Overland Drive Widening Project

Draft Initial Study – Mitigated Negative Declaration

prepared by

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RINCON CONSULTANTS, INC. SINCE 1994

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Acronyms and Abbreviations

AB	Assembly Bill
AQMP	Air Quality Management Plan
BMPs	Best Management Practices
BRA	Biological Resources Assessment
BUOW	burrowing owl.
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CO	Carbon Monoxide
CO_2e	carbon dioxide equivalent
dBA	A-weighted decibel
DOC	Department of Conservation
DWR	Department of Water Resources
EMWD	Eastern Municipal Water District
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	Greenhouse Gas
I-15	Interstate 15
IS-MND	Initial Study-Mitigated Negative
LARWQCB	Los Angeles Regional Water Quality Control Board
L_{eq}	average noise level equivalent
LSTs	Local Significance Thresholds
MT	metric tons
NAHC	Native American Heritage Commission
NO_x	Nitrogen Oxides
PE	Professional Engineer
PG	Professional Geologist

$PM_{2.5}$	Fine Particulate Matter
PM_{10}	Respirable Particulate Matter
PPV	peak particle velocity
PRC	Public Resource Code
RCWD	Rancho California Water District
ROG	Reactive Organic Gases
ROW	Right-of-Way
SCAG	Southern California Association of Government
SCAQMD	South Coast Air Quality Management District
SLF	Sacred Lands File
SMP	Soil Management Plan
SO_x	Sulfur Oxides
SP-14	Specific Plan 14
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
TMC	Temecula Municipal Code
USEPA	United States Environmental Protection Agency
VdB	vibration decibels
VHFSZ	Very High Fire Severity Zone
VMT	vehicle miles traveled
WQMP	Water Quality Management Plan

Initial Study

1. Project Title

Overland Drive Widening Project ("project" or "proposed project")

2. Lead Agency Name and Address

City of Temecula
Community Development Department
Planning Division
4100 Main Street
Temecula, California 92590

3. Contact Person and Phone Number

Chris White, Associate Engineer
951-694-6411

4. Project Location

The proposed project is located within the northwestern portion of the City of Temecula in Riverside County, California (Figure 1). The project is regionally accessible via Interstate 15 (I-15), State Route (SR)-215, and SR-79. Specifically, the project is located along Overland Drive, approximately 400 feet southwest of I-15 and 0.4 mile south of Winchester Road. On Overland Drive, the project extends from the northeast side of the Jefferson Avenue intersection to approximately 50 feet southwest of the Commerce Center Drive intersection (Figure 2). The project area also includes an approximately 190-foot-long segment of Commerce Center Drive, located approximately 375 feet southeast of its intersection with Overland Drive. The project's staging area is located on a vacant, City-owned parcel on Enterprise Circle, located approximately 400 feet southwest of the Overland Drive and Commerce Center Drive intersection.

5. General Plan Designation

Land use within the project area is designated in the City of Temecula General Plan Land Use Policy Map as Industrial Park. According to the General Plan Land Use Element, the Industrial Park designation is described as business and employment centers including professional offices, research and development, laboratories, light manufacturing, storage, industrial supply, and wholesale businesses (City of Temecula 2005).

Figure 1 Regional Location

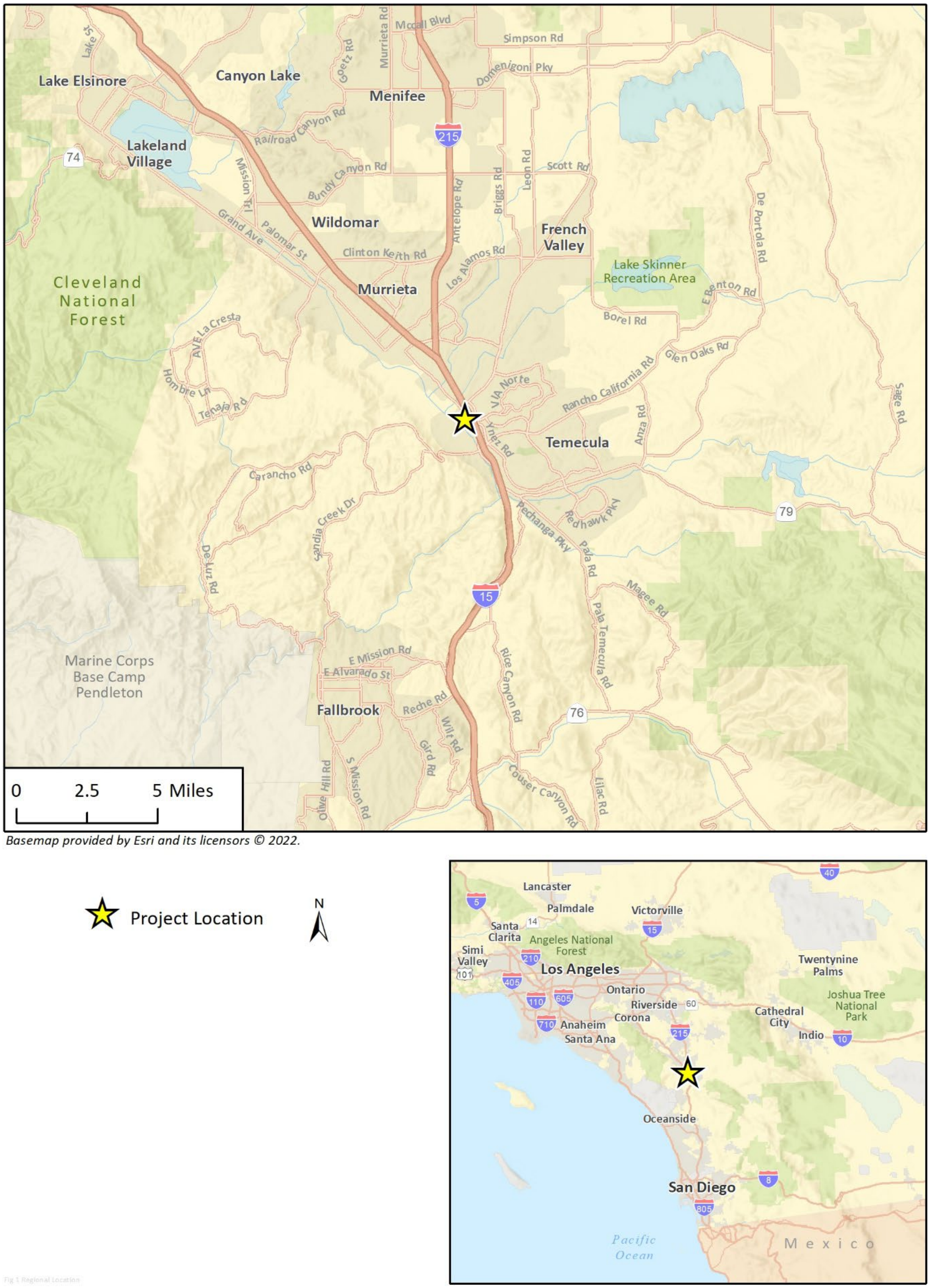

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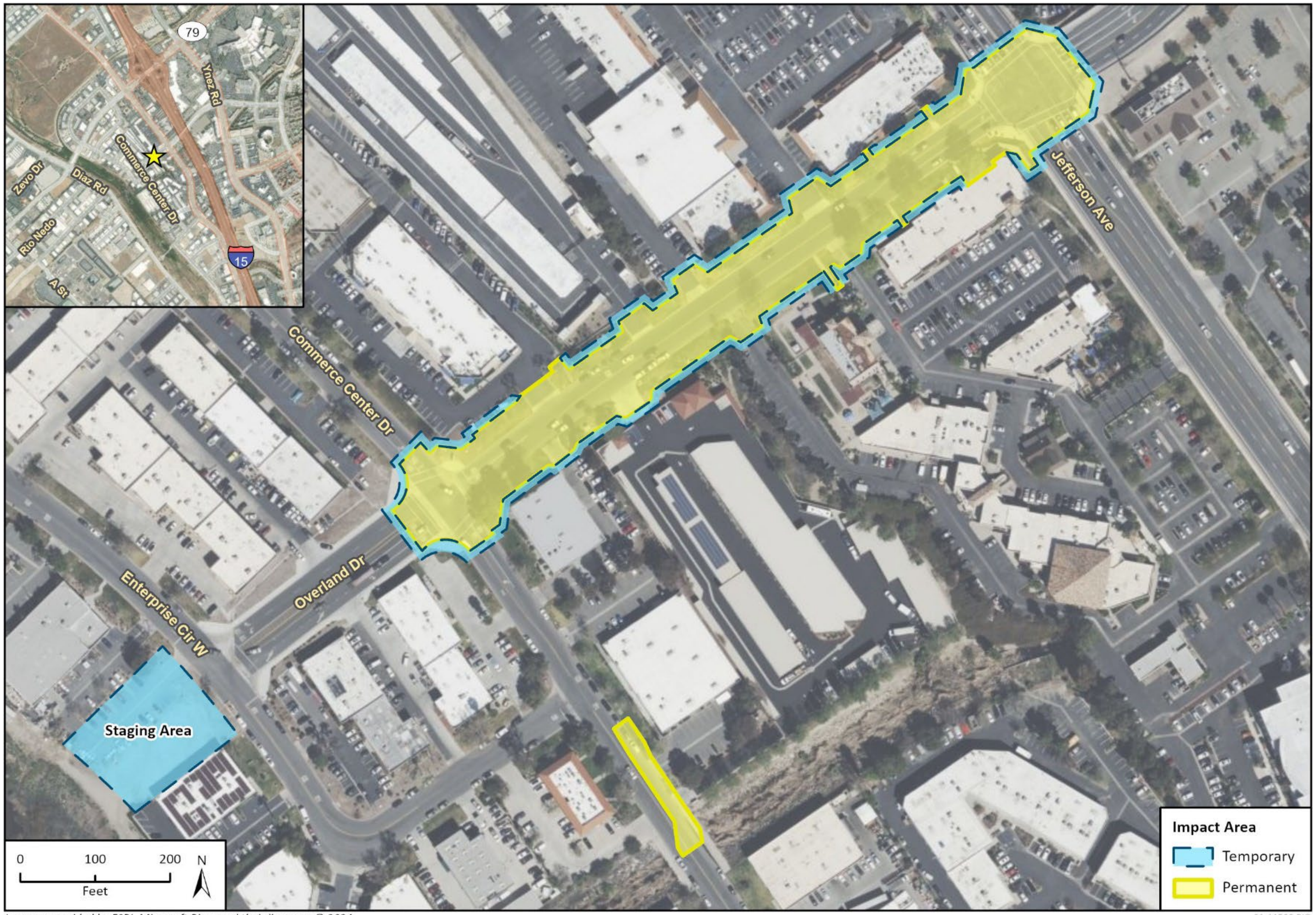
Figure 2 Project Location



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6. Zoning

The project area is zoned as Specific Plan 14 (SP-14; City of Temecula 2016a). SP-14 refers to the Uptown Temecula Specific Plan, which was adopted in 2015. According to Chapter 17.16.010 of the Temecula Municipal Code (TMC), the purpose of specific plan zoning is to provide for creative and effective planning and design in portions of the City that require a more comprehensive and coordinated approach to planning than can be achieved through the conventional application of standard zoning regulations. Within the Uptown Temecula Specific Plan, the project area is specifically designated as Employment and Office District (City of Temecula 2015).

7. Surrounding Land Uses and Setting

The project area is predominately flat, with a gentle slope from approximately 1,045 feet above mean sea level at the eastern portion of the project area, near the intersection of Overland Drive and Jefferson Avenue, to approximately 1,030 feet above mean sea level at the western portion of the project area, at the intersection of Overland Drive and Commerce Center Drive, to approximately 1,025 feet above mean sea level at the southern portion of the project area on Commerce Center Drive southeast of Overland Drive. Existing land uses adjacent to Overland Drive are characterized as commercial, industrial, and retail uses. Existing land uses adjacent to Jefferson Avenue include hotels, restaurants, and retail strips. Existing land uses adjacent to Commerce Center Drive include auto shops and storage facilities.

The project area lies between both recently completed roadway improvements and other roadway improvements that are currently being designed. Recently completed roadway improvements include the Overland overpass and associated approach roadway improvements east of the project area. Proposed roadway improvements currently under design include a bridge over Murrieta Creek, approach roadways, and storm drain improvements to the west.

8. Description of Project

Proposed Objective

The existing Overland Drive roadway is oriented in an east-west direction and extends between Enterprise Circle to the west and Margarita Road to the east. It is a four-lane roadway with two travel lanes in each direction for the entire stretch, except for the segment between Jefferson Avenue and Commerce Center Drive where it is a two-lane roadway with one travel lane in each direction. This configuration currently creates a bottleneck that increases travel times and greenhouse gas (GHG) emissions due to traffic congestion. The existing configuration of Overland Drive also results in impediments to pedestrian mobility due to the gap in sidewalk on both sides of the roadway between Jefferson Avenue and Commerce Center Drive. The proposed project would widen approximately 900 feet of Overland Drive between Jefferson Avenue and Commerce Center Drive from its existing two-lane collector roadway to a four-lane undivided secondary arterial roadway with a center two-way-left-turn-lane. This configuration would be consistent with the roadway’s secondary arterial classification, as shown on Figure C-2 (Roadway Plan) of the Temecula General Plan Circulation Element (City of Temecula 2005).

Proposed Improvements

The current Overland Drive configuration is symmetrical to the centerline and includes two 22-foot travel lanes with eleven additional feet of right-of-way (ROW) on either side, resulting in an overall ROW width of 66 feet. The proposed configuration would include a twelve-foot travel lane and an eleven-foot travel lane in both directions with a single ten-foot center turn lane, totaling five total lanes. The proposed configuration would also include six-foot Class II bike lanes and an additional ten feet of ROW on either side with new contiguous sidewalks. The resulting overall new ROW width would be 88 feet, consistent with the City of Temecula ROW requirements for secondary arterial roadways. The conceptual project design plans are provided in Appendix A.

The project would require modifications to the existing traffic signals at the intersection of Overland Drive with Jefferson Avenue, along with the replacement of traffic signal poles at the southern approach of this intersection. A new four-leg traffic signal would also be installed at the intersection of Overland Drive with Commerce Center Drive. The project would result in the removal of existing curb and gutter along both sides of Overland Drive's entire length, in addition to the removal of concrete cross gutters, block retaining walls, driveway aprons, sidewalk pavement, existing lighting, and landscaping. The project would also involve the replacement of 18 ornamental street trees (nine on the northern side of Overland Drive and nine on the southern side of Overland Drive) and the construction of 20 new tree wells (ten on the northern side of Overland Drive and ten on the southern side of Overland Drive).

Other project improvements would include the removal of one existing street light on the northern side of Overland Drive, the relocation of four existing street lights (one on the northern side of Overland Drive and three on the southern side of Overland Drive), and the installation of 16 street lights (nine on the northern side of Overland Drive and seven on the southern side of Overland Drive). Thirteen of the 20 new street lights would consist of 20-foot poles intended for pedestrian lighting, while the remaining seven street lights would consist of 25.5-foot poles intended for both vehicular and pedestrian lighting. All street lights would utilize light-emitting diode and would be shielded downwards.

The project would also modify existing underground drainage infrastructure from the southeast corner of the Overland Drive and Commerce Center Drive intersection to an outlet where the drainage infrastructure meets an existing drainage ditch located approximately 500 feet south of the intersection on Commerce Center Drive. New catch basins would be constructed on both sides of Overland Drive, ultimately connecting to a 72-inch storm drain pipe. The project would cut out a portion of the existing concrete culvert underneath Commerce Center Drive and connect the pipe to the culvert to adequately convey underground flows in the drainage infrastructure to the drainage ditch. Any runoff generated south of the two catch basins would be collected by another new catch basin constructed on Commerce Center Drive within the project area, located southeast of Overland Drive's intersection with Commerce Center Drive. This catch basin would discharge into the nearby Murrieta Creek channel. All new catch basins would be fitted with curb inlet filters.

The project would require the acquisition of permanent ROW and public access easements. Overall, the following Assessor's Parcel Numbers would be impacted by the proposed project: 909-240-015, 909-240-016, 909-240-023, 909-240-026, 921-480-042, 921-480-045, 921-480-047, 921-480-048, 921-480-055, and 921-480-056. Parcel ownership and impact data are provided in Appendix B.

Construction

Construction is anticipated to commence in mid-2025 and last for approximately 6 months, ending in early 2026. Construction would require one lane of the affected public roadways to be closed at any given time. To that end, a traffic control plan is proposed that would regulate worker parking, construction staging, roadway improvements and potential traffic detours during project construction. Construction staging and laydown areas would be provided within the public ROW on closed lanes, or on city-owned parcels. A construction staging area has been identified on a vacant, City-owned parcel located on the west side of Enterprise Circle (Figure 2). Worker parking would be provided on public streets adjacent to the project area. The City would post signage along the alignment and on roadways leading up to it before and during construction to give advance warning of road closures and required detours, if any.

Construction would occur 5 days per week. Limited weekend work may occur to accommodate the project schedule at the discretion of the City; however, total working days per month are not expected to exceed 22 days. Heavy equipment utilized during construction of the project would include aerial lifts, backhoes, cement and mortar mixers, concrete/industrial saws, compressors, cranes, tractors, crushing/processing equipment, dozers, dumpers/tenders, excavators, forklifts, generators, graders, front-end loaders, skid steer loaders, off-highway trucks and tractors, paving equipment, post drivers, rollers, scrapers, signal boards, surfacing equipment, sweepers/scrubbers, and trenchers. Construction tasks would include demolition, grading and excavation, site preparation, paving, and site restoration. Excavation for roadway improvements is anticipated at a depth of up to eight feet below ground surface. Excavation for installation of street light poles is anticipated at a depth of up to 13 feet below ground surface.

The project would require approximately 5,012 cubic yards of excavation, of which approximately 755 cubic yards would be used as backfill. Approximately 4,257 cubic yards of excavation are anticipated to be exported from the project area. Overall, the project would result in approximately 1.2 acres of temporary impacts (e.g., staging, construction buffer, laydown area) and 2.7 acres of permanent impacts (e.g., improvements on the expanded and existing ROW) for a total impact area of 3.9 acres. In accordance with the Construction Stormwater General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ), the proposed project would implement a Stormwater Pollution Prevention Plan (SWPPP) that would include the use of best management practices (BMPs) during project construction. These would include the following erosion control BMPs:

- Use of silt fencing, fiber rolls, gravel, and sandbags
- Storm drain inlet protection
- Stabilized construction entrance
- Street sweeping and vacuuming
- Concrete and solid waste management

Furthermore, in accordance with the project’s Water Quality Management Plan (WQMP; Appendix C), the following BMPs would be implemented:

- Plazas and sidewalks shall be swept regularly to prevent the accumulation of liter and debris.
- The proposed catch basins within the project area shall be labeled.
- Native and/or drought tolerant plant species would be used for landscaping to the extent feasible.

- Water use shall comply with the City of Temecula Irrigation Guidelines.
- The project shall maintain a similar overall drainage pattern compared to existing conditions.

9. Other Public Agencies Whose Approval is Required

The City of Temecula is the lead agency with responsibility for approving the project. The project would not require regulatory permits from the United States Army Corps of Engineers, the Los Angeles Regional Water Quality Control Board (LARWQCB), or the California Department of Fish and Wildlife (CDFW), as there would be no modifications to aquatic features or impacts to jurisdictional Waters of the State or Waters of the United States. However, coverage under the State Water Resources Control Board's (SWRCB) Construction Stormwater General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Order No. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ) would be required.

10. Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?

On July 25, 2022, the City of Temecula distributed Assembly Bill (AB) 52 consultation letters, including project information, map, and contact information, to each of the five Native American tribes previously requesting to consult on City of Temecula projects. The tribal governments that were provided an AB 52 consultation letter include the following:

- Pechanga Band of Mission Indians
- Rincon Band of Luiseño Indians
- Soboba Band of Luiseño Indians
- Agua Caliente Band of Cahuilla Indians
- Torres-Martinez Desert Cahuilla Indians

The Torres-Martinez Desert Cahuilla Indians and the Soboba Band of Luiseño Indians did not respond to the City's invitation to consult on the project. Each of the other three Tribes responded to the City's consultation letter. Responses are detailed in Section 18, *Tribal Cultural Resources*.

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Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is “Potentially Significant” or “Less than Significant with Mitigation Incorporated” as indicated by the checklist on the following pages.

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

Determination

Based on this initial evaluation:

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

■ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to 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 “less than significant with mitigation incorporated” 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 potential 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 or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Chris White — Signature | 7/2/24 — Date

Chris White	Associate Engineer II
Printed Name	Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	■	☐
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a 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?	☐	☐	■	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	■	☐

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

A scenic vista is usually a view of a valued resource, such as a waterway, the ocean, hills, valleys, or mountains. Although the Temecula General Plan has not formally designated any resource as a scenic vista, the General Plan has generally identified the western escarpment, the southern hills and ridgelines, the northern hillsides, and the Santa Margarita River as historic and scenic landscape features that should be protected from insensitive development so that public views are maintained to the extent possible (City of Temecula 2005).

The project area lies between recently completed construction projects and is surrounded by parcels with land uses characterized as commercial, industrial, and retail development. The western escarpment is visible from Overland Drive for the entirety of the corridor between Jefferson Avenue and Commerce Center Drive. Construction equipment present on the project area could partially obstruct views of the scenic landscapes from Overland Drive. However, the obstructions would be temporary in nature and would cease upon completion of the project. No new buildings would be constructed to permanently block views. Furthermore, the existing views of the escarpment are already partially obstructed by existing development and landscaping. Therefore, the project area would not have a substantial adverse effect on a scenic vista. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

The project is not located within a designated scenic highway. The nearest State-designated scenic highways in Riverside County are located along portions of SR-74 and SR-243. The portions of these highways designated as scenic are located approximately 28 miles northeast of the project area and are not visible from the project area.

I-15 from Corona south to the San Diego County line has been designated as an Eligible State Scenic Highway. While this portion of I-15 is eligible to be designated as a scenic highway, it has not yet been officially recognized as such (California Department of Transportation [Caltrans] 2024). The westernmost portion of the project area is located approximately 475 feet east of I-15. Public views from I-15 of the distant mountains and the Cleveland National Forest would not be obscured by development of the project.

As the project area is not located on or in the vicinity of a State scenic highway, the project would not substantially damage scenic resources, including rock outcroppings or historic buildings, within a State scenic highway. No impact would occur.

NO IMPACT

c. Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a 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?

The project is located within an urbanized area. The project area is zoned as SP-14, which refers to the Uptown Temecula Specific Plan (City of Temecula 2005). Although the Uptown Temecula Specific Plan includes design specifications and aesthetic guidelines for new development, it does not include regulations governing scenic quality. However, Policy 5.8 of the Temecula General Plan requires the re-vegetation of graded slopes concurrent with project development to minimize erosion and maintain the scenic character of the community (City of Temecula 2005). Any graded slopes adjacent to the project area would be re-vegetated after construction to the extent practicable. Therefore, the proposed project would not conflict with applicable zoning and other regulations governing scenic quality. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The City of Temecula regulates light pollution by reference in the TMC through the adoption of Riverside County Ordinance No. 655 (Mount Palomar Light Pollution Ordinance; City of Temecula 2021). Ordinance 655 restricts the use of certain light fixtures that emit undesirable light rays into the night sky, which can have a detrimental effect on astronomical observation and research and requires lighting to be fully shielded and directed down to avoid glare onto adjacent properties (County of Riverside 1988).

Existing sources of light or glare in the vicinity of the project area include vehicles on Overland Drive and other surrounding roadways, lights on local streets and parking lots, and windows from nearby development. Construction of the project would take place between the hours of 7:30 a.m. and 4:30 p.m., so no nighttime lighting would be required along or within the project area. After project completion, new lighting would be installed along Overland Drive, but would comply with Riverside County Ordinance No. 655 and would be consistent with existing lighting on Overland Drive and on other adjacent streets. The project would not result in additional vehicles on the roadway, as the project would not result in new land uses that would generate vehicle trips. Therefore, the project would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	□	□	□	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	□	□	□	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	□	□	□	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	□	□	□	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	□	□	□	■

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

According to the California Important Farmland Finder from the California Department of Conservation (DOC), the project area is considered Urban and Built-Up Land (DOC 2016). Therefore, the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No impact would occur.

NO IMPACT

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

According to the State of California Williamson Act Contract Land Map, the project area is considered Urban and Built-Up Land (DOC 2017). The project area is currently zoned as SP-14 and is specifically designated as Employment and Office District (City of Temecula 2005). No portion of the project area or surrounding land uses are zoned for agriculture and no nearby lands are enrolled under the Williamson Act. As such, development of the project would not conflict with existing zoning for agricultural use or a Williamson Act contract. No impact would occur.

NO IMPACT

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

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

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

As discussed above under *criterion a* and *criterion b,* the project area is currently zoned as SP-14 and is specifically designated as Employment and Office District. Furthermore, according to both the California Important Farmland Finder and the State of California Williamson Act Contract Land Map, the project area is considered Urban and Built-Up Land (DOC 2016; DOC 2017). Therefore, no agriculture, farmland, forest land, or timberland zoning is present on the project area or in the surrounding area. As such, development of the project would not conflict with existing zoning for forest land or timberland, nor would the project result in the loss of or conversion of forestland or farmland. No impact would occur.

NO IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	■
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?	☐	☐	■	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	■	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	■	☐

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

The project area is located in the South Coast Air Basin, which is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD). The SCAQMD is responsible for preparing and maintaining an Air Quality Management Plan (AQMP), which details goals, policies, and programs for improving air quality in the Basin. The most recent iteration is the 2022 AQMP. The proposed project would be inconsistent with the SCAQMD 2022 AQMP if the proposed project would generate population, housing, or employment growth exceeding forecasts used in the development of the AQMP. The 2022 AQMP incorporates local general plans and the SCAG's Connect SoCal socioeconomic forecast projections of regional population, housing, and employment growth (SCAQMD 2022).

As described in Environmental Checklist Section 14, *Population and Housing*, the proposed project would not cause direct growth as the project does not propose the introduction of new residences, businesses, or other land uses which would generate population growth. Given the small-scale nature of project construction activities, it is likely construction workers would be drawn from the existing, regional workforce and would not indirectly result in the relocation of people to the City of Temecula. Upon completion of construction, the proposed project would not require additional staff because the proposed project would not require new operations and maintenance activities. Accordingly, the proposed project would not result in population growth and therefore would not have the potential to conflict with or obstruct implementation of the 2022 AQMP. No impact would occur.

NO IMPACT

b. *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

The City of Temecula has not developed specific air quality thresholds for their jurisdiction. As such, the significance thresholds and analysis methodologies detailed in the SCAQMD's California Environmental Quality Act (CEQA) Air Quality Handbook (1993) were used to evaluate the potential for regional air quality impacts under implementation of the proposed project. According to the SCAQMD's CEQA Air Quality Handbook (1993), the proposed project would have a significant impact if regional construction emissions were to exceed 100 pounds per day of nitrogen oxides (NO_x), 75 pounds per day of reactive organic gases (ROG), 150 pounds per day of respirable particulate matter (PM_{10}), 55 pounds per day of fine particulate matter ($PM_{2.5}$), 150 pounds per day of sulfur oxides (SO_x), or 550 pounds per day of carbon monoxide (CO); refer to Table 1.

SCAQMD has also developed Local Significance Thresholds (LSTs), which represent the maximum amount of emissions a project can emit without causing or contributing to air quality impacts at the local level. LSTs within the South Coast Air Basin were developed based upon the ambient concentrations of each criteria pollutant within 38 source receptor areas. LSTs are only applicable to NO_x, CO, PM_{10}, and $PM_{2.5}$. For the purposes of this analysis, the LSTs for a two-acre site in Source Receptor Area 26 (Temecula Valley) at a distance of approximately 25 meters (or 82 feet) from the nearest sensitive receiver were used to evaluate the potential for localized air quality impacts during construction of the proposed project. According to the SCAQMD LSTs for Source Receptor Area 26 (Temecula Valley), the proposed project would have a significant impact if localized emissions would exceed 234 pounds per day of NO_x, 1100 pounds per day of CO, seven pounds per day of PM_{10}, or four pounds per day of $PM_{2.5}$; refer to Table 2.

All projects within the South Coast Air Basin are subject to the SCAQMD rules and regulations in effect at the time of construction. These rules and regulations, including Rule 402 for Nuisances and Rule 403 for Fugitive Dust, are not considered mitigation measures because they are standard regulatory requirements. Pursuant to the provisions of SCAQMD Rules 402 and 403, a fugitive dust control program would be implemented for the proposed project. Requirements associated with the project's fugitive dust control program include controlling fugitive dust, watering exposed surfaces within the project area at least three times per day, using a gravel apron, wheel washing, covering trucks hauling loose materials, and limiting on-site vehicle speeds on unpaved roads to 15 miles per hour or less.

