CITY OF REDDING
Development Services Planning Division
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cityofredding.gov

MITIGATED NEGATIVE DECLARATION

Permit No. Tentative Subdivision Map Application S-2021-01590
State Clearinghouse No. _____

SUBJECT

The Oasis Subdivision

PROJECT DESCRIPTION

Subdivision Map Application S-2021-01590, The Oasis Subdivision, submitted by Brian & Sandra Burk et al., proposes to subdivide approximately 48.6 acres in four phases, or units for development of 143 single-family residential lots as well as roadways and other supporting infrastructure. Residential lots would range in size from 7,000 square feet to 22,592 square feet. However, the majority of the lot sizes are within the 7,000-9,000-square-foot range. A road connection from Oasis Road is proposed for Unit 1 and a road connection from Gold Hills Drive, via Pleasant Hills Drive (proposed with the adjoining tentative map for The Reserve at Gold Hills Subdivision S-17-2004/AMND-2020-01539) is proposed for Unit 2. A road connection between Units 1 and 3 to Units 2 and 4 is proposed for a future road connection within the right-of-way through the intervening parcel between the Units 1 and 3 and Units 2 and 4. This connection will provide two points of public-street access for the subdivision. The project includes dedication of right-of-way along the eastern boundary of Units 1 and 3 for the future alignment of Shasta View Drive and dedication of the Dry Gulch Creek corridor along the west boundary of the subdivision as open space for recreational and trail purposes including a dog park.

Some off-site improvements are proposed in order to connect sewer infrastructure at the southwest corner of the project site along with a road connection through an adjacent parcel to the north. All street and utility improvements will connect to existing systems located adjacent to the project boundaries. The storm drain system would connect to the Dry Gulch Creek adjacent to the subdivision after any required on-site water treatment.

ENVIRONMENTAL SETTING

The project consists of four parcels generally located south of Oasis Road and east of Gold Hills Drive. The site ranges in elevation between 640 and 705 feet above sea level and primarily slopes to the west toward Dry Gulch Creek, generally located along the westerly boundary of the properties. With the exception of an existing dirt road that bisects the northern portion of the site, the site is undeveloped. The site is comprised of oak woodland with an annual grassland understory, and a minor amount of wetland vegetation. Surrounding land uses include primarily vacant, undisturbed areas on parcels directly to the north and south, with the developed Gold Hills Subdivision and Golf Course farther to the south. Property directly to the west is comprised of

vacant undisturbed land and townhouse developments located at the intersection of Oasis Road and Gold Hills Drive. Property east of the project site is primarily located in Shasta county and comprised of rural residential development and undeveloped properties.

FINDINGS AND DETERMINATION

The City of Redding conducted an Initial Study (attached), which determined that the proposed project could have significant environmental effects. Subsequent revisions in the project proposal create the specific mitigation measures identified below. The project, as revised and as agreed to by the applicant, avoids or mitigates the potentially significant environmental effects identified, and the preparation of an Environmental Impact Report will not be required. There is no substantial evidence, in light of the whole record before the City, that the project as revised may have a significant effect on the environment. If there are substantial changes that alter the character or impacts of the proposed project, another environmental impact determination will be necessary.

The project includes measures to mitigate potentially significant impacts of development on biological resources.

Prior to approval of the project, the lead agency may conclude, at a public hearing, that certain mitigation measures identified in the Mitigated Negative Declaration are infeasible or undesirable. In accordance with CEQA Section 15074.1, the lead agency may delete those mitigation measures and substitute other measures which it determines are equivalent or more effective. The lead agency would adopt written findings that the new measure is equivalent or more effective in mitigating or avoiding potential significant effects and that the measure, in itself, would not cause any potentially significant effect on the environment.

1. **Based on the whole record (including the Initial Study and any supporting documentation) and the mitigation measures incorporated into the project, the City of Redding has determined that a Mitigated Negative Declaration is appropriate. All potentially significant impacts would be reduced to less than significant.**

2. **The Mitigated Negative Declaration, with its supporting documentation, fully incorporated herein, reflects the independent judgment and analysis of the lead agency, which is the City of Redding.**

DOCUMENTATION

The attached Initial Study documents the reasons to support the above determination.

MITIGATION MEASURES

MM-Bio-1. Prior to any discharge or fill material into Waters of the U.S, authorization under a Nationwide Permit or Individual Permit shall be obtained from the U.S. Army Corps of Engineers (Corps). For fill requiring a Corps permit, a water quality certification from the Regional Water Quality Board (Clean Water Act §401) shall also be obtained prior to discharge of dredged or fill material.

MM-Bio-2. Prior to any activities that would obstruct the flow of or alter the bed, channel, or bank of any perennial, intermittent or ephemeral creeks, notification of streambed alteration shall be

submitted to the California Department of Fish and Wildlife (CDFW), and, if required, a Lake and Streambed Alteration Agreement (§1602) shall be obtained.

MM-Bio-3. Any area of off-site construction that has not previously been surveyed shall have a pre-construction rare plant survey conducted by a qualified botanist during the appropriate survey window (blooming period) for rare plants that have the potential to occur within the project site, as deemed appropriate by the California Department of Fish and Wildlife. Any required survey shall be in accordance with California Native Plant Society *Botanical Survey Guidelines* (CNPS 2001), California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special Status Plant Species Native Plant Populations and Natural Communities* (CDFW 2009), and U.S. Fish and Wildlife's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000). If present, special status plant species plant populations will be flagged and, if possible, avoided during construction. If the population cannot be avoided during construction, a mitigation plan will be developed for approval by the California Department of Fish and Wildlife which would include transplanting the plant population or compensation.

MM Bio-4. If vegetation removal or construction activities will occur during the nesting season for migratory birds or raptors (February 1 through August 31), a qualified biologist shall conduct a preconstruction survey seven days before construction activities begin. If nesting birds or raptors are found, California Department of Fish and Wildlife (CDFW) will be notified and consulted. An appropriate buffer, as determined by CDFW and the qualified biologist, will be placed around the nest until the young have fledged. If construction activities cease for a period greater than seven days, additional preconstruction surveys will be required.

MM-Bio-5. If construction (including the removal of large trees) occurs during the bat non-volant season (March 1 through August 31), a qualified professional shall conduct a pre-construction survey of the study area to locate maternity colonies and identify measures to protect colonies from disturbance. The preconstruction survey will be performed no more than seven days prior to the implementation of construction activities. If a maternity colony is located within the study area, or adjacent to the study area, a disturbance free buffer shall be established by a qualified professional, in consultation with California Department of Fish and Wildlife (CDFW), to ensure the colony is protected from project activities.

PUBLIC REVIEW DISTRIBUTION

Draft copies or notice of this Mitigated Negative Declaration were distributed to:

- State Clearinghouse
- Shasta County Clerk
- U.S. Army Corps of Engineers, Redding
- California Department of Fish and Wildlife, Redding
- Central Valley Regional Water Quality Control Board, Redding
- California Native Plant Society, Shasta County
- Shasta Environmental Alliance
- All property owners within 300 feet of the property boundary
- Applicant/property owner
- Representative

PUBLIC REVIEW

(x) Draft document referred for comments February 28, 2025.

( ) No comments were received during the public review period.

( ) Comments were received but did not address the draft Mitigated Negative Declaration findings or the accuracy/completeness of the Initial Study. No response is necessary. The letters are attached.

( ) Comments addressing the findings of the draft Mitigated Negative Declaration and/or accuracy or completeness of the Initial Study were received during the public review period. The letters and responses follow (see Response to Comments, attached).

Copies of the Mitigated Negative Declaration, the Initial Study, documentation materials, and the Mitigation Monitoring Program may be obtained at the Planning Division of the Development Services Department, City of Redding, 777 Cypress Avenue, Redding, CA 96001 and online on the Development Services Planning/Projects page of the City's website at: www.cityofredding.gov. Contact: David Schlegel, (530) 225-4036.

Lily Toy, Planning Manager — February 21, 2025 Date

Attachments:
A. Location map
B. Initial Study
C. Mitigation Monitoring Program
D. Comments and Response to Comments (if any)

ENVIRONMENTAL INITIAL STUDY

INITIAL STUDY CHECKLIST
References and Documentation

The Oasis

Tentative Subdivision Map Application S-2021-01590

Prepared by:
CITY OF REDDING
Development Services Department
Planning Division
777 Cypress Avenue
Redding, California 96001

February 21, 2025

CITY OF REDDING
ENVIRONMENTAL CHECKLIST FORM

1. Project Title: The Oasis Subdivision consisting of Tentative Subdivision Map Application S-2021-01590.

2. Lead Agency Name and Address:

CITY OF REDDING
Development Services Department
Planning Division
777 Cypress Avenue
Redding, CA 96001

2. Contact Person and Phone Number:

David Schlegel, Senior Planner, (530) 225-4036

3. Project Location:

Located in the northeast portion of the City of Redding, generally south of Oasis Road and east of Gold Hills Drive, on APNs 074-230-037; 074-230-035; 074-230-023; 074-230-034.

5. Applicant's Name and Address:

Brian and Sandra Burk, et al.
P.O. Box 492709
Redding, CA 96049-2709

Representative's Name and Address:

Sharrah Dunlap Sawyer
320 Hartnell Ave.
Redding, CA 96002

6. General Plan Designation:

"Residential, 2 to 3.5 dwelling units per acre," "Residential, 6 to 10 dwelling units per acre," and "Greenway"

7. Zoning:

"RM-6-PD" Residential Multiple-Family District and "RS-3" Residential Single-Family District

8. Description of Project:

The tentative subdivision map for The Oasis Subdivision is a request to subdivide approximately 48.6 acres in four phases, or units, for development of 143 single-family residential lots. Unit 1 includes 49 lots and Unit 2 will include 48 lots. A road connection from Oasis Road is proposed for Unit 1, and a road connection from Gold Hills Drive via Pleasant Hills Drive (proposed with the adjoining tentative map for The Reserve at Gold Hills Subdivision S-17-2004/AMND-2020-01539) is proposed for Unit 2. Unit 3 includes 31 lots and Unit 4 includes 15 lots. A road connection between Units 1 and 3 to Units 2 and 4 is proposed to be constructed within the right-of-way through the intervening parcel. This connection will provide two points of public-street access for the subdivision. The Project includes dedication of right-of-way along the eastern boundary of Units 1 and 3 for the future alignment of Shasta View Drive, and dedication of the Dry Gulch Creek corridor along the west boundary of the subdivision as open space for recreational and trail purposes, and will include a dog park.

The Project will be responsible for off-site construction of Road "A" within a dedicated easement from the subdivision to Oasis Road for development of Unit 1 and off-site construction of Pleasant Hills Drive to Gold Hills Drive if not already constructed at the time of development of Unit 2. The Project also necessitates construction of off-site sewer to connect from Pleasant Hills Drive along a southerly alignment to the existing sewer main located in the Gold Hills Subdivision, as well as construction of the off-site sewer connection between Units 1 and 3 and Units 2 and 4 along the alignment of the future road connection shown

on the tentative map between these units.

9. **Surrounding Land Uses and Setting:** The Project consists of four parcels generally located south of Oasis Road and east of Gold Hills Drive. The site ranges in elevation between 640 and 705 feet above sea level and primarily slopes to the west toward Dry Gulch Creek, which is generally located along the westerly boundary of the properties. With the exception of an existing dirt road that bisects the northern portion of the site, the site is undeveloped. The site is comprised of oak woodland with an annual grassland understory, and a minor amount of wetland vegetation. Surrounding land uses include primarily vacant, undisturbed areas on parcels directly to the north and south, with the developed Gold Hills Subdivision and golf course farther to the south. Property directly to the west is comprised of vacant undisturbed land and townhouse developments located at the intersection of Oasis Road and Gold Hills Drive. Property east of the Project site is primarily located in Shasta county and comprised of rural residential development and undeveloped properties.

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):** U.S. Army Corps of Engineers, California Department of Fish and Wildlife, Central Valley Regional Water Quality Control Board.

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, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?** Tribal consultation was sent on September 30, 2022. No requests for consultation or comments have been received.

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 21080.3.2.) 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 or Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of the 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR of NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Copies of the Initial Study and related materials and documentation may be obtained at the Planning Division of the Development Services Department, 777 Cypress Avenue, Redding, CA 96001. Contact David Schlegel at (530) 225-4036.

David Schlegel, Senior Planner, AICP
Development Services Department

February 21, 2025
Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

This section analyzes the potential environmental impacts associated with the proposed project. The issue areas evaluated in this Initial Study include:

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

The environmental analysis in this section is patterned after the Initial Study Checklist recommended by the State *CEQA Guidelines* and used by the City of Redding in its environmental review process. For the preliminary environmental assessment undertaken as part of this Initial Study's preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the development's impacts and to identify mitigation.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the development. To each question, there are four possible responses:

- **No Impact.** The development will not have any measurable environmental impact on the environment.
- **Less Than Significant Impact.** The development will have the potential for impacting the environment, although this impact will be below established thresholds that are considered to be significant.
- **Potentially Significant Impact Unless Mitigation Incorporated.** The development will have the potential to generate impacts which may be considered as a significant effect on the environment, although mitigation measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- **Potentially Significant Impact**. The development will have impacts which are considered significant, and additional analysis is required to identify mitigation measures that could reduce these impacts to less than significant levels.

Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

Prior environmental evaluations applicable to all or part of the Project site:

- *City of Redding General Plan 2045*
- *City of Redding General Plan Update Final Environmental Impact Report*, 2024, SCH #2022050300
- CEQA Findings of Fact and Statement of Overriding Considerations for the *City of Redding General Plan Update Final Environmental Impact Report*, as adopted by the Redding City Council on March 13, 2024, by Resolution 2024-027

List of attachments/references:

Attachment A
Figure 1 – Location Map
Figure 2 – Tentative Subdivision Map Sheets 1 through 5, dated January 20, 2025.

Attachment B – Biological Resources Studies
Biological Study Report, prepared by ENPLAN, dated September 2019
Aquatic Resource Delineation Report, prepared by ENPLAN, dated September 2019

Biological Study Report Addendum, prepared by ENPLAN dated July 2022
Biological Field Condition Evaluation, prepared by ENPLAN, dated June 2024
Evaluation of suitable habitat and potential for Crotch's bumble bee at Oasis Road, letter prepared by Gallaway Enterprises, dated May 31, 2024
All Tree Surveys Combined – The Oasis, prepared by ENPLAN, dated July 2022, February 2007, July 2007, and July 2006.
Wetland/Biological Evaluation for the Gold Hills Park Sewer Line Corridor and Shasta View Drive Extension, letter prepared by ENPLAN, dated June 28, 2005

Attachment C – Cultural Resources Studies on file in the Development Services Department, Planning Division
Archaeological Inventory Survey, by Northeast Information Center (NEIC) dated May 27, 2024.
Cultural Resource Inventory Survey for a Proposed Residential Subdivision, prepared by ENPLAN, December 2004
Cultural Resource Inventory Survey for the Proposed Gold Hills Residential Development Project, prepared by ENPLAN, July 2004
Cultural Resources Inventory Survey, Proposed Sewer Line Easement, prepared by ENPLAN, 2005
Cultural Resource Survey: The Reserve 2 and 3 in North Redding, prepared by ENPLAN, February 2007

Attachment D – Hydraulic Analysis Studies
Dry Gulch Creek Flood Study for the Oasis Subdivision, prepared by Sharrah Dunlap Sawyer, Inc, dated January 15, 2024
Entitlement Level Storm Drainage Analysis, Sharrah Dunlap Sawyer, Inc., dated February 2024

I. AESTHETICS: *Except as provided in Public Resources Code Section 21099, 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?				**X**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?				**X**
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? *(Public views are those that area experienced from publicly accessible vantage point).* If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				**X**
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			**X**	

Discussion:

a) The Project would not obstruct any documented scenic vistas and would not represent a significant change to the overall scenic quality of the area. The Project will include construction of single-family homes that must comply with the standards of the City's Zoning Ordinance including building height restrictions.

b) The Project site is not located adjacent to a state-designated scenic highway.

c) The Project will be compatible with the existing visual character of the surrounding area and properties zoned for single family residential use. The area of Dry Gulch Creek and the adjacent creek corridor will be preserved in open space; however, the area would not be considered an area of public views. The Project does not conflict with applicable zoning or other regulations and therefore would not conflict with those governing scenic quality. The Project will include construction of single-family homes that must comply with the standards of the City's Zoning Ordinance including height standards and lot coverage.

d) The Project would generate light that is customary for development and comply with the Zoning Ordinance light standards and all adopted codes for construction. Residences and streets constructed in accordance with the City's light standards would not cause a significant adverse effect on day or nighttime views in the area.

Documentation:
City of Redding General Plan 2045, Natural Resources Element 2045
City of Redding Zoning Ordinance, Chapter 18

Mitigation:
None necessary.

II. AGRICULTURE RESOURCES: *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural, Land Evaluation and Site Assessment Mode (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided bin Forest Protocols adopted by the California Air Resources Board. 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 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?				**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?				**X**
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 5110(g))?				**X**
d Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
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 land?				**X**

Discussion:
a-e) The Project site does not contain designated farmland, forest land, or timberlands. The Project site has not been historically used for agricultural purposes, nor does it possess soils that are prime for agricultural production. The site is not located within an area of Prime Farmland as identified by the California Department of Conservation's Important Farmland Series Mapping and Monitoring Program and is not under Williamson Act contract. The Project would not convert or rezone any farmland to non-agricultural use, or any forest land to non-forest use.

Documentation:
City of Redding General Plan 2045, Natural Resources Element 2045
California Department of Conservation's Farmland Mapping and Monitoring Program
United States Department of Agriculture, Soil Conservation Service and Forest Service, Soil Survey of Shasta County Area.

Mitigation:
None necessary.

III. AIR QUALITY: *Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. 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?			**X**	
b) 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			**X**	
c) Expose sensitive receptors to substantial pollutant concentrations?				**X**
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?				**X**

Discussion:

a) Shasta County, including the far northern Sacramento Valley, currently exceeds the State's ambient standards for ozone (smog) and particulates (fine, airborne particles). Consequently, these pollutants are the focus of local air quality policy, especially when related to land use and transportation planning. Even with application of measures to reduce emissions for individual projects, cumulative impacts are unavoidable when ozone and/or particulate emissions are involved. For example, the primary source of emissions contributing to ozone is from vehicles. Any project that generates vehicle trips has the potential of contributing incrementally to the problem.

The City of Redding General Plan (GP) Environmental Impact Report (EIR) concluded that cumulative impacts would be significant and unavoidable *on a City-wide basis* and those impacts are addressed in the adopted CEQA Findings of Fact and Statement of Overriding Considerations. The GP EIR estimated areawide and mobile source emissions under the General Plan 2045 and compared the estimates to the estimated area and mobile source emissions projected in the 2021 Air Quality Attainment Plan (AQAP) for year 2025, which is the time horizon of the AQAP. The analysis concluded that the *cumulative* ROG and NOX emissions that would be generated by activity under the GP in 2045 would exceed the projections in the AQAP for year 2025 resulting in a very conservative determination. The GP EIR mirrors GP policies by requiring Mitigation Measures AQ-1 and AQ-2. AQ-1 requires that "Standard Mitigation Measures" (SMMs) be applied to all discretionary projects. AQ-2 requires the use of Best Available Mitigation Measures (BAMMs) recommended by SCAQMD which has the ability to provide recommendations for each discretionary project. The requirement of SMMs are also required by the City's Standard Conditions of Approval (SCOA) for discretionary projects including subdivisions. Because the Project would generate the type of construction and traffic emissions projected for the land use types and density set forth for the Project site by the GP EIR, the Project would not conflict with the SCAQMD plans and impacts would be less than significant.

b) The GP EIR concluded that cumulative impacts would be significant and unavoidable on a City-wide basis and those impacts are addressed in the adopted CEQA Findings of Fact and Statement of Overriding Considerations. The GP EIR concluded that implementation of the GP would cumulatively generate construction-related emissions of criteria air pollutants and precursors, including ROG, NOX, PM10, and PM2.5 from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, worker commute trips, and other activities (e.g., building construction, asphalt paving, application of architectural coatings). Implementation of the construction-related SMMs as required by the City's SCOA for discretionary projects would reduce construction-generated emissions of criteria air pollutants and precursors. However, due to Shasta County's nonattainment-transitional status for ozone, construction activities associated with the Project would add to the cumulative impacts, and the GP EIR acknowledges that implementation of the GP may result in adverse air quality impacts to surrounding land uses and may contribute to the existing air quality condition in the City. There are no components of the proposed Project that would result in increased construction-related air quality emissions beyond what was previously evaluated and disclosed by the GP EIR for the Project site. Nonetheless, and consistent with the findings of the GP EIR, Project-related air quality emissions during construction activities would contribute to the significant and unavoidable construction-related air quality impact identified by the GP EIR (Impact AQ-2), However, the Project would not result in increased impacts or increased cumulatively-considerable impacts due to construction-related emissions beyond what was evaluated and disclosed by the GP EIR and would not exceed the thresholds established by the GP.

The *City of Redding General Plan 2045*, Natural Resources Element 2045 establishes emission thresholds that have been adopted by regional agencies when determining air quality impacts of discretionary projects for the important regional/local pollutants,

including: Reactive Organic Gases (ROG) and Oxides of Nitrogen (NOx), which are ozone precursors, and Inhalable Particulate Matter, 10 Micron (PM_{10}) and 2.5 Micron ($PM_{2.5}$) as follows:

Level "A"	**Level "B"**
25 pounds per day of NOx	137 pounds per day of NOx
25 pounds per day of ROG	137 pounds per day of ROG
80 pounds per day of PM_{10}	137 pounds per day of PM_{10}
80 pounds per day of $PM_{2.5}$	

The process of applying SMM and BAMM is to apply appropriate SMM to all projects based on potential air quality impacts and to help contribute to reducing cumulative impacts. If the Project exceeds Level "A" threshold, then BAMM will be applied based on the unique characteristics of the Project selected from a list of measures provided by AQMD. If a project exceeds Level "B" thresholds, SMM, BAMM, and appropriate special BAMM would be applied and the City will seek recommendations of the AQMD regarding the efficiency of proposed emissions measures beyond BAMM. If a project's emissions cannot be reduced to below Level "B" thresholds, emission offsets will be required. If, after applying emission offsets, the Project still exceeds the Level "B" threshold, then an Environmental Impact Report is required.

The current project has the potential to impact air quality primarily in two ways: (1) the Project would generate vehicle trip emissions (with NOx, ROG, and PM_{10}) that contribute cumulatively to local and regional air quality conditions; and (2) fugitive dust (particulate/$PM_{10\text{ and }}PM_{2.5}$) emissions are possible during construction activities. As a residential development, the Project does not have the potential to generate significant emission concentrations of other pollutants subject to state and federal ambient air quality standards and no recommendation for BAMM were made by the SCAQMD.

Application of the SMMs outlined below would reduce the Project's potential air quality impacts to a level less than significant.

- Apply nontoxic soil stabilizers according to manufacturer's specification to all inactive construction areas (previously-graded areas inactive for ten (10) days or more).
- Reestablish ground cover on the construction site through seeding and watering prior to final occupancy.
- All grading operations shall be suspended by the City Engineer when winds (as instantaneous gusts) exceed 20 miles per hour as directed by the AQMD.
- Provide temporary traffic control as appropriate during all phases of construction to improve traffic flow (e.g. flag person) as approved by the City Engineer.
- Schedule construction activities that affect traffic flow to off-peak hours as determined by the City Engineer.
- Water active construction sites at least twice daily or as directed by the Public Works Department.
- Reestablish ground cover on the construction site through seeding and watering prior to final occupancy.
- All truck hauling dirt, sand, soil, or other loose materials shall be covered or maintain at least two feet (2') of freeboard (i.e., minimum vertical distance between top of the load and the trailer) in accordance with the requirements of CVC Section 23114. This provision is enforced by local law enforcement agencies.
- Sweep streets at the end of the day if visible soil materials are carried onto adjacent public paved roads (recommend water sweeper with reclaimed water).
- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.

In addition to the requirements of the California Building Code, the following operational SMMs shall be applied as appropriate to each project and as recommended by the Shasta County Air Quality Management District:

- Provide energy-efficient process systems, such as water heaters, furnaces, and boiler units.
- All new wood burning devices shall be EPA Phase II certified.
- Large residential, commercial, and industrial projects should include bus shelters at transit access points.
- Contribute to traffic-flow improvements that reduce emissions and are not growth-inducing (e.g., right-of-way, capital improvements, etc.)
- Install an electrical outlet at the front and back of all residential units for electrical yard equipment.
- Streets should be designed to maximize pedestrian access to transit stops

c-d) The GP EIR concluded that cumulative impacts would be significant and unavoidable on a City-wide basis and those are addressed in the adopted CEQA Findings of Fact and Statement of Overriding Considerations. However, the document notes that the SCAQMD identified the following types of land use conflicts that could result in the exposure of sensitive receptors to excessive

pollutant concentrations in their CEQA Land Use Protocol Guidelines:

- Development projects with sensitive receptors in close proximity to a congested intersection or roadway with high levels of emissions from motor vehicles. High concentrations of carbon monoxide, fine particulate matter, or toxic air contaminants are the most common concerns.
- Development projects with sensitive receptors close to an industrial source of toxic air contaminants.
- Development projects with sensitive receptors close to a source of odorous emissions. Although odors generally do not pose a health risk, they can be quite unpleasant and often lead to citizen complaints to the District and to local governments.

The Project does not meet any of these criteria. Further, the Project is not located in proximity to any of the land uses types noted.

Documentation:
City of Redding General Plan 2045, Natural Resources Element 2045
City of Redding General Plan Update Final Environmental Impact Report, 2024, SCH #2022050300
CEQA Findings of Fact and Statement of Overriding Considerations for the *City of Redding General Plan Update Final Environmental Impact Report*, as adopted by the Redding City Council on March 13, 2024, by Resolution 2024-027

Mitigation:
None necessary.

IV. 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?		**X**		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local of regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			**X**	
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		**X**		
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?		**X**		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			**X**	
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?				**X**

Discussion:

a-d) The 48.6-acre property is currently vacant and undisturbed. The site is characterized as mixed oak woodland with annual grassland understory throughout the property, with a minimal amount of wetland vegetation. The oak woodland is represented by blue oak, interior live oak, and grey pine. The shrub layer is represented by poison oak, buckbrush, and white-leaved manzanita. The annual grassland is represented by rattlesnake grass, slender wild oats, ripgut grass, and medusahead. The wetland species include annual ryegrass, nit grass, jointed coyote thistle, western marsh cudweed, and soft chess. The site slopes generally to the west and ranges

in elevation between 640 and 705 feet above mean sea level (msl). On-site drainages primarily discharge to Dry Gulch Creek along the western property boundary, which then flows south and is tributary to Churn Creek, which is eventually tributary to the Sacramento River. Design of the Project includes dedication of the Dry Gulch Creek corridor along the west boundary of the subdivision as open space for tree preservation and recreational and trail purposes, including a dog park in Unit 2 of the Project.

An Aquatic Resource Delineation Report and Biological Study Report were prepared for the Project site by ENPLAN in September 2019. The studies included a Habitat Assessment to determine if suitable habitat occurs for special status species and to determine the presence of potential jurisdictional waters of the U.S. A Biological Study Report Addendum was then prepared by ENPLAN in July 2022 to reflect current conditions and a modified project boundary, coinciding with submittal of the proposed tentative map application. The Addendum was also prepared to document the results of an intensive 2022 Botanical Survey. A series of tree studies was completed for the Project over the course of varying application submittals which cover the current project site. Additionally, an updated Field Condition Evaluation for the Project was conducted in June of 2024, completed by ENPLAN, as well as a letter of Evaluation of Suitable Habitat and Potential for Occurrence for Crotch's Bumble Bee, by Gallaway Enterprises in May 2024.

Wetlands

The wetlands delineation found 26 features on the site with approximately 2.52 acres of potentially jurisdictional waters delineated and characterized as ephemeral stream (drainage channels that have flowing water only during a short duration after precipitation events in a typical year), intermittent stream (drainage channels with apparent bed and bank features that flow for more than several days following precipitation events), and seasonal wetlands (saturated or inundated during the winter wet season and dry during the dry season). This delineation was completed on a larger project site, including land west of Dry Gulch Creek that has since been excluded. The majority of wetland resources identified in the wetlands delineation is approximately 2.42 acres of intermittent stream located in the area of Dry Gulch Creek. This area will be placed in open space and will be undisturbed with the Project construction. Ephemeral streams, approximately 0.1 acres in size, are found throughout the site. Runoff from rainfall is the primary source of water for these stream flows. Two very small seasonal wetland features were found on the northern and southern section of the site, approximately .005 in size (217.8 square feet). These latter resources would be impacted by development of the Project. Project design for Unit 2 will include a box culvert crossing over Dry Gulch Creek with barriers on both sides and spanning along the bridge, providing secondary access to the subdivision for vehicular traffic, which may also impact wetland resources.

The City has not established its own mitigation standards for replacement of wetlands impacted by development and, instead, relies on criteria recognized by state and federal resource agencies. Federal and state policies promote no net loss of wetland resources. This can be accomplished in a number of ways, but a common approach is the purchase by the developer of mitigation credits at an established wetland mitigation bank. Based on these factors, mitigation measures are established below (BIO-1 and BIO-2) to ensure that, prior to issuance of a City grading permit, the necessary wetland mitigation credits are secured, and sufficient mitigation is performed in accordance with the Army Corps of Engineers and California Department of Fish and Wildlife permitting requirements.

Sensitive Species

The original Biological Study Report prepared in 2019 provided the following determinations:

- While no special-status plant species have been previously reported on-site, thirteen special-status plant species and three non-status plant species have been broadly mapped within a ten-mile radius of the Project site.

- There was the potential for an additional seven non-status plant species to occur on the Project site. Observation of one sensitive natural community, buckwheat scrub, was mapped near the northwestern corner of the site.

The California Department of Fish and Wildlife provided a letter of comment with the initial routing of the subdivision application for Agency review. In response to comments about the previous study conducted in 2019, an addendum to the biological survey which included a Botanical Survey was completed in July 2022. The updated information addressed the following issues:

- The study area boundaries have since been reduced to exclude lands west of Dry Gulch Creek; therefore, the current study area excludes the tripod buckwheat occurrence identified in the Biological Assessment of 2019.

- Two species, green sturgeon and Shasta snow-wreath, have been added to the lists since 2019, and a third, monarch butterfly, has had a change in status and is now a Candidate for State listing as Endangered.

- The study found that although flowering plants that may provide nectar for monarchs would be removed as a result of site development, the study area offers only a moderate number and variety of floral resources, and the loss of these floral resources would be offset at least to some extent by the planting of flowering plants in the future residential subdivision. Additionally, the study found that there was no suitable habitat for green sturgeon nor Shasta snow-wreath, and, with the implementation of erosion control practices, any potential occurrence would not be adversely affected.

- The addendum assessed the potential habitat for the above species, and provided a reassessment of all special status plant species potentially occurring in the Project area.

- Botanical surveys of the current study area were conducted on April 15, May 6, and July 6, 2022, and all special status plant species potentially occurring in the study area would have been identifiable at the time. No special-status plant species were observed on the site.

- Two non-status plants, Redding checkerbloom and Henderson's bentgrass were observed on the site. Because CDFW staff is currently re-evaluating the status of these two species, and have requested demographic data for the occurrences, the distribution of both were mapped and population estimates were made. Because these species are not considered special-status, having a Rare Plant Rank of 3 and 3.2, respectively, CDFW has historically not required mitigation for these species. Mitigation Measure (BIO-3), however, has been added in the event that any off-site construction areas that have not previously been evaluated may be required to be evaluated, as deemed appropriate by the California Department of Fish and Wildlife.

In response to comments regarding the potential for habitat for occurrence of Crotch's bumble bee, Gallaway Enterprises prepared a memo with an evaluation of suitable habitat at this site. It was determined that, due to the lack of abundance of supporting floristic resources to support Crotch's bumble bee nesting, and the absence of recorded occurrences in both proximity and time, an on-site specific assessment for the species was not warranted.

Off-Site Sewer

The proposed sewer line to serve the Project would extend from the proposed Pleasant Hills Drive to the existing sewer located south of the Project in the Gold Hills Subdivision. In 2005, ENPLAN prepared a Wetland/Biological Evaluation for the proposed alignment of the sewer and included a wetland delineation and a botanical survey of the area. The field surveys showed that there were no special status plant species in this area. In addition to several small intermittent to ephemeral streams located within the corridor draining to Dry Gulch Creek, one wetland feature was identified. The alignment of the sewer line, however, is proposed to avoid disturbance of the wetland and mitigate for any loss of other waters in this area in accordance with the Army Corps of Engineers and California Department of Fish and Wildlife permitting requirements (BIO-1 and BIO-2).

Migratory Birds, Raptors, and Special Status Bat Species

The natural oak woodland on-site provides attractive habitat for nesting and migratory birds. While many trees located within the dog park and open space areas associated with the Project will be preserved from development, there is the potential that raptors and migratory birds could be impacted by tree removal and other major land-clearing activity necessary to construct the subdivision. To minimize impacts from construction, mitigation is provided below (BIO-4) to encourage mass tree removal and other land-clearing work to be conducted outside the main nesting period of February 1 through August 31, and requiring a nest survey and appropriate nest-avoidance measures, if any work must occur during the nesting season.

Likewise, the site has the potential to support roosting, solitary, and colonial bats, including special-status bat species. Therefore, mitigation is provided below (BIO-5) that if construction or removal of trees will occur during the bat maternity season, when the young are non-volant, March 1 through August 31, a qualified professional shall conduct a pre-construction survey of the study area to locate maternity colonies and identify measures to protect colonies from disturbance in order to avoid impacts (BIO-5).

e) The City has adopted a Tree Management Ordinance (Chapter 18.45 of the RMC) that promotes the conservation of mature, healthy trees in the design of new development. The ordinance also recognizes that the preservation of trees will sometimes conflict with necessary land-development requirements, and staff acknowledges that preservation of native trees will sometimes conflict with normal land development activities such as installation of roads and utilities. But efforts must still be made to retain existing trees if reasonably possible, and to sufficiently plant new trees in the context of the new development. A tree survey is required to identify natural trees and tree groups most suitable for preservation or "candidate trees/groups." Where all identified candidate trees/groups cannot be preserved, the set-aside of a natural area or areas within a project site that is particularly suitable for the

planting, retention, and/or natural regeneration of trees is considered to be a desirable means of accomplishing the goals of the ordinance. In this case, design of the subdivision to set aside the Dry Gulch Creek corridor as open space which contains oak habitat and several hundred oak trees in this area is consistent with policies of the *City's General Plan Natural Resource Element*.

Tree cover on the site ranges from dense pockets of blue oak with a moderate canopy to sparser tree cover over other areas which are dominated by annual grasses. While the Tree Management Ordinance requires initial mapping of a development site, on sites of five (5) acres or more, at the discretion of the Development Services Director, regulations allow for the qualified professional to consult with staff to determine the appropriate level of detail. A Tree Survey Report was prepared by ENPLAN, in July 2022, for portions of the Project site that had not been previously studied with prior applications. The tree study identified a total of 593 trees over approximately 8.5 acres comprised entirely of blue oak with the exception of one gray pine. Three blue oaks were identified as Candidate Trees. Previous studies prepared for other areas of the Project site were required to provide information regarding trees of 24 inches in diameter or greater.

The Project proposes to dedicate the area of Dry Gulch Creek and the adjacent floodplain as an open space and recreational corridor, including a proposed dog park in the southern portion of the subdivision. While the planned avoidance of open space associated with the Project will result in a greenbelt with the retention of numerous trees, the Project's grading and utility demands make it unfeasible to save most trees in the main subdivision development area in a meaningful way. Under the circumstances, focusing the Project's tree-preservation efforts within the creek greenbelt area provides the best tree management strategy for the Project.

In addition to tree retention efforts, the developer is also obligated to replant suitable new trees at the time of home construction for shade and the enjoyment of residents. The Tree Management Ordinance identifies minimum planting criteria of one tree per 500 square feet of gross living area. Thus, with retention of trees in the proposed private open space easements and the planting of new trees as a standard condition of development, the Project is consistent with the intent of the Tree Management Ordinance.

Protection of Resources

With grading or construction of any phase of the Project, exclusionary fencing shall be placed along the areas of Dry Gulch Creek or any other environmentally sensitive areas (e.g. seasonal wetlands or intermittent streams to be undisturbed), with the installation of fencing and/or flagging or where specific buffer distances have been required for sensitive biological resources (e.g. active bird nests). Prior to construction, the contractor will be required to install high-visibility orange construction fencing along the perimeter of the identified area(s).

f) No habitat conservation plans or other similar plans have been adopted for the Project site or project area. No impact would occur in this regard.

Documentation:
City of Redding General Plan 2045, Natural Resources Element 2045
City of Redding General Plan Update Final Environmental Impact Report, 2024, SCH #2022050300
City of Redding Municipal Code, Chapter 18.45, Tree Management Ordinance
California Department of Fish and Wildlife: Natural Diversity Data Base
Biological Resource Assessment, prepared by ENPLAN, dated September 2019
Aquatic Resource Delineation Report, prepared by ENPLAN, dated September 2019
Biological Study Report Addendum, prepared by ENPLAN dated July 2022
Field Condition Evaluation, prepared by ENPLAN, dated June 2024
Evaluation of suitable habitat and potential for Crotch's bumble bee at Oasis Road, letter prepared by Gallaway Enterprises, dated May 31, 2024
The Oasis Subdivision - Tree Survey Report, prepared by ENPLAN, dated July 2022
Wetland/Biological Evaluation for the Gold Hills Park Sewer Line Corridor and Shasta View Drive Extension, letter prepared by ENPLAN, dated June 28, 2005
Tree Survey for The Reserve at Gold Hills Residential Subdivision, prepared by ENPLAN, dated February and July 2007

Mitigation:

MM-Bio-1. Prior to any discharge or fill material into Waters of the U.S, authorization under a Nationwide Permit or Individual Permit shall be obtained from the Corps. For fill requiring a Corps permit, a water quality certification from the Regional Water Quality Board (Clean Water Act §401) shall also be obtained prior to discharge of dredged or fill material.

MM-Bio-2. Prior to any activities that would obstruct the flow of or alter the bed, channel, or bank of any perennial, intermittent or ephemeral creeks, notification of streambed alteration shall be submitted to the California Department of Fish and Wildlife (CDFW), and, if required, a Lake and Streambed Alteration Agreement (§1602) shall be obtained.

MM-Bio-3. Any area of off-site construction that has not previously been surveyed shall have a pre-construction rare plant survey conducted by a qualified botanist during the appropriate survey window (blooming period) for rare plants that have the potential to occur within the Project site, as deemed appropriate by the California Department of Fish and Wildlife. Any required survey shall be in accordance with California Native Plant Society *Botanical Survey Guidelines* (CNPS 2001), California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special Status Plant Species Native Plant Populations and Natural Communities* (CDFW 2009), and U.S. Fish and Wildlife's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000). If present, special status plant species plant populations will be flagged and if possible avoided during construction. If the population cannot be avoided during construction, a mitigation plan will be developed for approval by the California Department of Fish and Wildlife which could include transplanting the plant population or compensation.

MM Bio-4. If vegetation removal or construction activities will occur during the nesting season for migratory birds or raptors (February 1 through August 31), a qualified biologist shall conduct a preconstruction survey seven days before construction activities begin. If nesting birds or raptors are found, California Department of Fish and Wildlife (CDFW) will be notified and consulted. An appropriate buffer, as determined by CDFW and the qualified biologist, will be placed around the nest until the young have fledged. If construction activities cease for a period greater than seven days, additional preconstruction surveys will be required.

MM-Bio-5. If construction (including the removal of large trees) occurs during the bat non-volant season (March 1 through August 31), a qualified professional shall conduct a pre-construction survey of the study area to locate maternity colonies and identify measures to protect colonies from disturbance. The preconstruction survey will be performed no more than seven days prior to the implementation of construction activities. If a maternity colony is located within the study area, or adjacent to the study area, a disturbance-free buffer shall be established by a qualified professional, in consultation with California Department of Fish and Wildlife (CDFW), to ensure the colony is protected from project activities.

V. 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 pursuant to Section 15064.5?			**X**	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?			**X**	
c) Disturb any human remains, including those interred outsides of dedicated cemeteries?				**X**

Discussion

a-c) The Northeast Information Center at California State University Chico (NEIC) maintains historical and archeological records, reports, and maps for the region including the City of Redding, and was contacted to provide a record search for the Project area. The NEIC conducted an examination of the official maps and records for cultural resources and surveys for this area and indicated that several cultural resource inventory surveys were conducted between 2005 and 2020 for previously approved development projects on this site and the adjoining lands, including the area of the off-site sewer extension.

While the Project area is considered to have a low to moderate sensitivity for cultural resources, the previous cultural resource inventories prepared for the site, including record searches and field surveys, did not find any significant cultural resources, and the site lacks evidence of association with historic-period mining, homesteading, and ranching activities. The City's Standard Subdivision Conditions require that if, in the course of development, any archeological, historical, or paleontological resources are uncovered, all work in the immediate vicinity of the discovery shall be stopped immediately and the City of Redding shall be notified. An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical

archaeology, as appropriate, shall be retained to evaluate the find and recommend appropriate conservation measures. The conservation measures shall be implemented prior to re-initiation of activities in the immediate vicinity of the discovery.

Documentation:
City of Redding General Plan 2045, Natural Resources Element 2045
Archaeological Inventory Survey, by Northeast Information Center (NEIC) dated May 27, 2024.
Cultural Resource Inventory Survey for a Proposed Residential Subdivision, prepared by ENPLAN, February 2004
Cultural Resource Inventory Survey for the Proposed Gold Hills Residential Development Project, prepared by ENPLAN, July 2004
Cultural Resources Inventory Survey, Proposed Sewer Line Easement, prepared by ENPLAN, 2005
Cultural Resource Survey: The Reserve 2 and 3 in North Redding, prepared by ENPLAN, February 2007

Mitigation:

None necessary.

VI. Energy: *Would the project:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			**X**	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				**X**

Discussion

a) The Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Direct energy use would involve the short-term use of energy for construction activities. Project construction would primarily consume diesel and gasoline through operation of construction equipment, material deliveries, and debris hauling. Construction is estimated to result in a short-term consumption of energy, representing a small demand on local and regional fuel supplies that would be easily accommodated and would be temporary. Long-term use of electricity for powering homes and other associated residential uses is expected to be less than significant due to energy efficient construction requirements from state and local ordinances and a lower-intensity scale of the Project.

b) The Project will not conflict with any State or local plans for renewable energy or energy efficiency.

Documentation:
City of Redding General Plan 2045, Natural Resources Element 2045

Mitigation:
None necessary.

VII. GEOLOGY AND SOILS: *Would the project:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Directly or indirectly cause 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 Publications 42. ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides?			**X**	
b) Result in substantial soil erosion or the loss of topsoil?			**X**	
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?			**X**	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				**X**
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?				**X**
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				**X**

Discussion:

a, c, d) There are no Alquist-Priolo earthquake faults designated in the Redding area of Shasta County. There are no other documented earthquake faults in the immediate vicinity that pose a significant risk, and the site is located in an area designated in the Public Safety Element of the *General Plan* as having a low ground-shaking potential. The Project is not located on or near any documented landslide hazard areas, and there is no evidence of ground slippage or subsidence occurring naturally on the site. The type of soils and underlying geology are identified as having no potential for liquefaction. While Dry Gulch Creek generally runs along the western boundary of the Project site, it is not a studied stream by the Federal Emergency Management Agency (FEMA), or the City of Redding Master Storm Drain Study by Montgomery Watson. Therefore, a hydraulic analysis was prepared to establish the 100-year surface elevation adjacent to the Project site. This information was utilized to ensure no grading encroaches in the 100-year floodplain and to provide adequate buffer for the adjacent homes.

b) The Project site contains the following primary soil classifications: Churn gravelly loam, Newtown gravelly loam, and Redding-Red Bluff gravelly loam. The majority of the developable area of the subdivision are those soils contained within the CeA, NeC, and ReB classification and are characterized by 0 to 3 percent, 3 to 8 percent, and 8 to 15 percent slopes, respectively. The study area also contains minor amounts of soils contained in the RcA, and RcB classification characterized by 0 to 3 and 3 to 8 percent slope and the NeD classification with a slope of 15 to 30 (no grading proposed). The majority of the site is well drained soil and has moderately slow permeability. Runoff is slow and the hazard for erosion is none to slight. Proposed grading consists of that necessary for construction of the roads, utilities, and individual lot pads.

The Project is subject to certain erosion-control requirements mandated by existing City and State regulations. These requirements include:

- *City of Redding Grading Ordinance.* This ordinance requires the application of "Best Management Practices" (BMPs) in accordance with the City Erosion and Sediment Control Standards Design Manual (Redding Municipal Code Section 16.12.060, Subsections C, D, E). In practice, specific erosion-control measures are determined upon review of the final project improvement plans and are tailored to project-specific grading impacts.
- *California Regional Water Quality Board "Construction Activity Storm Water Permit.*" This permit somewhat overlaps the City's Grading Ordinance provision by applying state standards for erosion-control measures during construction of the Project.
- *California Regional Water Quality Control Board "Project Storm Water Pollution Prevention Plan (SWPPP).*" This plan emphasizes stormwater best management practices and is required as part of the Construction Activity Storm Water Permit. The objectives of the SWPPP are to identify the sources of sediment and other pollutants that affect the quality of stormwater discharges and to describe and ensure the implementation of practices to reduce sediment and other pollutants in stormwater discharges.
- *California Department of Fish and Wildlife "1600 Agreement."* This notification is required for any work within a defined streambed and will be applicable to impacts to any work within a bed, channel, or bank of any perennial, intermittent, or ephemeral creeks.
- *U.S. Army Corps of Engineers Nationwide Permit or Individual Permit* to address impacts to jurisdictional waters.

Actions for compliance with these regulations are addressed under standard conditions of approval, which are uniformly applied to all land development projects. Since the Project is subject to uniformly-applied ordinances and policies, and the overall risk of erosion is low, potential impacts related to soil erosion and sedimentation are less than significant.

e) The proposed project does not involve the use of septic tanks or alternative wastewater disposal. No impact has been identified.

f) No unique geologic features, fossil-bearing strata, or paleontological sites are known to exist on the Project site.

Documentation:

City of Redding General Plan 2045, Public Safety Element 2045, *figures PS-1 (Ground Shaking Potential) and PS-2 (Liquefaction Potential)*

City of Redding General Plan Update Final Environmental Impact Report, 2024, SCH #2022050300 *City of Redding* Grading Ordinance, RMC Chapter 16.12

City of Redding Standard Specifications, Grading Practices

City of Redding Standard Development Conditions for Discretionary Approvals

Soil Survey of Shasta County Area, United States Department of Agriculture, Soil Conservation Service and Forest Service, August 1974

Division of Mines and Geology Special Publication 42

State Regional Water Quality Control Board, Central Valley Region, Regulations Related to Construction Activity Storm Water Permits and Storm Water Pollution Prevention Plans

Dry Gulch Creek Flood Study for the Oasis Subdivision, prepared by Sharrah Dunlap Sawyer, Inc, dated January 15, 2024

Mitigation:

None necessary.

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

Discussion:

a, b) The City of Redding General Plan (GP) and Environmental Impact Report (EIR) concluded this impact is cumulatively significant and unavoidable as pertains to buildout of the GP and is addressed in the GP EIR's CEQA Findings of Fact and Statement of Overriding Considerations. The EIR indicates that greenhouse gas (GHG) emissions are projected to result in a slight decrease in emissions from the CEQA baseline established by the GP EIR but not to result in the 85 percent reduction from existing conditions necessary to ensure the City is on a trajectory to achieve the long-term reductions goals AB 1279 and substantial progress toward the State's carbon neutrality goals for year 2045.

The City has not adopted a numerical significance threshold for assessing impacts related to GHG emissions. Similarly, neither the SCAQMD, CARB, nor any other state or regional agency has yet adopted a numerical significance threshold for assessing GHG emissions that applies to the Project. Since there is no applicable adopted or accepted numerical threshold of significance for GHG emissions, the methodology for evaluating the Project's impacts related to GHG emissions focuses on its consistency with statewide, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions. This consistency with such plans is the sole basis for determining the significance of the Project's GHG-related impacts on the environment.

The Project is consistent with numerous policies of the GP that address lowering VMT through infill development, including but not limited to the following:

- Establishing the "Primary and Secondary Growth Areas" intended to focus future development and annexations in proximity to existing services and infrastructure.
- Increasing residential densities along transit corridors.
- Prioritizing infill development.
- Working to complete the City's "Complete Streets" system to provide multimodal transportation opportunities.
- Strategically locating parks, trails, and similar facilities throughout the community to result in such facilities being located within ¼ mile of residents.
- Establishing identified "Opportunity Areas" to encourage redevelopment of older strip commercial centers to provide additional housing and mixed-use developments.
- Allowing neighborhood commercial services to be established within residential neighborhoods.

The Project is also consistent with the applicable Shasta Regional Transportation Agency's Regional Transportation Plan's goals, including:

- Encouraging transportation-efficient growth and development where it is supported by current or planned mobility options.
- Ensuring historically-marginalized and otherwise disadvantaged communities have an equitable role in planning and decision-making processes.

With regard to consistency with the California Air Resources Board's 2017 Scoping Plan, the Scoping Plan addresses a broad range of actions and strategies intended to reduce greenhouse gases, such as increasing the stringency of carbon fuel standards, adding additional zero-emission vehicles on the state's roadways, and similar broad-based programs which are not applicable to the Project.

As demonstrated by the above and the analysis provided in the GP EIR, the Project complies with or exceeds the plans, policies, regulations and GHG reduction actions/strategies outlined in the GP, the SRTA RTP, and CARB's 2017 Scoping Plan. Therefore, the Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing emissions of GHGs.

Documentation:
City of Redding General Plan 2045, Natural Resources Element 2045

Mitigation:
None necessary.

IX. **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?				**X**
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?				**X**
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				**X**
d) Be located on a site which 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?				**X**
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 or excessive noise for people residing or working in the project area?				**X**
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				**X**
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?			**X**	

Discussion:

a, b, c, d) The nature of the Project as residential housing does not present a significant risk related to hazardous materials or emissions. There are no documented hazardous material sites located on or near the Project.

e) The Project is not located within an airport land use plan or within two miles of a public airport or public use airport and would not result in a safety hazard for people residing or working in the Project area. There would be no impact on public safety.

f) The Project does not involve a use or activity that could interfere with emergency-response or emergency-evacuation plans for the area.

g) While the Project site is located within the Very High Fire Severity Zone, the nature of the Project will require extensive grading and removal of trees and other natural fire fuels throughout the site to accommodate potential housing development. City and state ordinances require, for a residential development of this size, multiple secondary access points. Secondary access points allow residents to safely remove themselves from potentially harmful or fatal situations involving fires. Additionally, California Residential Building Code requires dwellings to be constructed using flame-resistant materials and include fire-sprinklers within the dwelling and under the roof. Impacts would be considered less than significant.

Documentation:
City of Redding General Plan 2045, Public Safety Element 2045, *including figures PS-4 (Very High Fire Severity Zone) and PS-6 (Wildfire Evacuation Routes)*
Redding Municipal Airport Master Plan Update, November 2015
Comprehensive Land Use Plan
Airport Approach Zone provisions of the Municipal Code
California Airport Land Use Planning Handbook
Shasta County Airport Land Use Commission (ALUC) resolutions

Mitigation:
None necessary.

X. **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 or otherwise substantially degrade surface or ground water quality?			**X**	
b) Substantially decease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			**X**	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			**X**	
i) Result in substantial erosion or siltation on- or off-site;			**X**	
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			**X**	
iii) 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; or			**X**	
iv) Impede or redirect flood flows?				**X**
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				**X**
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				**X**

Discussion:

a) Since the Project would be served by City sanitary sewer service, the Project would not involve any permitted discharges of waste material into ground or surface waters. Construction and operation of the Project would not violate any water quality standards established by the Central Valley Regional Water Quality Control Board (RWQCB) in its Basin Plan for the Sacramento River and San Joaquin River Basins. Water pollution best management practices are required and will be incorporated into the improvement plans for the Project. The City's construction standards require that all projects prepare an erosion and sediment control plan (ESCP) prior to construction to address water pollution control. The ESCP will ensure that water quality standards are not substantially affected by the Project during construction.

b) The Project would utilize Bella Vista Water District (BVWD) for domestic uses and fire protection. A will-serve letter from BVWD is required in order for the Project to be served. The proposed project would not impact groundwater supplies.

c) Stormwater runoff from the Project site flows generally in a westerly direction from the site towards Dry Gulch Creek and will continue this pattern after grading and construction of the Project. Run-on from the east will be collected by the proposed storm drain system and included in The Oasis' detention facilities until the neighboring parcels are developed. City of Redding Policy 1806 requires that all subdivision developments include storm water detention facilities designed to maintain existing predevelopment rates of runoff during a 10-, 25-, and 100-year storm event with 6-hour duration. The Project application includes an entitlement storm drain analysis prepared by Sharrah Dunlap Sawyer, Inc. dated February 2024 that includes use of two detention basins to detain for the north and south sections of the Project. The detained stormwater will be metered by orifices designed to limit the flow. Flows leaving the site will not increase peak flows in the creeks and rivers downstream of the Project.

