamy, mixed, superactive, thermic Typic Haplargids textures. Slopes range from 0% to 15%. Elevations are 610 to 1,200 meters (2,000 to 3,935 feet). These soils formed in alluvium from granitoid rock. The climate is arid with hot, dry summers and cool, moist winters. The mean annual precipitation is 75 to 200 millimeters (3 to 8 inches). The mean annual temperature is 17°C to 20°C (62.5°F to 68°F). The frost-free season is 270 to 320 days (NRCS 2018).

Soil moisture control section: usually dry, moist in some part for short periods during winter and early spring and for 10 to 20 days cumulative between July and September following summer convection storms. The soils have a Typic-Aridic soil moisture regime (NRCS 2018).

The soils tend to be well drained, with negligible to low runoff and moderately high and high saturated hydraulic conductivity (NRCS 2018).

Common land uses for this soil series include irrigated agriculture and pasture, home sites, military operations, recreation, and wildlife habitat. Vegetation is mainly creosote bush, white bursage, Nevada joint fir (*Ephedra nevadensis*), Joshua trees, and annual forbs and grasses (NRCS 2018).

Bryman Series

The Bryman series consists of deep, well-drained soils that formed in alluvium from dominantly granitic sources found on terraces and older alluvial fans of the Mojave Desert. Bryman soils are on terraces and older alluvial fans and have gradients of 0% to 15%. They formed in mixed alluvium derived mainly from granitic sources. Elevations are

2,800 to 3,800 feet. The climate is arid with hot, dry summers and cool, somewhat moist winters. The mean annual precipitation is 4 to 6 inches with most of the moisture occurring as rain in late autumn and winter. Some moisture falls occasionally as snow. The mean annual temperature is 61°F to 65°F.; the average July temperature is about 44°F; and the average July temperature is about 83°F. The frost-free season is 190 to 255 days (NRCS 2018).

The soils are well drained with slow runoff and moderately slow permeability. Some areas are subject to flooding for 1 to 2 weeks from December to early February (NRCS 2018).

Common land uses for this soil series include irrigated crops such as alfalfa, small grains, and pasture. Other land uses include home sites and recreation. Vegetation is mostly creosote bush, white bursage, Mormon tea, Joshua tree, and annual forbs and grasses (NRCS 2018).

Norob Series

The Norob series consists of deep, moderately well drained soils that formed from mixed alluvium, with many areas having aeolian deposits on the soil surface, located at the eastern edge of Kern County near the town of Boron in the high desert area of the Mojave Desert. Norob soils are on alluvial plains and alluvial flats. Slopes are 0% to 5% and are formed in mixed alluvium. Elevations are 2,300 to 3,200 feet. The climate is characterized by hot, dry summers and cool, slightly moist winters. The mean annual precipitation is 4 to 6 inches. The average January temperature is 44°F.; the average July temperature is 87°F; and the mean annual temperature is 62°F to 65°F. The frost-free season is 200 to 250 days (NRCS 2018).

The soils are moderately well drained with negligible to medium runoff and some ponding during occasional heavy rainstorms, as well as slow permeability (NRCS 2018).

Common land uses for this soil include livestock grazing, military operations, and recreation. Vegetation is typically saltbush, creosote bush, and scattered annual grasses and forbs (NRCS 2018).

Halloran Series

The Halloran series consists of deep, moderately well drained soils that formed in mixed alluvium dominantly from granitic sources located on older, higher, alluvial river terraces of the Mojave Desert. Halloran soils occupy level and minor depressional areas on old, high alluvial river terraces and have gradients of 0% to 2%. They formed in old alluvium of mixed origin, although granitic material makes up a considerable part. They have been overblown with irregularly spaced hummocks and small dunes, which occupy 15% to 35% of the area and are mapped in some areas as a complex with dune land. Elevations are 1,800 to 1,850 feet. The climate is arid with hot, dry summers and cool, somewhat moist winters. The mean annual precipitation is about 4 inches occurring as rain in late autumn and winter. Some moisture falls occasionally as snow. The mean annual temperature is 61°F to 63°F.; the mean January temperature is about 44°F; and the mean July temperature is about 83°F. The frost-free season is 190 to 255 days (NRCS 2018).

The soils are moderately well drained, with slow runoff with some ponding during flooding after heavy rainstorms and moderately slow permeability (NRCS 2018).

Land use for these soils mainly includes wildlife habitat and recreation. Small areas are used for irrigated alfalfa, small grains, and pasture. Vegetation is mainly creosote bush, saltbush, and alkali-tolerant vegetation. Where wind-blown hummocks and small dunes occur, mesquite trees (*Prosopis glandulosa*) grow (NRCS 2018).

2.3 Vegetation Communities

Surrounding the proposed mitigation sites (Figures 1 through 7) there are six vegetation community alliances per California Native Plant Society (CNPS) classification, occurring within in the land designations shown in Table 4. Land cover types within the mitigation sites themselves are disturbed land, which is why they are proposed for restoration.

Table 4. Vegetation Community Distribution Among Mitigation Sites

Land Designation	Vegetation Community	Acreage of Mitigation Site within Vegetation Community Context
Daggett Ridge Monkey Flower	*Larrea tridentata–Ambrosia dumosa*	2.10
Ivanpah	*Yucca brevifolia* woodland	1.13
Northen Lucerne Wildlife Linkage	*Larrea tridentata*	0.21
Ord-Rodman	*Larrea tridentata–Ambrosia dumosa*	2.11
	Yucca schidigera	0.55
Shadow Valley	*Yucca brevifolia* woodland	3.11
Superior-Cronese	*Atriplex polycarpa*	0.21
	Atriplex spinifera	1.71
	Larrea tridentata–Ambrosia dumosa	0.30
	Total Mitigation Acreage	**11.44**

Vegetation community alliances surrounding the mitigation sites are described below.

***Atriplex polycarpa* Shrubland Alliance (Allscale Scrub)**

Atriplex polycarpa is dominant in the shrub canopy with *Ambrosia dumosa*, *Ambrosia salsola, Atriplex canescens, Bromus rubens, Chamaesyce polycarpa, Cleome isomeris, Isocoma acradenia*, and *Larrea tridentata*. Emergent trees may be present in lesser numbers, including *Prosopis glandulosa* (CNPS 2018).

The vegetation community form tends to be shrubs less than 3 meters in height with a canopy that is open to continuous, with a variable herbaceous layer, including seasonal annuals (CNPS 2018). This alliance is typically found in washes, playa lakebeds and shores, dissected alluvial fans, rolling hills, terraces, and edges of large, low gradient washes. Associated soils may be carbonate rich, alkaline, sandy, or sandy clay loams.

***Yucca brevifolia* Woodland Alliance (Joshua Tree Woodland)**

Yucca brevifolia is an emergent small tree over a shrub or grass layer with *Ambrosia dumosa, Ambrosia salsola, Artemisia tridentata, Chrysothamnus viscidiflorus, Coleogyne ramosissima, Cylindropuntia acanthocarpa, Ephedra nevadensis, Eriogonum fasciculatum, Gutierrezia microcephala, Krascheninnikovia lanata, Larrea tridentata, Lycium andersonii, Yucca baccata*, and *Yucca schidigera*. Other trees may be present at low cover, including *Juniperus californica, Juniperus osteosperma*, or *Pinus monophylla* (CNPS 2018).

The vegetation community form tends to be trees less than 14 meters, with a canopy that is open to intermittent. Shrub layer tends to be open to intermittent, with an open to intermittent herbaceous layer that includes perennial grasses and seasonal annuals (CNPS 2018). This alliance is typically found in gentle alluvial fans, ridges, and on gentle to moderate slopes. Associated soils are coarse sands, very fine silts, gravel, or sandy loams. Many sites have bimodal soils with both coarse sands and fine silts (CNPS 2018).

***Larrea tridentata* Shrubland Alliance (Creosote Bush Scrub)**

Larrea tridentata is dominant or co-dominant in the shrub canopy with *Acamptopappus shockleyi, Acamptopappus sphaerocephalus, Ambrosia dumosa, Ambrosia salsola, Atriplex confertifolia, Atriplex hymenelytra, Atriplex polycarpa, Brickellia incana, Encelia farinosa, Ephedra californica, Ephedra nevadensis*, and *Lycium andersonii*. Emergent trees may be present at low cover, including *Prosopis glandulosa* or *Yucca brevifolia* (CNPS 2018).

The vegetation community form tends to be shrubs less than 3 meters in height with a canopy that is intermittent to open. The herbaceous layer is open to intermittent with seasonal annuals or perennial grasses (CNPS 2018). This alliance is typically found in alluvial fans, bajadas, upland slopes, and minor intermittent washes. Associated soils are well drained, sometimes with desert pavement (CNPS 2018).

***Larrea tridentata–Ambrosia dumosa* Shrubland Alliance (Creosote Bush–White Bursage Scrub)**

Ambrosia dumosa and *Larrea tridentata* are co-dominant in the shrub canopy with *Ambrosia salsola, Amphipappus fremontii, Atriplex confertifolia, Atriplex hymenelytra, Atriplex polycarpa, Bebbia juncea, Croton californicus, Cylindropuntia acanthocarpa, Cylindropuntia ramosissima, Dalea mollissima, Echinocactus polycephalus, Encelia farinosa, Encelia virginensis, Ephedra* spp., *Eriogonum fasciculatum, Krameria* spp., *Lepidium fremontii, Lycium andersonii, Psorothamnus* spp., *Salazaria mexicana, Senna armata, Viguiera parishii*, and *Yucca schidigera*. Emergent trees or tall shrubs may be present at low cover, including *Fouquieria splendens* or *Yucca brevifolia* (CNPS 2018).

The vegetation community form tends to be shrubs less than 3 meters, with a canopy that is open to intermittent and two tiered. The herbaceous layer is absent to intermittent with seasonal annuals (CNPS 2018). This alliance is typically found in washes and rills, alluvial fans, bajadas, valleys, basins, upland slopes, mesas, and erosional highlands. Associated soils are well-drained, alluvial, colluvial, sandy, sometimes underlain by a hardpan that may be calcareous, igneous, and/or covered with desert pavement (CNPS 2018).

***Atriplex spinifera* Shrubland Alliance (Spinescale Scrub)**

Atriplex spinifera is dominant or co-dominant in the shrub canopy with *Ambrosia salsola, Atriplex polycarpa, Ephedra californica, Frankenia salina, Gutierrezia californica, Isocoma acradenia,* and *Picrothamnus desertorum* (CNPS 2018).

The vegetation community form tends to shrubs less than 2 meters, with a canopy that is open. The herbaceous layer is variable, with seasonal annuals reaching high cover (CNPS 2018). This alliance is typically found on alluvial fans, old lake beds perched above current drainages. Associated soils are moderately sandy clay loams to fine, silty clays that may be carbonate rich. Occurrences in the Coast Ranges may be located on moderate to steep slopes on sedimentary substrate.

***Yucca schidigera* Shrubland Alliance (Mojave yucca scrub)**

Yucca schidigera is dominant or characteristically present in the shrub or small tree canopy with *Ambrosia dumosa, Coleogyne ramosissima, Cylindropuntia acanthocarpa, Encelia farinosa, Ephedra nevadensis, Eriogonum fasciculatum, Larrea tridentata, Pleuraphis rigida, Salazaria mexicana, Simmondsia chinensis,* and *Viguiera parishii* (CNPS 2018).

The vegetation community form tends to shrubs less than 5 meters, with shrub and grass layers that are open to intermittent (CNPS 2018). This alliance is typically found on alluvial fans, rocky slopes, and upper bajadas. Soils are well-drained, sandy loams (CNPS 2018).

2.4 Special-Status Plant and Wildlife

No special-status plant or wildlife species were mapped within the proposed mitigation sites during the biological surveys associated with the proposed project. If special-status plants or wildlife are encountered during site review, project implementation, maintenance, or monitoring activities, the Project Biologist will review the specific situation and put in place measures to avoid impact to the observed resource. If special-status plant individuals are encountered on site, they shall be left undisturbed and incorporated into the overall site restoration effort.