Construction Emissions

Air pollutant emissions generated by project construction were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1.1.22. Construction modeling includes the emissions generated by construction equipment and the emissions generated by vehicle trips associated with construction, such as worker and vendor trips. CalEEMod uses project-specific information, including land use, square footage for different uses, and location, to model a project's construction and operational emissions.

Project construction would generate temporary air pollutant emissions associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions (ROG, NO_x, CO, SO_x PM_{10}, and $PM_{2.5}$) from heavy vehicles, worker vehicles, or vendor trucks. Table 1 summarizes the estimated maximum regional emissions of pollutants per day during project construction. As shown in Table 1, construction-related emissions would not exceed the SCAQMD thresholds for regional air quality impacts.

Table 1 Regional Construction Emissions

	Pollutant (pounds per day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Construction	38	37	79	<1	5	3
SCAQMD Regional Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Threshold Exceeded?	No	No	No	No	No	No

ROG = reactive organic gases NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide;

PM_{10} = particulate matter 10 microns in diameter or less; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

Source: CalEEMod worksheets in Appendix D, see Table 2.1 “Construction Emissions Compared Against Thresholds” emissions. Highest of Summer and Winter emissions results are shown for all emissions.

Similarly, Table 1 summarizes the estimated maximum localized emissions of pollutants per day during project construction. Construction-related emissions would not exceed the SCAQMD thresholds for localized air quality impacts with mitigation incorporated, as shown in Table 2.

Table 2 Localized Construction Emissions

	Pollutant (pounds per day)			
Year	NO_X	CO	PM_{10}	$PM_{2.5}$
Maximum Construction On-site Emissions	35	77	4	3
SCAQMD LST	**234**	**1,100**	**7**	**4**
Threshold Exceeded?	No	No	No	No

NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SCAQMD = South Coast Air Quality Management District; LST = Localized Significance Threshold.

Notes: Maximum on-site emissions are the highest emissions that would occur on the project area from on-site sources, such as heavy construction equipment and architectural coatings, and excludes off-site emissions from sources such as construction worker vehicle trips and haul truck trips.

Source: CalEEMod worksheets in Appendix D, see Tables 3.1 through 3.8 “Construction Emissions Details” emissions. The highest of Summer and Winter emissions results are shown for all emissions.

Because construction emissions would not exceed the identified SCAQMD thresholds for regional or localized air quality impacts, project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. This impact would be less than significant.

Operational Emissions

The proposed project would not involve operation or maintenance activities that would generate criteria air pollutants, as the project is not expected to generate any mobile trips, permanent stationary sources of emissions, or mobile sources of emissions. Rather, the project is intended to improve circulation and eliminate existing traffic congestion, which would not generate additional emissions beyond existing conditions. Therefore, given that operation and maintenance of the project would not emit criteria air pollutants, operational emissions would not exceed SCAQMD thresholds for criteria pollutants. Furthermore, project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment. Operational impacts involving air quality would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

The SCAQMD defines sensitive receptors as land uses where populations more susceptible to the adverse effects of air pollution exposure are likely to spend considerable amounts of time. Specifically, SCAQMD guidance recommends that sensitive receptor locations to be taken into consideration include residences, schools, playgrounds, child-care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The nearest sensitive receptor to the project area is Temecula Montessori Academy, a private preschool located approximately 150 feet south of the project area on Overland Drive. Air quality impacts to sensitive receptors would occur primarily through haul truck emissions as trucks travel along Jefferson Avenue, Winchester Road, and/or I-15 to reach the project area.

The proposed project does not include any stationary sources of air pollutant emissions, and once completed, the proposed project would not require operation and maintenance activities. Therefore, operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations and is not discussed further.

Carbon Monoxide Hotspots

Traffic-congested roadways and intersections have the potential to generate elevated localized carbon monoxide levels (i.e., carbon monoxide hotspots). In general, carbon monoxide hotspots occur in areas with poor circulation or areas with heavy traffic. Construction of the project could result in a minor increase in vehicle traffic on Jefferson Avenue, Winchester Road, and/or I-15 as a result of worker vehicle trips, delivery of heavy-duty equipment and materials, and haul trips during project construction. However, the proposed project would ultimately eliminate the existing bottleneck on Overland Drive which would therefore improve circulation, eliminate existing traffic congestion, and reduce the existing carbon monoxide levels in the vicinity of the project area.

SCAQMD's guidelines related to carbon monoxide impacts have remained the same since their guidance was adopted 1993; thus, these impacts are now considered obsolete. Contrarily, the Bay Area Air Quality Management District (BAAQMD) adopted updated guidelines in 2009 related to carbon monoxide hotspots that focus on total traffic volumes. According to the Bay Area Air Quality Management District, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour to generate a significant CO impact (BAAQMD 2009). The proposed project would not generate this volume of traffic. Thus, project-related traffic would not cause or contribute to potential temporary carbon monoxide hotspots, and the project would not expose sensitive receptors to substantial concentrations of carbon monoxide. Overall, impacts related to carbon monoxide hotspots would be less than significant.

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs generally consist of four types: organic chemicals, such as benzene, dioxins, toluene, and perchloroethylene; inorganic chemicals such as chlorine and arsenic; fibers such as asbestos; and metals such as mercury, cadmium, chromium, and nickel. The primary TAC emitted by proposed project implementation would be diesel particulate matter generated by heavy-duty equipment and diesel-fueled delivery and haul trucks during construction activities.

Construction activities would be temporary and transient (i.e., would move from location to location) and would not generate emissions in a fixed location for extended periods of time.

Construction activities would also be subject to and would comply with California regulations limiting the idling of heavy-duty construction equipment to no more than five minutes. Haul trucks that travel along Jefferson Avenue and Winchester Road could potentially expose commercial and industrial development to TACs; however, residential development is limited in this area, and the exposure to TACs would be temporary and transient. Furthermore, construction activities would also be subject to and would comply with California regulations limiting the idling of heavy-duty construction equipment to no more than five minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable TAC emissions. Compliance with the standard construction measures required by the SCAQMD would also further reduce nearby sensitive receptors' exposure to temporary and variable TAC emissions. Given the limited number of adjacent sensitive receptors to the project area, temporary nature of construction and haul truck emissions, compliance with existing regulations, project construction would not expose sensitive receptors to substantial TAC concentrations. This impact would be less than significant.

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d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Project construction could generate odors associated with heavy-duty equipment operation and earth-moving activities. Such odors would be temporary in nature and limited to the duration of construction in the vicinity of the project area. The project contractor(s) would also be required to adhere to SCAQMD Rule 402 (Nuisance), which prohibits discharge of air contaminants or any other material from a source that would cause nuisance to any considerable number of persons or the public, including odor. The proposed project would not involve the operation of land uses typically associated with odor complaints such as agricultural uses, wastewater treatment plants, food-processing plants, and landfills. Rather, the project would widen an existing roadway and would not create new sources of odor during operation. Therefore, the proposed project would not result in odors adversely affecting a substantial number of people. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	■
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?	☐	☐	☐	■
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	■
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	■
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	■	☐

In March 2022, Rincon Consultants, Inc. conducted a Biological Resources Assessment (BRA), including a literature review and field reconnaissance survey, to document existing site conditions and the potential presence of special-status biological resources, including plant and wildlife species, plant communities, jurisdictional waters and wetlands, and habitat for nesting birds. The field reconnaissance survey encompassed the project footprint (i.e., areas which are expected to be affected by the proposed project; the project area) and a 100-foot survey buffer beyond the limits of the project area. An additional field survey was completed to spot-check conditions and the BRA was updated in April 2024, confirming consistency with the 2022 findings. The following analysis is based on the findings of the BRA; the complete BRA is contained in Appendix E of this document.

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

A literature review of the California Natural Diversity Database identified 45 sensitive plant species and 37 sensitive wildlife species as known to occur within five miles of the project area. However, the project area is located within a highly developed and previously disturbed urban area surrounded by existing commercial land uses. Due to the lack of suitable habitats, lack of suitable substrates, and high levels of historic and existing disturbance, no sensitive or special status plant species are expected to occur on the project area. Similarly, the project area is not suitable for most special status wildlife species due to the lack of native vegetation communities, isolation from existing native habitats, and high levels of historic and existing disturbance. Therefore, no sensitive or special status wildlife species are expected to occur on the project area due to lack of suitable habitat (e.g., riparian, scrub, woodland).

Bird nests and eggs are protected by the California Fish and Game Code Section 3503 and the Migratory Bird Treaty Act. Ornamental shrubs and trees found within the developed urban areas surrounding the project area could provide suitable nesting habitat for several common avian species. During the field survey conducted as part of the BRA (refer to Appendix E), one inactive nest was observed in a London plane tree (*Platanus x hispanica*) in the northeast portion of the project area. Overall, the project area is considered to be of low quality for other species of nesting birds due to the lack of vegetation and the project area's proximity to heavily travelled roadways. However, if construction activities are expected to take place during nesting bird season (i.e., from March to August), indirect impacts such as construction noise and increased human presence could disturb any nests present in adjacent trees. Therefore, in accordance with Mitigation Measure BIO-1, pre-construction nesting bird surveys shall be conducted to ensure avoidance of all direct or indirect impacts to nesting birds. With implementation of Mitigation Measures BIO-1, the effects of the project on candidate, sensitive, or special status species would be minimized to less than significant with mitigation incorporated.

Mitigation Measure

Implementation of the following mitigation measure would reduce the potential impact to a less-than-significant level.

BIO-1 Pre-Construction Nesting Bird Surveys

If construction activities take place during the bird nesting season (generally February 1 through August 31, but variable based on seasonal and annual climatic conditions), as determined by a qualified biologist, nesting bird surveys shall be performed by a qualified biologist within three days prior to project activities to determine the presence/absence, location, and status of any active nests on-site and within 100 feet of the site. The biologist shall provide a written memorandum of results and findings.

If nesting birds are found on site, a construction buffer of appropriate size (as determined by the qualified biologist) shall be implemented around the active nests and demarcated with fencing or flagging. If ground/burrow nesting birds are identified, demarcation materials that will not provide perching habitat for predatory bird species shall be used. Nests should be monitored at a minimum of once per week by the qualified biologist until it has been determined that the nest is no longer being used by either the young or adults. No ground disturbance shall occur within this buffer until the qualified biologist confirms that the breeding/nesting is complete, and all the young have fledged and are capable of surviving independently of the nest. If project activities must occur within the buffer, they shall be conducted at a distance that will prevent project-related disturbances, as determined by the qualified biologist.

If no nesting birds are observed during pre-construction surveys, no further actions would be necessary. If construction is delayed or paused for more than two weeks during the nesting season, the preconstruction nesting bird survey shall be repeated.

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

The project area is heavily disturbed due to urban development and is currently either unvegetated, developed, or dominated by ornamental species not conducive to supporting riparian/riverine habitats. According to the results of the BRA (refer to Appendix E), no sensitive plant communities, as identified by the California Natural Diversity Database or local ordinances, are present in the project area. However, Murrieta Creek and an associated tributary are located adjacent to the project area, both of which are considered riparian/riverine areas. The portion of the project area adjacent to Murrieta Creek would only be used for construction staging. As described in *Section 10, Hydrology and Water Quality,* the project would be subject to the requirements of the SWRCB Construction Stormwater General Permit as well as regulations outlined in the TMC, ensuring protection of Murrieta Creek. Furthermore, construction activities would take place far enough from Murrieta Creek to avoid any potential construction-related impacts to the creek. Construction activities at the tributary’s existing drainage culvert under Commerce Center Drive would involve cutting out a portion of the concrete culvert to connect the proposed pipe outlet to the culvert, which would not involve the removal of any riparian habitat. As such, the project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or U.S. Fish and Wildlife Service. No impact would occur.

NO IMPACT

c. Would the project 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?

A preliminary review of the National Wetlands Inventory identified a 2.24-acre riverine habitat that historically crossed Overland Drive on the western portion of the project area. This aquatic feature was previously mapped within the project area but is no longer present. The field surveys, conducted in March 2022 and April 2024, confirmed that no water features currently exist on-site. As such, no waters or wetlands potentially subject to the jurisdiction of the United States Army Corps of Engineers, LARWQCB, or CDFW were observed within the project area during the field reconnaissance survey. Furthermore, no vernal pools or fairy shrimp habitat were observed within the project area, and it is underlain by moderately to excessively well-drained soils. Therefore, the project would not have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. No impact would occur.

NO IMPACT

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

As described in the BRA (refer to Appendix E), the project area is separated from essential habitat connectivity areas by public roadways and commercial areas. Although Murrieta Creek and the associated tributary serve as an important wildlife corridor, no construction activities would take place within the creek or the tributary. As such, the project area is not expected to 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. No impact would occur.

NO IMPACT

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

The project area is located within the County of Riverside Stephens' Kangaroo Rat Plan and Fee Area. County of Riverside Ordinance No. 663 (Stephen's Kangaroo Rat Mitigation Fee Ordinance) requires that all proposed development projects located within the fee area are reviewed to determine the most appropriate course of action to ensure the survival of the species. The proposed project area is located directly adjacent to urban roadways and lacks suitable grassland, coastal scrub, and sagebrush habitat to support Stephens' Kangaroo Rat. In addition, the project area is highly fragmented and surrounded by commercial development. Therefore, the proposed project would not result in impacts to or loss of suitable habitat for Stephens' Kangaroo Rat.

TMC Chapter 8.48 (Heritage Tree Ordinance) contains provisions that protect specific tree species including Oak, California Bay Laurel, California Black Walnut, California Holly, and California Sycamore trees as well as other trees of special significance to the community. None of the tree species within the project area are designated as a Heritage Tree pursuant to TMC Section 8.48.160. Additionally, as the project would disturb less than five acres, construction activities would not require a tree inventory pursuant to TMC Section 8.48.150, Heritage Tree Preservation and Protection Plan. No other resources protected by local policies or ordinances are present on the project area. Therefore, the project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. No impact would occur.

NO IMPACT

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

The project area is located within the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan, and portions of the project area are located within a burrowing owl (BUOW) species survey area. However, suitable BUOW habitat is not present within the project site, and neither BUOW nor their burrows were observed during the biological resources field survey. The potential for BUOW to occur is low given that the project area is located within highly disturbed areas surrounded by urban commercial development, which would normally deter individuals from long-term use of the site. Portions of the project area are also located within the Western Riverside County Multiple Species Habitat Conservation Plan's Criteria Cell 6783. However, the conservation criteria do not apply to the project, as the project area is urbanized and developed, and the conservation criteria for Cell 6783 only applies to Murrieta Creek and an upstream tributary. Furthermore, the project area is not located within a criteria cell or within Public/Quasi Public conserved lands. Therefore, the project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	■	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	■	☐	☐

CEQA requires a lead agency to determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1) and tribal cultural resources (PRC Section 21074 [a][1][A]-[B]). A historical resource is a resource listed in, or determined to be eligible for listing, in the California Register of Historical Resources, a resource included in a local register of historical resources, or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (State CEQA Guidelines, Section 15064.5[a][1-3]).

A resource shall be considered historically significant if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, if it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b]).

PRC, Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

a. *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

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

On July 21, 2022, Rincon conducted a records search of the California Historical Resources Information System at the Eastern Information Center, located at University of California, Riverside. The background research, records search and literature review did not identify known built environment historical resources within the project area. A review of aerial photography indicated that the structures adjacent to the project were constructed after 1985. Furthermore, the project's proposed activities do not include improvements or modifications to any existing structures. There would be no impact to built environment historical resources.

Similarly, the background research, records search and literature review did not identify known archaeological resources within or immediately adjacent to the project area. However, four known archaeological resources, including a Native American habitation site with human remains, were identified within one mile of the project area. Based on the results of the records search and an archival literature review, the project site is considered sensitive for potential archaeological resources of Native American origin. A positive Sacred Lands File (SLF) search result further indicated that the project area is within an area that Pechanga Tribe considers sensitive. Therefore, there is a chance unanticipated discovery of cultural resources could occur. Mitigation Measures CR-1 through CR-9 are included to reduce project impacts to a less than significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

As described above, evidence suggests Native American human remains are potentially present within one mile of the project area. Therefore, it is possible that remains may be unearthed during construction activities. If human remains are discovered during construction activities, Mitigation Measures CR-1 through CR-9 would reduce project impacts to a less than significant level.

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Mitigation Measures

Implementation of the following mitigation measures would reduce the potential impact to a less-than-significant level.

CR-1 Retain a Qualified Archaeological Monitor

Prior to the issuance of a grading permit, the City shall retain a Riverside County qualified archaeological monitor to monitor all ground-disturbing activities in archaeological sensitive sediments in an effort to identify any unknown archaeological resources. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during project construction. The Project Archeologist shall attend the pre-grading meeting with the City, Pechanga Tribe, the construction manager and any contractors and shall conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The training shall include a brief review of the cultural sensitivity of the project site and surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the project following the initial Training shall take the Cultural Sensitivity Training prior to beginning work and the project archaeologist shall make themselves available to provide the training on an as-needed basis.

CR-2 Cultural Resources Treatment and Monitoring Agreement

At least 30 days prior to beginning project construction the City shall contact the Pechanga Tribe to notify the Tribe of grading, excavation and the monitoring program, and to coordinate with the City of Temecula and the Tribe to develop a Cultural Resources Treatment and Monitoring Agreement. The Agreement shall address the treatment of known cultural resources, the designation, responsibilities, and participation of professional Native American Tribal monitors during grading, excavation and ground disturbing activities; project grading and development scheduling; terms of compensation for the monitors; and treatment and final disposition of any cultural resources, sacred sites, and human remains discovered on the site. Tribal monitors shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. The Pechanga Tribe shall attend the pre-grading meeting with the City, Project Archaeologist, the construction manager and any contractors and shall conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The training shall include a brief review of the cultural sensitivity of the project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols.

CR-3 Pre-grade Report

Prior to beginning project construction, the Project Archaeologist shall file a Cultural Resource Monitoring Plan with the City to document the proposed methodology for grading activity observation which will be determined in consultation with the Pechanga Tribe. Methodology shall include:

- Project description and location;
- Project grading and development scheduling;
- Roles and responsibilities of individuals on the project;
- The pre-grading meeting and Cultural Resources Worker Sensitivity Training details;
- The protocols and stipulations that the contractor, City, Consulting Tribe(s) and Project Archaeologist shall follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resource’s evaluation;
- The type of recordation needed for inadvertent finds and the stipulations of recordation of sacred items; and,
- Contact information of relevant individuals for the project.

CR-4 Inadvertent Discovery of Human Remains

If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California PRC Section 5097.98(b) remains shall be left in place and free from disturbance until a final decision as to their treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. The NAHC must then immediately identify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours of being granted access to the site, and engage in consultations concerning the treatment of the remains as provided in PRC 5097.98 and the treatment protocols described in the remaining measures.

CR-5 Ownership of Cultural Resources

The landowner shall relinquish ownership of all cultural resources, including sacred items, burial goods and all archaeological artifacts that are found on the project area to the appropriate Tribe for proper treatment and disposition.

CR-6 Avoidance of Sacred Sites

It is understood by all parties that, unless otherwise required by law, the site of any reburial of Native American human remains or associated grave goods shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, pursuant to the specific exemption set forth in California Government Code 6254(r), parties, and Lead Agencies, shall be asked to withhold public disclosure information related to such reburial, pursuant to the specific exemption set forth in California Government Code 6254(r).

CR-7 Inadvertent Discovery of Cultural Resources

If inadvertent discoveries of subsurface archaeological/cultural resources are discovered during grading, the Developer, the project archaeologist, and the Tribe shall assess the significance of such resources and shall meet and confer regarding the mitigation for such resources. Pursuant to California PRC § 21083.2(b) avoidance is the preferred method of preservation for archaeological resources. If the Developer, the project archaeologist and the Tribe cannot agree on the significance or the mitigation for such resources, these issues will be presented to the City’s Planning Director for a decision. The Planning Director shall make the determination based on the provisions of the California Environmental Quality Act with respect to archaeological resources and shall take into account the religious beliefs, customs, and practices of the Tribe. Treatment of tribal cultural resources inadvertently discovered during the project’s ground-disturbing activities shall be subject to the consultation process required by state law and AB 52:

- All ground disturbance activities within 100 feet of the discovered cultural resources shall be halted until a meeting is convened between the Project Applicant, the Project Archaeologist, the Tribal Representative(s), and the Community Development Director to discuss the significance of the find.
- At the meeting, the significance of the discoveries shall be discussed and after consultation with the Tribal Representative(s) and the Project Archaeologist, a decision shall be made, with the concurrence of the Community Development Director, as to the appropriate mitigation (documentation, recovery, avoidance, etc.) for the cultural resources.

- Further ground disturbance, including but not limited to grading, trenching etc., shall not resume within the area of the discovery until an agreement has been reached by all parties as to the appropriate mitigation. Work shall be allowed to continue outside of the buffer area and will be monitored by additional Tribal Monitors, if needed.
- Treatment and avoidance of the newly discovered resources shall be consistent with the Cultural Resources Management Plan and Monitoring Agreements entered into with the appropriate tribes. This may include avoidance of the cultural resources through project design, in-place preservation of cultural resources located in native soils and/or re-burial on the project property so they are not subject to further disturbance in perpetuity as identified in Non-Disclosure of Reburial Condition/Mitigation Measures.
- If the find is determined to be significant and avoidance of the site has not been achieved, a Phase III data recovery plan shall be prepared by the Project Archeologist, in consultation with the Tribe, and shall be submitted to the City for their review and approval prior to implementation of the said plan.
- Pursuant to California PRC § 21083.2(b), avoidance is the preferred method of preservation for archaeological resources and cultural resources. If the Project Applicant and the Tribe(s) cannot agree on the significance or the mitigation for the archaeological or cultural resources, these issues will be presented to the City Community Development Director for decision. The City Community Development Director shall make the determination based on the provisions of the California Environmental Quality Act with respect to archaeological resources, recommendations of the project archeologist and shall consider the cultural and religious principles and practices of the Tribe. Notwithstanding any other rights available under the law, the decision of the City Community Development Director shall be appealable to the City Planning Commission and/or City Council." Evidence of compliance with this mitigation measure, if a significant archaeological resource is found, shall be provided to City of Temecula upon the completion of a treatment plan and final report detailing the significance and treatment finding.

CR-8 Final Disposition of Inadvertent Discovery

In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries. One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Temecula Community Development Department:

- Preservation-In-Place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place where they were found with no development affecting the integrity of the resources.
- Reburial of the resources on the project property. The measures for reburial shall include, at least, measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed, with an exception that sacred items, burial goods, and Native American human remains are excluded. Any reburial process shall be culturally appropriate. Listing of contents and location of the reburial shall be included in the confidential Phase IV report. The Phase IV Report shall be filed with the City under a confidential cover and not subject to Public Records Request.

- If preservation in place or reburial is not feasible then the resources shall be curated in a culturally appropriate manner at a Riverside County curation facility that meets State Resources Department Office of Historic Preservation Guidelines for the Curation of Archaeological Resources ensuring access and use pursuant to the Guidelines. The collection and associated records shall be transferred, including title, and are to be accompanied by payment of the fees necessary for permanent curation. Evidence of curation in the form of a letter from the curation facility stating that subject archaeological materials have been received and that all fees have been paid, shall be provided by the landowner to the City. There shall be no destructive or invasive testing on sacred items, burial goods, and Native American human remains. Results concerning finds of any inadvertent discoveries shall be included in the Phase IV monitoring report. Evidence of compliance with this mitigation measure, if a significant archaeological resource is found, shall be provided to City of Temecula upon the completion of a treatment plan and final report detailing the significance and treatment finding.

CR-9 Final Inspection

Prior to final inspection, the Project Archeologist is to submit two (2) copies of the Phase IV Cultural Resources Monitoring Report that complies with the Planning Department's requirements for such reports. The Phase IV report shall include evidence of the required cultural/historical sensitivity training for the construction staff held during the pre-grade meeting. The Planning Department shall review the reports to determine adequate mitigation compliance. Provided the reports are adequate, the Planning Department shall clear this condition. Once the report(s) are determined to be adequate, two (2) copies shall be submitted to the Eastern Information Center at the University of California Riverside and one (1) copy shall be submitted to the Pechanga Cultural Resources Department.

6 Energy

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

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction Energy Demand

The proposed project would require demolition, excavation and grading, including hauling material to the project area, and site restoration. During project construction, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment within the project area, construction worker travel to and from the project area, and vehicles used to deliver materials to the project area. City-provided construction information and CalEEMod outputs from the air pollutant and GHG emissions modeling (Appendix D) were used to estimate energy consumption associated with the proposed project. Additional energy consumption calculations from construction equipment and vehicles are summarize in Table 3, including construction worker trips to and from the project area. As shown in Table 3, project construction would consume approximately 2,037 gallons of gasoline fuel and approximately 41,869 gallons of diesel fuel. These construction energy estimates are conservative because they assume the construction equipment used in each phase of construction is operating every day of construction.

Table 3 Estimated Fuel Consumption during Construction

	Fuel Consumption (gallons)	
Source	Gasoline	Diesel
Construction Equipment & Hauling Trips	0	41,869
Construction Worker Vehicle Trips	2,037	0
See Appendix F for energy consumption calculation sheets.		

Energy use during construction would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the region. In addition, construction contractors would be required to comply with the provisions of California Code of Regulations

Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes and would minimize unnecessary fuel consumption. Construction equipment would be subject to the United States Environmental Protection Agency (USEPA) Construction Equipment Fuel Efficiency Standard, which would also minimize inefficient, wasteful, or unnecessary fuel consumption. Therefore, construction of the proposed project would adhere to state regulations for energy efficiency and would not involve the inefficient, wasteful, and unnecessary use of energy.

Operational Energy Demand

The proposed project would not involve operation or maintenance activities that would require energy consumption, as the project is not expected to generate any mobile trips. Rather, the project is intended to improve circulation and eliminate existing traffic congestion, which would not generate additional energy consumption beyond existing conditions. Therefore, operation of the project would not involve the inefficient, wasteful, and unnecessary use of energy, and no impact would occur.

NO IMPACT

b. *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

The adopted 2020 SCAG Connect SoCal RTP/SCS contains transportation strategies intended to help to minimize energy consumption by improving the overall efficiency of the transportation system and land use patterns. The proposed project is intended to improve circulation and eliminate existing traffic congestion by widened the roadway from its existing two-lane configuration to a four-lane configuration with a center turn lane, eliminating the existing vehicular bottleneck and improving overall travel times, thereby improving operational efficiency of the transportation system. This type of project supports the efforts of the Connect SoCal RTP/SCS. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. No impact would occur.

NO IMPACT

7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. 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?	☐	☐	■	☐
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. Landslides?	☐	☐	☐	■
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	■
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 wastewater?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	■	☐

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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?

The project area is intersected by the Elsinore Fault Zone, which is designated as an Alquist-Priolo Earthquake Fault Zone (DOC 2021). The proposed project does not involve mining operations or boring of large areas that could create unstable seismic conditions or exacerbate stresses in the Earth's crust. Therefore, the proposed project would not exacerbate the fault rupture susceptibility of the Elsinore Fault Zone. Furthermore, the proposed project does not include habitable structures, but rather would include improvements to an existing roadway which is already utilized for local travel. Accordingly, the proposed project would not expose people to the risk of loss, injury, or death involving rupture of a known earthquake fault beyond existing conditions. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

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

The project area is intersected by the Elsinore Fault Zone and lies within a seismically active region of Southern California (DOC 2021). The project area is also located within a liquefaction hazard zone (DOC 2021). However, the proposed project would not exacerbate seismic hazards beyond existing conditions. As discussed under *criterion a.1,* the project does not involve mining operations or boring of large areas that could create unstable seismic conditions or exacerbate stresses in the Earth's crust. Furthermore, the proposed project would be required to adhere to the standards outlined in the Caltrans Seismic Design Criteria, which include foundation design and ground motion response to minimize the potential for adverse impacts related to ground shaking and liquefaction to occur (Caltrans 2019). Through compliance with Caltrans Seismic Design Criteria, the proposed project would not result in the risk of loss, injury, or death involving strong seismic ground shaking, seismic-related ground failure, subsidence, liquefaction, or collapse. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The project area and adjacent areas are relatively flat and are not within a landslide hazard zone identified by the DOC (DOC 2021). The proposed project would not create steep slopes or exacerbate existing slope conditions. Therefore, the proposed project would not cause substantial adverse effects related to landslides, and no impact would occur.