The Project is subject to standard requirements defined under Section VII., *Geology and Soils*, and mitigation measures under Section IV, *Biological Resources*, that minimize the potential for erosion or siltation on- or off-site. The final improvement plans for the Project must also incorporate specific design measures intended to limit pollutant discharges in stormwater from urban

improvements as established under the State's National Pollutant Elimination System (NPDES) general permit, which the City is now obligated to follow in accordance with State Water Quality Control Order No. 2003-0005-DWQ. Feasible Best Management Practices (BMPs) would be incorporated in the final design of the Project's storm-drain system, as approved by the City Engineer, based on the BMPs listed in the latest edition of the California Storm Water Quality Association Storm Water Best Management Practices Handbook.

d) While the Project site is not located in a documented flood hazard zone as identified by the Federal Emergency Management Agency or the Master Storm Drain Master Plan prepared by Montgomery Watson, a hydraulic analysis was prepared to establish the 100-year surface elevation of Dry Gulch Creek adjacent to the Project site. This information was utilized to ensure no grading encroaches in the 100-year floodplain and to provide adequate buffer for the adjacent homes so as not to risk release of pollutants due to project inundation. The Project site is not located in a tsunami or seiche zone.

e) The Project would not conflict with a water quality control plan or groundwater management plan.

Documentation:
City of Redding General Plan 2045, Natural Resources Element 2045
City of Redding General Plan 2045, Public Safety Element 2045
Federal Emergency Management Agency Floodplain regulations, FIRM map 06089C1238G, dated March 17, 2011
City of Redding Storm Drain Master Plan, Montgomery-Watson Engineers 1993
Dry Gulch Creek Flood Study for the Oasis Subdivision, prepared by Sharrah Dunlap Sawyer, Inc., January 2024
Entitlement Level Storm Drainage Analysis, Sharrah Dunlap Sawyer, Inc., dated February 2024

Mitigation:
None necessary.

XI. 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?				**X**
b) Cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				**X**

Discussion:

a) The Project does not have the potential to physically divide an established community. The Project involves construction of a residential subdivision in an area with a General Plan designation and zoning district allowing for residential development.

b) The Project is compatible with the applicable policies and regulations of the City General Plan and Zoning Ordinance and is not in conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Documentation:
City of Redding General Plan 2045, Community Development and Design Element, 2045
City of Redding General Plan 2045, Natural Resources Element, 2045

Mitigation:
None necessary.

XII. 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?				**X**
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?				**X**

Discussion:

a, b) The Project site is not identified in the General Plan as having any known mineral-resource value or as being located within any "Critical Mineral Resource Overlay" on the General Plan diagram.

Documentation:
City of Redding General Plan 2045, Natural Resources Element, 2045
City of Redding General Plan Land Use 2045 Diagram

Mitigation:
None necessary.

XIII. NOISE: *Would the project result in:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			**X**	
b) Generation of excessive ground-borne vibration or ground-borne noise levels?				**X**
c) For a project located within the vicinity of a private airstrip or 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?				**X**

Discussion:

a, b) The Project site is located approximately 550 feet from Oasis Road, identified as an arterial street by the City's General Plan, and is separated by approximately 10.56 undeveloped acres of vacant land located to the north. Due to the distance and separation from Oasis Road to the Project site, lots are not expected to be exposed to future traffic noise levels in excess of the applicable City of Redding exterior and interior noise level criteria established in Table N-1 of the Noise Element of the City of Redding *General Plan 2045*. The Noise Element establishes a daytime Leq of 60 dBA as the standard acceptable exterior noise level for non-transportation noise sources for residential land use and 50 dBA for interior noise levels. The nature of the Project would result in levels within acceptable limits and would not require further mitigation.

The Project may potentially generate a temporary increase in noise at time of construction; however, due to the nature of the Project as a single-family residential development, it will not generate excessive noise post-construction. During construction of the proposed project, there will be a temporary increase in noise in the Project vicinity above existing ambient noise levels. The most noticeable construction noise will be related to grading, utility excavation, and land-clearing activity. The City's Grading Ordinance (RMC Chapter 16.12.120.H) limits grading-permit-authorized activities to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday. No operations are allowed on Sunday. Since heavy construction work associated with the Project is limited in scope and by existing regulation, the anticipated noise impact to neighboring residents is considered less than significant.

Future alignment of Shasta View Drive, identified as a 3-lane arterial street by the City's General Plan, runs adjacent to the east of

the Project site. Although the Project will not result in excessive noise, Chapter 17.60 of the Redding Municipal Code requires the construction of walls along major street frontages for aesthetic and screening purposes. The Project will include a condition to construct a 6-foot-high decorative concrete or masonry wall along the future frontage of Shasta View Drive. In addition to added aesthetic value, the wall will further reduce the impacts of residents from future traffic flow. Construction of the road is planned to commence within the next 20 years.

Due to the nature of the Project as a residential development away from any noise contours within existing roadways, it would not result in a permanent increase in ambient noise levels and would not result in generation of excessive ground-borne vibration or ground-borne noise levels.

c) The proposed subdivision site is not located within any of the noise contours of Redding Municipal Airport and is located approximately 10 miles away. There are no private airstrips in the vicinity of the Project site.

Documentation:
City of Redding General Plan 2045, Noise Element, 2045
City of Redding General Plan 2045, Transportation Element, 2045
City of Redding Zoning Ordinance Redding Municipal Code, Section 18.40.100
City of Redding Grading Ordinance Redding Municipal Code, Section 16.12.120
City of Redding Municipal Airport Master Plan Update, November 2015

Mitigation:
None necessary.

XIV. POPULATION AND HOUSING: *Would the project:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Induce substantial unplanned 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)*?			**X**	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			**X**	

Discussion:

a, b) The Project would create opportunity for the construction of new homes as planned and anticipated by the Redding *General Plan*. As previously noted, the Project is similar in character to that in the surrounding area. The Project would not induce unplanned population growth and does not propose the extension of any new roads or utilities not anticipated by the *General Plan*. The Project does not displace substantial numbers of people or housing. The Project will provide housing.

Documentation:
City of Redding General Plan 2045, Housing Element, 2020-2028

Mitigation:
None necessary.

XV. PUBLIC SERVICES: *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:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
Fire Protection?			**X**	
Police Protection?			**X**	
Schools?			**X**	

XV. PUBLIC SERVICES: *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:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
Parks?			**X**	
Other public facilities?			**X**	

Discussion:

Fire and Police Protection:

The City would provide police and fire protection to the Project from existing facilities and under existing service levels. The size of the Project would not mandate the need for additional police or fire facilities.

The Project is subject to Chapter 16.20 of the Redding Municipal Code, which requires new development to pay a citywide fire facilities-impact fee calculated to mitigate a project's fair share of cumulative impacts to the City's fire-protection infrastructure based upon improvements necessary to accommodate new development under the City's *General Plan*.

Schools:

The Project is located in the Gateway Union Elementary and High School District and may contribute to the total student enrollment in these districts. However, a school-facility impact (in-lieu) fee exists, as provided under State law, that is paid prior to the issuance of a building permit for each residential unit to address school-facility funding necessitated by the effects of growth citywide.

Parks:

The Project will not cause a physical deterioration of an existing park facility or cause an adverse physical impact associated with a new park facility. The Project is subject to Chapter 16.20 of the Redding Municipal Code, which requires new residential development to pay a citywide park and recreation-facilities impact fee calculated to mitigate a project's fair share of cumulative impacts to the City's parks and recreation infrastructure based upon improvements necessary to accommodate new development under the City's General Plan. See discussion under Item XVI (Recreation) below.

Documentation:
City of Redding General Plan 2045, Public Facilities and Services Element 2045

Mitigation:
None necessary.

XVI. RECREATION:	**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?			**X**	
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?			**X**	

Discussion:

a) There are no existing neighborhood or regional parks, or other recreational facilities in close proximity to the Project and therefore, any use of existing neighborhood and regional parks elsewhere would not be significant and would not cause a significant physical deterioration of an existing recreation facility or cause a significant adverse physical impact associated with a new recreation facility.

b) Chapter 17.54 of the City's Subdivision Ordinance, *Park and Recreational Land Dedications and In-Lieu Fees*, requires that as a condition of approval of a tentative map, a subdivider shall either dedicate land or pay a fee in lieu thereof for park or recreational purposes. In accordance with state subdivision law, only projects containing 50 or more lots may be *required* to dedicate land for park development. The Project proposes to dedicate the area of Dry Gulch Creek and the adjacent floodplain as an open space and recreational corridor, which will include provisions for a trail through the area and a dog park in the southern portion of the subdivision. The City's Community Services Department has indicated that park fee credit may be allowed for some or all of the improvements. Overall, the development within this area is intended to be consistent with the provisions of the Open Space zone district which requires low-impact type uses and would preserve existing vegetation while avoiding aquatic features. Based upon the City code requirements which apply to City of Redding parks construction and operation and the restriction of intensive uses in the Open Space zone district, the trails and park facility would have a less-than-significant impact on the environment.

Documentation:
City of Redding General Plan 2045, Natural Resources Element, 2045
City of Redding General Plan, Parks, Trails, and Recreation Element, 2045
City of Redding General Plan 2045, Public Facilities and Services Element, 2045

Mitigation:
None necessary.

XVII. TRANSPORTATION: *Would the project:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			**X**	
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?			**X**	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				**X**
d) Result in inadequate emergency access?			**X**	

Discussion:

a, c) The General Plan (GP) Environmental Impact Report (EIR) concluded this impact to be less than significant. Local programs, plans, ordinances, and policies are consistent with the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) for the Shasta Region, the Redding Active Transportation Plan (ATP), the Redding Area Bus Authority (RABA) Short Range Transit Plan, Title 11, *Vehicles and Traffic* of the Redding Municipal Code, and the Redding Complete Streets Policy. The GP focuses on increasing options for alternative transportation (public transit, walking, and bicycling); ensuring that pedestrian and bicycle systems connect residential neighborhoods to public facilities and services, schools, parks, and shopping areas; and other means to develop a multi-modal transportation system that meets the needs of all members of the community.

Primary access to the subdivision for Unit 1 would be via construction of a new street connection to Oasis Road (Road "A") located approximately 1,300 feet east of the main connection to the Risen King Community Church and 605 feet west of the future Shasta View Drive extension, currently Indian Country Drive. Unit 2 would take primary access from construction of a new street

connection to Gold Hills Drive, Pleasant Hills Drive, which is a planned street connection shown on the adjacent tentative map for The Reserve at Gold Hills. These two access points, in combination with the proposed Road "H" connection, would satisfy General Plan Policy PS4L as well as the City's Subdivision Ordinance Chapter 17.60, *Subdivision Design*, that requires at least two connected points of public-street access for subdivisions with 50 or more dwelling units. This connection would be required prior to the completion of improvements for Units 3 and 4. In addition, the subdivision design includes dedication of a 42-foot half-section for future Shasta View Drive along the eastern boundary of the site.

The Transportation Element of the *General Plan* establishes acceptable peak-hour "Level of Service" (LOS) criteria for roadways and intersections for use in transportation planning and project review. The LOS methodology is an established way of ranking the degree of traffic-flow efficiency and congestion. For most of the City, LOS "C" or "acceptable delay" is identified as the maximum allowable threshold before a more congested and potentially significant traffic condition occurs. For state highway interchange connections with local streets, a maximum LOS "D" or "tolerable delay" is established.

To help assess potential LOS and traffic impacts, a Traffic Impact Study for the Oasis Subdivision was prepared by W-Trans, dated January 25, 2022. The study analyzed project impacts during both AM and PM peak hour for both Existing Conditions, Baseline Conditions (existing plus approved project's conditions), and Future Conditions (cumulative traffic conditions that would be expected upon completion of the roadway improvements identified in the Oasis Road Specific Plan Area Traffic Impact Fee Study) and those conditions with the proposed project. Impacts were analyzed at seven intersections, including the following:

Intersections Studied

Oasis Road/ Cascade Boulevard
Oasis Road/I-5 South Ramps
Oasis Road/I-5 North Ramps
Oasis Road/Twin View Boulevard
Oasis Road/Gold Hills Drive
Oasis Road/Project Street (Road "A")
Oasis Roads/Shasta View Drive (Future Conditions only)

In its review of the noted intersections and streets, the study arrives at the following conclusions:

- The proposed project would be expected to generate an average of 1,935 trips per day at build-out of the site, including 152 trips during the a.m. peak hour and 203 trips during the p.m. peak.

- Upon addition of the Project-generated trips to the Existing volumes, the study intersections are expected to continue operating at the same levels of service as without the Project trips, and the Project's effect is considered acceptable. The Project intersection with Oasis Road would operate acceptably with side-street controls.

- Upon the addition of Project-generated trips to the near-term Baseline volumes, the study intersections of Oasis Road/Cascade Boulevard, Oasis Road/Twin View Boulevard, Oasis Road/Gold Hills Drive would all operate at LOS D. The Project's effect would be acceptable at the Oasis Road/Cascade Boulevard and Oasis Road/Twin View Boulevard intersections, but would be adverse at the Oasis Road/Gold Hills Drive intersection.

- Upon the addition of Project-generated traffic to the anticipated Future volumes, and with completion of planned infrastructure projects, the study intersections are expected to operate acceptably, except for the Project intersection, which would operate at LOS D for the northbound left-turn movements during the p.m. peak hour with side-street controls.

- Traffic associated with the proposed project would represent less than 25 percent of the anticipated future growth in traffic volumes at each intersection; therefore, payment of the North Redding Traffic Benefit District (NRTBD) impact fees would offset long-term cumulative effects of Project traffic.

- Base on OPR guidance and information contained within the Shasta Regional Transportation Agency travel demand model and the 2018 Regional Transportation Plan, the Project's impact on Vehicle Miles Traveled would be considered less-than-significant.

- Existing bicycle facilities serving the Project site are adequate and will be improved with the planned installation of buffered Class II bike lanes along Oasis Road.

- The lack of transit facilities serving the Project does not result in an impact given the rural location and minimal demand that would be expected.

Based on these conclusions, the study recommends the following improvements to be made in order to reduce impacts to LOS associated with the Project's traffic-related impacts:

- At the time of construction of any phase that includes off-site construction of Pleasant Hills Drive and a connection to Gold Hills Drive, the Oasis Road/Gold Hills Drive intersection shall be restriped to include a dedicated left-turn lane with 80 feet of stacking space.

- At the time of construction of the Project intersection with Oasis Road and the associated frontage improvements, the west leg shall be improved with installation of a two-way left-turn lane or a westbound acceleration lane.

- The Project applicant shall pay the required NRTBD impact fees to offset cumulative effects of the Project traffic and help fund the circulation improvements identified in the Oasis Road Specific Plan. In accordance with Chapter 16.20 of the Redding Municipal Code, the City's traffic impact fee is collected at the time of issuance of a building permit for each new residence.

b) The General Plan Environmental Impact Report concluded this impact to be less than significant. The analysis conducted for the EIR found that the forecasted rate of VMT per resident under Year 2045 conditions with GP would not exceed the established regional threshold as the VMT rate per resident will be below the established 15.6 VMT per resident. This finding is consistent with the 2018 RTP/SCS which noted that Redding has the lowest rate of VMT per capita in Shasta County, and the shortest average trip lengths in the County, reflecting the proximity of homes, jobs and services within Redding.

The number and type of dwelling units and therefore projected traffic generated by the Project is consistent with the assumptions made for Traffic Analysis Zone number 550 (TAZ) used in the Shasta SIMM model to evaluate the VMT impacts of the General Plan. The Project will not conflict with CEQA guidelines section 15064.3(b).

d) The City's General Plan and Subdivision Ordinance require that developments of one or two-family dwellings, where the number of dwelling units exceeds 49 units, provide two separate and approved fire apparatus points of access to public roads. The Project includes a total of 143 lots, and thus requires secondary access. Access to the subdivision would be derived from Oasis Road by way of a future Road "A", and a secondary paved access along Road "H" through the Project and Pleasant Hills Drive. Improvements will be required at a development rate as follows:

- Unit 1 - Construction of 1 to 49 Units: Access from Oasis Road via Road "A."
- Unit 2 - Construction of 50 to 97 Units: Full improvements of a portion of Road "H" within the unit, Road "I" and Pleasant Hills Drive to Gold Hills Drive as standalone primary access for Unit 2.
- Unit 3 - Construction of 98 to 128 Units: Construction of Road "H" as a secondary access road to connect Road "G" from Unit 1 with Unit 2.
- Unit 4 - Construction of 129 to 143 Units: Full improvements of Road "K" and connections to Road "I" and Pleasant Hills Drive.

As noted above, the northern driveway would provide adequate access for the first 49 lots developed for Unit 1, while Pleasant Hills Drive would provide adequate access for 48 lots as part of Unit 2. Development of Units 3 and 4 would require secondary access, with improvements of Road "H" connecting the Project with north-south access. Unit 4 would take its access from the improvements of Road "G" and Pleasant Hills Drive to Gold Hills Drive. The Redding Fire Marshal has deemed this to be adequate access for emergency access and fire protection.

Documentation:
City of Redding General Plan 2045, Transportation Element, 2045
City of Redding General Plan 2045, Parks, Trails, and Recreation Element 2045
City of Redding Parks, Trails, and Open Space Master Plan, Update
City of Redding Traffic Impact Fee Program

City of Redding Active Transportation Plan, 2018
Redding Area Bus Authority Short Range Transit Plan, January 2024
Traffic Impact Study for the Oasis Subdivision, prepared by W-Trans, January 2022

Mitigation:
None necessary.

XVIII. TRIBAL CULTURAL RESOURCES: *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:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) 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				**X**
b) 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				**X**

Discussion:

a, b) The Project was referred to the appropriate tribal entities and no request for consultation was received.

Documentation:
Letters sent to Redding Rancheria, the Wintu Tribe of Northern California, and Paskenta Band of Nomlaki Indians, dated September 30, 2022.

Mitigation:
None necessary.

XIX. UTILITIES AND SERVICE SYSTEMS: *Would the project:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				**X**
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				**X**
c) 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?				**X**

XIX. **UTILITIES AND SERVICE SYSTEMS:** *Would the project:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
d) Generate solid waste in excess of State or local standards, or infrastructure, or otherwise impair the attainment of solid waste reduction goals?				**X**
e) Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste?				**X**

Discussion:

a) The proposed development does not generate the need for relocation or construction of new or expanded water or wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities.

b) The Project area is within the Bella Vista Water District (BVWD) and would provide potable water is to serve the Project with adequate pressure and flows for fire suppression. BVWD has indicated that sufficient water supplies are available to serve the Project and reasonably foreseeable future development during normal years. However, in accordance with BVWD policy an agreement must be provided to the district which demonstrates an adequate water source under drought conditions for dry, and multiple dry years. In negotiation with BVWD, the City of Redding will supply the dry and multiple dry years contingency water subject to a finalized will-serve letter required to be issued to the applicant prior to approval of any construction or improvement plans.

c) The Project will utilize the City's sanitary sewer system to dispose of wastewater. Adequate sewer capacity and wastewater treatment are available in the City's existing system.

d) The Project would not generate solid waste in excess of State or local standards, or infrastructure, or otherwise impair the attainment of solid waste reduction goals. The City provides solid waste disposal (curbside pick-up) service, which homes in the subdivision would utilize. Adequate capacity is available to serve the needs of the Project without need of special accommodation.

e) The Project will comply with Federal, State, and local management and reduction statutes and regulations related to solid waste. The City regulates and operates programs that promote the proper disposal of toxic and hazardous materials from households, including those created by the Project.

Documentation:
City of Redding General Plan 2045, Public Facilities and Services Element, 2045
City of Redding Water and Sewer Atlas

Mitigation:
None necessary.

XX. **WILDFIRE:** *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
a) Substantially impair an adopted emergency response plan or emergency evacuation Plan?			**X**	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose projects occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildfire?			**X**	

XX. WILDFIRE: *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	**Potentially Significant Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
c) Require installation or maintenance of associated infrastructure (such as roads, fuel sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				**X**
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result, post-fire slope instability, or drainage changes?				**X**

Discussion:

a) While the Project is located within a mapped Very High Fire Severity Zone, it would not impair an emergency response plan or emergency evacuation plan. The subdivision is designed to provide access to Oasis Road and Gold Hills Drive but also be designed with secondary access as necessary with each phase of development. The Project is also designed with additional access to the future Shasta View Drive.

b) The Project will be graded to accommodate future development and will be cleared of most trees on-site. The Dry Gulch Creek open space area will be required to be placed in a Landscape Maintenance District that will include fire fuel management of the natural greenbelt area. The Project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from a wildfire.

c) The Project would not require the installation or maintenance of associated infrastructure that could exacerbate wildfire risks.

d) The Project would not expose people or structures to downstream flooding or landslides.

Documentation:
City of Redding General Plan 2045, Public Safety Element 2045, including figures PS-4 Very High Fire Severity Zone and PS-6 Wildfire Evacuation Routes

Mitigation:
None necessary

XXI. 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 substantially 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 the self-sustaining levels, threaten to eliminate a plant or animal community, substantially 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?			**X**	
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)?			**X**	
c) Does the project have potential environmental effects which may cause substantial adverse effects on human beings, either directly or indirectly?				**X**

Discussion:

Based on the analysis undertaken as part of this Initial Study, the following findings can be made:

a) As discussed under Item IV, *Biological Resources*, if unmitigated, the Project has the potential to result in the loss of small amount of wetland features considered jurisdictional waters of the United States and potential impacts to special status plant and animal species. Mitigation Measures listed below are established to reduce potential impact to less than significant.

b) As discussed in Section III, the Project will contribute to regionwide cumulative air quality impacts. However, under policy of the *General Plan*, application of existing grading and construction standards will reduce potential impacts from this project to a level less than significant.

c) As discussed herein, the Project does not have characteristics which could cause substantial adverse effects on human beings, either directly or indirectly.

Documentation:
See all Sections above.

Mitigation:

MM-Bio-1. Prior to any discharge or fill material into waters of the U.S, authorization under a Nationwide Permit or Individual Permit shall be obtained from the Corps. For fill requiring a Corps permit, a water quality certification from the Regional Water Quality Board (Clean Water Act §401) shall also be obtained prior to discharge of dredged or fill material.

MM-Bio-2. Prior to any activities that would obstruct the flow of or alter the bed, channel, or bank of any perennial, intermittent or ephemeral creeks, notification of streambed alteration shall be submitted to the California Department of Fish and Wildlife (CDFW), and, if required, a Lake and Streambed Alteration Agreement (§1602) shall be obtained.

MM-Bio-3. Any area of off-site construction that has not previously been surveyed shall have a pre-construction rare plant survey conducted by a qualified botanist during the appropriate survey window (blooming period) for rare plants that have the potential to occur within the Project site, as deemed appropriate by the California Department of Fish and Wildlife. Any required survey shall be in accordance with California Native Plant Society *Botanical Survey Guidelines* (CNPS 2001), California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special Status Plant Species Native Plant Populations and Natural Communities* (CDFW 2009), and U.S. Fish and Wildlife's *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000). If present, special status plant species plant populations will be flagged and if possible avoided during construction. If the population cannot be avoided during construction, a mitigation plan, which would include transplanting the plant population or compensation, will be developed for approval by the California Department of Fish and Wildlife.

M Bio-4. If vegetation removal or construction activities will occur during the nesting season for migratory birds or raptors (February 1 through August 31), a qualified biologist shall conduct a preconstruction survey seven days before construction activities begin. If nesting birds or raptors are found, CDFW will be notified and consulted. An appropriate buffer, as determined by CDFW and the qualified biologist, will be placed around the nest until the young have fledged. If construction activities cease for a period greater than seven days, additional preconstruction surveys will be required.

MM-Bio-5. If construction (including the removal of large trees) occurs during the bat non-volant season (March 1 through August 31), a qualified professional shall conduct a pre-construction survey of the study area to locate maternity colonies and identify measures to protect colonies from disturbance. The preconstruction survey will be performed no more than seven days prior to the implementation of construction activities. If a maternity colony is located within the study area, or adjacent to the study area, a disturbance-free buffer shall be established by a qualified professional, in consultation with CDFW, to ensure the colony is protected from project activities.

List of Attachments

Attachment A

- Figure 1 – Location Map
- Figure 2 – Tentative Subdivision Map

Attachment B

- Biological Study Report, prepared by ENPLAN, dated September 2019
- Aquatic Resource Delineation Report, prepared by ENPLAN, dated September 2019
- Biological Study Report Addendum, prepared by ENPLAN dated July 2022
- Biological Field Condition Evaluation, prepared by ENPLAN, dated June 2024
- Evaluation of suitable habitat and potential for Crotch's bumble bee at Oasis Road, letter prepared by Gallaway Enterprises, dated May 31, 2024
- All Tree Surveys Combined – The Oasis, prepared by ENPLAN, dated July 2022, February 2007, July 2007, and July 2006.
- Wetland/Biological Evaluation for the Gold Hills Park Sewer Line Corridor and Shasta View Drive Extension, letter prepared by ENPLAN, dated June 28, 2005

Attachment C

- Archaeological Inventory Survey, by Northeast Information Center (NEIC) dated May 27, 2024.
- Cultural Resource Inventory Survey for a Proposed Residential Subdivision, prepared by ENPLAN, December 2004
- Cultural Resource Inventory Survey for the Proposed Gold Hills Residential Development Project, prepared by ENPLAN, July 2004
- Cultural Resources Inventory Survey, Proposed Sewer Line Easement, prepared by ENPLAN, 2005
- Cultural Resource Survey: The Reserve 2 and 3 in North Redding, prepared by ENPLAN, February 2007

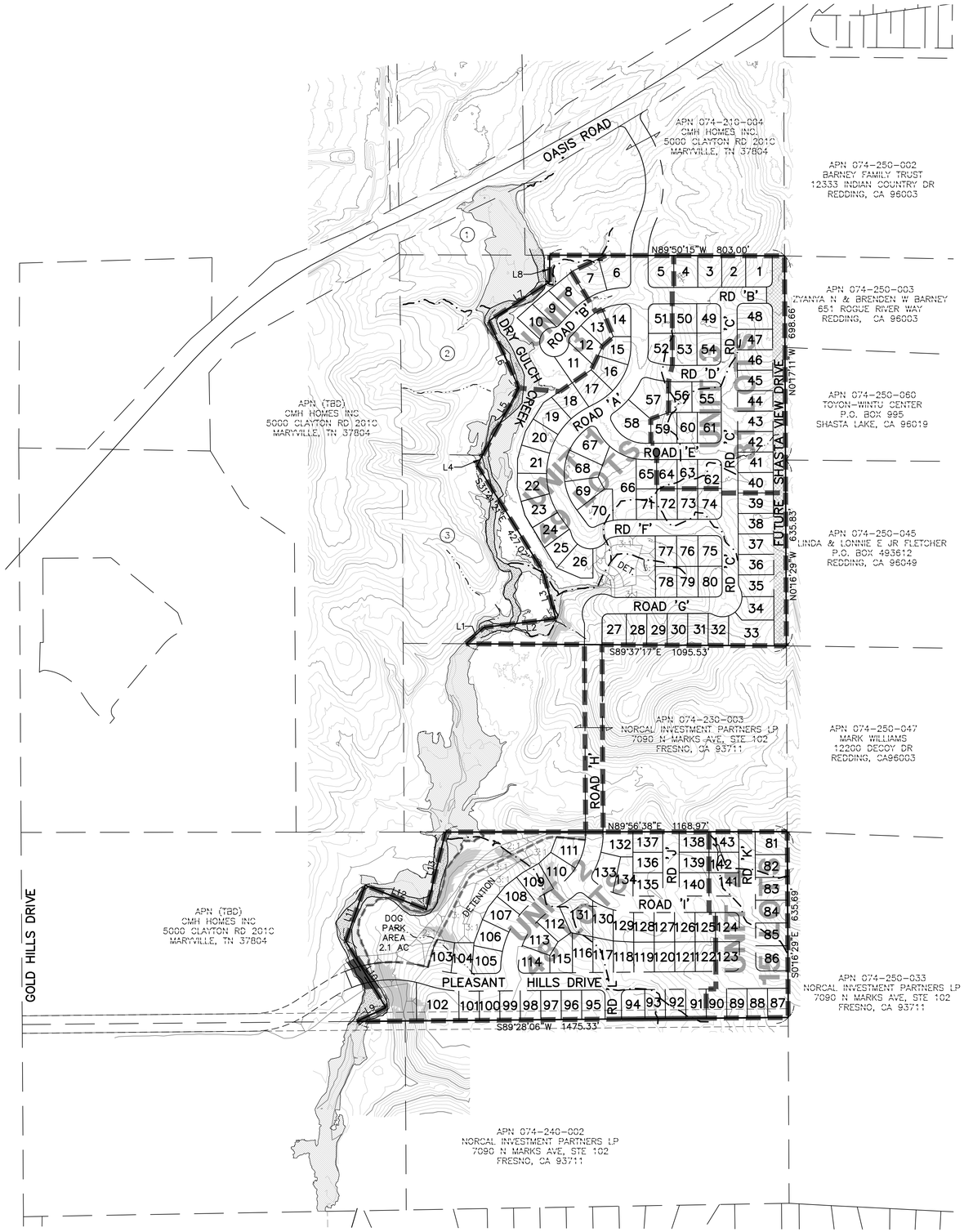
Attachment D

- Dry Gulch Creek Flood Study for the Oasis Subdivision, prepared by Sharrah Dunlap Sawyer, Inc, dated January 15, 2024
- Entitlement Level Storm Drainage Analysis, Sharrah Dunlap Sawyer, Inc., dated February 2024

Attachment A

Figure 1 – Location Map
Figure 2 – Tentative Subdivision Map

N W E S	**GIS DIVISION** INFORMATION TECHNOLOGY DEPARTMENT	**LOCATION MAP**	MTG. DATE:
	DATE PRODUCED: SEPTEMBER 30, 2022	S-2021-01590 THE OASIS SUBDIVISION 6201 & 6251 OASIS ROAD / 2121 & 2333 GOLD HILLS DRIVE AP# 074-230-023, -034, -035, & -037	ITEM: ATTACHMENT:
	0 200 400 Feet		
P:\Planning\ProProjects\S\S-2021-01590.aprx			



LEGEND

- 20% AND GREATER SLOPE
- 100-YEAR WATER SURFACE ELEVATION
- RIGHT-OF-WAY DEDICATION FOR FUTURE SHASTA VIEW DRIVE
- DOG PARK AREA (2.1 AC)
- PHASING LINES
- INTERMITTENT STREAM/WETLAND
- EPHEMERAL STREAM
- SEASONAL WETLAND

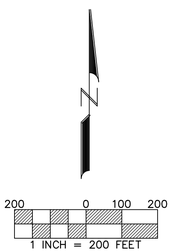
NOTE: STREAM AND WETLAND INFORMATION PER AQUATIC RESOURCE DELINEATION REPORT PREPARED BY ENPLAN AND DATED SEPTEMBER 2019

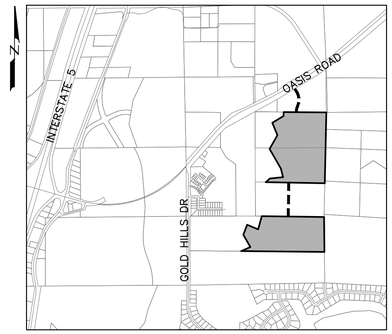
ADJACENT LAND OWNERS

1. APN 074-220-021
   JUDY HOBBS
   6285 OASIS ROAD
   REDDING, CA 96003
2. APN (TBD)
   CMH HOMES INC
   5000 CLAYTON RD 201C
   MARYVILLE, TN 37804
3. APN (TBD)
   CMH HOMES INC
   5000 CLAYTON RD 201C
   MARYVILLE, TN 37804

NOTE: PARCELS SHOWN ARE BASED ON THE PLA IN PROCESS. SOME ASSESSOR'S PARCEL NUMBERS ARE TO BE DETERMINED.

LINE TABLE		
LINE	BEARING	LENGTH
L1	S47°22'43"W	82.52'
L2	S83°03'35"W	247.94'
L3	S15°18'45"E	168.17'
L4	S28°27'04"W	38.16'
L5	S28°27'04"W	261.44'
L6	S24°13'52"E	252.06'
L7	S57°22'31"W	247.24'
L8	S0°13'51"W	91.49'
L9	N64°24'39"E	109.99'
L10	N31°13'38"W	265.79'
L11	N19°16'10"E	202.56'
L12	S68°16'17"E	225.28'
L13	N13°53'52"E	273.65'





VICINITY MAP
N.T.S

CLIENT:
BRIAN BURK
P.O. BOX 1485
BEND, OR 97709-1485

OWNER:
BRIAN & SANDRA BURK
P.O. BOX 1485
BEND, OR 97709-1485

ENGINEER:
SHARRAH DUNLAP SAWYER, INC.
320 HARTNELL AVENUE
REDDING, CA 96002

OVERALL SITE DATA

A.P.# 074-230-037, 074-230-035, 074-230-023, 074-230-034
GENERAL PLAN: RES 2-3.5
ZONING: RS-3
EXISTING USE: VACANT
PROPOSED USE: 143 LOT SUBDIVISION

SITE AREA: 48.6 AC
20% & GREATER SLOPES: 1.0 AC
BUILDABLE AREA: 47.6 AC
PROJECT DENSITY: 3.0 D.U./AC

ELECTRICITY: CITY OF REDDING
WATER: BELLA VISTA WATER DISTRICT
SEWER: CITY OF REDDING
TELEPHONE: AT&T
CABLE/INTERNET: CHARTER

THE OASIS SUBDIVISION TENTATIVE MAP S-2021-01590 COVER SHEET

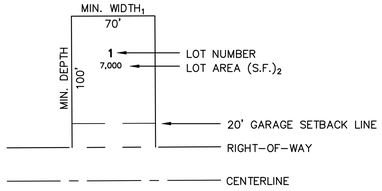
BEING LOCATED IN THE WEST HALF OF SECTION 8, TOWNSHIP 32 NORTH, RANGE 4 WEST, MDM, CITY OF REDDING, SHASTA COUNTY, CALIFORNIA

FOR

BRIAN BURK

BY

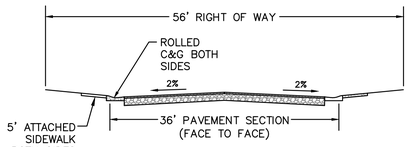
SHARRAH DUNLAP SAWYER, INC.
Civil Engineering • Land Planning • Surveying & Mapping
Landscape Architecture • Presentation Graphics
320 Hartnell Ave, Redding, CA 96002
530.221.1792 voice • info@sdsengineering.com



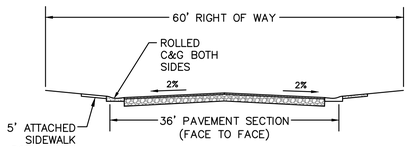
TYPICAL LOT LAYOUT
N.T.S.

NOTES:
1 CUL-DE-SAC AND KNUCKLE LOTS ARE A MINIMUM OF 35' AT RIGHT-OF-WAY, EXCEPT FOR FLAG LOT WHERE THE MINIMUM IS 20'.

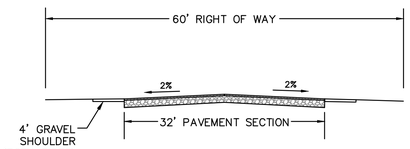
2 MINIMUM LOT AREA IS 7,000 S.F.; MINIMUM CORNER LOT AREA IS 8,000 S.F.



TYPICAL 56' STREET SECTION
ROADS 'B'-'G', 'I'-'L'
NOT TO SCALE



TYPICAL 60' STREET SECTION
ROADS 'A', 'H', & PLEASANT HILLS DRIVE
NOT TO SCALE



TYPICAL 60' STREET SECTION
OFFSITE ROADS 'A' & 'H'
BETWEEN OASIS & NORTH PROPERTY LINE
& BETWEEN NORTH AND SOUTH PORTIONS OF PROJECT
NOT TO SCALE

LEGEND

- 20% AND GREATER SLOPE
- 100-YEAR WATER SURFACE ELEVATION
- RIGHT-OF-WAY DEDICATION FOR FUTURE SHASTA VIEW DRIVE
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SEASONAL WETLAND

NOTE: STREAM AND WETLAND INFORMATION PER AQUATIC RESOURCE DELINEATION REPORT PREPARED BY ENPLAN AND DATED SEPTEMBER 2019

60 0 30 60
1 INCH = 60 FEET

THE OASIS SUBDIVISION TENTATIVE MAP S-2021-01590 (NORTH)

BEING LOCATED IN THE WEST HALF OF SECTION 8, TOWNSHIP 32 NORTH, RANGE 4 WEST, MDM, CITY OF REDDING, SHASTA COUNTY, CALIFORNIA

FOR

BRIAN BURK

BY

SHARRAH DUNLAP SAWYER, INC.
Civil Engineering • Land Planning • Surveying & Mapping
Landscape Architecture • Presentation Graphics
320 Hartnell Ave, Redding, CA 96002
530.221.1792 voice • info@sdsengineering.com

DATE: JANUARY 20, 2025 SCALE: 1"=60' SHEET 2 OF 5

MD/MH/ND P:/proj/p/19155/dwg/19155tm_BURK.dwg 19155

SEE SHEET 3 OF 5

SEE SHEET 2 OF 5

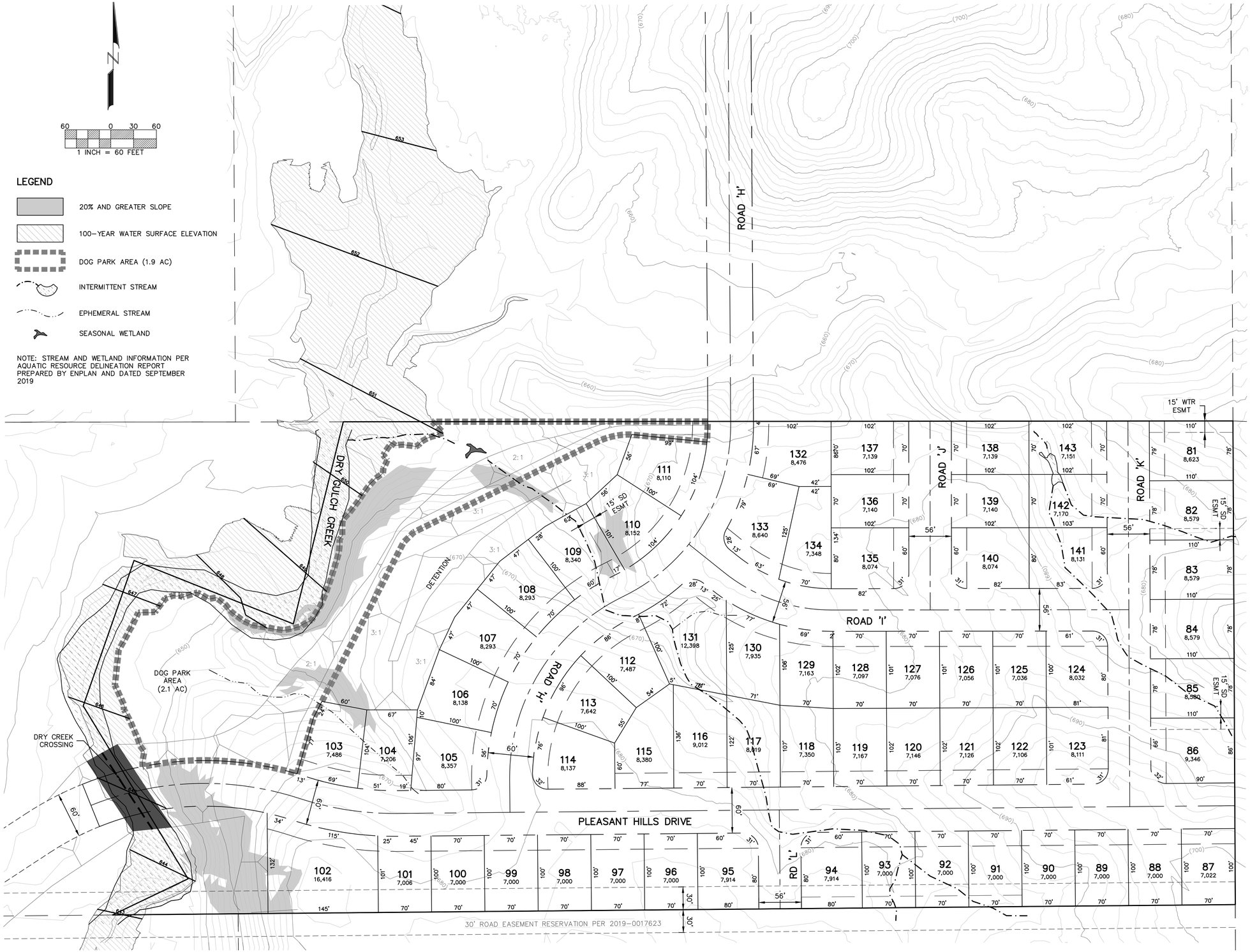
N

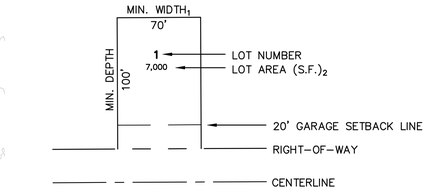
60 0 30 60
1 INCH = 60 FEET

LEGEND

- 20% AND GREATER SLOPE
- 100-YEAR WATER SURFACE ELEVATION
- DOG PARK AREA (1.9 AC)
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SEASONAL WETLAND

NOTE: STREAM AND WETLAND INFORMATION PER AQUATIC RESOURCE DELINEATION REPORT PREPARED BY ENPLAN AND DATED SEPTEMBER 2019





TYPICAL LOT LAYOUT
N.T.S.

NOTES:
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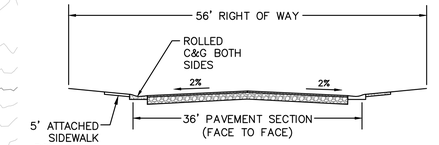
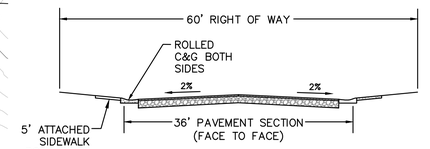
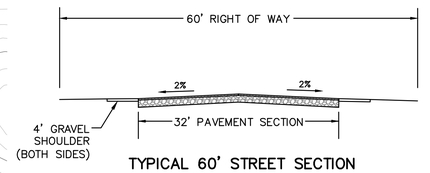


TYPICAL 56' STREET SECTION
ROADS 'B'-'G', 'I'-'L'
NOT TO SCALE



TYPICAL 60' STREET SECTION
ROADS 'A', 'H', & PLEASANT HILLS DRIVE
NOT TO SCALE



TYPICAL 60' STREET SECTION
OFFSITE ROAD 'A'
BETWEEN OASIS & NORTH PROPERTY LINE
& BETWEEN NORTH AND SOUTH PORTIONS OF PROJECT
NOT TO SCALE

THE OASIS SUBDIVISION TENTATIVE MAP S-2021-01590 (SOUTH)

BEING LOCATED IN THE WEST HALF OF SECTION 8, TOWNSHIP 32 NORTH, RANGE 4 WEST, MDM, CITY OF REDDING, SHASTA COUNTY, CALIFORNIA

FOR

BRIAN BURK

BY

SHARRAH DUNLAP SAWYER, INC.
Civil Engineering • Land Planning • Surveying & Mapping
Landscape Architecture • Presentation Graphics
320 Hartnell Ave, Redding, CA 96002
530.221.1792 voice • info@sdsengineering.com

LEGEND

- 20% AND GREATER SLOPE
- 100-YEAR WATER SURFACE ELEVATION
- RIGHT-OF-WAY DEDICATION FOR FUTURE SHASTA VIEW DRIVE
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SEASONAL WETLAND
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN CATCH BASIN
- PROPOSED STORM DRAIN HEADWALL
- PROPOSED MANHOLE
- SS — PROPOSED SANITARY SEWER LINE
- W — PROPOSED WATER LINE
- PROPOSED WATER LINE BLOWOFF
- (E) 8" W — EXISTING WATER LINE
- EXISTING WATER LINE TO BE REALIGNED

NOTE: STREAM AND WETLAND INFORMATION PER AQUATIC RESOURCE DELINEATION REPORT PREPARED BY ENPLAN AND DATED SEPTEMBER 2019

60 0 30 60
1 INCH = 60 FEET

THE OASIS SUBDIVISION TENTATIVE MAP PRELIMINARY GRADING & UTILITIES (NORTH)

BEING LOCATED IN THE WEST HALF OF SECTION 8, TOWNSHIP 32 NORTH, RANGE 4 WEST, MDM, CITY OF REDDING, SHASTA COUNTY, CALIFORNIA

FOR

BRIAN BURK

BY

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DATE: JANUARY 20, 2025 SCALE: 1"=60' SHEET 4 OF 5

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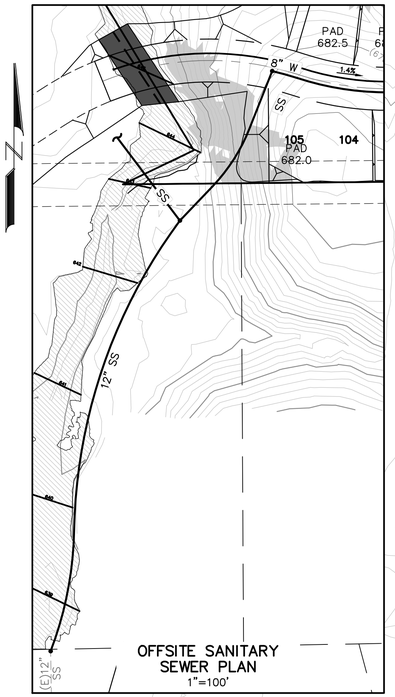

LEGEND

- 20% AND GREATER SLOPE
- 100-YEAR WATER SURFACE ELEVATION
- DRY CREEK CROSSING
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SEASONAL WETLAND
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN CATCH BASIN
- PROPOSED STORM DRAIN HEADWALL
- PROPOSED MANHOLE
- SS — PROPOSED SANITARY SEWER LINE
- W — PROPOSED WATER LINE
- PROPOSED WATER LINE BLOWOFF
- (E) 8" W — EXISTING WATER LINE
- EXISTING WATER LINE TO BE REALIGNED

NOTE: STREAM AND WETLAND INFORMATION PER AQUATIC RESOURCE DELINEATION REPORT PREPARED BY ENPLAN AND DATED SEPTEMBER 2019

THE OASIS SUBDIVISION TENTATIVE MAP PRELIMINARY GRADING & UTILITIES (NORTH)

BEING LOCATED IN THE WEST HALF OF SECTION 8, TOWNSHIP 32 NORTH, RANGE 4 WEST, MDM, CITY OF REDDING, SHASTA COUNTY, CALIFORNIA

FOR

BRIAN BURK

BY

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DATE: JANUARY 20, 2025 SCALE: 1"=60' SHEET 5 OF 5

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Attachment B

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- Wetland/Biological Evaluation for the Gold Hills Park Sewer Line Corridor and Shasta View Drive Extension, letter prepared by ENPLAN, dated June 28, 2005

BIOLOGICAL STUDY REPORT

Gold Hills Site
City of Redding, Shasta County, California

Prepared for:

Brian Burk

September 2019
100-05

Prepared by:

ENPLAN
3179 Bechelli Lane, Suite 100, Redding, CA 96002
(530) 221-0440
www.enplan.com

TABLE OF CONTENTS

TABLES

APPENDICES

1. INTRODUCTION

This biological study report addresses a ±64-acre parcel in the City of Redding, located southwest of the intersection of Oasis Road and Indian Country Drive. As shown in Figure 1, the site is located in Section 8, Township 32 North, Range 4 West (U.S. Geological Survey's Project City 7.5-minute quadrangle. An aerial photograph of the site is shown in Figure 2. The site is comprised of Shasta County Assessor's Parcels 074-220-005, 074-230-023, -024, the eastern portion of 074-240-001, and the western portion of 074-210-004. With the exception of a few dirt roads, the site is undeveloped.

The purpose of this biological study report (BSR) is to identify and characterize sensitive biological resources that may occur on the ±64-acre site or that may be adversely affected by development of the subject parcels. This BSR is intended to serve as a baseline study to assist in the preparation of subsequent environmental documentation. Recommended measures to protect special-status species, sensitive habitats, and nesting migratory birds are presented in the report.

2. METHODOLOGY AND STAFF QUALIFICATIONS

Records reviewed for this evaluation consisted of California Natural Diversity Data Base (CNDDB) records for special-status plants, animals, and natural communities (see Table 1); California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (see Table 2); U.S. Fish and Wildlife Service (USFWS) records for federally listed, proposed, and Candidate plant and animal species under jurisdiction of the USFWS (see Appendix B); National Marine Fisheries Service (NMFS) records for anadromous fish species under the jurisdiction of the NMFS (see Appendix B); soils records maintained by the U.S. Department of Agriculture's Natural Resources Conservation Service, and National Wetlands Inventory (NWI) maps (USFWS, 2019). The CNDDB records search covered a ten-mile radius around the study site. This review of records addressed portions of the Balls Ferry, Bella Vista, Bend, Bohemotash Mountain, Clough Gulch, Cottonwood, Enterprise, Minnesota Mountain, O'Brien, Olinda, Palo Cedro, Project City, Redding, Shasta Dam, and Whiskeytown quadrangles.

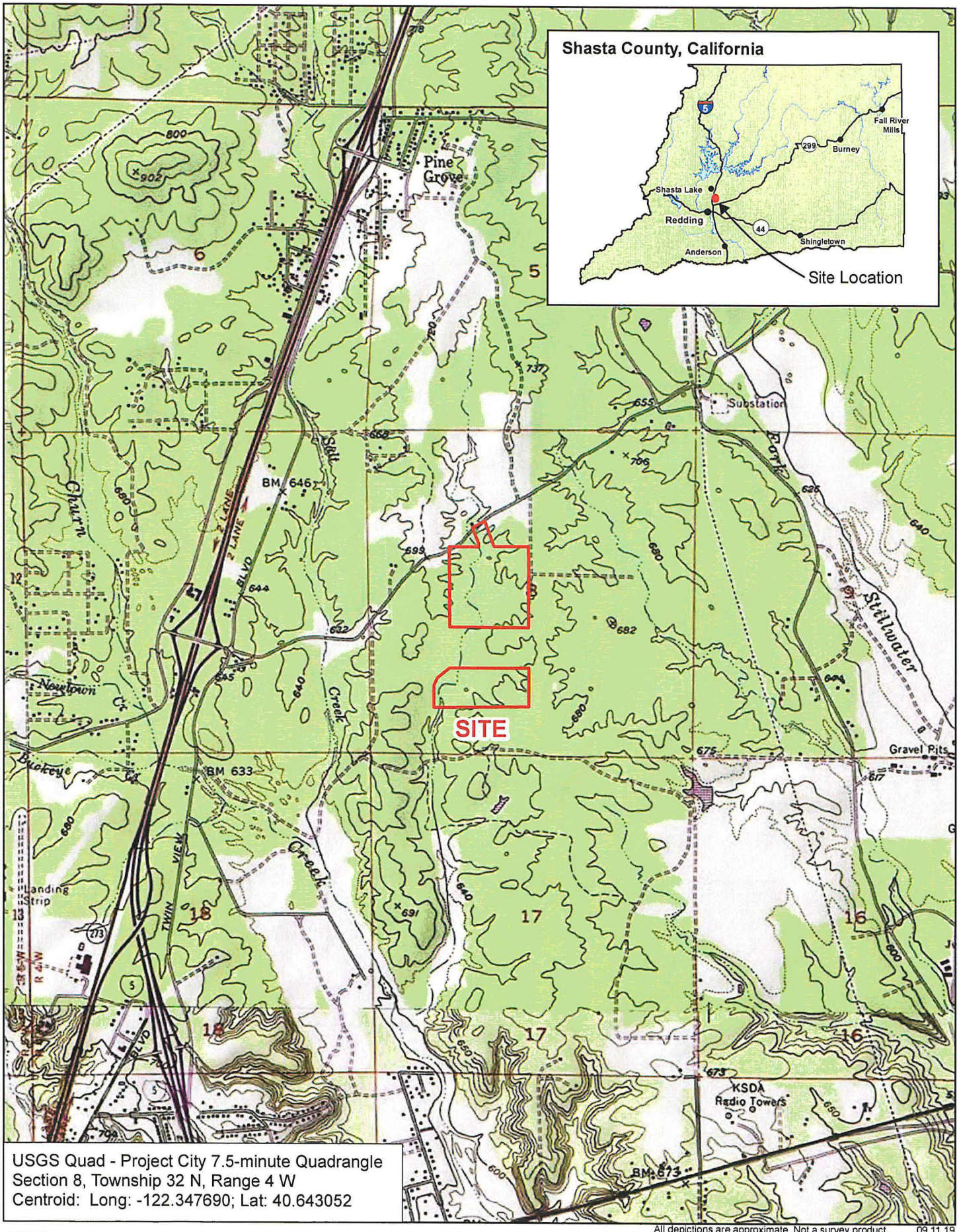

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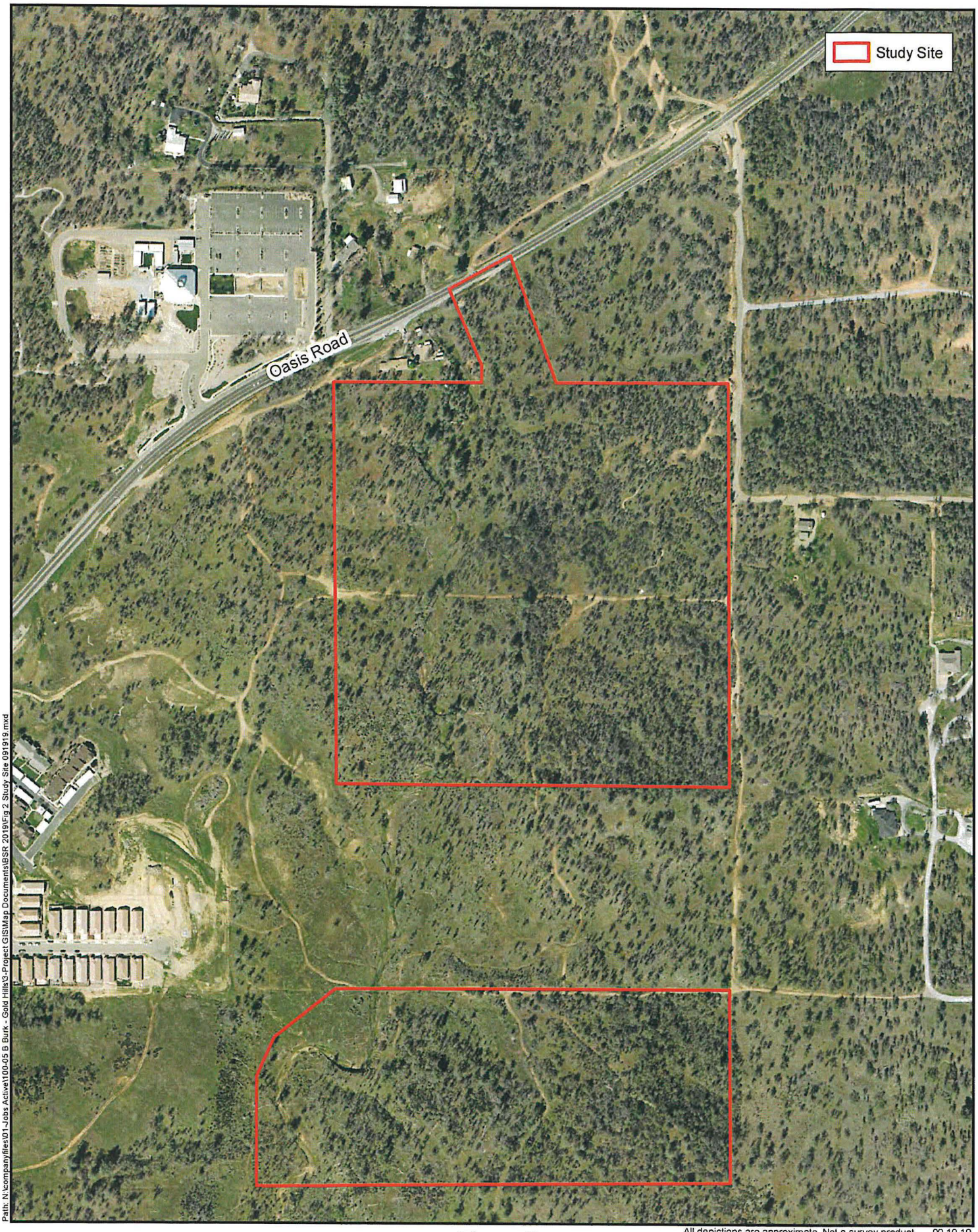
Figure 1

Project Vicinity

ENPLAN



Path: N:\companyfiles\01-Jobs Active\100-05 B Burk - Gold Hills\3-Project GIS\Map Documents\BSR 2019\Fig 2 Study Site 091919.mxd

All depictions are approximate. Not a survey product. 09.19.19

0 400 Feet

Figure 2

Study Site

ENPLAN

Upon completion of the pre-field review, a botanical evaluation was conducted on September 13, 2019, and included approximately 6 hours of field survey time. Most of the special-status plant species potentially occurring on the site would not have been evident at the time the fieldwork was conducted. The potential presence of species not readily identifiable during the field survey was determined on the basis of observed habitat characteristics.