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3 GROUND DISTURBANCE MITIGATION GOALS

The goal of the mitigation effort outlined herein includes physical restoration of a minimum of 11.19 acres of previously disturbed BLM lands within the boundary of the specific California Desert NCLs and/or ACEC unit(s) being impacted as shown in Table 1. This goal will be considered achieved once success criteria in Section 6.1 is achieved, as determined by BLM. It should be noted that there is no requirement for percent native vegetation cover associated with this effort, but rather visual and topographical restoration to blend in with the surrounding, typical landscape. This overall goal may be obtained in part by establishment of some native vegetation, but establishment of a certain level of native vegetation cover is not the ultimate intent.

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4 IMPLEMENTATION PLAN

LADWP will oversee mitigation implementation and is responsible for the successful implementation of this mitigation and monitoring program. Project management will be provided by LADWP, who will be financially responsible for implementation and management of this mitigation program.

4.1 Project Biologist

LADWP shall designate a qualified biologist (Project Biologist) to provide biological monitoring during implementation of the mitigation program. The Project Biologist will review all aspects of pertinent project documents prior to project implementation.

The Project Biologist will oversee and coordinate implementation of this mitigation plan, conduct field monitoring of project installation, and perform biological monitoring throughout the maintenance and monitoring period. The Project Biologist shall possess specific project knowledge and demonstrate experience with mitigation projects.

The Project Biologist will inform all project personnel prior to implementation of this mitigation plan of all on-site construction restrictions and conditions. The Project Biologist will inform all project personnel of the presence or potential presence of sensitive species and vegetation communities within or adjacent to the project areas, as well as any potential dangers on site. Information about federal, state, and local laws relating to these biological resources will be discussed as part of personnel education. Access and staging areas outside of environmentally and culturally sensitive areas will be established.

Biological monitoring will occur throughout the mitigation installation period. Monitoring time may increase or decrease as required by field conditions and installation activities. During installation, the Project Biologist, via the LADWP point of contact, will have authority to stop work in situations where biological resources not authorized to be impacted are in imminent danger of impacts from adjacent construction activities. Each site visit will be documented in a site observation report that will note restoration installation activities relating to this mitigation plan.

The Project Biologist shall conduct on-site monitoring visits throughout the maintenance and monitoring period to assess progress and growth trends, document project deficiencies, and provide recommendations for remedial measures, if necessary, to achieve compliance with success criteria outlined in Section 6.1. Each monitoring visit will include a qualitative assessment of maintenance work and will include remedial recommendations as necessary to help ensure successful project completion.

4.2 Installation and Maintenance Contractor

LADWP will select a qualified installation contractor to implement the mitigation installation and maintenance program. The contractor must be able to identify California native plants and common weed species and demonstrate knowledge of desert habitat restoration techniques.

The installation contractor will be responsible for conformance to (1) this mitigation plan, and (2) environmental regulatory agency requirements. The contractor's responsibility for installation will continue until successful completion and final acceptance by LADWP and the Project Biologist.

After initial mitigation project installation, LADWP will designate a maintenance contractor. Maintenance work shall be performed as indicated herein and per the Project Biologist's recommendations. LADWP may choose to designate a maintenance entity that is separate from the installation entity.

4.3 Preliminary Schedule

The schedule presented in Table 5 is a preliminary schedule of implementation and may be modified based on site conditions, accessibility, and personal availability. It is recommended that the majority of the work be conducted during the cooler season of the year, but this may be modified based on the overall project timeline. Initiation of the restoration effort will begin within 12 months following initiation of the construction activities associated with this mitigation.

Table 5. Ground Disturbance Mitigation Program Schedule

Work Tasks	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Site delineation									X			
Seed collection/plant salvage										X		
Soil contouring											X	X
Vertical mulch and landscaping	X											X
Seed installation	X											X
Erosion control		X	X									

4.4 Site Access

The mitigation sites will be accessed via existing authorized roads to the extent feasible. Staging will occur outside of sensitive habitat, preferably in existing disturbed areas, and avoid unauthorized additional impacts to the surrounding area.

Prior to implementation, the Project Biologist will coordinate with the installation contractor to determine appropriate routes for accessing each mitigation site, accounting for the type(s) of equipment needed.

4.5 Sensitive Species Protection Measures

Prior to mitigation implementation, the Project Biologist will review pertinent project-specific literature and biological survey data results. The Project Biologist shall evaluate each mitigation site in the field to determine if suitable habitat is present that warrants additional focused survey efforts in order to identify special-status plant or wildlife species with a potential to occur within the mitigation site footprints, and with potential to be adversely affected during implementation of the mitigation project.

If special-status plant species are observed within a mitigation site prior to project implementation, the Project Biologist will flag and delineate the plant locations, and make the installation contractor aware of their presence prior to implementation. Impacts to special-status plant species will avoided, and the presence of such plants will be incorporated into the overall design of the project.

If special-status wildlife are observed, or evidence of their territories and utilization of the site are observed prior to project implementation, the Project Biologist will work with the installation contractor to avoid "take" of individuals or their functional habitats.

If the contractor observes special-status plants or wildlife during mitigation installation implementation or subsequent maintenance activities, he/she shall stop work in that area and notify the Project Biologist. The Project Biologist will then work with the crews to avoid impacts appropriately based on the site condition.

4.6 Site Preparation

The sites will be delineated by the Project Biologist prior to project implementation. The flagging will be temporary in nature and will be removed following implementation to avoid attracting unwanted attention and possible vandalism to the site. No fencing shall be used to delineate the site that could cause additional impacts and barrier to wildlife movement. In the event that flagging in the field is not feasible or desirable, the Project Biologist will provide the installation contractor a georeferenced PDF file of the site footprint overlaid onto a high-resolution aerial map. The georeferenced map may be accessed in the field via mobile electronic device and used for spatial navigation while on site.

A variety of restoration methods may be employed, based on their suitability to a given location and site context, as determined by the Project Biologist. Not all methods will be uniformly suitable throughout the entirety of the mitigation sites, and they will be utilized as appropriate. Methods outlined in Sections 4.6.1 through 4.8 may be used independently, or in combination with each other to achieve the overall goals of the project, based on site conditions.

4.6.1 Native Plant Salvage and Seed Collection

For areas where seeding is utilized, seeds should be gathered as close to the specific mitigation site as possible. Seeds can be collected from the ground at the base of existing, mature native plants (such as a creosote bush). The

surrounding debris may also be collected with the seed for efficiency and to provide organic matter with the seeds. No more than approximately 10% of observed seeds should be removed from any individual plant to ensure that seeding occurs from a diverse group of individuals. This approach will also help to ensure that there is no disruption of habitat development due to over collection of seeds from a given area (SCA 2013). Collected seed shall be stored in a cool, dry location until it is installed on the mitigation site.

If feasible, existing native vegetation within the mitigation sites shall be left in place and incorporated into the overall restoration design of the site. If the overall restoration approach requires grading, recontouring, or other soil work that necessitates the removal of existing native vegetation, then native plant individuals shall be salvaged to the greatest extent feasible. Salvaged plants shall be stored in a stockpile area adjacent the site, and then replanted as part of the restoration effort following completion of soil work. The Project Biologist shall work directly with the installation contractor to identify vegetation for salvage within the mitigation sites.

Vegetation salvage shall occur during the cooler months, preferably between October and February. Vegetation collection of stem succulent segments includes individual and multiple stem sections. Each salvaged segment shall include at a minimum complete segments. Segments shall be manually separated from host plants with hand tools (i.e., bladed tools) and transferred directly to a transport vehicle or temporary on-site stockpile areas approved by the Project Biologist.

For both succulent and non-succulent plants, individual stems or stem clusters containing established roots shall be carefully lifted from the soil with intact root ball and soil attached. These specimens shall be separated from the non-rooted segments.

All salvaged plants with developed root balls shall be salvaged and transplanted in the designated stockpile area adjacent the site. Rooted specimens shall be carefully excavated from the soil with a minimum of an 8-inch x 8-inch root ball and soil attached. The root ball and soil shall be kept intact for transport to the stockpile area. Salvage will include the collection of segments and rooted plants as directed in the field by the Project Biologist. Rooted segments shall be planted immediately upon arrival at the stockpile area.

In addition to preserving the rootball, all existing attached pads or plant parts shall be preserved intact to provide the maximum vertical and horizontal structure for transplantation.

Salvaged plant individuals shall be stockpiled adjacent the site in a location designated by the Project Biologist while grading and re-contouring is occurring. The salvage can be transferred to prepared 3-foot-wide, 18-inch-deep stockpiling trenches of any desired length. If using multiple, parallel trenches, they should be far enough apart to allow any applicable equipment access to each trench. Trenches will be watered thoroughly prior to transplanting material. Salvaged individuals should be placed in the trench and planted with native soil. Care should be taken to properly tamp down and compact all soil around roots of plants to remove all air pockets. A depression around each plant should be formed to hold water. After individuals are transplanted, they will be watered thoroughly one time. A one-time watering approximately 15 days after planting will occur to remove or minimize any air pockets and assure

proper soil compaction. Yucca will be placed in the trenches and the soil tamped by hand around the base of the plant so that there are no air pockets. To reduce watering, DriWater can be applied to each individual. DriWater is a gelatinous polymer that slowly breaks down to water over time. DriWater comes in biodegradable cartons and is applied by cutting the top of the carton and placing it upsidedown around the plant to be watered. The area around the plant must be thoroughly wet to activate the DriWater. The DriWater is applied around the base of the plant at a rate of 1 quart for every foot in plant height. DriWater cartons are to be buried completely. At the surface, a watering well will be formed around the plant. Afterward, the plant will be watered thoroughly again (Ironwood 2014).

Following grading, re-contouring and soil surface preparation, salvaged plant material may be replanted back onto the mitigation site. Any soil disturbance associated with stockpiling salvage plants adjacent the site shall also be restored as part of the project.

4.6.2 Equipment and Materials

Equipment utilized for grading, re-contouring, decompacting, ripping, planting salvaged native plants, and vertical mulch may include hand tools such as rakes, buckets, shovels, pick mattocks, McLeods, brooms rock bars, and wheelbarrows.

Mechanized equipment such as skid-steer loaders and mini-excavators may also be used in combination for various tasks such as native plant salvage, moving rocks, soil ripping (for decompaction), grading, re-contouring, and materials relocation. Larger machinery is not recommended because additional soil compaction is not desirable.

A water truck is also recommended to be on site for the purposes of emergency fire control, dust control, and watering in salvaged plant materials.

4.6.3 Soil Preparation and Grading

Soil work within the mitigation sites will consist of decompacting, raking, recontouring, berms, and sweeping. It may also involve movement or placement of native rock material in a way that provides a determent to unauthorized use, or creates a break in the line-of-site, helping to blend the mitigation site visually back into the surrounding landscape context. Methods of soil preparation and grading are discussed below. Each site will be different, and the contractor, in coordination with the Project Biologist, will develop a work plan utilizing a combination of methods outlined herein.

4.6.3.1 Decompacting/Soil Ripping

Unauthorized vehicle use in the desert causes soils to compact, as may be the case with some of the mitigation sites. In order to promote suitable soil habitat for new plant growth and to improve water infiltration and runoff, it may be necessary to decompact the soil. This may be accomplished using hand tools such as rakes, McLeods, or pick mattocks, depending on the extent that the soil is compacted. If significant compaction over a large area is present, a

skid steer, mini-excavator, or small tractor may be fitted with a ripper. Heavy decompaction may require more extensive finishing efforts to lend the decompacted area visually with the surrounding soils, as the churning of the soils changes not only the color of the soil but also the look of it. Decompaction should be done in a way that creates irregular, organically shaped edges to avoid creating straight lines or geometric forms. Once soil has been decompacted, it should be smoothed via raking or sweeping and assessed to determine how much finish contouring and texturizing is necessary (SCA 2013).

4.6.3.2 Raking

Raking may be used to erase small ruts and redistribute sand and small rocks to match the surrounding area. This may be used as a finish technique following other grading methods, or on its own for areas of minor impact. Raking should seek to distribute materials evenly and avoid forming lines or clumps of rock, especially when raking a long, narrow incursion. Irregular, organically shaped edges should be created to blend in with the surrounding landscape context.

Once raking is complete, the area should be assessed to determine if the soil is discolored. Sanding and or rocking with native topsoil materials can be used to mask discolored soil and to help redistribute the texture more evenly. With any soil disturbance, some soil discoloration is probable, but the color of the soil tends to fade with sun and dry air over time (SCA 2013).