NO IMPACT

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

Based on City-provided information, the project's construction activities would require approximately 5,012 cubic yards of excavation. Disturbed soils within the project area would be susceptible to erosion from wind and rain, which could result in substantial soil erosion or the loss of topsoil. However, as described in Section 10, *Hydrology and Water Quality*, construction activities would disturb more than one acre and therefore would be subject to the requirements of SWRCB's Construction Stormwater General Permit. Compliance with the Construction Stormwater General Permit requires implementation of a SWPPP and associated BMPs to reduce soil erosion. Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, and control pollutants from construction materials. Compliance with the Construction Stormwater General Permit is reinforced through TMC Chapter 18.18 (Erosion and Sediment Control). Pursuant to TMC 18.18, no grading work would be allowed on any portion of the project area unless an approved erosion and sediment control system has been implemented. With compliance with existing state and local regulations, the proposed project's construction activities would not result in substantial soil erosion or the loss of topsoil. Upon completion of construction, the proposed project would not include any features that could result in substantial soil erosion or the loss of topsoil. Overall, this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. Would the project 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?

Expansive soils are soils with high shrink-swell potential. The shrink-swell potential is low if the soil has a linear extensibility of less than three percent (United States Department of Agriculture [USDA] 2017). The project area is underlain by the Grangeville soil series, which has a linear extensibility rating of 1.5 percent, indicating a low shrink-swell potential (National Resources Conservation Service 2023). Further, the proposed project would not include habitable structures and would therefore not create substantial direct or indirect risks to life or property beyond existing conditions. No impact would occur.

NO IMPACT

e. Would the project 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 wastewater?

The proposed project would not involve the use of septic tanks or alternative wastewater disposal systems. No impact would occur.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (e.g., older than middle Holocene in age) and are preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2010). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically important paleontological resources, and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they are discovered during construction of a development project.

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the project area to assess the project's potential for significant impacts to scientifically important paleontological resources. The analysis was based on the results of a paleontological locality search and a review of existing information in the scientific literature regarding known fossils within geologic units mapped at the project area. According to the SVP (2010) classification system, geologic units can be assigned a high, low, undetermined, or no potential for containing scientifically significant nonrenewable paleontological resources. Following the literature review, a paleontological sensitivity classification was assigned to each geologic unit mapped within the project area. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units.

The project area is situated in the Peninsular Ranges, one of the eleven major geomorphic provinces in California (California Geological Survey 2002). In general, the Peninsular Ranges consist of northwest-southeast trending mountain ranges and faults (Norris and Webb 1976), which are comprised of Mesozoic to Cenozoic plutonic and extrusive igneous and Cretaceous marine sedimentary rocks. The Peninsular Ranges province also contains sedimentary basins such as the Los Angeles Basin which have accumulated thick sequences of Cenozoic marine and terrestrial sedimentary rocks. The project is located in the Murrieta, California United States Geological Survey 7.5-minute topographic quadrangle(s). The geology of the region surrounding the project area was mapped by Morton and Miller (2006) who mapped two geologic units, Quaternary young axial channel deposits and Quaternary young alluvial-valley deposits, at the surface within the project area.

Quaternary young axial-channel deposits consist of slightly to moderately consolidated silt, sand, and gravel. Quaternary young alluvial-valley deposits consist of loose clay, sand, and silt. Both geologic units are Holocene to late Pleistocene in age. Therefore, at the surface, these geologic units are likely too young (e.g., less than 5,000 years old) to preserve paleontological resources, but at some unknown depth in the subsurface, they will likely become old enough to preserve such resources. The geotechnical report for the adjacent project involving the construction of a bridge along Overland Drive over Murrietta Creek reported that Pleistocene-aged alluvial sediments occur at approximately 1,000 feet above sea level beneath that site (Leighton Consulting, Inc. 2023). Pleistocene-aged alluvial sediments in Riverside County are known to produce paleontological resources and, thus, have high paleontological sensitivity (Jefferson 2010; Paleobiology Database 2024). Assuming that this 1,000-foot figure is consistent, then Pleistocene-aged sediments should occur between approximately 25 feet (near Commerce Center Drive) and 44 feet (near Jefferson Avenue) below the surface. Therefore, the sediments underlying the project area have low paleontological sensitivity from the surface to 25 feet below the surface and undetermined paleontological sensitivity greater than 25 feet below the surface.

Ground disturbance associated with roadway improvements are anticipated to reach up to eight feet below the surface, and excavations for new street light poles are anticipated to reach 13 feet below the surface. Therefore, these activities will be limited to sediments with low paleontological sensitivity, and potential impacts to paleontological resources would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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8 Greenhouse Gas Emissions

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

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Although there is no adopted state or local standard for determining the cumulative significance of a project's GHG emissions, the SCAQMD recommends a GHG threshold of 3,000 metric tons (MT)/year of carbon dioxide equivalent (CO_2e) for all non-industrial projects. This threshold was developed for individual land use projects in 2010 but has not yet been formally adopted. Considering that no specific GHG threshold or qualified GHG reduction plan has been formally adopted by the City of Temecula, it is appropriate to refer to SCAQM's recommended GHG threshold of 3,000 MT of CO_2e per year (SCAQMD 2008).

Construction of the proposed project would generate temporary GHG emissions, primarily as a result of on-site construction equipment usage, vehicles transporting construction workers to and from the project area, and heavy trucks transporting construction materials. GHG emissions associated with project construction were estimated using CalEEMod, version 2022.1.1.2. Construction of the proposed project would generate an estimated total of 411 MT/year of CO_2e, all of which would occur in 2025 (Appendix D). Operation of the proposed project would not generate GHG emissions, as the proposed project would not require additional operation or maintenance activities. Furthermore, the operation of the project is intended to improve circulation and eliminate existing traffic congestion, which would result in an overall reduction in operational GHG emissions. Therefore, the proposed project emissions would not exceed 3,000 MT/year CO_2e, and this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The most directly applicable adopted regulatory plans to reduce GHG emissions are California Air Resources Board's 2022 Scoping Plan and SCAG's Connect SoCal plan. The following policies apply to the proposed project:

- **2022 Scoping Plan:** Implement Complete Streets policies and investments, consistent with general plan circulation element requirements.
- **Connect SoCal:** Adapt to a changing climate and support an integrated regional development pattern and transportation network.

The proposed project would include six-foot Class II bike lanes and an additional ten feet of ROW on either side with new contiguous sidewalks. These improvements would address existing impediments to pedestrian mobility on Overland Drive and would provide means for bicycle travel on Overland Drive. This configuration would be consistent with the roadway's secondary arterial classification, as shown on Figure C-2 (Roadway Plan) of the Temecula General Plan Circulation Element (City of Temecula 2005). Accordingly, the proposed project would implement features to enhance Temecula's multimodal transportation options in accordance with the 2022 Scoping Plan and Connect SoCal. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs. No impact would occur.

NO IMPACT

9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	□	■	□	□
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	□	■	□	□
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	□	□	■	□
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	□	□	■	□
e. For a project located in 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?	□	□	□	■
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	□	□	■	□
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	□	□	□	■

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

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

Project construction would temporarily increase the use and transport of hazardous materials in the project area through the operation of vehicles and equipment. Such materials include diesel fuel, oil, solvents, and other similar construction-related hazardous materials that could be introduced through the potential for an accidental spill or release to occur. These materials would be contained within receptacles specifically engineered for safe storage and would not be transported, stored, or used in quantities which would pose a significant hazard to the public or construction workers themselves. Hazardous materials used during project construction would be disposed of offsite in accordance with all applicable state and local laws and regulations, such as Title 22 if the California Code of Regulations and the Public Safety Element of the City's General Plan. Furthermore, certain USEPA and United States Department of Transportation laws and regulations have been promulgated to track and manage the safe interstate transportation of hazardous materials and waste. USEPA administers permitting, tracking, reporting, and operations requirements established by Resource Conservation and Recovery Act, which creates the framework for the proper management of hazardous and non-hazardous solid waste. The United States Department of Transportation also regulates the transportation of hazardous materials through implementation of the Hazardous Materials Transportation Act, which administers container design, labeling, and driver training requirements. State and local agencies enforce the application of these acts and provide coordination of safety and mitigation responses in the case that accidents involving hazardous materials occur. Project construction activities would be subject to all such federal regulations in addition to the state and local laws and regulations described above.

A review of historical aerial photographs for the project area identified Jefferson Avenue as being present by 1938. The remainder of the project area appeared to be vacant land until sometime between 1985 and 1996 when Overland Drive, Commerce Center Drive, and the surrounding development was constructed. Additional adjacent development occurred between 2005 and 2009 (Nationwide Environmental Title Research [NETR] 2022). Based on the presence of Overland Drive, Jefferson Drive, and Commerce Center Drive during the time period that leaded gasoline was used in motor vehicles (the 1970s through the 1990s), there is potential for elevated concentrations of aerially deposited lead to be present in onsite shallow soils. Furthermore, a site reconnaissance of the project area, conducted by Rincon Consultants Inc. on May 15, 2022, identified paint striping along Overland Drive and Commerce Center Drive that has the potential to contain both lead and chromium. Implementation of Mitigation Measures HAZ-1, HAZ-2, and HAZ-3 would ensure the project would not 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 during project construction.

Project operation would result in the continued vehicular use of Overland Drive, similar to the existing use. As such, project operation would not require the transport, use, storage, or disposal of hazardous materials beyond existing conditions. Overall, impacts related to creating a significant hazard to the public or the environment would be less than significant with mitigation incorporated.

Mitigation Measures

Implementation of the following mitigation measures during would reduce the potential impact to a less-than-significant level.

HAZ-1 Subsurface Investigation

The project applicant shall retain a qualified environmental consultant (Professional Geologist [PG] or Professional Engineer [PE]) or other qualified person to prepare and conduct a subsurface investigation at the project area. The investigation is to include necessary measures to determine the extent of potential elevated concentrations of aerially deposited lead in soil and metals in paint striping at the project area. If it is determined that soil within the project area is impacted, the project applicant shall retain a qualified environmental consultant (PG or PE) to conduct additional assessment or remediation work, as necessary. Additional assessment and/or remediation work may include development of subsurface investigation workplans; removal of paint striping, completion of soil, soil vapor, and/or groundwater subsurface investigations; installation of soil vapor or groundwater monitoring wells; soil excavation and offsite disposal; completion of human health risk assessments; and/or completion of remediation/mitigation reports.

HAZ-2 Soil Management Plan (SMP)

The project applicant shall retain a qualified environmental consultant (PG or PE), to prepare a SMP prior to construction. The SMP, or equivalent document, shall be prepared to address onsite handling and management of impacted soils or other impacted wastes (including paint striping), and reduce hazards to construction workers and offsite receptors during construction. The plan must establish remedial measures and/or soil management practices to ensure construction worker safety, the health of future workers and visitors, and the off-site migration of contaminants from the project area. These measures and practices may include, but are not limited to:

- Stockpile management;
- Proper disposal procedures of contaminated materials;
- Monitoring and reporting; and,

A health and safety plan shall also be prepared for contractors working at the site that addresses the safety and health hazards of each phase of site construction activities with the requirements and procedures for employee protection. The health and safety plan shall outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction. The project applicant shall review and implement the SMP prior to demolition and construction.

HAZ-3 Remediation

If soil present within the construction envelopes at the project area contains chemicals at concentrations exceeding hazardous waste screening thresholds for contaminants in soil (California Code of Regulations Title 22, Section 66261.24), the project applicant shall retain a qualified environmental consultant (PG or PE) to conduct additional analytical testing and recommend soil disposal recommendations, or consider other remedial or mitigation engineering controls, as necessary for the proposed construction at the project area.

The qualified environmental consultant shall utilize the analytical results from the site assessment activities for waste characterization purposes prior to offsite transportation or disposal of potentially impacted soils or other impacted wastes. The qualified environmental consultant shall provide disposal recommendations and arrange for proper disposal of the waste soils or other impacted wastes (as necessary), and/or provide recommendations for remedial or mitigation engineering controls, if appropriate for the proposed construction.

The project applicant shall review and approve the disposal recommendations prior to transportation of waste soils offsite, and review and approve remedial engineering controls, prior to construction. Remediation of impacted soils and/or implementation of remedial or mitigation engineering controls may require additional delineation of impacts; additional analytical testing per landfill or recycling facility requirements; soil excavation; and offsite disposal or recycling. The project applicant shall review and implement remedial or mitigation engineering controls, prior to construction.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Although not a public school, the Temecula Montessori Academy is located within 0.25- mile of the project area. The nearest public school is the Temecula Elementary School, located approximately 1.2 miles southeast of the project area. Ground disturbance during construction of the project could temporarily expose nearby receptors, including Temecula Montessori Academy, to emissions of fugitive dust. However, construction activity would be temporary, resulting in minimal fugitive dust emissions during the limited construction period. Additionally, as discussed in *criterion* a and *criterion* b, above, construction activities would be required to comply with all applicable federal, state, and local laws and regulations, such as Resource Conservation and Recovery Act and United States Department of Transportation regulations, Title 22 if the California Code of Regulations, and the Public Safety Element of the City's General Plan.

Operation of the project would result in the continued vehicular use of Overland Drive, similar to the existing use, and would not involve hazardous emissions or handling of hazardous materials beyond the routine application of roadway maintenance materials like asphalt or paint. Therefore, the potential impact on schools would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. Would the project be located on a site that is included on a list of hazardous material 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?

Government Code Section 65962.5 requires the California Environmental Protection Agency to develop an updated list of hazardous material sites (Cortese List). The California Department of Toxic Substances Control is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. The project area is not included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5. However, a review of the Department of Toxic Substances Control's EnviroStor and SWRCB GeoTracker databases identified three unauthorized release sites located within 1,000 feet of the project area.

The first unauthorized release site identified is a Chevron (27560 Jefferson Avenue), located approximately 600 feet northwest of the project area. The GeoTracker database indicates that this site is classified as a Leaking Underground Storage Tank Cleanup Site with a "Completed – Case

Closed" status as of 2014. Based on the results of multiple groundwater monitoring events between 2002 and 2013 (RM Environmental 2013) and the reported southwestern flow of groundwater (crossgradient with respect to the project area), the Chevron release is not expected to have adversely impacted the project area. The second unauthorized release site, Dutch Dry Cleaners (27403-27537 Jefferson Avenue), reported a release located 700 feet to the northwest of the project area. The GeoTracker database indicates that this site is classified as a Cleanup Program Site with a "Completed – Case Closed Status" as of 2015. Based on the results of a Subsurface Assessment Report and Closure Request, prepared for the case by SCS Engineers (2014), and the reported southwestern flow of groundwater at the site (crossgradient with respect to the project area), the Dutch Dry Cleaners unauthorized release is not expected to have adversely impacted the project area. The third unauthorized release site, Honda of Temecula (27500 Jefferson Avenue), is located approximately 850 feet northwest of the project area. The GeoTracker database indicates that this site is classified as a Leaking Underground Storage Tank Cleanup Site with a "Completed – Case Closed" status as of 2004. Based on the results of a 2003 site assessment report conducted by Harrison/Roberts Environmental Management and the reported flow of groundwater (crossgradient with respect to the project area), the Honda of Temecula release is not expected to have adversely impacted the project area. As the project area was not listed as a hazardous materials site compiled pursuant to Government Code Section 65962.5 and the three nearby release sites are not expected to have adversely impacted the project area, this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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?

French Valley Airport is the closest airport, located approximately four miles northeast of the project area. The project area is not located in the Airport's safety compatibility zones or runway protection zones (County of Riverside 2004). As the project area is not located in the vicinity of any public or private airstrip or airport land use plan, and implementation of the project would not result in aviation related safety hazards, no impact would occur.

NO IMPACT

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

Both Riverside County and the City of Temecula maintain Emergency Operations Plans (Riverside County 2019; City of Temecula 2019). Construction of the project would require the transport of construction equipment and workers to and from the project area. Haul routes used for access to the project area during construction would primarily utilize Jefferson Avenue, Winchester Road, and/or I-15. Movement of construction equipment, hauling of construction materials, and transport of construction workers would temporarily increase traffic on the roadways in the vicinity of the project area. Furthermore, the project would require temporary lane closures along Overland Drive throughout construction. However, traffic would be managed by a traffic control plan that would regulate worker parking, construction staging, roadway improvements and potential traffic detours during project construction. Staging would occur within closed lanes or on City parcels in order to minimize the amount of closures required. The traffic control plan would ensure that emergency routes remain open with minimal traffic delays resulting from project construction. Any delays during project construction would be temporary in nature, would not significantly add to off-site traffic congestion, and would not impair the implementation of or physically interfere with County-adopted plans or procedures. Following construction of the project, Overland Drive would be widened from its existing two-lane configuration to a four-lane configuration with a center turn lane, eliminating an existing vehicular bottleneck and improving overall travel times. Therefore, impacts related to impairment to implementation of or physical interference with an adopted emergency response or emergency evacuation plan would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The project area is adjacent to existing commercial, industrial, and retail uses. There are no wildland conditions on or adjacent to the project area, and the project is not located in a designated Very High Fire Hazard Severity Zone (VHFHSZ; California Department of Forestry and Fire Protection [CAL FIRE] 2007, 2009). The project would result in the widening of an existing roadway; once constructed, the project would not increase wildfire risk as the site would contain paved roadway sections, bike lanes, and sidewalks. In addition, landscaping would be limited to turf and large trees, similar to existing conditions. Operation of the project is not anticipated to require regular maintenance activities. Therefore, project operation would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. No impact would occur.

NO IMPACT

10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
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:				
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	■	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	■	☐
(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	☐	☐	■	☐
(iv) Impede or redirect flood flows?	☐	☐	■	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	■	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	■	☐

a. *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Construction activities for the proposed project could result in the alteration of existing drainage patterns and soil erosion due to earth-moving activities such as stockpiling, grading, excavation, soil compaction, and cut and fill activities. Disturbed soils within the project area would be susceptible to erosion from wind and rain, which could result in sediment transport from the construction site and temporary staging areas to Murrieta Creek, located approximately 750 feet southwest of the Overland Drive's intersection with Commerce Center Drive. The types of pollutants contained in runoff from the construction site could include contaminants such as oils, fuels, paints, and solvents. Additionally, other pollutants, such as trace metals and hydrocarbons, could attach to sediment and be transported from the project area to Murrieta Creek, contributing to the overall degradation of water quality.

As the construction activities would disturb more than one acre, the project would be subject to the requirements of the SWRCB Construction Stormwater General Permit. Compliance with the requirements of the Construction Stormwater General Permit would require:

- A Risk Assessment to determine pollution prevention requirements pursuant to the three risk levels established in the General Permit;
- Elimination or reduction of non-stormwater discharges to storm sewer systems and other waters of the United States;
- Development and implementation of a SWPPP that specifies BMPs to reduce pollution in stormwater discharges to the Best Available Technology/ Economically Achievable/Best Conventional Pollutant Control Technology standards;
- Inspections and maintenance of all BMPs; and
- Stormwater sampling, if required based on risk level.

Compliance with the Construction Stormwater General Permit would also require the preparation of a SWPPP and implementation of BMPs to ensure that all pollutants throughout and from the site would be minimized. Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, and control pollutants from construction materials. Development of the BMPs specific to the proposed project would be guided by the City of Temecula's BMP Design Manual (2018). The SWPPP would include a discussion of the program to inspect and maintain all BMPs.

Compliance with the Construction Stormwater General Permit is reinforced through TMC Chapter 18.18 (Erosion and Sediment Control). Pursuant to TMC 18.18, no grading work would be allowed on any portion of the project area if the city engineer determines upon inspection that erosion, mudflow, or sediment discharges would adversely affect downstream drainage courses or storm drains, unless an approved erosion and sediment control system has been implemented. Furthermore, TMC Chapter 18.18 requires all erosion and sediment control systems to be evaluated, revised, repaired as necessary prior to and after each rainstorm event. In addition, pursuant to TMC Chapter 8.28 (Stormwater and Urban Runoff Management and Discharge Controls), a WQMP was prepared for the project (Appendix C). Compliance with the regulations outlined in the TMC, preparation of the WQMP and SWPPP, and implementation of BMPs would ensure that project construction would comply with State water quality standards, including those protecting the beneficial uses and water quality of Murrieta Creek. The project area would be subject to routine inspections by the City engineer to ensure compliance with all requirements set forth in the TMC.

After construction is complete and the roadways are paved, topography of the project area would be similar to existing conditions. The project would result in minimal changes in ground surface permeability due to roadway widening, as most of the project area and adjacent parcels have been previously developed and currently contain impervious surfaces. Nonetheless, the project could result in increased discharges to the City storm drain system during precipitation events. However, the project would modify existing underground drainage infrastructure from the southeast corner of the Overland Drive and Commerce Center Drive intersection to an outlet where the drainage infrastructure meets an existing drainage ditch located approximately 500 feet south of the intersection on Commerce Center Drive. Such modifications would result in improvements to the existing drainage system and would better facilitate drainage from the project area to the existing drainage ditch. Overall, impacts related to violation of water quality standards or waste discharge requirements or degradation of surface or ground water quality would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The project area overlies the Temecula Valley Groundwater Basin. Water would be supplied to the project area by Rancho California Water District (RCWD) or the Eastern Municipal Water District (EMWD). Groundwater currently makes up approximately 30-40 percent of RCWD's water supply portfolio (RCWD 2021). According to their analysis of water supply reliability in the 2021 Water Shortage Contingency Plan, RCWD will have sufficient water supply, including groundwater supply, to meet the projected service area demands through the year 2045 under all scenarios considered, including normal year, single dry year, and multiple dry years (RCWD 2021). EMWD has four primary sources of water supply, including both local groundwater and desalinated groundwater. According to their 2020 Urban Water Management Plan, EMWD will also have sufficient water supply, including groundwater supply, to meet the projected service area demands through the year 2045 under all scenarios considered, including normal year, single dry year, and multiple dry years (EMWD 2021a).

Project construction would require minimal amounts of water for dust suppression in order to comply with SCAQMD Rule 403: Fugitive Dust. Construction activities would be temporary in nature, lasting for approximately six months. Therefore, no substantial increase in demand on groundwater supplies would occur, and adequate water supplies would be available to meet the needs of the project for dust suppression purposes.

The proposed project would result in a small addition of impervious surfaces, as the project proposes to widen an existing roadway. However, most of the project area and adjacent parcels have been previously developed and currently contain impervious surfaces. Furthermore, no buildings would be constructed, and the project would not induce unanticipated growth. The existing drainage system would be modified to better facilitate drainage from the project area; therefore, stormwater would continue to runoff from impervious surfaces into the existing stormwater drainage system. As such, groundwater recharge would continue as it does under existing conditions. Impacts related to the depletion of groundwater supplies and groundwater recharge would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

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

c.(iii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would 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?

c.(iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

The closest water course to the project area is Murrieta Creek, located approximately 750 feet southwest of the project area. Construction and operation of the project would not result in the alteration of the course of Murrieta Creek, or any other bodies of water. However, the project could alter existing drainage patterns by introducing additional impervious surfaces into the project area.

As described under *criterion a*, above, the project would be required to comply with TMC Chapter 18.18, resulting in the preparation of a SWPPP and implementation of BMPs. Compliance with TMC Chapter 18.18 would ensure no grading work would be allowed on any portion of the project area if the city engineer determines that erosion, mudflow, or sediment discharges would adversely affect downstream drainage courses or storm drains, unless an approved erosion and sediment control system has been implemented. Compliance with TMC Chapter 18.18 would also require all erosion and sediment control systems to be evaluated, revised, repaired as necessary prior to and after each rainstorm event. Compliance with the TMC would ensure the project would not result in substantial erosion or siltation and would reduce the risk of additional sources of polluted runoff within the existing drainage system.

Although the project would result in the addition of impervious surfaces, the project would modify the existing drainage system to better facilitate drainage from the project area to an existing drainage ditch. As a result, the project would not exceed the capacity of the drainage system, increase the rate or amount of surface runoff in a manner which would result in flooding, or impede or redirect flows. Overall, the proposed project components would not substantially alter the existing drainage pattern in the vicinity of the project area or alter the course of Murrieta Creek. Additionally, the project would not result in substantial erosion, siltation, or flooding, nor would it exceed the capacity of existing or planned stormwater drainage systems, provide substantial additional sources of polluted runoff, or impede or redirect flows. These impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, the project area is designated as Zone X; however, the permanent impacts area located on Commerce Center Drive, southeast of the main project area on Overland Drive, is designated as a Zone AE floodplain (FIRM #06065C2720G, Effective 8/28/2008; FEMA 2008). Zone X is an area of moderate flood hazard, while Zone AE is subject to inundation by the 1-percent-annual-chance flood event. According to the City of Temecula General Plan Safety Element, the entirety of project area is within the 100-year flood zone. Furthermore, the Temecula General Plan Safety Element identifies the project area as located within the Dam Inundation Area for the Lake Skinner Dam, the Vail Lake Dam, and the Diamond Valley Lake Dam, which are located approximately seven miles northeast, eleven miles southeast, and twelve miles northeast of the project area, respectively (City of Temecula 2005). Dam failure and/or overflow of Murrieta Creek during precipitation events could result in substantial flooding of the project area. Regular California Department of Water Resources (DWR) inspections and required maintenance of the dams substantially reduces the potential for dam failure, and the floodwalls on the banks of Murrieta Creek, as identified in FIRM #06065C2720G, substantially reduce the potential for overflow flooding from Murrieta Creek.

Construction activities that use or store large quantities of hazardous materials could harm the environment if inundated by a flood resulting from a storm event or dam failure. As described in Section 9, *Hazards and Hazardous Materials*, such materials would be contained within receptacles specifically engineered for safe storage, would not be transported, stored, or used in quantities which would pose a threat of release into the environment during inundation, and would be disposed of off-site. Project construction activities would be temporary in nature, lasting for approximately six months, and construction would not increase the risk of dam failure or flooding of Murrieta Creek. Operation of the project would not introduce new pollutants to the project area or result in a change to the existing flood patterns, as described above in *criterion c.(i)* through *c.(iv)*. Thus, the risk of release of pollutants due to inundation during a flood hazard or dam failure would be less than significant.

The project area is not located within a tsunami inundation area according to the DOC's Tsunami Inundation Map (DOC 2019). Therefore, the project area is not subject to flooding from tsunami. Seiches are a related hazard that can occur when a sudden displacement event or very strong winds happen in an enclosed or semi-enclosed body of water, such as a lake or reservoir. The closest body of water, Lake Skinner Reservoir, is located approximately seven miles northwest of the project area. Therefore, inundation by seiche would not occur.

Overall, the project area is not expected to experience inundation from a tsunami or seiche. Although the project area is located within the 100-year flood zone and a dam inundation zone, the project would not introduce new pollutants to the project area. Therefore, impacts due to the release of pollutants from project inundation would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Under the Clean Water Act, Section 303(d) requires states to identify water bodies that do not meet water quality objectives and are not supporting their beneficial uses. Each state must submit an updated biennial list identifying which water bodies are impaired, called the 303(d) list, to the

USEPA. Project construction activities would occur approximately 750 feet northeast of Murrieta Creek, which was included in the 2022 303(d) List of Impaired Waters, adopted by the USEPA on May 11, 2022 (State of California 2022). The *Water Quality Control Plan for the San Diego Basin* identifies beneficial uses for Murrieta Creek as municipal and domestic water supply, agricultural supply, industrial service supply, industrial process supply, contact water recreation, non-contact water recreation, warm freshwater habitat, and wildlife habitat (San Diego RWQCB 1994). The Basin Plan also identifies the water quality objectives for Murrieta Creek's beneficial uses. According to the California Water Code, water quality objectives are defined as, "the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area" (San Diego RWQCB 1994). In addition, Chapter 7 of the Basin Plan identifies total maximum daily loads, which are a calculation of the maximum amount of a pollutant that a water body can have and still meet water quality objectives established by the region.

As described previously under *criterion a* and *criterion c(i)* through *criterion c(iv)*, above, project construction would be subject to the requirements of the Construction Stormwater General Permit (NPDES No. CAS000002) and the TMC. A SWPPP and a WQMP would be prepared and BMPs implemented for water quality control during construction activities, which would ensure pollutants throughout and from the site would be reduced to the maximum extent practicable. As such, the proposed project would not violate water quality objectives for beneficial uses in the vicinity of the project area or exceed total maximum daily load. Therefore, impacts related to conflict with or obstruct implementation of a water quality control plan would be less than significant.

The project area overlies the Temecula Valley Groundwater Bain. According to the SGMA Basin Prioritization Dashboard, the Temecula Valley Groundwater Basin is considered a very low priority basin (DWR 2022a). DWR currently only requires local groundwater sustainability agencies in high- and medium- priority basins to develop and implement Groundwater Sustainability Plans (DWR 2022b). Therefore, the proposed project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	□	□	□	■
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	□	□	□	■

a. Would the project physically divide an established community?