The general wildlife evaluation was conducted in two phases. The first phase consisted of the records search described above. Under the second phase, the habitats on the site were identified through field reconnaissance and their potential to support special-status species was evaluated. An intensive wildlife survey was conducted on September 14, 2019, and included approximately 6 hours of field survey time. Additional wildlife observations were recorded during the botanical and wetland field studies on August 15, as well as September 6 and 13, 2019. Although some of the special-status animal species potentially occurring on the site would not have been evident at the time the fieldwork was conducted, the potential presence of these species was determined on the basis of observed habitat characteristics.

ENPLAN is an environmental consulting firm with over 35 years of experience with projects throughout northern California. All work associated with this project was performed by Donald Burk, Environmental Services Manager, John Luper, Environmental Scientist, and Jacob Ewald, Wildlife Biologist. Mr. Burk received his Master of Science degree in Botany, and Bachelor of Arts degrees in Chemistry and Biological Sciences, from California State University, Chico. Having worked in the environmental consulting field since 1981, he has an in-depth background in a broad spectrum of environmental studies. His experience includes managing the preparation of CEQA/NEPA environmental compliance documents, environmental site assessments, wildlife and botanical studies, wetland delineations, reclamation plans, and stream restoration projects. Mr. Burk was responsible for the botanical surveys and final report review.

Mr. Luper received his Bachelor of Science degree in Botany and Biology (Environmental) from California State University, Humboldt. He has over fourteen years of experience working as a biologist and regulatory specialist throughout northern

California. His experience includes preparation of CEQA/NEPA environmental compliance documents, wetland delineations, biological studies, open space preserve development, environmental monitoring for construction activities, and preparation/ implementation of storm water management plans. Mr. Luper was responsible for the delineation of waters subject to federal and State jurisdiction, project mapping, and drafting the report.

Mr. Ewald received his Bachelor of Science degree in Biology from the University of California, Davis. He has over four years of experience in California, where he has conducted stream surveys, endangered species surveys, nesting bird surveys, and construction monitoring. Mr. Ewald conducted the wildlife survey for the project.

3. RESULTS

3.1 Plant Communities/Wildlife Habitats

The site ranges in elevation between 640 and 705 feet above sea level, and, generally speaking, slopes to the west. On-site drainages primarily discharge to Dry Gulch (5:IS) that bisects the western portion of the site. Dry Gulch is tributary to Churn Creek, which confluences with the Sacramento River.

Based on the field evaluation, the study site was found to support an open blue oak woodland with an annual grassland understory, and a minor amount of wetland vegetation. The oak woodland is represented by blue oak, interior live oak, and gray pine. The shrub layer is represented by poison oak, buckbrush, and white-leaved manzanita. The annual grassland is represented by rattlesnake grass, slender wild oats, ripgut grass, and medusahead. Typical wetland species include annual ryegrass, nit grass, jointed coyote thistle, western marsh cudweed, and soft chess. Representative photographs of the on-site communities are provided in **Appendix A**.

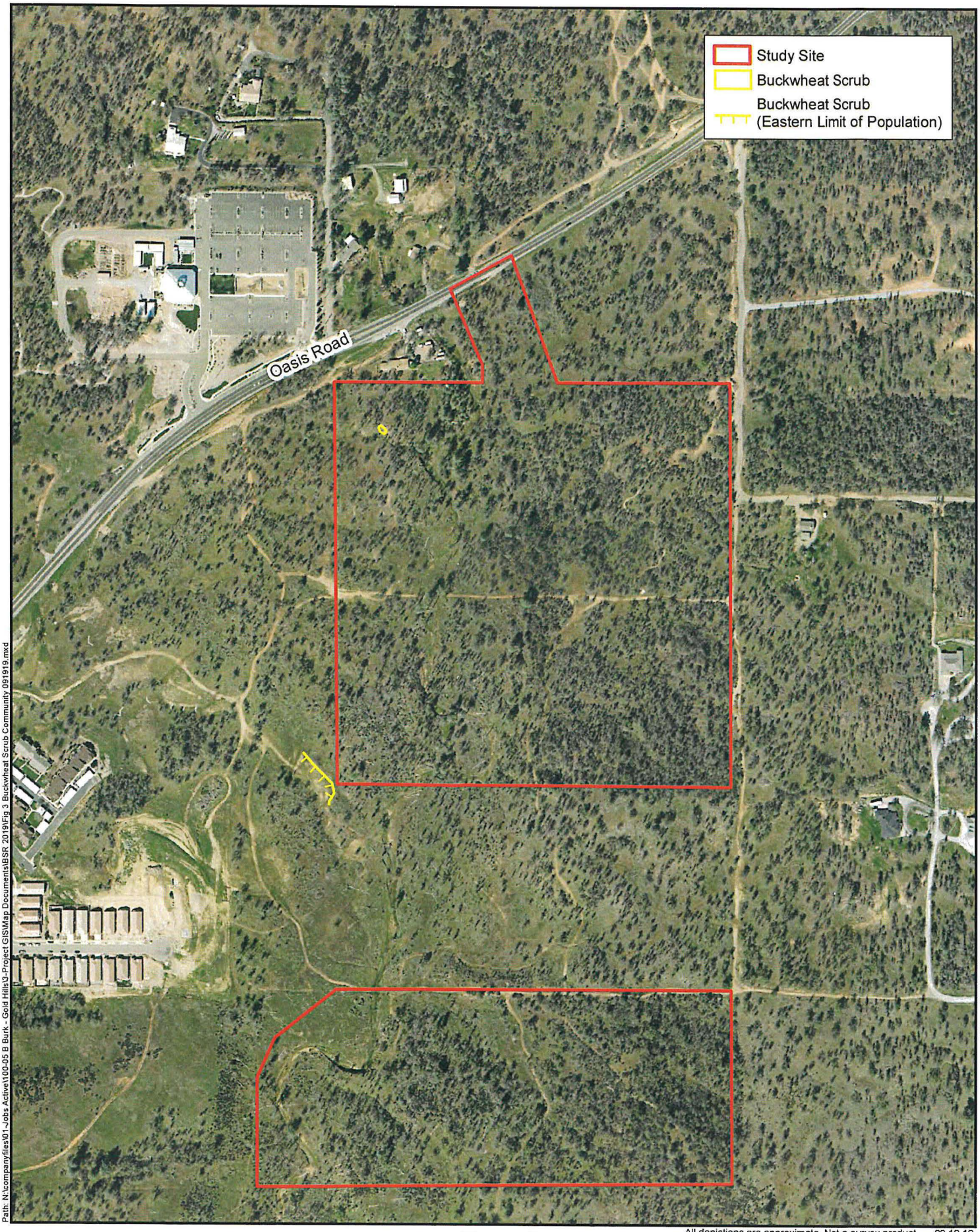
Review of CNDDB records identified three sensitive natural communities within a ten-mile radius of the study site: Great Valley Cottonwood Riparian Forest, Great Valley Valley Oak Riparian Forest, and Great Valley Willow Scrub. None of these communities are present on the study site. Based on CDFW's Natural Communities List, the on-site community is a blue oak woodland alliance and most closely resembles the following three defined associations: Quercus douglasii – Quercus wislizeni – Pinus sabiniana

(71.020.18), Quercus douglasii – Quercus wislizeni / Ceanothus cuneatus (71.020.07), and Quercus douglasii / grass (71.020.05). None of these plant associations is considered as a sensitive natural community by CDFW; the on-site blue oak woodland community is likewise not considered as a sensitive natural community.

The blue oak/gray pine woodland contains a small ±0.009-acre inclusion of a sensitive plant community: buckwheat scrub. The community occurs on a gravelly slope above one of the tributaries to Dry Gulch (**Figure 3**). The subject population has been inspected multiple times since 2004, and has remained relatively unchanged. The community is dominated by tripod buckwheat; depauperate milk-vetch and Sanborn's onion could potentially be present, but would not have been identifiable at the time of the 2019 field visit. Much larger occurrences of this community occur on lands to the west, including one occurrence adjacent to the southwestern corner of the study site (**Figure 3**). Adopted conditions of approval for two residential development projects to the west (The Reserve and Tuscany Villas) call for preservation of significant portions of the unique plant community.

It is our understanding that, with the protection measures established for the sites to the west, preservation of the on-site buckwheat scrub community is not warranted. Nonetheless, measures should be implemented to ensure that the adjoining buckwheat scrub occurrence planned for preservation is not adversely affected by project implementation. Measures should include erecting and maintaining temporary fencing to protect the community during construction and erecting and maintaining permanent fencing to provide for long-term protection. Permanent fencing should be established along the western and southern site boundaries adjacent to the mapped community. Implementation of **Mitigation Measure 1**, as further discussed below, would ensure that the buckwheat scrub community is not adversely affected by project implementation.

In accordance with the City of Redding's Tree Ordinance, a candidate tree survey should be conducted to determine if the site supports candidate trees and/or candidate tree groupings. Survey results should be evaluated in conjunction with future site plans to determine the appropriate level of tree retention. Although blue oak woodlands are not identified as a sensitive natural community by CDFW, retention of oaks is warranted to avoid cumulatively significant impacts on the community. As called



Path: N:\companyfiles\01-Jobs Active\100-05 B Burk - Gold Hills\3-Project GIS\Map Documents\BSR 2019\Fig 3 Buckwheat Scrub Community 091919.mxd

All depictions are approximate. Not a survey product. 09.19.19

0 400 Feet

Figure 3

Buckwheat Scrub - 2019 Survey Results

ENPLAN

for in **Mitigation Measure 2,** priority should be given to retention of oaks along Dry Gulch and other intermittent streams.

3.2 Special-Status Plant Species

Review of the U.S. Fish and Wildlife Service species list (see **Appendix B**) for the study area identified no federally listed plant species as potentially being affected by the proposed project. The study site does not contain designated critical habitat for any federally listed plant species.

Review of California Natural Diversity Data Base (CNDDB) records (**Table 1**) showed that no special-status plant species have been previously reported on the study site. Thirteen special-status plant species have been broadly mapped as potentially occurring within a ten-mile radius of the study area: Canyon Creek stonecrop, legenere, maverick clover, northern clarkia, oval-leaved viburnum, Red Bluff dwarf rush, Sanford's arrowhead, Shasta huckleberry, Shasta limestone monkeyflower, Shasta snow-wreath, silky cryptantha, slender Orcutt grass, and Sulphur Creek brodiaea. In addition, three non-status plant species have been broadly mapped as potentially occurring within a ten-mile radius of the study area: dubious pea, Henderson's bent grass, and woolly meadowfoam.

The CNPS Inventory (**Table 2**) identifies seven additional non-status plants within the USGS Project City quadrangle in which the study site occurs: depauperate milk-vetch, Redding checkerbloom, Sanborn's onion, Shasta County arnica, Shasta maidenhair fern, slender false lupine, and thread-leaved beakseed. Based on botanical surveys performed in 2004, 2005, 2007, and 2019, another non-status plant, tripod buckwheat, is known to occur on the study site.

The potential for each of the special-status plant species to occur on the study site is evaluated in **Table 3**. None of these or any other special-status plant species were observed during the botanical field survey. However, two non-status plants, tripod buckwheat and Henderson's bentgrass, were observed on the site. Further, depauperate milk-vetch, Redding checkerbloom, and Sanborn's onion have a high potential to occur on the site, while dubious pea, woolly meadowfoam, and maverick clover have a low potential to be present.

Tripod buckwheat is assigned to California Rare Plant Rank (CRPR) 4.2 (Limited Distribution in California – Fairly Endangered in California), and was observed near a small drainage near the northwestern corner of the site. Henderson's bentgrass is assigned to CRPR 3.2 (Plants about which more information is needed: Review List – Moderately Threatened in California) and was observed along the edges of several drainages. An extensive survey of Henderson bentgrass was not conducted. Redding checkerbloom is also assigned to CRPR 3, and generally occurs in small populations in open oak woodlands in Shasta and Tehama counties. The Jepson Manual notes that Redding checkerbloom is readily confused with giant checkerbloom and harsh checkerbloom; all three species occur in Shasta County, which makes identification difficult. Remnants of a checkerbloom were observed during the September survey, but could not be identified to species. Sanborn's onion is assigned to CRPR 4.2, and generally occurs on serpentine or gravelly outcrops in chaparral, cismontane woodland, and lower montane coniferous forest. Depauperate milk-vetch is assigned to CRPR 4.3 and generally occurs in stony flats with thin soils. Depauperate milk-vetch and Sanborn's onion have a high potential to co-occur with tripod buckwheat.

Dubious pea (CRPR 3) usually occurs in open to brushy woodland habitats although its presence is difficult to predict, the site appears to have a low potential to support this species. Woolly meadowfoam (CRPR 4.2) often occurs in and adjacent to seasonal drainages in oak woodlands and annual grasslands, and has a low to moderate potential to be present. Maverick clover (CRPR 1B.2: Plants Rare, Threatened or Endangered in California and Elsewhere -- Fairly Threatened in California) is the only special-status plant thought to have some potential to occur on the site. There are very few known occurrences of this species, and all are south of Highway 44. However, the species is relatively recently described and comprehensive surveys for the species have not been conducted. Accordingly, we cannot rule out the potential presence of this species.

A list of plant species observed during the field survey is provided in **Appendix C**. As described in **Mitigation Measure 3**, we recommend performing a supplemental botanical survey in the spring to identify species that would not have been evident or identifiable during the September site visit.

3.3 Special-Status Wildlife Species

Review of the NMFS species list found that Central Valley spring-run Chinook salmon, evolutionary significant unit (ESU) (federally threatened); Sacramento River winter-run (SRWR) Chinook salmon ESU (federally endangered); and California Central Valley (CCV) steelhead, distinct population segment (DPS) (federally threatened) occur in the Project City quadrangle. No critical fish habitat or essential fish habitat (EFH) is identified in the Project City quadrangle.

Review of the USFWS species list for the study area (see **Appendix B**) identified the following federally listed animal species as potentially being affected by the proposed project: northern spotted owl, California red-legged frog, Delta smelt, Shasta crayfish, and vernal pool fairy shrimp. The USFWS does not identify designated critical habitat in the study area for any federally listed animal species.

As shown in **Table 1**, review of CNDDB records showed that no special-status wildlife species have been previously reported on the study site. Nineteen special-status animals have been broadly mapped as potentially occurring within a ten-mile radius of the study area: American peregrine falcon, bald eagle, bank swallow, Central Valley spring-run Chinook salmon, Central Valley steelhead, Sacramento River winter-run Chinook salmon, fisher-west coast DPS, foothill yellow-legged frog, pallid bat, purple martin, Shasta salamander, spotted bat, Townsend's big-eared bat, tricolored blackbird, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, western pond turtle, and western spadefoot. In addition, fourteen non-status animal species have been reported within the ten-mile search radius: Antioch Dunes anthicid beetle, California linderiella, great egret, Klamath sideband, kneecap lanx, North American porcupine, Oregon shoulderband, Sacramento anthicid beetle, Shasta chaparral, Shasta hesperian, silver-haired bat, western pearlshell, Wintu sideband, and Yuma myotis.

The potential for each of the above special-status animal species to occur on the project site is further evaluated in **Table 3**. None of these or any other special-status animal species were observed during the field survey, however, two special-status have a low potential to occur on the study site: purple martin and pallid bat. Implementation

of **Mitigation Measure 4**, as further discussed below, would ensure that nesting birds are not adversely affected by project implementation; no further mitigation is needed with respect to the purple martin. Pallid and spotted bats could potentially roost in some of the larger trees and snags present on the site. Pallid bats roost alone, in small groups, or in large colonies; while the spotted bat is solitary. To ensure that bats are not adversely affected by project implementation, a two-step process for removal of these trees is recommended, as outlined in **Mitigation Measure 5**. A list of wildlife species observed during the field survey is provided in **Appendix C**.

4. NESTING MIGRATORY BIRDS

Under the Migratory Bird Treaty Act (MBTA) of 1918, migratory bird species, their nests, and their eggs are protected from injury or death, and any project-related disturbances during the nesting period. In addition, California Fish and Game Code §3503 and §3503.5 provide regulatory protection to resident and migratory birds and all birds of prey within the State.

The study site has a high potential to support nesting birds in future seasons. Construction activities could directly affect nesting migratory birds as a result of tree removal. Indirectly effects such as increased noise levels and increased human activity could lead to nest abandonment by adults. Most birds expected to occur on the site nest between February 1 and August 31. Removal of potential nesting habitat to other times of the year (before February 1 or after August 31) is unlikely to affect nesting birds, and is the preferred method for ensuring that nesting birds are not adversely affected. If work must occur during the nesting season, a nesting survey should be conducted in advance of vegetation removal. If active nests are present, a buffer zone should be established around the nest to ensure that nesting birds are not directly or indirectly affected. Implementation of **Mitigation Measure 4** would preclude disturbance to nesting migratory birds.

5. NOXIOUS WEEDS

The introduction and spread of noxious weeds during construction activities has the potential to adversely impact natural habitats. A noxious weed is a plant that has

been defined as a pest by federal or state law. In California, the California Department of Food and Agriculture (CDFA) maintains a list of plants that are considered threats to the well-being of the state. Each noxious weed identified by the CDFA receives a rating that reflects the importance of the pest, the likelihood that eradication or control efforts would be successful and the present distribution of the pest within the state. Below is a description of ratings categories that apply to the study area:

> **Category A**. A pest of known economic or environmental detriment and is either not known to be established in California or it is present in a limited distribution that allows for the possibility of eradication or successful containment. A-rated pests are prohibited from entering the state because they have been determined to be detrimental to agriculture.
>
> **Category B**. A pest of known economic or environmental detriment and, if present in California, it is of limited distribution. B-rated pests are eligible to enter the state if the receiving county has agreed to accept them.
>
> **Category C.** A pest of known economic or environmental detriment and, if present in California, it is usually widespread. C-rated organisms are eligible to enter the state as long as the commodities with which they are associated conform to pest cleanliness standards when found in nursery stock shipments.

Three Category C noxious weeds: Italian thistle, Klamath weed, and yellow star-thistle, were observed in the study area during the botanical survey. These weeds are of widespread distribution in the County, and further spread of these weeds is not anticipated. However, there is a low potential for other noxious weeds to be introduced into the study area if construction vehicles are not properly washed. As required by **Mitigation Measure 6**, the potential for introduction and spread of noxious weeds can be avoided/minimized by using only certified weed-free erosion control materials, mulch, and seed; limiting any import or export of fill material to material that is known to be weed free; and requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering and upon leaving the job site.

6. CONCLUSIONS AND MITIGATION MEASURES

6.1 Conclusions

Based on the records search results, field observations throughout the study corridor on a number of occasions, and the above analyses, we make the following findings:

- One sensitive natural community, buckwheat scrub, was mapped near the northwestern corner of the site. With the proposed avoidance/preservation of off-site buckwheat scrub communities (**Mitigation Measure 1**), preservation of the on-site population is not warranted.
- One small seasonal wetland and a number of ephemeral and intermittent streams are present on the site. A separate delineation report has been completed to document the location and extent of these features. Permits from the Corps of Engineers, Regional Water Quality Control Board, and/or California Department of Fish and Wildlife will be required if any work in waters is proposed; conditions of these permits would ensure no net loss of waters.
- The site has the potential to support special-status plant species. We recommend performing a supplemental botanical survey in spring prior to development (**Mitigation Measure 2**).
- Site development would contribute to the cumulative loss of blue oak woodlands. To minimize this impact, a tree survey should be completed and priority should be given to retention of trees along Dry Gulch and other intermittent streams (**Mitigation Measure 3**).
- The project site has the potential to support nesting birds, including special-status birds. With implementation of **Mitigation Measure 4,** potential adverse effects on these birds would be avoided.
- The project site has the potential to support roosting solitary and colonial bats, including special-status bats. With implementation of **Mitigation Measure 5,** potential adverse effects on these bats would be avoided.
- Project implementation has the potential to result in the introduction and spread of noxious weeds. **Mitigation Measure 6** provides steps to be taken to minimize this potentially adverse impact.

6.2 Mitigation Measures

To ensure there are no direct or indirect impacts to on-site resources, we recommend the following mitigation measures be implemented as part of a future development:

MM1: *Protect the Off-Site Buckwheat Scrub Community.* Erect and maintain temporary fencing to protect the off-site buckwheat scrub community during construction and erecting and maintaining permanent fencing to provide for long-term protection. Permanent fencing shall be established along the western and southern site boundaries adjacent to the mapped community.

MM 2: *Conduct a Tree Survey and Retain Candidate Trees and Tree Groupings*. In accordance with the City of Redding's Tree Ordinance, a candidate tree survey shall be conducted to identify candidate trees and candidate tree groupings on the site. Survey results should be evaluated in conjunction with future site plans to determine the appropriate level of tree retention. Priority shall be given to retention of oaks along Dry Gulch and other intermittent streams.

MM 3: *Conduct a Supplemental Botanical Survey in Spring Blooming Period*. A supplemental botanical survey shall be conducted in the spring blooming period to identify species that would not have been evident during the September site visit. The study shall be completed in general accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW, 2018). If special-status species are observed, consultation shall be undertaken with California Department of Fish and Wildlife staff and the City of Redding to establish appropriate avoidance or mitigation measures.

MM 4: *Avoid Disturbing Nesting Migratory Birds.* In order to avoid impacts to nesting birds and raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5, including their nests and eggs, one of the following shall be implemented:

- Vegetation removal and other ground-disturbance activities associated with construction shall occur between September 1 and January 31 when birds are not nesting; or
- If vegetation removal or ground disturbance activities occur during the nesting season, a pre-construction nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area.
- Surveys shall begin prior to sunrise and continue until vegetation and nests have been sufficiently observed. The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds. At a minimum, the survey report shall include a description of the area surveyed, date and time of the survey, ambient conditions, bird species observed in the area, a description of any active nests observed, any evidence of breeding behaviors (e.g., courtship, carrying nest materials or food, etc.), and a description of any outstanding conditions that may have impacted the survey results

(e.g., weather conditions, excess noise, the presence of predators, etc.).

- The results of the survey shall be submitted to the California Department of Fish and Wildlife upon completion. The survey shall be conducted no more than one week prior to the initiation of construction. If construction activities are delayed or suspended for more than one week after the pre-construction survey, the site shall be resurveyed.
- If active nests are found, appropriate actions shall be implemented to ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

MM 5: *Avoid the Potential "Take" of Colonial and/or Solitary Bats Potentially Roosting in the On-Site Tree Canopy.* Removal of trees with a diameter at breast height (dbh) of 10 inches or greater shall only be conducted within seasonal periods of bat activity during which specific temperature and precipitation criteria are met. Removal of such trees may be conducted between about March 15 (or after evening temperatures rise above 45°F) and April 30, or between August 15 and about October 1 (or before evening temperatures fall below 45°F); no eviction work shall be conducted if more than 1/2" of rainfall has occurred within the preceding 24 hours. On the first day, non-habitat features of the trees (e.g., branches without cavities, crevices, or exfoliating bark) shall be removed with chainsaws and be chipped on-site to create high levels of noise and vibration. On the following day, the trees shall be removed from the site. On the subsequent day, trees larger than 10" dbh shall be removed, beginning with smaller trees first.

MM 6: *Introduction and Spread of Noxious Weeds*. The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

- Using only certified weed-free erosion control materials, mulch, and seed.
- Limiting any import or export of fill material (excluding fill material that will be overcovered with asphalt, concrete or other impervious materials) to material that is known to be weed free.
- Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering and upon leaving the job site.

TABLES

Table 1. Rarefind (CNDDB) Report Summary (July 31, 2019 Data)

Reserve at Gold Hills Project – 10-mile Radius

Listed Element	Quadrangle[1]																Status[2]
	BF	BV	BD	BM	CG	CW	EP	IG	MM	OB	OL	PC	PJ	RD	SD	WT	
Animals																	
American peregrine falcon				•													FD, SD, SFP
Antioch Dunes anthicid beetle															•		None
Bald eagle		•				•	•	•	•	•			•		•		FD, SE, SFP
Bank swallow							•										ST
California linderiella							•										None
Chinook salmon-Central Valley spring-run ESU											•			•			FT, ST
Chinook salmon-Sacramento River winter-run ESU			•														FE, SE
Fisher-west coast DPS				•						•			•		•		ST, SSSC
Foothill yellow-legged frog							•			•			•	•	•		SCT, SSSC
Great egret														•			None
Klamath sideband				•													None
Kneecap lanx														•			None
North American porcupine		•															None
Oregon shoulderband				•						•			•	•			None
Pallid bat												•					SSSC
Purple martin		•															SSSC
Sacramento anthicid beetle															•		None
Shasta chaparral		•		•						•			•	•	•		None
Shasta hesperian													•				None
Shasta salamander		•		•					•	•			•		•	•	ST
Silver-haired bat							•			•							None
Spotted bat												•					SSSC
Steelhead-Central Valley DPS	•										•	•					FT
Townsend's big-eared bat								•						•			SSSC
Tricolored blackbird														•			ST, SSSC
Valley elderberry longhorn beetle					•		•										FT
Vernal pool fairy shrimp							•										FT
Vernal pool tadpole shrimp							•					•					FE
Western pearlshell							•										None
Western pond turtle							•			•			•	•	•		SSSC
Western spadefoot							•										SSSC
Wintu sideband													•				None
Yuma myotis				•													None

Table 1. Rarefind (CNDDB) Report Summary (July 31, 2019 Data)
Reserve at Gold Hills Project – 10-mile Radius

Listed Element	Quadrangle[1]																Status[2]
	BF	BV	BD	BM	CG	CW	EP	IG	MM	OB	OL	PC	**PJ**	RD	SD	WT	
Plants																	
Canyon Creek stonecrop																•	1B.3
Dubious pea														•			3
Henderson's bent grass							•						•				3.2
Legenere							•										1B.1
Maverick clover														•			1B.2
Northern clarkia				•									•		•		1B.3
Oval-leaved viburnum		•															2B.3
Red Bluff dwarf rush							•						•				1B.1
Sanford's arrowhead													•				1B.2
Shasta huckleberry				•											•	•	1B.3
Shasta limestone monkeyflower				•						•							1B.1
Shasta snow-wreath		•								•			•				1B.2
Silky cryptantha							•					•	•				1B.2
Slender Orcutt grass							•										FT, SE, 1B.1
Sulphur Creek brodiaea														•			1B.1
Woolly meadowfoam												•					4.2
Natural Communities																	
Great Valley Cottonwood Riparian Forest							•										None
Great Valley Valley Oak Riparian Forest							•										None
Great Valley Willow Scrub						•	•										None

Highlighting Denotes the Quadrangle in which Project Site is Located

[1]Quadrangle Code

BF = Balls Ferry
BV = Bella Vista
BD = Bend
BM = Bohemotash Mountain
CG = Clough Gulch
CW = Cottonwood
EP = Enterprise
IG = Igo
MM = Minnesota Mountain
OB = O'Brien
OL = Olinda
PC = Palo Cedro
PJ = Project City
RD = Redding
SD = Shasta Dam
WT = Whiskeytown

[2]Status Codes

Federal

FE = Federally Listed – Endangered
FT = Federally Listed – Threatened
FC = Federal Candidate Species
FPT = Federal Proposed – Threatened
FD = Federally Delisted
FSC = Federal Species of Concern

State

SFP = State Fully Protected
SR = State Rare
SE = State Listed – Endangered
ST = State Listed – Threatened
SCT = State Candidate – Threatened
SD = State Delisted
SSSC = State Species of Special Concern

Rare Plant Rank

List 1A = Presumed extirpated in California and either rare or extinct elsewhere
List 1B = Rare or Endangered in California and elsewhere
List 2A = Presumed extirpated in California, but more common elsewhere
List 2B = Rare or Endangered in California, but more common elsewhere
List 3 = Plants for which we need more information - Review list (generally not considered special-status, unless unusual circumstances warrant)
List 4 = Plants of limited distribution - Watch list (generally not considered special-status, unless unusual circumstances warrant)

Threat Ranks

0.1 = Seriously Threatened in California
0.2 = Fairly Threatened in California
0.3 = Not Very Threatened in California

Natural Community Rank

Critically Imperiled	Critically imperiled in the state because of extreme rarity (often five or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation.
Imperiled	Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation.
Vulnerable	Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
Apparently Secure	Uncommon but not rare; some cause for long-term concern due to declines or other factors.
Secure	Common, widespread, and abundant in the state.

TABLE 2
California Native Plant Society
Inventory of Rare and Endangered Plants
U.S. Geological Survey's Project City 7.5-minute Quadrangle

Common Name	Scientific Name	CA Rare Plant Rank	Blooming Period	State Listing Status	Federal Listing Status
Depauperate milk-vetch	*Astragalus pauperculus*	4.3	Mar-Jun	None	None
Henderson's bent grass	*Agrostis hendersonii*	3.2	Apr-Jun	None	None
Northern clarkia	*Clarkia borealis ssp. borealis*	1B.3	Jun-Sep	None	None
Red Bluff dwarf rush	*Juncus leiospermus var. leiospermus*	1B.1	Mar-Jun	None	None
Redding checkerbloom	*Sidalcea celata*	3	Apr-Aug	None	None
Sanborn's onion	*Allium sanbornii var. sanbornii*	4.2	May-Sep	None	None
Sanford's arrowhead	*Sagittaria sanfordii*	1B.2	May-Oct (Nov)	None	None
Shasta County arnica	*Arnica venosa*	4.2	May-Jul (Sep)	None	None
Shasta maidenhair fern	*Adiantum shastense*	4.3	Apr-Aug	None	None
Shasta snow-wreath	*Neviusia cliftonii*	1B.2	Apr-Jun	None	None
Silky cryptantha	*Cryptantha crinita*	1B.2	Apr-May	None	None
Slender false lupine	*Thermopsis gracilis*	4.3	Mar-Jul	None	None
Thread-leaved beakseed	*Bulbostylis capillaris*	4.2	Jun-Aug	None	None

Rare Plant Rank	
1A	Plants presumed extinct in California and either rare or extinct elsewhere
1B	Plants rare, threatened or endangered in California and elsewhere
2A	Plants presumed extinct in California but common elsewhere
2B	Plants rare, threatened, or endangered in California but common elsewhere
3	Review List: Plants about which more information is needed (generally not considered special-status, unless unusual circumstances warrant)
4	Watch List: Plants of limited distribution (generally not considered special-status, unless unusual circumstances warrant)
Rare Plant Threat Rank	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

Source: *California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). http://www.rareplants.cnps.org. Accessed September 2019.*

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
PLANTS							
Canyon Creek stonecrop	*Sedum obtusatum* ssp. *paradisum*	1B.3	Canyon Creek stonecrop occurs on rock faces or in crevices of exposed granite in the Klamath Mountains of northwestern California. The species is reported between 1,000 and 6,300 feet in elevation. The flowering period is May through June.	No	No	No	No potentially suitable habitat for Canyon Creek stonecrop is present in the study site. Canyon Creek stonecrop was not observed during the botanical survey and is not expected to be present.
Depauperate milk-vetch	*Astragalus pauperculus*	4.3	Depauperate milk vetch is an annual herb that occurs in chaparral, cismontane woodland, and valley and foothill grassland from 200 to 2,100 feet above sea level. This plant generally occurs in stony flats and/or shallow depressions with thin soils of volcanic origin. The species is reported between 200 and 3,700 feet in elevation. The flowering period is March through June.	Yes	No	Pot.	The site provides suitable habitat for depauperate milk-vetch. The vetch is known to occur on adjacent sites, and has a high potential to occur on the study site.
Dubious pea	*Lathyrus sulphureus* var. *argillaceus*	3	The dubious pea is a perennial herb that occurs in cismontane woodland and montane coniferous forest. The species is reported between 500 and 1,000 feet in elevation. The flowering period is April and May.	Yes	No	Pot.	The site provides marginal habitat for dubious pea. Dubious pea could potentially occur on the study site.
Henderson's bent grass	*Agrostis hendersonii*	3.2	Henderson's bent grass is an annual herb that occurs along the edges of vernal pools and swales, typically on thin soils overlying a hard pan. Henderson's bent grass is usually found in sparsely vegetated habitats between 200 and 1,000 feet in elevation. The flowering period is April through June.	Yes	No	Yes	Henderson's bent grass was observed along several onsite drainages during the 2019 botanical survey.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Legenere	*Legenere limosa*	1B.1	Legenere is an annual herb that occurs in moist or wet soil associated with vernal pools, vernal marshes, lakes, ponds and sloughs up to 3,000 feet in elevation. The flowering period is April through June.	No	No	No	No vernal pools or other potentially suitable habitats for legenere are present in the study site. Legenere was not observed during the botanical survey and is not expected to be present.
Maverick clover	*Trifolium piorkowskii*	1B.2	Maverick clover is an annual herb that occurs in chaparral, cismontane woodland, lower montane coniferous forests, valley and foothill grasslands, and vernal pools between 525 and 2,230 feet. This plant is typically found in volcanic clay, openings, and often streambanks. The flowering period is April and May.	Yes	No	Pot.	The site provides marginal habitat for maverick clover. The clover could potentially occur on the study site.
Northern clarkia	*Clarkia borealis* ssp. *borealis*	1B.3	Northern clarkia is an annual herb that inhabits chaparral, cismontane woodland, and coniferous forests between 1,200 and 2,400 feet in elevation. The species often occurs in dry, rocky substrates along roads. The flowering period is June through September.	No	No	No	The site elevation is outside the known elevation range of the northern clarkia. The species was not observed during the botanical survey and is not expected to occur on the study site.
Oval-leaved viburnum	*Viburnum ellipticum*	2B.3	Oval-leaved viburnum is a perennial deciduous shrub that occurs in chaparral, cismontane woodland, and lower montane coniferous forests. The species often occurs on north-facing slopes covered by dense brush. Oval-leaved viburnum is found between 700 and 4,600 feet in elevation. The flowering period is May and June.	Yes	No	No	The site provides marginal habitat for oval-leaved viburnum. However, the species would have been evident at the time of the survey, but was not observed. Hence, oval-leaved viburnum is not expected to occur on the study site.
Red Bluff dwarf rush	*Juncus leiospermus* var. *leiospermus*	1B.1	Red Bluff dwarf rush is an annual herb that typically occurs along the edges of vernal pools and vernal drainages, or on clay-rich terrace soils. The species is found between 100 and 3,400 feet in elevation. The flowering period is March through May.	No	No	No	No vernal pools or other potentially suitable habitats for Red Bluff dwarf rush are present on the study site. The species is not expected to be present.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Redding checkerbloom	*Sidalcea celata*	3	Redding checkerbloom is a perennial herb that generally occurs on serpentine soils or generally in open cismontane woodland. The species is reported between 500 and 1,200 feet in elevation. The blooming period is April through August.	Yes	No	Pot.	The site provides suitable habitat for Redding checkerbloom. The checkerbloom has a high potential occur on the study site.
Sanborn's onion	*Allium sanbornii* var. *sanbornii*	4.2	Sanborn's onion is a perennial bulbiferous herb that generally occurs on serpentine or gravelly outcrops in chaparral, cismontane woodland, and lower montane coniferous forest. The species is reported between 800 and 5,000 feet in elevation. The flowering period is May through September.	Yes	No	Pot.	The site provides suitable habitat for Sanborn's onion. The onion has a high potential occur on the study site.
Sanford's arrowhead	*Sagittaria sanfordii*	1B.2	Sanford's arrowhead occurs in freshwater ponds, marshes, and ditches with perennial water. The species is reported from sea level to 2,200 feet in elevation. The flowering period is May through October.	No	No	No	No potentially suitable habitats for Sanford's arrowhead are present in the study site. Sanford's arrowhead was not observed during the botanical survey and is not expected to be present.
Shasta huckleberry	*Vaccinium shastense* ssp. *shastense*	1B.3	Shasta huckleberry, a perennial deciduous shrub, occurs in a variety of habitats including chaparral, cismontane woodland, coniferous forest, and riparian. Within these habitats, Shasta huckleberry may be found along streambanks; around seeps, rocky outcrops, and roadsides; and in disturbed areas. The species is reported between 1,000 and 4,000 feet in elevation. The flowering period is December through September.	No	No	No	The site does not provide suitable habitat for Shasta huckleberry. In any case, the species would have been evident at the time of the survey, but was not observed. Hence, Shasta huckleberry is not expected to occur on the study site

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Shasta limestone monkeyflower	*Erythranthe taylorii*	1B.1	Shasta limestone monkeyflower occurs on limestone rocks in the vicinity of Shasta Lake. The species is reported between 1,100 and 3,300 feet in elevation. The flowering period is February through May.	No	No	No	No potentially suitable habitat for Shasta limestone monkeyflower is present in the study site. Shasta limestone monkeyflower would not be present on the site.
Shasta snow-wreath	*Neviusia cliftonii*	1B.2	The Shasta snow-wreath is a perennial deciduous shrub that is generally limited to limestone-derived soils in shady stream canyons. The species is found between 900 and 1,700 feet in elevation. The flowering period is April through June.	No	No	No	No potentially suitable habitat for Shasta snow-wreath is present in the study site. Shasta snow-wreath was not observed during the botanical survey and is not expected to be present.
Silky cryptantha	*Cryptantha crinita*	1B.2	Silky cryptantha is an annual herb that occurs along low-gradient seasonal streams with broad floodplains, usually on the valley floor, where it is found on gravelly or cobbly substrates. The species also occurs in vernally moist uplands. Less frequently, it occurs along perennial streams, including the Sacramento River. The species is found between 200 and 4,000 feet in elevation. The flowering period is April and May.	Yes	No	No	Although potentially suitable habitat for silky cryptantha is present in the study site, silky cryptantha was not observed during the botanical survey and is not expected to be present. Although the field survey was conducted well after the plant's blooming period, the species would have been detectable if present.
Slender Orcutt grass	*Orcuttia tenuis*	FT, SE, 1B.1	Slender Orcutt grass is an annual herb that occurs in vernal pools and similar habitats, occasionally on reservoir edges or stream floodplains, on clay soils with seasonal inundation in valley grassland, coniferous forest, and sagebrush scrub. The species is found between 100 and 5,800 feet in elevation. The flowering period is May through September.	No	No	No	No vernal pools or other potentially suitable habitats for slender Orcutt grass are present in the study site. Slender Orcutt grass was not observed during the botanical survey and is not expected to be present.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Sulphur Creek brodiaea	*Brodiaea matsonii*	1B.1	Sulphur Creek brodiaea, a perennial bulbiferous herb, is reported only from two locations along Sulphur Creek. This plant occurs on metamorphic amphibolite schists in close proximity to streams, meadows, and/or seeps within cismontane woodland. The species is reported between 600 and 700 feet in elevation. The flowering period is May and June.	No	No	No	No potentially suitable habitats for Sulphur Creek brodiaea are present in the study site. Sulphur Creek brodiaea was not observed during the botanical survey and is not expected to be present.
Tripod buckwheat	*Eriogonum tripodum*	4.2	Tripod buckwheat is a perennial deciduous shrub that generally occurs on gravelly slopes and flats in cismontane woodland and chaparral. The species is reported between 600 and 5,300 feet in elevation. The flowering period is May through July.	Yes	No	Yes	A small population of tripod buckwheat (±0.009 acres) was observed near the northwestern corner of the site.
Woolly meadowfoam	*Limnanthes floccosa* ssp. *floccosa*	4.2	Woolly meadowfoam is an annual herb that generally occurs in vernal pools, ditches, seasonal drainages, and ponds in valley foothill and grasslands, cismontane woodland, and chaparral. The species is reported between 200 and 3,600 feet in elevation. The flowering period is March through June.	Yes	No	Pot.	Potentially suitable habitat for woolly meadowfoam is present in the study site. Woolly meadowfoam has a low to moderate potential occur on the study site.
CRUSTACEANS							
Shasta crayfish	*Pacifastacus fortis*	FE	Shasta crayfish inhabit sections of the Pit River, Fall River, Hat Creek, and tributary streams and springs characterized by cool, clear water, low gradient, and substrate consisting of volcanic rubble on sand and/or gravel.	No	No	No	No suitable habitat occurs in the study site for Shasta crayfish. The Shasta crayfish would thus not be present.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Vernal pool fairy shrimp inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump or basalt-flow depression pools.	No	No	No	No vernal pools or other potentially suitable habitats for vernal pool fairy shrimp are present in the study site. Vernal pool fairy shrimp would thus not be present.
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	Vernal pool tadpole shrimp occur in vernal pools in California's Central Valley and in the surrounding foothills.	No	No	No	No vernal pools or other potentially suitable habitats for vernal pool tadpole shrimp are present in the study site. Vernal pool tadpole shrimp would thus not be present.
BIRDS							
American peregrine falcon	*Falco peregrinus anatum*	FD, SD, SFP	American peregrine falcons frequent water bodies in open areas with cliffs and canyons nearby for nesting. This falcon feeds and breeds near water.	No	No	No	No suitable nesting habitat is present in the study site. Thus, the American peregrine falcon would not nest in the study site.
Bald eagle	*Haliaeetus leucocephalus*	FD, SE, SFP	Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	No	No	No	No suitable nesting habitat for the bald eagle is present on the study site. No bald eagles or eagle nests were observed during the biological surveys. Thus, the bald eagle is not expected to nest on the study site.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Bank swallow	*Riparia riparia*	ST	Bank swallows require vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, or the ocean for nesting.	Yes	No	No	Vertical banks along the southern portion of Dry Gulch provide marginal habitat for bank swallow. However, no nests were observed during the survey. Thus, bank swallow are not expected to be present.
Northern spotted owl	*Strix occidentalis caurina*	FT, SC, SSSC	Northern spotted owls inhabit dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir forests from sea level to approximately 7,600 feet in elevation. Northern spotted owls typically nest in tree cavities, the broken tops of trees, or in snags.	No	No	No	No old-growth forests or potentially suitable nesting habitats are present in the study site. Thus, the spotted owl is not expected to nest in the study site.
Purple martin	*Progne subis*	SSSC	Purple martins inhabit woodlands and low elevation coniferous forests of Douglas-fir, ponderosa pine, and Monterey pine. Purple martins nest in old woodpecker cavities or in man-made structures such as culverts, bridges, or nest boxes.	Yes	No	Pot.	On-site woodlands provide suitable habitat for purple martin. Purple martin could potentially nest in the study site.
Tricolored blackbird	*Agelaius tricolor*	ST, SSSC	Tricolored blackbirds are colonial nesters and generally nest near open water. Nesting areas must be large enough to support a minimum colony of about 50 pairs. Tricolored blackbirds generally construct nests in dense cattails or tules, although they can also nest in thickets of willow, blackberry, wild rose and tall herbs.	No	No	No	No suitable nesting habitat for tricolored blackbirds is present in the study site, and no nests were observed during the biological survey. Thus, the tricolored blackbird is not expected to nest on the site.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
MAMMALS							
Fisher-west coast DPS	*Pekania pennanti*	ST, SSSC	Fishers inhabit mixed conifer forests dominated by Douglas-fir, although they also are encountered frequently in higher elevation fir and pine forests, and mixed evergreen/broadleaf forests. Suitable habitat for fishers consists of large areas of mature, dense forest stands with snags and greater than 50 percent canopy closure. Fishers den in cavities in large trees, snags, logs, rocky areas, or shelters provided by slash or brush piles. Fishers are very sensitive to human activities. Den sites are most often found in areas with no human disturbance.	No	No	No	No suitable habitat occurs in the study site for fisher-west coast DPS. The fisher-west coast DPS would thus not be present.
Pallid bat	*Antrozous pallidus*	SSSC	Pallid bats inhabit grasslands, shrublands, woodlands, and forests, but are most common in open, dry habitats. Day roosts include caves, rock crevices, mines, and occasionally trees and buildings. Buildings are often used for night roosting. The breeding period is October through February, and pups are born between April and July.	Yes	No	Pot.	The site supports marginal habitat for pallid bat. The species could potentially occur on the study site.
Spotted bat	*Euderma maculatum*	SSSC	Spotted bats inhabit grasslands, mixed coniferous forests, and deserts. Spotted bats typically roost in cliff crevices, but may also roost in caves, and manmade structures. Roosts usually occur near suitable foraging areas (i.e., open water, meadows, riparian habitat, and forest openings).	No	No	No	The project site does not provide suitable roosting habitat for spotted bats. The species would thus not roost on the study site.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Townsend's big-eared bat	*Corynorhinus townsendii*	SSSC	Townsend's big-eared bat is found throughout California except in subalpine and alpine habitats, and may be found at any season throughout its range. The species is most abundant in mesic habitats. The bat requires caves, mines, tunnels, buildings, or other human-made structures for roosting. This bat is especially sensitive to disturbance of roosting sites, and a single disturbance event may result in abandonment of the roost site.	No	No	No	No suitable roosting habitat occurs in the study site for Townsend's big-eared bat. Townsend's big-eared bat would thus not roost on the study site.
AMPHIBIANS							
California red-legged frog	*Rana draytonii*	FT	Suitable aquatic habitat for the California red-legged frog (CRLF) consists of permanent water bodies of virtually still or slow-moving fresh water, including natural and man-made ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds. The CRLF is not characteristically found in deep lacustrine habitats (e.g., deep lakes and reservoirs). Dense, shrubby riparian vegetation, e.g., willow (*Salix*) and bulrush (*Scirpus*) species, and bank overhangs are important features of CRLF breeding habitat. The CRLF tends to occur in greater numbers in deeper, cooler pools with dense emergent and shoreline vegetation.	No	No	No	No suitable habitat for the California red-legged frog is present in the study site. The project site is well outside the current range of the CRLF. Thus, the CRLF would not be present on the study site.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Foothill yellow-legged frog	*Rana boylii*	SCT, SSSC	Foothill yellow-legged frogs are typically found in shallow, partly-shaded, perennial streams in areas with riffles and rocky substrates. This frog needs at least some cobble-sized substrate for egg-laying. Foothill yellow-legged frogs generally prefer low- to moderate-gradient streams, especially for breeding and egg-laying, although juvenile and adult frogs may utilize moderate- to steep-gradient streams during summer and early fall.	No	No	No	No suitable habitat for the foothill yellow-legged frog is present in the study site. The foothill yellow-legged frog would thus not be present in the study site.
Shasta salamander	*Hydromantes shastae*	ST	The Shasta salamander is primarily restricted to limestone outcrops near Lake Shasta. Habitat consists of moist limestone fissures and caves, limestone talus, and under woody debris on the surface near limestone outcrops. Shasta salamanders may be found in all successional stages of valley foothill hardwood-conifer, ponderosa pine, and mixed conifer habitats.	No	No	No	No suitable habitat for the Shasta salamander is present in the study site. The Shasta salamander would thus not be present in the study site.
Western spadefoot	*Spea hammondii*	SSSC	Western spadefoots breed from January through May in shallow, temporary pools that persist for at least three weeks. Breeding pools are generally absent of bullfrogs, fish, and crayfish. After breeding, adults seek shelter underground either by excavating a subterranean burrow or retreating into a small mammal burrow nearby. Tadpoles transform within three weeks. Following transformation, juveniles leave breeding pools and seek shelter underground. Western spadefoots remain underground until breeding pools form the following spring.	No	No	No	No suitable habitat for the western spadefoot is present in the study site. The western spadefoot would thus not be present in the study site.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
REPTILES							
Western pond turtle	*Emys marmorata*	SSSC	The western pond turtle associates with permanent or nearly permanent water in a variety of habitats. This turtle is typically found in quiet water environments. Pond turtles require basking sites such as partially submerged logs, rocks, or open mud banks, and suitable (sandy banks or grassy open fields) upland habitat for egg-laying. Nests are generally constructed within 500 feet of a waterbody, but some nests have been found up to 1,200 feet away. Pond turtles leave aquatic sites in the fall and overwinter in uplands nearby. Pond turtles return to aquatic sites in spring.	No	No	No	No suitable habitat occurs in the study site for the western pond turtle. The western pond turtle would thus not be present.
INSECTS							
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	The valley elderberry longhorn beetle is found only in association with elderberry shrubs (*Sambucus* spp.). The species' elevational range extends from sea level to 3,000 feet. The species is known to occur in the Central Valley and foothills.	No	No	No	No elderberries are present on the study site. Thus, the valley elderberry longhorn beetle would not be present.
FISH							
Chinook salmon-Central Valley spring-run ESU	*Oncorhynchus tshawytscha* pop. 6	FT, ST	Central Valley spring-run Chinook salmon enter the Sacramento-San Joaquin Delta in early January, and enter natal streams between mid-March and mid-October. Upon entering fresh water, spring-run are sexually immature and must hold in cold water habitats through summer to mature. Typically, spring-run utilize mid- to high-elevation streams that provide sufficient flow, water temperature, cover, and pool depth to allow over-summering. Spawning occurs between August and mid-October.	No	No	No	No suitable habitat occurs in the study site for chinook salmon-Central Valley spring-run ESU. The chinook salmon-Central Valley spring-run ESU would thus not be present.

TABLE 3

Potential for Special-Status Species Identified by the National Marine Fisheries Service, USFWS, and CNDDB to Occur on the Project Site

September 2019

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Chinook salmon-Sacramento River winter-run ESU	*Oncorhynchus tshawytscha* pop. 7	FE, SE	Sacramento River winter-run Chinook salmon spawn almost exclusively in the Sacramento River, and not in tributary streams. Spawning generally occurs in swift, relatively shallow riffles or along the edges of fast runs where there is an abundance of loose gravel. Juveniles may rear in tributaries of the Sacramento River.	No	No	No	No suitable habitat occurs in the study site for chinook salmon-Sacramento River winter-run ESU. The chinook salmon-Sacramento River winter-run ESU would thus not be present.
Delta smelt	*Hypomesus transpacificus*	FT	Delta smelt primarily inhabit the brackish waters of Sacramento-San Joaquin River Delta. Most spawning occurs in backwater sloughs and channel edgewaters.	No	No	No	No suitable habitat occurs in the study site for Delta smelt. The Delta smelt would thus not be present.
Steelhead-Central Valley DPS	*Oncorhynchus mykiss irideus* pop. 11	FT	Central Valley steelhead inhabit cold-water tributaries of the Sacramento and San Joaquin rivers. Adults begin their upstream spawning migration between August and March. Spawning occurs between December and April. Spawning habitat is characterized by loose, clean gravel in cold, swiftly flowing, shallow water.	No	No	No	No suitable habitat occurs in the study site for steelhead-Central Valley DPS. The steelhead-Central Valley DPS would thus not be present.