4.6.3.3 Recontouring

In some cases, changing the contour of the landscape is sometimes desirable—either to restore an area to what it was pre-disturbance, or to modify it in a way that will discourage future disturbance. Unauthorized vehicle routes in softer desert soils may become deeply compacted, resulting in a general trough shape that remains even after decompaction. Disrupting the shape of the trough feature assists in eliminating visual evidence of the disturbance. Recontouring the shape to include other forms can assist in breaking up the linear trough feature. Recontouring should always seek to form shapes that are in context with the surrounding landforms and features of the site (SCA 2013).

4.6.3.4 Berms

Berms can occur along the edge of unauthorized desert roads in areas of sand or loose soils. These berms may be interrupted, or new berms created that blend into their surroundings and disrupt the linear visual features of the unauthorized road (SCA 2013).

4.6.3.5 Large Rock Placement

If larger rocks are present within a mitigation site, they may be moved to appear in formations that can serve as natural barricades for discouraging unauthorized vehicle use. Rocks may be utilized to block and camouflage existing

routes, or to create new, similar formations that blend with the surroundings. Only rocks within the mitigation site in areas of disturbance should be considered for this application (SCA 2013).

4.6.3.6 Small Rocks/Desert Pavement

In mitigation sites where desert pavement or small exposed rocks are prominent on the soil surface, rocks may be gathered and scattered to blend the mitigation area with its surroundings. Only rocks within the mitigation site in areas of disturbance should be considered for this application. Care must be taken to avoid creating patches devoid of any rocks or other obvious evidence of disruption. A variety of rock sizes should be collected to avoid a uniform appearance. Rock dispersal should cover an organically shaped, irregular area to blend in with the surrounding landscape (SCA 2013).

4.6.3.7 Sanding

For areas where decompaction or raking has discolored the soil surface, scattering a layer of sand or fine gravel can mask the discoloration as well as can help visually blend the site with its surroundings. Collection of sand for this purpose should be from within the mitigation site in a disturbed area (SCA 2013).

4.6.3.8 Sweeping

For finishing the soil surface, sweeping may be used to remove vehicle tracks in sandy washes, remove footprints, or other signs of human usage (SCA 2013).

4.6.4 Vertical Mulching Techniques

Vertical mulch collection involves gathering dead branches from surrounding plants, or gathering small dead bushes no longer rooted into the ground. When collecting from live plants, remove only dead branches from plants, and do not remove more than 10% of the dead branches from a single individual plant. Branches used should break away using only a minimum amount of force. Branches that do not break easily should be left in place (SCA 2013).

To install vertical mulch, a hole of sufficient depth is dug to "plant" it. Rocks may be used in the bottom of the hole to help support and anchor the vertical mulch. Once branches are secured and able to stand upright on their own, the remainder of the hole may be filled with more rocks and then soil. A mound may be constructed around the base of the installation for additional support if necessary (SCA 2013).

Placement of branches should appear natural, and asymmetrical within the installation clump. Clumps should be spaced consistently with the natural surrounding vegetation density.

4.7 Seeding and Planting Techniques

All salvaged plant material stockpiled next to the mitigation sites will be replanted in a natural pattern, consistent with the landscape context. Plant individuals will be carefully removed from the stockpiling area, taking care to not damage stems, roots, or the base of the plant. A hole at least two times the size of the rootball/succulent base will be prepared for each plant. The hole will be filled with water and allowed to drain once; then the hole will be filled with water again and then back-filled with soil to form a muddy matrix. The plant will then be planted, and the soil around the plant will be tamped so that there are no air pockets. DriWater may be applied around the plant at a rate of one quart for every foot in height. DriWater cartons are to be buried completely, with no visual trace from the surface. At the surface, a watering well will be formed around the plant (Ironwood 2014).

Collected seed may be installed using two applications: seed pits and broadcast seeding.

4.7.1 Seed Pits

Following installation of vertical mulch, a shallow pit may be dug at the base. Pits should be 2 to 6 inches deep and sized to hold approximately a hand full of seeds. Placing seeds in these pits protects them from windy conditions. Seed pits may also be prepared where no vertical mulch has been installed (SCA 2013). Small organic matter should also be placed in the seed pits to help hold moisture.

4.7.2 Broadcast Seeding

Seed may also be disbursed throughout the site through hand broadcasting. This should only be done in areas that have been decompacted, and where the soil surface has enough texture through raking for the seeds to incorporate into the topsoil layer, as opposed to staying on top of the soil and being prone to relocation by the wind (SCA 2013).

For areas and applications where collection of native seed from the area surrounding the site is not feasible, a native seed mix may be utilized. The seed mix may be modified by the Project Biologist based on site conditions. An example seed mix is shown in Table 6.

Table 6. Example Native Seed Mix

Species and Common name	Pounds Per Acre	Percent Purity
Ambrosia dumosa (white bursage)	3.5	29
Atriplex canescens (four-winged saltbush)	1.5	12
Ephedra nevadensis (Nevada ephedra)	1.5	12
Larrea tridentata (creosote bush)	2.5	3

All purchased seeds will be clearly labeled, showing type of seed, test date, the name of the supplier, and percentage of the following: pure seed, crop seed, inert matter, weed seed, noxious weeds, and total germination content. All material will be delivered to the site in original, unopened containers bearing the manufacturer's guaranteed analysis. All seed mixes will be stored in a dark, cool place and not be allowed to become damp. All seed from seed mixes should be sourced from as close to the mitigation sites as possible. Labels for each seed delivered to the site will be inspected and approved by the Project Biologist prior to mixing and application.

Installation between the months of October to January is ideal for allowing establishment during the cooler and wetter time of the year.

Additional seed may be hand broadcast at a later date if the seed of selected species is not available at the time of initial seed installation. The contractor should consult the Project Biologist for modifications to the seed palette.

4.8 Erosion and Sedimentation Control Measures

If a rainfall event is forecasted by the National Weather Service while bare mineral soil is exposed from vegetation clearing work, the contractor shall deploy erosion control devices such as silt fencing, straw wattles, bonded fiber matrix, or spreading of crushed mulch as directed by the Project Biologist. All materials, with the exception of silt fencing, shall be made of 100% biodegradable materials. No erosion control materials shall contain plastic that may entrap or endanger wildlife.

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5 SITE MAINTENANCE PLAN

5.1 Maintenance Activities and Schedule

Following successful mitigation project installation, as approved by the Project Biologist and LADWP, the mitigation program will begin its maintenance and monitoring phase, which shall extend until performance criteria in Section 6.1 are achieved for all areas of all mitigation sites.

Maintenance activities will be directed by the Project Biologist and shall consist of correcting any deficiencies in the original project design, or making adjustments to the site to maintain its compliance with the original design. Maintenance activities may include removal of anthropogenic trash, repair and soil recontouring following unauthorized vehicle impact, and addressing soil erosion. Methods outlined in Sections 4.6.3 through 4.8 may be utilized for maintenance purposes and corrective actions. Maintenance visits are twice a year, and may be increased or decreased as recommended by the Project Biologist based on the trajectory of the project. An estimated maintenance schedule is shown in Table 5. Not all maintenance activities listed in Table 7 may be necessary at every visit, but they will be evaluated by the Project Biologist.

Table 7. Mitigation Maintenance Program Schedule

Work Tasks	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Anthropogenic trash removal				X						X		
Erosion control				X						X		
Maintenance of vertical mulch				X						X		
Repair of unauthorized vehicle use				X						X		

5.2 Maintenance Guidelines

Specific maintenance activities shall be directed by the Project Biologist, and shall be consistent with the intent of achieving the success criteria outlined in Section 6.1.

While eradication of non-native plant species is not a specific goal of the project, the site shall be maintained such that presence of non-native plant species within the site does not exceed that of the ambient, surrounding landscape context, as directed by the Project Biologist. Non-native plant control measures will include the following: (1) hand removal, (2) cutting with mechanical devices, and (3) herbicide application. Hand removal of non-natives is the most desirable method of control and will be used around existing individual native plants where feasible. Weeds should be pulled when plants are 6–12 inches tall or when they can be positively identified, and prior to the formation of seed

heads. If seed heads have formed, they shall be hand cut and bagged for removal from the site. Care should be taken to avoid spreading weed seeds throughout the site.

The maintenance contractor should coordinate with the Project Biologist to identify weeds for removal as needed. Chemical herbicide control will be used for perennial species that are low growing and difficult to control by hand pulling. Any herbicide treatment must be applied by a licensed pest control applicator.

Pruning or clearing of native vegetation will generally not be allowed within the mitigation areas, except as directed by the Project Biologist. Dead biomass and plant litter will not be removed and will be left in place, or utilized for additional vertical mulch applications as directed by the Project Biologist. Organic biomass and leaf litter provide valuable microhabitats for benthic and terrestrial invertebrates, reptiles, small mammals, and birds. In addition, the decomposition of plant material is essential for the replenishment of soil nutrients and minerals.

Anthropogenic trash will be removed from the mitigation areas by hand on a regular basis. Trash consists of all anthropogenic materials, equipment, or debris dumped, thrown, washed, blown, and left within the mitigation areas.

Contractor maintenance shall include maintenance and repair of specific grading/recontouring features that are intended to obscure unauthorized roads, or deter unauthorized human use. The contractor shall confer with the Project Biologist if it appears that maintenance needs of the site indicate that changes in the specified location, materials, or methods need to be altered to meet their intent for this project.

Remedial seeding may also be recommended by the Project Biologist to help increase cover and structure to the site.

6 MONITORING PLAN

6.1 Success Criteria

Per BLM requirements (BLM 2016), mitigation areas will be considered successful and the effort complete when they meet one of the two following criteria, as determined by BLM:

1. Field verification that disturbed areas are dominated by the establishment of native shrubs, as appropriate for the site, and demonstrated function of ecological processes (e.g., water flow, soil stability).
2. Ground disturbance can no longer be seen at the 1:10,000 scale using the best available aerial imagery.

Portions of the mitigation sites may be determined recovered by BLM at any time, once one of the two success criteria are met, prior to the entirety of the mitigation polygon being determined recovered. Once a given area is determined to have met one of the two success criteria, it will be removed from the acreage of the active, ongoing mitigation program footprint. Maintenance and monitoring will continue for the remaining areas until all required mitigation areas have been determined to have met final success criteria by BLM.

While establishment of native shrubs is listed as a component of site restoration, there is no specific native vegetation cover requirement for these sites, nor is there criteria for control of non-native plant species.

6.2 Monitoring Methods

To evaluate the success criteria outlined in Section 6.1, monitoring of the mitigation effort shall consist of qualitative approaches, including desktop analysis of existing commercially available aerial imagery, utilizing an unmanned drone to obtain aerial imagery of the mitigation sites and on-site qualitative visual assessment.

6.2.1 Field Evaluations

Qualitative monitoring field visits will be conducted twice a year by the Project Biologist to determine if the site is meeting interim and final success criteria as described in success criteria option number 1. If mitigation efforts are observed to be failing to meet the intent of the success criteria, the Project Biologist may recommend remedial actions to bring the site into compliance. This will involve an assessment of native species composition and vegetation density present throughout site compared with an undisturbed control area adjacent the site.

Monitoring activities will include regular evaluation of weed species establishment. No plant species listed as problematic and/or invasive by the CNPS, the California Invasive Plant Council, or the State of California shall be allowed to naturalize or persist in the mitigation site. No plant species listed as a "noxious weed" by the State of California or the U.S. federal government shall be planted or allowed to naturalize or persist within the mitigation site.

Following each site visit, the Project Biologist shall generate a brief Site Observation Report detailing the condition of the mitigation sites and any maintenance and/or remedial actions recommended to support the project in meeting its success criteria. Copies of the Site Observation Report shall be provided to LADWP and the maintenance contractor.

6.2.2 Aerial Survey and Map Evaluation

To determine if the mitigation sites are meeting success criteria option number 2, commercially available high-resolution aerial imagery (such as Google Earth or equivalent) may be used for evaluation if the date of the imagery is current and relevant to capturing recent site development. Obscuring the site in plan view at a 1:10,000 scale requires distribution of vegetation and land features in addition to presence and density of native vegetation. It is for this reason that evaluation of the site from an aerial plan view is necessary in addition to field evaluation of vegetation.