The project may result in temporary roadway closures during construction activities. However, a traffic control plan would be implemented, consistent with the provisions of the State of California Manual of Uniform Traffic Control Devices (State of California 2021), to regulate worker parking, construction staging, roadway improvements, and potential traffic detours during project construction. Such traffic control measures would facilitate access between established communities and existing land uses throughout the duration of project construction. After completion, the project would not alter the existing pattern of land use in the project vicinity, nor would the project divide neighborhoods or land uses from one another. Rather, the project would facilitate improved access between the land uses on the eastern side of Overland Drive and the land uses on the western side of Overland Drive by widening the roadway and alleviating existing traffic congestion. The project would also reduce existing impediments to pedestrian mobility and increase bicycle accessibility by adding a contiguous sidewalk and Class II bike lanes on both side of the roadway, further establishing improved access between the land uses on the eastern side of Overland Drive and the land uses on the western side of Overland Drive. Therefore, the project would not physically divide an established community. No impact would occur.

NO IMPACT

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

According to the City of Temecula General Plan, the project area is zoned as SP-14, which refers to the Uptown Temecula Specific Plan. Within the Uptown Temecula Specific Plan, the project area is specifically designated as Employment and Office District. The proposed project would not change the existing use of the project area or result in new land uses in its vicinity. No development beyond the current vision of the Riverside County or City of Temecula General Plans would occur as a result of the project. Therefore, the project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

NO IMPACT

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12 Mineral Resources

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

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

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

According to the Temecula General Plan, the State Division of Mines and Geology has prepared a mineral resources report entitled Mineral Land Classification of the Temescal Valley Area, Riverside County, California, Special Report 165 (City of Temecula 2005). Special Report 165 evaluated mineral deposits within the Temecula Planning Area. According to the Report, the Temecula Planning Area was classified as a mineral Resources Zone-3a (MRZ-3a), which determined that the area contains sedimentary deposits that have the potential to supply sand and gravel for concrete and crushed stones for aggregate; however, these areas are not considered to contain mineral resources of significant economic value (City of Temecula 2005).

No existing mineral resource mining operations currently occur in the vicinity of the project area, and no mining activity is planned to occur on the project area. The project would not result in the loss of availability of mineral resources, nor would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, no impact would occur.

NO IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project result in:				
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?	☐	■	☐	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
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?	☐	☐	☐	■

The following analysis is based on a Noise Study, conducted by Entech Consulting Group in June 2022; the complete Noise Study Report is contained in Appendix G of this document.

a. Would the project result in 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?

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. The City of Temecula General Plan Noise Element identifies noise-sensitive land uses as residences, schools, libraries, offices, hospitals, churches, hotels, motels, and outdoor recreational areas (City of Temecula 2005). The nearest noise sensitive receiver to the project area is the Temecula Montessori Academy, located approximately 150 feet south of the project area on Overland Drive.

The most prevalent source of noise in the project area is vehicular traffic on surrounding roadways. To characterize ambient sound levels at and near the project area, three 15-minute sound level measurements were conducted at locations within or near the project area on May 31, 2022. A Larson Davis Type 1 precision sound level meter was used to conduct the measurements. Table 4 summarizes the results of the noise measurements. Monitoring locations and detailed sound level measurement data are included in Appendix G.

Table 4 Project Area Vicinity Sound Level Monitoring Results - Short-Term

Measurement Location		Time of Measurement	Primary Noise Source	L_{eq} (dBA)
R-1	Extended Stay Hotel on the corner of Overland Drive and Jefferson Avenue, north of the project area	10:55 – 11:20 a.m.	Traffic	66.0
R-2	Temecula Montessori Academy on Overland Drive, adjacent to project area	11:30 – 11:45 a.m.	Traffic	63.4
R-3	Corner of Overland Drive and Commerce Center Drive, within project area	11:50 a.m. – 12:05 p.m.	Traffic	64.2

L_{eq} = average noise level equivalent; dBA = A-weighted decibel

Locations of monitoring sites and field monitoring forms are included in Appendix G

Construction Noise

Chapter 9.20 (Noise) of the TMC establishes criteria and standards for regulating noise levels within the City and implementing the noise provisions contained in the City's General Plan. The proposed project would be exempted from local noise regulations pursuant to TMC Chapter 9.20.030, which lists capital improvement projects of a governmental agency as exempt. However, the Federal Transit Authority (FTA) provides reasonable criteria for assessing construction noise impacts based on the potential for adverse community reaction in their *Transit Noise and Vibration Impact Assessment Manua*l (FTA 2018). For both residential and institutional land uses (such as the Temecula Montessori Academy located approximately 150 feet south of the project area on Overland Drive), the daytime noise threshold is 80 dBA L_{eq} for an 8-hour period. This value was used in the construction noise analysis as the threshold of significance since the project would be exempt from the City of Temecula Noise Ordinance, pursuant to TMC Chapter 9.20.030.

Construction activity would result in temporary noise in the project vicinity, exposing surrounding sensitive receivers to increased noise levels. Project construction would involve demolition, grading and excavation, site preparation, paving, and site restoration. Typical construction projects have long-term noise averages which are lower than louder short-term noise events due to equipment moving from one point to another on the site, work breaks, and idle time. Construction noise levels were estimated using FTA data in the 2018 *Transit Noise and Vibration Impact Assessment Manual*, which provides a method for calculating noise levels for the two noisiest pieces of equipment operating in each construction phase by using reference noise levels for individual pieces of equipment. Construction equipment would not all operate at the same time or location. In addition, construction equipment would not be in constant use during the assumed 8-hour operating day.

Although the project would be exempt from the City of Temecula Noise Ordinance's established maximum exterior and interior noise levels, the project would still be subject to the policies contained within the General Plan's Noise Element. In addition, construction would be required to occur between the hours of 7:00 a.m. to 6:30 p.m., as outlined in TMC Section 9.20.60D, to protect the health, safety, or general welfare of Temecula residents. Nonetheless, construction-related noise levels would have the potential to exceed existing background noise levels at the nearest sensitive receiver, a private preschool located approximately 150 feet south of Overland Drive. Table 5 summarizes the maximum noise levels at this receiver during each phase of construction. Construction noise would have the potential to reach maximum estimated exterior unmitigated noise levels of 80.8 dBA at this receiver, exceeding FTA's daytime noise threshold of 80 dBA L_{eq}. Therefore, Mitigation Measure NOI-1 is recommended to reduce construction noise. Based on Federal Highway Administration's (FHWA) 2017 Special Report on Measurement, Prediction, and

Mitigation, it is estimated that the use of equipment silencers and optimal muffler systems in accordance with Mitigation Measure NOI-1 would provide a reduction in noise of up to 10 dBA at the nearest sensitive receiver (FHWA 2017). As such, implementation of Mitigation Measure NOI-1 would reduce construction noise at the nearest sensitive receiver below FTA's daytime noise threshold of 80 dBA L_{eq}, as shown in Table 5. Therefore, noise impacts from construction equipment would not exceed standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Construction noise impacts would be less than significant with mitigation incorporated.

Table 5 Unmitigated and Mitigated Maximum Noise Levels for Construction Phases

Construction Phase	Maximum Noise Level at Nearest Sensitive Receiver (dBA [L_{eq}]) Without Mitigation	Maximum Noise Level at Nearest Sensitive Receiver (dBA [L_{eq}]) With Mitigation
Demolition	80.1	70.1
Site Preparation	80.8	70.8
Grading/Excavation	80.8	70.8
Paving	80.1	70.1
Site Restoration	80.8	70.8

Source: Appendix G; FHWA 2017

Operational Noise

In addition to construction noise, transportation-related operational noise impacts associated with implementation of the project were also evaluated (refer to Appendix G). Noise level increases and impacts attributable to development of the proposed project were estimated by comparing the "with project" traffic volume to the "without project" traffic volume. For purposes of this analysis, roadway noise impacts would be considered significant if the project were to increase noise levels above allowable noise exposure levels shown in Table 6, below.

Table 6 Significance Thresholds for Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA [L_{eq}])	Allowable Noise Exposure Increase (dBA [L_{eq}])	Significance Threshold for New Noise Exposure (dBA [L_{eq}])
45-49	7	56
50-54	5	59
55-59	3	62
60-64	2	66
65-69	1	70
69-74	1	75

The information contained in this table was derived from the Noise/Land Use Compatibility Matrix in the Temecula General Plan (2005) to present allowable operational roadway noise exposure increases in a simplified format.

Roadway noise impacts from vehicular traffic associated with operation of the proposed were predicted using the FHWA Traffic Noise Model, Version 2.5. The FHWA Traffic Noise Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level. Adjustments are made to account for the roadway classification, the active roadway width, traffic volumes on nearby roadways, the travel speed, the percentages of automobiles, medium trucks, and heavy trucks, and the site conditions. The anticipated changes in operational roadway noise exposure are detailed in Table 7, below. The existing (2022) noise levels shown in the table below were also derived from the FHWA Traffic Noise Model and were utilized in the project's traffic data, contained in the Traffic Impact Analysis prepared by STC Traffic in March 2022 (Appendix H). The traffic model's existing noise outputs were utilized for the purposes of operational analysis rather than the sound level monitoring results, as the modeled conditions are typically how roadway noise is evaluated for the peak hour traffic (refer to Appendix G for methodology details).

Table 7 Changes in Operational Roadway Noise Exposure

	2022	2024			2045				
Location	Existing Noise Levels L_{eq}(dBA)	No Build Noise Levels L_{eq} (dBA)	With Project Noise Levels L_{eq} (dBA)	Project Increase over Existing	No Build Noise Levels L_{eq} (dBA)	With Project Noise Levels L_{eq} (dBA)	Project Increase over Existing	Allowable Noise Exposure Increase (dBA)	Allowable Noise Exposure Exceeded
R1	49.9	50.1	50.4	0.5	51.8	21.6	-0.2	7	No
R2	58.7	58.9	59.6	0.9	61.0	62.7	1.7	3	No
R3	62.1	62.3	63.0	0.7	64.8	65.2	0.4	1	No

Source: FHWA Traffic Noise Model, Version 2.5; refer to Appendix G

As shown in Table 7, implementation of the proposed project would not result in a change in noise levels from existing conditions above the allowable noise exposure increases. As such, operational noise impacts are considered less than significant.

Mitigation Measures

Implementation of the following mitigation measures during would reduce the potential impact to a less-than-significant level.

NOI-1 Construction Noise Reduction

During the entire active construction period, all equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., optimal muffler systems, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV), which is normally described in inches per second (in/sec). PPV corresponds to the stresses that are experienced by building and is defined as the maximum instantaneous positive or negative peak of a vibration signal.

High levels of groundborne vibration may cause damage to nearby buildings or structures; at lower levels, groundborne vibration may cause minor cosmetic damage (i.e., non-structural damage) such as cracks. These vibration levels are nearly exclusively associated with high impact activities such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation. The FTA has adopted vibration standards to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in Table 8.

Table 8 Construction Vibration Damage Thresholds

Building Category	PPV (in/sec)
Reinforced-concrete, steel, or timber (no plaster)	0.5
Engineered concrete and masonry (no plaster)	0.3
Non-engineered timber and masonry buildings	0.2
Buildings extremely susceptible to vibration damage	0.12

Source: FTA 2018

The FTA has also adopted standards for groundborne vibration impacts related to human annoyance. These human annoyance vibration standards are divided into three categories: Category 1 includes high sensitivity buildings where vibration would interfere with normal operations, such as vibration-sensitive research and manufacturing facilities and hospitals with vibration-sensitive equipment; Category 2 includes all residential land uses and buildings where people sleep, such as hotels and hospitals; Category 3 includes institutional land uses, such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment but still have the potential for activity interference. The vibration thresholds associated with human annoyance for these three land-use categories are described in Table 9.

Table 9 Construction Vibration Annoyance Thresholds

Land Use Category	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1	65 VdB[4]	65 VdB[4]	65 VdB[4]
Category 2	72 VdB	75 VdB	80 VdB
Category 3	75 VdB	78 VdB	83 VdB

[1] Frequent Events are defined as more than 70 vibration events of the same source per day
[2] Occasional Events are defined as between 30 and 70 vibration events of the same source per day
[3] Infrequent Events are defined as fewer than 30 vibration events of the same kind per day
[4] This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes

Source: FTA 2018

* VdB = vibration decibels

Construction

Groundborne vibration may occur from use of heavy equipment during demolition, grading, and paving activities associated with project construction. However, neither blasting nor pile driving would be required for construction of the proposed project. Construction vibration was estimated using FTA data in the 2018 *Transit Noise and Vibration Impact Assessment Manual*. Potential vibration levels resulting from project construction activities were identified at the nearest off-site sensitive receptor location and compared to both the FTA damage criteria identified in Table 8 and the FTA vibration annoyance thresholds identified in Table 9. Based on the FTA's reference vibration levels, a large bulldozer represents the peak source of vibration with a reference level of 0.089 in/sec at a distance of 25 feet (FTA 2018). At the nearest sensitive receiver, located approximately 150 feet from project area, the vibration level would be approximately 0.011 in/sec or 63.6 VdB (refer to Appendix G for methodology details). As such, construction of the proposed project would not result in vibration levels in exceedance of the significance thresholds identified above for structure damage or human annoyance. In addition, vibration impacts at the site of the closest sensitive receptor are unlikely to be sustained during the entire construction period; rather, vibration impacts would only occur during the times that heavy construction equipment is operating near the perimeter of the project area. Furthermore, project construction would be restricted to daytime hours based upon TMC requirements, thereby eliminating potential construction vibration impacts during nighttime hours. Therefore, the proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels. Construction vibration impacts would be less than significant.

Operation

Groundborne vibration from vehicular traffic rarely causes a disturbance within buildings located in urban environments unless the pavement surface is uneven or the receptor is highly sensitive to groundborne vibration, such as a scientific research establishment. Furthermore, the project would not result in additional vehicle trips; rather, the proposed project is intended to reduce traffic congestion on Overland Drive. In addition, the project would not result in changes to existing maintenance activities conducted by the City. Therefore, the project would not include permanent stationary sources of vibration, such as manufacturing or heavy equipment operations. No operational vibration impact would occur.

LESS-THAN-SIGNIFICANT IMPACT

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?*

The project area is not located in an airport land use plan area or within two miles of a public or private airport. The closest airport is the French Valley Airport, located approximately four miles northeast of the project area. The proposed project would not add new residents to the project area and given the distance of these airports from the project area, the project would not expose construction workers to excessive noise levels associated with airport operations. No impact would occur.

NO IMPACT

14 Population and Housing

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

a. Would the project 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)?

The proposed project would not involve the construction of new residences or businesses. Although the project would widen an existing roadway, the project would not result in the extension of the roadway or result in new land uses that would induce substantial unplanned population growth. The project would not support new uses that are not consistent with the Riverside County or City of Temecula General Plans or current zoning. The presence of construction workers would be temporary, and it is likely the construction workers would be utilized from the existing work force within Riverside County, so workers would not need to relocate to the area for project construction. The presence of construction workers would be temporary and would not lead to a demand for permanent housing, goods, or services in the area. Therefore, the project would not induce substantial unplanned growth, directly or indirectly. No impact would occur.

NO IMPACT

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

The project area does not currently contain any residences. The proposed project would not involve the demolition of existing residences and would therefore not displace existing housing or people. No impact would occur.

NO IMPACT

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15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:				
1 Fire protection?	☐	☐	☐	■
2 Police protection?	☐	☐	☐	■
3 Schools?	☐	☐	☐	■
4 Parks?	☐	☐	☐	■
5 Other public facilities?	☐	☐	☐	■

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

According to the City of Temecula General Plan, the Riverside County Fire Department provides fire protection, fire prevention, and emergency medical rescue services in the City of Temecula through a cooperative agreement (City of Temecula 2005). The closest fire station in the vicinity of the project area is Riverside County Fire Department Station 73, located at 27415 Enterprise Circle, approximately 1200 feet northwest of the westerly terminus of the project area. Similarly, police services for the City and the project area are provided by the Riverside County Sheriff Department. The closest police station in the vicinity of the project area is the Temecula Promenade Mall Police Substation, located at 40820 Winchester Road #2020, approximately one mile northeast of the easterly terminus of the project area (City of Temecula 2005).

The school district associated with the project area is the Temecula Valley Unified School District, which serves approximately 28,468 students (City of Temecula 2022). As described under Section 9, *Hazards and Hazardous Materials*, the nearest public school to the project area is Temecula Elementary School, located approximately 1.2 miles southeast of the project area. The nearest library facility to the project area is the Grace Mellman Community Library, located approximately 0.68-mile northeast of the project area. The nearest recreational area to the project area is Harveston Community Park, located approximately one mile northeast of the project area.

As discussed in Section 13, *Population and Housing*, the project would not induce growth, nor would it introduce new uses along the project area that would increase demand for fire, police, school, park, or other governmental facilities. Increased operation and maintenance activities are not anticipated on the roadway after construction of the project is complete. Therefore, the project would not result in the need for new or physically altered fire protection facilities, police protection facilities, schools, parks, or other public facilities. No impact would occur.

NO IMPACT

16 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?	☐	☐	☐	■
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?	☐	☐	☐	■

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?

As discussed in Section 14, *Population and Housing*, the project would not induce growth, nor would it introduce new uses along the project area that would result in new users to the project area. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities, nor would the project cause substantial physical deterioration of any facility to occur or be accelerated. No impact would occur.

NO IMPACT

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?

The City of Temecula has set a standard of five acres of City-owned parkland per 1,000 residents (City of Temecula 2005). The proposed project would construct new contiguous sidewalks and six-foot Class II bike lanes on both sides of Overland Drive. The project is consistent with the City of Temecula General Plan, which shows the portion of Overland Drive between Jefferson Avenue and Commerce Center Drive as having Class II bike lanes on Figure C-4 (Multi-Use Trails and Bikeways). It is anticipated that the construction of the bike lanes would not result in an adverse effect on the environment, since the project area has been previously disturbed by existing development along the corridor. Therefore, no impact would occur.

NO IMPACT

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17 Transportation

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

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The proposed project would widen the existing two-lane configuration on Overland Drive between Jefferson Avenue and Commerce Center Drive to a four-lane undivided secondary arterial roadway facility. The project would also construct new contiguous sidewalks and six-foot Class II bike lanes on both sides of Overland Drive. Overland Drive is currently shown as a secondary arterial roadway on Figure C-2 (Roadway Plan) of the Temecula General Plan Circulation Element, and Figure C-4 (Multi-Use Trails and Bikeways) of the Temecula General Plan Circulation Element shows Class II bike lanes along this section of Overland Drive. Furthermore, the project would be consistent with Policy 5.4 of the Temecula General Plan (City of Temecula 2005), which details the provision of a comprehensive network of multi-use trails and bikeways. Therefore, the project would be consistent with the Temecula General Plan.

The project would not induce growth or travel, as no new land uses would result from project implementation. Rather, the proposed project is intended to reduce traffic congestion and would thereby reduce travel times and GHG emissions, consistent with the vision of the SCAG 2020-2045 RTS/SCS (SCAG 2020). The project is also intended to reduce pedestrian impediments and increase bicycle accessibility in the corridor, consistent with the goals Multi-use Trails and Bikeways Master Plan (City of Temecula 2016b). There are no existing transit stops along Overland Drive between Jefferson Avenue and Commerce Center Drive, and the project would not impact the existing nearby transit tops on Jefferson Avenue. Therefore, the project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

b. *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

CEQA Guidelines section 15064.3 describes specific considerations for evaluating a project's transportation impacts. Generally, vehicle miles traveled (VMT) is identified as the most appropriate measure of transportation impacts. For the purposes of this CEQA section, VMT refers to the amount and distance of automobile travel attributable to a project. Lead agencies were required to approve a VMT significance threshold by July 1, 2020. In response, the City of Temecula prepared Traffic Impact Analysis Guidelines, which contains methodology, thresholds of significance, and screening criteria for conducting VMT Analyses. If a project meets the screening criteria within the Traffic Impact Analysis Guidelines, a full VMT analysis is not required, and it is assumed the project would have a less than significant impacts on VMT(City of Temecula 2020a).

The project's impact on VMT was analyzed by STC Traffic Inc. in 2022 within a VMT Analysis Memo (Appendix H). According to the VMT Analysis Memo, the proposed project would be screened out of a full VMT analysis as the proposed project would be consistent with the following project types listed in Exhibit D of the City's Traffic Impact Analysis Guidelines:

- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit.
- Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way.

Accordingly, the proposed project would not have a substantial effect on VMT. The proposed project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

The existing Overland Drive roadway is configured with two lanes in each direction east of Jefferson Avenue before dropping to one lane in each direction west of Jefferson Avenue, creating a bottleneck. The proposed project would widen the existing roadway to provide two lanes of travel in each direction on Overland Drive between Jefferson Avenue and Commerce Center Drive, which would increase vehicular safety along the corridor by removing the existing bottleneck. Furthermore, the project would result in a contiguous sidewalk along Overland Drive, which would increase pedestrian safety along the corridor by removing the existing sidewalk gap on both sides of the roadway. The project would also increase bicyclist safety by providing six feet of Class II bike lanes and an additional ten feet of ROW on both sides of the roadway.

All project improvements would be constructed in accordance with the City of Temecula design standards, approved by the City's Director of Public Works (City of Temecula 2011). All traffic signal improvements, pavement markings, pavement striping, and roadway signage would be designed to conform to the provisions of both the State of California Manual of Uniform Traffic Control Devices and the Caltrans Standard Plans and Specifications (State of California 2021; Caltrans 2018). Furthermore, the project would be subject to inspection by the City Engineer to ensure that construction conforms to approved project plans and specifications as well as City and engineering standards (City of Temecula 2020b).

The proposed project may result in temporary roadway closures during construction for equipment and vehicular access. The project would implement a traffic control plan, consistent with the provisions of the State of California Manual of Uniform Traffic Control Devices (State of California 2021), which would maintain public safety during project construction while facilitating the necessary equipment and vehicular access to the project area. All construction equipment would be contained in staging and laydown areas, provided within the public ROW on closed lanes, or on a designated city-owned parcel shown in Figure 2. The project's construction activities would be temporary in nature and any equipment utilized during construction would be removed after completion of the project. Therefore, no hazards or incompatible uses would occur. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. Would the project result in inadequate emergency access?

Construction of the project may result in temporary roadway closures. However, a traffic control plan would be implemented, to regulate worker parking, construction staging, roadway improvements, and potential traffic detours during project construction. As described under *criterion c,* above, the proposed project would remove the existing bottleneck on Overland Drive by widening the existing two-lane configuration to a four-lane configuration, resulting in an increase in roadway safety and emergency access during operation of the project. Therefore, the project would not result in inadequate emergency access. This impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or 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:				
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)?	☐	■	☐	☐
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.	☐	■	☐	☐

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k), or
2. 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 PRC Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead Agency.

a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is 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)?*

b. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is 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?*

The NAHC was contacted on June 21, 2022, for a search of its SLF. The NAHC responded on July 28, 2022, stating the results of the SLF search were positive with instructions to contact the Pechanga Band of Mission Indians for more information.

On July 25, 2022, the City sent AB 52 consultations letters via certified mail to the following parties:

- Agua Caliente Band of Cahuilla Indians
- Pechanga Band of Indians
- Rincon Band of Luiseño Indians
- Soboba Band of Luiseño Indians
- Torres Martinez Desert Cahuilla Indians

The City did not receive a response from the Soboba Band of Luiseño Indians or the Torres Martinez Desert Cahuilla Indians. The City did receive responses from the Agua Caliente and Rincon Bands, both of which stated that their records indicate the project is not located within their respective Tribe's traditional use area and did not request formal consultation. The City also received a response from the Pechanga Tribe requesting formal consultation with the City.

A consultation meeting occurred with Paul Macarro and Molly Earp of Pechanga Tribe on October 30, 2023. During the consultation meeting, Pechanga Tribe requested use of the mitigation measures from the nearby Murrieta Creek Bridge for Overland Drive Widening Project, as well as tribal monitoring during project related construction. As approved by the City, this Initial Study-Mitigated Negative Declaration (IS-MND) incorporates Pechanga's suggested measures as Mitigation Measures CR-1 through CR-9. The IS-MND will be submitted to Pechanga for review prior to public circulation of the draft environmental documents. This concluded the formal AB 52 process.

Based on the positive results of the SLF search coupled with known ethnographic settlement patterns, the project area is considered sensitive for tribal cultural resources. Therefore, Mitigation Measures CR-1 through CR-9 are required to bring impact to a less than significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	■	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	■	☐
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?	☐	☐	■	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	■	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	■	☐

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Water

Project construction would require minimal amounts of water for dust suppression and would not require water use during operation. Water required during construction would be provided by a water truck. No additional water infrastructure would be required for the proposed project. Therefore, no impact would occur.

Wastewater

The project would generate minimal amounts of wastewater during construction through use of portable toilets by construction workers. This wastewater would be handled via portable facilities and would not require the addition of wastewater infrastructure. Following construction, the proposed project would not generate wastewater or require additional wastewater infrastructure. Therefore, no impact would occur.

Stormwater

The project would result in a small addition in impervious surfaces, as the project proposes to widen an existing roadway. However, most of the project area and adjacent parcels have been previously developed and currently contain impervious surfaces. To better facilitate drainage from the project area to an existing drainage ditch, the proposed project would modify the existing drainage system through installation of new catch basins on both sides of Overland Drive, ultimately connecting to an existing 72-inch storm drain pipe. The environmental impacts associated with these improvements are evaluated throughout this IS-MND. The increase in impervious surfaces associated with the project would not necessitate additional stormwater infrastructure beyond what is included as part of the proposed project. Therefore, this impact would be less than significant.

Electric Power

The proposed project involves modifications to existing traffic signals, the installation of a new four-leg traffic signal at the intersection of Overland Drive with Commerce Center Drive, and installation of street lights. Although these features would require electricity, the project area is within an urban area with existing electric infrastructure available. Only minor electric infrastructure connections to the proposed project would be required, and the proposed project would not necessitate substantial relocation or construction of new or expanded electric power facilities. This impact would be less than significant.

Natural Gas

The proposed project involves roadway improvements and would not require natural gas or otherwise necessitate the construction or relocation of natural gas infrastructure. No impact would occur.

Telecommunications Facilities

The proposed project involves roadway improvements and does not involve or necessitate the construction of new or expansion of existing telecommunications facilities. No impact would occur.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Project construction would require minimal amounts of water for dust suppression. Water would be supplied to the project area by RCWD or EMWD. According to the analysis of water supply reliability in the 2021 Water Shortage Contingency Plan and the 2020 Urban Water Management Plan, both RCWD and EMWD will have sufficient water supplies to meet the projected service area demands through the year 2045 under all scenarios considered, including normal year, single dry year, and multiple dry years (RCWD 2021; EMWD 2021a). Operation of the project would not require additional water usage. Therefore, sufficient water supplies would be available to serve the project. Impacts to water supply would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

As described under *criterion a*, above, the proposed project would generate wastewater during construction through use of portable toilets by construction workers. Any wastewater generated during project construction would be minimal and temporary in nature and would be disposed of at the Temecula Valley Regional Water Reclamation Facility, which is located approximately 0.5 mile southwest of the project area. The Temecula Valley Regional Water Reclamation Facility is currently designed to treat up to 23 million gallons of wastewater per day (EMWD 2021b). Operation of the project would not result in additional wastewater discharge into the City's wastewater system. Furthermore, the project would not result in new buildings or induce growth. Therefore, the proposed project would not result in a permanent new source of wastewater. Impacts on wastewater treatment capacity would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

e. *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Project construction activities would generate construction waste, resulting in the need for solid waste disposal. Recoverable materials generated during construction would be separated and recycled to minimize construction waste and exportation from the site, resulting in limited demand on nearby landfills. Remaining construction waste would be disposed of at either El Sobrante Landfill or Lamb Canyon Sanitary Landfill or, located approximately 26 miles northeast of the project area and 27 miles northwest, respectively. Long-term operation of the project would not generate solid waste.

According to California Department of Resources Recycling and Recovery's (CalRecycle) Solid Waste Information System, El Sobrante Landfill is a public Class III landfill in Corona, California with a maximum permitted capacity of 16,054 tons per day. This landfill is only permitted to accept tires, mixed municipal, contaminated soil, and construction/demolition waste. In April 2018, the El Sobrante Landfill's estimated remaining capacity was 143,977,170 cubic yards with an estimated closure date of January 2051 (CalRecycle 2019a). Similarly, Lamb Canyon Sanitary Landfill is a public Class III landfill in Beaumont, California with a maximum permitted capacity of 5,000 tons per day. This landfill is permitted to accept a variety of waste types, including metals, mixed municipal, industrial, contaminated soil, construction/demolition, and liquid waste. In January 2015, Lamb Canyon Sanitary Landfill's estimated remaining capacity was 19,242,950 cubic yards with an estimated closure date of April 2032 (CalRecycle 2019b).