[1] Status Codes

Federal:		**State**:	
FE	Federally Listed – Endangered	SFP	State Fully Protected
FT	Federally Listed – Threatened	SR	State Rare
FC	Federal Candidate Species	SE	State Listed - Endangered
FP	Federal Proposed Species	ST	State Listed - Threatened
FD	Federal Delisted	SC	State Candidate Species
		SSSC	State Species of Special Concern

Rare Plant Rank

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2A	Presumed extirpated in California, but more common elsewhere
2B	Rare or Endangered in California, but more common elsewhere

Rare Plant Threat Rank

0.1	Seriously Threatened in California
0.2	Fairly Threatened in California
0.3	Not Very Threatened in California

APPENDIX A

REPRESENTATIVE PHOTOGRAPHS

Gold Hills Site
Representative Photos

Dry Gulch (principal intermittent stream) looking south near southern boundary

Intermittent stream looking east

Gold Hills Site
Representative Photos

Henderson bent grass habitat

Tripod buckwheat habitat

Gold Hills Site
Representative Photos

Blue oak woodland with grassland understory

Representative snags providing nesting, roosting, and denning opportunities for wildlife

Gold Hills Site
Representative Photos

Blue oak woodland with shrubby understory

APPENDIX B

SPECIES LISTS

U.S. Fish and Wildlife Service List of Threatened and Endangered Species

National Marine Fisheries Service Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Consultation Code: 08ESMF00-2019-SLI-2629
Event Code: 08ESMF00-2019-E-08370
Project Name: 100-05 Reserve at Gold Hills

July 31, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-2629

Event Code: 08ESMF00-2019-E-08370

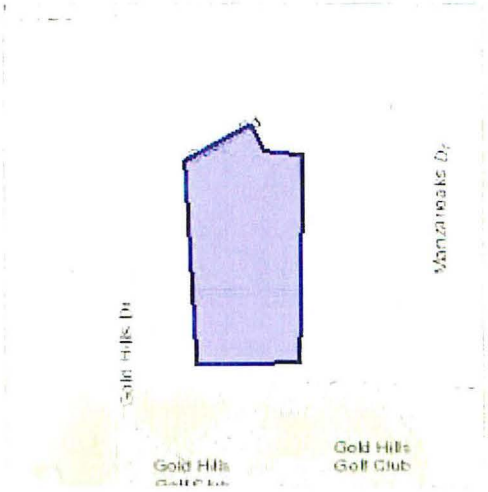
Project Name: 100-05 Reserve at Gold Hills

Project Type: DEVELOPMENT

Project Description: Environmental studies for the Reserve at Gold Hills parcel located on Oasis Road, as well as several adjacent sites.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/40.642083934555146N122.34815301963528W



Counties: Shasta, CA

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Shasta Crayfish *Pacifastacus fortis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8284	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

National Marine Fisheries Service
Species List

Quad Name **Project City**
Quad Number **40122-F3**

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat

APPENDIX C

List of Vascular Plants Observed during the Botanical Surveys

List of Wildlife Species Observed

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Gold Hills Site

September 13, 2019

Agavaceae	**Century-plant Family**
Chlorogalum angustifolium	Narrow-leaved soap plant
Chlorogalum pomeridianum var. *pomeridianum*	Wavy-leaved soap plant
Alliaceae	**Onion Family**
Allium sp.	Onion
Amaranthaceae	**Amaranth Family**
Amaranthus albus	Tumbleweed
Anacardiaceae	**Sumac Family**
Pistacia chinensis	Chinese pistach
Toxicodendron diversilobum	Poison-oak
Apiaceae	**Carrot Family**
Daucus pusillus	Rattlesnake weed
Eryngium articulatum	Jointed coyote thistle
Perideridia sp.	Yampah
Sanicula crassicaulis	Pacific sanicle
Torilis arvensis	Field hedge-parsley
Asteraceae	**Sunflower Family**
Baccharis pilularis	Coyote-brush
Carduus pycnocephalus	Italian thistle
Centaurea solstitialis	Yellow star thistle
Centromadia fitchii	Fitch's spikeweed
Erigeron canadensis	Canadian horseweed
Eriophyllum lanatum	Woolly sunflower
Gnaphalium palustre	Western marsh cudweed
Lactuca serriola	Prickly lettuce
Lagophylla sp.	Hareleaf
Leontodon saxatilis	Hawkbit
Logfia gallica	Narrow-leaved cottonrose
Madia sp.	Madia
Wyethia angustifolia	Narrowleaf mule ears
Xanthium strumarium	Cocklebur
Boraginaceae	**Borage Family**
Plagiobothrys sp.	Popcorn-flower
Brassicaceae	**Mustard Family**
Barbarea sp.	Wintercress
Caprifoliaceae	**Honeysuckle Family**
Lonicera interrupta	Chaparral honeysuckle
Cyperaceae	**Sedge Family**
Cyperus eragrostis	Nut sedge
Eleocharis macrostachya	Creeping spikerush

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED
Gold Hills Site

Ericaceae	**Heath Family**
Arctostaphylos viscida	White-leaf manzanita
Euphorbiaceae	**Spurge Family**
Croton setigerus	Dove weed
Triadica sebifera	Chinese tallow
Fabaceae	**Legume Family**
Acmispon americanus	Spanish lotus
Lathyrus angulatus	Angular-seeded pea
Trifolium hirtum	Rose clover
Trifolium incarnatum	Crimson clover
Fagaceae	**Oak Family**
Quercus douglasii	Blue oak
Quercus wislizeni	Interior live oak
Gentianaceae	**Gentian Family**
Centaurium sp.	Centaury
Hypericaceae	**St. John's-wort Family**
Hypericum perforatum	Klamath weed
Juncaceae	**Rush Family**
Juncus acuminatus	Sharp-fruited rush
Juncus bufonius	Toad rush
Juncus phaeocephalus var. *paniculatus*	Panicled rush
Juncus tenuis	Slender rush
Lamiaceae	**Mint Family**
Lavandula sp.	Lavender
Mentha pulegium	Pennyroyal
Monardella sp.	Monardella
Lythraceae	**Loosestrife Family**
Lythrum hyssopifolia	Hyssop loosestrife
Malvaceae	**Mallow Family**
Sidalcea sp.	Perennial sidalcea
Molluginaceae	**Carpet-weed Family**
Mollugo verticillata	Green carpetweed
Onagraceae	**Evening-Primrose Family**
Clarkia sp.	Clarkia
Epilobium sp. (Sect. Boisduvalia)	Boisduvalia
Epilobium brachycarpum	Tall annual willowherb
Phrymaceae	**Lopseed Family**
Mimulus guttatus	Common monkey-flower

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Gold Hills Site

Pinaceae	**Pine Family**
Pinus sabiniana	Grey pine
Plantaginaceae	**Plantain Family**
Kickxia elatine	Sharp-leaved fluellin
Plantago coronopus	Cut-leaf plantain
Plantago erecta	Hooker's plantain
Plantago lanceolata	English plantain
Poaceae	**Grass Family**
Agrostis hendersonii	Henderson's bentgrass
Aira caryophyllea	Silver hairgrass
Anthoxanthum aristatum	Vernal grass
Aristida oligantha	Oldfield three-awn
Avena barbata	Slender wild oats
Brachypodium distachyon	False brome
Briza maxima	Big quaking grass
Briza minor	Little quaking grass
Bromus diandrus	Ripgut grass
Bromus hordeaceus	Soft chess
Bromus madritensis subsp. *rubens*	Red brome
Cynosurus echinatus	Hedgehog dogtail
Deschampsia danthonioides	Annual hairgrass
Elymus caput-medusae	Medusahead
Festuca microstachys	Reflexed fescue
Festuca myuros	Foxtail fescue
Festuca perennis	Annual ryegrass
Gastridium phleoides	Nit grass
Hordeum marinum subsp. *gussoneanum*	Mediterranean barley
Melica californica	California melic
Nassella pulchra	Purple needlegrass
Paspalum dilatatum	Dallis grass
Polypogon monspeliensis	Annual beardgrass
Polemoniaceae	**Phlox Family**
Navarretia sp.	Navarretia
Polygonaceae	**Buckwheat Family**
Eriogonum tripodum	Tripod buckwheat
Eriogonum luteolum var. *luteolum*	Golden buckwheat
Eriogonum nudum	Naked buckwheat
Persicaria punctata	Dotted smartweed
Polygonum californicum	California knotweed
Rumex sp.	Dock
Rumex crispus	Curly dock
Rhamnaceae	**Buckthorn Family**
Ceanothus cuneatus var. *cuneatus*	Buckbrush
Frangula californica subsp. *tomentella*	Hoary coffeeberry

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Gold Hills Site

Rosaceae	**Rose Family**
Heteromeles arbutifolia	Toyon
Prunus cerasifera	Cherry plum
Pyrus sp.	Pear
Rubus armeniacus	Himalayan blackberry
Rubiaceae	**Madder Family**
Crucianella angustifolia	Cross-wort
Galium porrigens var. *tenue*	Climbing bedstraw
Salicaceae	**Willow Family**
Populus fremontii subsp. *fremontii*	Fremont cottonwood
Salix gooddingii	Goodding's black willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Scrophulariaceae	**Snapdragon Family**
Verbascum blattaria	Moth mullein
Tecophilaeaceae	**Tecophilaea Family**
Odontostomum hartwegii	Hartweg's odontostomum
Themidaceae	**Brodiaea Family**
Brodiaea sp.	Brodiaea
Dichelostemma sp.	Blue dicks
Dichelostemma multiflorum	Round-toothed ookow
Vitaceae	**Grape Family**
Vitis californica	Wild grape

Gold Hills General Wildlife Survey
09/14/2019

The survey began at 8:07am on September 14, 2019. The temperature was 67 degrees Fahrenheit with a gentle breeze, and the sky was cloudless. The survey concluded at 2:04pm, for a total survey time of six hours. At the conclusion of the survey, the sky was still clear while the temperature had risen to 94 degrees Fahrenheit.

The site consists of 64 acres of oak-pine woodlands, with oaks dominating the area throughout the site. Canopy cover varies from nearly closed (~80% cover) to open (~0% cover) in different areas of the site. Beneath the canopy, manzanita was found in various stages of growth. The manzanita ranged from young, shrub-like individuals to mature individuals that nearly reached the tree canopy. The understory was dominated by annual grasses, with a few herbaceous plants growing near intermittent streams. Dead woody material was distributed throughout the site, mainly consisting of standing/fallen manzanitas and standing/fallen oaks (presumably resulting from the 1999 Jones Fire). Numerous unvegetated trails cut across the site, and numerous intermittent and ephemeral streams were previously identified.

The biologist visually inspected trees, shrubs, the sky, and open ground in the project area. While conducting the survey, the biologist searched for nests and burrows, listened for wildlife vocalizations, periodically scanned the sky for birds, and examined the ground for scat, feathers, tracks, and pellets. The biologist identified acorn woodpeckers, Anna's hummingbirds, black-chinned hummingbirds, California quails, killdeer, white-breasted nuthatches, and turkey vultures. Additionally, he observed several western fence lizards. Scat observations confirmed the presence of rabbits and coyotes on the site. Lastly, a nesting cavity was observed in a mature oak tree, though it appeared to be unoccupied.

Wildlife Species Observed
September 14, 2019

Common Name	**Scientific Name**	**Status**
Acorn woodpecker	*Melanerpes formicivorus*	None
Anna's hummingbird	*Calypte anna*	None
Black-chinned hummingbird	*Archilochus alexandri*	None
Black-tailed deer	*Odocoileus hemionus*	None
Black-tailed jackrabbit	*Lepus californicus*	None
California quail	*Callipepla californica*	None
California ground squirrel	*Otospermophilus beecheyi*	None
Coyote	*Canis latrans*	None
Killdeer	*Charadrius vociferus*	None
Turkey vulture	*Cathartes aura*	None
Western fence lizard	*Sceloporus occidentalis*	None
White-breasted nuthatch	*Sitta carolinensis*	None

Aquatic Resource Delineation Report

Gold Hills Site
Shasta County, California

Prepared for:

Brian Burk

September 2019
100-05

ENPLAN
3179 Bechelli Lane Suite 100
Redding, CA 96002

Gold Hills Site
Aquatic Resource Delineation Report

Applicant/Land Owner:
Brian Burk
P.O. Box 1485
Bend, OR 97709
(458) 256-7362

Access:
From Interstate 5 in the City of Redding, exit on Oasis Road and turn east. Turn south on Indian Country Drive. The site is located on the west side of Indian Country Drive, and can be accessed along the length of the road.

I. INTRODUCTION

The ±64-acre Gold Hills site is located southwest of the intersection of Oasis Road and Indian Country Drive, in the City of Redding, Shasta County. As shown in Figure 1 (Appendix A), the site is situated in Section 8, Township 32 North, Range 4 West (U.S. Geological Survey Project City 7.5-minute quadrangle).

The site ranges in elevation between 640 and 705 feet above sea level, and, generally speaking, slopes to the west. With the exception of an existing dirt road that bisects the northern portion of the site, the site is undeveloped. On-site drainages primarily discharge to Dry Gulch (5:IS) that bisects the western portion of the site. Dry Gulch is tributary to Churn Creek, which confluences with the Sacramento River.

The site is comprised of an oak woodland with an annual grassland understory, and a minor amount of wetland vegetation. The oak woodland is represented by blue oak (*Quercus douglasii*, UPL), interior live oak (*Quercus wislizeni*, UPL), and gray pine (*Pinus sabiniana*, UPL). The shrub layer is represented by poison oak (*Toxicodendron diversilobum*, FACU), buckbrush (*Ceanothus cuneatus*, UPL), and white-leaved manzanita (*Arctostaphylos viscida*, UPL). The annual grassland is represented by rattlesnake grass (*Briza maxima*, UPL), slender wild oats (*Avena barbata*, UPL), ripgut grass (*Bromus diandrus*, UPL), and medusahead (*Elymus caput-medusae*, UPL). Typical wetland species include annual ryegrass (*Festuca perennis*, FAC), nit grass (*Gastridium phleoides,* FACU), jointed coyote thistle (*Eryngium articulatum*, OBL), western marsh cudweed (*Gnaphalium palustre*, FACW), and soft chess (*Bromus hordeaceous*, FACU).

According to the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS, 2019), six soil units have been mapped within the study site (Table 1). None of the soil units are considered hydric; however, four units may

contain hydric inclusions: Churn gravelly loam, 0 to 3 percent slopes (CeA); Red Bluff gravelly loam, moderately deep, 3 to 8 percent slopes (RcB); Redding-Red Bluff gravelly loams, 0 to 3 percent slopes (ReA); and Redding-Red Bluff gravelly loams, 3 to 8 percent slopes (ReB). A soils map is provided in Figure 2 (Appendix A).

Table 1
Summary of On-Site Soil Units

Map Symbol	Soil Unit Name	Hydric Soil?	Hydric Inclusions Present?	Hydric* Criteria	Hydric Landforms
CeA	Churn gravelly loam, 0 to 3 percent slopes	N	Y	3, 4	Drainageways
NeC	Newtown gravelly loam, 8 to 30 percent slopes	N	N	—	—
NeD	Newtown gravelly loam, 15 to 30 percent slopes	N	N	—	—
RcB	Red Bluff gravelly loam, moderately deep, 3 to 8 percent slopes	N	Y	3	Depressions
ReA	Redding-Red Bluff gravelly loams, 0 to 3 percent slopes	N	Y	3	Depressions
ReB	Redding-Red Bluff gravelly loams, 3 to 8 percent slopes	N	Y	3	Depressions

*3 Soils that are frequently ponded for long or very long duration during the growing season.
4 Map unit components that are frequently flooded for long duration or very long duration during the growing season.

The climate of the project vicinity is of the Mediterranean type, with cool, moist winters and hot, dry summers. Annual precipitation averages ±33.7 inches at the Redding Municipal Airport, which reasonably approximates conditions on the subject site (WRCC, 2019).

II. METHODOLOGY

Prior to undertaking the field study, National Wetlands Inventory maps (U.S. Fish and Wildlife Service, 2019) were reviewed to determine if any waters have been previously mapped on the study site. One feature (Dry Gulch, 5:IS) has been mapped along the western site boundary and is designated as Riverine; Intermittent; Streambed; Temporary Flooded (R4SBA).

The field investigation was conducted on August 15 and September 6, 2019. Based on rainfall totals recorded at the Redding Municipal Airport (NOAA, 2019), it was determined that rainfall totals were sufficient to identify the presence/absence of wetlands, and establish the ordinary high water mark of other waters.

The limit of the Corps of Engineers' jurisdiction over streams is concurrent with the extent of the ordinary high water mark. As described in the Code of Federal Regulations Title 33: Navigation and Navigable Waters-Sec. 328.3(e), the ordinary high water mark is defined as the line on the shore established by fluctuations of water indicated by physical characteristics. These may include a clear/natural line on the bank, shelving, changes in soil, destruction of terrestrial vegetation, presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

The field investigation was conducted in accordance with technical methods outlined in the *Corps of Engineers Wetlands Delineation Manual* (U.S. Department of the Army, Corps of Engineers, 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Department of the Army, Corps of Engineers, 2008), and the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar, 2008).

Scientific nomenclature for plants cited in this report is in accordance with *The Jepson Manual* (Baldwin et al., 2012). The indicator status of plants in this report is in accordance with the National Wetland Plant List (NWPL) (Lichvar et. al., 2016). Soil colors were identified using Munsell Soil Color Charts (Kollmorgen Instruments Corporation, 2000).

Coordinates along the perimeter of wetlands, as well as larger stream features were obtained using a global positioning system (GPS) unit capable of sub-meter accuracy. GPS coordinates for smaller streams were collected along the centerline of the features. The GPS coordinates were downloaded into ArcMap for mapping and acreage calculations.

III. RESULTS

As a result of the field delineation effort, 26 features were mapped on the site within three categories: ephemeral stream, intermittent stream, and seasonal wetland (Figure 3, Appendix A). Approximately 2.522 acres of potentially jurisdictional waters were delineated on the site and are characterized below. Representative photos are presented in Appendix B.

Ephemeral Stream: Ephemeral streams are drainage channels that have flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral streams are located above the water table year round. Runoff from rainfall is the primary source of water for stream flow. Groundwater is not a source of water for ephemeral streams. The predominant indicators of high flows in on-site ephemeral streams were scour and the presence of litter and debris.

Intermittent Stream: Intermittent streams are drainage channels with apparent bed and bank features that flow for more than several days following precipitation events. Water sources may include direct precipitation and runoff from upstream channels. The predominant indicators of high flows in on-site intermittent streams were scour and the presence of litter and debris.

Seasonal Wetland: Seasonal wetlands are saturated or inundated during the winter wet season and dry during the dry season. They may occur in a variety of topographic positions and support a broad range of wetland species. Specific to on-site seasonal wetlands, these features appear to be subject to natural and/or human disturbance. 10:SW is subject to a cycle of sediment deposition/scour during periods of high flow in Dry Gulch. 25:SW is subject to off-road vehicle activity. 1:SW occurs at the toe of slope of Oasis Road. It appears disturbed; however, the nature of the disturbance is unknown.

In addition to waters of the U.S., approximately 0.002 acres of a non-jurisdictional ephemeral stream (4:ES) was delineated on the site. The stream is short (67 linear feet), flows for short duration, dissipates to sheetflow approximately 200 feet from Dry Gulch, and provides no physical, chemical, or biological values to downstream waters. As such, this feature does not meet the criteria required for Corps jurisdiction.

Indicators of wetland hydrology in the on-site wetlands include inundation and oxidized rhizospheres. On-site wetland soil colors were 7.5YR 4/4, with common, distinct mottles. Soil colors at contrasting upland sites were 7.5YR 4/4, with no mottles or other hydric indicators. Plants representative of the on-site wetlands and contrasting upland sites are described in the introduction of this report. Wetland Determination Data Forms were completed for the sample sites and are presented in Appendix C.

IV. JURISDICTIONAL DETERMINATION

In accordance with Regulatory Guidance Letter 16-01, the applicant elects to use both an “approved jurisdictional determination” and a “preliminary jurisdictional determination” to identify the mapped waters subject to Army Corps of Engineers

jurisdiction under the Clean Water Act. Figure 3 depicts both the Approved JD and Preliminary JD boundaries. The applicant elects to use an approved jurisdictional determination to identify mapped water 4:ES as not subject to Corps jurisdiction in accordance with EPA's 2008 guidance. The applicant elects to use a "preliminary jurisdictional determination" to identify the remaining waters as being subject to Corps jurisdiction.

V. REFERENCES

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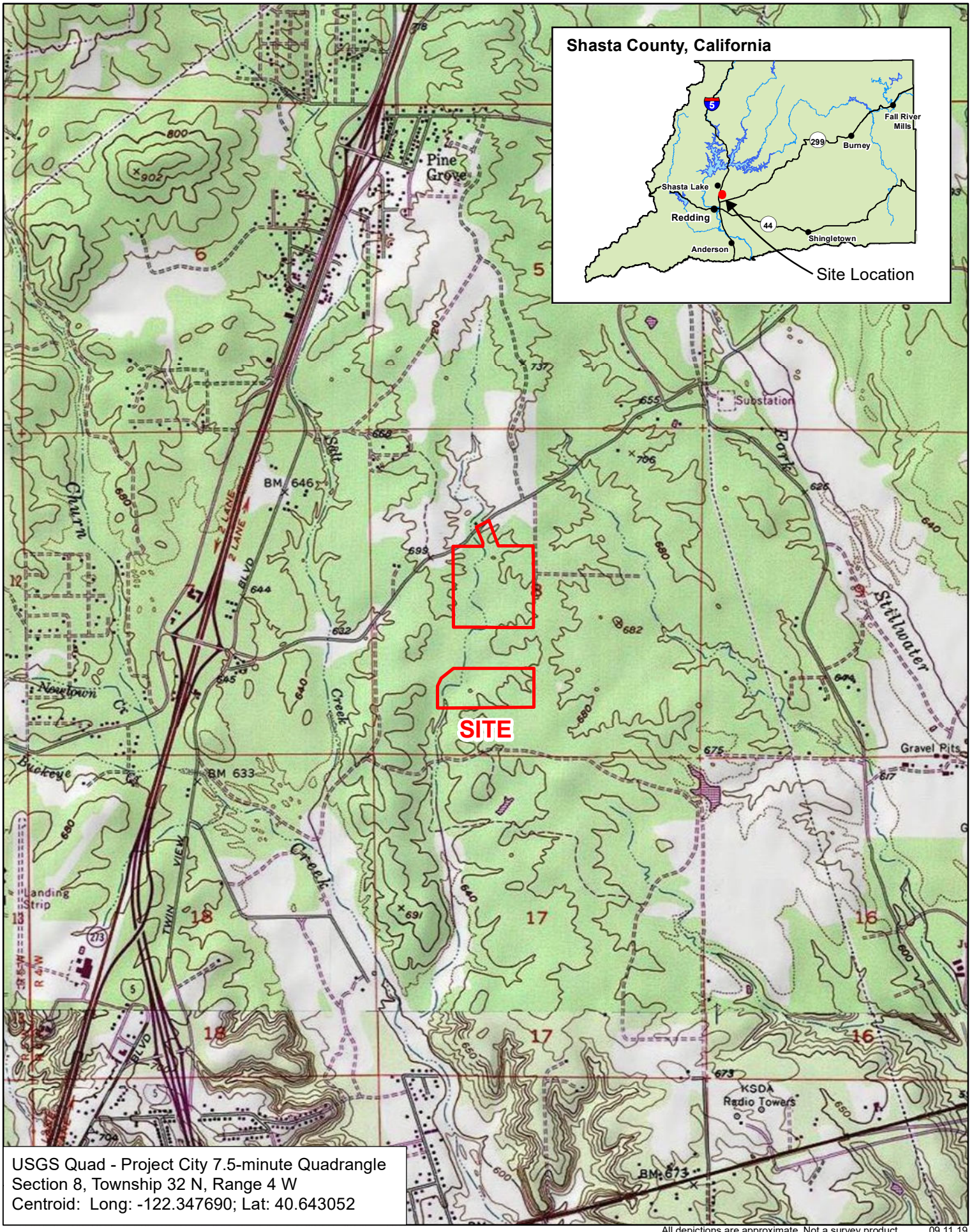
APPENDIX A

Maps



USGS Quad - Project City 7.5-minute Quadrangle
Section 8, Township 32 N, Range 4 W
Centroid: Long: -122.347690; Lat: 40.643052

Path: N:\companyfiles\01-Jobs Active\100-05 B Burk - Gold Hills\3-Project GIS\Map Documents\DeIn 2019\Fig_1_Project_Vicinity_091119.mxd

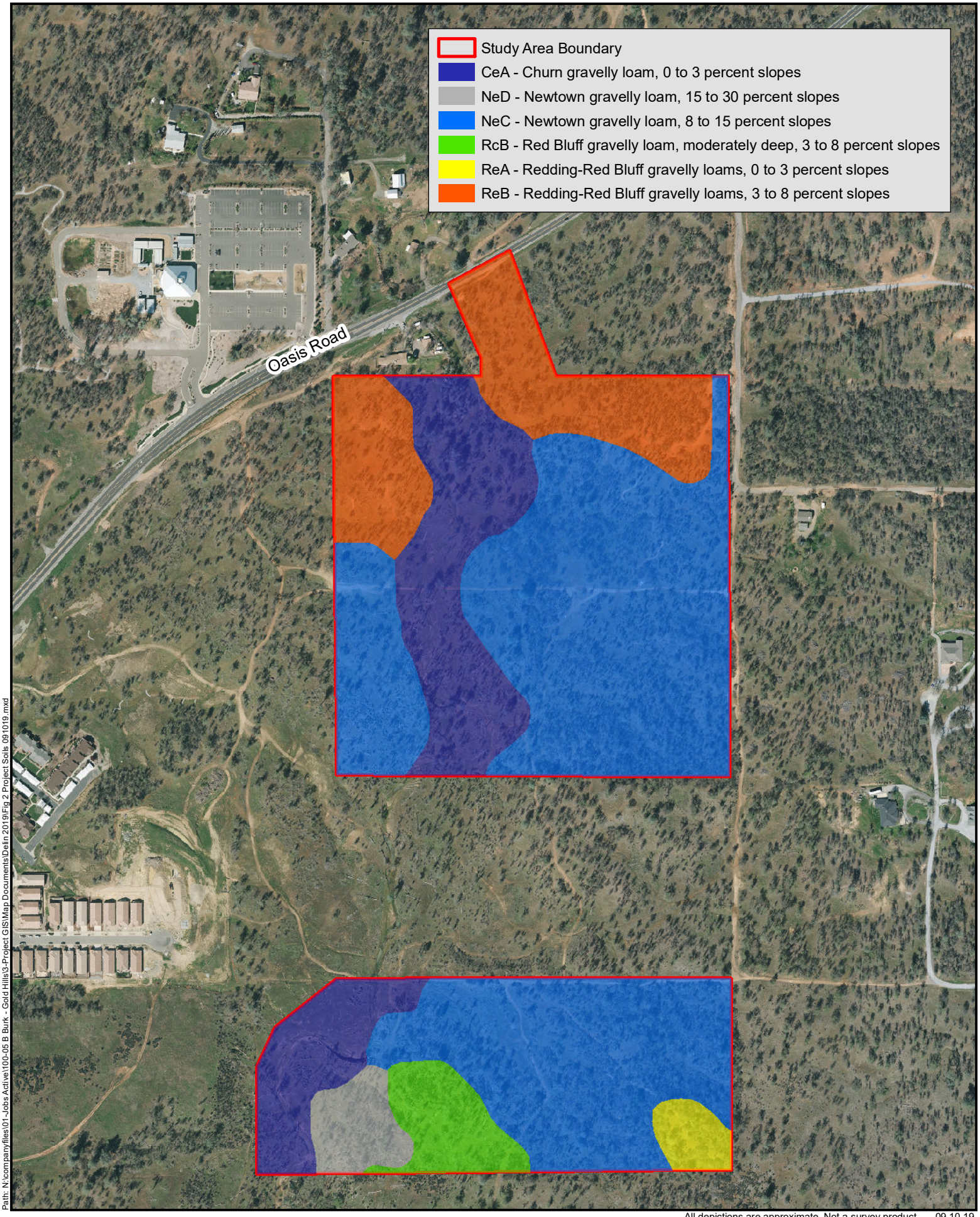
All depictions are approximate. Not a survey product. 09.11.19

0 2,000 Feet

Figure 1

Project Vicinity

ENPLAN



Path: N:\companyfiles\01-Jobs Active\100-05 B Burk - Gold Hills\3-Project GIS\Map Documents\DeIn 2019\Fig 2 Project Soils 091019.mxd

All depictions are approximate. Not a survey product. 09.10.19

0 400 Feet

Figure 2

Project Soils

ENPLAN

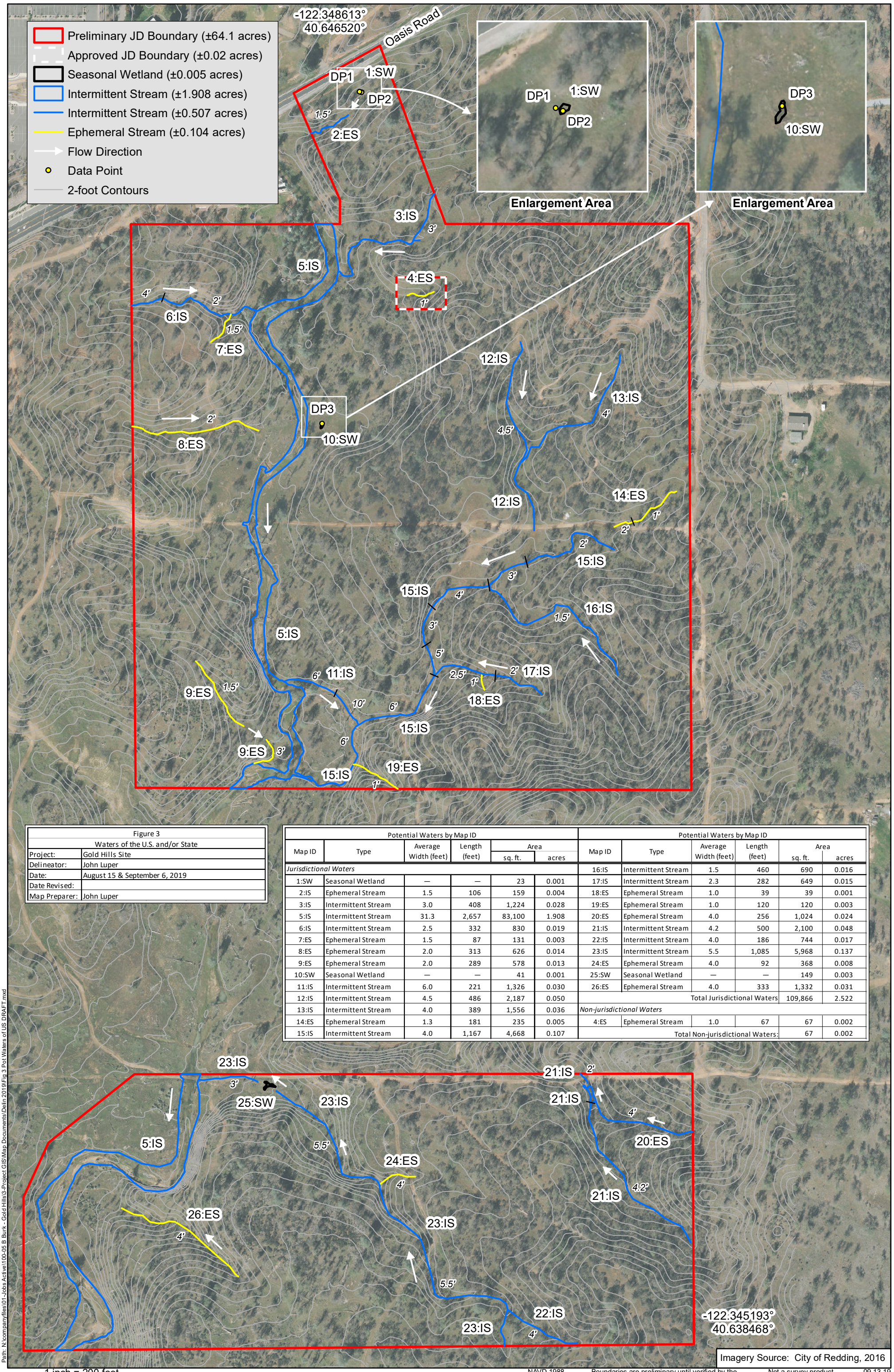


Figure 3	
Waters of the U.S. and/or State	
Project:	Gold Hills Site
Delineator:	John Luper
Date:	August 15 & September 6, 2019
Date Revised:	
Map Preparer:	John Luper

Potential Waters by Map ID						Potential Waters by Map ID					
Map ID	Type	Average Width (feet)	Length (feet)	Area		Map ID	Type	Average Width (feet)	Length (feet)	Area	
				sq. ft.	acres					sq. ft.	acres
Jurisdictional Waters						16:IS	Intermittent Stream	1.5	460	690	0.016
1:SW	Seasonal Wetland	—	—	23	0.001	17:IS	Intermittent Stream	2.3	282	649	0.015
2:IS	Ephemeral Stream	1.5	106	159	0.004	18:ES	Ephemeral Stream	1.0	39	39	0.001
3:IS	Intermittent Stream	3.0	408	1,224	0.028	19:ES	Ephemeral Stream	1.0	120	120	0.003
5:IS	Intermittent Stream	31.3	2,657	83,100	1.908	20:ES	Ephemeral Stream	4.0	256	1,024	0.024
6:IS	Intermittent Stream	2.5	332	830	0.019	21:IS	Intermittent Stream	4.2	500	2,100	0.048
7:ES	Ephemeral Stream	1.5	87	131	0.003	22:IS	Intermittent Stream	4.0	186	744	0.017
8:ES	Ephemeral Stream	2.0	313	626	0.014	23:IS	Intermittent Stream	5.5	1,085	5,968	0.137
9:ES	Ephemeral Stream	2.0	289	578	0.013	24:ES	Ephemeral Stream	4.0	92	368	0.008
10:SW	Seasonal Wetland	—	—	41	0.001	25:SW	Seasonal Wetland	—	—	149	0.003
11:IS	Intermittent Stream	6.0	221	1,326	0.030	26:ES	Ephemeral Stream	4.0	333	1,332	0.031
12:IS	Intermittent Stream	4.5	486	2,187	0.050	Total Jurisdictional Waters				109,866	2.522
13:IS	Intermittent Stream	4.0	389	1,556	0.036	*Non-jurisdictional Waters*					
14:ES	Ephemeral Stream	1.3	181	235	0.005	4:ES	Ephemeral Stream	1.0	67	67	0.002
15:IS	Intermittent Stream	4.0	1,167	4,668	0.107	Total Non-jurisdictional Waters:				67	0.002

Path: N:\companyfiles\01-Jobs Active\100-05 B Burk - Gold Hills\3-Project GIS\Map Documents\DelIn 2019\Fig 3 Pot Waters of US DRAFT.mxd

APPENDIX B

Representative Photos

Gold Hills Site
Representative Photos

DP2 looking north; 1:SW in foreground (September 6, 2019)

Dry Gulch (5:IS) looking south near confluence with 23:IS (September 6, 2019)

Gold Hills Site
Representative Photos

6:IS looking west

10:SW looking north, shovel indicates location of DP3 (September 6, 2019)

Gold Hills Site
Representative Photos

16:IS looking east (August 15, 2019)

21:IS looking south toward confluence with 20:IS; overflow to road visible in foreground (August 15, 2019)

APPENDIX C

Wetland Determination Forms

ENPLAN

100-05
July 18, 2022

Brian Burk
P.O. Box 1485
Bend, OR 97709

SUBJECT: Biological Study Report Addendum, The Oasis Subdivision

ENPLAN prepared a Biological Study Report (BSR) in 2019 addressing a ±64-acre study area identified as the Gold Hills site. Field work was completed primarily in September 2019. The botanical survey identified the presence of Henderson's bentgrass (*Agrostis hendersonii*), which is assigned a California Rare Plant Rank of 3.2, as well as tripod buckwheat (*Eriogonum tripodum*), a California Rare Plant Rank 4.2 species. A perennial checkerbloom was also observed, but could not be reliably identified to the species level at the time of the survey. However, the report noted that there was a high potential for the plant to be Redding checkerbloom (*Sidalcea celata*), a California Rare Plant Rank 3 species. Several other spring-blooming species were also identified as having some potential to be present on the site, but would not have been identifiable at the time the survey was conducted. Therefore, a mitigation measure was included in the 2019 report recommending a supplemental botanical survey during the spring blooming period.

The study area boundaries have since been reduced to exclude lands west of Dry Gulch; the current study area now encompasses ±49 acres east of Dry Gulch, and is known as The Oasis Subdivision Project. The current study area boundary excludes the tripod buckwheat occurrence identified in 2019. **Figure 1 (Appendix A)** shows the location of the current project site. An aerial photograph of the project site is provided in **Figure 2 (Appendix A)**.

This Addendum to the 2019 Biological Study Report has been prepared to document the results of the 2022 botanical survey. Additionally, an updated biological records search was completed. Two species have been added to the lists since 2019 and a third has had a change in status and is now a Candidate for state listing as Endangered; the potential for each of these species to occur in the study area is addressed in this Addendum.

Records Search Results
The records search update included a review of California Natural Diversity Data Base (CNDDB) records for special-status plants, animals, and natural communities; the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants; U.S. Fish and Wildlife Service (USFWS) records for federally listed, proposed, and Candidate plant and animal species under jurisdiction of the USFWS; and National Marine Fisheries Service (NMFS) records for anadromous fish species. The records search outputs are provided in **Appendix B**.

Monarch Butterfly
The updated record search identified one additional special-status animal species, monarch butterfly (*Danaus plexippus*), as potentially occurring on the project site. The monarch butterfly was designated as a Candidate species for federal listing under the Endangered Species Act (ESA) in December 2020. Candidate species receive no statutory protection under the ESA, but federal agencies typically treat them as if they were listed because they may be listed by the time a project moves to the construction phase; consideration during California Environmental

Quality Act (CEQA) compliance review is likewise appropriate. The National Domestic Listing Workplan[1] shows that the monarch butterfly is currently anticipated to be listed in Fiscal Year 2024 and therefore may be listed by the time the proposed project moves to the construction phase.

Monarch butterflies lay their eggs only on milkweeds within their breeding range. The egg-to-adult development period lasts 17 to 37 days. With the exception of the last generation of the season, adults generally live 2 to 5 weeks. In the western U.S., monarchs overwinter at sites on the California Coast, Baja California, and, to some extent, in the central Mexico mountains. Adults leave their overwintering sites in February and March, and reach the northern limit of their North American range in California, Oregon, Washington, Idaho, and Nevada, in early to mid-June. Adult monarchs feed on the nectar from a variety of flowers, which contains sugar and other nutrients. An abundance of nectar sources is important for migrating butterflies in that nectar provides energy for both reproduction and migration. Several generations of monarchs can be produced within one season; the last generation begins migration back to the overwintering range in August and September, where the butterflies live between 6 and 9 months before migrating north.

Monarch butterflies could be directly affected by the proposed subdivision if milkweeds are present and are removed from the site during the monarch breeding season (when monarch eggs or larvae may be on the milkweeds). To a lesser extent, monarchs may be adversely affected by loss of nectar sources.

Neither the 2019 nor 2022 botanical surveys identified milkweeds in the study area. Although flowering plants that may nectar for monarchs would be removed as a result of site development, the study area offers only a moderate number and variety of floral resources, and the loss of these floral resources would be offset at least to some extent by the planting of flowering plants in the future residential subdivision. Therefore, potential impacts of the proposed project on the monarch butterfly would be less than significant.

Green Sturgeon
Updated CNDDB records showed that green sturgeon – southern distinct population segment (DPS) is now identified as being present within a five-mile radius of the project site. The green sturgeon is listed as a federally Threatened species under the ESA. Threatened species listed under the ESA are likely to become endangered species within the foreseeable future throughout all or a significant portion of their range.

Green sturgeon are anadromous fish that spawn in large rivers. In California, green sturgeon spawn primarily in the Klamath and Trinity rivers, but a small number is known to spawn in the Sacramento River. Most spawning in the Sacramento River occurs above Hamilton City and may range as far north as Keswick Dam. Spawning in the Sacramento River occurs between March and July when water temperatures are 8° to 14°C. Spawning occurs in deep (greater than three meters) water with a swift current. Preferred spawning substrate is large cobble but may include clean sand to bedrock.

There is no suitable habitat within the study area for green sturgeon. Further, implementation of standard erosion control practices would ensure that off-site transport of sediments would be minimized such that the potential for indirect impacts on downstream sturgeon and their habitats

[1] USFWS National Listing Workplan. https://www.fws.gov/project/national-listing-workplan.

would not be adversely affected. Therefore, potential impacts of the proposed project on the green sturgeon would be less than significant.

Shasta Snow-Wreath
The 2019 records search identified Shasta snow-wreath (*Neviusia cliftonii*) as occurring within a five-mile radius of the study area. At that time, the snow-wreath was assigned a California Rare Plant Rank of 1B.2, but was not state or federally listed. The updated records search found that, in February 2022, the species was designated as a Candidate for listing as an Endangered species under the California Endangered Species Act (CESA).

Shasta snow-wreath is endemic to Shasta County, where it is known from fewer than 20 occurrences in the mountains around Lake Shasta. The species is typically found in yellow pine forest communities, generally limited to limestone-derived soils in shady stream canyons. The species was not observed during 2019 or 2022 botanical surveys of the project site and, due to the absence of suitable habitat, has no potential to be present in the study area.

Botanical Survey Results
Botanical surveys of the current study area were conducted by ENPLAN biologist Donald Burk on April 15, May 6, and July 6, 2022. All special status plant species potentially occurring in the project area would have been identifiable at the time the botanical surveys were completed. No special-status plant species were observed on the site. However, two non-status plants, Redding checkerbloom (*Sidalcea celata*) and Henderson's bentgrass (*Agrostis hendersonii*), were observed on the site. CDFW staff is currently re-evaluating the status of these two species, and has requested demographic data for the occurrences to assist in the agency's status re-evaluation. Therefore, the distribution of both species on the site was mapped and population estimates were made. Observed occurrences are shown on **Figure 2** (**Appendix A)**.

Redding checkerbloom is currently assigned to California Rare Plant Rank 3 (Plants About Which We Need More Information – A Review List). The plant generally occurs in small populations in open to moderately dense oak woodlands in Shasta and Tehama counties. It is frequently found on north- and east-facing slopes and on the north and east sides of trees and shrubs, but may also occur on flats and in relatively open habitats. The Jepson Manual notes that Redding checkerbloom is readily confused with giant checkerbloom (*S. gigantea*) and harsh checkerbloom (*S. asprella* ssp. *asprella*); all three species occur in Shasta County, which makes identification difficult. However, the leaves of Redding checkerbloom generally have simple or two-branched hairs while the other two species have minute stellate hairs.

Roughly 900 individuals of Redding checkerbloom were mapped on the subject site. Less than 20 percent of the plants were in bloom at the time of the May field survey, which was near the peak bloom period. The vegetative plants were no longer visible by the July 6 survey. The density and distribution of Redding checkerbloom on the subject site is similar to what we have observed in other blue oak woodland habitats in the general Redding area. It should be noted that we observed Redding checkerbloom on three other sites in the Redding–Bella Vista area this year alone, none of which have been previously documented.

Henderson's bentgrass is assigned to California Rare Plant Rank 3.2. The plant is native to northern California and southern Oregon. Recent field surveys (May 2022) failed to relocate Henderson's bentgrass in southern Oregon. The species has not been documented in Oregon since 1930, causing botanists to speculate that it may now be extirpated in Oregon (D. Stone, pers. comm.). The California Native Plant Society in association with the California (Rancho

Santa Ana) Botanic Garden has recently initiated a phylogenetic study to determine if Henderson's bentgrass is a valid species or should be combined with *Agrostis microphylla*, a more common and widespread species.

Henderson's bentgrass is typically found in vernal pool habitats, valley grasslands, foothill grasslands, and wetland-riparian habitats. ENPLAN biologists have observed Henderson's bentgrass in a wide range of habitats, including thin-soiled flats, along wet swales and small streams, in disturbed/graded flats, and along the edges of vernal pools; however, all of the occurrences have vernally wet soils. Population sizes are generally largest around vernal pools and in transitional wet-flat habitats near vernal pools. On the subject site, Henderson's bentgrass occurs at and near the headwaters of small streams and swales. The onsite population consists of several small occurrences totaling roughly 100 individuals.

CDFW has historically not required mitigation for the loss of California Rare Plant Rank 3 species. Most of the plants assigned to this rank have taxonomic problems, as is the case with Henderson's bentgrass. Others, such as Redding checkerbloom, have not been sufficiently studied such that their range and abundance are understood.

Please contact me if you have any questions regarding our findings or recommendations.

Sincerely,

Donald Burk
Environmental Services Manager

TABLES

Table 1
Rarefind (CNDDB) Report Summary (June 2022 Data)
The Oasis Subdivision Project

Listed Element	Quadrangle[1]				Status[2]
	EP	**PC**	RD	SD	
Animals					
Bald eagle	●	●			FD, SE, SFP
California linderiella		●			None
Chinook salmon-Sacramento River winter-run ESU	●		●		FE, SE
Foothill yellow-legged frog	●	●	●		SE, SSSC
Green sturgeon – southern DPS	●		●		FT
Shasta chaparral			●		None
Silver-haired bat	●				None
Steelhead-Central Valley DPS	●		●		FT
Valley elderberry longhorn beetle	●				FT
Western pearlshell	●		●		None
Western pond turtle		●			SSSC
Plants					
Dubious pea			●		3
Henderson's bent grass		●			3.2
Red Bluff dwarf rush		●			1B.1
Sanford's arrowhead		●			1B.2
Silky cryptantha		●			1B.2
Sulphur Creek brodiaea			●		1B.1
Natural Communities					
Great Valley Cottonwood Riparian Forest	●		●		None

Highlighting Denotes the Quadrangle in which Project Site is Located

[1]Quadrangle Code

EP = Enterprise
PC = Project City
RD = Redding
SD = Shasta Dam

[2]Status Codes

Federal
FE = Federally Listed – Endangered
FT = Federally Listed – Threatened
FC = Federal Candidate Species
FPT = Federal Proposed – Threatened
FD = Federally Delisted
FSC = Federal Species of Concern

State
SFP = State Fully Protected
SR = State Rare
SE = State Listed – Endangered
ST = State Listed – Threatened
SCT = State Candidate – Threatened
SD = State Delisted
SSSC = State Species of Special Concern
WL = Watch List

Rare Plant Rank
List 1A = Presumed extirpated in California and either rare or extinct elsewhere
List 1B = Rare or Endangered in California and elsewhere
List 2A = Presumed extirpated in California, but more common elsewhere
List 2B = Rare or Endangered in California, but more common elsewhere
List 3 = Plants for which we need more information - Review list (generally not special-status, unless unusual circumstances warrant)
List 4 = Plants of limited distribution - Watch list (generally not special-status, unless unusual circumstances warrant)

Threat Ranks
0.1 = Seriously Threatened in California
0.2 = Fairly Threatened in California
0.3 = Not Very Threatened in California

TABLE 2
California Native Plant Society
Inventory of Rare and Endangered Plants
U.S. Geological Survey's Project City 7.5-minute Quadrangle

Common Name	Scientific Name	CA Rare Plant Rank	Blooming Period	State Listing Status	Federal Listing Status
Depauperate milk-vetch	*Astragalus pauperculus*	4.3	Mar-Jun	None	None
Henderson's bent grass	*Agrostis hendersonii*	3.2	Apr-Jun	None	None
Northern clarkia	*Clarkia borealis* ssp. *borealis*	4.3	Jun-Sep	None	None
Red Bluff dwarf rush	*Juncus leiospermus* var. *leiospermus*	1B.1	Mar-Jun	None	None
Redding checkerbloom	*Sidalcea celata*	3	Apr-Aug	None	None
Sanborn's onion	*Allium sanbornii* var. *sanbornii*	4.2	May-Sep	None	None
Sanford's arrowhead	*Sagittaria sanfordii*	1B.2	May-Oct (Nov)	None	None
Shasta County arnica	*Arnica venosa*	4.2	May-Jul (Sep)	None	None
Shasta maidenhair fern	*Adiantum shastense*	4.3	Apr-Aug	None	None
Shasta snow-wreath	*Neviusia cliftonii*	1B.2	Apr-Jun	Candidate	None
Silky cryptantha	*Cryptantha crinita*	1B.2	Apr-May	None	None
Thread-leaved beakseed	*Bulbostylis capillaris*	4.2	Jun-Aug	None	None
Tripod buckwheat	*Eriogonum tripodum*	4.2	May-Jul	None	None

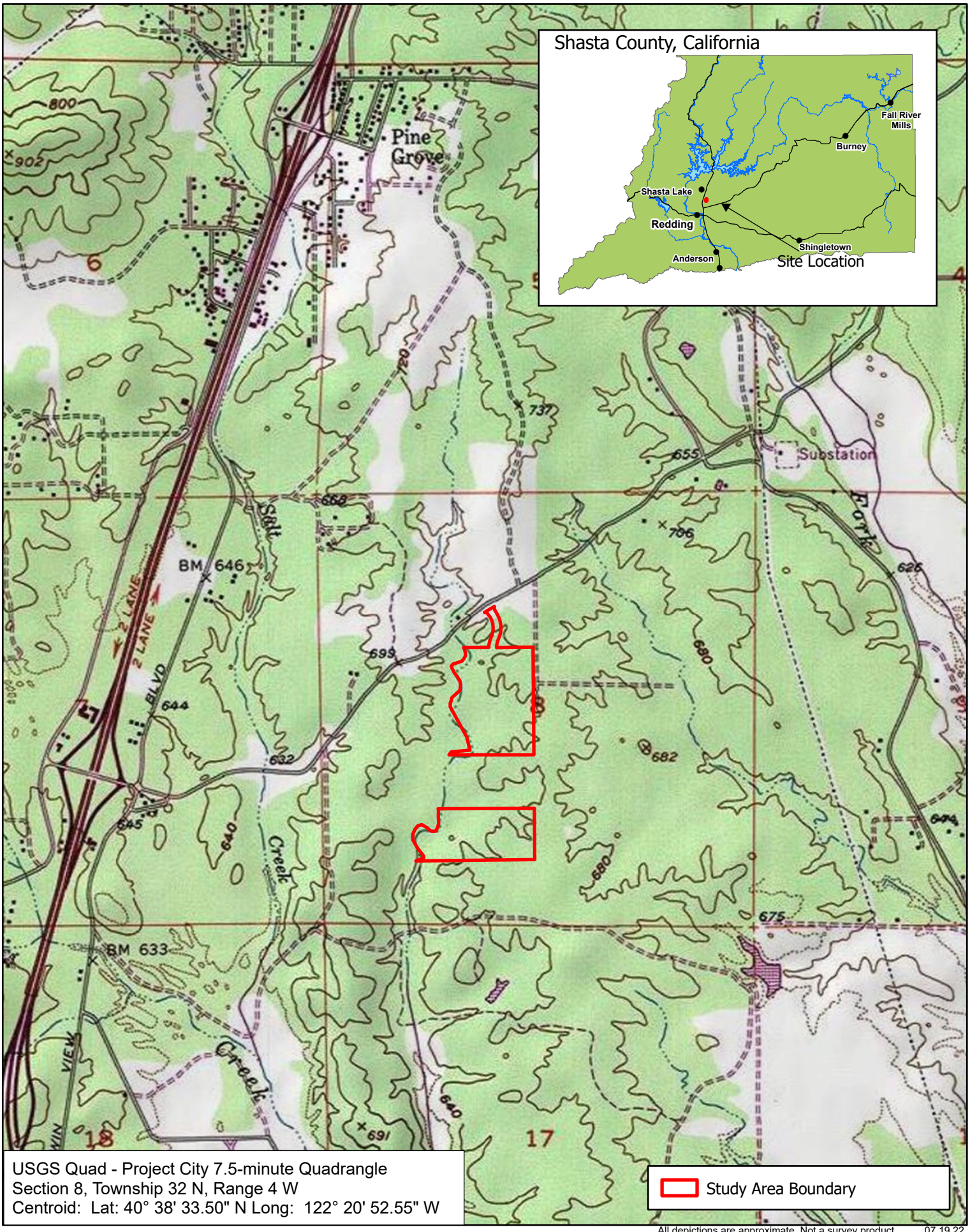
Rare Plant Rank	
1A	Plants presumed extinct in California and either rare or extinct elsewhere
1B	Plants rare, threatened or endangered in California and elsewhere
2A	Plants presumed extinct in California but common elsewhere
2B	Plants rare, threatened, or endangered in California but common elsewhere
3	Review List: Plants about which more information is needed (generally not special-status, unless unusual circumstances warrant)
4	Watch List: Plants of limited distribution (generally not special-status, unless unusual circumstances warrant)
Rare Plant Threat Rank	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

Source: *California Native Plant Society, Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.5). http://www.rareplants.cnps.org. Accessed July 2022.*

APPENDIX A

Project Vicinity Map

Botanical Survey Results



USGS Quad - Project City 7.5-minute Quadrangle
Section 8, Township 32 N, Range 4 W
Centroid: Lat: 40° 38' 33.50" N Long: 122° 20' 52.55" W

All depictions are approximate. Not a survey product. 07.19.22

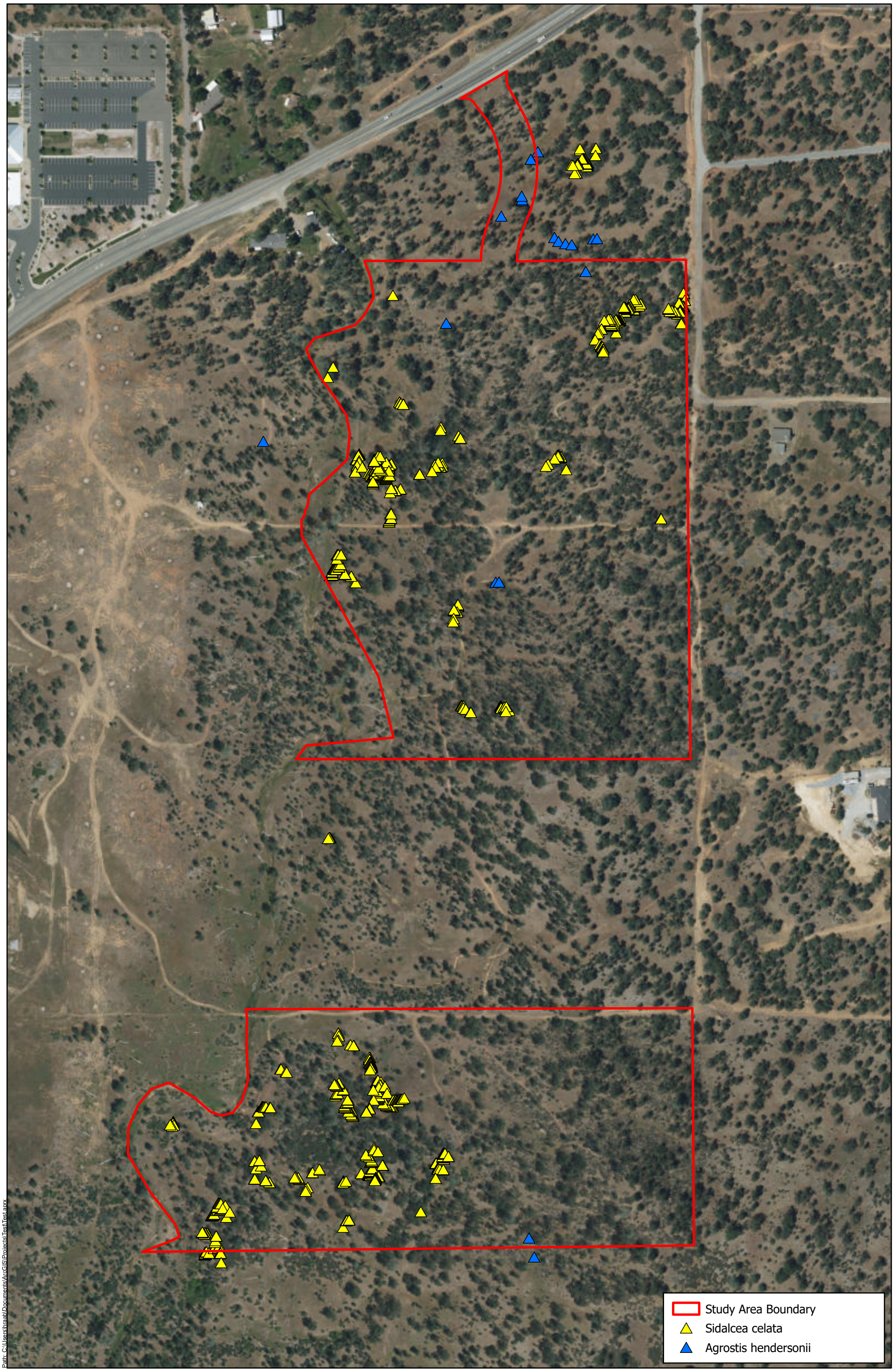
0 2,000 Feet

Figure 1

Project Vicinity Map

ENPLAN

Path: N:\companyfiles\01-Jobs Active\100-05 B Burk - Gold Hills\3-Project GIS\Map Documents\Study Area Boundary Map 071922\Study Area Boundary Map 071922.aprx



All depictions are approximate. Not a survey product. 07.19.22

0 300 Feet

Figure 2

Botanical Survey Results

ENPLAN

APPENDIX B

SPECIES LISTS

U.S. Fish and Wildlife Service List of Threatened and Endangered Species

National Marine Fisheries Service Species List

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

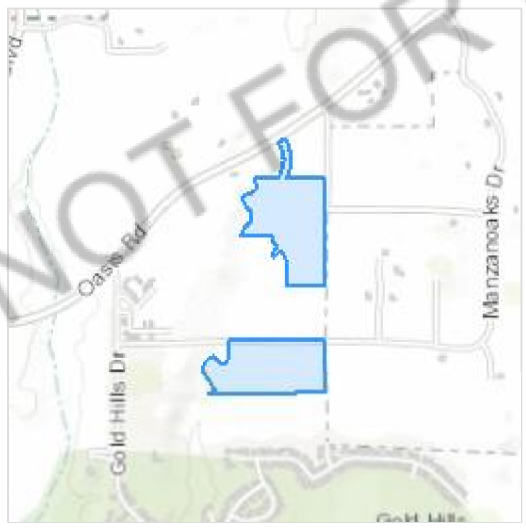
This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Shasta County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

NOT FOR CONSULTATION

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Northern Spotted Owl Strix occidentalis caurina Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/1123	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS

NOT FOR CONSULTATION

Shasta Crayfish Pacifastacus fortis — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8284

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/498

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

NOT FOR CONSULTATION

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

National Marine Fisheries Service
Species List

Quad Name **Project City**
Quad Number **40122-F3**

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat

ENPLAN

100-05
June 3, 2024

Brian Burk
P.O. Box 1485
Bend, OR 97709

SUBJECT: 2024 Field Condition Evaluation, The Oasis Subdivision

ENPLAN prepared a Biological Study Report (BSR) in 2019 addressing a ~64-acre study area identified as the Gold Hills site. The study area boundaries have since been reduced to exclude lands west of Dry Gulch; the current study area now encompasses ~49 acres east of Dry Gulch, and is known as The Oasis Subdivision Project. **Figure 1** shows the location of the current project site. An Addendum to the 2019 Biological Study Report was prepared in 2022, and included an update of the biological records search as well as an intensive botanical survey. The objective of the current field evaluation was to determine if any substantial changes in site conditions have occurred since 2022 that would affect the previously documented biological and aquatic resources.