If commercially available aerial imagery is not current or insufficient, aerial surveys of the mitigation sites may be conducted to provide high-resolution aerial basemap (RGB color value/true color) to document current conditions of the project site and allow for evaluation of site progress and success criteria. Data may be collected by flying a small unmanned aerial system (sUAS/drone) over the mitigation sites (this activity may be combined with site monitoring, conditions permitting). Collected photographic mapping data will be post-processed and converted into a georeferenced composite aerial map compatible for use with ESRI mapping software and CAD software. The final mapping product will have a minimum resolution of 1-inch per pixel. Mapping will then be scaled to 1:10,000, and assessed for attainment of success criteria. All flight operations shall comply with the following:

- All flight operations will be conducted in compliance with the requirements of the Federal Aviation Administration Part 107 Federal Aviation Regulations (14 CFR Part 107)
- The sUAS/drone carries current FAA registration.

6.3 Monitoring Schedule

Monitoring shall be conducted twice a year, and be coordinated with the contractor's maintenance efforts, as shown in Table 5. Monitoring may occur prior to the contractor's maintenance visits, or may be conducted in conjunction with the contractor's maintenance visit to provide direct coordination.

6.4 Annual Reports

An annual biological monitoring report outlining the results of the progress of the mitigation effort will be submitted to LADWP, permitting regulatory agencies and BLM at the end of each year on the anniversary date of completion of project installation, or at the end of the calendar year (December). The annual monitoring reports will include the following: describe the existing conditions of the mitigation sites derived from qualitative and aerial imagery data, provide a comparison of pre-project field conditions with current conditions, identify any shortcomings of the mitigation program, and recommend remedial measures necessary for the successful

completion of the mitigation project. The reports will also identify any portions of the mitigation sites that are currently meeting success criteria and are ready to be requested for final completion by BLM.

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7 CONTINGENCY MEASURES

As the project progresses, if portions of the mitigation sites are struggling to meet success criteria, the Project Biologist in consultation with LADWP will prepare an analysis of the cause(s) of failure(s) and, if determined to be necessary, propose remedial actions to correct the mitigation effort deficiencies. If the mitigation sites have not met the performance criterion, LADWP maintenance and monitoring obligations will continue until final project approval/ confirmation is obtained.

As owner and permittee of the project, LADWP is financially responsible for implementation and management of the mitigation program. LADWP will oversee mitigation installation and will be responsible for the successful implementation of the mitigation program. Funding will be made available by LADPW for adaptive management of the mitigation effort, should it become necessary.

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8 MITIGATION COMPLETION

When monitoring results indicate the project has met the final performance criteria for the mitigation sites, LADWP will notify BLM and submit a monitoring report outlining compliance with final performance criteria and request final sign-off of the mitigation as being complete.

Areas within California Desert NCLs and/or ACECs may be determined recovered by BLM at any time, once one of the two success criteria in Section 6.1 are met, prior to the entire unit (of calculation and mitigation) being determined recovered. Areas determined recovered by BLM would be removed from the subsequent ground disturbance calculation for that unit (BLM 2016). The mitigation program would continue until all of the required 11.19 acres meet final performance criteria.

Ground disturbance is assessed during the decadal ground disturbance threshold ecoregion trend monitoring assessments that are conducted. Between the decadal assessments, BLM will assume the mitigation sites are not restored until data is presented otherwise and BLM agrees with the conclusion (see Section 6.4 for reporting).

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9 REFERENCES

14 CCR Part 107. Small Unmanned Aircraft Systems.

BLM (Bureau of Land Management). 2016. *Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan*. September 2016.

CNPS (California Native Plant Society). 2018. *A Manual of California Vegetation Online*. Accessed May 2018. http://vegetation.cnps.org/.

Ironwood. 2014. *Site Rehabilitation and Cactus and Yucca Salvage Plan, Silver State Solar Power South*. February 2014.

NRCS (National Resources Conservation Service). 2018. "Official Soil Series Descriptions (OSDs)." Accessed May 2018. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053587.

SCA (Student Conservation Association, Bureau of Land Management). 2013. *Yuha Desert Crew's Guide to Restoration Theory and Practice*.

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APPENDIX E

Air Quality and Greenhouse Gas Emissions Data

Appendix E

Air Quality and Greenhouse Gas Emissions Data

Path 46 Construction - Annual

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Parking	10.70	User Defined Unit	10.70	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Annual construction only; no increase/change in routine maintenance operations

Land Use - Assuming 10.7 acre project area total (all grading sites and tower raising sites)

Construction Phase - All 70 grading sites (about 2 days per site average) and tower raising (about 45 days per tower) assumed to occur in same year

Off-road Equipment - Equipment list provided by applicant for tower raising

Off-road Equipment - Equipment list provided by applicant for grading

Trips and VMT - Worker trips from applicant. Vendor trips are water trucks. Increased default trip lengths to 40 miles for rural location of sites. Dump truck (assuming 16CY) would move spoils on-site

Grading - Disturbed daily area based on CalEEMod default. 10,809CY spoils based on total grading

Consumer Products - Construction emission modeling only

Landscape Equipment - Construction emission modeling only

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed area 2x per day

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	90.00
tblConstructionPhase	NumDays	30.00	94.00
tblConstructionPhase	NumDays	30.00	23.00
tblConstructionPhase	PhaseEndDate	4/17/2017	12/6/2016
tblConstructionPhase	PhaseStartDate	12/13/2016	8/3/2016
tblGrading	AcresOfGrading	47.00	1.50
tblGrading	AcresOfGrading	23.00	3.00
tblGrading	MaterialExported	0.00	7,206.00
tblGrading	MaterialExported	0.00	3,603.00
tblLandUse	LotAcreage	0.00	10.70
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00

tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	VendorTripLength	6.60	40.00
tblTripsAndVMT	VendorTripLength	6.60	40.00
tblTripsAndVMT	VendorTripLength	6.60	40.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripLength	16.80	40.00
tblTripsAndVMT	WorkerTripLength	16.80	40.00
tblTripsAndVMT	WorkerTripLength	16.80	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	48.00
tblTripsAndVMT	WorkerTripNumber	30.00	20.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.4818	4.8909	3.7585	5.1500e-003	0.5324	0.2578	0.7902	0.2609	0.2381	0.4989	0.0000	461.2942	461.2942	0.1087	0.0000	463.5772
Total	**0.4818**	**4.8909**	**3.7585**	**5.1500e-003**	**0.5324**	**0.2578**	**0.7902**	**0.2609**	**0.2381**	**0.4989**	**0.0000**	**461.2942**	**461.2942**	**0.1087**	**0.0000**	**463.5772**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.4818	4.8909	3.7585	5.1500e-003	0.2988	0.2578	0.5566	0.1332	0.2381	0.3713	0.0000	461.2937	461.2937	0.1087	0.0000	463.5768
Total	**0.4818**	**4.8909**	**3.7585**	**5.1500e-003**	**0.2988**	**0.2578**	**0.5566**	**0.1332**	**0.2381**	**0.3713**	**0.0000**	**461.2937**	**461.2937**	**0.1087**	**0.0000**	**463.5768**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**43.87**	**0.00**	**29.56**	**48.94**	**0.00**	**25.58**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Double Site	Grading	7/1/2016	8/2/2016	5	23	
2	Single Site	Grading	8/3/2016	12/12/2016	5	94	
3	Building Construction	Building Construction	8/3/2016	12/6/2016	5	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Single Site	Excavators	1	8.00	162	0.38
Single Site	Graders	1	8.00	174	0.41
Single Site	Rubber Tired Dozers	1	8.00	255	0.40
Double Site	Scrapers	0	8.00	361	0.48
Single Site	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Double Site	Skid Steer Loaders	2		64	0.37
Single Site	Skid Steer Loaders	1	8.00	64	0.37
Building Construction	Cranes	4	8.00	226	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Aerial Lifts	2	8.00	62	0.31
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Double Site	Excavators	2	8.00	162	0.38
Double Site	Graders	2	8.00	174	0.41
Double Site	Rubber Tired Dozers	2	8.00	255	0.40

Building Construction	Air Compressors	1	8.00	78	0.48
Single Site	Scrapers	0	8.00	361	0.48
Double Site	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Single Site	6	20.00	2.00	901.00	40.00	40.00	0.50	LD_Mix	HDT_Mix	HHDT
Building Construction	10	48.00	2.00	0.00	40.00	40.00	20.00	LD_Mix	HDT_Mix	HHDT
Double Site	12	20.00	4.00	450.00	40.00	40.00	0.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Double Site - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1404	0.0000	0.1404	0.0764	0.0000	0.0764	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0765	0.8094	0.5443	6.1000e-004		0.0448	0.0448		0.0412	0.0412	0.0000	57.7991	57.7991	0.0174	0.0000	58.1652
Total	**0.0765**	**0.8094**	**0.5443**	**6.1000e-004**	**0.1404**	**0.0448**	**0.1852**	**0.0764**	**0.0412**	**0.1176**	**0.0000**	**57.7991**	**57.7991**	**0.0174**	**0.0000**	**58.1652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.2000e-003	6.8700e-003	0.0644	1.0000e-005	1.0000e-004	5.0000e-005	1.5000e-004	3.0000e-005	4.0000e-005	7.0000e-005	0.0000	0.7080	0.7080	1.0000e-005	0.0000	0.7083
Vendor	1.1600e-003	0.0162	0.0149	5.0000e-005	1.6300e-003	5.1000e-004	2.1300e-003	4.6000e-004	4.7000e-004	9.3000e-004	0.0000	4.6529	4.6529	2.0000e-005	0.0000	4.6533
Worker	1.9500e-003	5.5700e-003	0.0482	8.0000e-005	6.8600e-003	4.0000e-005	6.9000e-003	1.8200e-003	4.0000e-005	1.8600e-003	0.0000	5.8664	5.8664	3.8000e-004	0.0000	5.8743
Total	**7.3100e-003**	**0.0286**	**0.1275**	**1.4000e-004**	**8.5900e-003**	**6.0000e-004**	**9.1800e-003**	**2.3100e-003**	**5.5000e-004**	**2.8600e-003**	**0.0000**	**11.2272**	**11.2272**	**4.1000e-004**	**0.0000**	**11.2360**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0632	0.0000	0.0632	0.0344	0.0000	0.0344	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0765	0.8094	0.5443	6.1000e-004		0.0448	0.0448		0.0412	0.0412	0.0000	57.7990	57.7990	0.0174	0.0000	58.1651
Total	**0.0765**	**0.8094**	**0.5443**	**6.1000e-004**	**0.0632**	**0.0448**	**0.1080**	**0.0344**	**0.0412**	**0.0756**	**0.0000**	**57.7990**	**57.7990**	**0.0174**	**0.0000**	**58.1651**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.2000e-003	6.8700e-003	0.0644	1.0000e-005	1.0000e-004	5.0000e-005	1.5000e-004	3.0000e-005	4.0000e-005	7.0000e-005	0.0000	0.7080	0.7080	1.0000e-005	0.0000	0.7083

Vendor	1.1600e-003	0.0162	0.0149	5.0000e-005	1.6300e-003	5.1000e-004	2.1300e-003	4.6000e-004	4.7000e-004	9.3000e-004	0.0000	4.6529	4.6529	2.0000e-005	0.0000	4.6533
Worker	1.9500e-003	5.5700e-003	0.0482	8.0000e-005	6.8600e-003	4.0000e-005	6.9000e-003	1.8200e-003	4.0000e-005	1.8600e-003	0.0000	5.8664	5.8664	3.8000e-004	0.0000	5.8743
Total	**7.3100e-003**	**0.0286**	**0.1275**	**1.4000e-004**	**8.5900e-003**	**6.0000e-004**	**9.1800e-003**	**2.3100e-003**	**5.5000e-004**	**2.8600e-003**	**0.0000**	**11.2272**	**11.2272**	**4.1000e-004**	**0.0000**	**11.2360**