Both El Sobrante Landfill and Lamb Canyon Sanitary Landfill would have sufficient permitted capacity to accommodate the project's temporary solid waste disposal needs associated with construction activities. In addition, the project would comply with all applicable statutes and regulations related to solid waste, including those within Chapter 18 of the TMC. Compliance with the TMC would ensure the contractor would obtain a Haul Route Permit, which is required when soils are being moved on public roadways to or from a grading site and would ensure that solid waste would only be deposited at disposal or dumping sites or recycling or composting facilities. Overall, the project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure. Furthermore, the project would comply with all federal, state, and local management and reduction statutes and regulations related to solid waste. These impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	□	□	■	□
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	□	□	■	□
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	□	□	■	□
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	□	□	■	□

a. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

b. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

According to the CAL FIRE Fire Hazard Severity Zone Maps prepared under the Fire and Resource Assessment Program, the project area is not located within a State Responsibility Area. The project area is mapped as a Non-(VHFHSZ within a local responsibility area (CAL FIRE 2009). The nearest VHFHSZ is located approximately 0.66 mile west of the project area within a local responsibility area; the nearest VHFHSZ within a state responsibility area is located approximately 1.15 mile east of the project area near an urban-wildland interface (CAL FIRE 2007). As the project is not located in or near a state responsibility area, and because the project would not result in additional housing or new permanent structures to accommodate occupants, the project would not expose people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. Furthermore, the project would not impair an adopted emergency response plan or emergency evacuation plan, nor would the project require associated infrastructure such as fuel breaks or emergency water sources that would result in temporary or ongoing impacts to the environment. Overall, wildfire impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Does the project:				
a. 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 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?	□	■	□	□
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	□	■	□	□
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	□	■	□	□

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 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?

The proposed project is limited to activities that would occur in the project area. Implementation of Mitigation Measure BIO-1 would ensure the proposed project would not impact the total mapped habitat areas of nesting bird species. The proposed project does not include large-scale activities which would pose a substantial threat to species or their mapped habitats. Due to the local scale of the project, the project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. This impact would be less than significant.

As discussed in Section 5, *Cultural Resources*, there are no historical built environment resources located at the project area, and the proposed project would not cause a substantial change in the significance of a historical built environment resource. Although there is archaeological sensitivity at the project area, the proposed project would implement Mitigation Measures CUL-1 through CUL-9 for monitoring and the evaluation, consultation, avoidance, and data recovery of any unanticipated discovery of archaeological resources during construction. Because no important examples of the major periods of California history or prehistory are known to be present at the project area, the proposed project would not eliminate important examples of the major periods of California history or prehistory. Impacts would be less than significant with mitigation incorporated.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

As described in the discussions of Sections 1 through 19, with respect to all environmental issues, the proposed project would either have no impact, a less-than-significant impact, or impacts would be reduced to a less-than-significant level with implementation of required mitigation. Cumulatively considerable impacts could occur if the construction or operation of other projects coincides with the proposed project in the same vicinity of the project area, such that similar impacts of multiple projects combine to expose a resource to greater levels of impacts than what would occur in accordance with the proposed project. Based on a review of the City's current development projects, cumulative projects proximate to the project area include the following (City of Temecula 2024):

- **Murrieta Creek Bridge at Overland Drive Project:** Located approximately 380 feet southwest of the project area. This project involves the construction of a new bridge crossing over Murrieta Creek between Rancho California Road and Winchester Road. Construction is anticipated to start late 2025 or early 2026.
- **Diaz Road Expansion Project:** Located approximately 1,100 feet southwest of the project area. This project involves improvements to Diaz Road to meet the roadway classification of Major Arterial (4 Lanes Divided), between Cherry Street and Rancho California Road. Construction is anticipated to begin Fall 2024.

The proposed project would have no impact on Agriculture and Forestry Resources, Energy, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, and Recreation. Thus, the proposed project would not contribute to cumulative impacts to these resource topics. In addition, certain resource areas (e.g., cultural resources, geology and soils, hazards and hazardous materials, and tribal cultural resources) are by their nature specific to a project location such that impacts at one location do not add to impacts at other locations, and therefore would not result in cumulative impacts.

The proposed project would be consistent with surrounding development at the project area and would introduce lighting in accordance with City requirements such that lighting introduced would not considerably contribute to cumulative impacts associated with substantial increases in lighting.

Project-level air quality and GHG impacts are by their nature cumulative impacts, as they consider whether an individual development would contribute to nonattainment in an air basin or a substantial cumulative increase in GHG emissions. As described in Section 3, *Air Quality*, the proposed project would not result in an exceedance of SCAQMD regional thresholds for criteria air pollutants and therefore would result in a cumulatively considerable net increase of any criteria pollutant. As described in Section 8, *Greenhouse Gas Emissions*, the proposed project would not result in GHG emissions above the City's 3,000 MT/year CO2e and therefore would not contribute considerably to cumulative GHG emissions.

Most cumulative impacts to biological resources occur when a disproportionate number of development projects occur at once and regionally impact a local population of a special status species, riparian habitat, sensitive natural communities, wetlands, or other locally protected biological resources. Similar to the proposed project, cumulative development would be subject to regulatory requirements such as the federal Endangered Species Act, California Endangered Species Act, and Migratory Bird Treaty Act. These regulations are designed to protect individual species and their habitats. Cumulative projects would be required to abide by the provisions of these regulations and subject to review from agencies including, but not limited to, CDFW and USFWS, to ensure potential impacts to species or habitat are minimized. However, existing regulatory requirements alone cannot guarantee species loss, habitat loss, or other impact to biological resources due to cumulative development. Nonetheless, the proposed project would incorporate Mitigation Measure BIO-1 to minimize impacts to nesting birds. As a result, the proposed project would not contribute considerably to cumulative impacts to biological resources.

Impacts related to hydrology and water quality are typically minimized with adherence to existing federal, state, and local regulations. The proposed project and other cumulative development projects in the city would with the Construction Stormwater General Permit and implement a WQMP and SWPPP which would minimize cumulative impacts to hydrology and water quality. Accordingly, the proposed project would not contribute considerably to cumulative impacts to hydrology and water quality.

Due to the project area's proximity to cumulative development projects, overlapping construction schedules could result in substantial cumulative construction noise and vibration. However, the proposed project's construction activities would generate approximately 56 dBA and approximately 0.011 in/sec vibration at the nearest sensitive receiver. These values would not exceed applicable noise or vibration thresholds. Accordingly, the proposed project would contribute considerably to cumulative noise impacts.

Cumulative development in the City of Temecula could result in population increases and subsequently increase citywide VMT. The proposed project is a roadway improvement project that provides for improved pedestrian and new bicycle facilities. Therefore, the proposed project is presumed to have a less than significant VMT impact and would not considerably contribute to cumulative citywide VMT.

Cumulative development could result in increased water demand, wastewater generation, and solid waste generation. The proposed project is a roadway improvement project and would only require minimal water use during construction for dust suppression purposes. During construction, minimal wastewater and solid waste would be generated. The minimal wastewater generated during construction would be treated at the Temecula Valley Regional Water Reclamation Facility which is currently designed to treat up to 23 million gallons of wastewater per day. The proposed project's generated wastewater would not exceed the capacity of the Temecula Valley Regional Water Reclamation Facility and therefore would not contribute considerably to the cumulative demand for wastewater infrastructure. Similarly, solid waste generated during construction would be processed at El Sobrante Landfill or Lamb Canyon Sanitary Landfill, which have estimated closure dates of 2051 and 2032, respectively. Therefore, the proposed project would not contribute considerably to the cumulative demand for solid waste infrastructure.

Cumulative development within or proximate to fire hazard severity zones could result in fire hazards which could potentially spread across the City of Temecula, resulting in a cumulative risk of loss or injury due to wildfire. The proposed project is not located within a fire hazard severity zone and would not result in additional housing or new permanent structures to accommodate occupants, and therefore would not expose people to fire risk. Construction of the proposed project would adhere to applicable state regulations mandating the use of spark arrestors to reduce the potential for fire during construction. Accordingly, the proposed project would not contribute considerably to cumulative wildfire impacts.

Overall, the proposed project would not contribute considerably to cumulative environmental impacts with adherence to regulatory standards and implementation of applicable mitigation measures.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

Adverse effects on human beings are typically associated with air quality, hazards and hazardous materials, noise, and wildfire impacts. These impacts are addressed in Section 3, *Air Quality*, Section 9, *Hazards and Hazardous Materials*, Section 13, *Noise*, and Section 20, *Wildfire*. As discussed in detail in these sections, the proposed project would implement Mitigation Measures HAZ-1 through HAZ-3, which would reduce hazards impacts to a less than significant level. With incorporation of these mitigation measures, the proposed project would have a less than significant impact on human beings.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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Appendix A

Conceptual Design Plans

CITY OF TEMECULA
OVERLAND DRIVE WIDENING
FROM COMMERCE CENTER DRIVE TO JEFFERSON AVENUE
PROJECT PW20-11

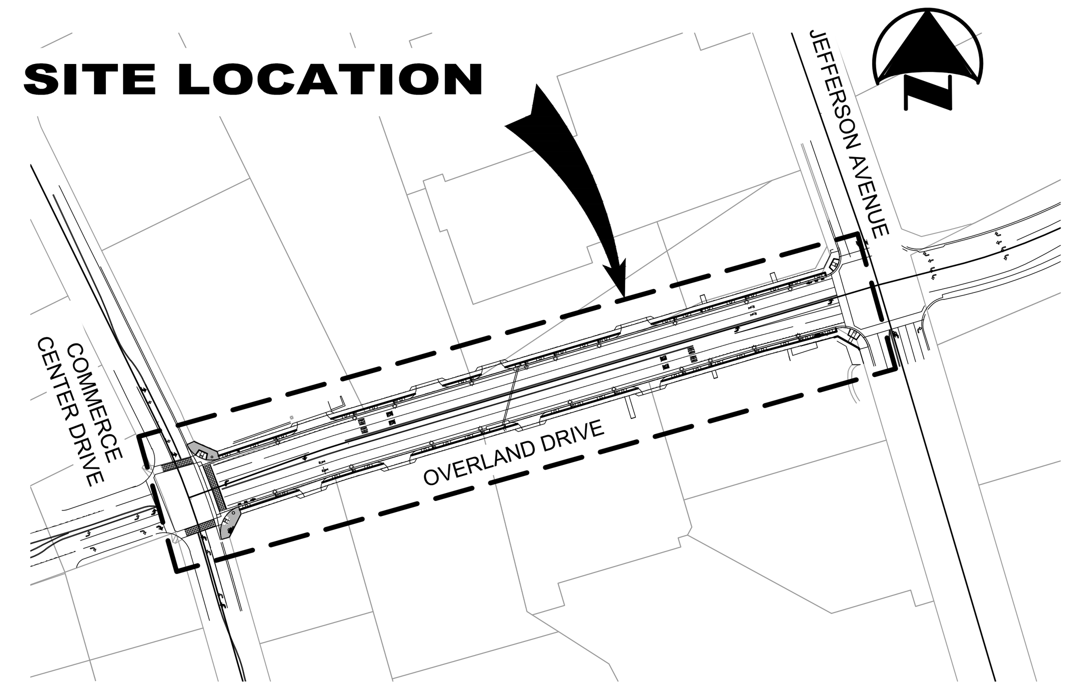
GENERAL NOTES:

1. STANDARDS. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE CITY'S IMPROVEMENT STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION (AND SUBSEQUENT AMENDMENTS), THE CITY'S ENGINEERING AND CONSTRUCTION MANUAL, CITY CODES AND REQUIREMENTS.
2. LICENSE/PERMIT REQUIREMENT.
   PRIOR TO START OF ANY WORK, A BUSINESS LICENSE SHALL BE OBTAINED FROM THE CITY.
3. ERRORS OR OMISSIONS. APPROVAL OF THESE PLANS BY THE CITY DOES NOT RELIEVE THE APPLICANT AND ENGINEER OF RECORD FROM THE RESPONSIBILITY FOR THE CORRECTION OF ERRORS OR OMISSIONS DISCOVERED DURING CONSTRUCTION.
4. UTILITIES. APPROVAL OF THESE PLANS BY THE CITY DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OR COMPLETENESS OF THE LOCATION, NOR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITIES WITHIN THE PROJECT LIMITS. ANY UTILITY DAMAGED DURING THE PERFORMANCE OF THE WORK SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE GOVERNING AGENCY BY THE CONTRACTOR, AT HIS EXPENSE.
5. SURVEY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF RECORD AND TO INSTALL STREET CENTERLINE MONUMENTS, AS REQUIRED BY RIVERSIDE COUNTY ORDINANCE NO. 461. CENTERLINE TIES SHALL BE PROVIDED TO THE CITY ENGINEER, UPON COMPLETION OF THE PROJECT AND BEFORE ACCEPTANCE IS GRANTED. ALL EXISTING MONUMENTATION (DISTURBED OR DESTROYED DURING CONSTRUCTION) SHALL BE REPLACED TO CITY STANDARDS IN ACCORDANCE WITH THE LAND SURVEYORS ACT AND THE STREETS AND HIGHWAY CODE, AND AS APPROVED BY THE CITY ENGINEER. UPON REQUEST, SURVEY CUT SHEETS SHALL BE PROVIDED TO THE CITY ENGINEER.
6. DUST CONTROL. DUST SHALL BE CONTROLLED BY WATERING OR OTHER METHODS, AS APPROVED BY THE CITY ENGINEER AND SHALL COMPLY WITH SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S (SCAQMD) RULE 403.
7. OTHER CONSTRUCTION NOTES. REFER TO SEPARATE NOTES FOR "GRADING," "EROSION AND SEDIMENT CONTROL," "PAVING" AND "TRAFFIC" REQUIREMENTS, IF APPLICABLE.

TRAFFIC SIGNAL GENERAL NOTES:

1. ALL WORK MATERIAL AND EQUIPMENT SHALL CONFORM TO THE PROVISIONS OF THE CITY OF TEMECULA TRAFFIC SIGNAL STANDARDS AND GUIDELINES, STANDARD PLANS AND STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) LATEST EDITION, AND THE SPECIAL PROVISIONS.
2. A CITY OF TEMECULA ENCROACHMENT PERMIT SHALL BE REQUIRED TO PERFORM WORK WITHIN THE PUBLIC RIGHT-OF-WAY. CITY APPROVED PLANS DO NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF OBTAINING AN ENCROACHMENT PERMIT. A COPY OF THE PERMIT SHALL BE KEPT ON THE CONSTRUCTION SITE AT ALL TIMES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A DETAILED TRAFFIC CONTROL PLAN FOR ANY LANE CLOSURES ASSOCIATED WITH THE TRAFFIC SIGNAL CONSTRUCTION.
4. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES IS APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND DEPTH OF ALL UTILITIES INCLUDING THOSE NOT SHOWN ON THE PLAN PRIOR TO START OF WORK. CONTACT UNDERGROUND SERVICE ALERT AT (800) 422-4133.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN ELECTRICAL PERMIT FROM THE CITY'S BUILDING AND SAFETY DEPARTMENT FOR THE SERVICE PEDESTAL.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND NOTIFYING AFFECTED AGENCIES AT LEAST 72 HOURS PRIOR TO START OF WORK.
7. THE CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE APPROPRIATE NUMBER OF CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
8. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER THE EXACT LOCATION OF ALL TRAFFIC SIGNAL EQUIPMENT PRIOR TO INSTALLATION.
9. EACH CONDUCTOR SHALL BE PERMANENTLY IDENTIFIED. IDENTIFICATION SHALL BE BY DIRECT LABELING, TAGS OR BANDS PERMANENTLY FASTENED TO THE CONDUCTORS. THE IDENTIFICATION SHALL BE PLACED ON EACH CONDUCTOR OR GROUP OF CONDUCTORS IN EACH PULL BOX AND NEAR THE END OF EACH CONDUCTOR WHERE THE CONDUCTORS ARE TERMINATED.
10. UNDERGROUND TRAFFIC SIGNAL CONDUCTORS BETWEEN PULL BOXES OR OTHERWISE SHALL NOT BE SPLICED.
11. ANY LANDSCAPING DAMAGED BY THE TRAFFIC SIGNAL CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER AND THE PROPERTY OWNER.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL "PUNCH LIST" ITEMS PRIOR TO TRAFFIC SIGNAL TURN-ON.

Underground Service Alert
Call: TOLL FREE
1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG



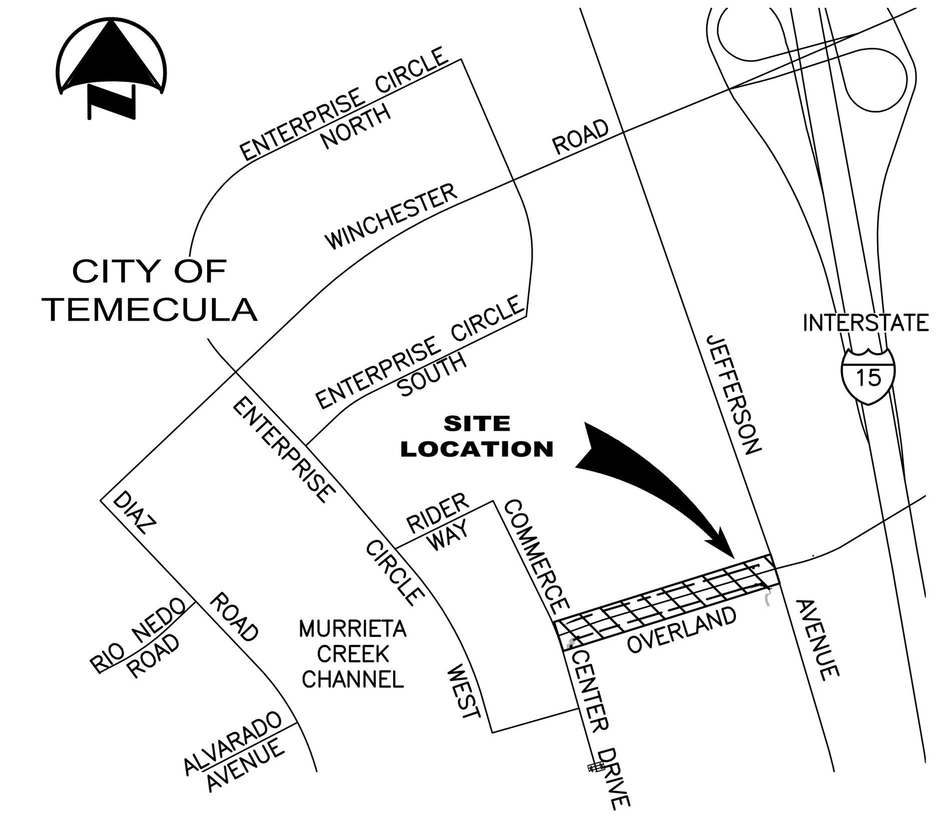
INDEX MAP
SCALE 1"=250'

EARTHWORK QUANTITIES

CUT = 5,011.80 CY.
FILL = 755.00 CY.
TOTAL EXPORT = 4,256.80 CY.

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM NAD 83 (2011) ZONE 6, AS DETERMINED LOCALLY BY THE LINE BETWEEN USC&GS CORS STATIONS DM7578 AND DG9734, SHOWN HEREIN AS:
N 59°34'58" W, 2010.0000 EPOCH.



VCINITY MAP
NOT TO SCALE

WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE CONSTRUCTED ACCORDING TO:
1. THE CITY OF TEMECULA DESIGN STANDARDS AND STANDARDS DRAWING FOR PUBLIC WORKS CONSTRUCTION.
2. THESE PLANS AND TECHNICAL PROVISIONS FOR CONSTRUCTION OF TRAFFIC SIGNALS & SAFETY LIGHTING.
3. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 2018 EDITION AND SUPPLEMENTS.
4. CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES 2014, REVISION 5.
5. STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS & SPECIFICATIONS 2018.

LEGEND:

RIGHT OF WAY
EXISTING FENCE
EXISTING FLOW LINE
EXISTING EDGE OF PAVEMENT
EXISTING EASEMENT
EXISTING GAS LINE
EXISTING WATER LINE
EXISTING BUILDING
PROPERTY LINE
EXISTING SEWER
EXISTING TELECOMMUNICATIONS
EXISTING ELECTRIC
EXISTING STORM DRAIN PIPE
PROPOSED IMPROVEMENTS
EXISTING POWER POLE
EXISTING STREET LIGHT
EXISTING FIRE HYDRANT
EXISTING WATER VALVE
EXISTING PALM TREE
EXISTING TREE
EXISTING SIGN
EXISTING CLEANOUT
EXISTING INLET
EXISTING WATER METER
EXISTING IRRIGATION
EXISTING UTILTIY
SEWER MANHOLE
EXISTING POST INDICATOR VALVE — PIV
EXISTING CONTOUR — 50
EXISTING SD MANHOLE
PROPOSED CONTOURS — 50
CONCRETE PAVERS
GRADING LIMITS
GRIND AND OVERLAY
PROPOSED ASPHALT
PROPOSED CONCRETE
SAWCUT
STAMPED ASPHALT
REMOVAL LIMITS
TRENCH REPAIR

ENGINEER OF WORK'S AND STATEMENT OF RESPONSIBILITIES CHARGE

I, ______________________, HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER DESIGN ON THIS PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THE DESIGN IS CONSISTENT WITH CURRANT STANDARDS AND CITY OF TEMECULA.

I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS OF CITY OF TEMECULA IS CONFINED TO REVIEW ONLY AND DOES NOT RELIEVE ME OF RESPONSIBILITIES FOR PROJECT DESIGN.

SIGNED ______________________ DATE ______________
R.C.E NO. ______________________ EXP. ______________
FIRM ENGINEERING RESOURCES OF SOUTHERN CALIFORNIA, INC.
ADDRESS 1861 W. REDLANDS BLVD., REDLANDS, CA 92373
TELEPHONE 909-890-1255

NOTE TO CONTRACTOR

CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE OR DISTURBED ADJACENT PROPERTY AND HARDSCAPE, AND SHALL REPLACE IN KIND TO MATCH EXISTING.

ENGINEERING RESOURCES OF SOUTHERN CALIFORNIA, INC. MAKES NO REPRESENTATION CONCERNING THE ESTIMATED QUANTITIES ON THESE PLANS. OTHER THAN THAT ALL SUCH FIGURES ARE PRELIMINARY ESTIMATES AND FOR PERMIT PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PREPARE HIS/HER OWN QUANTITY ESTIMATE FOR CONSTRUCTION AND OR COST PURPOSES. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY DEVIATIONS BETWEEN ESTIMATED QUANTITIES AND THE ACTUAL QUANTITIES AT THE TIME OF CONSTRUCTION.

UTILITY NOTIFICATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES. FOR LOCATION OF UNDERGROUND UTILITIES, OR FOR EMERGENCY ASSISTANCE CALL:

WATER	RANCHO CALIFORNIA WATER DISTRICT (RCWD) (951) 453-9930
SEWER	EASTERN MUNICIPAL WATER DISTRICT (EMWD) (951) 928-6107
ELECTRICITY	SOUTHERN CALIFORNIA EDISON (909) 335-7891
GAS	SO CAL GAS (909) 335-7955
TELEPHONE	AT&T (714) 963-7964
CABLE TELEVISION	SPECTRUM CHARTER (951) 406-1690

SHEET INDEX

SHEET NO.	DRAWING NO.	DESCRIPTION
1 OF 19	C1	TITLE SHEET
2 OF 19	C2	GENERAL NOTES AND TYPICAL SECTIONS
3 OF 19	C3	DETAILS
4 OF 19	C4	DETAILS
5 OF 19	C5	DETAILS
6 OF 19	C6	DETAILS
7 OF 19	C7	DEMOLITION PLAN
8 OF 19	C8	OVERLAND DRIVE IMPROVEMENTS PLAN & PROFILE
9 OF 19	C9	SIGNING AND STRIPING PLAN
10 OF 19	C10	STREET LIGHT GENERAL NOTES AND VOLTAGE DROP CALCULATIONS
11 OF 19	C11	STREET LIGHT PLAN
12 OF 19	C12	STREET LIGHT DETAILS
13 OF 19	C13	JEFFERSON AVENUE AND OVERLAND DRIVE TRAFFIC SIGNAL PLAN
14 OF 19	C14	COMMERCE CENTER DRIVE AND OVERLAND DRIVE TRAFFIC SIGNAL PLAN
15 OF 19	C15	FIBER OPTIC COMMUNICATION PLAN
16 OF 19	C16	STORM DRAIN IMPROVEMENTS
17 OF 19	C17	EROSION CONTROL
18 OF 19	C18	EROSION CONTROL
19 OF 19	C19	SECTIONS

ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD | DATE | BY | REVISIONS | ACC'D | DATE
Contractor ______
Inspector ______
Date Completed ______

BENCH MARK
RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL:
REGISTERED PROFESSIONAL ENGINEER
JOHN M. BRUDIN
No. 41836
CIVIL
STATE OF CALIFORNIA

Designed By | Drawn By | Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE Date ______
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ______ DATE: ______
NINO ABAD, SENIOR CIVIL ENGINEER
ACCEPTED BY: ______ DATE: ______
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS
OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
TITLE SHEET

Drawing No.
C 01

WORK TO BE DONE / BID ITEMS

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
P.	PROTECT IN PLACE	–	–
1.	CONSTRUCT TYPE "A-6" CURB AND GUTTER PER CITY OF TEMECULA STD. DWG. No. 200	1,455	LF
2.	CONSTRUCT 6' SIDEWALK PER CITY OF TEMECULA STD. DWG. No. 401	12,515	SF
3.	CONSTRUCT ADA ACCESS RAMP WITH TRUNCATED DOMES PER CITY OF TEMECULA STD. DWG. No. 402	4	EA
4.	CONSTRUCT CONCRETE CROSS GUTTER PER CITY OF TEMECULA STD. DWG. No. 211	1,205	SF
5.	CONSTRUCT RETAINING CURB PER DETAIL 5 ON SHEET 4	67	LF
6.	CONSTRUCT COMMERCIAL DRIVEWAY APPROACH PER CITY OF TEMECULA STD. DWG. No. 207A	4,465	SF
7.	CONSTRUCT 0.15' RHMA OVER 0.45' HMA OVER 0.67' CAB	–	–
7.1.	0.15' RHMA	632	TON
7.2.	0.45' HMA	1,896	TON
7.3.	0.67' CAB	2,822	TON
8.	CONSTRUCT RETAINING WALL PER CALTRANS STD PLAN B3-7B TYPE 6B (6' MAX)	55	LF
9.	SAWCUT AND REMOVE AC PAVEMENT	300	LF
10.	REMOVE CONCRETE C&G.	1,615	LF
11.	RELOCATE OR ADJUST TO GRADE UTILITY BY OTHERS	23	EA
12.	REMOVE TREE	18	EA
13.	REMOVE TRAFFIC SIGNS	10	EA
14.	RELOCATE TRAFFIC SIGNAL EQUIPMENT. SEE TRAFFIC SIGNAL PLAN	10	EA
15.	REMOVE EXISTING STREET LIGHTS TO BE SALVAGE AND PROVIDE TO THE CITY OF TEMECULA	5	EA
16.	REMOVE RETAINING CURB / CONCRETE WALL	150	LF
17.	REMOVE EXISTING BOLLARD	4	EA
18.	REMOVE CONCRETE SIDEWALK	1,310	SF
19.	REMOVE CURB RAMP	4	EA
20.	REMOVE CROSS GUTTER	730	SF
21.	REMOVE DRIVEWAY APPROACH	2,480	SF
22.	REMOVE CURB	310	LF
23.	REMOVE RIBBON GUTTER	30	LF
24.	REMOVE AND RELOCATE MONUMENT SIGN	4	EA
25.	CONSTRUCT TREE WELL PER CITY OF TEMECULA STD. DWG. NO. 903 AND UPTOWN SPECIFIC PLAN.	38	EA
26.	INSTALL 4"X16" CONCRETE PAVERS PER CITY OF TEMECULA STD. DWG. NO. 934 AND UPTOWN SPECIFIC PLAN.	930	SF
27.	CONSTRUCT STAMPED ASPHALT CROSS WALK WITH 8" WIDE WHITE BORDER PER UPTOWN SPECIFIC PLAN.	1,250	SF
28.	GRIND AND OVERLAY EXISTING PAVEMENT PER DETAIL ON SHEET 4	7,630	SF
29.	CONSTRUCT UNDER SIDEWALK DRAIN PIPE PER CITY OF TEMECULA STD. DWG. 303	1	EA
29A.	CONSTRUCT TYPE D-6 CURB PER CITY OF TEMECULA STD. DWG. 204A	12	LF
29B.	TRENCH REPAIR PER CITY OF TEMECULA STD. DWG. NO. 407	1,825	SF