The field evaluation was completed on May 30, 2024, and consisted of walking the project site and the proposed sewer corridor extending south of the site, with a focus on the site perimeter and possible vehicle entry points. As documented in the attached photographs, recent minor bank erosion was noted along Dry Gulch, evidence of limited vehicle activity was observed, and grass was laid over in two to three clustered spots, suggesting recent use, possibly by youths. No recent dumping, tree cutting, road construction, or other destructive activities were observed. Accordingly, we find no evidence of substantial changes since our 2022 evaluation that would affect aquatic or biological resources.

Please contact me if you have any questions regarding our findings or recommendations.

Sincerely,

Donald Burk
Environmental Services Manager

All depictions are approximate. Not a survey product. 6/3/2024

0 2,000 Feet

Figure 1

Project Site

ENPLAN

Recent slumping along Dry Gulch, with soil deposits in streambed, view to south.

Activity area in central portion of southern parcel; possibly a children’s play area.

Evidence of recent but infrequent vehicle entry near SE corner of northern parcel.

Evidence of recent but infrequent vehicle entry near NE corner of southern parcel.

gallaway
ENTERPRISES

117 Meyers Street • Suite 120 • Chico CA 95928 • 530-332-9909

May 31, 2024

Brian Burk
P.O. Box 1485
Bend, OR 97709
landpro958@hotmail.com
458-256-7362

RE: Evaluation of suitable habitat and potential for occurrence for Crotch's bumble bee at Oasis Road S-2021-01590

Mr. Burke,

Per your request we are providing a review of the potential habitat and potential for occurrence of Crotch's bumble bee at the Oasis Road site. This review is based on observations and findings documented in the original *Biological Study Report for the Gold Hills Site* produced by Enplan (Enplan, 2019), our familiarity of the immediate area resulting from working on several of the adjoining parcels and a desktop analysis of the Project site. Crotch's bumble bee habitat requirements include native grasslands and shrublands with floristic resources that persist through the summer featuring species such as antirrhinum, phacelia, clarkia, dendromecon, eschscholzia, and eriogonum. Enplan biologists observed buckwheat scrub habitat including a small population of several species of the genus eriogonum in the northeastern corner of the site. While there is an occurrence of a supporting floristic resource, eroigonum, the lack of abundance within the site are likely insufficient to support Crotch's bumble bees nesting. Additionally, the nearest Crotch's bumble bee CNDDB occurrence (year 1956) is approximately 31 miles southeast of the BSA in Red Bluff. It is our opinion that an on-site species-specific assessment for Crotch's bumble bee is not warranted due to the minimal amount of supporting floristic resources (eroigonum) and the lack of recorded occurrences in both proximity and time.

Sincerely,

Kevin Sevier
Vice President
Gallaway Enterprises, Inc.

The Oasis
All Tree Surveys Combined

ENPLAN

100-05
July 12, 2007

Brian Burk in 2004
P.O. Box 492709
Redding, CA 96049-2709

SUBJECT: Tree Survey for The Reserve at Gold Hills Residential Subdivision III

ENPLAN has conducted a tree survey addressing a ±13.8-acre study site located south of Oasis Road, in the City of Redding. The site consists of the portion of Shasta County APN 074-220-005 east of Dry Gulch Creek. The study site is shown on Figure 1.

This site was surveyed by another consultant in 2004 for trees 24 inches and greater in diameter. However, the GPS unit used to locate the trees was accurate to only ± 50 feet. ENPLAN resurveyed the site with a GPS unit capable of sub-meter accuracy. Because of the more precise locations, several of the trees indentified in the 2004 survey were found to be outside the boundaries of the project site. In addition, the 2004 survey was conducted by measuring basal diameters instead of diameters at breast height (dbh), which greatly increased the size of the tree diameter measurements. As a result, many of the trees recorded as 24 inches and greater were actually much smaller, and were not included in this survey.

ENPLAN surveyed the site on June 27, 2007, to identify the locations, species, and condition of all trees in the survey site that are 24 inches and greater in dbh, per the tree survey requirements of the City of Redding in 2004, as understood by the site developer.

The following methodology was used for the tree survey:

- The entirety of the site was inspected to identify all trees with a dbh of 24 inches or greater. These trees are referred to as “survey trees” in this document.
- The locations of all survey trees were recorded using a GPS unit capable of submeter accuracy.
- Species, dbh (using a diameter tape), and health were determined for all recorded trees. Health was rated on a scale of 1-5 (Poor-Best). Health factors include crown diameter, density and length; trunk defect; epicormic branching; etc.
- For trees on slopes, diameters were measured on the upslope side of the tree, 4½ feet above the ground surface.
- Each survey tree was labeled with a numbered metal tree tag.

A total of ten survey trees were recorded on the site. Seven survey trees were blue oaks (*Quercus douglasii*), and three were grey pines (*Pinus sabiniana*); they range from 24.3 to 32.3 inches dbh, have an average dbh of 27.4 inches, and are in poor to good health (rating 2-4). Figure 2 presents the location of each survey tree. A Survey Tree Specifications table is included in Figure 2 and shows recorded data on each survey tree.

Generally, survey trees identified in this study are decadent, large-diameter trees, with reduced crowns, showing minor to major structural damage, and have a poor to fair potential for long-term survival. Survey trees 1, 2, 3, and 5 are the healthiest, most structurally sound trees, showing some epicormic branching in the oaks, but showing generally healthy crowns. These four survey trees show the best potential for long-term survival after construction activities. ENPLAN recommends retaining these survey trees.

One other tree that approaches 24 inches in dbh (23.5 inches) and shows very good potential for long-term survival is shown on Figure 3 as tree A. This blue oak is located in the center of the site, shows no structural defect or epicormic branching, and has an excellent crown. ENPLAN recommends retaining tree A as well as the four survey trees, mentioned above.

In summary, ENPLAN recommends retaining four of the 10 survey trees (trees 24 inches and over) and one tree approaching 24 inches: retention tree 4. All trees recommended for retention are shown in Figure 3.

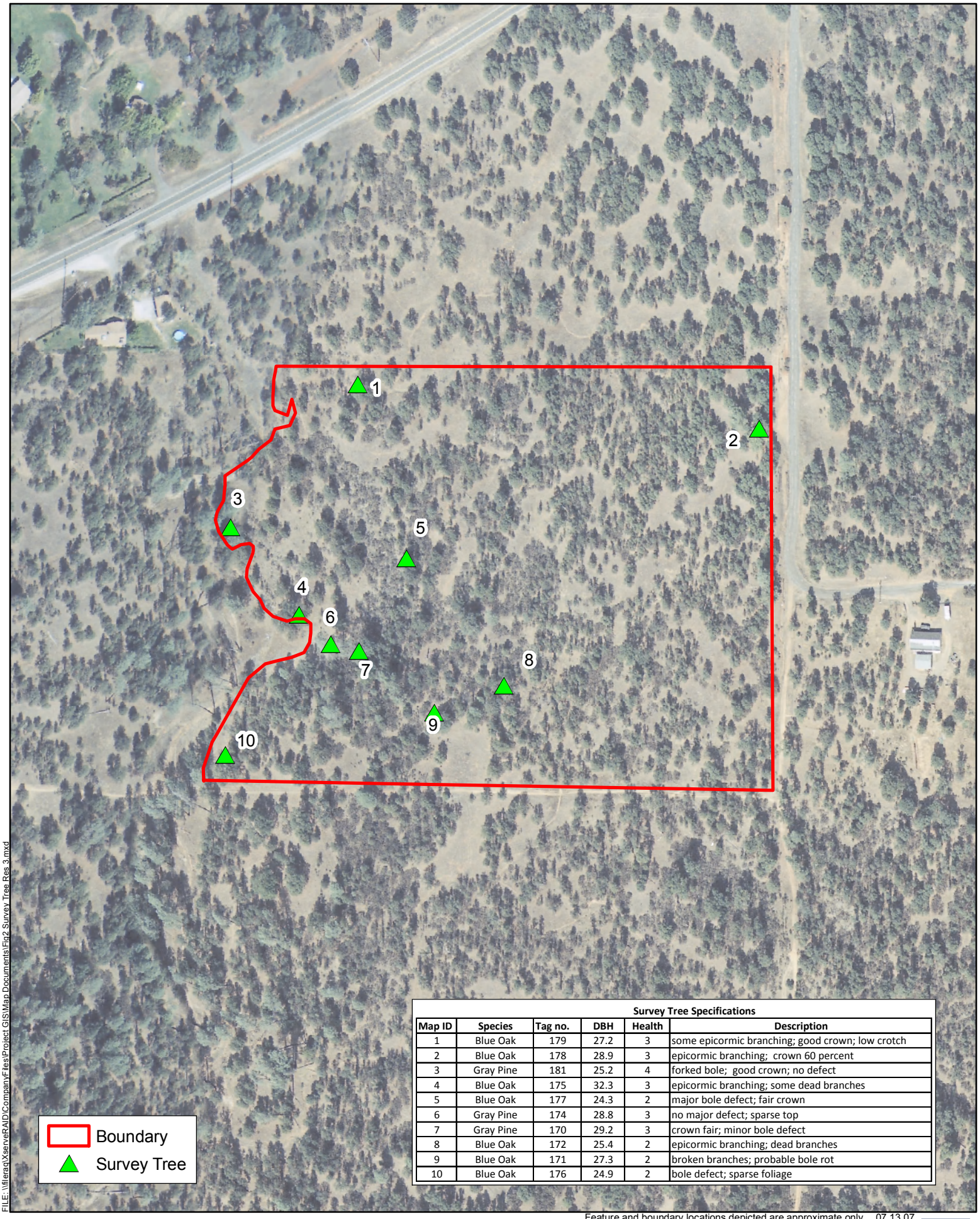
Please call us if you have any questions regarding the results of our tree survey.

Sincerely,

Kirk Vail
ISA Certified Arborist #WE-4575A

encl. Figure 1. Vicinity Map
Figure 2. Map with Survey Tree Specifications
Figure 3. Retention Trees

c. w/ encl. Sam Heier/SDS



Survey Tree Specifications

Map ID	Species	Tag no.	DBH	Health	Description
1	Blue Oak	179	27.2	3	some epicormic branching; good crown; low crotch
2	Blue Oak	178	28.9	3	epicormic branching; crown 60 percent
3	Gray Pine	181	25.2	4	forked bole; good crown; no defect
4	Blue Oak	175	32.3	3	epicormic branching; some dead branches
5	Blue Oak	177	24.3	2	major bole defect; fair crown
6	Gray Pine	174	28.8	3	no major defect; sparse top
7	Gray Pine	170	29.2	3	crown fair; minor bole defect
8	Blue Oak	172	25.4	2	epicormic branching; dead branches
9	Blue Oak	171	27.3	2	broken branches; probable bole rot
10	Blue Oak	176	24.9	2	bole defect; sparse foliage

FILE: \\fileraq\XserveRAID\CompanyFiles\Project GIS\Map Documents\Fig2 Survey Tree Res 3.mxd

Feature and boundary locations depicted are approximate only. 07.13.07

Figure 2
Survey Trees

ENPLAN

ENPLAN

100-05
February 12, 2007

Brian Burk
P.O. Box 492709
Redding, CA 96049-2709

SUBJECT: Tree Survey for The Reserve at Gold Hills Residential Subdivision II

ENPLAN has conducted a tree survey addressing a ±7.7-acre study site located south of Oasis Road, in the City of Redding. The site consists of the portion of Shasta County Assessor's Parcel No. 074-230-002 and APN 074-220-005 west of Dry Gulch Creek. The study site is shown on Figure 1.

The site was surveyed on February 1, 2007, to identify the presence of "candidate trees" and "candidate tree groupings." These terms are defined in the City of Redding Zoning Ordinance Update, Chapter 18.61, as: A single healthy tree or group of healthy trees warranting consideration for preservation by virtue of its value to the community, the immediate neighborhood, or the natural environment in recognition of the existence of one or more of the following attributes:

1. It is an outstanding specimen of its species in terms of aesthetic quality as determined by shape and branch structure.
2. It is one of the largest or oldest trees in Redding that also has historical or neighborhood interest.
3. It adds significantly to the environment of the city because of its location, distinct form, unique species, or other identifying characteristics.
4. It is in a location which is connected to a larger natural woodland system, such as a permanent open-space area, and which is likely to be self-supporting over time.
5. It serves a desirable function, such as buffering dissimilar land uses, or is a component of an overall landscape plan.

The following methodology was used for the tree survey:

- The entirety of the site was inspected to identify all candidate trees and tree groupings.
- The locations of all candidate trees were recorded using a GPS unit capable of submeter accuracy.
- Species, dbh (using a diameter tape), and health were determined for all recorded trees. Health was rated on a scale of 1-5 (Poor-Best). Health factors

include crown diameter, density and length; trunk defect; epicormic branching; etc.
- For trees on slopes, diameters were measured on the upslope side of the tree, 4½ feet above the ground surface.
- Each candidate tree was labeled with a numbered metal tree tag.

A total of six candidate trees were recorded on the site; no candidate tree groupings were observed. All candidate trees are blue oaks (*Quercus douglasii*). They range from 15 to 22.8 inches dbh, have an average dbh of 18.4 inches, and are in fair to good health (rating 3-4). Figure 2 presents the location of each candidate tree. A Candidate Tree Specifications table is included in Figure 2 and shows recorded data on each candidate tree.

Due to a fire in the summer of 2006, many trees and trees groupings sustained severe bark and crown damage, and are not suitable for classification as candidate trees. Generally, candidate trees identified in this survey are healthy, moderately large diameter trees, with moderately full crowns, show minor to no structural damage, and have a good potential for long-term survival. Candidate trees 3 and 7 show minor fire damage to the lower trunk bark. Candidate tree 4 shows minor root crown damage unrelated to the recent fire. Candidate tree 1 is under some environmental stress, as indicated by some epicormic branching (released latent branch buds in the tree trunk) and less than a full-sized crown. Tree 2 has some roots that are exposed by Dry Gulch Creek, but should not experience any stability problems in the long-term.

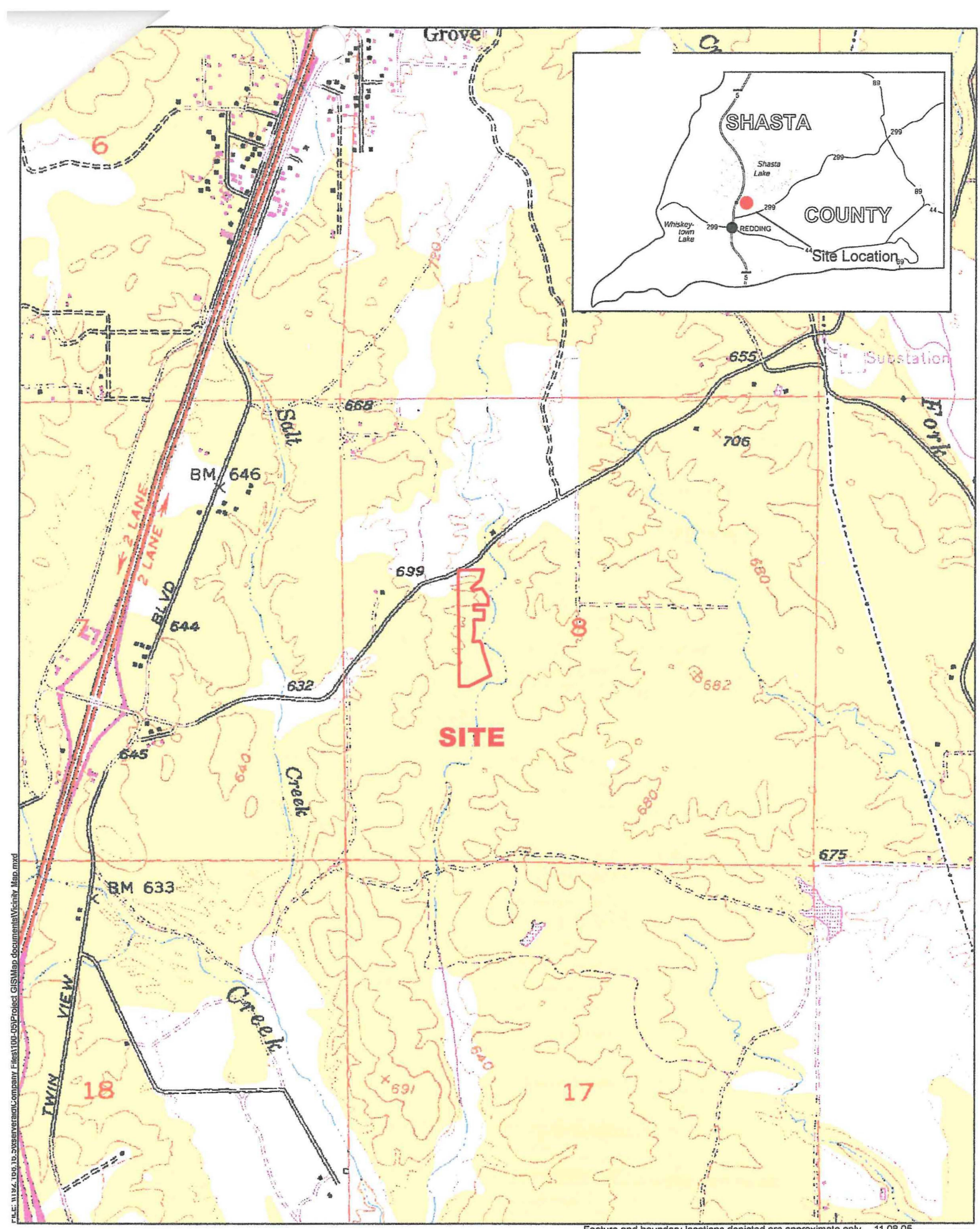
Please call us if you have any questions regarding the results of our tree survey.

Sincerely,

Kirk Vail
ISA Certified Arborist #WE-4575A

encl. Project Location Map
Tree Survey Map with Candidate Tree Specifications

c. w/ encl. Sam Heier/SDS



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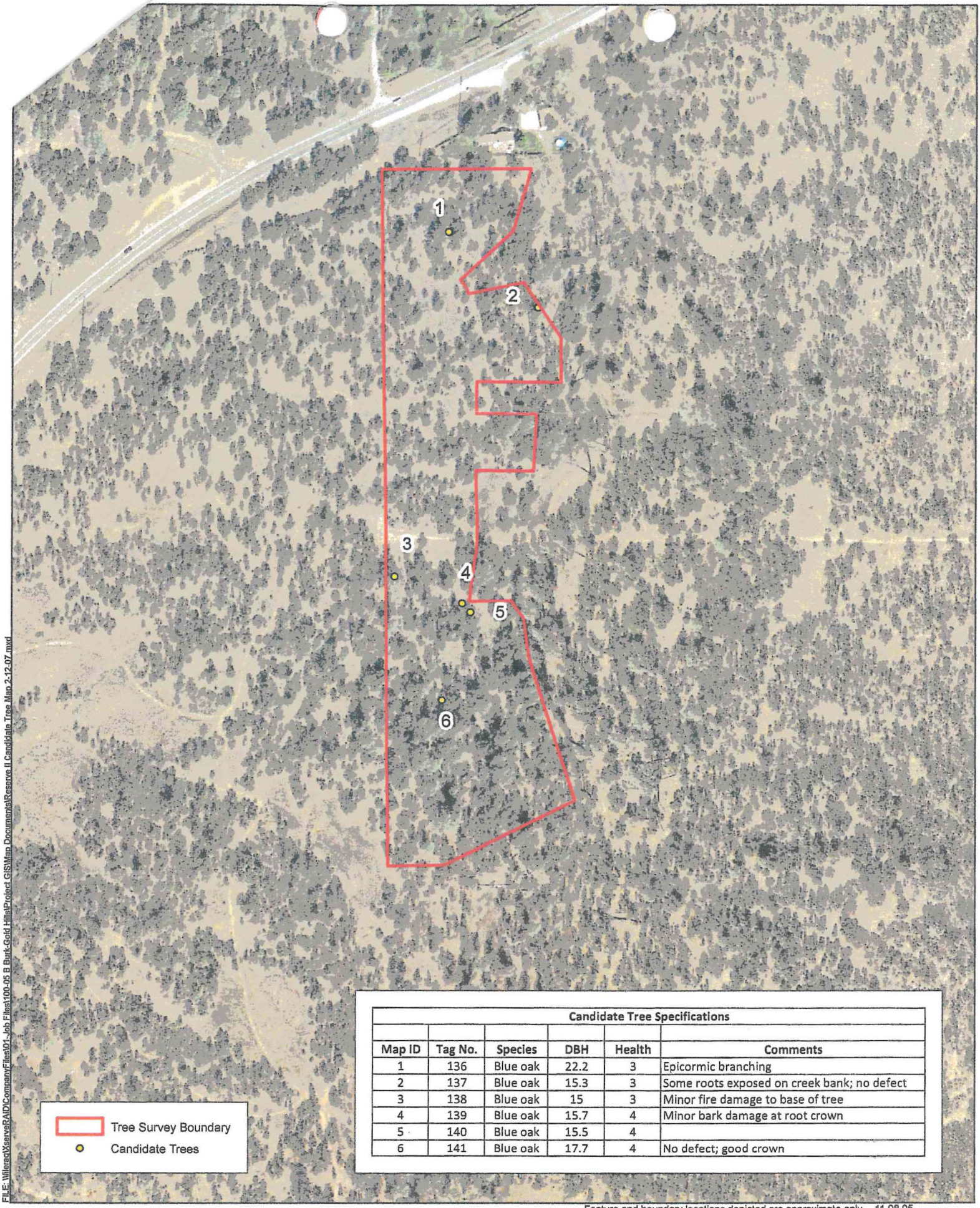
Feature and boundary locations depicted are approximate only. 11.08.05

0 1,000 2,000 Feet

Figure 1
Vicinity Map

ENPLAN



Candidate Tree Specifications					
Map ID	Tag No.	Species	DBH	Health	Comments
1	136	Blue oak	22.2	3	Epicormic branching
2	137	Blue oak	15.3	3	Some roots exposed on creek bank; no defect
3	138	Blue oak	15	3	Minor fire damage to base of tree
4	139	Blue oak	15.7	4	Minor bark damage at root crown
5	140	Blue oak	15.5	4	
6	141	Blue oak	17.7	4	No defect; good crown

Feature and boundary locations depicted are approximate only. 11.08.05

Feet
0 100 200

Figure 2
Tree Survey

ENPLAN

ENPLAN

100-05
February 9, 2007

Brian Burk
P.O. Box 492709
Redding, CA 96049-2709

SUBJECT: Tree Survey for The Reserve at Gold Hills Residential Subdivision II

ENPLAN has conducted a tree survey addressing a ±17.7-acre study site located south of Oasis Road, in the City of Redding. The site consists of the western two-thirds of Shasta County Assessor's Parcel No. 074-230-002 and that portion of APN 074-220-005 west of Dry Creek. The study site is shown on Figure 1.

The site was surveyed on February 1, 2007, to identify the presence of "candidate trees" and "candidate tree groupings". These terms are defined in the City of Redding Zoning Ordinance Update, Chapter 18.61, as: A single healthy tree or group of healthy trees warranting consideration for preservation by virtue of its value to the community, the immediate neighborhood, or the natural environment in recognition of the existence of one or more of the following attributes:

1. It is an outstanding specimen of its species in terms of aesthetic quality as determined by shape and branch structure.
2. It is one of the largest or oldest trees in Redding that also has historical or neighborhood interest.
3. It adds significantly to the environment of the city because of its location, distinct form, unique species, or other identifying characteristics.
4. It is in a location which is connected to a larger natural woodland system, such as a permanent open-space area, and which is likely to be self-supporting over time.
5. It serves a desirable function, such as buffering dissimilar land uses, or is a component of an overall landscape plan.

The following methodology was used for the tree survey:

- The entirety of the site was inspected to identify all candidate trees and tree groupings.
- The locations of all candidate trees were recorded using a GPS unit capable of submeter accuracy.
- Species, dbh (using a diameter tape) and health were determined for all recorded trees. Health was rated on a scale of 1-5 (Poor-Best). Health factors include crown diameter, density and length, trunk defect, epicormic branching, etc.
- For trees on slopes, diameters were measured on the upslope side of the tree, 4½ feet above the ground surface.
- Each candidate tree was labeled with a numbered metal tree tag.

A total of 10 candidate trees were recorded on the site; no candidate tree groupings were observed. All candidate trees are blue oaks (*Quercus douglasii*). They range from 15 to 22.8 inches dbh, have an average dbh of 18.4 inches, and are in fair to good health (rating 3-4). Figure 2 presents the location of each candidate tree. A Candidate Tree Specifications table is included in Figure 2 and shows recorded data on each candidate tree.

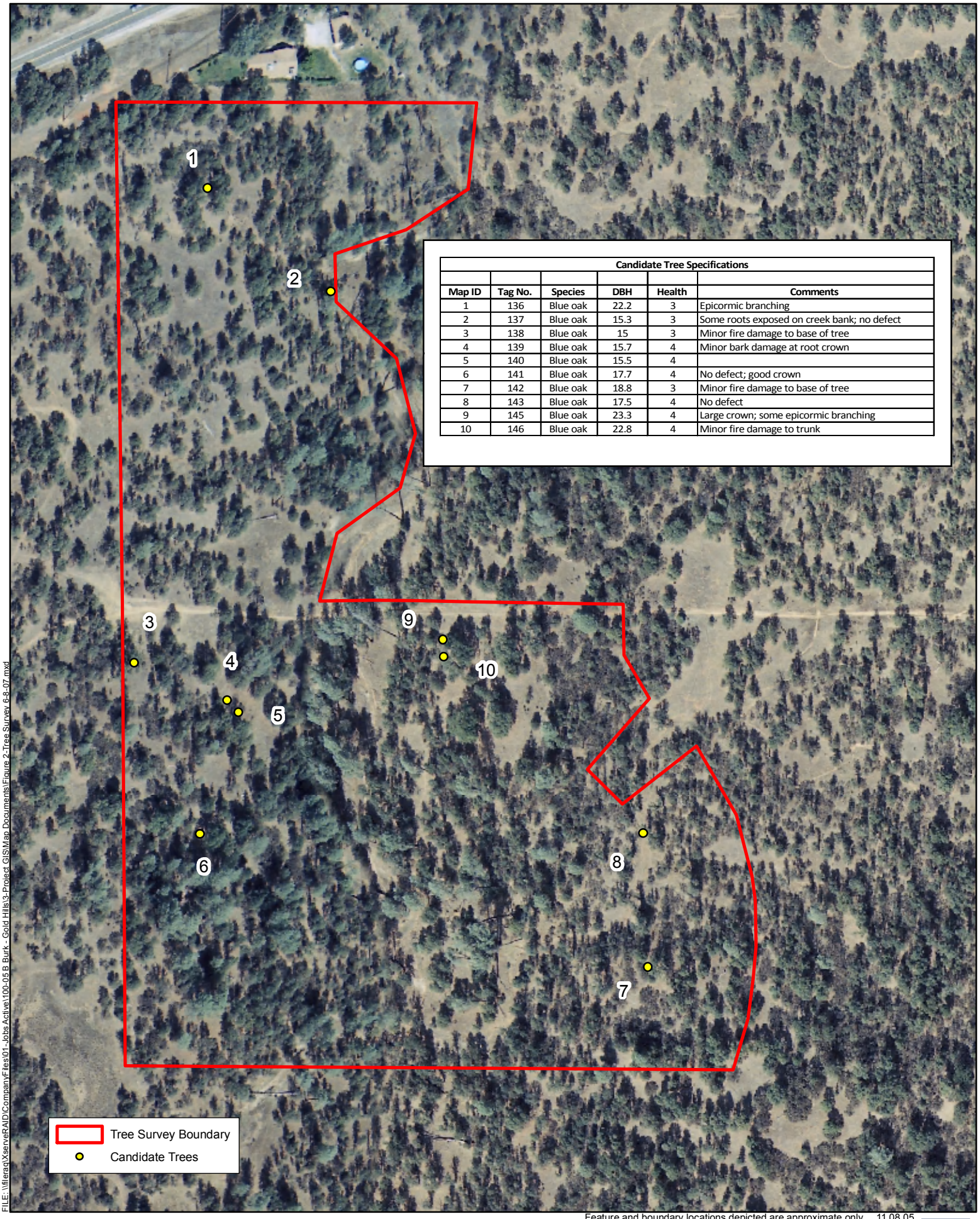
Due to a fire in the summer of 2006, many trees and trees groupings sustained severe bark and crown damage, and are not suitable for classification as candidate trees. Generally, candidate trees identified in this survey are healthy, moderately large diameter trees, with moderately full crowns, show minor to no structural damage, and have a good potential for long-term survival. Candidate trees 3, 7 and 10 show minor fire damage to the lower trunk bark. Candidate tree 4 shows minor root crown damage unrelated to the recent fire. Candidate trees 1 and 9 are under some environmental stress, as indicated by some epicormic branching (released latent branch buds in the tree trunk) and less than full-sized crowns. Tree 2 has some roots that are exposed by Dry Gulch Creek, but should not experience any stability problems in the long-term.

Please call us if you have any questions regarding the results of our tree survey.

Sincerely,

Kirk Vail
ISA Certified Arborist #WE-4575A

encl. Project Location Map
Tree Survey Map with Candidate Tree Specifications



Candidate Tree Specifications

Map ID	Tag No.	Species	DBH	Health	Comments
1	136	Blue oak	22.2	3	Epicormic branching
2	137	Blue oak	15.3	3	Some roots exposed on creek bank; no defect
3	138	Blue oak	15	3	Minor fire damage to base of tree
4	139	Blue oak	15.7	4	Minor bark damage at root crown
5	140	Blue oak	15.5	4	
6	141	Blue oak	17.7	4	No defect; good crown
7	142	Blue oak	18.8	3	Minor fire damage to base of tree
8	143	Blue oak	17.5	4	No defect
9	145	Blue oak	23.3	4	Large crown; some epicormic branching
10	146	Blue oak	22.8	4	Minor fire damage to trunk

FILE: \\fileraq\XserveRAID\CompanyFiles\01-Jobs Active\100-05 B Burk - Gold Hills\3-Project GIS\Map Documents\Figure 2-Tree Survey 6-8-07.mxd

Feature and boundary locations depicted are approximate only. 11.08.05

0 100 200 Feet

Figure 2
Tree Survey

ENPLAN

ENPLAN

100-05
July 7, 2022

Brian Burk
P.O. Box 1485
Bend, OR 97709

SUBJECT: The Oasis Subdivision - Tree Survey Report

In response to your request, ENPLAN has completed a tree survey for a ±8.5-acre study site located south of Oasis Road and west of Indian Country Drive, in the City of Redding. This report provides the results of our survey.

The site consists of portions of Shasta County Assessor's Parcels 074-210-004 and 074-230-023. The site is situated approximately 685 feet above sea level. Figure 1 shows the project location and vicinity.

City of Redding Tree Protection Ordinances and Permitting

The Redding Municipal Code provides tree protection through the Streets and Sidewalks Ordinance, Chapter 13.40.010 Trees and Shrubs and through Zoning Ordinance, Chapter 18.45.030 Tree Management. As described in Chapter 13.40.010, trees that are considered unique, outstanding specimens of desirable species, have historic interest, or are of distinct form will be identified and preserved in a Landmark and Heritage Tree Plan developed by the community services advisory commission. According to City staff, no landmark or heritage trees have been identified on the subject site (Lily Toy, pers. comm.).

The City of Redding Zoning Ordinance, Chapter 18.45.030, states that "no tree, regardless of species, that exceeds 6 inches dbh on any developed or undeveloped/vacant property in the city shall be destroyed, killed, or removed unless a tree removal permit is first obtained." An application for a "Discretionary Permit", as described in Chapter 18.45.070, will also serve as "an application for tree removal in those instances where trees will be affected by the development."

To secure a Discretionary Permit, "candidate trees and "candidate tree groupings", as defined under Chapter 18.61, must be identified on the site. These trees are classified as a single healthy tree or group of healthy trees (i.e., common, unbroken canopy) warranting consideration for preservation by virtue of its value to the community, the immediate neighborhood, or the natural environment in recognition of the existence of one or more of the following attributes:

- It is an outstanding specimen of its species in terms of aesthetic quality as determined by shape and branch structure.

- It is one of the largest or oldest trees in Redding that also has historical or neighborhood interest.
- It adds significantly to the environment of the City because of its location, distinct form, unique species, or other identifying characteristics.
- It is in a location which is connected to a larger natural woodland system, such as a permanent open-space area, and which is likely to be self-supporting over time.
- It serves a desirable function, such as buffering dissimilar land uses, or is a component of an overall landscape plan.

Section 18.45.060 states that prior to any work done on the site, “every tree designated for removal on the approved site plan that is outside the proposed right-of-way or easement areas shall be clearly marked in the field.” Section 18.45.080 states that “a pre-construction meeting” be “held with the contractor and City staff to review any tree protection measures required.”

Tree Survey Methodology

The following methodology was used for the tree survey:

- The site was inspected to identify all trees ≥6-inch diameter breast height (dbh), including candidate trees and candidate tree groupings.
- Species, dbh, and health were determined for all trees. Health was rated on a scale of 1-5 (Poor-Best). Health factors include tree form and structure; crown diameter; density; amount of foliation on lateral branches; trunk defects; presence of damage, disease, or decay; condition of old and new wood; etc. See Table 1 for a more detailed description of health ratings.
- Using a diameter tape, tree diameters were measured approximately 4½ feet above the ground surface. Where the trunk split below this level, each stem was separately measured and recorded.
- Trees evaluated were marked with spray paint; candidate trees were labelled with a numbered metal tree tag.
- Tree locations were recorded with a GPS unit capable of sub-meter accuracy.

Tree Survey Results

The site was surveyed on June 29 and July 1, 2022, to identify the presence and status of trees, as defined above. The survey was conducted by Rico Montenegro, Certified Arborist #WE-6734A, with assistance from ENPLAN biologist Sabrina Rouse. A total of 593 trees were recorded on the site; all the trees were blue oaks, with the exception of one gray pine. Three blue oaks were identified as candidate trees. No candidate tree groupings were identified. Table 1 lists the candidate trees and their attributes, and Figure 2 shows their location within the project boundary. All the surveyed trees,

including their identification number, species, size, health rating, and classification, are listed in Table 2. The locations of all trees, by species, are depicted on Figure 3.

City of Redding Application Process

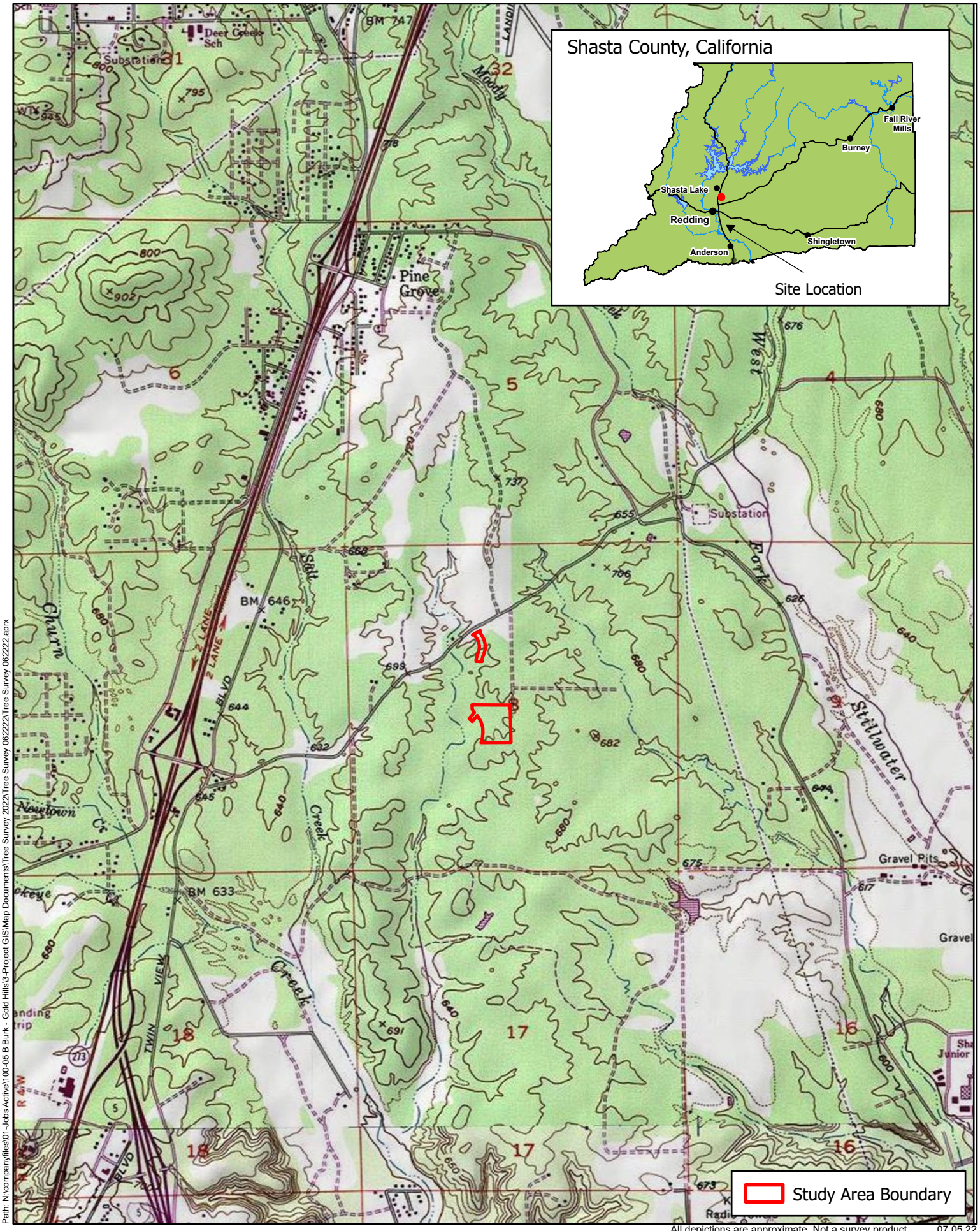
An application for a Discretionary Permit is considered an application for tree removal in those instances where trees will be affected by planned development of the subject site. Any identified candidate trees should be preserved. Further, if all identified candidate trees cannot be preserved, the design of the development should address preservation of the most desirable and significant of the healthy candidate trees.

Please call us if you have any questions regarding the results of our tree survey.

Sincerely,

Allison Loveless
Environmental Scientist/Wildlife Biologist

encl. Figure 1. Project Vicinity
Figure 2. Tree Survey Results – Candidate Trees
Figure 3. Tree Survey Results – Trees by Species
Table 1. Candidate Trees
Table 2. Surveyed Trees



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All depictions are approximate. Not a survey product. 07.05.22

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Figure 1

Project Vicinity Map

ENPLAN

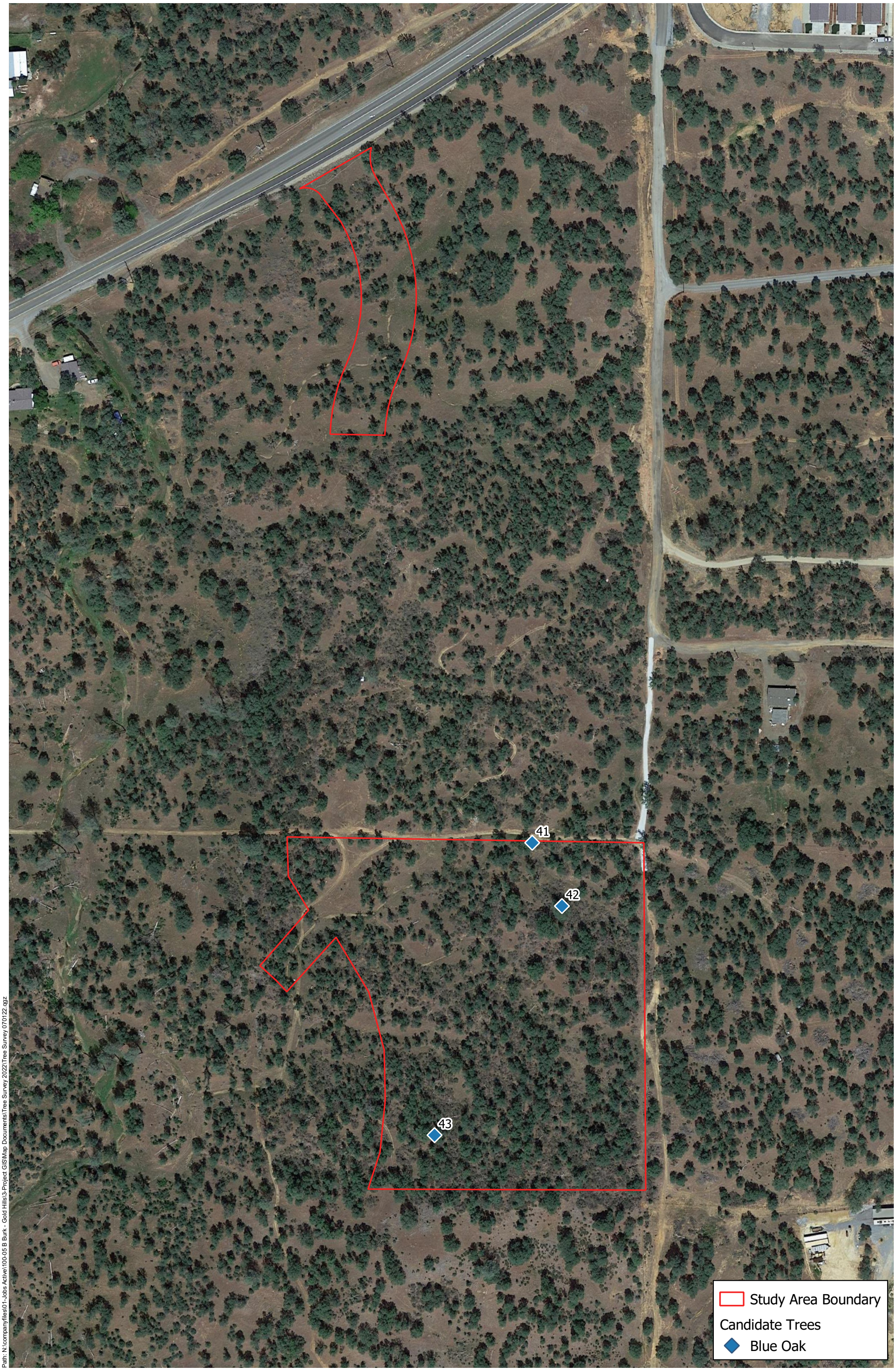

Figure 2

Tree Survey Results - Candidate Trees

All depictions are approximate. Not a survey product. 07.05.22

ENPLAN

Study Area Boundary
Blue oak
Gray pine

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All depictions are approximate. Not a survey product. 07.05.22

0 75 150 Feet

Figure 3

Tree Survey Results - Species

ENPLAN

Table 1
Candidate Trees
The Oasis Subdivision

Tag Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)
41	Blue Oak	*Quercus douglasii*	5	19
42	Blue Oak	*Quercus douglasii*	4	31
43	Blue Oak	*Quercus douglasii*	5	20

* Health rating (Defined by Rico Montenegro Certified Arborist #WE-6734A)
1. Extreme and profound visible evidence of disease, insect damage, decay, or limb loss. Less than 25% of branches are foliated. Trees may contain single or multiple trunks with deteriorated form and structure. Trees are in later stages of senescence.
2. Major and large amounts of visible disease, insect damage, decay, or limb loss. Between 25 and 50% of the branches are foliated. Trees can contain single or multiple trunks, with poor form and structure. Trees are in the early stages of senescence.
3. Moderate amounts of visible disease, insect damage, decay, or limb loss. Between 50 and 80% of the branches are foliated. Trees are generally single trunked, with compromised form and structure, and moderate growth.
4. Minor evidence of disease, insect damage, decay, or limb loss. More than 80 to 90% of the branches are foliated. Trees are generally single trunked, with good form and structure, and good growth.
5. None or very little evidence of disease, insect damage, decay, or limb loss. More than 90% of the branches are foliated. Trees are generally single trunked, with very good form and structure, and vigorous growth.