3.3 Single Site - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2843	0.0000	0.2843	0.1557	0.0000	0.1557	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1617	1.7231	1.1774	1.3500e-003		0.0954	0.0954		0.0878	0.0878	0.0000	127.0904	127.0904	0.0383	0.0000	127.8954
Total	**0.1617**	**1.7231**	**1.1774**	**1.3500e-003**	**0.2843**	**0.0954**	**0.3797**	**0.1557**	**0.0878**	**0.2435**	**0.0000**	**127.0904**	**127.0904**	**0.0383**	**0.0000**	**127.8954**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.4000e-003	0.0138	0.1289	2.0000e-005	2.0000e-004	1.0000e-004	3.0000e-004	6.0000e-005	9.0000e-005	1.5000e-004	0.0000	1.4176	1.4176	3.0000e-005	0.0000	1.4182
Vendor	2.3600e-003	0.0331	0.0304	1.0000e-004	3.3200e-003	1.0400e-003	4.3600e-003	9.4000e-004	9.6000e-004	1.9000e-003	0.0000	9.5080	9.5080	5.0000e-005	0.0000	9.5090
Worker	7.9700e-003	0.0228	0.1970	3.2000e-004	0.0280	1.8000e-004	0.0282	7.4400e-003	1.6000e-004	7.6100e-003	0.0000	23.9755	23.9755	1.5600e-003	0.0000	24.0082
Total	**0.0187**	**0.0696**	**0.3563**	**4.4000e-004**	**0.0316**	**1.3200e-003**	**0.0329**	**8.4400e-003**	**1.2100e-003**	**9.6600e-003**	**0.0000**	**34.9011**	**34.9011**	**1.6400e-003**	**0.0000**	**34.9353**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1280	0.0000	0.1280	0.0701	0.0000	0.0701	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1617	1.7231	1.1774	1.3500e-003		0.0954	0.0954		0.0878	0.0878	0.0000	127.0903	127.0903	0.0383	0.0000	127.8953
Total	**0.1617**	**1.7231**	**1.1774**	**1.3500e-003**	**0.1280**	**0.0954**	**0.2234**	**0.0701**	**0.0878**	**0.1579**	**0.0000**	**127.0903**	**127.0903**	**0.0383**	**0.0000**	**127.8953**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.4000e-003	0.0138	0.1289	2.0000e-005	2.0000e-004	1.0000e-004	3.0000e-004	6.0000e-005	9.0000e-005	1.5000e-004	0.0000	1.4176	1.4176	3.0000e-005	0.0000	1.4182
Vendor	2.3600e-003	0.0331	0.0304	1.0000e-004	3.3200e-003	1.0400e-003	4.3600e-003	9.4000e-004	9.6000e-004	1.9000e-003	0.0000	9.5080	9.5080	5.0000e-005	0.0000	9.5090
Worker	7.9700e-003	0.0228	0.1970	3.2000e-004	0.0280	1.8000e-004	0.0282	7.4400e-003	1.6000e-004	7.6100e-003	0.0000	23.9755	23.9755	1.5600e-003	0.0000	24.0082
Total	**0.0187**	**0.0696**	**0.3563**	**4.4000e-004**	**0.0316**	**1.3200e-003**	**0.0329**	**8.4400e-003**	**1.2100e-003**	**9.6600e-003**	**0.0000**	**34.9011**	**34.9011**	**1.6400e-003**	**0.0000**	**34.9353**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1970	2.1761	1.0712	1.7800e-003		0.1142	0.1142		0.1060	0.1060	0.0000	166.0803	166.0803	0.0473	0.0000	167.0732

Total	**0.1970**	**2.1761**	**1.0712**	**1.7800e-003**		**0.1142**	**0.1142**		**0.1060**	**0.1060**	**0.0000**	**166.0803**	**166.0803**	**0.0473**	**0.0000**	**167.0732**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2600e-003	0.0317	0.0291	1.0000e-004	3.1800e-003	1.0000e-003	4.1800e-003	9.0000e-004	9.2000e-004	1.8200e-003	0.0000	9.1034	9.1034	4.0000e-005	0.0000	9.1043
Worker	0.0183	0.0524	0.4528	7.4000e-004	0.0644	4.1000e-004	0.0648	0.0171	3.8000e-004	0.0175	0.0000	55.0926	55.0926	3.5800e-003	0.0000	55.1677
Total	**0.0206**	**0.0840**	**0.4819**	**8.4000e-004**	**0.0676**	**1.4100e-003**	**0.0690**	**0.0180**	**1.3000e-003**	**0.0193**	**0.0000**	**64.1960**	**64.1960**	**3.6200e-003**	**0.0000**	**64.2721**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1970	2.1761	1.0712	1.7800e-003		0.1142	0.1142		0.1060	0.1060	0.0000	166.0801	166.0801	0.0473	0.0000	167.0730
Total	**0.1970**	**2.1761**	**1.0712**	**1.7800e-003**		**0.1142**	**0.1142**		**0.1060**	**0.1060**	**0.0000**	**166.0801**	**166.0801**	**0.0473**	**0.0000**	**167.0730**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2600e-003	0.0317	0.0291	1.0000e-004	3.1800e-003	1.0000e-003	4.1800e-003	9.0000e-004	9.2000e-004	1.8200e-003	0.0000	9.1034	9.1034	4.0000e-005	0.0000	9.1043
Worker	0.0183	0.0524	0.4528	7.4000e-004	0.0644	4.1000e-004	0.0648	0.0171	3.8000e-004	0.0175	0.0000	55.0926	55.0926	3.5800e-003	0.0000	55.1677
Total	**0.0206**	**0.0840**	**0.4819**	**8.4000e-004**	**0.0676**	**1.4100e-003**	**0.0690**	**0.0180**	**1.3000e-003**	**0.0193**	**0.0000**	**64.1960**	**64.1960**	**3.6200e-003**	**0.0000**	**64.2721**

CalEEMod Version: CalEEMod.2013.2.2

Date: 11/24/2015 11:21 AM

Path 46 Construction - Annual

San Bernardino-Mojave Desert County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Double Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Single Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Aerial Lifts	Diesel	No Change	0	2	No Change	0.00
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	4	No Change	0.00
Excavators	Diesel	No Change	0	3	No Change	0.00
Forklifts	Diesel	No Change	0	0	No Change	0.00
Generator Sets	Diesel	No Change	0	0	No Change	0.00
Graders	Diesel	No Change	0	3	No Change	0.00
Rough Terrain Forklifts	Diesel	No Change	0	1	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	3	No Change	0.00
Skid Steer Loaders	Diesel	No Change	0	3	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	8	No Change	0.00

Welders	Diesel	No Change	0	0	No Change	0.00
Scrapers	Diesel	No Change	0	0	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Aerial Lifts	5.02000E-003	8.25700E-002	9.70900E-002	1.50000E-004	3.39000E-003	3.12000E-003	0.00000E+000	1.39290E+001	1.39290E+001	4.20000E-003	0.00000E+000	1.40172E+001
Air Compressors	2.21100E-002	1.42330E-001	1.13040E-001	1.80000E-004	1.18000E-002	1.18000E-002	0.00000E+000	1.53195E+001	1.53195E+001	1.81000E-003	0.00000E+000	1.53575E+001
Cranes	1.29600E-001	1.53568E+000	5.37270E-001	1.01000E-003	6.96800E-002	6.41100E-002	0.00000E+000	9.57282E+001	9.57282E+001	2.88800E-002	0.00000E+000	9.63346E+001
Excavators	2.71700E-002	3.10160E-001	2.39990E-001	3.70000E-004	1.52600E-002	1.40400E-002	0.00000E+000	3.49214E+001	3.49214E+001	1.05300E-002	0.00000E+000	3.51426E+001
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Graders	7.13100E-002	7.26590E-001	3.44930E-001	4.40000E-004	4.08200E-002	3.75500E-002	0.00000E+000	4.12392E+001	4.12392E+001	1.24400E-002	0.00000E+000	4.15005E+001
Rough Terrain Forklifts	9.62000E-003	1.22520E-001	1.06620E-001	1.60000E-004	6.80000E-003	6.26000E-003	0.00000E+000	1.46765E+001	1.46765E+001	4.43000E-003	0.00000E+000	1.47695E+001
Rubber Tired Dozers	8.66800E-002	9.70950E-001	7.33940E-001	6.20000E-004	4.51800E-002	4.15600E-002	0.00000E+000	5.86406E+001	5.86406E+001	1.76900E-002	0.00000E+000	5.90121E+001
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Skid Steer Loaders	5.34000E-003	6.91000E-002	6.50500E-002	1.00000E-004	3.86000E-003	3.55000E-003	0.00000E+000	8.97926E+000	8.97926E+000	2.71000E-003	0.00000E+000	9.03614E+000
Tractors/Loaders/Backhoes	7.83300E-002	7.48660E-001	5.54900E-001	7.20000E-004	5.76400E-002	5.30300E-002	0.00000E+000	6.75361E+001	6.75361E+001	2.03700E-002	0.00000E+000	6.79639E+001
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Aerial Lifts	5.02000E-003	8.25700E-002	9.70900E-002	1.50000E-004	3.39000E-003	3.12000E-003	0.00000E+000	1.39289E+001	1.39289E+001	4.20000E-003	0.00000E+000	1.40172E+001
Air Compressors	2.21100E-002	1.42330E-001	1.13030E-001	1.80000E-004	1.18000E-002	1.18000E-002	0.00000E+000	1.53195E+001	1.53195E+001	1.81000E-003	0.00000E+000	1.53574E+001
Cranes	1.29600E-001	1.53567E+000	5.37270E-001	1.01000E-003	6.96800E-002	6.41100E-002	0.00000E+000	9.57281E+001	9.57281E+001	2.88700E-002	0.00000E+000	9.63344E+001
Excavators	2.71700E-002	3.10160E-001	2.39990E-001	3.70000E-004	1.52600E-002	1.40400E-002	0.00000E+000	3.49214E+001	3.49214E+001	1.05300E-002	0.00000E+000	3.51426E+001
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000

Graders	7.13100E-002	7.26590E-001	3.44920E-001	4.40000E-004	4.08200E-002	3.75500E-002	0.00000E+000	4.12392E+001	4.12392E+001	1.24400E-002	0.00000E+000	4.15004E+001
Rough Terrain Forklifts	9.62000E-003	1.22520E-001	1.06620E-001	1.60000E-004	6.80000E-003	6.26000E-003	0.00000E+000	1.46765E+001	1.46765E+001	4.43000E-003	0.00000E+000	1.47695E+001
Rubber Tired Dozers	8.66800E-002	9.70950E-001	7.33940E-001	6.20000E-004	4.51800E-002	4.15600E-002	0.00000E+000	5.86406E+001	5.86406E+001	1.76900E-002	0.00000E+000	5.90120E+001
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Skid Steer Loaders	5.34000E-003	6.91000E-002	6.50500E-002	1.00000E-004	3.86000E-003	3.55000E-003	0.00000E+000	8.97925E+000	8.97925E+000	2.71000E-003	0.00000E+000	9.03613E+000
Tractors/Loaders/Backhoes	7.83300E-002	7.48660E-001	5.54900E-001	7.20000E-004	5.76400E-002	5.30300E-002	0.00000E+000	6.75360E+001	6.75360E+001	2.03700E-002	0.00000E+000	6.79638E+001
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Aerial Lifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.43586E-006	1.43586E-006	0.00000E+000	0.00000E+000	1.42682E-006
Air Compressors	0.00000E+000	0.00000E+000	8.84643E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.30552E-006	1.30552E-006	0.00000E+000	0.00000E+000	1.30230E-006
Cranes	0.00000E+000	6.51177E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.25355E-006	1.25355E-006	3.46260E-004	0.00000E+000	1.14185E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.14543E-006	1.14543E-006	0.00000E+000	0.00000E+000	1.42277E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Graders	0.00000E+000	0.00000E+000	2.89914E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21244E-006	1.21244E-006	0.00000E+000	0.00000E+000	1.20481E-006
Rough Terrain Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	6.81361E-007	6.81361E-007	0.00000E+000	0.00000E+000	1.35414E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19371E-006	1.19371E-006	0.00000E+000	0.00000E+000	1.18620E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Skid Steer Loaders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.11368E-006	1.11368E-006	0.00000E+000	0.00000E+000	1.10667E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.18455E-006	1.18455E-006	0.00000E+000	0.00000E+000	1.17710E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input	Mitigation Input	Mitigation Input