STORM DRAIN CONSTRUCTION NOTES:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
30.	CONSTRUCT 18" RCP (2000-D)	85	LF
31.	CONSTRUCT 24" RCP (2000-D)	162	LF
32.	CONSTRUCT CATCH BASIN No. 1 PER RCFC STD NO. CB100	3	EA
33.	CONSTRUCT LOCAL DEPRESSION No2. PER RCFCD STD DWG NO. LD201, CASE B	3	EA
34.	CONSTRUCT JUNCTION STRUCTURE No. 6 PER RCFC STD. No. JS231	1	EA
35.	CONSTRUCT JUNCTION STRUCTURE No. 6 PER RCFC STD. No. JS231	1	EA

SIGNING AND STRIPING CONSTRUCTION NOTES:

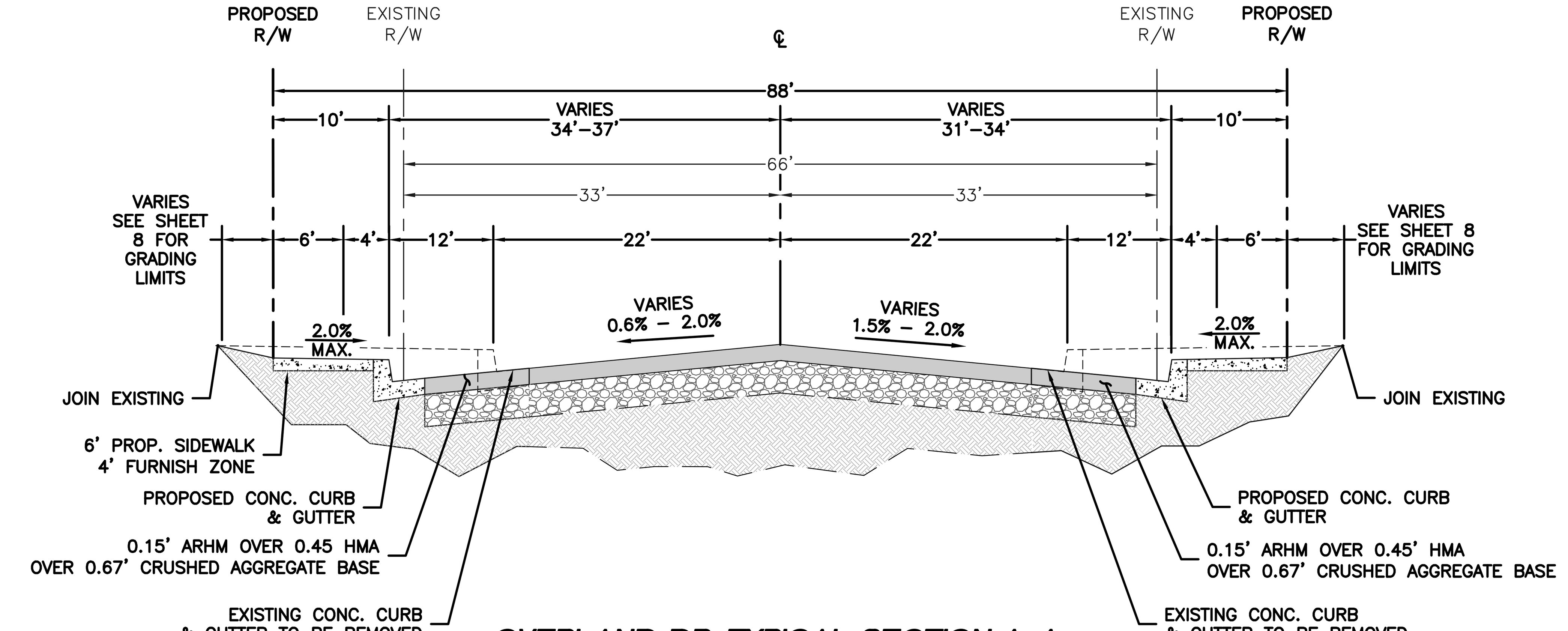
ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
1	PAINT 6" WHITE LANE PER DETAIL 12, CALTRANS STD. PLAN A20A.	1,570	LF
2	PAINT 6" SOLID WHITE LANE LEAD LINE EXTENSIONS.	200	LF
3	INSTALL 12" WIDE SOLID WHITE THERMOPLASTIC CROSSWALK OR LIMIT LINE PER CALTRANS STD. PLAN A24E.	670	LF
4	INSTALL THERMOPLASTIC TYPE IV LEFT ARROW PER CALTRANS STD. A24A.	195	SF
5	INSTALL THERMOPLASTIC PAVEMENT MARKING PER CALTRANS STD. PLAN A24C & A24D. AS NOTED ON THE PLAN.	320	SF
6	INSTALL THERMOPLASTIC 8" WHITE CHANNELIZING LANE LINE PER DETAIL 38 CALTRANS STD. PLAN A20D.	595	LF
7	PAINT 6" YELLOW NO PASSING ZONES-TWO DIRECTION PER DETAIL 22 CALTRANS STD. PLAN A20D.	745	LF
8	INSTALL SIGN R7-9A ON STREET LIGHT POLE EVERY 60' OR PER PLAN.	20	LF
9	PAINT 6" SOLID WHITE BIKE LANE PER DETAIL 39 CALTRANS STD. PLAN A20D.	1,305	LF
10	PAINT 6" WHITE BIKE LANE PER DETAIL 39A CALTRANS STD. PLAN A20D.	300	LF
11	INSTALL PRE-MARK THERMOPLASTIC WHITE LETTERING WITH GREEN BACKGROUND PER DETAIL "A" HEREON.	2	EA
12	PAINT 6" YELLOW TWO-WAY LEFT TURN LANES PER DETAIL 32 CALTRANS STD. PLAN A20B.	375	LF
13	INSTALL W3-3 SIGN.	2	EA
14	INSTALL SIGN AND POLE R7-9A PER PLAN.	1	EA
RM	REMOVE ALL EXISTING CONFLICTING TRAFFIC STRIPING, MARKING OR PAVEMENT ARROWS AS NOTED, INCLUDING RAISED PAVEMENT MARKERS (EXCEPT WHERE INDICATED). AREAS THAT ARE TO BE SLURRY SEALED SHALL BE GROUNDED OUT.	1	LS

STREET LIGHT CONSTRUCTION NOTES:

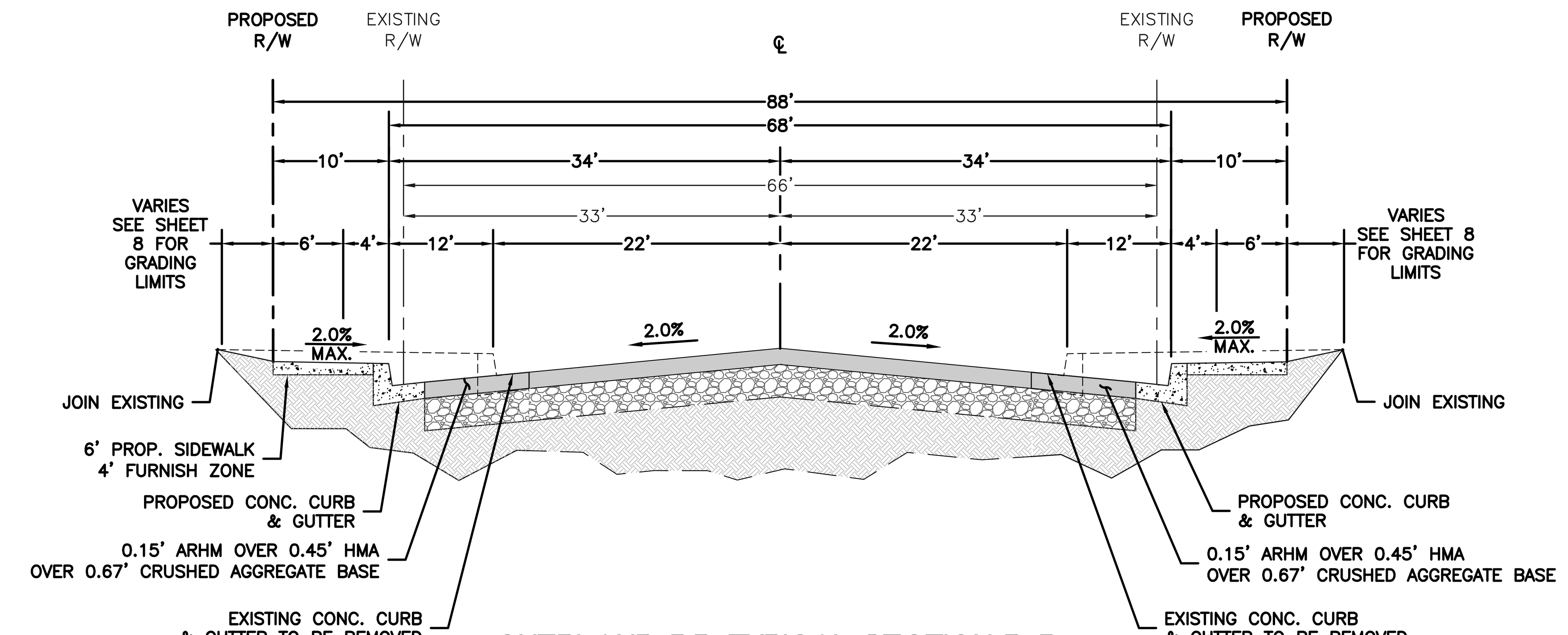
ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
1	INSTALL DECORATIVE PEDESTRIAN LED LIGHT WITH BANNER, 84 LEDS, 94 WATTS, 120 VOLT PER CITY STANDARD NO. 800 AND DETAIL ON SHEET 12. – MANUFACTURE: STERNBERG LIGHTING. – PRODUCT NUMBER: 1521LED-R-6ARC40T2-MDL03-SV2/OBSPM/ 7715P5-.250/BCC4/DBA/DBT – FOUNDATION PER CITY STANDARD NO. 801	13	EA
1A	INSTALL DECORATIVE VEHICULAR AND PEDESTRIAN LED LIGHT WITH BANNER, 140 LEDS/84 LEDS, 158 WATTS/94 WATTS, 240 VOLT PER CITY STANDARD NO. 800 AND DETAIL ON SHEET 12. – MANUFACTURE: STERNBERG LIGHTING. PRODUCT NUMBER: 1A-1527LED-R-10ARC40T2-MDL03-SV2-EZ / OBPM 1AM-1521LED-R-6ARC40T2-MDL03-SV2-EZ / OBMO /9720ARSS /DBA / BCC4 / DBT – FOUNDATION PER CITY STANDARD NO. 801	7	EA
2	INSTALL #3 1/2 PULL BOX PER CITY STANDARD NO. 802 AND CALTRANS STANDARD DWG. ES-8A.	20	EA
3	INSTALL PHOTOELECTRIC UNIT FOR LIGHTING PER CITY STANDARD NO. 800	1	EA
4	INSTALL 2" CONDUIT SCH 80 PVC -(2) XHHW-2#8 & 1#10G. BURRY 18" MIN. BELOW GRADE.	1,078	LF
5	INSTALL 2" CONDUIT SCH 80 PVC-(4) XHHW-2#8 & 1#10G. BURRY 36" MIN. BELOW GRADE.	30	LF
6	INSTALL 2" CONDUIT SCH 80 PVC, XHHW-2#8, 1#8G WITH PULL ROPE. BURY 18" BELOW GRADE.	5	LF
7	EXISTING TYPE III-CF 120/240V METER SERVICE PEDESTAL, MODIFY PER TRAFFIC SIGNAL PLAN.	–	–
8	INSTALL #5E PULL BOX PER CITY STANDARD NO. 802 AND CALTRANS STANDARD DWG. ES-8A.	1	EA
9	PROPOSED SERVICE CABINET, PER TRAFFIC SIGNAL PLAN.	–	–

FIBER OPTIC COMMUNICATION CONSTRUCTION NOTES:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
10	INSTALL 3" SCH. 80 PVC CONDUIT WITH TRACER WIRE AND MULE TAPE. CONDUIT SWEEPS SHALL BE 45°	950	LF
11	FURNISH AND INSTALL FIBER OPTIC SPLICE ENCLOSURE IN "DOUBLE-STACKED" #6 CONCRETE PULL BOX WITH FIBERLYTE PULL BOX COVER. A MINIMUM OF 100 FOOT OF SLACK IS REQUIRED.	2	EA
12	FURNISH AND INSTALL "DOUBLE-STACKED" #6 CONCRETE PULL BOX WITH FIBERLYTE PULL BOX COVER. A MINIMUM OF 50 FOOT OF SLACK SHALL BE PROVIDED.	3	EA
13	FURNISH AND INSTALL A 12-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK IN CONTROLLER CABINET.	85	LF
14	FURNISH AND INSTALL A 24-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK IN CONTROLLER CABINET.	20	LF
15	FURNISH AND INSTALL A 72-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK IN CONTROLLER CABINET. BURRY 36" MIN. BELOW GRADE.	825	LF
16	FURNISH AND INSTALL FIBER OPTIC JUMPER (2M DUPLEX LC TO SC) IN CONTROLLER CABINET.	1	LS
17	FIBER DISTRIBUTION UNIT (FDU) WITH SC 6 PORT PANEL IN CONTROLLER CABINET FROM EXISTING CABINET TO NEW CABINET.	1	LS
RC / CC	EQUIPMENT OR MATERIAL TO BE SALVAGED AND PROVIDED TO THE CITY OF TEMECULA. CONNECT NEW CONDUIT TO EXISTING CONDUIT.	1	LS



OVERLAND DR. TYPICAL SECTION A-A
STA 21+96.47 TO STA 25+00.00
N.T.S.



OVERLAND DR. TYPICAL SECTION B-B
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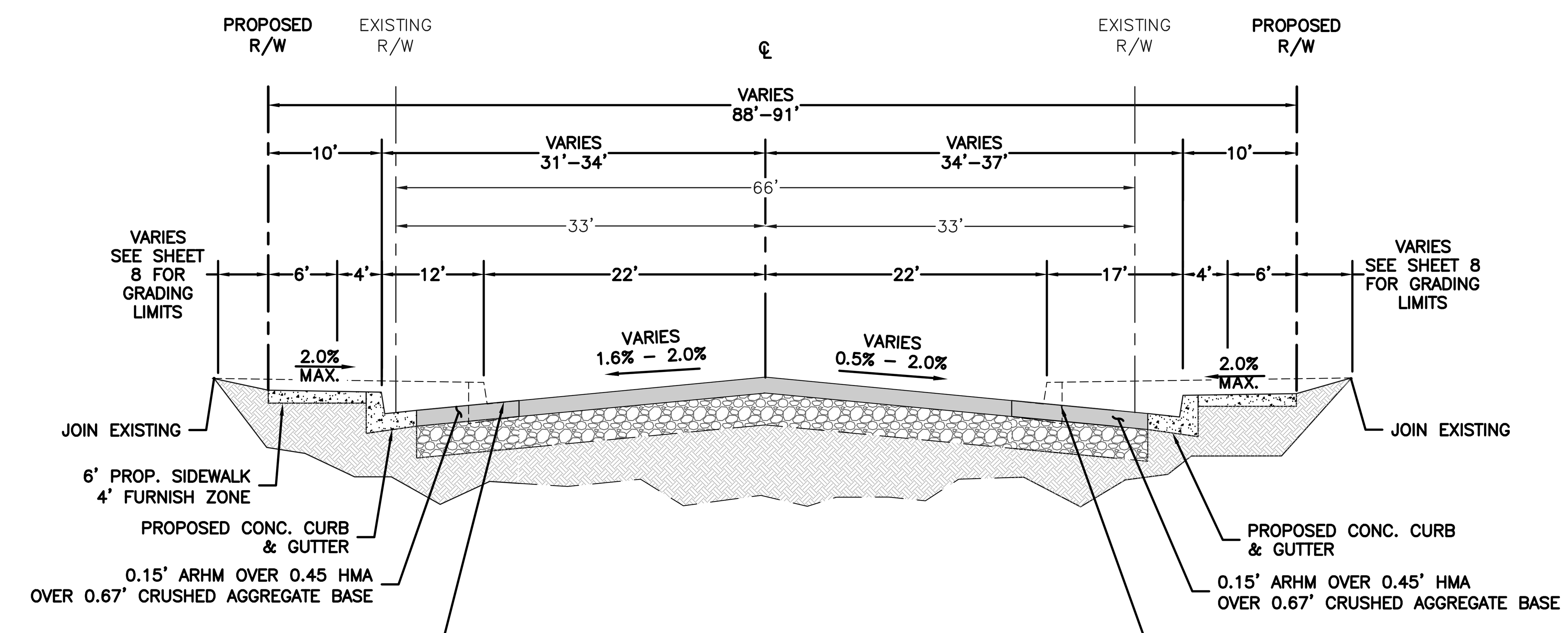
N.T.S.



OVERLAND DR. TYPICAL SECTION C-C
STA 29+17.86 TO STA 30+57.28
N.T.S.

LEGEND:

PCC IMPROVEMENTS

PROPOSED ASPHALT

Underground Service Alert
Call: TOLL FREE
1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

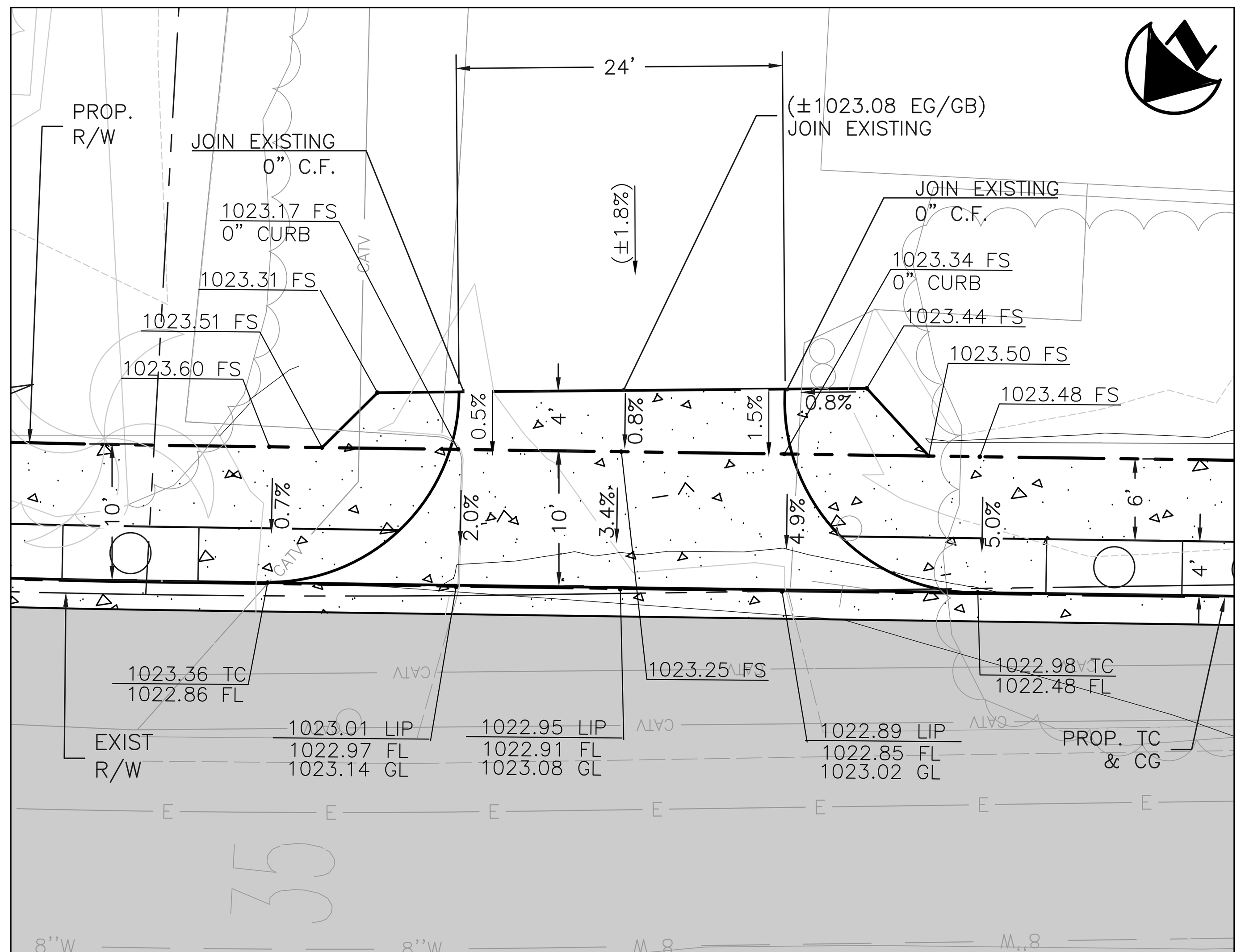
Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 — Expires 03-31-24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER — DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER — DATE:
R.C.E. No. 44223 — Expires: 06-30-2023

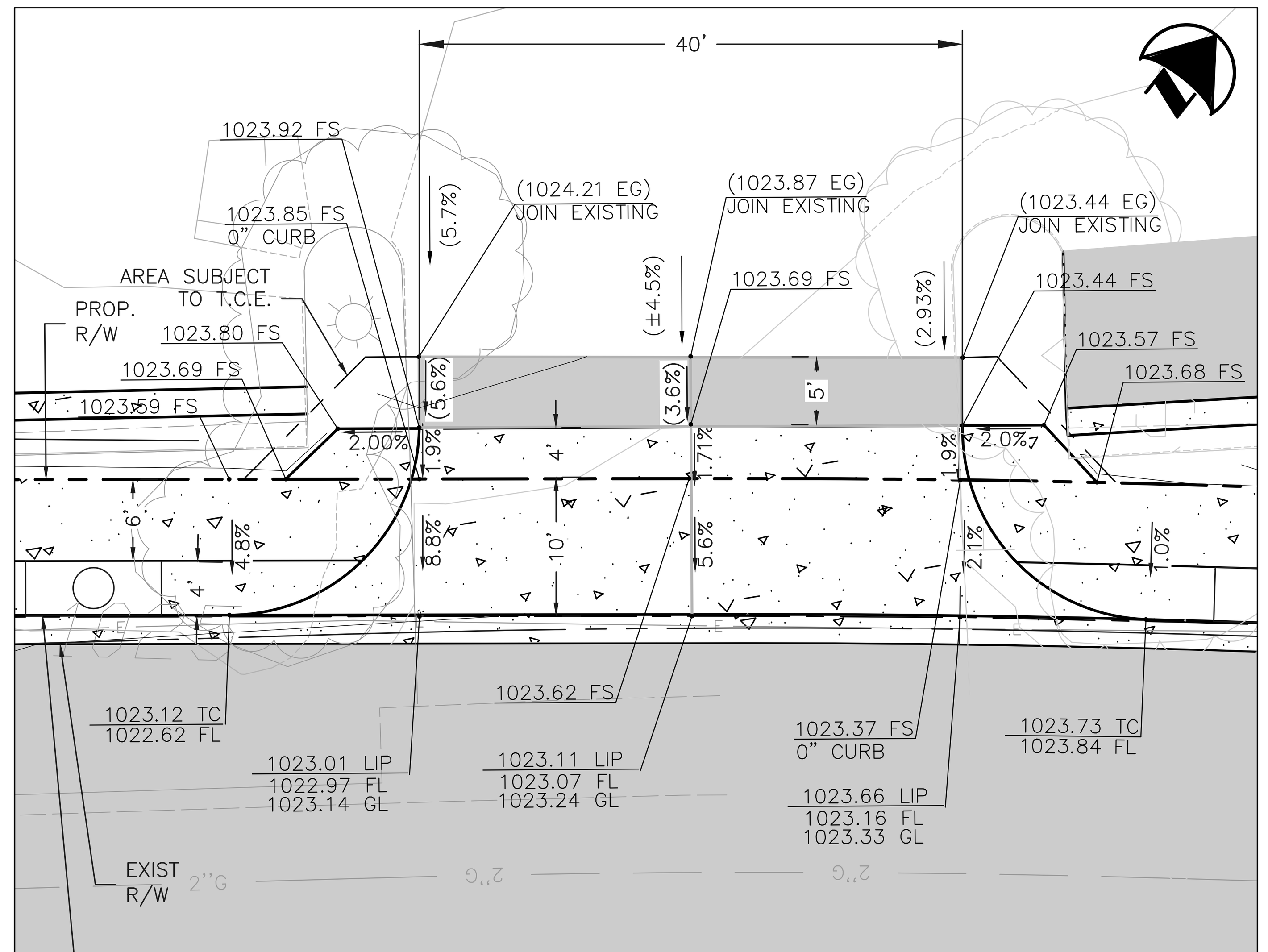
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
GENERAL NOTES AND TYPICAL SECTIONS