Table 2
Surveyed Trees
The Oasis Subdivision

Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
41	**Blue Oak**	***Quercus douglasii***	**5**	**19**	**Yes**
42	**Blue Oak**	***Quercus douglasii***	**4**	**31**	**Yes**
43	**Blue Oak**	***Quercus douglasii***	**5**	**20**	**Yes**
200	Blue Oak	*Quercus douglasii*	3	14	No
201	Blue Oak	*Quercus douglasii*	5	9	No
202	Blue Oak	*Quercus douglasii*	4	18	No
203†	Blue Oak	*Quercus douglasii*	4	8, 7	No
204†	Blue Oak	*Quercus douglasii*	4	8, 6	No
205	Blue Oak	*Quercus douglasii*	3	15	No
206†	Blue Oak	*Quercus douglasii*	3	8, 8	No
207	Blue Oak	*Quercus douglasii*	4	8	No
208	Blue Oak	*Quercus douglasii*	2	8	No
209	Blue Oak	*Quercus douglasii*	3	8	No
210†	Blue Oak	*Quercus douglasii*	3	7, 7	No
211	Blue Oak	*Quercus douglasii*	3	11	No
212†	Blue Oak	*Quercus douglasii*	3	10, 8	No
213†	Blue Oak	*Quercus douglasii*	3	8, 8	No
214	Blue Oak	*Quercus douglasii*	3	8	No
215	Blue Oak	*Quercus douglasii*	4	12	No
216	Blue Oak	*Quercus douglasii*	4	10	No
217	Blue Oak	*Quercus douglasii*	4	8	No
218	Blue Oak	*Quercus douglasii*	3	14	No
219	Blue Oak	*Quercus douglasii*	3	14	No
220	Blue Oak	*Quercus douglasii*	4	7	No
221	Blue Oak	*Quercus douglasii*	2	6	No
222	Blue Oak	*Quercus douglasii*	4	10	No
223	Blue Oak	*Quercus douglasii*	3	8	No
224	Blue Oak	*Quercus douglasii*	4	14	No
225	Blue Oak	*Quercus douglasii*	3	8	No
226	Blue Oak	*Quercus douglasii*	2	9	No
227†	Blue Oak	*Quercus douglasii*	2	8, 8	No
228	Blue Oak	*Quercus douglasii*	4	20	No
229	Blue Oak	*Quercus douglasii*	3	8	No
230	Blue Oak	*Quercus douglasii*	4	6	No
231	Blue Oak	*Quercus douglasii*	4	18	No
232	Blue Oak	*Quercus douglasii*	4	19	No
233	Blue Oak	*Quercus douglasii*	2	11	No
234	Blue Oak	*Quercus douglasii*	3	16	No
235	Blue Oak	*Quercus douglasii*	3	14	No
236	Blue Oak	*Quercus douglasii*	4	8	No
237	Blue Oak	*Quercus douglasii*	4	15	No
238	Blue Oak	*Quercus douglasii*	3	14	No
239	Blue Oak	*Quercus douglasii*	4	9	No
240	Blue Oak	*Quercus douglasii*	4	8	No

Table 2
Surveyed Trees
The Oasis Subdivision

Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
241	Blue Oak	*Quercus douglasii*	3	14	No
242	Blue Oak	*Quercus douglasii*	2	14	No
243	Blue Oak	*Quercus douglasii*	3	7	No
244	Blue Oak	*Quercus douglasii*	3	10	No
245	Blue Oak	*Quercus douglasii*	4	17	No
246†	Blue Oak	*Quercus douglasii*	3	8, 8	No
247	Blue Oak	*Quercus douglasii*	3	8	No
248	Blue Oak	*Quercus douglasii*	2	6	No
249	Blue Oak	*Quercus douglasii*	3	8	No
250	Blue Oak	*Quercus douglasii*	2	6	No
251	Blue Oak	*Quercus douglasii*	3	10	No
252	Blue Oak	*Quercus douglasii*	3	7	No
253	Blue Oak	*Quercus douglasii*	3	6	No
254	Blue Oak	*Quercus douglasii*	3	11	No
255	Blue Oak	*Quercus douglasii*	3	8	No
256†	Blue Oak	*Quercus douglasii*	3	8, 8	No
257	Blue Oak	*Quercus douglasii*	3	7	No
258†	Blue Oak	*Quercus douglasii*	3	7, 6	No
259	Blue Oak	*Quercus douglasii*	2	13	No
260†	Blue Oak	*Quercus douglasii*	2	11, 10	No
261	Blue Oak	*Quercus douglasii*	2	10	No
262	Blue Oak	*Quercus douglasii*	3	6	No
263†	Blue Oak	*Quercus douglasii*	3	8, 8	No
264	Blue Oak	*Quercus douglasii*	3	8	No
265	Blue Oak	*Quercus douglasii*	3	6	No
266†	Blue Oak	*Quercus douglasii*	3	11, 11	No
267	Blue Oak	*Quercus douglasii*	3	7	No
268	Blue Oak	*Quercus douglasii*	3	8	No
269	Blue Oak	*Quercus douglasii*	5	17	No
270	Blue Oak	*Quercus douglasii*	2	6	No
271	Blue Oak	*Quercus douglasii*	2	10	No
272	Blue Oak	*Quercus douglasii*	4	8	No
273†	Blue Oak	*Quercus douglasii*	3	7, 7	No
274	Blue Oak	*Quercus douglasii*	2	16	No
275	Blue Oak	*Quercus douglasii*	4	12	No
276	Blue Oak	*Quercus douglasii*	3	13	No
277	Blue Oak	*Quercus douglasii*	3	13	No
278	Blue Oak	*Quercus douglasii*	3	13	No
279	Blue Oak	*Quercus douglasii*	2	7	No
280	Blue Oak	*Quercus douglasii*	5	18	No
281	Blue Oak	*Quercus douglasii*	2	15	No
282	Blue Oak	*Quercus douglasii*	3	13	No
283	Blue Oak	*Quercus douglasii*	3	9	No
284	Blue Oak	*Quercus douglasii*	3	13	No

Table 2
Surveyed Trees
The Oasis Subdivision

Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
285	Blue Oak	*Quercus douglasii*	3	13	No
286†	Blue Oak	*Quercus douglasii*	3	14, 13	No
287	Blue Oak	*Quercus douglasii*	3	14	No
288†	Blue Oak	*Quercus douglasii*	4	13, 13	No
289	Blue Oak	*Quercus douglasii*	3	8	No
290†	Blue Oak	*Quercus douglasii*	3	13, 13, 13, 13	No
291	Blue Oak	*Quercus douglasii*	4	14	No
292†	Blue Oak	*Quercus douglasii*	3	12, 12	No
293†	Blue Oak	*Quercus douglasii*	5	12, 12	No
294	Blue Oak	*Quercus douglasii*	2	12	No
295 (North) †	Blue Oak	*Quercus douglasii*	3	14, 8	No
295 (South)	Blue Oak	*Quercus douglasii*	3	15	No
296	Blue Oak	*Quercus douglasii*	3	13	No
297	Blue Oak	*Quercus douglasii*	3	6	No
298	Blue Oak	*Quercus douglasii*	3	6	No
299	Gray pine	*Pinus sabiniana*	4	13	No
300	Blue Oak	*Quercus douglasii*	3	8	No
301	Blue Oak	*Quercus douglasii*	4	12	No
302	Blue Oak	*Quercus douglasii*	5	12	No
303	Blue Oak	*Quercus douglasii*	3	8	No
304	Blue Oak	*Quercus douglasii*	3	8	No
305	Blue Oak	*Quercus douglasii*	4	11	No
306†	Blue Oak	*Quercus douglasii*	5	18, 16	No
307	Blue Oak	*Quercus douglasii*	3	8	No
308	Blue Oak	*Quercus douglasii*	2	16	No
309	Blue Oak	*Quercus douglasii*	3	7	No
310	Blue Oak	*Quercus douglasii*	3	22	No
311	Blue Oak	*Quercus douglasii*	3	7	No
312	Blue Oak	*Quercus douglasii*	3	13	No
313	Blue Oak	*Quercus douglasii*	3	12	No
314†	Blue Oak	*Quercus douglasii*	3	12, 12	No
315	Blue Oak	*Quercus douglasii*	3	11	No
316	Blue Oak	*Quercus douglasii*	3	8	No
317	Blue Oak	*Quercus douglasii*	3	13	No
318	Blue Oak	*Quercus douglasii*	3	17	No
319	Blue Oak	*Quercus douglasii*	5	15	No
320	Blue Oak	*Quercus douglasii*	4	12	No
321	Blue Oak	*Quercus douglasii*	3	11	No
322†	Blue Oak	*Quercus douglasii*	3	6, 6	No
323	Blue Oak	*Quercus douglasii*	2	9	No
324	Blue Oak	*Quercus douglasii*	3	12	No
325	Blue Oak	*Quercus douglasii*	2	6	No
326	Blue Oak	*Quercus douglasii*	3	13	No
327	Blue Oak	*Quercus douglasii*	4	10	No

Table 2
Surveyed Trees
The Oasis Subdivision

Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
328	Blue Oak	*Quercus douglasii*	5	13	No
329	Blue Oak	*Quercus douglasii*	2	8	No
330†	Blue Oak	*Quercus douglasii*	3	9, 7	No
331	Blue Oak	*Quercus douglasii*	4	11	No
332	Blue Oak	*Quercus douglasii*	3	7	No
333†	Blue Oak	*Quercus douglasii*	3	10, 10	No
334	Blue Oak	*Quercus douglasii*	3	16	No
335	Blue Oak	*Quercus douglasii*	3	7	No
336	Blue Oak	*Quercus douglasii*	3	8	No
337	Blue Oak	*Quercus douglasii*	3	7	No
338†	Blue Oak	*Quercus douglasii*	3	9, 9, 9	No
339	Blue Oak	*Quercus douglasii*	3	7	No
340	Blue Oak	*Quercus douglasii*	3	8	No
341†	Blue Oak	*Quercus douglasii*	3	8, 8	No
342	Blue Oak	*Quercus douglasii*	4	13	No
343	Blue Oak	*Quercus douglasii*	4	13	No
344	Blue Oak	*Quercus douglasii*	4	8	No
345	Blue Oak	*Quercus douglasii*	5	11	No
346	Blue Oak	*Quercus douglasii*	4	8	No
347	Blue Oak	*Quercus douglasii*	5	13	No
348	Blue Oak	*Quercus douglasii*	3	8	No
349	Blue Oak	*Quercus douglasii*	4	12	No
350	Blue Oak	*Quercus douglasii*	4	9	No
351	Blue Oak	*Quercus douglasii*	2	7	No
352	Blue Oak	*Quercus douglasii*	2	8	No
353	Blue Oak	*Quercus douglasii*	2	11	No
354	Blue Oak	*Quercus douglasii*	4	12	No
355†	Blue Oak	*Quercus douglasii*	3	8, 6	No
356	Blue Oak	*Quercus douglasii*	3	11	No
357†	Blue Oak	*Quercus douglasii*	4	14, 12	No
358	Blue Oak	*Quercus douglasii*	2	9	No
359	Blue Oak	*Quercus douglasii*	2	13	No
360	Blue Oak	*Quercus douglasii*	3	13	No
361	Blue Oak	*Quercus douglasii*	3	11	No
362†	Blue Oak	*Quercus douglasii*	3	13, 13	No
363	Blue Oak	*Quercus douglasii*	3	13	No
364	Blue Oak	*Quercus douglasii*	3	12	No
365	Blue Oak	*Quercus douglasii*	4	20	No
366†	Blue Oak	*Quercus douglasii*	3	13, 12	No
367†	Blue Oak	*Quercus douglasii*	4	12, 12	No
368	Blue Oak	*Quercus douglasii*	4	12	No
369	Blue Oak	*Quercus douglasii*	5	17	No
370	Blue Oak	*Quercus douglasii*	2	6	No
371	Blue Oak	*Quercus douglasii*	4	14	No

Table 2
Surveyed Trees
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Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
372†	Blue Oak	*Quercus douglasii*	4	15, 12	No
373	Blue Oak	*Quercus douglasii*	3	10	No
374	Blue Oak	*Quercus douglasii*	5	18	No
375	Blue Oak	*Quercus douglasii*	5	18	No
376	Blue Oak	*Quercus douglasii*	5	17	No
377	Blue Oak	*Quercus douglasii*	3	15	No
378	Blue Oak	*Quercus douglasii*	3	9	No
379	Blue Oak	*Quercus douglasii*	3	11	No
380	Blue Oak	*Quercus douglasii*	3	10	No
381	Blue Oak	*Quercus douglasii*	3	12	No
382	Blue Oak	*Quercus douglasii*	4	14	No
383	Blue Oak	*Quercus douglasii*	4	16	No
384	Blue Oak	*Quercus douglasii*	4	6	No
385	Blue Oak	*Quercus douglasii*	4	8	No
386	Blue Oak	*Quercus douglasii*	5	12	No
387	Blue Oak	*Quercus douglasii*	4	7	No
388	Blue Oak	*Quercus douglasii*	4	11	No
389	Blue Oak	*Quercus douglasii*	5	9	No
390	Blue Oak	*Quercus douglasii*	4	12	No
391	Blue Oak	*Quercus douglasii*	5	10	No
392	Blue Oak	*Quercus douglasii*	4	16	No
393	Blue Oak	*Quercus douglasii*	3	12	No
394	Blue Oak	*Quercus douglasii*	4	13	No
395	Blue Oak	*Quercus douglasii*	5	13	No
396	Blue Oak	*Quercus douglasii*	5	12	No
397†	Blue Oak	*Quercus douglasii*	5	9, 9	No
398	Blue Oak	*Quercus douglasii*	4	8	No
399	Blue Oak	*Quercus douglasii*	4	9	No
400	Blue Oak	*Quercus douglasii*	4	10	No
401	Blue Oak	*Quercus douglasii*	3	13	No
402	Blue Oak	*Quercus douglasii*	4	14	No
403	Blue Oak	*Quercus douglasii*	5	13	No
404	Blue Oak	*Quercus douglasii*	4	8	No
405	Blue Oak	*Quercus douglasii*	3	16	No
406	Blue Oak	*Quercus douglasii*	3	8	No
407	Blue Oak	*Quercus douglasii*	4	14	No
408	Blue Oak	*Quercus douglasii*	4	20	No
410	Blue Oak	*Quercus douglasii*	4	13	No
411	Blue Oak	*Quercus douglasii*	5	14	No
412†	Blue Oak	*Quercus douglasii*	4	13, 10	No
413†	Blue Oak	*Quercus douglasii*	4	11, 11, 11	No
414†	Blue Oak	*Quercus douglasii*	4	11, 11	No
415	Blue Oak	*Quercus douglasii*	3	12	No
416	Blue Oak	*Quercus douglasii*	3	8	No

Table 2
Surveyed Trees
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Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
417	Blue Oak	*Quercus douglasii*	2	7	No
418	Blue Oak	*Quercus douglasii*	4	14	No
419	Blue Oak	*Quercus douglasii*	4	12	No
420	Blue Oak	*Quercus douglasii*	3	10	No
421	Blue Oak	*Quercus douglasii*	4	10	No
422	Blue Oak	*Quercus douglasii*	2	10	No
423	Blue Oak	*Quercus douglasii*	2	6	No
424	Blue Oak	*Quercus douglasii*	3	9	No
425	Blue Oak	*Quercus douglasii*	3	18	No
426	Blue Oak	*Quercus douglasii*	4	22	No
427	Blue Oak	*Quercus douglasii*	3	13	No
428	Blue Oak	*Quercus douglasii*	2	14	No
429	Blue Oak	*Quercus douglasii*	5	11	No
430	Blue Oak	*Quercus douglasii*	3	13	No
431	Blue Oak	*Quercus douglasii*	3	21	No
432	Blue Oak	*Quercus douglasii*	4	18	No
433	Blue Oak	*Quercus douglasii*	3	10	No
434	Blue Oak	*Quercus douglasii*	4	11	No
435	Blue Oak	*Quercus douglasii*	4	12	No
436	Blue Oak	*Quercus douglasii*	5	14	No
437	Blue Oak	*Quercus douglasii*	4	7	No
438	Blue Oak	*Quercus douglasii*	4	14	No
439	Blue Oak	*Quercus douglasii*	4	15	No
440	Blue Oak	*Quercus douglasii*	4	18	No
441	Blue Oak	*Quercus douglasii*	4	16	No
442	Blue Oak	*Quercus douglasii*	4	7	No
443	Blue Oak	*Quercus douglasii*	2	14	No
444	Blue Oak	*Quercus douglasii*	5	14	No
445	Blue Oak	*Quercus douglasii*	4	8	No
446	Blue Oak	*Quercus douglasii*	4	16	No
447	Blue Oak	*Quercus douglasii*	5	13	No
448	Blue Oak	*Quercus douglasii*	5	13	No
449	Blue Oak	*Quercus douglasii*	5	18	No
450	Blue Oak	*Quercus douglasii*	4	7	No
451	Blue Oak	*Quercus douglasii*	5	8	No
452	Blue Oak	*Quercus douglasii*	4	10	No
453	Blue Oak	*Quercus douglasii*	4	7	No
454	Blue Oak	*Quercus douglasii*	4	13	No
455	Blue Oak	*Quercus douglasii*	5	11	No
456	Blue Oak	*Quercus douglasii*	3	7	No
457	Blue Oak	*Quercus douglasii*	3	13	No
458	Blue Oak	*Quercus douglasii*	4	8	No
460	Blue Oak	*Quercus douglasii*	4	13	No
461	Blue Oak	*Quercus douglasii*	4	18	No

Table 2
Surveyed Trees
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Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
462	Blue Oak	*Quercus douglasii*	3	16	No
463	Blue Oak	*Quercus douglasii*	4	10	No
464	Blue Oak	*Quercus douglasii*	2	13	No
465	Blue Oak	*Quercus douglasii*	4	15	No
466	Blue Oak	*Quercus douglasii*	2	13	No
467	Blue Oak	*Quercus douglasii*	4	8	No
468	Blue Oak	*Quercus douglasii*	4	13	No
469	Blue Oak	*Quercus douglasii*	4	12	No
470	Blue Oak	*Quercus douglasii*	5	14	No
471	Blue Oak	*Quercus douglasii*	3	18	No
472	Blue Oak	*Quercus douglasii*	4	13	No
473†	Blue Oak	*Quercus douglasii*	3	17, 17	No
474	Blue Oak	*Quercus douglasii*	4	11	No
475†	Blue Oak	*Quercus douglasii*	4	11, 11	No
476	Blue Oak	*Quercus douglasii*	4	15	No
477	Blue Oak	*Quercus douglasii*	3	13	No
478	Blue Oak	*Quercus douglasii*	3	12	No
479	Blue Oak	*Quercus douglasii*	4	11	No
480†	Blue Oak	*Quercus douglasii*	4	16, 16	No
481	Blue Oak	*Quercus douglasii*	3	18	No
482	Blue Oak	*Quercus douglasii*	4	15	No
483	Blue Oak	*Quercus douglasii*	3	8	No
484	Blue Oak	*Quercus douglasii*	3	7	No
485	Blue Oak	*Quercus douglasii*	4	12	No
486	Blue Oak	*Quercus douglasii*	3	13	No
487	Blue Oak	*Quercus douglasii*	4	13	No
488	Blue Oak	*Quercus douglasii*	3	12	No
489	Blue Oak	*Quercus douglasii*	5	7	No
490	Blue Oak	*Quercus douglasii*	3	12	No
491	Blue Oak	*Quercus douglasii*	4	14	No
492	Blue Oak	*Quercus douglasii*	2	12	No
493	Blue Oak	*Quercus douglasii*	3	8	No
494	Blue Oak	*Quercus douglasii*	3	8	No
495	Blue Oak	*Quercus douglasii*	3	18	No
496	Blue Oak	*Quercus douglasii*	4	32	No
497	Blue Oak	*Quercus douglasii*	3	9	No
498	Blue Oak	*Quercus douglasii*	4	9	No
499	Blue Oak	*Quercus douglasii*	3	14	No
500	Blue Oak	*Quercus douglasii*	3	13	No
501	Blue Oak	*Quercus douglasii*	2	12	No
502	Blue Oak	*Quercus douglasii*	3	13	No
503	Blue Oak	*Quercus douglasii*	3	12	No
504	Blue Oak	*Quercus douglasii*	3	14	No
505	Blue Oak	*Quercus douglasii*	3	13	No

Table 2
Surveyed Trees
The Oasis Subdivision

Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
506	Blue Oak	*Quercus douglasii*	3	14	No
507	Blue Oak	*Quercus douglasii*	2	7	No
508	Blue Oak	*Quercus douglasii*	4	6	No
509	Blue Oak	*Quercus douglasii*	4	9	No
510	Blue Oak	*Quercus douglasii*	2	8	No
511	Blue Oak	*Quercus douglasii*	4	6	No
512	Blue Oak	*Quercus douglasii*	3	12	No
513	Blue Oak	*Quercus douglasii*	4	12	No
514	Blue Oak	*Quercus douglasii*	5	7	No
515	Blue Oak	*Quercus douglasii*	3	13	No
516	Blue Oak	*Quercus douglasii*	3	13	No
517	Blue Oak	*Quercus douglasii*	4	16	No
518	Blue Oak	*Quercus douglasii*	4	13	No
519	Blue Oak	*Quercus douglasii*	3	12	No
520	Blue Oak	*Quercus douglasii*	3	14	No
521	Blue Oak	*Quercus douglasii*	2	9	No
522	Blue Oak	*Quercus douglasii*	2	10	No
523	Blue Oak	*Quercus douglasii*	3	13	No
524	Blue Oak	*Quercus douglasii*	3	14	No
525	Blue Oak	*Quercus douglasii*	3	11	No
526	Blue Oak	*Quercus douglasii*	3	10	No
527	Blue Oak	*Quercus douglasii*	3	13	No
528	Blue Oak	*Quercus douglasii*	3	13	No
529	Blue Oak	*Quercus douglasii*	4	17	No
530	Blue Oak	*Quercus douglasii*	3	13	No
531	Blue Oak	*Quercus douglasii*	3	15	No
532	Blue Oak	*Quercus douglasii*	3	14	No
533	Blue Oak	*Quercus douglasii*	3	14	No
534	Blue Oak	*Quercus douglasii*	3	13	No
535	Blue Oak	*Quercus douglasii*	4	14	No
536	Blue Oak	*Quercus douglasii*	3	9	No
537	Blue Oak	*Quercus douglasii*	3	13	No
538†	Blue Oak	*Quercus douglasii*	2	10, 10	No
539	Blue Oak	*Quercus douglasii*	2	8	No
540	Blue Oak	*Quercus douglasii*	4	16	No
541	Blue Oak	*Quercus douglasii*	3	8	No
542	Blue Oak	*Quercus douglasii*	2	8	No
543	Blue Oak	*Quercus douglasii*	3	7	No
544	Blue Oak	*Quercus douglasii*	3	8	No
545	Blue Oak	*Quercus douglasii*	3	14	No
546	Blue Oak	*Quercus douglasii*	3	14	No
547	Blue Oak	*Quercus douglasii*	3	14	No
548	Blue Oak	*Quercus douglasii*	2	7	No
549	Blue Oak	*Quercus douglasii*	3	10	No

Table 2
Surveyed Trees
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Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
550	Blue Oak	*Quercus douglasii*	4	15	No
551	Blue Oak	*Quercus douglasii*	3	13	No
552	Blue Oak	*Quercus douglasii*	3	14	No
553	Blue Oak	*Quercus douglasii*	4	16	No
554	Blue Oak	*Quercus douglasii*	3	14	No
555	Blue Oak	*Quercus douglasii*	4	18	No
556	Blue Oak	*Quercus douglasii*	4	14	No
557	Blue Oak	*Quercus douglasii*	4	10	No
558	Blue Oak	*Quercus douglasii*	3	8	No
559	Blue Oak	*Quercus douglasii*	4	8	No
560	Blue Oak	*Quercus douglasii*	2	13	No
561	Blue Oak	*Quercus douglasii*	3	14	No
562†	Blue Oak	*Quercus douglasii*	2	12, 12	No
563	Blue Oak	*Quercus douglasii*	3	13	No
564	Blue Oak	*Quercus douglasii*	2	12	No
565	Blue Oak	*Quercus douglasii*	2	11	No
566	Blue Oak	*Quercus douglasii*	3	13	No
567	Blue Oak	*Quercus douglasii*	3	11	No
568	Blue Oak	*Quercus douglasii*	3	11	No
569	Blue Oak	*Quercus douglasii*	4	7	No
570	Blue Oak	*Quercus douglasii*	4	7	No
571	Blue Oak	*Quercus douglasii*	4	12	No
572	Blue Oak	*Quercus douglasii*	3	12	No
573 (North)	Blue Oak	*Quercus douglasii*	4	15	No
573 (South)	Blue Oak	*Quercus douglasii*	4	8	No
574	Blue Oak	*Quercus douglasii*	5	10	No
575	Blue Oak	*Quercus douglasii*	4	13	No
576	Blue Oak	*Quercus douglasii*	5	13	No
577	Blue Oak	*Quercus douglasii*	5	10	No
578	Blue Oak	*Quercus douglasii*	5	11	No
579	Blue Oak	*Quercus douglasii*	2	7	No
580†	Blue Oak	*Quercus douglasii*	3	8, 8	No
581†	Blue Oak	*Quercus douglasii*	3	6, 6	No
582	Blue Oak	*Quercus douglasii*	3	6	No
583	Blue Oak	*Quercus douglasii*	3	7	No
584	Blue Oak	*Quercus douglasii*	3	14	No
585	Blue Oak	*Quercus douglasii*	3	13	No
586	Blue Oak	*Quercus douglasii*	3	15	No
587	Blue Oak	*Quercus douglasii*	4	10	No
588	Blue Oak	*Quercus douglasii*	3	12	No
589	Blue Oak	*Quercus douglasii*	3	13	No
590	Blue Oak	*Quercus douglasii*	3	10	No
591	Blue Oak	*Quercus douglasii*	3	13	No
592	Blue Oak	*Quercus douglasii*	3	13	No

Table 2
Surveyed Trees
The Oasis Subdivision

Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
593	Blue Oak	*Quercus douglasii*	4	15	No
594	Blue Oak	*Quercus douglasii*	3	13	No
595	Blue Oak	*Quercus douglasii*	3	14	No
596	Blue Oak	*Quercus douglasii*	4	16	No
597	Blue Oak	*Quercus douglasii*	4	16	No
598	Blue Oak	*Quercus douglasii*	4	12	No
599	Blue Oak	*Quercus douglasii*	4	10	No
600	Blue Oak	*Quercus douglasii*	4	13	No
601	Blue Oak	*Quercus douglasii*	3	15	No
602	Blue Oak	*Quercus douglasii*	3	13	No
603	Blue Oak	*Quercus douglasii*	3	12	No
604	Blue Oak	*Quercus douglasii*	2	10	No
605	Blue Oak	*Quercus douglasii*	2	10	No
606	Blue Oak	*Quercus douglasii*	2	10	No
607	Blue Oak	*Quercus douglasii*	3	10	No
608	Blue Oak	*Quercus douglasii*	2	7	No
609	Blue Oak	*Quercus douglasii*	3	13	No
610†	Blue Oak	*Quercus douglasii*	4	15, 13	No
611	Blue Oak	*Quercus douglasii*	4	13	No
612	Blue Oak	*Quercus douglasii*	4	14	No
613	Blue Oak	*Quercus douglasii*	4	12	No
614	Blue Oak	*Quercus douglasii*	4	14	No
615	Blue Oak	*Quercus douglasii*	3	12	No
616†	Blue Oak	*Quercus douglasii*	4	10, 10	No
617	Blue Oak	*Quercus douglasii*	4	13	No
618	Blue Oak	*Quercus douglasii*	4	13	No
619	Blue Oak	*Quercus douglasii*	3	16	No
620	Blue Oak	*Quercus douglasii*	3	12	No
621	Blue Oak	*Quercus douglasii*	3	12	No
622	Blue Oak	*Quercus douglasii*	2	11	No
623	Blue Oak	*Quercus douglasii*	2	12	No
624	Blue Oak	*Quercus douglasii*	2	12	No
625	Blue Oak	*Quercus douglasii*	4	14	No
626	Blue Oak	*Quercus douglasii*	3	14	No
627	Blue Oak	*Quercus douglasii*	2	8	No
628	Blue Oak	*Quercus douglasii*	2	6	No
629	Blue Oak	*Quercus douglasii*	3	9	No
630	Blue Oak	*Quercus douglasii*	2	6	No
631	Blue Oak	*Quercus douglasii*	3	9	No
632	Blue Oak	*Quercus douglasii*	3	9	No
633	Blue Oak	*Quercus douglasii*	2	7	No
634	Blue Oak	*Quercus douglasii*	4	13	No
635	Blue Oak	*Quercus douglasii*	5	12	No
636	Blue Oak	*Quercus douglasii*	2	11	No

Table 2
Surveyed Trees
The Oasis Subdivision

Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
637	Blue Oak	*Quercus douglasii*	2	11	No
638	Blue Oak	*Quercus douglasii*	3	12	No
639	Blue Oak	*Quercus douglasii*	3	13	No
640	Blue Oak	*Quercus douglasii*	4	14	No
641	Blue Oak	*Quercus douglasii*	2	11	No
642	Blue Oak	*Quercus douglasii*	2	10	No
643	Blue Oak	*Quercus douglasii*	2	8	No
644	Blue Oak	*Quercus douglasii*	3	9	No
645	Blue Oak	*Quercus douglasii*	3	13	No
646	Blue Oak	*Quercus douglasii*	3	14	No
647	Blue Oak	*Quercus douglasii*	5	9	No
648	Blue Oak	*Quercus douglasii*	4	12	No
649	Blue Oak	*Quercus douglasii*	4	12	No
650	Blue Oak	*Quercus douglasii*	3	12	No
651	Blue Oak	*Quercus douglasii*	2	7	No
652	Blue Oak	*Quercus douglasii*	3	13	No
653	Blue Oak	*Quercus douglasii*	4	12	No
654	Blue Oak	*Quercus douglasii*	5	10	No
655	Blue Oak	*Quercus douglasii*	4	12	No
656	Blue Oak	*Quercus douglasii*	4	10	No
657	Blue Oak	*Quercus douglasii*	5	12	No
658	Blue Oak	*Quercus douglasii*	4	14	No
659	Blue Oak	*Quercus douglasii*	3	11	No
660	Blue Oak	*Quercus douglasii*	5	12	No
661	Blue Oak	*Quercus douglasii*	4	12	No
662†	Blue Oak	*Quercus douglasii*	4	12, 10, 7	No
663	Blue Oak	*Quercus douglasii*	4	12	No
664†	Blue Oak	*Quercus douglasii*	4	10, 10	No
665	Blue Oak	*Quercus douglasii*	3	12	No
666	Blue Oak	*Quercus douglasii*	4	12	No
667	Blue Oak	*Quercus douglasii*	5	17	No
678	Blue Oak	*Quercus douglasii*	3	13	No
679	Blue Oak	*Quercus douglasii*	4	14	No
680	Blue Oak	*Quercus douglasii*	3	18	No
681	Blue Oak	*Quercus douglasii*	3	18	No
682†	Blue Oak	*Quercus douglasii*	3	11, 9, 7	No
683	Blue Oak	*Quercus douglasii*	4	10	No
684	Blue Oak	*Quercus douglasii*	3	8	No
685†	Blue Oak	*Quercus douglasii*	4	10, 8	No
686	Blue Oak	*Quercus douglasii*	4	13	No
687	Blue Oak	*Quercus douglasii*	4	8	No
688	Blue Oak	*Quercus douglasii*	4	14	No
689	Blue Oak	*Quercus douglasii*	3	15	No
690	Blue Oak	*Quercus douglasii*	5	14	No

Table 2
Surveyed Trees
The Oasis Subdivision

Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
691†	Blue Oak	*Quercus douglasii*	5	9, 9	No
692	Blue Oak	*Quercus douglasii*	4	13	No
693	Blue Oak	*Quercus douglasii*	4	10	No
694	Blue Oak	*Quercus douglasii*	4	12	No
695	Blue Oak	*Quercus douglasii*	5	10	No
696	Blue Oak	*Quercus douglasii*	2	14	No
697	Blue Oak	*Quercus douglasii*	5	15	No
698	Blue Oak	*Quercus douglasii*	5	13	No
699	Blue Oak	*Quercus douglasii*	5	13	No
700	Blue Oak	*Quercus douglasii*	3	13	No
701	Blue Oak	*Quercus douglasii*	2	10	No
702	Blue Oak	*Quercus douglasii*	3	13	No
703	Blue Oak	*Quercus douglasii*	3	13	No
704	Blue Oak	*Quercus douglasii*	3	12	No
705	Blue Oak	*Quercus douglasii*	3	12	No
706†	Blue Oak	*Quercus douglasii*	3	10, 9	No
707	Blue Oak	*Quercus douglasii*	3	8	No
708	Blue Oak	*Quercus douglasii*	3	9	No
709	Blue Oak	*Quercus douglasii*	4	13	No
710	Blue Oak	*Quercus douglasii*	4	11	No
711	Blue Oak	*Quercus douglasii*	3	10	No
712	Blue Oak	*Quercus douglasii*	4	8	No
713	Blue Oak	*Quercus douglasii*	4	10	No
714	Blue Oak	*Quercus douglasii*	3	13	No
715	Blue Oak	*Quercus douglasii*	3	10	No
716	Blue Oak	*Quercus douglasii*	4	13	No
717	Blue Oak	*Quercus douglasii*	2	12	No
718	Blue Oak	*Quercus douglasii*	5	13	No
719	Blue Oak	*Quercus douglasii*	3	6	No
720	Blue Oak	*Quercus douglasii*	3	11	No
721	Blue Oak	*Quercus douglasii*	3	6	No
722	Blue Oak	*Quercus douglasii*	3	10	No
723†	Blue Oak	*Quercus douglasii*	3	11, 9	No
724	Blue Oak	*Quercus douglasii*	3	9	No
725	Blue Oak	*Quercus douglasii*	4	11	No
726	Blue Oak	*Quercus douglasii*	3	12	No
727	Blue Oak	*Quercus douglasii*	4	8	No
728	Blue Oak	*Quercus douglasii*	5	12	No
729	Blue Oak	*Quercus douglasii*	4	10	No
730	Blue Oak	*Quercus douglasii*	3	11	No
731	Blue Oak	*Quercus douglasii*	4	12	No
732†	Blue Oak	*Quercus douglasii*	3	8, 8	No
733	Blue Oak	*Quercus douglasii*	3	16	No
734	Blue Oak	*Quercus douglasii*	4	12	No

Table 2
Surveyed Trees
The Oasis Subdivision

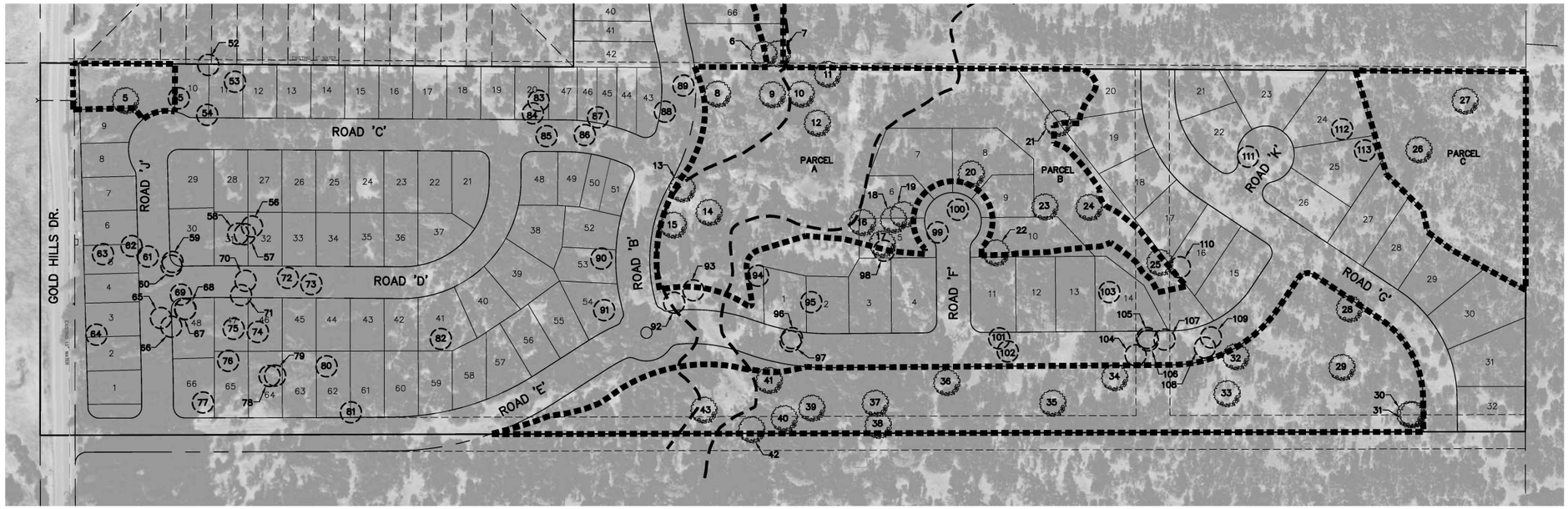
Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
736	Blue Oak	*Quercus douglasii*	4	6	No
737	Blue Oak	*Quercus douglasii*	4	14	No
738	Blue Oak	*Quercus douglasii*	2	10	No
739	Blue Oak	*Quercus douglasii*	2	11	No
740	Blue Oak	*Quercus douglasii*	3	9	No
741†	Blue Oak	*Quercus douglasii*	3	13, 13	No
742	Blue Oak	*Quercus douglasii*	4	12	No
743	Blue Oak	*Quercus douglasii*	3	11	No
744	Blue Oak	*Quercus douglasii*	3	13	No
745	Blue Oak	*Quercus douglasii*	3	13	No
746†	Blue Oak	*Quercus douglasii*	5	13, 13	No
747	Blue Oak	*Quercus douglasii*	3	12	No
748†	Blue Oak	*Quercus douglasii*	3	10, 10	No
749	Blue Oak	*Quercus douglasii*	3	12	No
750†	Blue Oak	*Quercus douglasii*	3	8, 8	No
751	Blue Oak	*Quercus douglasii*	3	6	No
752	Blue Oak	*Quercus douglasii*	2	9	No
753	Blue Oak	*Quercus douglasii*	4	8	No
754†	Blue Oak	*Quercus douglasii*	3	8, 8	No
755	Blue Oak	*Quercus douglasii*	2	8	No
756	Blue Oak	*Quercus douglasii*	4	13	No
757†	Blue Oak	*Quercus douglasii*	4	8, 6	No
758†	Blue Oak	*Quercus douglasii*	3	10, 10	No
759	Blue Oak	*Quercus douglasii*	4	8	No
760	Blue Oak	*Quercus douglasii*	3	12	No
761	Blue Oak	*Quercus douglasii*	3	7	No
762	Blue Oak	*Quercus douglasii*	2	6	No
764	Blue Oak	*Quercus douglasii*	3	6	No
765	Blue Oak	*Quercus douglasii*	3	12	No
766	Blue Oak	*Quercus douglasii*	2	6	No
767	Blue Oak	*Quercus douglasii*	4	12	No
768†	Blue Oak	*Quercus douglasii*	4	10, 10	No
769†	Blue Oak	*Quercus douglasii*	2	10, 8	No
770†	Blue Oak	*Quercus douglasii*	3	9, 7	No
771	Blue Oak	*Quercus douglasii*	3	8	No
772†	Blue Oak	*Quercus douglasii*	3	8, 8	No
773†	Blue Oak	*Quercus douglasii*	3	8, 8	No
774	Blue Oak	*Quercus douglasii*	3	18	No
775	Blue Oak	*Quercus douglasii*	2	16	No
776	Blue Oak	*Quercus douglasii*	3	12	No
777	Blue Oak	*Quercus douglasii*	2	14	No
778	Blue Oak	*Quercus douglasii*	4	13	No
779	Blue Oak	*Quercus douglasii*	4	7	No
780	Blue Oak	*Quercus douglasii*	4	8	No

Table 2
Surveyed Trees
The Oasis Subdivision

Tree Number	Common Name	Scientific Name	Health Rating*	Diameter at Breast Height (inches)	Candidate
781	Blue Oak	*Quercus douglasii*	4	11	No
782	Blue Oak	*Quercus douglasii*	5	10	No
783	Blue Oak	*Quercus douglasii*	5	13	No
783	Blue Oak	*Quercus douglasii*	5	7	No
785	Blue Oak	*Quercus douglasii*	5	12	No
786	Blue Oak	*Quercus douglasii*	4	7	No
787	Blue Oak	*Quercus douglasii*	3	14	No

† Multi-trunked tree that splits below breast height
***Bold-face** indicates Candidate trees*

* Health rating (Defined by Rico Montenegro Certified Arborist #WE-6734A)
1. Extreme and profound visible evidence of disease, insect damage, decay, or limb loss. Less than 25% of branches are foliated. Trees may contain single or multiple trunks with deteriorated form and structure. Trees are in later stages of senescence.
2. Major and large amounts of visible disease, insect damage, decay, or limb loss. Between 25 and 50% of the branches are foliated. Trees can contain single or multiple trunks, with poor form and structure. Trees are in the early stages of senescence.
3. Moderate amounts of visible disease, insect damage, decay, or limb loss. Between 50 and 80% of the branches are foliated. Trees are generally single trunked, with compromised form and structure, and moderate growth.
4. Minor evidence of disease, insect damage, decay, or limb loss. More than 80 to 90% of the branches are foliated. Trees are generally single trunked, with good form and structure, and good growth.
5. None or very little evidence of disease, insect damage, decay, or limb loss. More than 90% of the branches are foliated. Trees are generally single trunked, with very good form and structure, and vigorous growth.



24" AND GREATER TREES TO BE SAVED		24" AND GREATER TREES TO BE REMOVED			
1. VBO	28"	44. BVBO	24"	81. DP	28"
2. VBO	26"	45. VBO	28"	82. VBO	28"
3. VBO	24"	46. VBO	24"	83. DP	24"
4. VBO	24"	47. VBO	24"	84. VBO	28"
5. VBO	26"	48. VBO	26"	85. VBO	28"
6. BDP	26"	49. BVBO	24"	86. VBO	24"
7. BDP	28"			87. DP	24"
8. DP	28"	50. VBO	28"	88. BDP	24"
9. BDP	26"	51. VBO	26"	89. FDP	38"
10. BDP	24"	52. VBO	26"	90. DP	32"
		53. VBO	30"		
11. BDP	24"	54. DP	30"	91. DP	36"
12. BDP	24"	55. DP	26"	92. DP	30"
13. BDP	28"	56. LO	24"	93. DP	24"
14. BDP	24"	57. DP	40"	94. DP	24"
15. BDP	26"	58. VBO	28"	95. VBO	26"
16. VBO	24"	59. DP	24"	96. VBO	24"
17. VBO	24"			97. VBO	24"
18. VBO	24"	60. VBO	28"	98. VBO	24"
19. VBO	28"	61. VBO	24"	99. VBO	28"
20. DP	24"	62. VBO	24"	100. VBO	30"
		63. VBO	26"		
21. VBO	30"	64. DP	28"	101. VBO	24"
22. VBO	28"	65. LO	24"	102. VBO	24"
23. VBO	30"	66. DP	24"	103. VBO	28"
24. VBO	24"	67. LO	26"	104. VBO	24"
25. VBO	26"	68. LO	24"	105. DP	26"
26. VBO	24"	69. VBO	24"	106. DP	34"
27. VBO	24"	70. DP	48"	107. VBO	28"
28. VBO	26"			108. VBO	24"
29. VBO	24"	71. VBO	24"	109. DP	24"
30. VBO	24"	72. LO	24"	110. VBO	24"
		73. DP	24"		
31. DP	24"	74. LO	28"	111. VBO	24"
32. VBO	24"	75. VBO	28"	112. VBO	28"
33. DP	26"	76. FDP	32"	113. VBO	28"
34. VBO	30"	77. VBO	30"		
35. VBO	24"	78. DP	26"		
36. VBO	26"	79. DP	30"		
37. VBO	26"	80. DP	34"		
38. BVBO	26"				
39. DDP	28"				
40. DDP	26"				
41. VBO	24"				
42. VBO	24"				
43. DP	24"				

DP: DIGGER PINE
BDP: BURNED DIGGER PINE
DDP: DEAD DIGGER PINE
FDP: FORKED DIGGER PINE
LO: LIVE OAK
VBO: VALLEY BLUE OAK
BVBO: BURNED VALLEY BLUE OAK
FVBO: FORKED VALLEY BLUE OAK

TOTAL AREA OF TREE PRESERVATION: 12.3 AC
TREE PRESERVATION INSIDE FLOOD PLAIN: 2.1 AC
TREE PRESERVATION OUTSIDE FLOOD PLAIN: 10.2 AC

APPROX NUMBER OF TREES TO REMAIN: 209
(BASED ON 8/24/05 FIELD OBSERVATION)
APPROX NUMBER OF TREES TO BE REMOVED: 339

LEGEND

TREE PRESERVATION AREA

TREE TO BE REMOVED (24" AND GREATER) – 70 TOTAL

TREE TO REMAIN (24" AND GREATER) – 43 TOTAL

N

100 0 50 100
1 INCH = 100 FEET

THE RESERVE AT GOLD HILLS
TREE PRESERVATION PLAN
S–17–04

BEING A PORTION OF THE N ½, S 1/2, OF THE SW 1/4, OF SECTION 8, T 32 N, R 4 W, AND THE E1/2 OF THE NW 1/4 OF THE SW1/4 OF SECTION 8 T32N, R4W AND A PORTION OF SW1/4 OF THE NW ¼ OF SECTION 8 T32N R4W M. D. M. IN THE CITY OF REDDING, COUNTY OF SHASTA, STATE OF CALIFORNIA

FOR

BRIAN BURK

BY

SHARRAH DUNLAP SAWYER, INC.
ENGINEERING · PLANNING · SURVEYING
3161 Bechelli Lane-Suite 100-Redding, Ca. 96002
(530) 221–1792 Fax (530) 221–8369

DATE: JUNE, 2006 SCALE: 1"=100' SHEET 7 OF 7

P:\PROJ\04137\DWG\04137TM.DWG 04137

ENPLAN

100-05
June 28, 2005

Jim Wildauer
City of Redding Planning Division
P.O. Box 496071
777 Cypress Avenue
Redding, CA 96049-6071

SUBJECT: Wetland/Biological Evaluation for the Gold Hills Park Sewer Line Corridor and Shasta View Drive Extension

At the request of Brian Burk, and as discussed with you, ENPLAN has completed a biological and wetland screening addressing the proposed Shasta View Drive extension and the proposed sewer line corridor extending from the back lot of the Gold Hills Golf Course to Oasis Road. Significant portions of the sewer line corridor were addressed as part of our earlier evaluations of the Gold Hills Park and Emily Estates subdivision sites (ENPLAN, 2004 a, b), and were not revisited. The current study area boundary, which excludes the lands already surveyed, is shown in Figure 1. Biological and wetland studies within the current study area were undertaken on May 16 and June 12, 2005.

Biological Resources

Our recent work included a botanical survey to document the presence/absence of silky cryptantha and other special-status plant species. The field surveys showed that no special-status plant species occur in or adjacent to the study area. Likewise, based on our earlier surveys and our recent field evaluations, we find that the project site has no potential to support special-status animal species, with the possible exception of anadromous fish.

Potentially suitable habitat for listed anadromous fish occurs in Dry Gulch Creek, which is tributary to Churn Creek approximately one mile downstream of the study area. Churn Creek is known to support fall/late fall-run Chinook salmon (unlisted) on an occasional basis, as well as the federally listed Central Valley steelhead. As documented in our Gold Hills Park Biological Screening Report, Dry Gulch Creek is extremely unlikely to support anadromous fish, and none of its tributaries are capable of supporting anadromous fish. Provided that adequate erosion controls are implemented and work near streams is undertaken when they are dry, no adverse impacts on anadromous fish are expected.

Wetlands and Other Waters of the United States

Our initial reports identified the presence of one possible wetland adjacent to Dry Gulch Creek, and recommended a follow-up visit in the spring to make a final determination of the status of this feature. The follow-up visit was conducted on May 16, 2005, and confirmed that the feature is a wetland subject to the jurisdiction of the US Department of the Army, Corps of Engineers. As discussed in our June 28, 2005, letter regarding the Emily Estates application package, we understand that the sewer line corridor will be rerouted a minimum of 25 feet from the wetland and that temporary fencing will be erected around the wetland during project construction. With implementation of these measures, sewer line construction will not affect the wetland.

No other wetlands were observed in the current study area or the two proposed subdivision sites noted above. However, several small intermittent to ephemeral streams are present in the proposed sewer line corridor and Shasta View Drive extension (Figure 1). Sewer lines can generally be conducted under a Nationwide Permit 12 (Utility Line Activities), while roads can generally be constructed under Nationwide Permit 14 (Linear Transportation Projects).

Please contact me if you have any questions regarding our evaluation.

Sincerely,

Donald Burk,
Environmental Services Manager

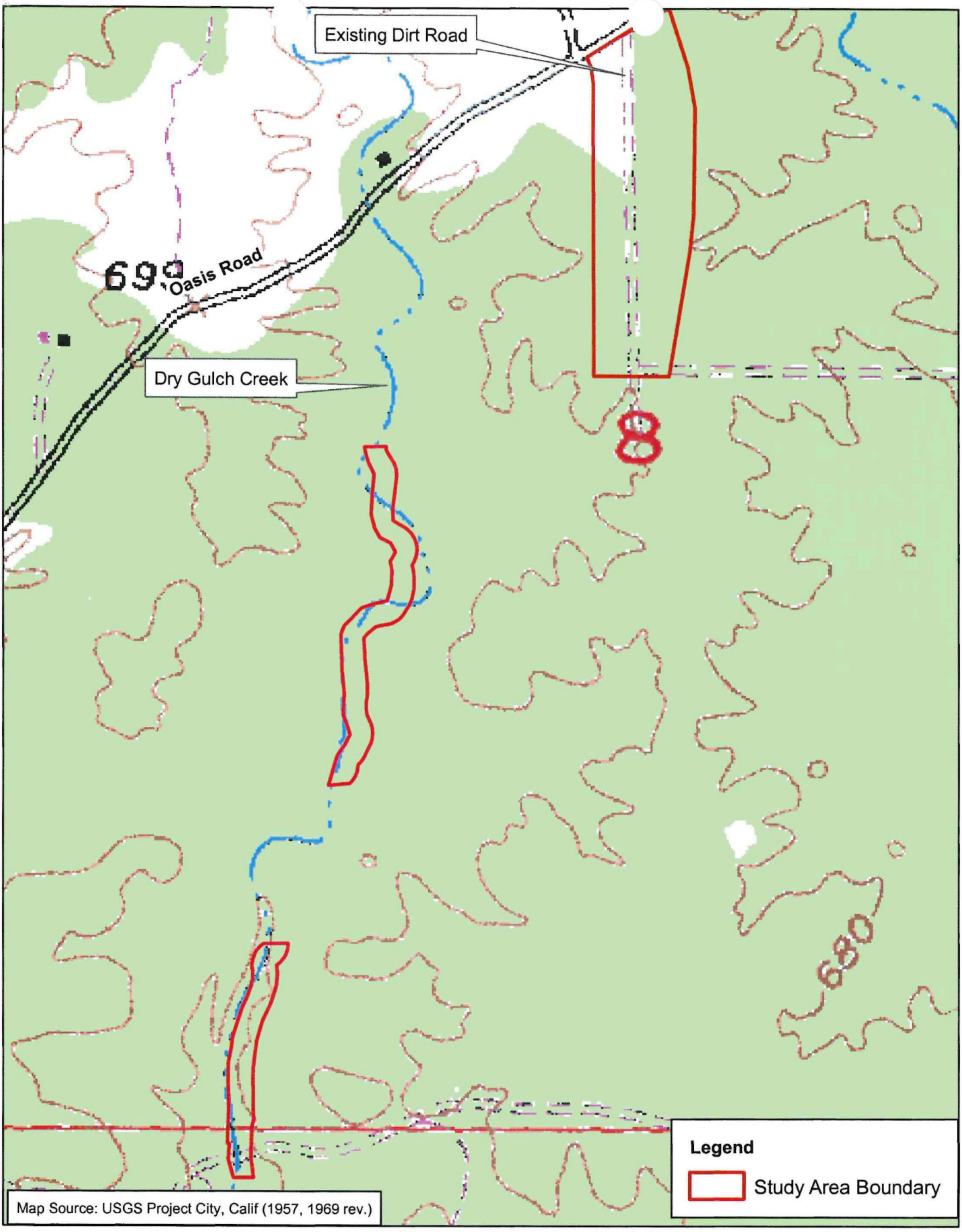
encl.

xc: Brian Burk

References

ENPLAN. 2004a. Gold Hills Park Biological Screening. Letter from ENPLAN to Brian Burk, dated October 7, 2004.

_____. 2004b. Biological and Wetland Screening (Shasta County APN 074-220-005). Letter from ENPLAN to Brian Burk, dated December 17, 2004.