No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.07	0.02	0.07	0.02	0.00	0.00
Double Site	Fugitive Dust	0.14	0.08	0.06	0.03	0.55	0.55
Double Site	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Single Site	Fugitive Dust	0.28	0.16	0.13	0.07	0.55	0.55
Single Site	Roads	0.03	0.01	0.03	0.01	0.00	0.00

Path 46 Construction - Concurrent Tower Raising/Grading

San Bernardino-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Parking	2.00	User Defined Unit	2.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Simultaneous tower raising and grading activities only; no increase/change in routine maintenance operations

Land Use - Assuming 1.85 ac for tower raising and about 0.1 ac for daily grading

Construction Phase - Simultaneous tower raising and grading activity

Off-road Equipment - Equipment list provided by applicant

Off-road Equipment - Equipment list provided by applicant

Trips and VMT - Worker trips from applicant. Vendor trips are water trucks. Increased default trip lengths to 40 miles for rural location of sites. Dump truck (assuming 16CY) would move spoils on-site

Grading - Disturbed daily area based on CalEEMod default. 1,080 CY spoils based on worse-case grading

Consumer Products - Construction emission modeling only

Landscape Equipment - Construction emission modeling only

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed area 2x per day

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	45.00
tblConstructionPhase	NumDays	4.00	3.00
tblConstructionPhase	PhaseEndDate	9/6/2016	9/1/2016
tblConstructionPhase	PhaseStartDate	7/6/2016	7/1/2016
tblGrading	MaterialExported	0.00	1,080.00
tblLandUse	LotAcreage	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	VendorTripLength	6.60	40.00
tblTripsAndVMT	VendorTripLength	6.60	40.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripLength	16.80	40.00
tblTripsAndVMT	WorkerTripLength	16.80	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	48.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	9.2788	89.2826	74.6783	0.0967	8.8343	4.6356	13.4699	3.9697	4.2856	8.2552	0.0000	9,499.9475	9,499.9475	2.1869	0.0000	9,545.8731
Total	**9.2788**	**89.2826**	**74.6783**	**0.0967**	**8.8343**	**4.6356**	**13.4699**	**3.9697**	**4.2856**	**8.2552**	**0.0000**	**9,499.9475**	**9,499.9475**	**2.1869**	**0.0000**	**9,545.8731**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	9.2788	89.2826	74.6783	0.0967	5.2027	4.6356	9.8383	2.1133	4.2856	6.3989	0.0000	9,499.9474	9,499.9474	2.1869	0.0000	9,545.8731
Total	**9.2788**	**89.2826**	**74.6783**	**0.0967**	**5.2027**	**4.6356**	**9.8383**	**2.1133**	**4.2856**	**6.3989**	**0.0000**	**9,499.9474**	**9,499.9474**	**2.1869**	**0.0000**	**9,545.8731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**41.11**	**0.00**	**26.96**	**46.76**	**0.00**	**22.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2016	7/5/2016	5	3	
2	Building Construction	Building Construction	7/1/2016	9/1/2016	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	2	8.00	62	0.31
Building Construction	Air Compressors	1	8.00	78	0.48
Building Construction	Cranes	4	8.00	226	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class

Grading	6	20.00	2.00	135.00	40.00	40.00	0.50	LD_Mix	HDT_Mix	HHDT
Building Construction	10	48.00	2.00	0.00	40.00	40.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6029	0.0000	6.6029	3.3751	0.0000	3.3751			0.0000			0.0000
Off-Road	3.4404	36.6677	25.0559	0.0287		2.0302	2.0302		1.8678	1.8678		2,981.5634	2,981.5634	0.8994		3,000.4497
Total	**3.4404**	**36.6677**	**25.0559**	**0.0287**	**6.6029**	**2.0302**	**8.6331**	**3.3751**	**1.8678**	**5.2430**		**2,981.5634**	**2,981.5634**	**0.8994**		**3,000.4497**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7979	1.3390	11.4362	1.6900e-003	0.0207	9.9200e-003	0.0306	5.7500e-003	9.0700e-003	0.0148		151.4771	151.4771	3.0900e-003		151.5419
Vendor	0.0492	0.6913	0.6085	2.2200e-003	0.0718	0.0222	0.0940	0.0204	0.0204	0.0407		222.7832	222.7832	1.0900e-003		222.8060
Worker	0.1660	0.4528	3.8721	6.5900e-003	0.6080	3.8400e-003	0.6118	0.1612	3.5000e-003	0.1647		544.9602	544.9602	0.0365		545.7266
Total	**1.0131**	**2.4831**	**15.9168**	**0.0105**	**0.7005**	**0.0359**	**0.7364**	**0.1873**	**0.0329**	**0.2202**		**919.2205**	**919.2205**	**0.0407**		**920.0745**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9713	0.0000	2.9713	1.5188	0.0000	1.5188			0.0000			0.0000
Off-Road	3.4404	36.6677	25.0559	0.0287		2.0302	2.0302		1.8678	1.8678	0.0000	2,981.5634	2,981.5634	0.8994		3,000.4497
Total	**3.4404**	**36.6677**	**25.0559**	**0.0287**	**2.9713**	**2.0302**	**5.0015**	**1.5188**	**1.8678**	**3.3866**	**0.0000**	**2,981.5634**	**2,981.5634**	**0.8994**		**3,000.4497**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7979	1.3390	11.4362	1.6900e-003	0.0207	9.9200e-003	0.0306	5.7500e-003	9.0700e-003	0.0148		151.4771	151.4771	3.0900e-003		151.5419
Vendor	0.0492	0.6913	0.6085	2.2200e-003	0.0718	0.0222	0.0940	0.0204	0.0204	0.0407		222.7832	222.7832	1.0900e-003		222.8060
Worker	0.1660	0.4528	3.8721	6.5900e-003	0.6080	3.8400e-003	0.6118	0.1612	3.5000e-003	0.1647		544.9602	544.9602	0.0365		545.7266
Total	**1.0131**	**2.4831**	**15.9168**	**0.0105**	**0.7005**	**0.0359**	**0.7364**	**0.1873**	**0.0329**	**0.2202**		**919.2205**	**919.2205**	**0.0407**		**920.0745**

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	4.3775	48.3539	23.8042	0.0395		2.5381	2.5381		2.3561	2.3561		4,068.4759	4,068.4759	1.1583		4,092.7991
Total	**4.3775**	**48.3539**	**23.8042**	**0.0395**		**2.5381**	**2.5381**		**2.3561**	**2.3561**		**4,068.4759**	**4,068.4759**	**1.1583**		**4,092.7991**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0492	0.6913	0.6085	2.2200e-003	0.0718	0.0222	0.0940	0.0204	0.0204	0.0407		222.7832	222.7832	1.0900e-003		222.8060
Worker	0.3985	1.0867	9.2931	0.0158	1.4591	9.2100e-003	1.4683	0.3869	8.4000e-003	0.3953		1,307.9045	1,307.9045	0.0876		1,309.7439
Total	**0.4477**	**1.7780**	**9.9015**	**0.0180**	**1.5309**	**0.0314**	**1.5623**	**0.4072**	**0.0288**	**0.4360**		**1,530.6877**	**1,530.6877**	**0.0887**		**1,532.5499**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.3775	48.3539	23.8042	0.0395		2.5381	2.5381		2.3561	2.3561	0.0000	4,068.4759	4,068.4759	1.1583		4,092.7991
Total	**4.3775**	**48.3539**	**23.8042**	**0.0395**		**2.5381**	**2.5381**		**2.3561**	**2.3561**	**0.0000**	**4,068.4759**	**4,068.4759**	**1.1583**		**4,092.7991**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0492	0.6913	0.6085	2.2200e-003	0.0718	0.0222	0.0940	0.0204	0.0204	0.0407		222.7832	222.7832	1.0900e-003		222.8060
Worker	0.3985	1.0867	9.2931	0.0158	1.4591	9.2100e-003	1.4683	0.3869	8.4000e-003	0.3953		1,307.9045	1,307.9045	0.0876		1,309.7439
Total	**0.4477**	**1.7780**	**9.9015**	**0.0180**	**1.5309**	**0.0314**	**1.5623**	**0.4072**	**0.0288**	**0.4360**		**1,530.6877**	**1,530.6877**	**0.0887**		**1,532.5499**

Path 46 Construction - Concurrent Tower Raising/Grading

San Bernardino-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Parking	2.00	User Defined Unit	2.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Simultaneous tower raising and grading activities only; no increase/change in routine maintenance operations

Land Use - Assuming 1.85 ac for tower raising and about 0.1 ac for daily grading

Construction Phase - Simultaneous tower raising and grading activity

Off-road Equipment - Equipment list provided by applicant

Off-road Equipment - Equipment list provided by applicant

Trips and VMT - Worker trips from applicant. Vendor trips are water trucks. Increased default trip lengths to 40 miles for rural location of sites. Dump truck (assuming 16CY) would move spoils on-site

Grading - Disturbed daily area based on CalEEMod default. 1,080 CY spoils based on worse-case grading

Consumer Products - Construction emission modeling only

Landscape Equipment - Construction emission modeling only

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed area 2x per day

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	45.00
tblConstructionPhase	NumDays	4.00	3.00
tblConstructionPhase	PhaseEndDate	9/6/2016	9/1/2016
tblConstructionPhase	PhaseStartDate	7/6/2016	7/1/2016
tblGrading	MaterialExported	0.00	1,080.00
tblLandUse	LotAcreage	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	VendorTripLength	6.60	40.00
tblTripsAndVMT	VendorTripLength	6.60	40.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripLength	16.80	40.00
tblTripsAndVMT	WorkerTripLength	16.80	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	0.00	48.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	9.2735	89.1495	76.7701	0.1000	8.8343	4.6351	13.4694	3.9697	4.2851	8.2548	0.0000	9,768.5327	9,768.5327	2.1866	0.0000	9,814.4508
Total	**9.2735**	**89.1495**	**76.7701**	**0.1000**	**8.8343**	**4.6351**	**13.4694**	**3.9697**	**4.2851**	**8.2548**	**0.0000**	**9,768.5327**	**9,768.5327**	**2.1866**	**0.0000**	**9,814.4508**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	9.2735	89.1495	76.7701	0.1000	5.2027	4.6351	9.8378	2.1133	4.2851	6.3985	0.0000	9,768.5327	9,768.5327	2.1866	0.0000	9,814.4508
Total	**9.2735**	**89.1495**	**76.7701**	**0.1000**	**5.2027**	**4.6351**	**9.8378**	**2.1133**	**4.2851**	**6.3985**	**0.0000**	**9,768.5327**	**9,768.5327**	**2.1866**	**0.0000**	**9,814.4508**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**41.11**	**0.00**	**26.96**	**46.76**	**0.00**	**22.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2016	7/5/2016	5	3	
2	Building Construction	Building Construction	7/1/2016	9/1/2016	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	2	8.00	62	0.31
Building Construction	Air Compressors	1	8.00	78	0.48
Building Construction	Cranes	4	8.00	226	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class