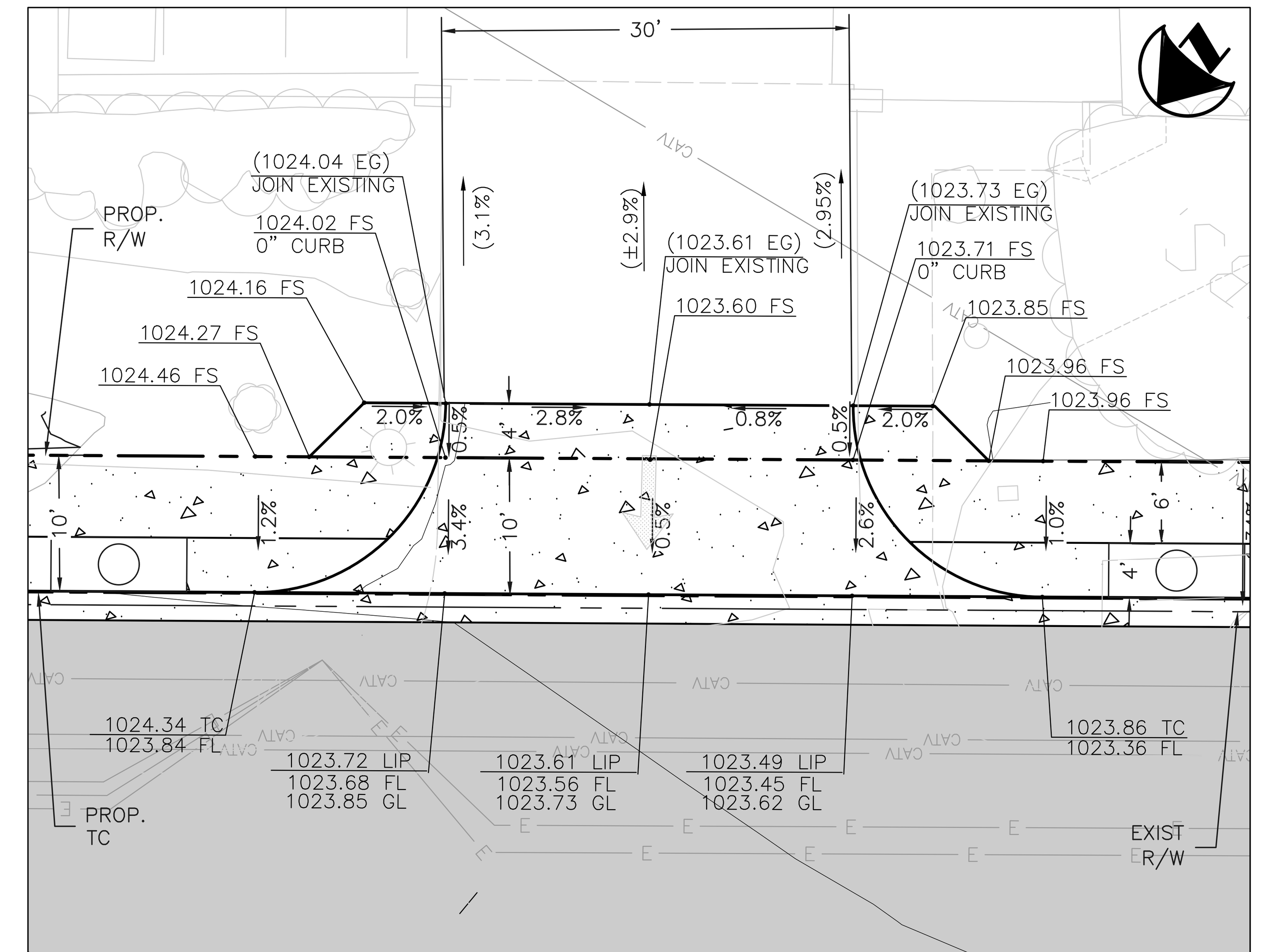
Drawing No. C 02



DRIVEWAY "A"
STA 22+96.73 D/W ℄



DRIVEWAY "B"
STA 23+27.45 D/W ℄



DRIVEWAY "C"
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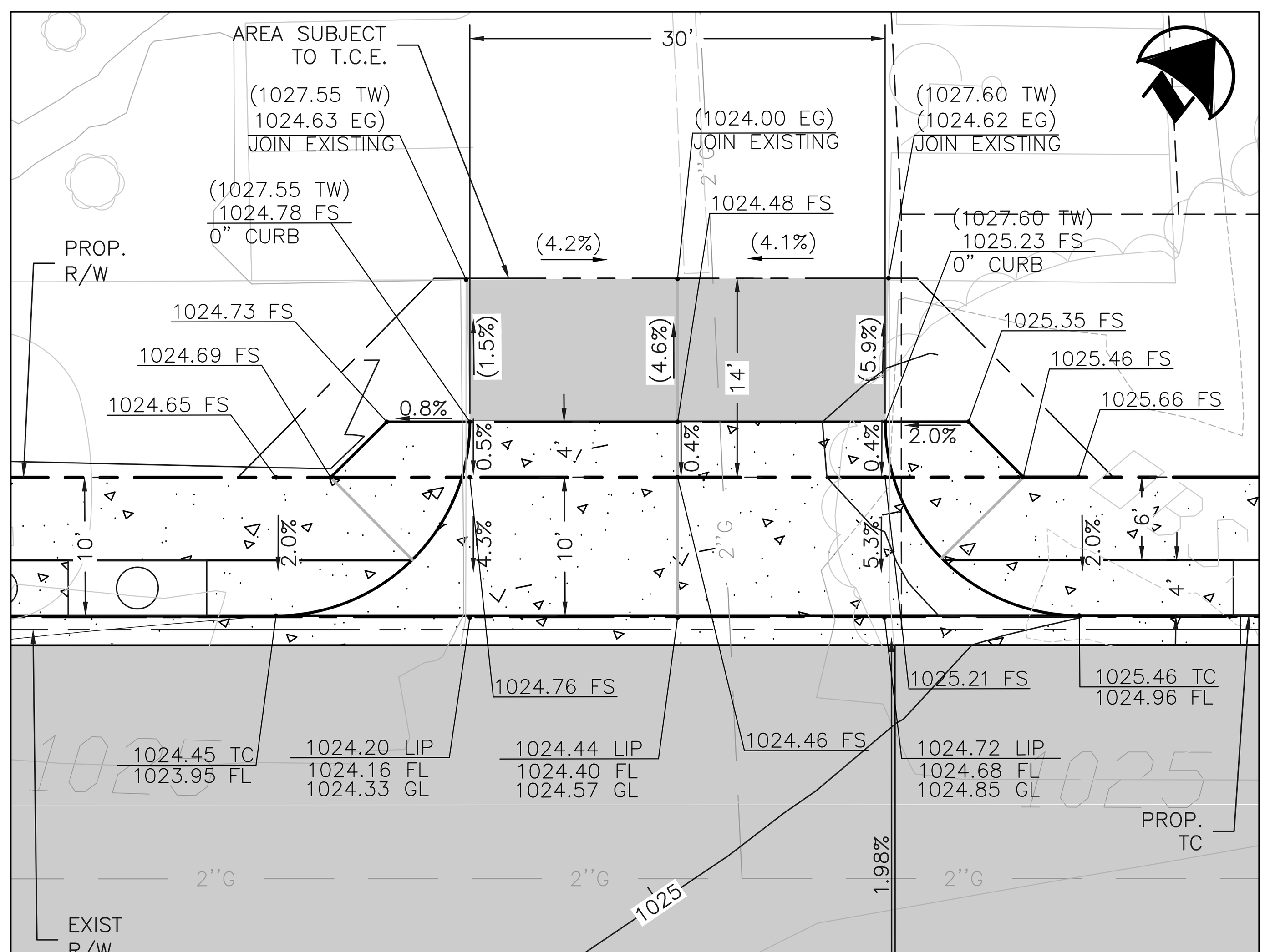
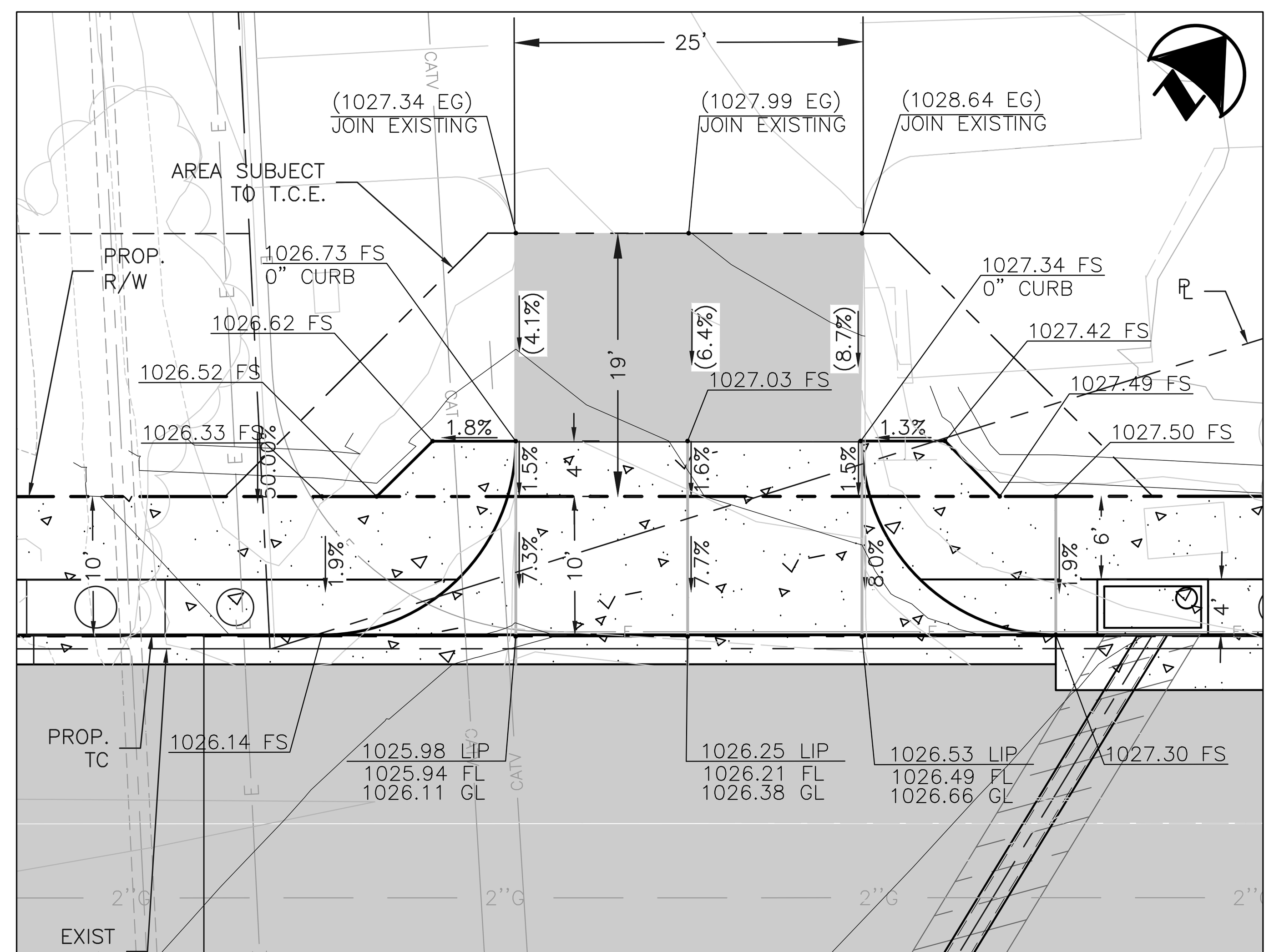
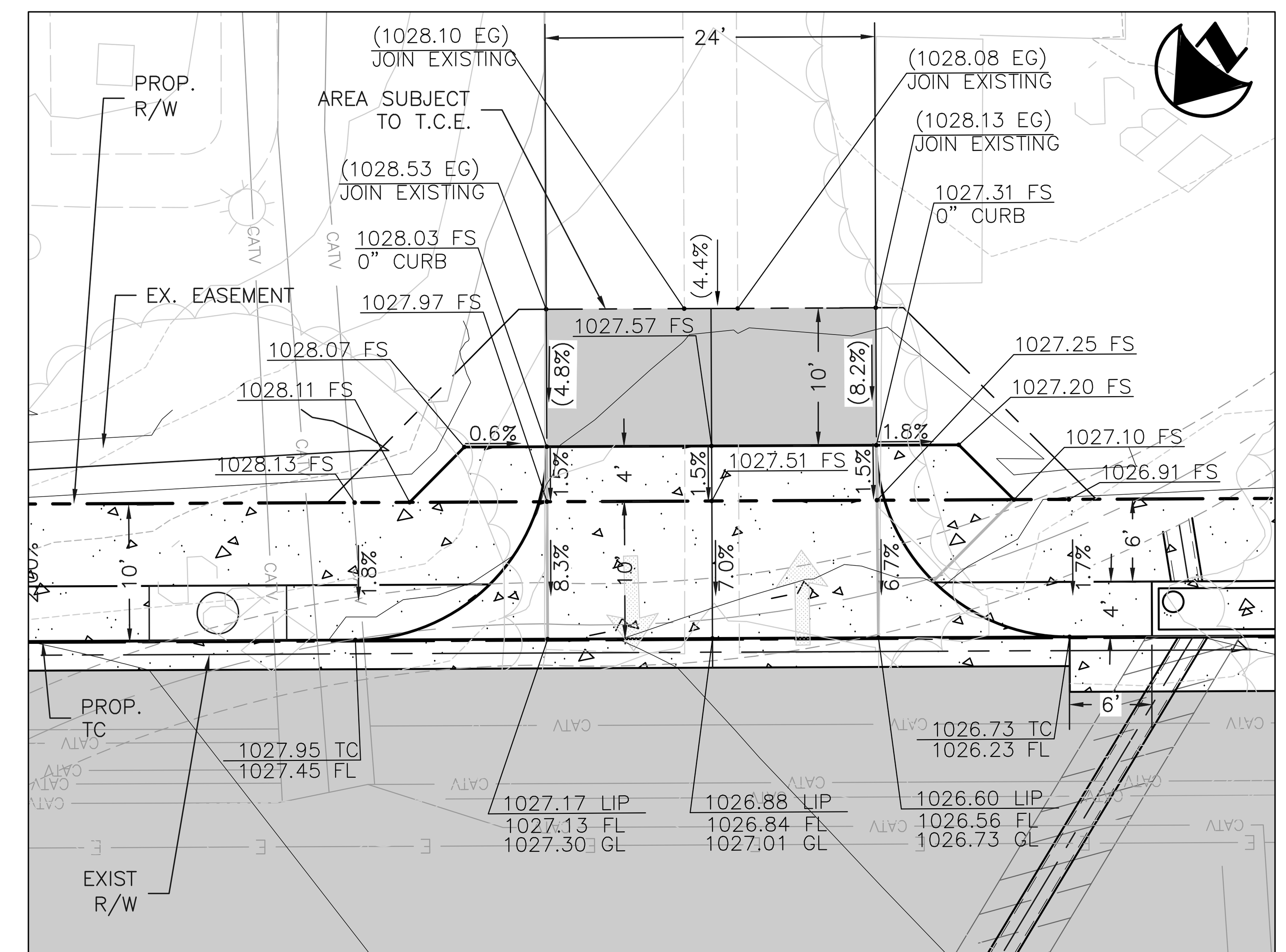


DRIVEWAY "D"
STA 24+84.31 D/W ℄



DRIVEWAY "E"
STA 25+72.25 D/W ℄



DRIVEWAY "F"
STA 25+99.37 D/W ℄

Underground Service Alert

Call: TOLL FREE
1-800
422-4133

TWO WORKING DAYS BEFORE YOU DIG

LEGEND

PROPOSED CONCRETE

PROPOSED CONCRETE

0' 5' 10' 20' 30' 40'
GRAPHIC SCALE IN FEET
1" = 10'

Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER, JOHN M. BRUDIN, No. 41836, CIVIL, STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

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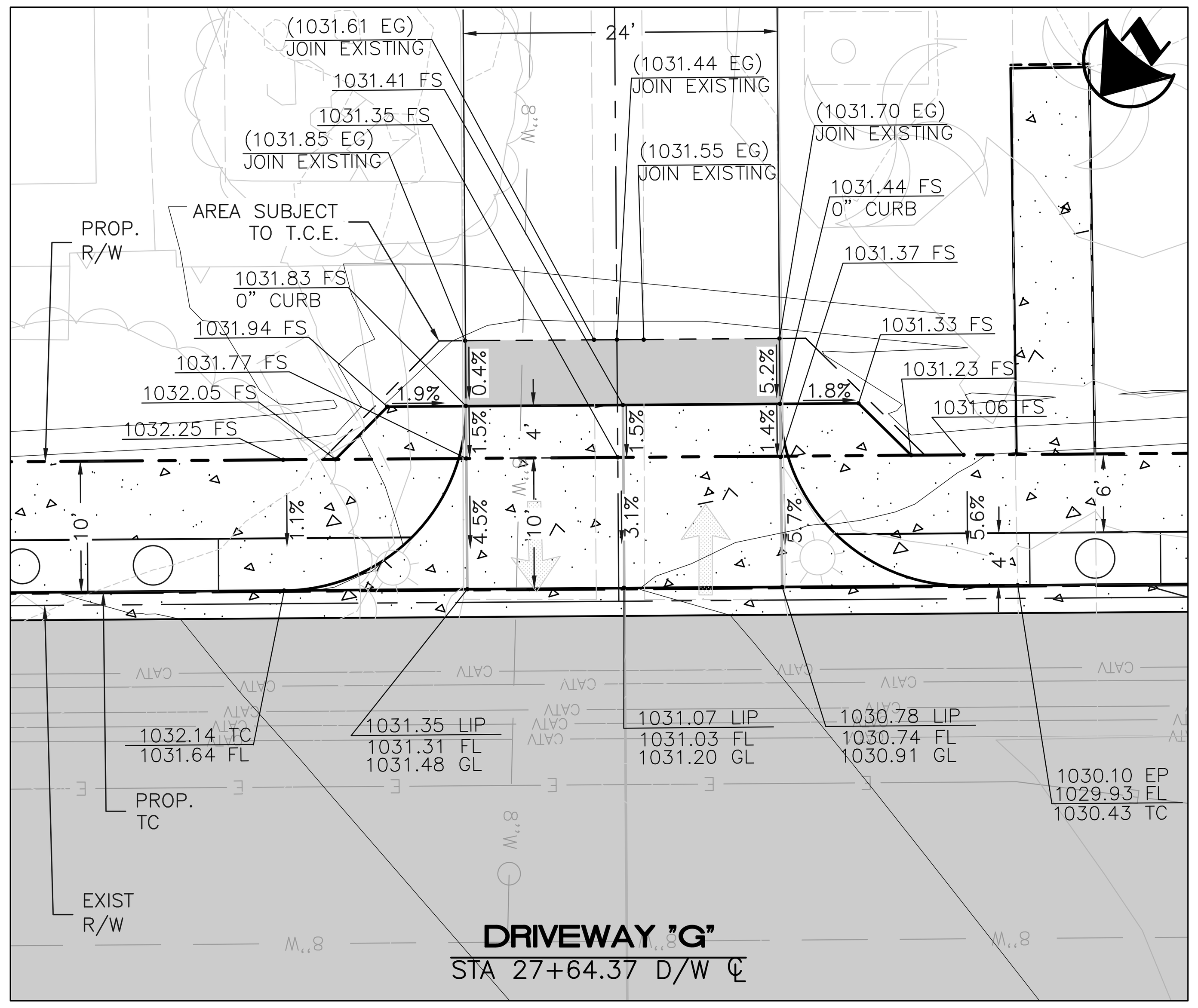
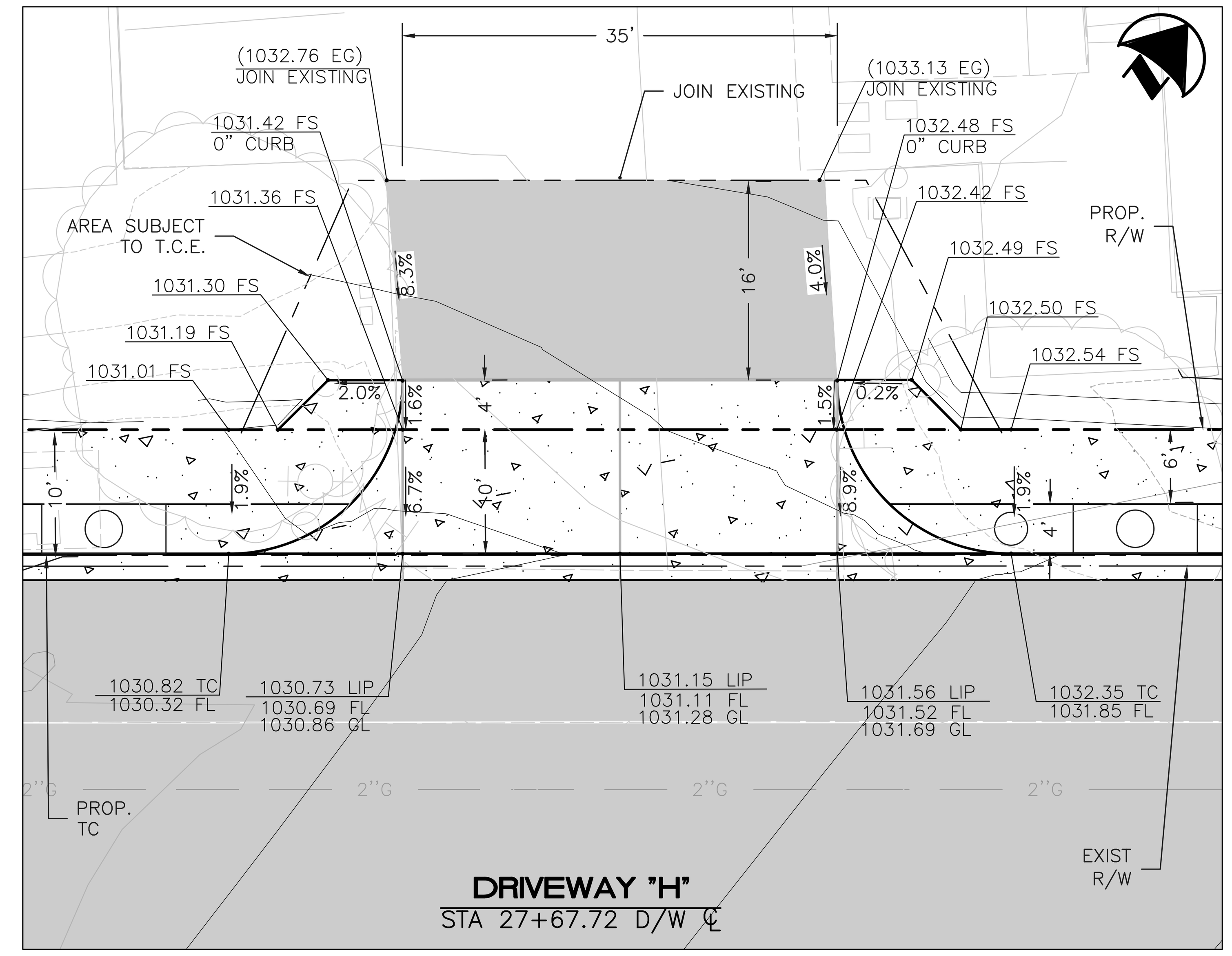
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

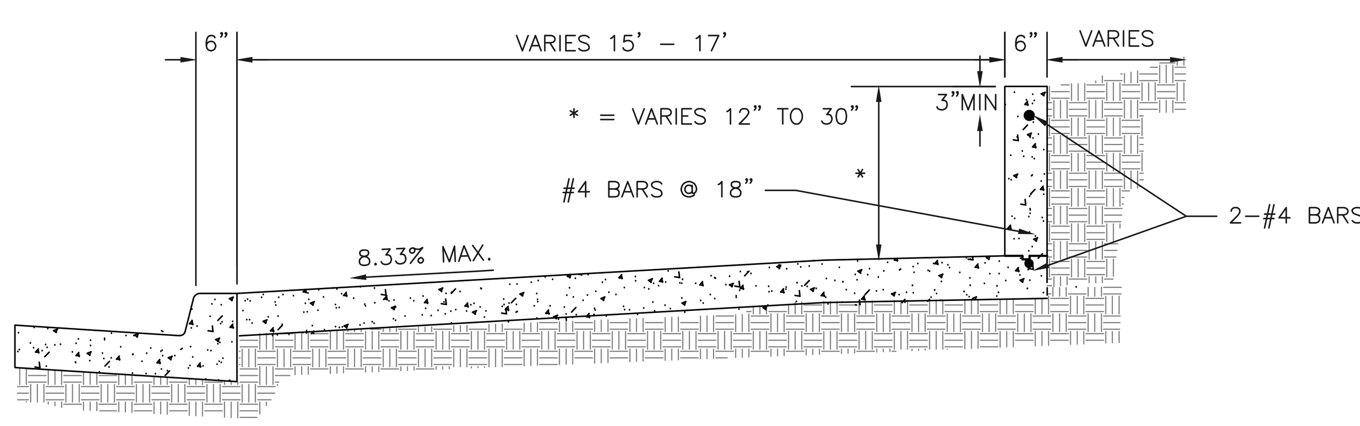
OVERLAND DRIVE
WIDENING
PROJECT NO. PW 20-11
DETAILS

Drawing No. C 03

Sheet 3 of 19

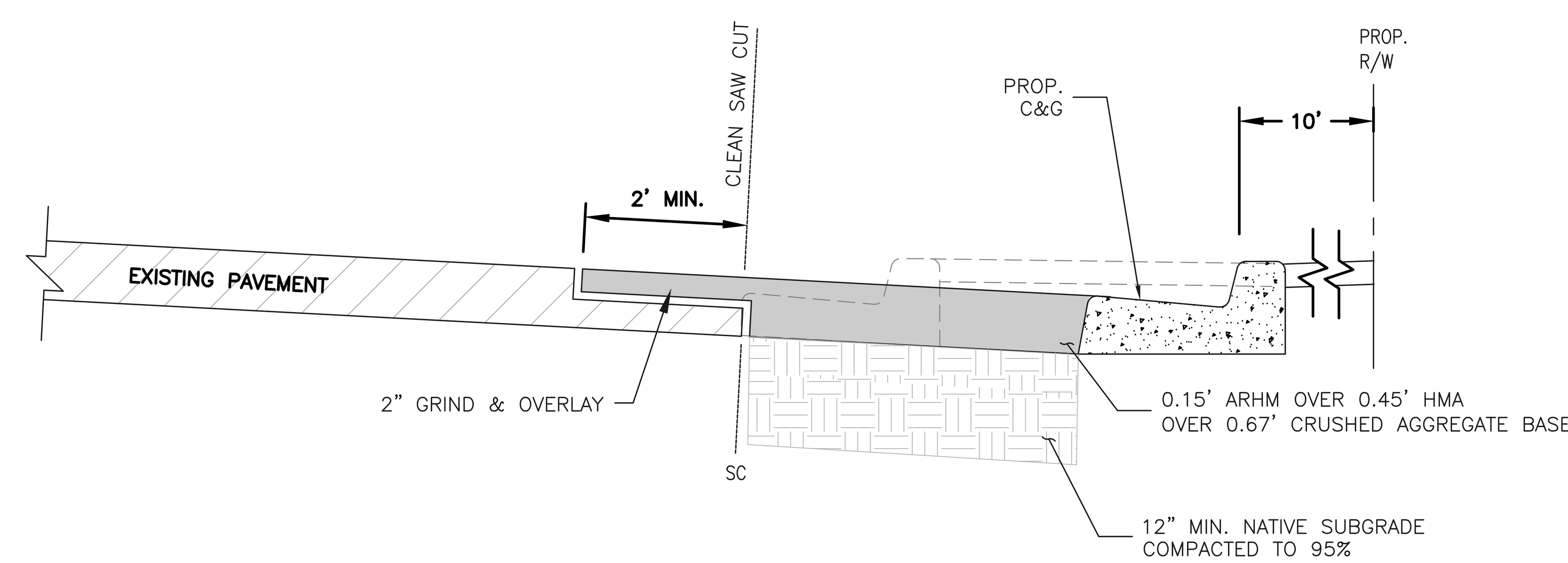






5 SHT C06 **RETAINING CURB DETAIL**

N.T.S.



SAWCUT - DETAIL "C"
N.T.S

LEGEND

PROPOSED CONCRETE

PROPOSED ASPHALT

Underground Service Alert

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422-4133

TWO WORKING DAYS BEFORE YOU DIG

0' 5' 10' 20' 30' 40'
GRAPHIC SCALE IN FEET
1" = 10'

ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							
Date Completed							Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE:

ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:

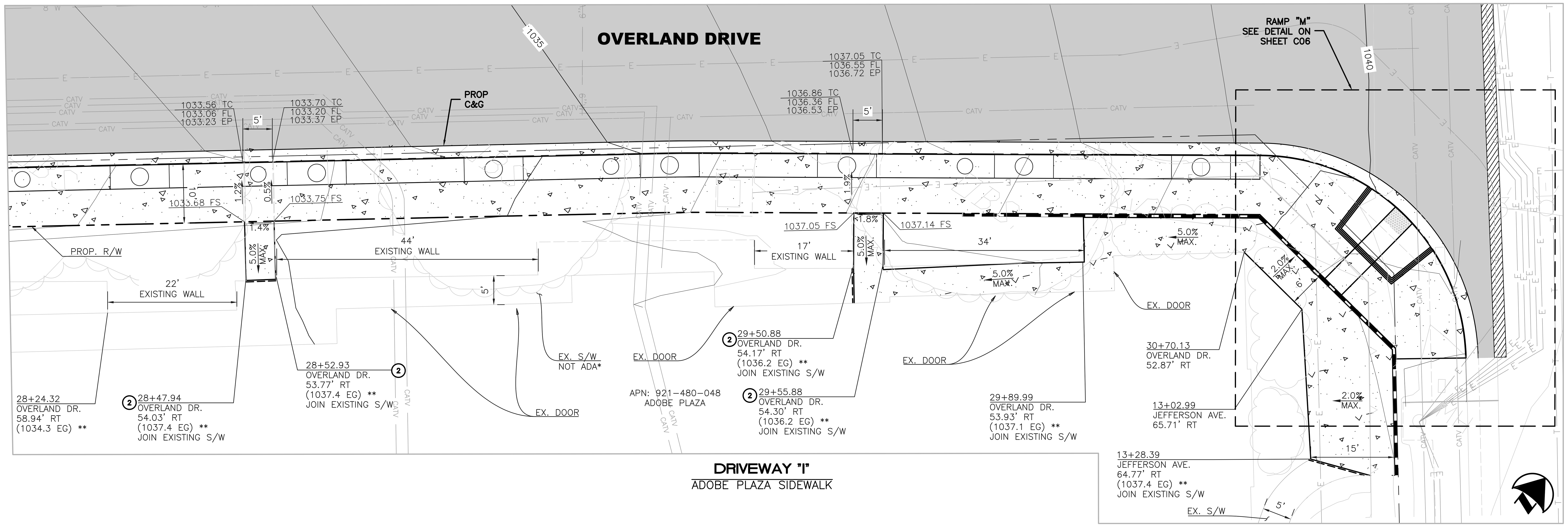
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE
WIDENING
PROJECT NO. PW 20-11
DETAILS