N

1" = 500'

Figure 1
Study Area Boundary

ENPLAN

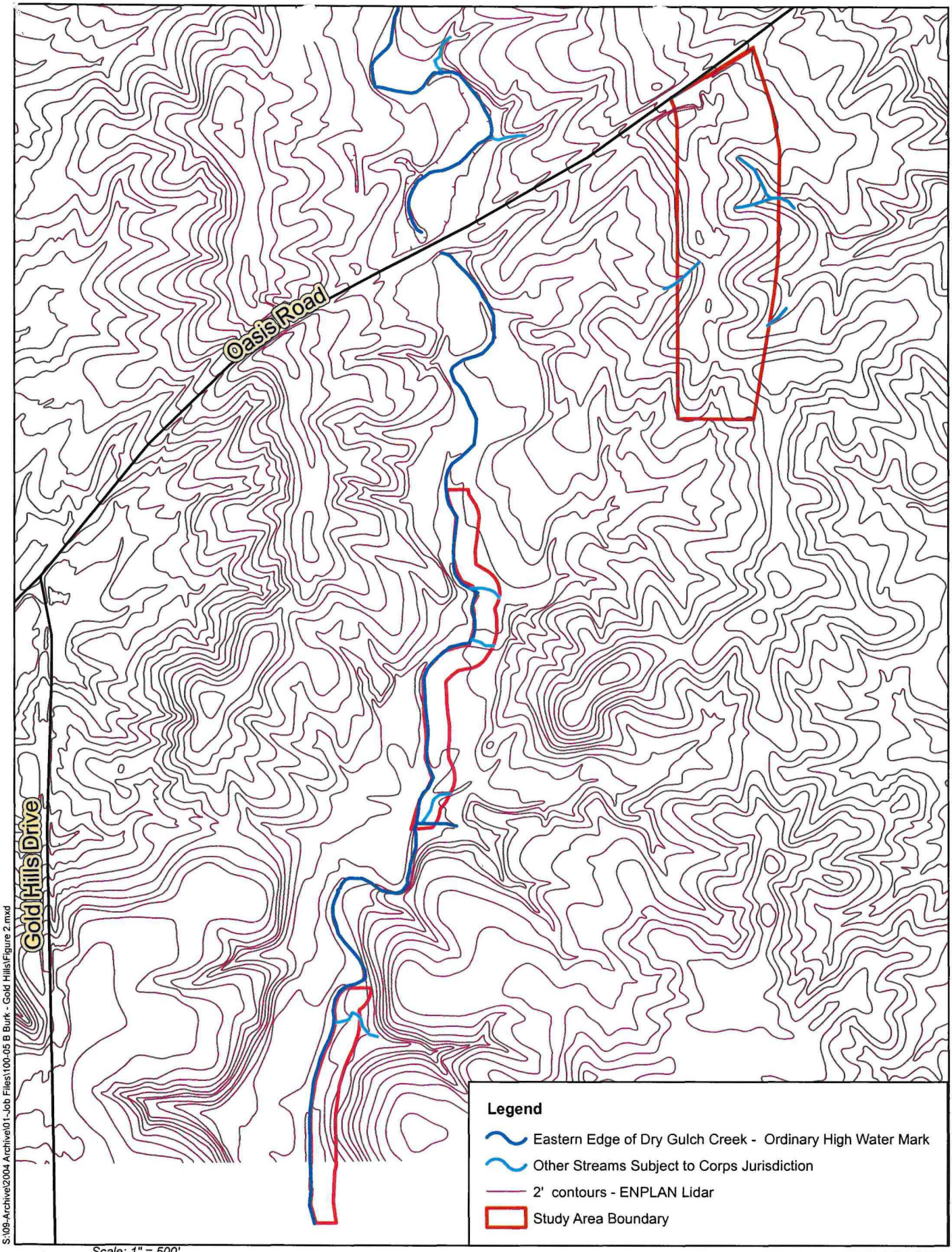


Figure 2
Waters of the United States

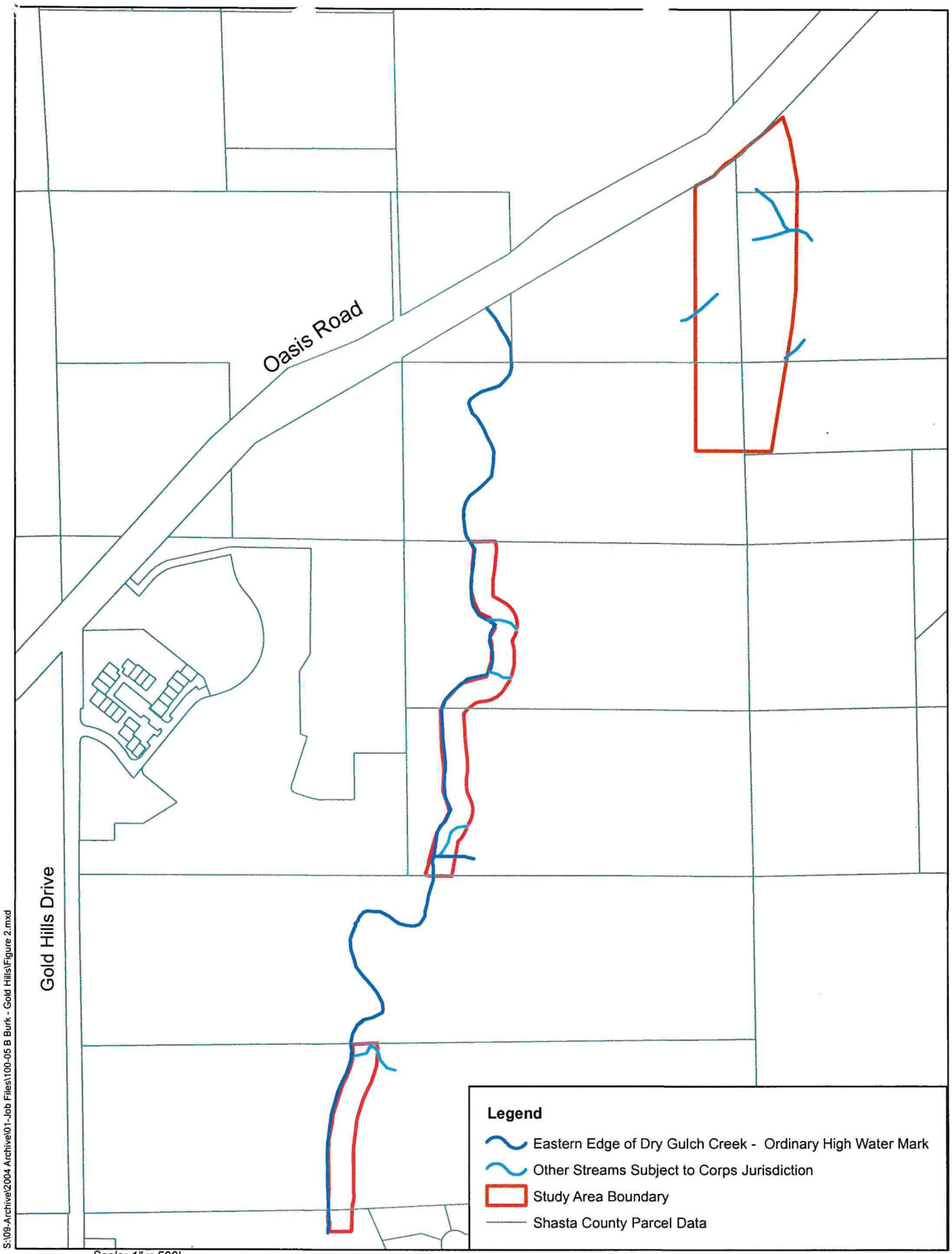


Figure 1
Study Area Boundary and
Waters of the United States

Attachment C

- Archaeological Inventory Survey, by Northeast Information Center (NEIC) dated May 27, 2024.
- Cultural Resource Inventory Survey for a Proposed Residential Subdivision, prepared by ENPLAN, December 2004
- Cultural Resource Inventory Survey for the Proposed Gold Hills Residential Development Project, prepared by ENPLAN, July 2004
- Cultural Resources Inventory Survey, Proposed Sewer Line Easement, prepared by ENPLAN, 2005
- Cultural Resource Survey: The Reserve 2 and 3 in North Redding, prepared by ENPLAN, February 2007

Attachment C

Cultural Resources Inventory Survey

NOTE TO REVIEWER: Information contained in the *Cultural Resources Studies* for the Oasis Subdivision related to the specific location of prehistoric and historic sites is confidential and exempt from the Freedom of Information Act (FOIA) and the California Public Records Act (CPRA); therefore, site specific cultural resource investigations are not appended to this Initial Study. Professionally qualified individuals, as determined by the California Office of Historic Preservation, may contact the City of Redding Development Services Department, Planning Division directly in order to inquire about its availability.

Attachment D

- Hydraulic Analysis Study on file in the Development Services Department, Planning Division
- Dry Gulch Creek Flood Study for the Oasis Subdivision, prepared by Sharrah Dunlap Sawyer, Inc, dated January 15, 2024
- Entitlement Level Storm Drainage Analysis, Sharrah Dunlap Sawyer, Inc., dated February 2024

DRY GULCH CREEK FLOOD STUDY

FOR THE OASIS SUBDIVISION

STORM DRAINAGE ANALYSIS

Prepared by

SHARRAH DUNLAP SAWYER, INC.
320 HARTNELL AVE.
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This report was written by or under the direct supervision of:

Ian T. Stripling, P.E.
Civil Engineer

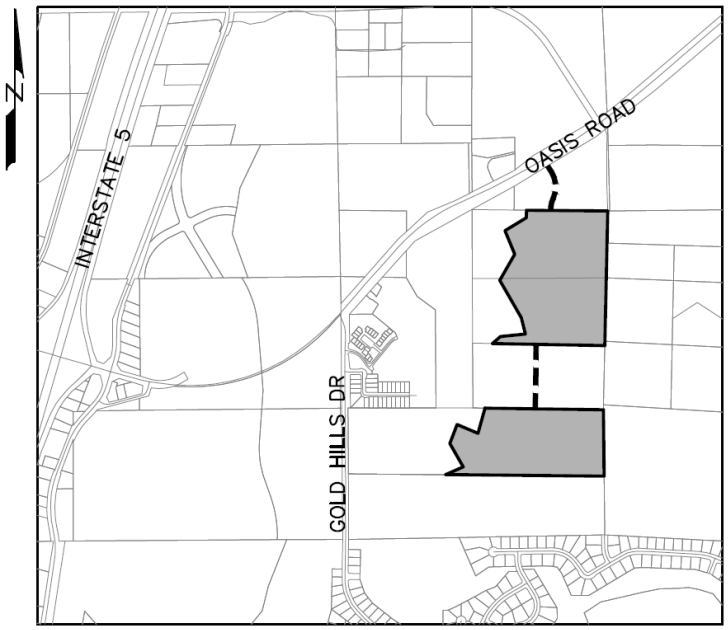
1/15/2024
Date

TABLE OF CONTENTS

Section **Page**

EXECUTIVE SUMMARY

The Oasis Subdivision is a proposed residential subdivision located within the limits of the City of Redding (COR). The vicinity map below shows the project location south of Oasis Road and east of Gold Hills Dr. The following report details how the 100-year water surface elevation was determined for Dry Gulch Creek through the project.



VICINITY MAP

BACKGROUND

The Oasis Subdivision will be constructed on multiple parcels: APN074-230-037, 074-230-035, 074-230-023 and 074-230-034. Dry Gulch Creek, a tributary to Churn Creek, runs through the project site. The site is located high within the Dry Gulch Creek basin.

DESIGN CRITERIA

Since Dry Gulch Creek is not a studied stream by FEMA, nor by the Montgomery Watson Study, this analysis has been prepared to establish the 100-year water surface elevation (WSEL), adjacent to the proposed Oasis Subdivision. The project has been designed in such a way that the limits of disturbance/grading do not encroach into the 100-year WSEL.

Hydraulic Analysis

Cross section geometry was created using a combination of UDALE contours and 2016 City Lidar. Contour data is horizontally located in California State Plane Zone I—NAD83—and located vertically on NAVD88. All contour units are in feet.

The 100-year peak flow in the creek is calculated using HEC-1. The COR HEC-1 Preprocessor FLOW version 1.3 was used in conjunction with the provided model named

"CORChurn2004.XML". See the "Dry Gulch Creek Stream Flow" exhibit for peak flow locations and river stationing.

Contraction and expansion coefficients of 0.01 and 0.03 are used respectively to simulate the gradual transitions of a natural stream. Manning's 'n'; values of 0.025 to 0.045 and used in the channel and 0.03 to 0.04 are used for the overbank. The channel ranges from a clean channel with cobble and laid down grass to a weedy overgrown channel. The overbanks are grassy and range from few bushes and trees to some bushes and trees.

Coefficient Table

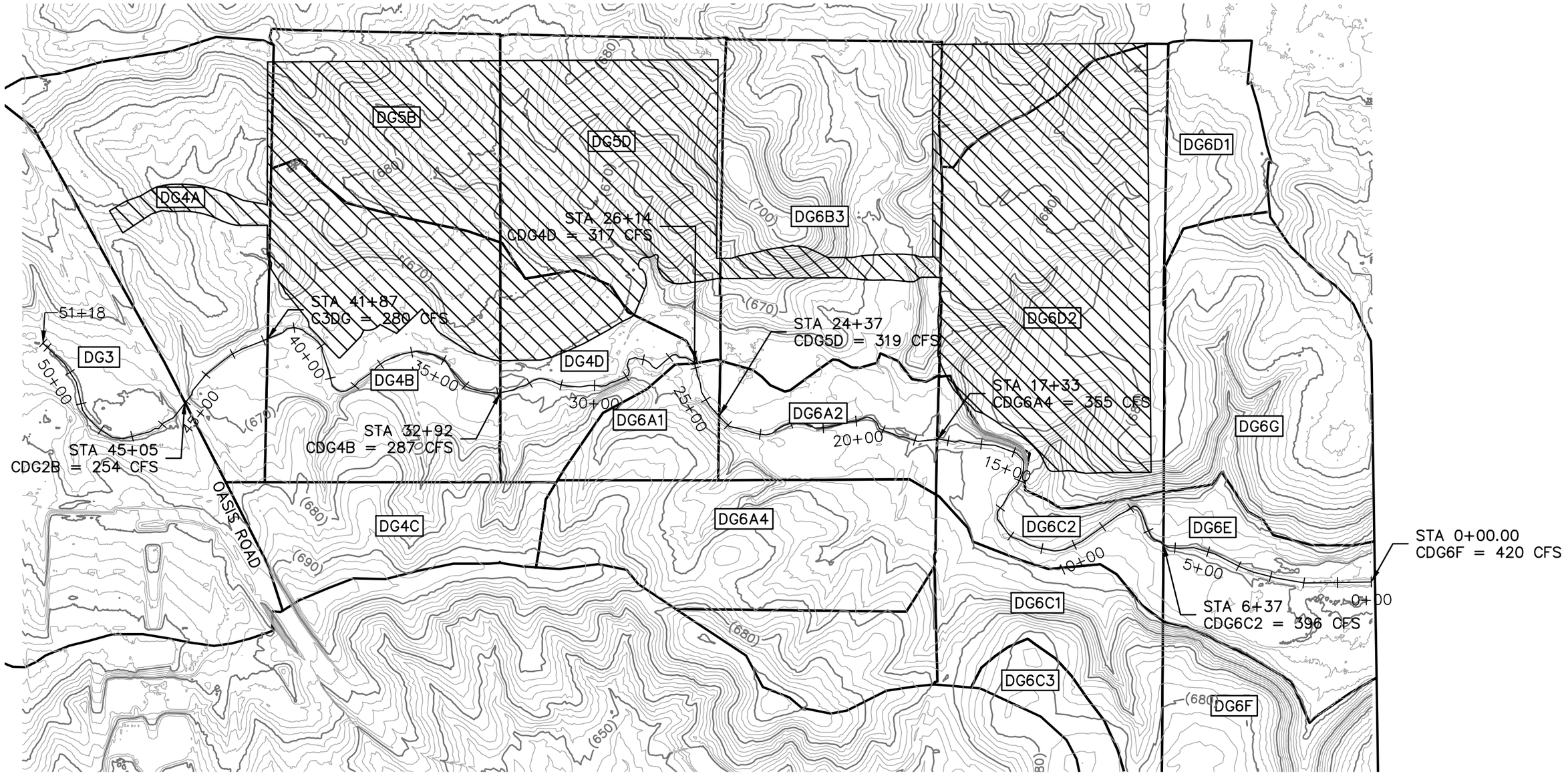
Contraction	Expansion	Channel 'n' Value Range	Overbank 'n' Value Range
0.01	0.03	0.025-0.045	0.03-0.04

HEC-RAS settings
A mixed flow regime was used to analyze the water surface elevation. A critical boundary condition is used as the upstream boundary, and a normal depth with a hydraulic slope of 0.0059 is used as the downstream boundary.

CONCLUSION

The calculated 100-year water surface elevation is shown on the attached exhibits and reflected on the construction documents. The project grading does not encroach on the 100-year water surface elevation.

APPENDIX A
HEC-1 DATA



LEGEND

PROJECT LIMITS

300 0 150 300

1 INCH = 300 FEET

DRY GULCH CREEK STREAM FLOW

BY

SHARRAH DUNLAP SAWYER, INC.

Civil Engineering • Land Planning • Surveying & Mapping
Landscape Architecture • Presentation Graphics

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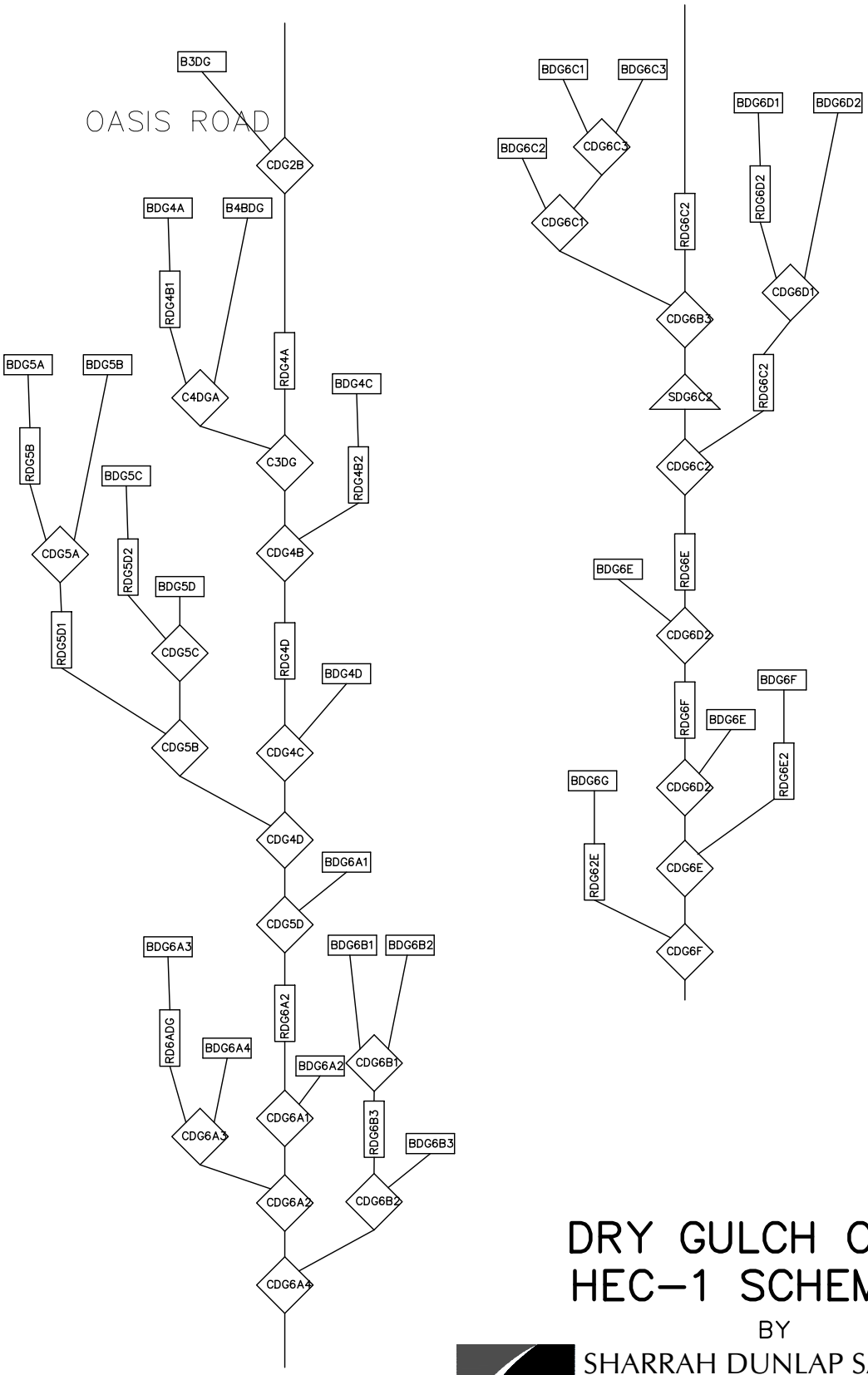
TO BE USED AS A VISUAL AID ONLY. LINEWORK DOES NOT REPRESENT, NOR IS IT INTENDED TO REPLACE SURVEY OR RECORDED PROPERTY INFORMATION.

DATE: JANUARY, 2024 SCALE: 1"=300' SHEET 1 OF 1

RTT "P:\proj\p\19155\Dwg\19155det-Dry Gulch Creek.dwg" JOB#:19.0155.000



DRY GULCH CREEK HEC–1 SCHEMATIC

BY

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DATE: JANUARY, 2024 SCALE: 1"=NA SHEET 1 OF 1

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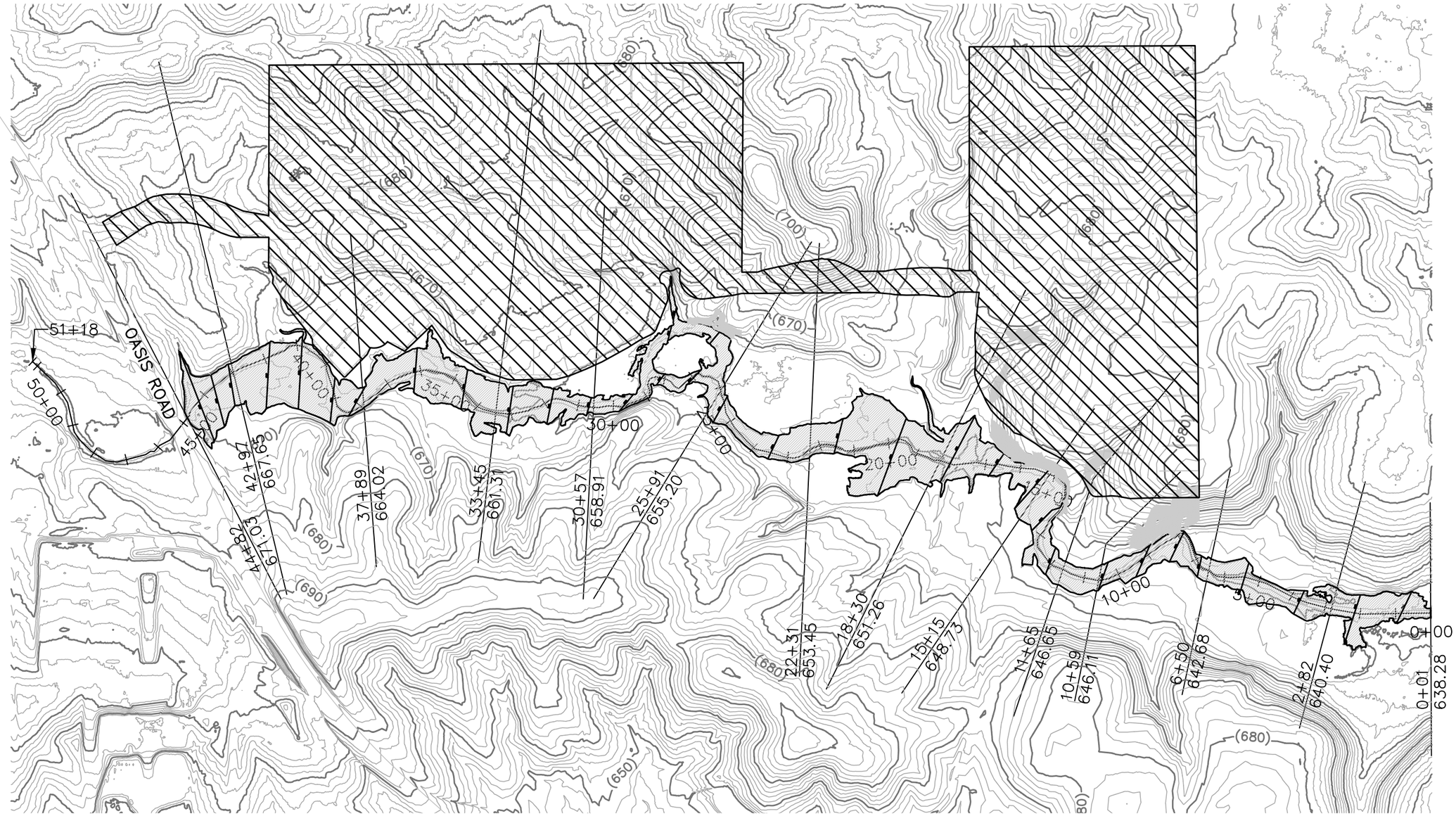
APPENDIX B
HEC-RAS DATA



LEGEND

- 100–YEAR WATER SURFACE ELEVATION
- PROJECT LIMITS
- STA / ELEV — CROSS SECTION

300 0 150 300

1 INCH = 300 FEET

DRY GULCH CREEK CROSS SECTIONS

BY

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DATE: JANUARY, 2024 SCALE: 1"=300' SHEET 1 OF 1

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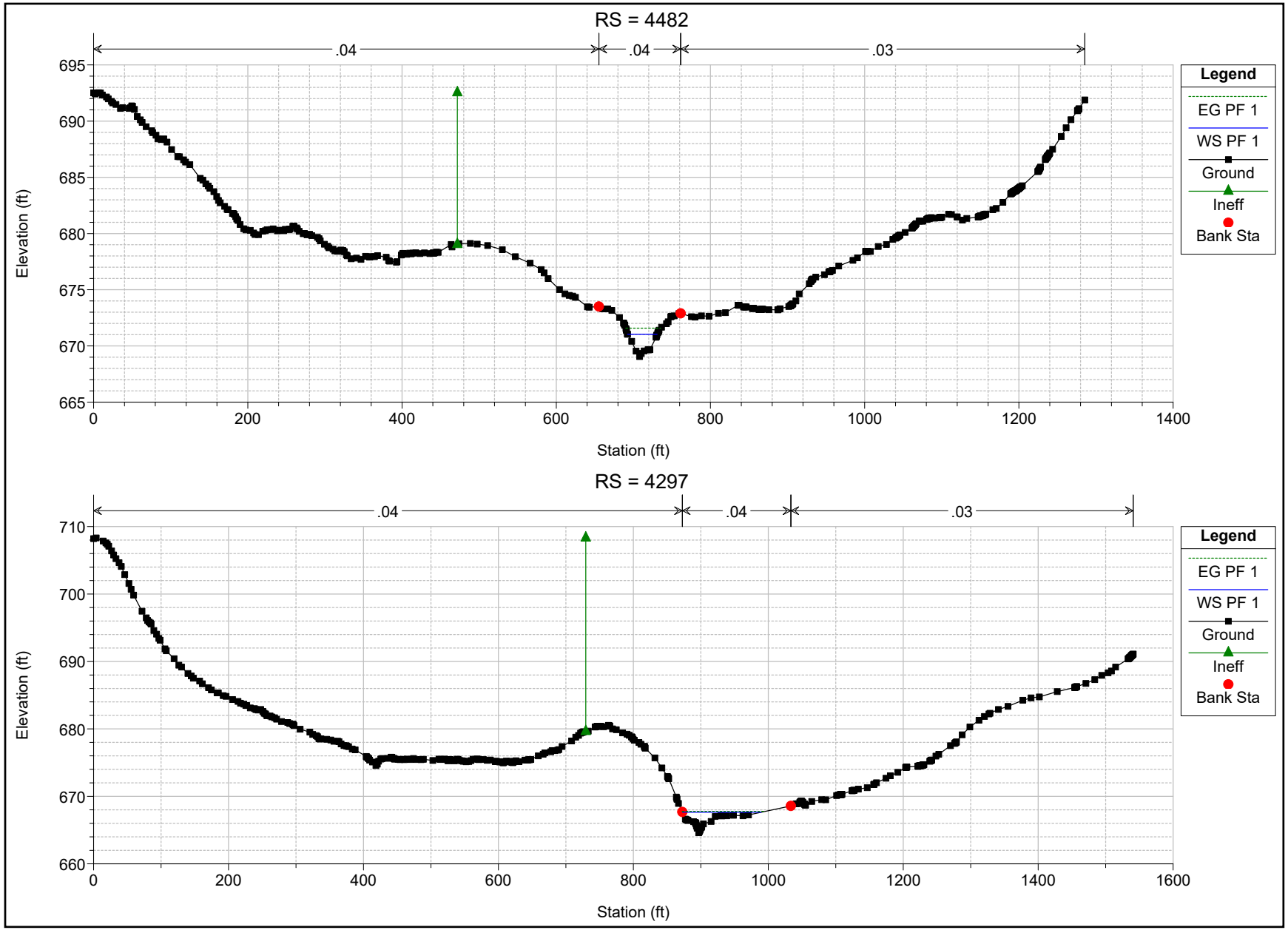
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1000
1200
1400
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Ineff
Bank Sta
RS = 4297
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.03
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690
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670
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Elevation (ft)
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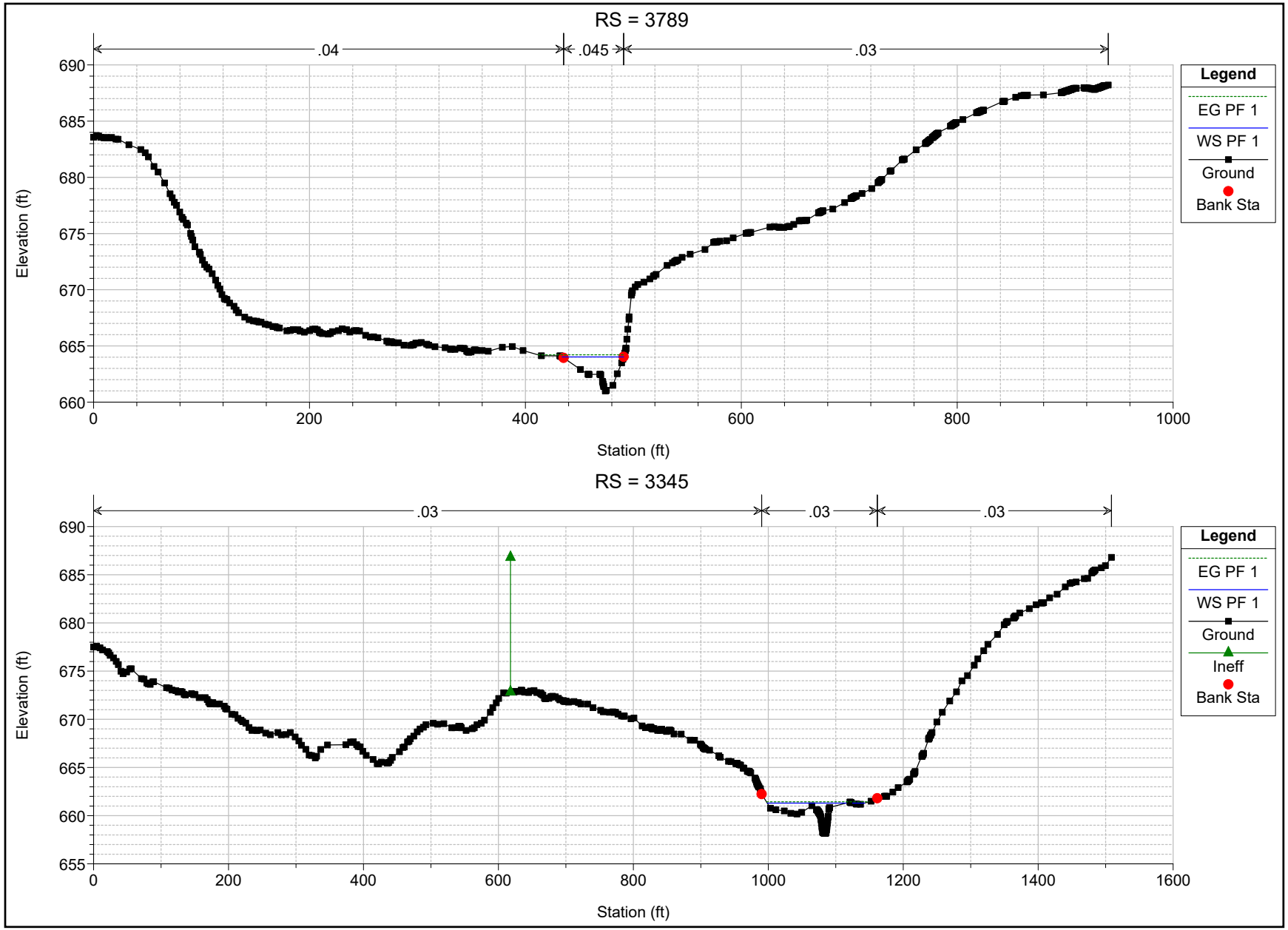
Bank Sta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1000
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Ground
Bank Sta
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.03
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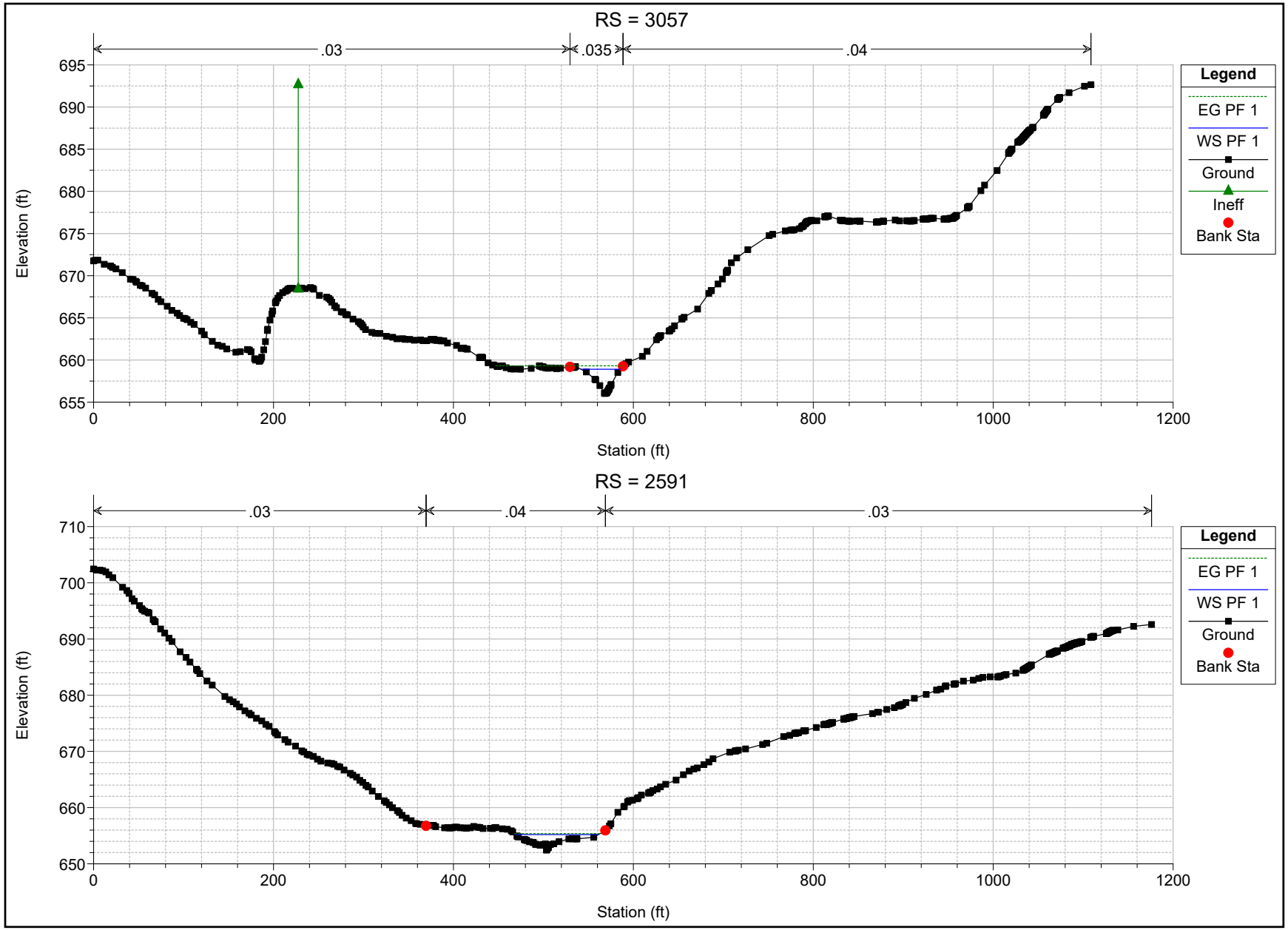
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WS PF 1
Ground
Ineff
Bank Sta
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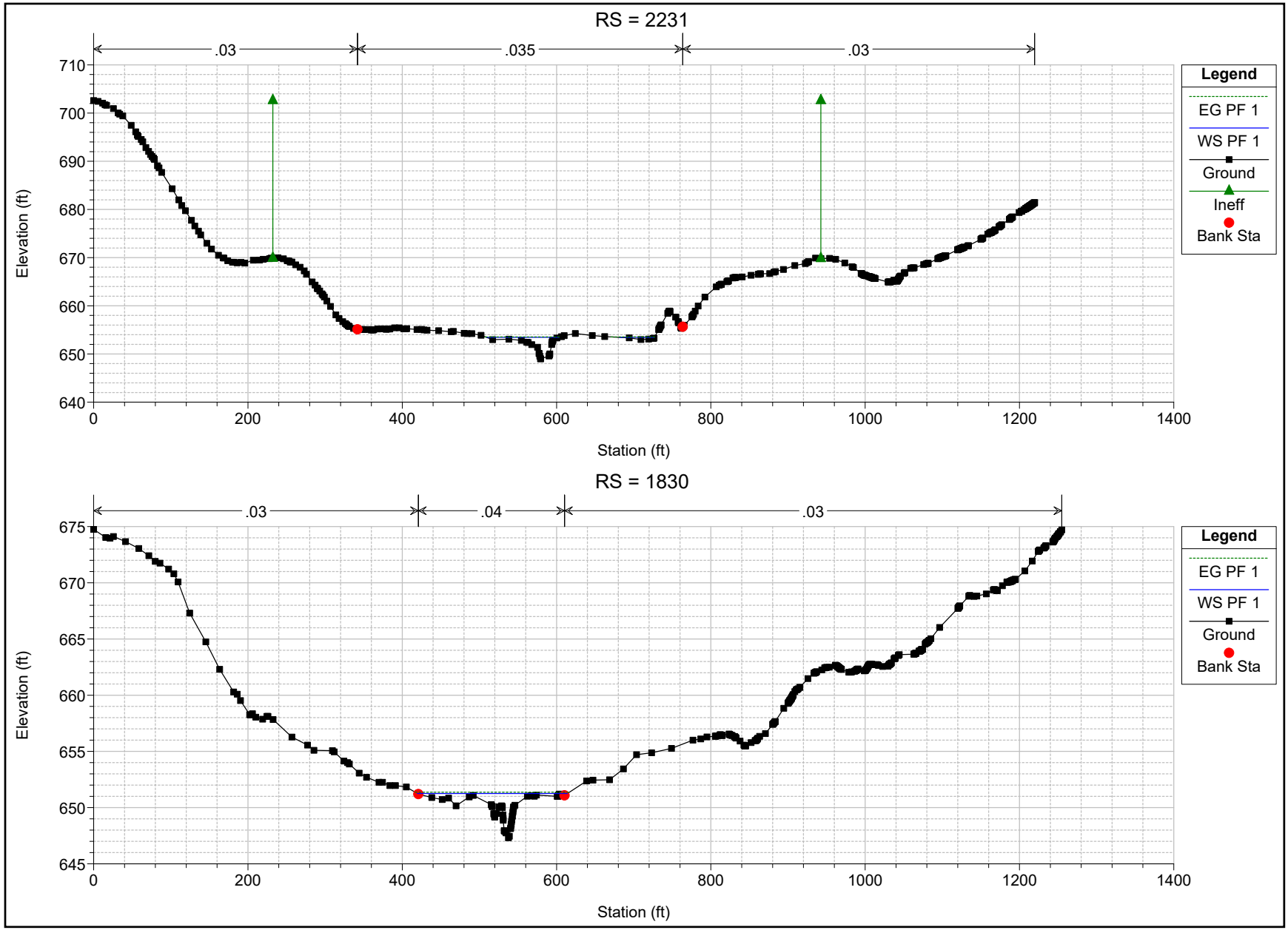
Bank Sta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Station (ft)
Legend
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Ineff
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.04
.03
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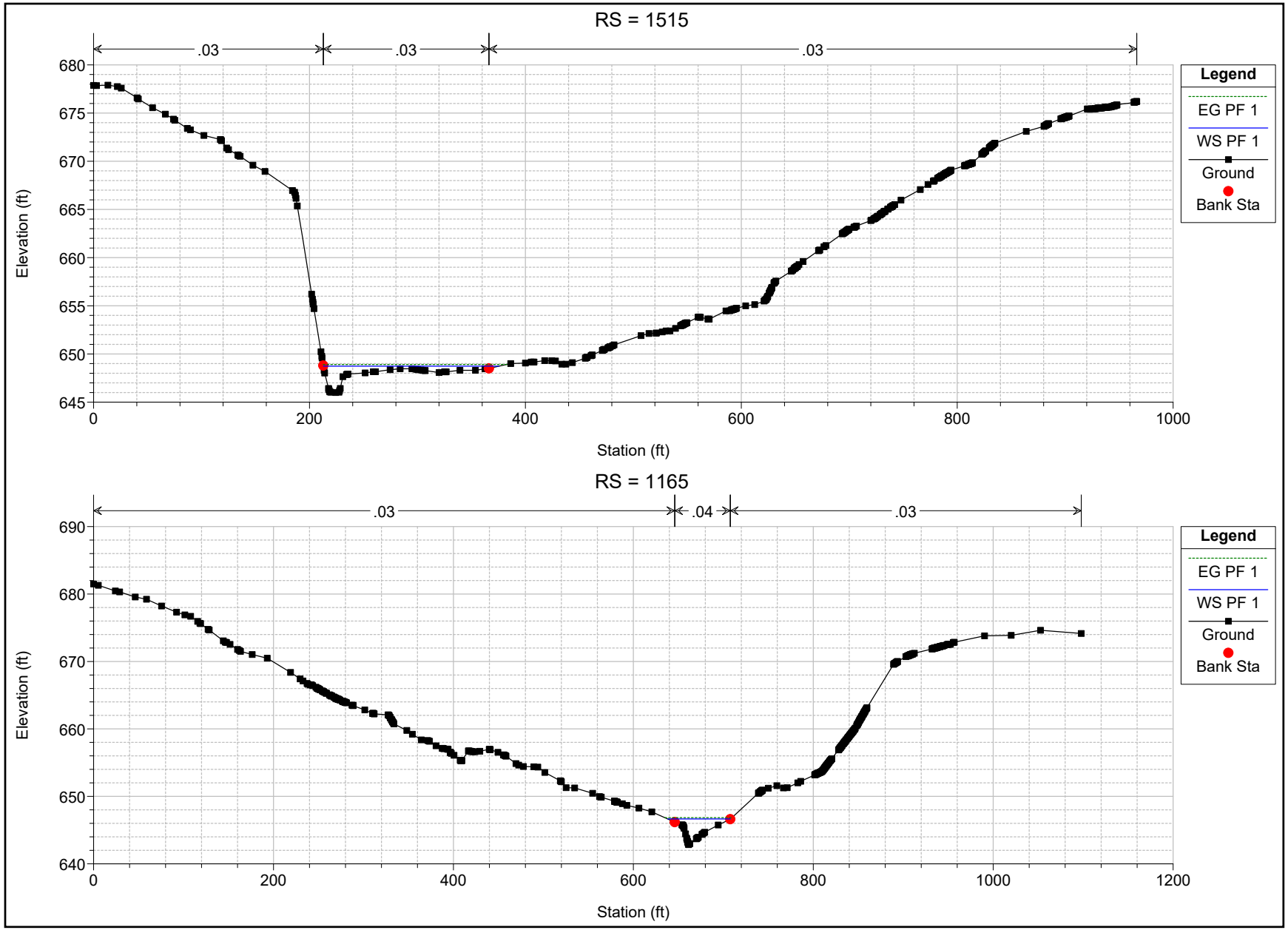
Bank Sta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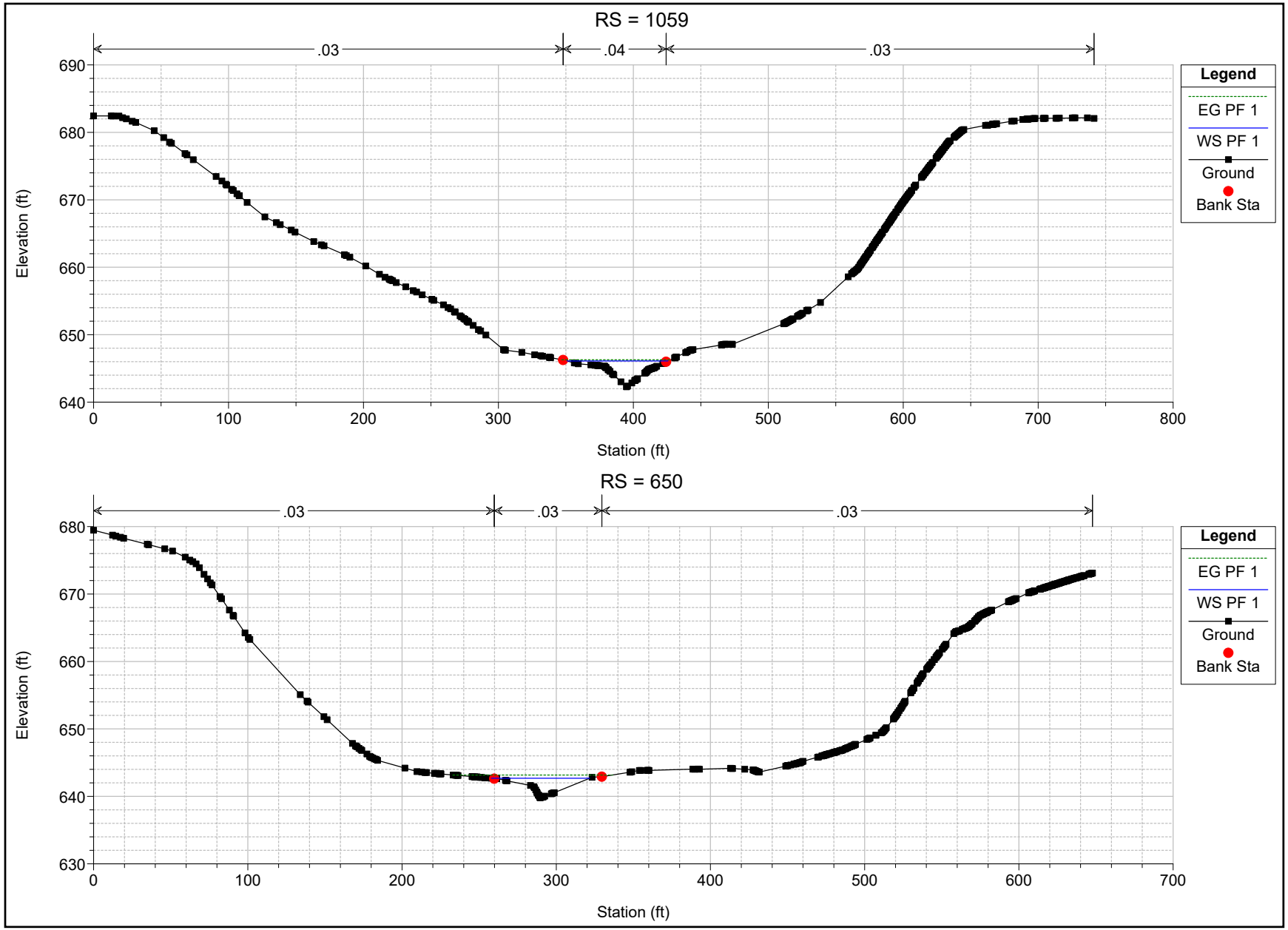
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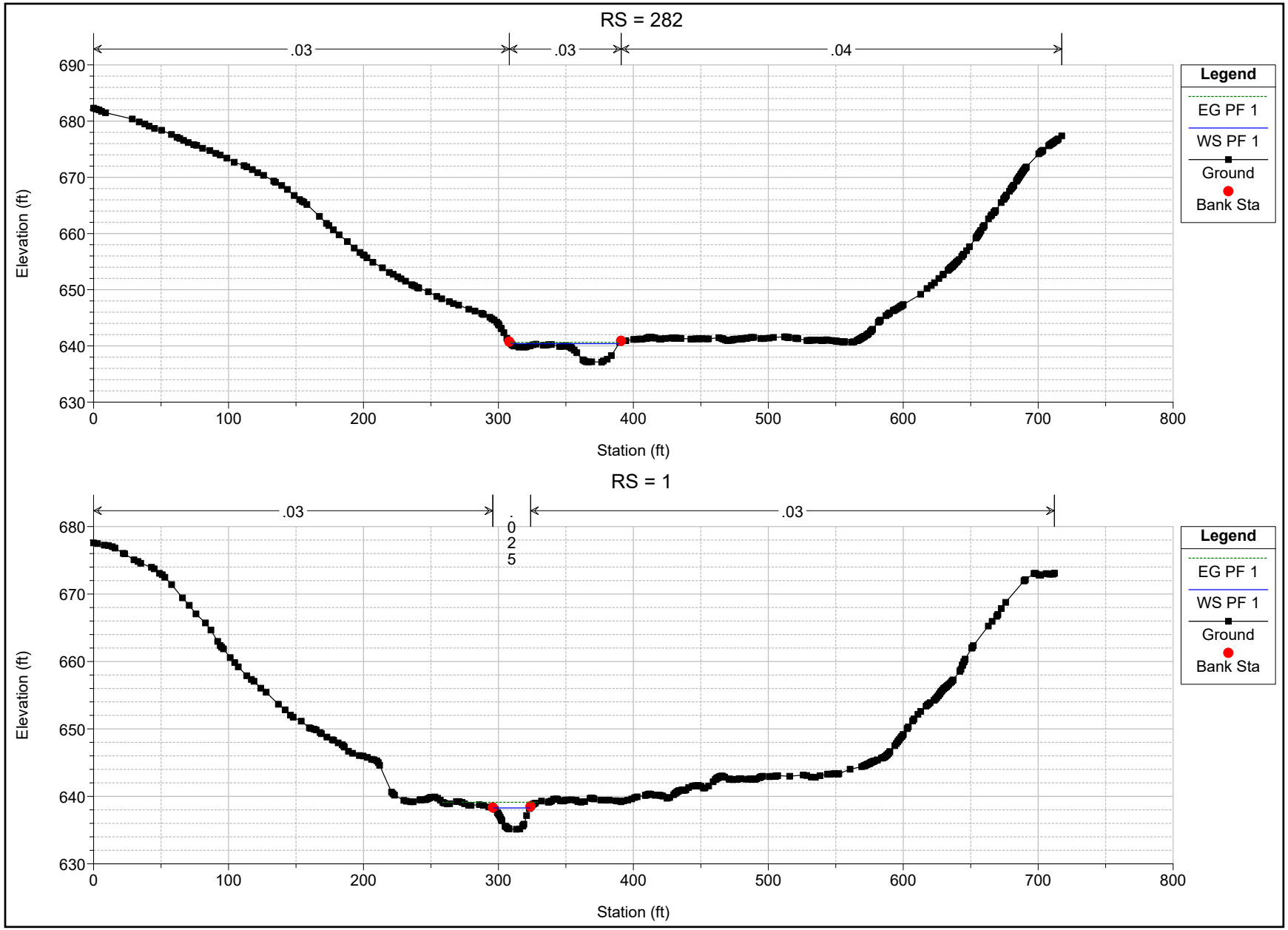
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Station (ft)
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WS PF 1
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Bank Sta
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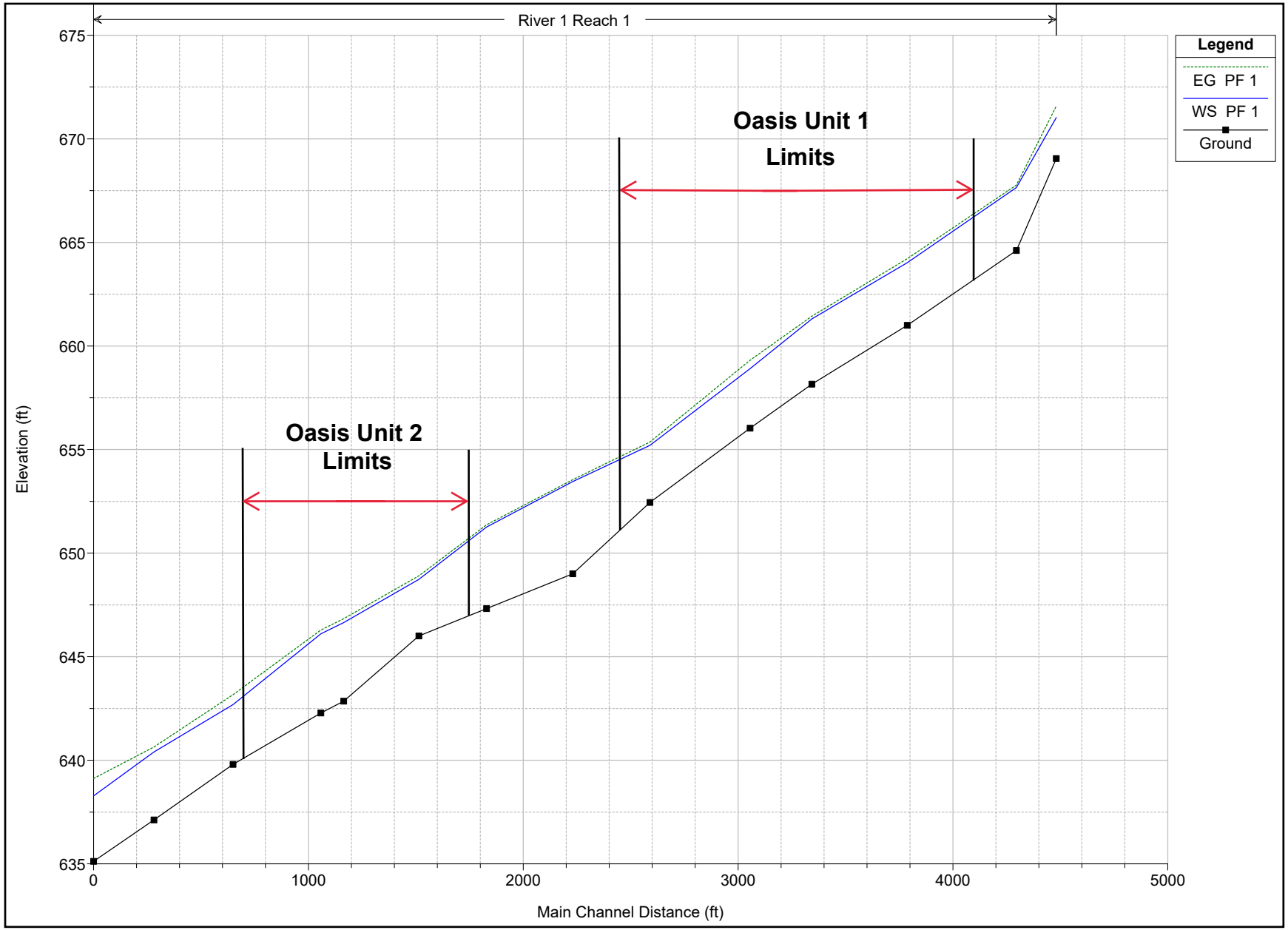
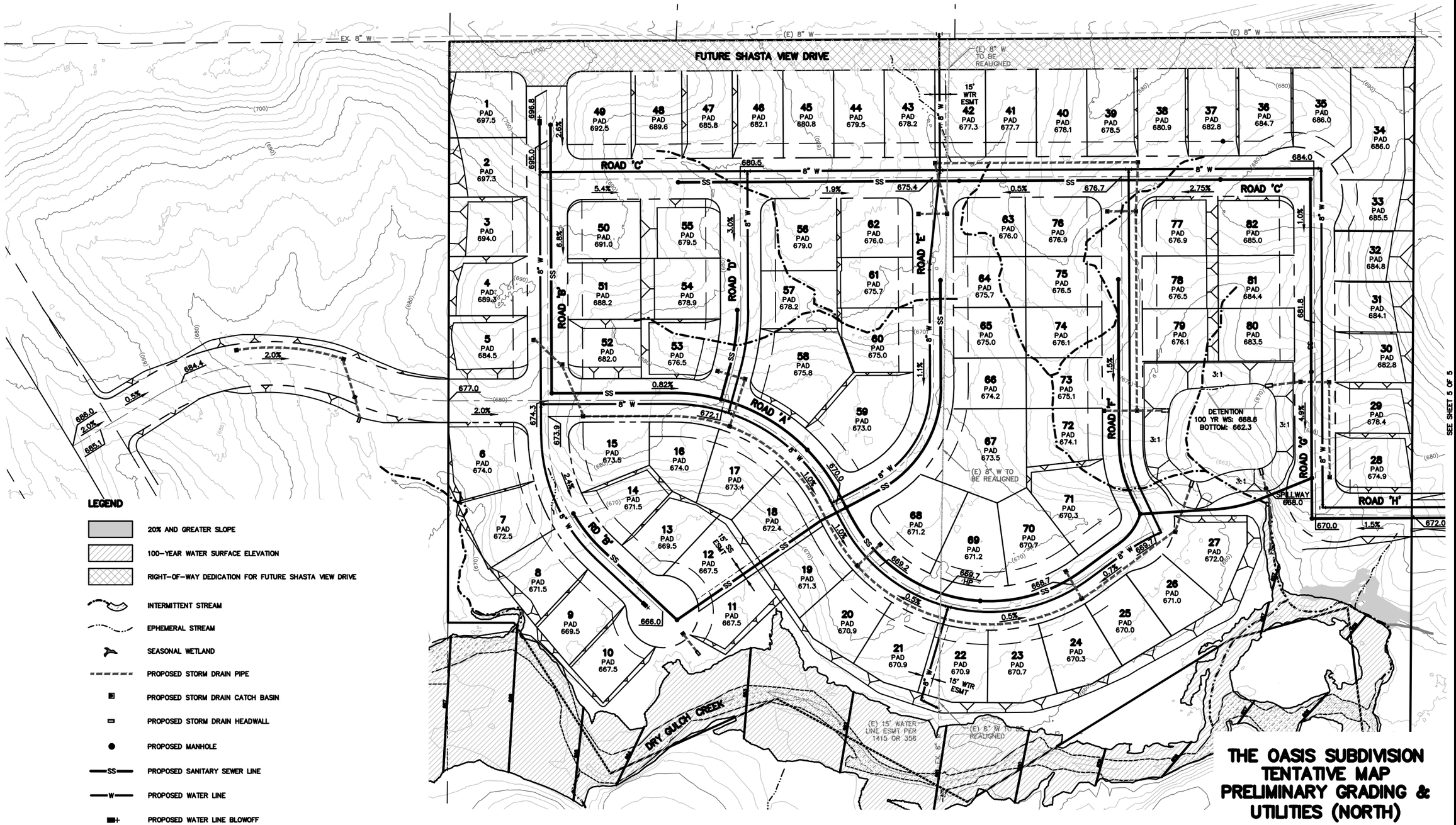
Bank Sta