Grading	6	20.00	2.00	135.00	40.00	40.00	0.50	LD_Mix	HDT_Mix	HHDT
Building Construction	10	48.00	2.00	0.00	40.00	40.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6029	0.0000	6.6029	3.3751	0.0000	3.3751			0.0000			0.0000
Off-Road	3.4404	36.6677	25.0559	0.0287		2.0302	2.0302		1.8678	1.8678		2,981.5634	2,981.5634	0.8994		3,000.4497
Total	**3.4404**	**36.6677**	**25.0559**	**0.0287**	**6.6029**	**2.0302**	**8.6331**	**3.3751**	**1.8678**	**5.2430**		**2,981.5634**	**2,981.5634**	**0.8994**		**3,000.4497**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7150	1.3336	9.7461	1.7400e-003	0.0207	9.5000e-003	0.0302	5.7500e-003	8.6800e-003	0.0144		159.4337	159.4337	2.7500e-003		159.4915
Vendor	0.0470	0.6591	0.5662	2.2200e-003	0.0718	0.0221	0.0939	0.0204	0.0204	0.0407		223.1484	223.1484	1.0800e-003		223.1710
Worker	0.1902	0.4342	5.0093	7.5400e-003	0.6080	3.8400e-003	0.6118	0.1612	3.5000e-003	0.1647		621.4008	621.4008	0.0365		622.1673
Total	**0.9522**	**2.4268**	**15.3216**	**0.0115**	**0.7005**	**0.0355**	**0.7359**	**0.1873**	**0.0325**	**0.2198**		**1,003.9830**	**1,003.9830**	**0.0403**		**1,004.8297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9713	0.0000	2.9713	1.5188	0.0000	1.5188			0.0000			0.0000
Off-Road	3.4404	36.6677	25.0559	0.0287		2.0302	2.0302		1.8678	1.8678	0.0000	2,981.5634	2,981.5634	0.8994		3,000.4497
Total	**3.4404**	**36.6677**	**25.0559**	**0.0287**	**2.9713**	**2.0302**	**5.0015**	**1.5188**	**1.8678**	**3.3866**	**0.0000**	**2,981.5634**	**2,981.5634**	**0.8994**		**3,000.4497**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7150	1.3336	9.7461	1.7400e-003	0.0207	9.5000e-003	0.0302	5.7500e-003	8.6800e-003	0.0144		159.4337	159.4337	2.7500e-003		159.4915
Vendor	0.0470	0.6591	0.5662	2.2200e-003	0.0718	0.0221	0.0939	0.0204	0.0204	0.0407		223.1484	223.1484	1.0800e-003		223.1710
Worker	0.1902	0.4342	5.0093	7.5400e-003	0.6080	3.8400e-003	0.6118	0.1612	3.5000e-003	0.1647		621.4008	621.4008	0.0365		622.1673
Total	**0.9522**	**2.4268**	**15.3216**	**0.0115**	**0.7005**	**0.0355**	**0.7359**	**0.1873**	**0.0325**	**0.2198**		**1,003.9830**	**1,003.9830**	**0.0403**		**1,004.8297**

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day										lb/day					
Off-Road	4.3775	48.3539	23.8042	0.0395		2.5381	2.5381		2.3561	2.3561		4,068.4759	4,068.4759	1.1583		4,092.7991
Total	**4.3775**	**48.3539**	**23.8042**	**0.0395**		**2.5381**	**2.5381**		**2.3561**	**2.3561**		**4,068.4759**	**4,068.4759**	**1.1583**		**4,092.7991**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0470	0.6591	0.5662	2.2200e-003	0.0718	0.0221	0.0939	0.0204	0.0204	0.0407		223.1484	223.1484	1.0800e-003		223.1710
Worker	0.4564	1.0421	12.0223	0.0181	1.4591	9.2100e-003	1.4683	0.3869	8.4000e-003	0.3953		1,491.3620	1,491.3620	0.0876		1,493.2014
Total	**0.5034**	**1.7012**	**12.5885**	**0.0203**	**1.5309**	**0.0313**	**1.5623**	**0.4072**	**0.0288**	**0.4360**		**1,714.5104**	**1,714.5104**	**0.0887**		**1,716.3724**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.3775	48.3539	23.8042	0.0395		2.5381	2.5381		2.3561	2.3561	0.0000	4,068.4759	4,068.4759	1.1583		4,092.7991
Total	**4.3775**	**48.3539**	**23.8042**	**0.0395**		**2.5381**	**2.5381**		**2.3561**	**2.3561**	**0.0000**	**4,068.4759**	**4,068.4759**	**1.1583**		**4,092.7991**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0470	0.6591	0.5662	2.2200e-003	0.0718	0.0221	0.0939	0.0204	0.0204	0.0407		223.1484	223.1484	1.0800e-003		223.1710
Worker	0.4564	1.0421	12.0223	0.0181	1.4591	9.2100e-003	1.4683	0.3869	8.4000e-003	0.3953		1,491.3620	1,491.3620	0.0876		1,493.2014
Total	**0.5034**	**1.7012**	**12.5885**	**0.0203**	**1.5309**	**0.0313**	**1.5623**	**0.4072**	**0.0288**	**0.4360**		**1,714.5104**	**1,714.5104**	**0.0887**		**1,716.3724**

Path 46 Construction - Concurrent Tower Raising/Grading

San Bernardino-Mojave Desert County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Aerial Lifts	Diesel	No Change	0	2	No Change	0.00
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	4	No Change	0.00
Excavators	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	0	No Change	0.00
Generator Sets	Diesel	No Change	0	0	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Rough Terrain Forklifts	Diesel	No Change	0	1	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	1	No Change	0.00
Skid Steer Loaders	Diesel	No Change	0	1	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	4	No Change	0.00

Welders	Diesel	No Change	0	0	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Aerial Lifts	2.52000E-003	4.15200E-002	4.88300E-002	7.00000E-005	1.71000E-003	1.57000E-003	0.00000E+000	7.00515E+000	7.00515E+000	2.11000E-003	0.00000E+000	7.04953E+000
Air Compressors	1.10500E-002	7.11700E-002	5.65200E-002	9.00000E-005	5.90000E-003	5.90000E-003	0.00000E+000	7.65976E+000	7.65976E+000	9.00000E-004	0.00000E+000	7.67873E+000
Cranes	6.48000E-002	7.67840E-001	2.68640E-001	5.10000E-004	3.48400E-002	3.20500E-002	0.00000E+000	4.78641E+001	4.78641E+001	1.44400E-002	0.00000E+000	4.81673E+001
Excavators	5.80000E-004	6.65000E-003	5.14000E-003	1.00000E-005	3.30000E-004	3.00000E-004	0.00000E+000	7.48320E-001	7.48320E-001	2.30000E-004	0.00000E+000	7.53060E-001
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Graders	1.53000E-003	1.55700E-002	7.39000E-003	1.00000E-005	8.70000E-004	8.00000E-004	0.00000E+000	8.83700E-001	8.83700E-001	2.70000E-004	0.00000E+000	8.89300E-001
Rough Terrain Forklifts	4.79000E-003	6.09500E-002	5.30400E-002	8.00000E-005	3.38000E-003	3.11000E-003	0.00000E+000	7.30175E+000	7.30175E+000	2.20000E-003	0.00000E+000	7.34800E+000
Rubber Tired Dozers	1.86000E-003	2.08100E-002	1.57300E-002	1.00000E-005	9.70000E-004	8.90000E-004	0.00000E+000	1.25659E+000	1.25659E+000	3.80000E-004	0.00000E+000	1.26454E+000
Skid Steer Loaders	1.70000E-004	2.21000E-003	2.08000E-003	0.00000E+000	1.20000E-004	1.10000E-004	0.00000E+000	2.87740E-001	2.87740E-001	9.00000E-005	0.00000E+000	2.89560E-001
Tractors/Loaders/Backhoes	1.63500E-002	1.56240E-001	1.15810E-001	1.50000E-004	1.20300E-002	1.10700E-002	0.00000E+000	1.40945E+001	1.40945E+001	4.25000E-003	0.00000E+000	1.41838E+001
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Aerial Lifts	2.52000E-003	4.15200E-002	4.88300E-002	7.00000E-005	1.71000E-003	1.57000E-003	0.00000E+000	7.00515E+000	7.00515E+000	2.11000E-003	0.00000E+000	7.04952E+000
Air Compressors	1.10500E-002	7.11700E-002	5.65200E-002	9.00000E-005	5.90000E-003	5.90000E-003	0.00000E+000	7.65975E+000	7.65975E+000	9.00000E-004	0.00000E+000	7.67872E+000
Cranes	6.48000E-002	7.67840E-001	2.68630E-001	5.10000E-004	3.48400E-002	3.20500E-002	0.00000E+000	4.78640E+001	4.78640E+001	1.44400E-002	0.00000E+000	4.81672E+001
Excavators	5.80000E-004	6.65000E-003	5.14000E-003	1.00000E-005	3.30000E-004	3.00000E-004	0.00000E+000	7.48320E-001	7.48320E-001	2.30000E-004	0.00000E+000	7.53060E-001
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Graders	1.53000E-003	1.55700E-002	7.39000E-003	1.00000E-005	8.70000E-004	8.00000E-004	0.00000E+000	8.83700E-001	8.83700E-001	2.70000E-004	0.00000E+000	8.89290E-001
Rough Terrain Forklifts	4.79000E-003	6.09500E-002	5.30400E-002	8.00000E-005	3.38000E-003	3.11000E-003	0.00000E+000	7.30174E+000	7.30174E+000	2.20000E-003	0.00000E+000	7.34799E+000

Rubber Tired Dozers	1.86000E-003	2.08100E-002	1.57300E-002	1.00000E-005	9.70000E-004	8.90000E-004	0.00000E+000	1.25658E+000	1.25658E+000	3.80000E-004	0.00000E+000	1.26454E+000
Skid Steer Loaders	1.70000E-004	2.21000E-003	2.08000E-003	0.00000E+000	1.20000E-004	1.10000E-004	0.00000E+000	2.87740E-001	2.87740E-001	9.00000E-005	0.00000E+000	2.89560E-001
Tractors/Loaders/Backhoes	1.63500E-002	1.56240E-001	1.15810E-001	1.50000E-004	1.20300E-002	1.10700E-002	0.00000E+000	1.40945E+001	1.40945E+001	4.25000E-003	0.00000E+000	1.41838E+001
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Aerial Lifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.41853E-006
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.30552E-006	1.30552E-006	0.00000E+000	0.00000E+000	1.30230E-006
Cranes	0.00000E+000	0.00000E+000	3.72245E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.25355E-006	1.25355E-006	0.00000E+000	0.00000E+000	1.24566E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.12448E-005
Rough Terrain Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.36953E-006	1.36953E-006	0.00000E+000	0.00000E+000	1.36091E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	7.95805E-006	7.95805E-006	0.00000E+000	0.00000E+000	0.00000E+000
Skid Steer Loaders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	7.09498E-007	7.09498E-007	0.00000E+000	0.00000E+000	7.05032E-007
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00

No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.03	0.01	0.03	0.01	0.00	0.00
Grading	Fugitive Dust	0.01	0.01	0.00	0.00	0.55	0.55
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Path 46 Construction - Concurrent Grading

San Bernardino-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Parking	0.20	User Defined Unit	0.20	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Concurrent grading activities at 2 locations only; no increase/change in routine maintenance operations

Land Use - Assuming 0.1 ac for each daily grading site

Construction Phase - Two simultaneous grading sites

Off-road Equipment - Equipment list provided by applicant

Off-road Equipment - Equipment list provided by applicant for concurrent grading sites

Trips and VMT - Worker trips from applicant. Vendor trips are water trucks. Increased default trip lengths to 40 miles for rural location of sites. Dump trucks (assuming 16CY) would move spoils on-site

Grading - Disturbed daily area based on CalEEMod default. 1,080 + 731 CY spoils based on worse-case grading sites

Consumer Products - Construction emission modeling only

Landscape Equipment - Construction emission modeling only

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed area 2x per day

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	3.00
tblGrading	MaterialExported	0.00	1,811.00
tblLandUse	LotAcreage	0.00	0.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripNumber	226.00	227.00
tblTripsAndVMT	VendorTripLength	6.60	40.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripLength	16.80	40.00
tblTripsAndVMT	WorkerTripNumber	30.00	20.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	8.4869	77.4223	74.4306	0.0712	13.9759	4.1253	18.1011	6.9594	3.7951	10.7545	0.0000	7,208.3593	7,208.3593	1.8426	0.0000	7,247.0528
Total	**8.4869**	**77.4223**	**74.4306**	**0.0712**	**13.9759**	**4.1253**	**18.1011**	**6.9594**	**3.7951**	**10.7545**	**0.0000**	**7,208.3593**	**7,208.3593**	**1.8426**	**0.0000**	**7,247.0528**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	8.4869	77.4223	74.4306	0.0712	6.7216	4.1253	10.8469	3.2481	3.7951	7.0432	0.0000	7,208.3593	7,208.3593	1.8426	0.0000	7,247.0528
Total	**8.4869**	**77.4223**	**74.4306**	**0.0712**	**6.7216**	**4.1253**	**10.8469**	**3.2481**	**3.7951**	**7.0432**	**0.0000**	**7,208.3593**	**7,208.3593**	**1.8426**	**0.0000**	**7,247.0528**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.91**	**0.00**	**40.08**	**53.33**	**0.00**	**34.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2016	7/5/2016	5	3	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	2	8.00	174	0.41
Grading	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Skid Steer Loaders	2	8.00	64	0.37
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	12	20.00	4.00	227.00	40.00	40.00	0.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					13.1895	0.0000	13.1895	6.7478	0.0000	6.7478			0.0000			0.0000
Off-Road	6.8808	73.3353	50.1118	0.0573		4.0605	4.0605		3.7356	3.7356		5,963.1269	5,963.1269	1.7987		6,000.8994
Total	**6.8808**	**73.3353**	**50.1118**	**0.0573**	**13.1895**	**4.0605**	**17.2500**	**6.7478**	**3.7356**	**10.4834**		**5,963.1269**	**5,963.1269**	**1.7987**		**6,000.8994**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3416	2.2515	19.2298	2.8400e-003	0.0347	0.0167	0.0514	9.6700e-003	0.0153	0.0249		254.7059	254.7059	5.1900e-003		254.8149
Vendor	0.0985	1.3826	1.2169	4.4300e-003	0.1436	0.0443	0.1879	0.0407	0.0408	0.0815		445.5663	445.5663	2.1700e-003		445.6119
Worker	0.1660	0.4528	3.8721	6.5900e-003	0.6080	3.8400e-003	0.6118	0.1612	3.5000e-003	0.1647		544.9602	544.9602	0.0365		545.7266
Total	**1.6061**	**4.0869**	**24.3188**	**0.0139**	**0.7864**	**0.0648**	**0.8512**	**0.2116**	**0.0595**	**0.2711**		**1,245.2324**	**1,245.2324**	**0.0439**		**1,246.1535**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.9353	0.0000	5.9353	3.0365	0.0000	3.0365			0.0000			0.0000

Off-Road	6.8808	73.3353	50.1118	0.0573		4.0605	4.0605		3.7356	3.7356	0.0000	5,963.1268	5,963.1268	1.7987		6,000.8993
Total	**6.8808**	**73.3353**	**50.1118**	**0.0573**	**5.9353**	**4.0605**	**9.9957**	**3.0365**	**3.7356**	**6.7721**	**0.0000**	**5,963.1268**	**5,963.1268**	**1.7987**		**6,000.8993**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3416	2.2515	19.2298	2.8400e-003	0.0347	0.0167	0.0514	9.6700e-003	0.0153	0.0249		254.7059	254.7059	5.1900e-003		254.8149
Vendor	0.0985	1.3826	1.2169	4.4300e-003	0.1436	0.0443	0.1879	0.0407	0.0408	0.0815		445.5663	445.5663	2.1700e-003		445.6119
Worker	0.1660	0.4528	3.8721	6.5900e-003	0.6080	3.8400e-003	0.6118	0.1612	3.5000e-003	0.1647		544.9602	544.9602	0.0365		545.7266
Total	**1.6061**	**4.0869**	**24.3188**	**0.0139**	**0.7864**	**0.0648**	**0.8512**	**0.2116**	**0.0595**	**0.2711**		**1,245.2324**	**1,245.2324**	**0.0439**		**1,246.1535**

Path 46 Construction - Concurrent Grading

San Bernardino-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Parking	0.20	User Defined Unit	0.20	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2018
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Concurrent grading activities at 2 locations only; no increase/change in routine maintenance operations

Land Use - Assuming 0.1 ac for each daily grading site

Construction Phase - Two simultaneous grading sites

Off-road Equipment - Equipment list provided by applicant

Off-road Equipment - Equipment list provided by applicant for concurrent grading sites

Trips and VMT - Worker trips from applicant. Vendor trips are water trucks. Increased default trip lengths to 40 miles for rural location of sites. Dump trucks (assuming 16CY) would move spoils on-site

Grading - Disturbed daily area based on CalEEMod default. 1,080 + 731 CY spoils based on worse-case grading sites

Consumer Products - Construction emission modeling only

Landscape Equipment - Construction emission modeling only

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed area 2x per day

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	3.00
tblGrading	MaterialExported	0.00	1,811.00
tblLandUse	LotAcreage	0.00	0.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripNumber	226.00	227.00
tblTripsAndVMT	VendorTripLength	6.60	40.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripLength	16.80	40.00
tblTripsAndVMT	WorkerTripNumber	30.00	20.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	8.3673	77.3300	72.6414	0.0723	13.9759	4.1245	18.1003	6.9594	3.7944	10.7538	0.0000	7,298.9093	7,298.9093	1.8420	0.0000	7,337.5905
Total	**8.3673**	**77.3300**	**72.6414**	**0.0723**	**13.9759**	**4.1245**	**18.1003**	**6.9594**	**3.7944**	**10.7538**	**0.0000**	**7,298.9093**	**7,298.9093**	**1.8420**	**0.0000**	**7,337.5905**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	8.3673	77.3300	72.6414	0.0723	6.7216	4.1245	10.8461	3.2481	3.7944	7.0425	0.0000	7,298.9093	7,298.9093	1.8420	0.0000	7,337.5905
Total	**8.3673**	**77.3300**	**72.6414**	**0.0723**	**6.7216**	**4.1245**	**10.8461**	**3.2481**	**3.7944**	**7.0425**	**0.0000**	**7,298.9093**	**7,298.9093**	**1.8420**	**0.0000**	**7,337.5905**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.91**	**0.00**	**40.08**	**53.33**	**0.00**	**34.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2016	7/5/2016	5	3	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	2	8.00	174	0.41
Grading	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Skid Steer Loaders	2	8.00	64	0.37
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	12	20.00	4.00	227.00	40.00	40.00	0.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					13.1895	0.0000	13.1895	6.7478	0.0000	6.7478			0.0000			0.0000
Off-Road	6.8808	73.3353	50.1118	0.0573		4.0605	4.0605		3.7356	3.7356		5,963.1269	5,963.1269	1.7987		6,000.8994
Total	**6.8808**	**73.3353**	**50.1118**	**0.0573**	**13.1895**	**4.0605**	**17.2500**	**6.7478**	**3.7356**	**10.4834**		**5,963.1269**	**5,963.1269**	**1.7987**		**6,000.8994**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2023	2.2424	16.3880	2.9300e-003	0.0347	0.0160	0.0507	9.6700e-003	0.0146	0.0243		268.0849	268.0849	4.6300e-003		268.1820
Vendor	0.0941	1.3181	1.1324	4.4400e-003	0.1436	0.0442	0.1879	0.0407	0.0407	0.0814		446.2968	446.2968	2.1500e-003		446.3419
Worker	0.1902	0.4342	5.0093	7.5400e-003	0.6080	3.8400e-003	0.6118	0.1612	3.5000e-003	0.1647		621.4008	621.4008	0.0365		622.1673
Total	**1.4865**	**3.9947**	**22.5296**	**0.0149**	**0.7864**	**0.0640**	**0.8504**	**0.2116**	**0.0588**	**0.2704**		**1,335.7825**	**1,335.7825**	**0.0433**		**1,336.6912**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.9353	0.0000	5.9353	3.0365	0.0000	3.0365			0.0000			0.0000

Off-Road	6.8808	73.3353	50.1118	0.0573		4.0605	4.0605		3.7356	3.7356	0.0000	5,963.1268	5,963.1268	1.7987		6,000.8993
Total	**6.8808**	**73.3353**	**50.1118**	**0.0573**	**5.9353**	**4.0605**	**9.9957**	**3.0365**	**3.7356**	**6.7721**	**0.0000**	**5,963.1268**	**5,963.1268**	**1.7987**		**6,000.8993**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2023	2.2424	16.3880	2.9300e-003	0.0347	0.0160	0.0507	9.6700e-003	0.0146	0.0243		268.0849	268.0849	4.6300e-003		268.1820
Vendor	0.0941	1.3181	1.1324	4.4400e-003	0.1436	0.0442	0.1879	0.0407	0.0407	0.0814		446.2968	446.2968	2.1500e-003		446.3419
Worker	0.1902	0.4342	5.0093	7.5400e-003	0.6080	3.8400e-003	0.6118	0.1612	3.5000e-003	0.1647		621.4008	621.4008	0.0365		622.1673
Total	**1.4865**	**3.9947**	**22.5296**	**0.0149**	**0.7864**	**0.0640**	**0.8504**	**0.2116**	**0.0588**	**0.2704**		**1,335.7825**	**1,335.7825**	**0.0433**		**1,336.6912**

CalEEMod Version: CalEEMod.2013.2.2

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Path 46 Construction - Concurrent Grading

San Bernardino-Mojave Desert County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Concrete/Industrial Saws	Diesel	No Change	0	0	No Change	0.00
Excavators	Diesel	No Change	0	2	No Change	0.00
Graders	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00
Skid Steer Loaders	Diesel	No Change	0	2	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	4	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Excavators	1.16000E-003	1.32900E-002	1.02900E-002	2.00000E-005	6.50000E-004	6.00000E-004	0.00000E+000	1.49663E+000	1.49663E+000	4.50000E-004	0.00000E+000	1.50611E+000
Graders	3.06000E-003	3.11400E-002	1.47800E-002	2.00000E-005	1.75000E-003	1.61000E-003	0.00000E+000	1.76740E+000	1.76740E+000	5.30000E-004	0.00000E+000	1.77859E+000

Rubber Tired Dozers	3.71000E-003	4.16100E-002	3.14500E-002	3.00000E-005	1.94000E-003	1.78000E-003	0.00000E+000	2.51317E+000	2.51317E+000	7.60000E-004	0.00000E+000	2.52909E+000
Skid Steer Loaders	3.40000E-004	4.43000E-003	4.17000E-003	1.00000E-005	2.50000E-004	2.30000E-004	0.00000E+000	5.75480E-001	5.75480E-001	1.70000E-004	0.00000E+000	5.79120E-001
Tractors/Loaders/Backhoes	2.04000E-003	1.95300E-002	1.44800E-002	2.00000E-005	1.50000E-003	1.38000E-003	0.00000E+000	1.76181E+000	1.76181E+000	5.30000E-004	0.00000E+000	1.77297E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Excavators	1.16000E-003	1.32900E-002	1.02900E-002	2.00000E-005	6.50000E-004	6.00000E-004	0.00000E+000	1.49663E+000	1.49663E+000	4.50000E-004	0.00000E+000	1.50611E+000
Graders	3.06000E-003	3.11400E-002	1.47800E-002	2.00000E-005	1.75000E-003	1.61000E-003	0.00000E+000	1.76739E+000	1.76739E+000	5.30000E-004	0.00000E+000	1.77859E+000
Rubber Tired Dozers	3.71000E-003	4.16100E-002	3.14500E-002	3.00000E-005	1.94000E-003	1.78000E-003	0.00000E+000	2.51317E+000	2.51317E+000	7.60000E-004	0.00000E+000	2.52909E+000
Skid Steer Loaders	3.40000E-004	4.43000E-003	4.17000E-003	1.00000E-005	2.50000E-004	2.30000E-004	0.00000E+000	5.75480E-001	5.75480E-001	1.70000E-004	0.00000E+000	5.79120E-001
Tractors/Loaders/Backhoes	2.04000E-003	1.95300E-002	1.44800E-002	2.00000E-005	1.50000E-003	1.38000E-003	0.00000E+000	1.76181E+000	1.76181E+000	5.30000E-004	0.00000E+000	1.77297E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Percent Reduction											
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	5.65803E-006	5.65803E-006	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Skid Steer Loaders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input		
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00			

Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Grading	Fugitive Dust	0.02	0.01	0.01	0.00	0.55	0.55
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX F

Archeology Resource Inventory

Confidential Appendix F is on file at the Los Angeles Department of Water and Power, Environmental Affairs, 111 North Hope Street, Room 1044, Los Angeles, California 90012.

To view this document, please contact Brian Gonzalez at (213) 367-2612.

APPENDIX G

Historic Resource Assessment Report

Confidential Appendix G is on file at the Los Angeles Department of Water and Power, Environmental Affairs, 111 North Hope Street, Room 1044, Los Angeles, California 90012.

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APPENDIX H

Paleontological Resources Survey Report

Confidential Appendix H is on file at the Los Angeles Department of Water and Power, Environmental Affairs, 111 North Hope Street, Room 1044, Los Angeles, California 90012.

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