River 1 Reach 1
Legend
EG PF 1
WS PF 1
Ground
Oasis Unit 1
Limits
Oasis Unit 2
Limits
Elevation (ft)
675
670
665
660
655
650
645
640
635
0
1000
2000
3000
4000
5000
Main Channel Distance (ft)

HEC-RAS Plan: Plan 01 River: River 1 Reach: Reach 1 Profile: PF 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	4482	254.00	669.05	671.03	671.03	671.58	0.022634	5.97	42.56	38.31	1.00
Reach 1	4297	280.00	664.61	667.65	667.28	667.77	0.006643	2.75	101.70	116.73	0.52
Reach 1	3789	280.00	661.00	664.02		664.22	0.007341	3.55	78.97	56.93	0.52
Reach 1	3345	287.00	658.16	661.31		661.44	0.005348	2.92	98.38	134.86	0.60
Reach 1	3057	287.00	656.03	658.91	658.64	659.31	0.010577	5.10	56.33	44.23	0.80
Reach 1	2591	317.00	652.45	655.20	654.81	655.36	0.006838	3.20	98.94	92.20	0.55
Reach 1	2231	319.00	649.00	653.45		653.55	0.003786	2.46	129.56	139.69	0.45
Reach 1	1830	355.00	647.32	651.26	650.85	651.37	0.008122	2.64	134.53	194.60	0.55
Reach 1	1515	355.00	646.00	648.73	648.58	648.91	0.007483	3.34	107.18	162.88	0.71
Reach 1	1165	355.00	642.85	646.65		646.84	0.004801	3.52	101.86	69.64	0.49
Reach 1	1059	355.00	642.28	646.11		646.29	0.005484	3.44	103.42	74.86	0.51
Reach 1	650	396.00	639.80	642.68	642.59	643.17	0.010602	5.57	71.17	63.67	0.92
Reach 1	282	396.00	637.12	640.40		640.64	0.004575	3.90	101.48	79.83	0.61
Reach 1	1	420.00	635.12	638.28	638.05	639.12	0.005907	7.35	57.16	26.82	0.89

APPENDIX C
PROPOSED DEVELOPMENT



LEGEND

- 20% AND GREATER SLOPE
- 100-YEAR WATER SURFACE ELEVATION
- RIGHT-OF-WAY DEDICATION FOR FUTURE SHASTA VIEW DRIVE
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SEASONAL WETLAND
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN CATCH BASIN
- PROPOSED STORM DRAIN HEADWALL
- PROPOSED MANHOLE
- SS — PROPOSED SANITARY SEWER LINE
- W — PROPOSED WATER LINE
- PROPOSED WATER LINE BLOWOFF
- (E) 8" W — EXISTING WATER LINE
- EXISTING WATER LINE TO BE REALIGNED

NOTE: STREAM AND WETLAND INFORMATION PER AQUATIC RESOURCE DELINEATION REPORT PREPARED BY ENPLAN AND DATED SEPTEMBER 2019

60 0 30 60
1 INCH = 60 FEET

THE OASIS SUBDIVISION TENTATIVE MAP PRELIMINARY GRADING & UTILITIES (NORTH)

BEING LOCATED IN THE WEST HALF OF SECTION 8, TOWNSHIP 32 NORTH, RANGE 4 WEST, MDM, CITY OF REDDING, SHASTA COUNTY, CALIFORNIA

FOR

BRIAN BURK

BY

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Civil Engineering • Land Planning • Surveying & Mapping
Landscape Architecture • Presentation Graphics
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DATE: DECEMBER 20, 2023 SCALE: 1"=60' SHEET 4 OF 5

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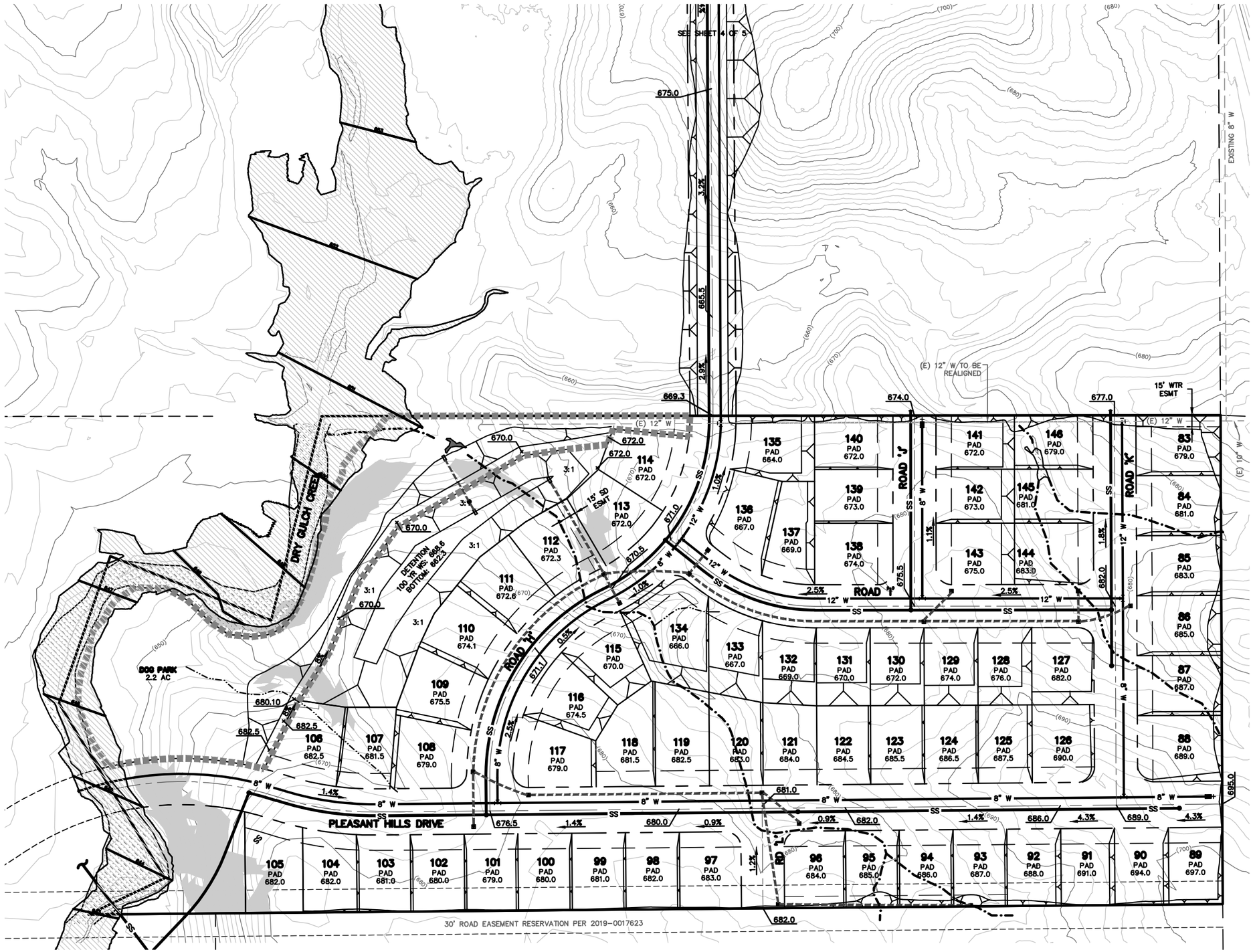

LEGEND

- 20% AND GREATER SLOPE
- 100-YEAR WATER SURFACE ELEVATION
- INTERMITTENT STREAM
- EPHEMERAL STREAM
- SEASONAL WETLAND
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN CATCH BASIN
- PROPOSED STORM DRAIN HEADWALL
- PROPOSED MANHOLE
- SS — PROPOSED SANITARY SEWER LINE
- W — PROPOSED WATER LINE
- PROPOSED WATER LINE BLOWOFF
- -(E) 8" W- EXISTING WATER LINE
- EXISTING WATER LINE TO BE REALIGNED

NOTE: STREAM AND WETLAND INFORMATION PER AQUATIC RESOURCE DELINEATION REPORT PREPARED BY ENPLAN AND DATED SEPTEMBER 2019

N

60 0 30 60
1 INCH = 60 FEET

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BEING LOCATED IN THE WEST HALF OF SECTION 8, TOWNSHIP 32 NORTH, RANGE 4 WEST, MDM, CITY OF REDDING, SHASTA COUNTY, CALIFORNIA

FOR

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BY

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DATE: DECEMBER 20, 2023 SCALE: 1"=60' SHEET 5 OF 5

MD/MH/ND P:/proj/p19155/dwg/19155tm_BURK.dwg 19155

THE OASIS SUBDIVISION

APN: 074-220-005, 074-230-024, 074-240-001, 074-410-001
REDDING, CA 96003

ENTITLEMENT STORM DRAINAGE ANALYSIS

Prepared by

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This report was written by or under the direct supervision of:

Ian T. Stripling, P.E.
Civil Engineer

2/22/24
Date

TABLE OF CONTENTS

Section **Page**

EXECUTIVE SUMMARY

The Oasis Subdivision is a proposed single family residential subdivision located south of Oasis Road along the east bank of Dry Gulch Creek. The site is within the city limits of Redding, CA. It includes the Shasta County Parcels: 074-220-005, 074-230-024, 074-240-001 & 074-410-001 as shown below. As described in the following report, the projects grading, and storm drain system have been designed to incorporate multiple storm water detention facilities in order to maintain or reduce pre-project storm water runoff once the project is complete in accordance with the City of Redding Engineering Division requirements.

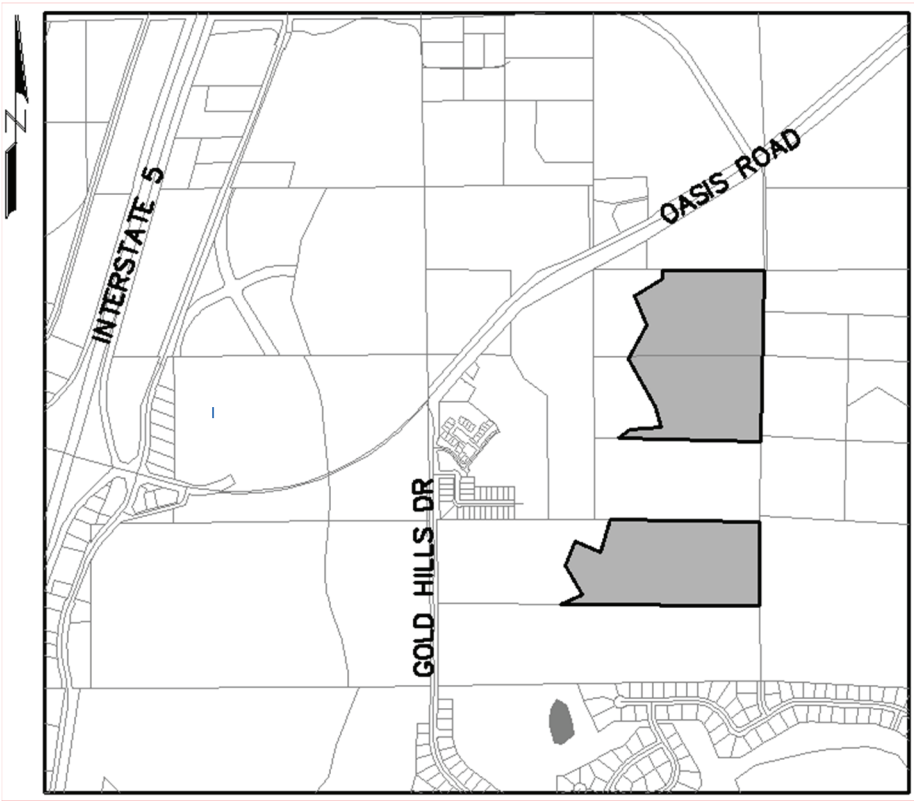


FIGURE 1 – VICINITY MAP

DESIGN CRITERIA

To meet City Council Policy 1806, and City of Redding Engineering Division requirements for protection of floodplains and downstream drainage concerns, the design is required to maintain or reduce pre-project peak flows for the 10-, 25-, and 100-year design storm events. This report compares the pre-project condition against the post-project condition. To meet these requirements, the post-project peak runoff flows must be equal to, or less than, the pre-project peak runoff flows.

The project consists of multiple drainage basins, many of which are greater than 10 acres. Per the City of Redding Construction Standards (CORCS) 200.00-9, HEC-1 shall be used to calculate, route, and compare the runoff for the project. For this report, the City of Redding preprocessor model (FLOW) is used to run HEC-1.

Per the CORCS, a 100-year design storm shall be used to size the detention basin to ensure that the project complies with City Council Policy 1806 and the City of Redding Engineering Division requirements. The Intensity-Depth-Frequency curve used for this location was generated within the City of Redding FLOW program. See the *City of Redding HEC-1 Processor*

Documentation (January 16, 2006) for details. The hydrologic soil groups used in this report were taken from the *USDA NRCS Web Soil Survey of the Shasta County Area.* See Appendix A for site specific details.

PRE-PROJECT CONDITION

The pre-project condition consists of steep hilly terrain draining to gully's that are tributary to Dry Gulch Creek. Most of the site contains hydrologic soil group 'C' gravely loam and vegetated ground cover with oak trees scattered throughout. The City of Redding's default Churn Creek model (containing Dry Gulch Creek) has been modified to reflect the soil conditions from the USDA soil survey. The subbasin area, elevation and lag time have been unaltered.

The stormwater flow runs west through the basins before combining with Dry Gulch Creek, which is located on the western boundary of the site. Dry Gulch Creek flows south and ultimately joins with Churn Creek. The confluence between Dry Gulch Creek and Churn Creek is the furthest recorded flow location for this project (C1292). See Appendix 'B' for the pre-project basin map and flow routing schematic. The contours shown on the pre-project basin map are from 2016 City of Redding LiDAR data.

HEC-1 PRE-PROJECT BASIN CHARACTERISTICS

Basin Name	Land Use: Open Oak Type C	Land Use: Open Oak Type D	CN	Impervious (percent)	Area (acres)	Elevation (feet)
BDG4B	55%	45%	76	1%	12.9	664
BDG4D	100%	-	73	1%	5.3	664
BDG5A	100%	-	73	1%	2.3	688
BDG5B	100%	-	73	1%	8.0	684
BDG5C	100%	-	73	1%	2.8	684
BDG5D	100%	-	73	1%	11.9	666
BDG6B1	100%	-	73	1%	3.2	684
BDG6B2	90%	10%	74	1%	5.3	685
BDG6B3	100%	-	73	1%	14.6	678
BDG6D1	68%	32%	75	1%	3.5	690
BDG6D2	90%	10%	74	1%	16.9	670

POST-PROJECT CONDITION

In the post-project condition, The Oasis Subdivision will develop residential lots along the proposed roadways shown in the Post-Development Basin Map. Areas of development are modeled as Single Family residential, with 4-6 units per acre. The project is divided into three sections, a northern, middle, and southern portion.

The northern portion contains the developed basin BDG5B and the undeveloped tributary basins BDG5A & BDG5C. These basins are routed through the on-site drainage system before entering the northern detention basin (SDG5B). The developed basin BDG5B1, the northwestern most cul-de-sac, is released undetained into Dry Gulch Creek.

The middle portion contains an undeveloped basin BDG6B1, combining with BDG6B3. Basin BDG6B3 contains flow from the southern portion of the proposed project. Both basins combine before being routed to Dry Gulch Creek undetained.

The southern portion contains the developed basin BDG6D2 and the undeveloped tributary basins BDG6B2 & BDG6D1. These basins are routed through the on-site drainage system before entering the southern detention basin (SDG6D2). The basin west of the project (BDG6D3) releases into Dry Gulch Creek undetained. See Appendix 'C' for the post-project basin map and flow routing schematic.

HEC-1 POST-PROJECT BASIN CHARACTERISTICS

Basin Name	Land Use: Single Family Type C	Land Use: Single Family Type D	Land Use: Open Oak Type C	Land Use: Open Oak Type D	CN	Impervious (percent)	Area (acres)	Elevation (feet)
BDG5B1	80%	20%	-	-	79	40%	2.4	664
BDG4B	-	-	45%	55%	77	1%	8.1	664
BDG4D	-	-	100%	-	73	1%	5.3	664
BDG5A	-	-	100%	-	73	1%	2.3	688
BDG5C	-	-	100%	-	73	1%	2.8	684
BDG5B	96%	-	4%	-	78	38%	23.5	684
BDG6B1	-	-	100%	-	73	1%	3.2	684
BDG6B3	18%	-	82%	-	74	8%	16.0	678
BDG6D1	-	-	68%	32%	75	1%	3.5	690
BDGB2	-	-	100%	-	73	1%	2.9	685
BDGD2	90%	10%	-	-	79	40%	14.8	670
BDG6D3	-	-	100%	-	73	1	1.9	660

DETENTION BASINS

Northern Detention Basin SDG5B

The proposed northern detention basin is an above ground basin with 3:1 side slopes, as shown in the post-project basin map in Appendix 'C'. See the table below containing the details, pre-project, and post-project flows for the site and the proposed detention basin.

Per the City of Redding's MS4 requirements, the 2-year peak flow rate must not exceed pre-project flow rates in the post-project condition. The Drainage Summary Table below shows that the peak flow rate in the 2-year storm has not increased. See Appendix 'D' for detention calculations.

North Detention Basin Summary	
Top Elevation:	670.00
Detention Spillway:	668.00
100yr Max Water Surface:	668.53
Opening 3:	CalTrans G-1 Area Drain w/ Tee-Pee Grate
Opening 2:	18in. x 12in. Weir
Opening 1:	11" Diameter Circle
Bottom Elevation:	661.50

North Detention Basin S-S-D Table		
Elev (ft)	Storage (ac-ft)	Discharge (cfs)
661.50	0.00	0.0
662.00	0.14	0.9
663.00	0.44	3.2
664.00	0.79	4.5
665.00	1.16	5.5
666.00	1.58	6.4
667.00	2.04	11.9
668.00	2.54	16.6
669.00	3.09	47.7
670.00	3.68	62.0

Southern Detention Basin SDG6D2

The proposed southern detention basin is an above ground basin with 3:1 side slopes, as shown in the post-project basin map in Appendix 'C'. See the table below containing the details, pre-project, and post-project flows for the site and the proposed detention basin.

Per the City of Redding's MS4 requirements, the 2-year peak flow rate must not exceed pre-project flow rates in the post-project condition. The Drainage Summary Table below shows that the peak flow rate in the 2-year storm has not increased. See Appendix 'D' for detention calculations.

CDG6C2: South Detention Basin Summary	
Top Elevation:	670.00
Detention Spillway:	666.00
100yr Max Water Surface:	666.65
Opening 3:	CalTrans G-1 Area Drain w/ Tee-Pee Grate
Opening 2:	N/A
Opening 1:	10" Diameter Circle
Bottom Elevation:	660.00

South Detention Basin S-S-D Table		
Elev (ft)	Storage (ac-ft)	Discharge (cfs)
660.00	0.00	0.0
662.00	0.38	3.3
663.00	0.65	4.2
664.00	0.98	5.0
665.00	1.36	5.6
666.00	1.81	6.2
667.00	2.31	34.6
668.00	2.89	46.7
669.00	3.53	56.1
670.00	4.25	64.0

DRY GULCH DRAINAGE RESULTS

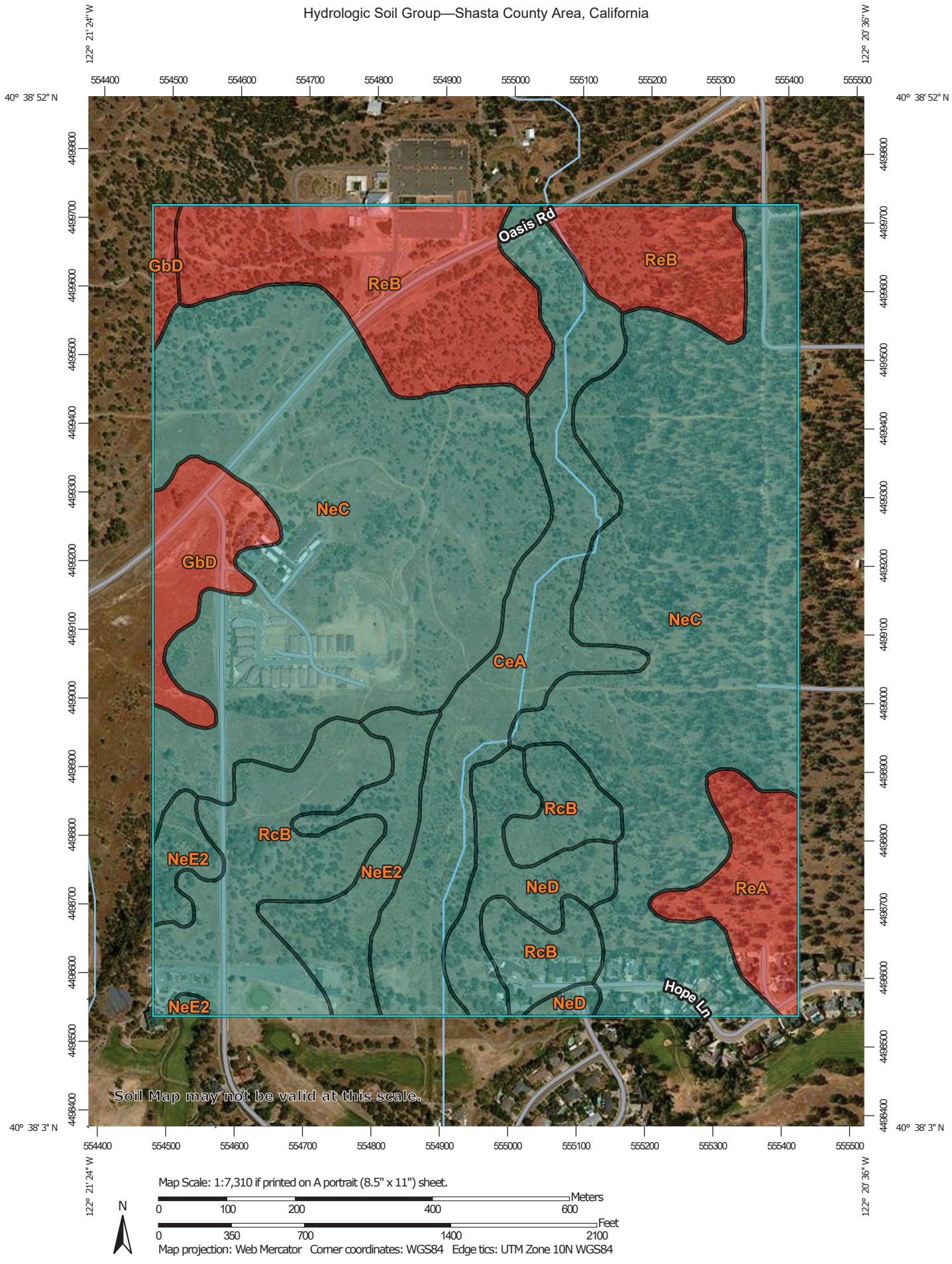
The detention basins are designed to meter flows so that there is no increase in flow within Dry Gulch Creek as a result of the project development. This report looked at four key points of interest downstream of the project, including where Dry Gulch Creek flows into Churn Creek. The following table compares the pre-project existing flows in Dry Gulch Creek against the post-development flows expected upon completion of the project. The north and south detention basins are sized to match the 2-year flows leaving the outfall.

HEC-1 Analysis: Drainage Summary											
	HEC-1 ID		2-year		10-year		25-year		100-year		
DESCRIPTION	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST	Max WSE
North Detention Basin	N/A	SDG5B	N/A	6	N/A	12	N/A	15	N/A	33	668.53
DGC @ North Det Outfall	CDG4D	CDG4D	73	73	133	133	178	177	273	273	
South Detention Basin	N/A	SDG6D2	N/A	5	N/A	6	N/A	10	N/A	25	666.60
DGC @ South Det Outfall	CDG6C2	CDG6C2	91	88	167	156	223	209	343	328	
Gold Hills X-ing	CDG7C	CDG7C	-	-	157	154	182	177	319	309	
Nathan Way X-ing	CDG18	CDG18	-	-	199	194	230	224	394	383	
Hollow Lane X-ing	CDG25A	CDG25A	-	-	242	235	298	298	452	447	
Churn Creek Combine	C1292	C1292	-	-	5,403	5,401	6,832	6,828	9,660	9,656	

CONCLUSION

As described above, the project's storm drain system manages the storm water runoff in a way that maintains or reduces pre-project runoff volumes in the post-project condition. The proposed storm drain design complies with City Council Policy 1806, and City of Redding Engineering Division requirements for protection of floodplains and downstream drainage concerns.

Appendix A
SITE DETAILS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555000
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555400
555500
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40° 38' 3" N
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4499700
4499600
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4499400
4499300
4499200
4499100
4499000
4498900
4498800
4498700
4498600
4498500
4498400
Oasis Rd
Hope Ln
GbD
ReB
NeC
CeA
RcB
NeE2
NeD
ReA
Soil Map may not be valid at this scale.
Map Scale: 1:7,310 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
100
200
400
600
Feet
0
350
700
1400
2100
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Shasta County Area, California
Survey Area Data: Version 14, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 26, 2015—Jun 26, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CeA	Churn gravelly loam, 0 to 3 percent slopes	C	29.7	10.7%
GbD	Gaviota very rocky sandy loam, 0 to 30 percent slopes	D	10.6	3.8%
NeC	Newtown gravelly loam, 8 to 15 percent slopes	C	138.2	49.9%
NeD	Newtown gravelly loam, 15 to 30 percent slopes	C	10.1	3.6%
NeE2	Newtown gravelly loam, 30 to 50 percent slopes, eroded	C	13.5	4.9%
RcB	Red Bluff gravelly loam, moderately deep, 3 to 8 percent slopes	C	29.9	10.8%
ReA	Redding-Red Bluff gravelly loams, 0 to 3 percent slopes	D	9.7	3.5%
ReB	Redding-Red Bluff gravelly loams, 3 to 8 percent slopes	D	35.1	12.7%
Totals for Area of Interest			**276.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

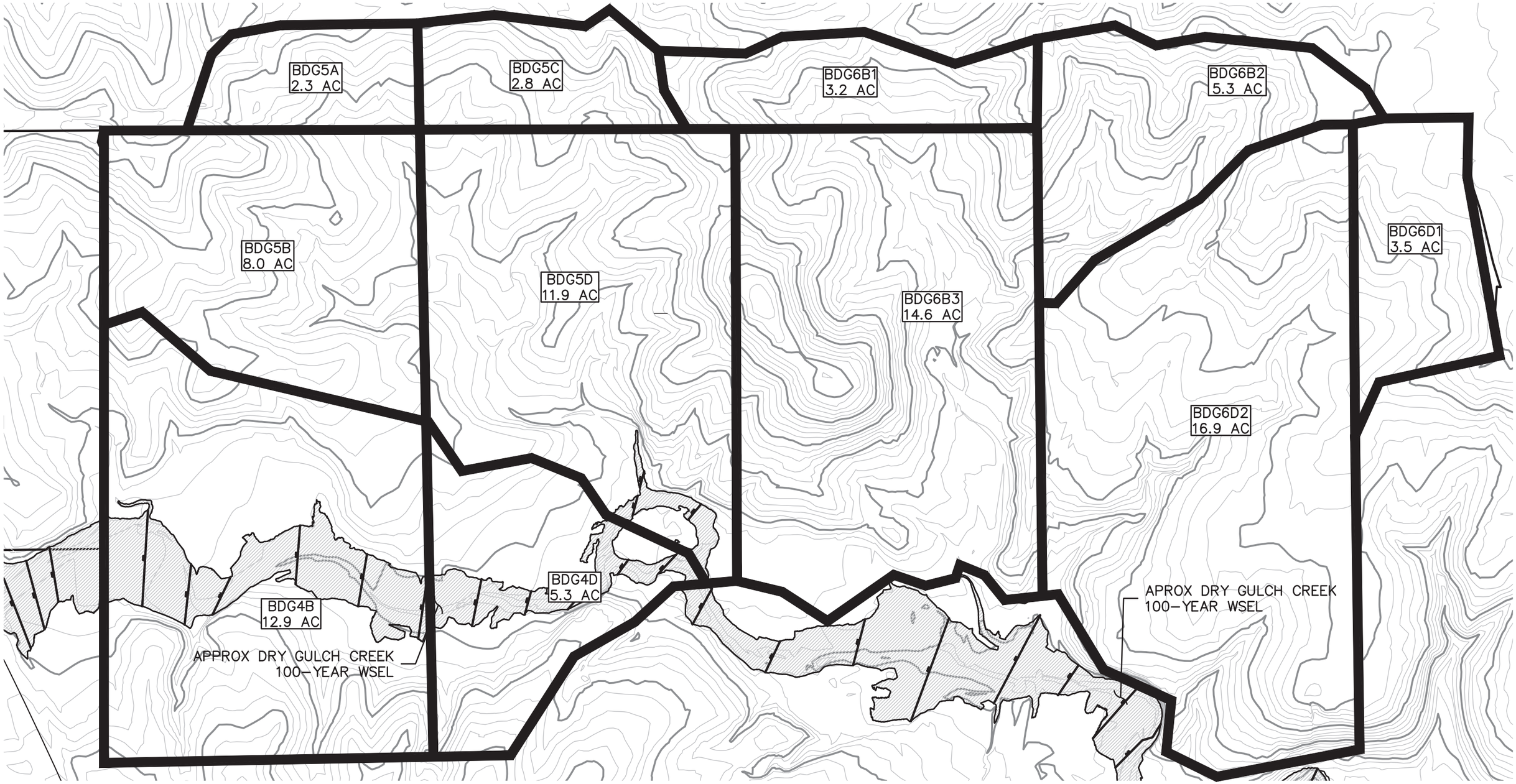
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX B
PRE-PROJECT CONDITION



200 0 100 200

1 INCH = 200 FEET

PRE-PROJECT BASIN MAP

THE RESERVE UNIT 3

SHARRAH DUNLAP SAWYER, INC.
Civil Engineering • Land Planning • Surveying & Mapping
Landscape Architecture • Presentation Graphics
320 Hartnell Ave, Redding, CA 96002
530.221.1792 voice • info@sdsengineering.com

TO BE USED AS A VISUAL AID ONLY. LINEWORK DOES NOT REPRESENT, NOR IS IT INTENDED TO REPLACE SURVEY OR RECORDED PROPERTY INFORMATION.

DATE: FEBRUARY, 2024 SCALE: 1"=200' SHEET 1 OF 1

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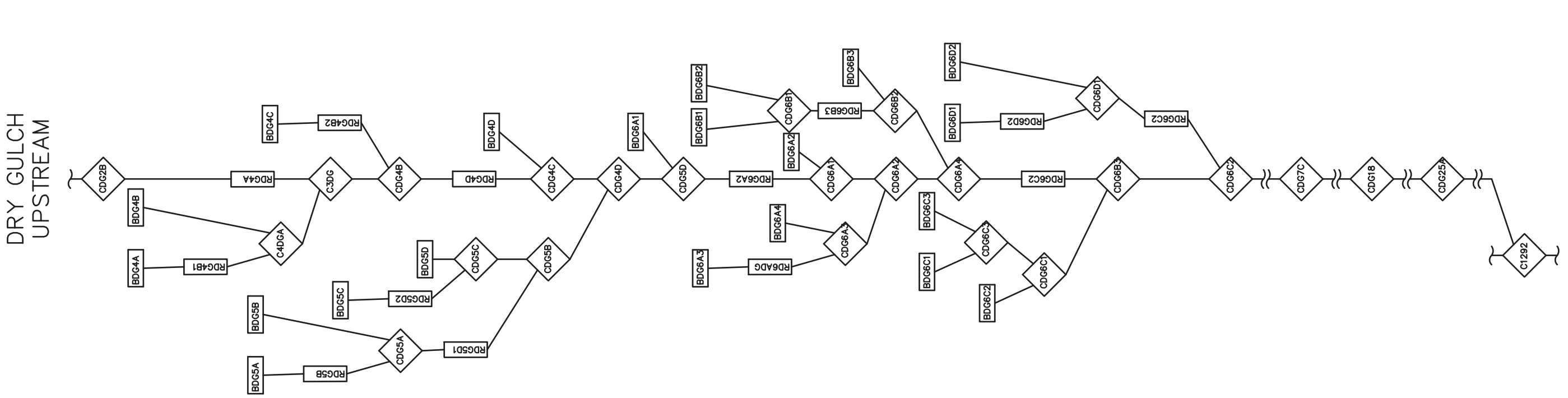

PRE–PROJECT
HEC–1 SCHEMATIC

THE RESERVE UNIT 3

BY

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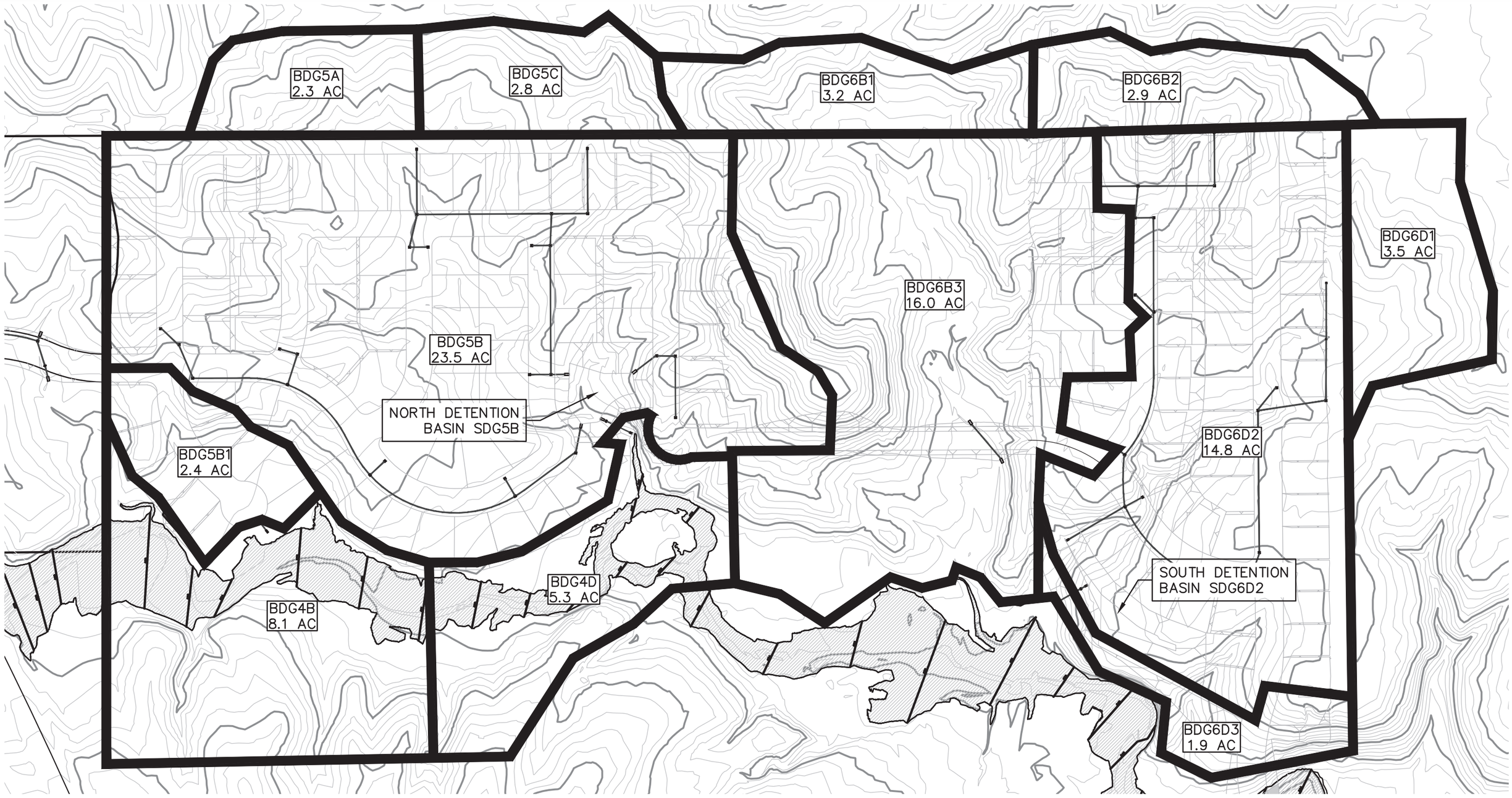
DATE: FEBRUARY, 2024 SCALE: 1"=N/A SHEET 1 OF 1

RTT P:\PROJ\P\19155\DWG\19155det_BURK.dwg JOB#:19.0155.005

Appendix C

POST-PROJECT CONDITION



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1 INCH = 200 FEET

15

POST–PROJECT BASIN MAP

THE RESERVE UNIT 3

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DATE: FEBRUARY, 2024 SCALE: 1"=200' SHEET 1 OF 1

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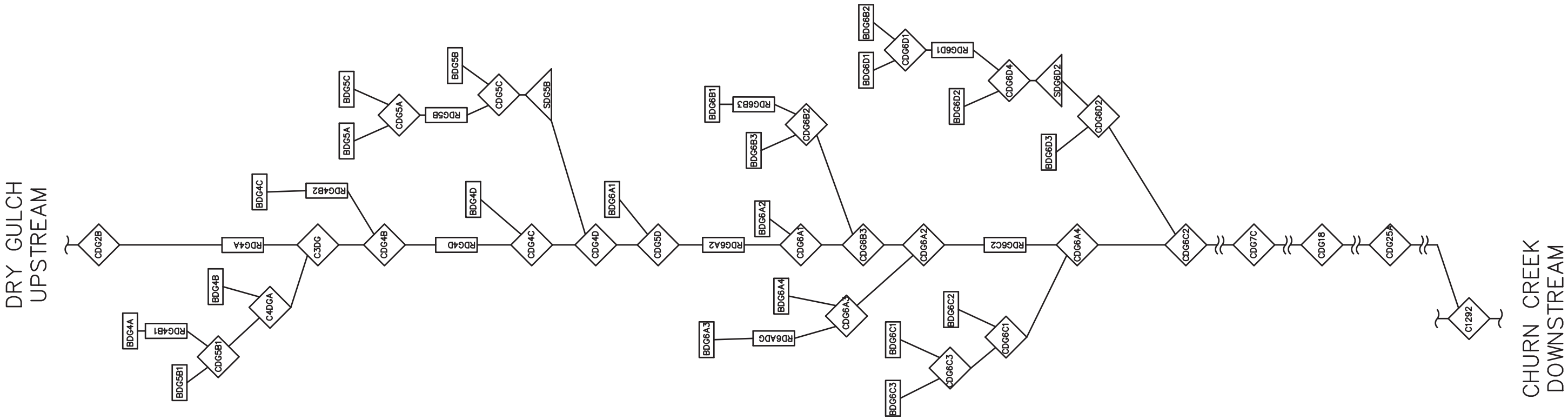

POST–PROJECT HEC–1 SCHEMATIC

THE RESERVE UNIT 3

BY

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Landscape Architecture • Presentation Graphics
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DATE: FEBRUARY, 2024 SCALE: 1"=N/A SHEET 1 OF 1

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Appendix D

NORTHERN DETENTION CALCULATIONS

Stage-Storage

North Detention Basin - SDG5B

DETENTION BASIN - STAGE STORAGE TABLE						
ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)		AVG END TOTAL VOL. (ac. ft.)
661.50	11,767	0.00	0.00	0.00		0.00
662.00	12,520	0.50	6,072	6,072		0.14
663.00	14,059	1.00	13,290	19,361		0.44
664.00	15,665	1.00	14,862	34,223		0.79
665.00	17,336	1.00	16,501	50,724		1.16
666.00	19,073	1.00	18,205	68,928		1.58
667.00	20,877	1.00	19,975	88,903		2.04
668.00	22,745	1.00	21,811	110,714		2.54
669.00	24,677	1.00	23,711	134,425		3.09
670.00	26,675	1.00	25,676	160,101		3.68

Detention Stage-Storage-Discharge Calculation

North Detention Basin - SDG5B

Top Opening					
CalTrans G-1 Area Drain w/ Tee-Pee Grate					A = 5.800 sf
	cl elev =	668.00 ft	inv elev =	668.00 ft	L = 9.65 ft

2nd Opening					
18in. x 12in. Weir	w =	18.0 in	h =	12.0 in	A = 1.500 sf
	cl elev =	666.50 ft	inv elev =	666.00 ft	L = 1.50 ft

Bottom Opening					
11" Diameter Circle			d =	11.0 in	A = 0.660 sf
	cl elev =	661.96 ft	inv elev =	661.50 ft	

Orifice equation =	$CA(2g\Delta H)^{0.5}$	Weir equation =	$CLH^{1.5}$
C =	0.6	C =	3.2
2g =	64.4		

	1st Opening		2nd Opening				Top Opening					
	cl depth	orifice outflow	wier depth	wier outflow	cl depth	orifice outflow	weir depth	weir outflow	cl depth	orifice outflow	Detention Discharge	Storage Volume
Elev	ft	cfs	ft	cfs	ft	cfs	ft	cfs	ft	cfs	cfs	Ac-ft
661.50												
662.00	0.50	0.9									0.9	0.14
663.00	1.04	3.2									3.2	0.44
664.00	2.04	4.5									4.5	0.79
665.00	3.04	5.5									5.5	1.16
666.00	4.04	6.4									6.4	1.58
667.00	5.04	7.1	1.00	4.8	0.50	5.1					11.9	2.04
668.00	6.04	7.8	2.00	13.6	1.50	8.8					16.6	2.54
669.00	7.04	8.4	3.00	24.9	2.50	11.4	1.0	30.90	1.00	27.90	47.7	3.09
670.00	8.04	9.0	4.00	38.4	3.50	13.5	2.0	87.30	2.00	39.50	62.0	3.68

** Note: Per Urban Drainage Design Manual Publication No. FHWA-NHI-01-021 August 2001 "*The Flow Condition, orifice or weir, producing the lowest discharge for a given stage defines the controlling relationship."*

APPENDIX E
SOUTH DETENTION CALCULATIONS

Stage-Storage

South Detention Basin - SDG6D2

DETENTION BASIN - STAGE STORAGE TABLE						
ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)		AVG END TOTAL VOL. (ac. ft.)
660.00	6,080	0.00	0.00	0.00		0.00
662.00	10,567	2.00	16,647	16,647		0.38
663.00	12,963	1.00	11,765	28,412		0.65
664.00	15,453	1.00	14,208	42,620		0.98
665.00	18,036	1.00	16,745	59,365		1.36
666.00	20,695	1.00	19,366	78,730		1.81
667.00	23,496	1.00	22,096	100,826		2.31
668.00	26,439	1.00	24,968	125,793		2.89
669.00	29,515	1.00	27,977	153,770		3.53
670.00	32,797	1.00	31,156	184,926		4.25

Detention Stage-Storage-Discharge Calculation

South Detention Basin - SDG6D2

Top Opening			
CalTrans G-1 Area Drain w/ Tee-Pee Grate			A = 5.800 sf
	cl elev = 666.00 ft	inv elev = 666.00 ft	L = 9.65 ft

2nd Opening - NOT USED			
N/A	w =	h =	A =
	cl elev =	inv elev =	L =

Bottom Opening			
10" Diameter Circle		d = 10.0 in	A = 0.545 sf
	cl elev = 660.42 ft	inv elev = 660.00 ft	

Orifice equation = $CA(2g\Delta H)^{0.5}$ C = 0.6 2g = 64.4

Weir equation = $CLH^{1.5}$ C = 3.2

	1st Opening		2nd Opening				Top Opening					
	cl depth	orifice outflow	wier depth	wier outflow	cl depth	orifice outflow	weir depth	weir outflow	cl depth	orifice outflow	Detention Discharge	Storage Volume
Elev	ft	cfs	ft	cfs	ft	cfs	ft	cfs	ft	cfs	cfs	Ac-ft
660.00												
662.00	1.58	3.3									3.3	0.38
663.00	2.58	4.2									4.2	0.65
664.00	3.58	5.0									5.0	0.98
665.00	4.58	5.6									5.6	1.36
666.00	5.58	6.2									6.2	1.81
667.00	6.58	6.7					1.0	30.90	1.00	27.90	34.6	2.31
668.00	7.58	7.2					2.0	87.30	2.00	39.50	46.7	2.89
669.00	8.58	7.7					3.0	160.50	3.00	48.40	56.1	3.53
670.00	9.58	8.1					4.0	247.00	4.00	55.90	64.0	4.25

** Note: Per Urban Drainage Design Manual Publication No. FHWA-NHI-01-021 August 2001 "*The Flow Condition, orifice or weir, producing the lowest discharge for a given stage defines the controlling relationship."*

THE OASIS SUBDIVISION
TENTATIVE SUBDIVISION MAP S-2021-01590

MITIGATION MONITORING PROGRAM CONTENTS

This document is the Mitigation Monitoring Program (MMP) for The Oasis subdivision. The MMP includes a brief discussion of the legal basis for and the purpose of the program, discussion, and direction regarding complaints about noncompliance, a key to understanding the monitoring matrix, and the monitoring matrix itself.

LEGAL BASIS OF AND PURPOSE FOR THE MITIGATION MONITORING PROGRAM

California Public Resources Code Section 21081.6 requires public agencies to adopt mitigation monitoring or reporting programs whenever certifying an environmental impact report (EIR) or a mitigated negative declaration. This requirement facilitates implementation of all mitigation measures adopted through the California Environmental Quality Act (CEQA) process.

The MMP contained herein is intended to satisfy the requirements of CEQA as they relate to the Initial Study/Mitigated Negative Declaration prepared for The Oasis subdivision. It is intended to be used by City of Redding (City) staff, participating agencies, project contractors, and mitigation monitoring personnel during implementation of the project.

Mitigation is defined by CEQA Guidelines Section 15370 as a measure that does any of the following:

- Avoids impacts altogether by not taking a certain action or parts of an action.
- Minimizes impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifies impacts by repairing, rehabilitating or restoring the impacted environment.
- Reduces or eliminates impacts over time by preservation and maintenance operations during the life of the project.
- Compensates for impacts by replacing or providing substitute resources or environments.

The intent of the MMP is to ensure the effective implementation and enforcement of adopted mitigation measures and permit conditions. The MMP will provide for monitoring of construction activities as necessary, on-site identification and resolution of environmental problems, and proper reporting to City staff.

MITIGATION MONITORING TABLE

The Mitigation Monitoring Table identifies the mitigation measures proposed for The Oasis subdivision. These mitigation measures are reproduced from the Initial Study and conditions of approval for the project. The tables have the following columns:

Mitigation Measure: Lists the mitigation measures identified within the Initial Study for a specific impact, along with the number for each measure as enumerated in the Initial Study.

Timing: Identifies at what point in time, review process, or phase the mitigation measure will be completed.

Agency/Department Consultation: References the City department or any other public agency with which coordination is required to satisfy the identified mitigation measure.

Verification: Spaces to be initialed and dated by the individual designated to verify adherence to a specific mitigation measure.

NONCOMPLIANCE COMPLAINTS

Any person or agency may file a complaint asserting noncompliance with the mitigation measures associated with the project. The complaint shall be directed to the City in written form, providing specific information on the asserted violation. The City shall conduct an investigation and determine the validity of the complaint. If noncompliance with a mitigation measure has occurred, the City shall take appropriate action to remedy any violation. The complainant shall receive written confirmation indicating the results of the investigation or the final action corresponding to the particular noncompliance issue.

MITIGATION MONITORING TABLE
FOR THE OASIS SUBDIVISION MMP

Mitigation Measure	Timing/Implementation	Enforcement/Monitoring	Verification (Date and Initials)
Biological Resources			
MM-Bio-1. Prior to any discharge or fill material into Waters of the U.S, authorization under a Nationwide Permit or Individual Permit shall be obtained from the Corps. For fill requiring a Corps permit, a water quality certification from the Regional Water Quality Board (Clean Water Act §401) shall also be obtained prior to discharge of dredged or fill material.	At time of development.	Public Works, Planning.	
MM-Bio-2. Prior to any activities that would obstruct the flow of or alter the bed, channel, or bank of any perennial, intermittent or ephemeral creeks, notification of streambed alteration shall be submitted to the California Department of Fish and Wildlife (CDFW), and, if required, a Lake and Streambed Alteration Agreement (§1602) shall be obtained.	At time of development.	Public Works, Planning.	
MM-Bio-3. Any area of off-site construction that has not previously been surveyed shall have a pre-construction rare plant survey conducted by a qualified botanist during the appropriate survey window (blooming period) for rare plants that have the potential to occur within the project site, as deemed appropriate by the California Department of Fish and Wildlife. Any required survey shall be in accordance with California Native Plant Society *Botanical Survey Guidelines* (CNPS 2001), California Department of Fish and Wildlife Protocols for Surveying and Evaluating Impacts to Special Status Plant Species Native Plant Populations and Natural Communities (CDFW 2009), and U.S. Fish and Wildlife's Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants (USFWS 2000). If present, special status plant species plant populations will be flagged and if possible avoided during construction. If the population cannot be avoided	At time of development.	Public Works, Planning.	

Mitigation Measure	Timing/Implementation	Enforcement/Monitoring	Verification (Date and Initials)
during construction a mitigation plan will be developed for approval by the California Department of Fish and Wildlife which could include transplanting the plant population or compensation.			
MM Bio-4. If vegetation removal or construction activities will occur during the nesting season for migratory birds or raptors (February 1 through August 31), a qualified biologist shall conduct a preconstruction survey seven days before construction activities begin. If nesting birds or raptors are found, California Department of Fish and Wildlife (CDFW) will be notified and consulted. An appropriate buffer, as determined by CDFW and the qualified biologist, will be placed around the nest until the young have fledged. If construction activities cease for a period greater than seven days, additional preconstruction surveys will be required.	At time of development.	Public Works, Planning.	
MM-Bio-5. If construction (including the removal of large trees) occurs during the bat non-volant season (March 1 through August 31), a qualified professional shall conduct a pre-construction survey of the study area to locate maternity colonies and identify measures to protect colonies from disturbance. The preconstruction survey will be performed no more than seven days prior to the implementation of construction activities. If a maternity colony is located within the study area, or adjacent to the study area, a disturbance free buffer shall be established by a qualified professional, in consultation with California Department of Fish and Wildlife (CDFW), to ensure the colony is protected from project activities.	At time of development.	Public Works, Planning.	