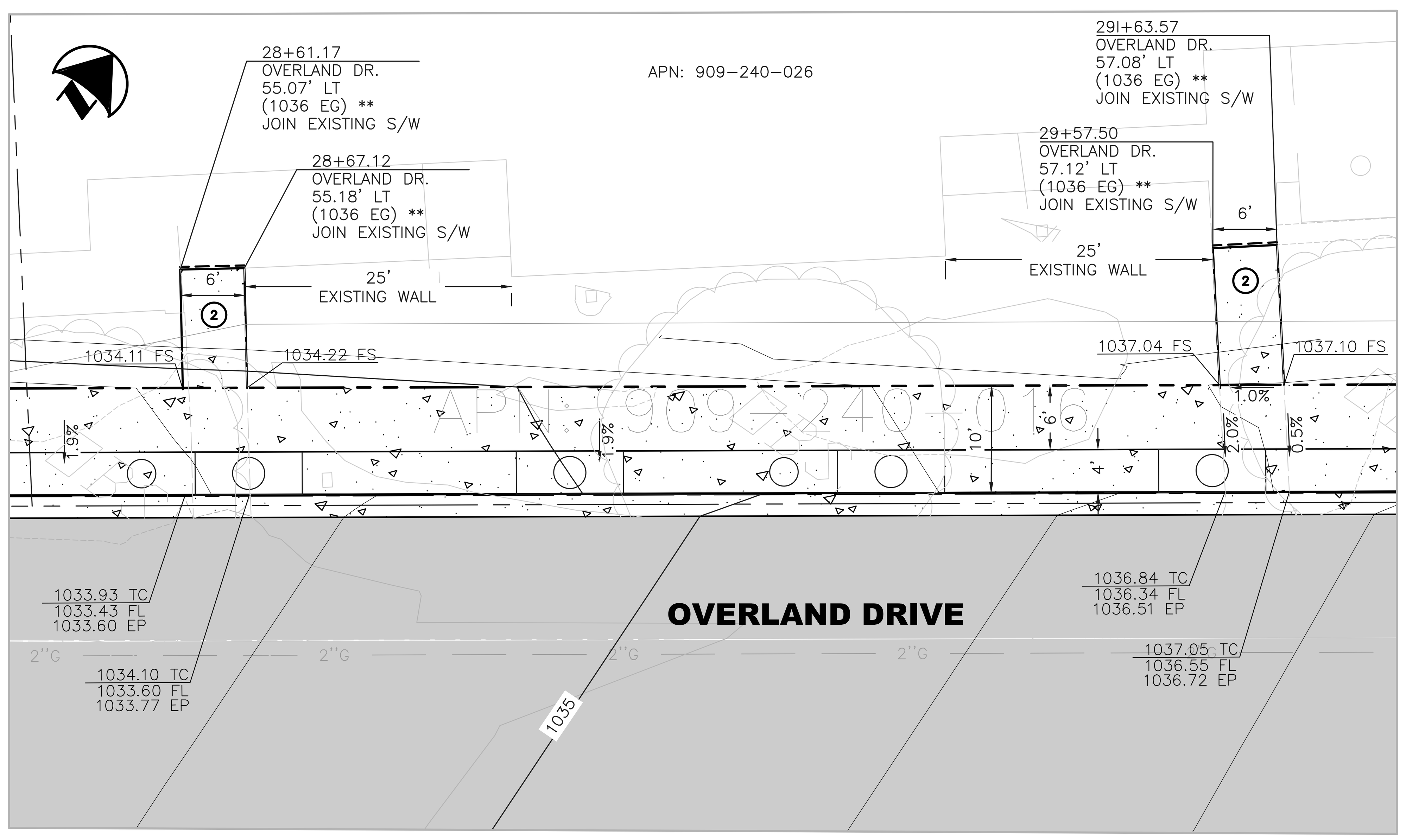
Drawing No. C 04

Sheet 4 of 19



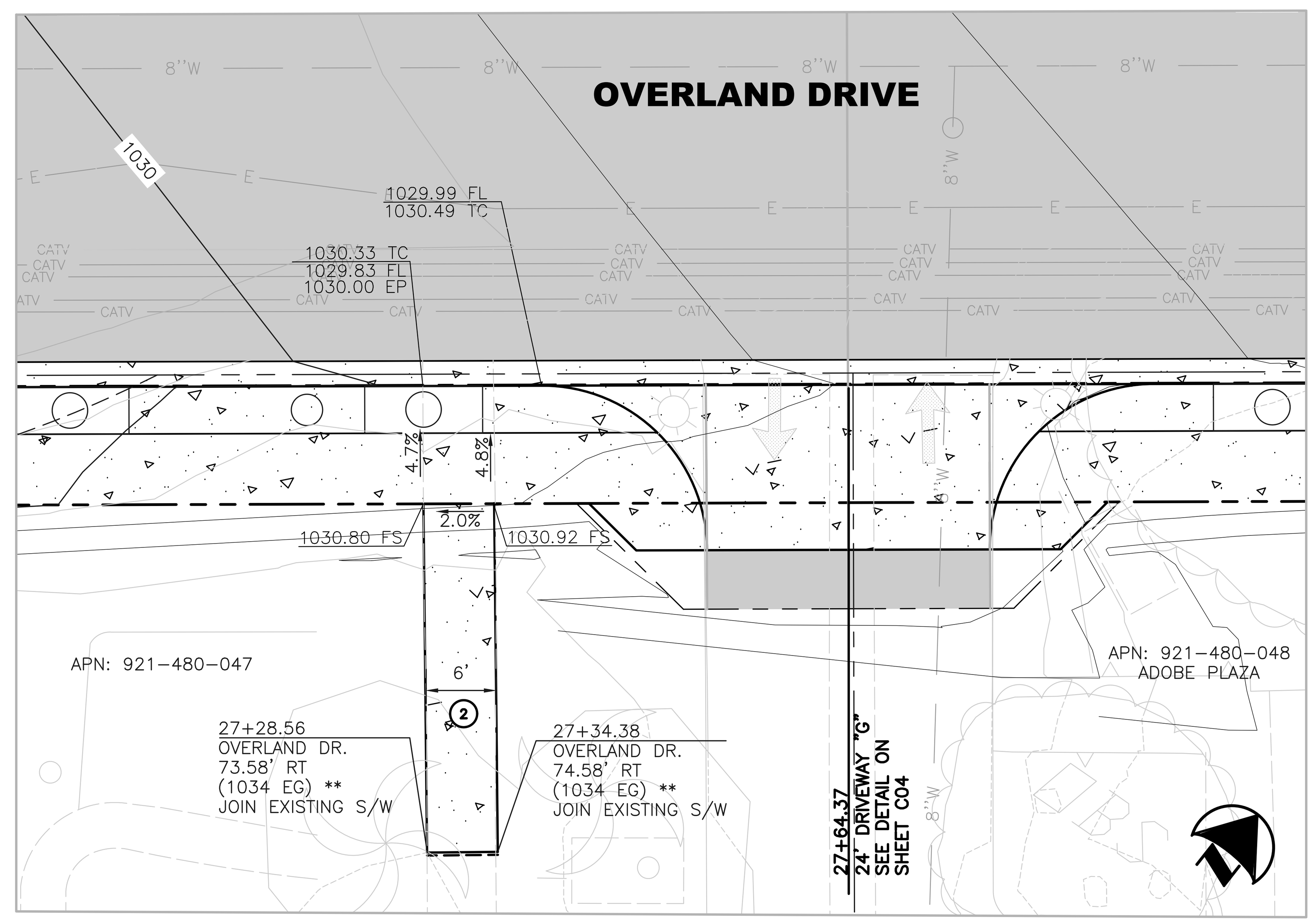
DRIVEWAY "I"

ADOBE PLAZA SIDEWALK



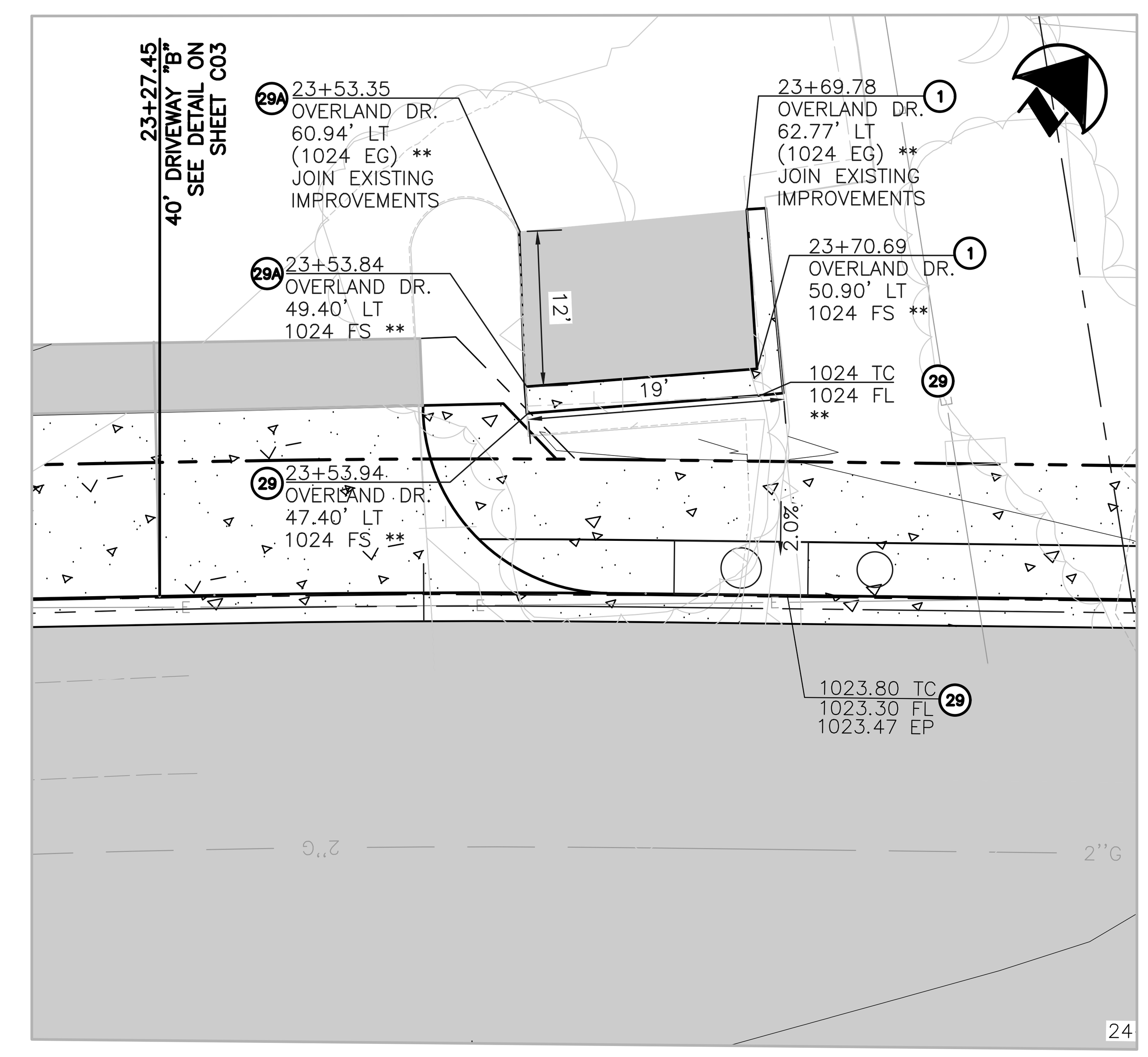
DRIVEWAY "J"

SIDEWALK



DRIVEWAY "K"

SIDEWALK



DRIVEWAY "L"

UNDER SIDEWALK

Underground Service Alert

Call: TOLL FREE
1-800
422-4133

TWO WORKING DAYS BEFORE YOU DIG

NOTE
** APPROXIMATELY ELEVATION TO BE CONFIRMED WITH ADDITIONAL SURVEY.

LEGEND

PROPOSED CONCRETE

PROPOSED ASPHALT

CONSTRUCTION NOTES:

1. CONSTRUCT TYPE "A-6" CURB AND GUTTER PER CITY OF TEMECULA STD. DWG. No. 200
2. CONSTRUCT 6' SIDEWALK PER CITY OF TEMECULA STD. DWG. No. 401
29. CONSTRUCT UNDER SIDEWALK DRAIN PIPE PER CITY OF TEMECULA STD. DWG. No. 303
29A. CONSTRUCT TYPE D-6 CURB PER CITY OF TEMECULA STD. DWG. No. 204A

0' 5' 10' 20' 30' 40'

GRAPHIC SCALE IN FEET
1" = 10'

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 — Expires 03-31-24

RECOMMENDED BY: ______ DATE: ______
NINO ABAD, SENIOR CIVIL ENGINEER

ACCEPTED BY: ______ DATE: ______
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

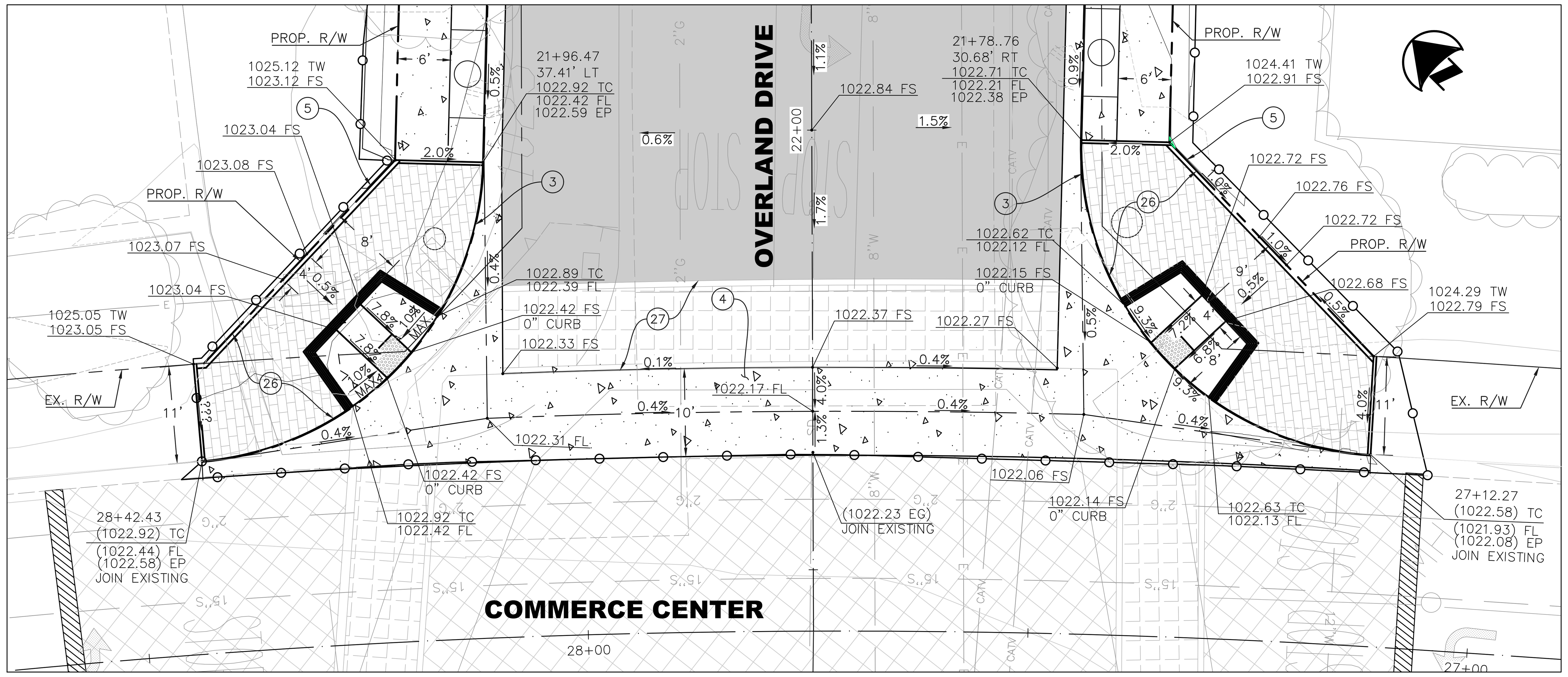
R.C.E. No. 44223 — Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

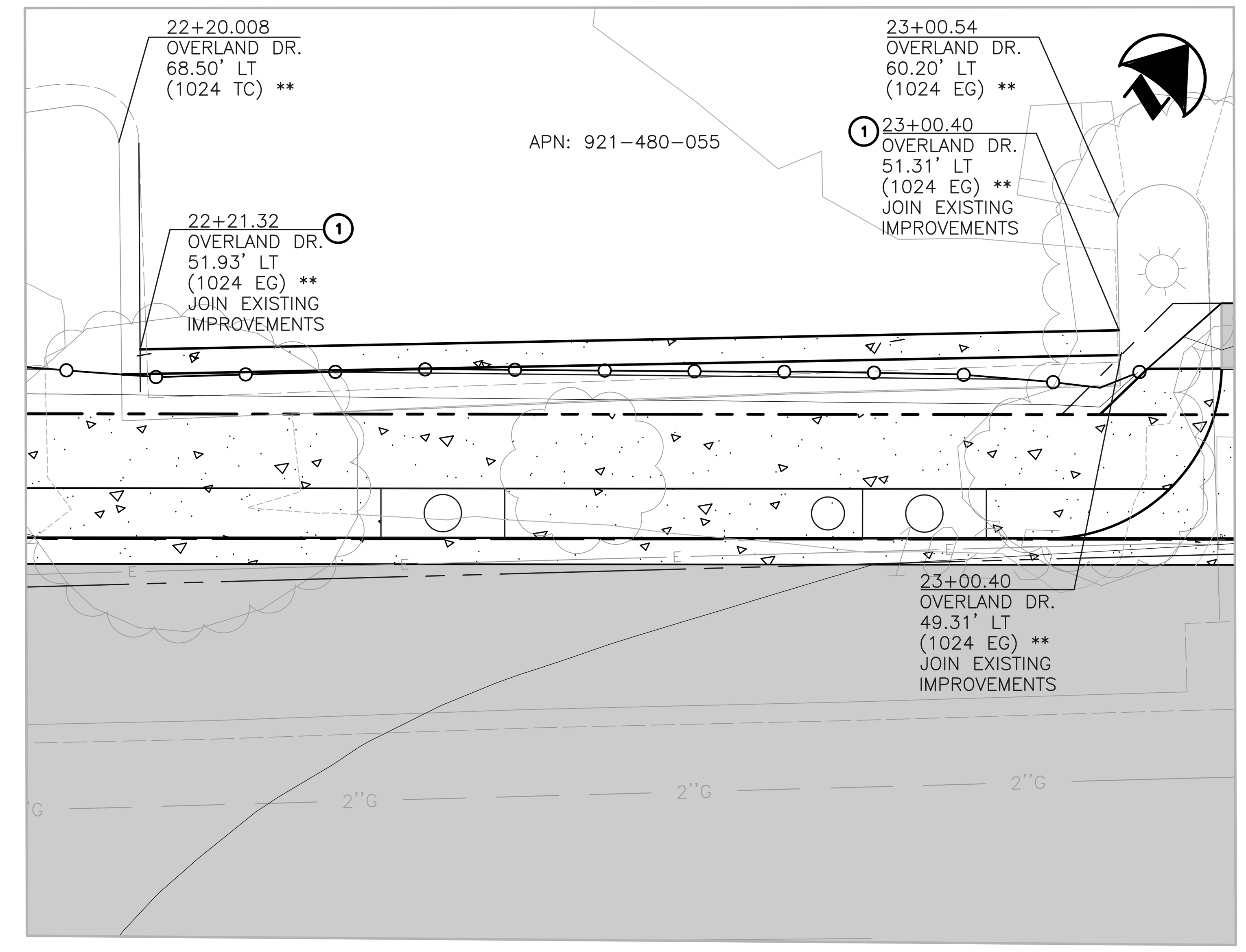
OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
DETAILS

Drawing No. C 05

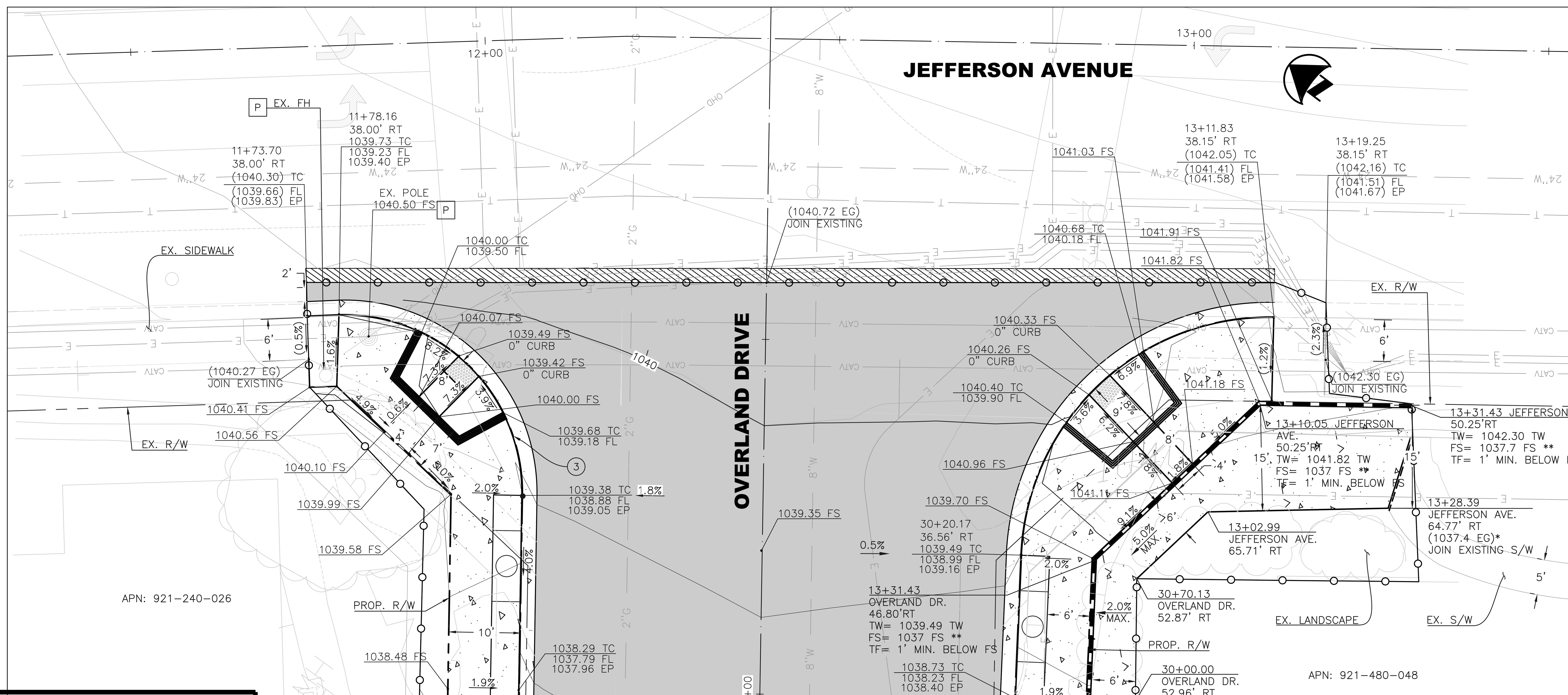
Sheet 5 of 19



DETAIL "M"
OVERLAND DRIVE AND COMMERCE CENTER



DRIVEWAY "O"
UNDER SIDEWALK



DETAIL "N"
OVERLAND DRIVE AND JEFFERSON AVENUE

CONSTRUCTION NOTES:

1. CONSTRUCT TYPE "A-6" CURB AND GUTTER PER CITY OF TEMECULA STD. DWG. No. 200
3. CONSTRUCT ADA ACCESS RAMP WITH TRUNCATED DOMES PER CITY OF TEMECULA STD. DWG. No. 402
4. CONCRETE CROSS GUTTER PER CITY OF TEMECULA STD. DWG. No. 211
5. CONSTRUCT RETAINING CURB PER DETAIL 5 ON SHEET 4
8. CONSTRUCT RETAINING WALL PER CALTRANS STD PLAN B3-7B TYPE 6B (6' MAX)
26. INSTALL 4"X16" CONCRETE PAVERS PER CITY OF TEMECULA STD. DWG. No. 934 AND UPTOWN SPECIFIC PLAN.
27. CONSTRUCT STAMPED ASPHALT CROSS WALK WITH 8" WIDE WHITE BORDER PER UPTOWN SPECIFIC PLAN.

LEGEND

- CONCRETE PAVERS
- GRADING LIMITS
- GRIND AND OVERLAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- SAWCUT
- STAMPED ASPHALT

NOTE
* EXISTING ELEVATION TO BE VERIFY IN THE FIELD PRIOR CONSTRUCTION. MAXIMUM SLOPES MUST NOT BE EXCEED.

** APPROXIMATELY ELEVATION TO BE CONFIRMED WITH ADDITIONAL SURVEY.

0' 5' 10' 20' 30' 40'
GRAPHIC SCALE IN FEET
1" = 10'

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TWO WORKING DAYS BEFORE YOU DIG

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE Date
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ____ DATE: ____
NINO ABAD, SENIOR CIVIL ENGINEER

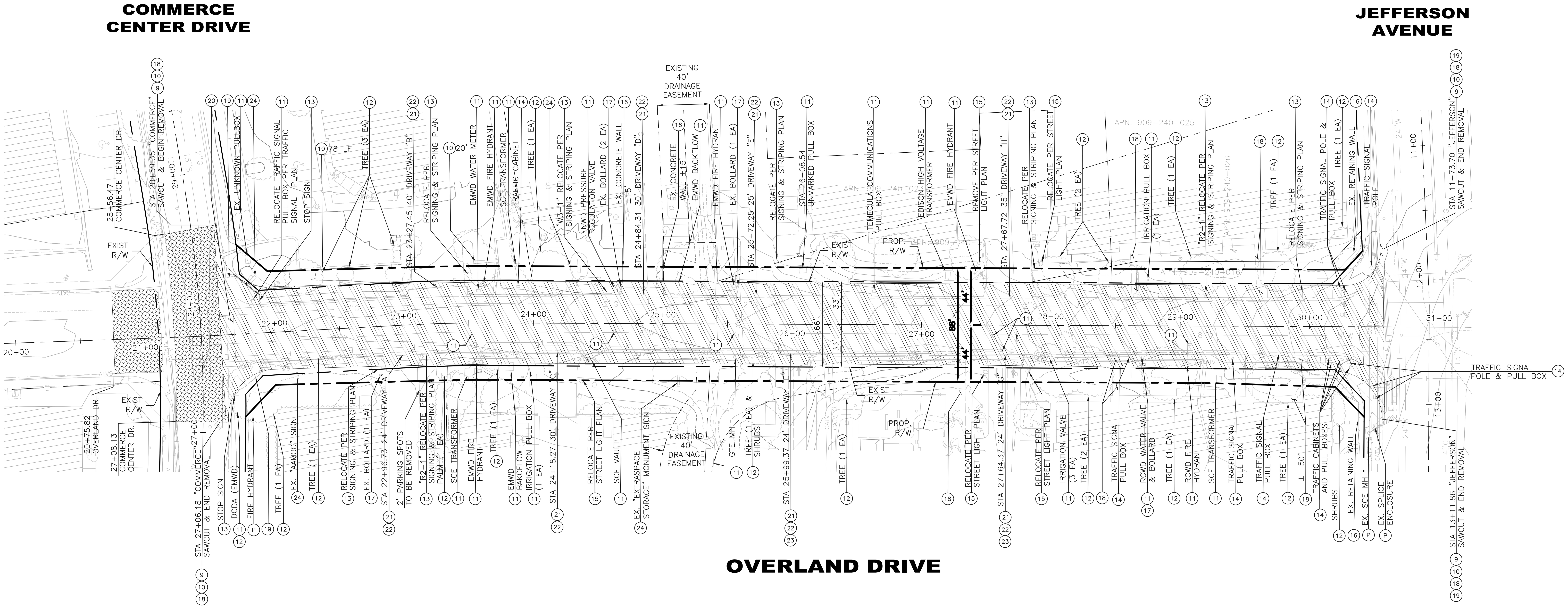
ACCEPTED BY: ____ DATE: ____
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
DETAILS

Drawing No. C 06

Sheet 6 of 19



GRADING GENERAL NOTES:

1. STANDARDS. ALL CONSTRUCTION AND GRADING RELATED ACTIVITIES (I.E., STOCKPILING, LAND CLEARING, EROSION & SEDIMENT CONTROL, ETC.) SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 18 OF THE CITY OF TEMECULA MUNICIPAL CODE, THE ENGINEERING AND CONSTRUCTION MANUAL, ALL APPLICABLE STANDARDS, THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE (APPENDIX J) AND, IF APPLICABLE, THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES.

2. DRAINAGE.

   a. AS APPLICABLE, PROVIDE CONCRETE BROW DITCHES TO CONVEY 0-YEAR STORM FLOWS OR PROVIDE GRADED BERMS ALONG THE TOP OF ALL GRADED SLOPES OVER THREE FEET IN VERTICAL HEIGHT OR THAT ARE ADJACENT TO GRADED AREAS, TO DIRECT SURFACE RUNOFF AWAY FROM THE TOP OF SLOPES. ALL DRAINAGE DEVICES SHALL BE CONSTRUCTED PER THE APPROVED PLANS.

   b. EXISTING DRAINAGE COURSES SHALL CONTINUE TO FUNCTION AT ALL TIMES. NO OBSTRUCTION OF FLOOD PLAINS OR NATURAL WATER COURSES SHALL BE PERMITTED.

   c. TEMPORARY DRAINAGE SHALL BE PROVIDED UNTIL PERMANENT DRAINAGE STRUCTURES ARE INSTALLED .PROTECTIVE MEASURES SHALL BE IMPLEMENTED TO PROTECT ADJOINING AND DOWNSTREAM PROPERTIES FROM SILT DEPOSITION AND PONDING WATER DURING CONSTRUCTION/GRADING OPERATIONS.

   d. APPROVED PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT ADJOINING PROPERTIES DURING THE GRADING PROJECT.

   e. DRAINAGE EASEMENTS SHALL BE KEPT CLEAR OF ALL OBSTRUCTIONS; NO BUILDING OR WALLS SHALL BE PLACED WITHIN THE LIMITS OF EASEMENTS.

   f. THE MINIMUM GRADE FOR CONCRETE SURFACE DRAINAGE FACILITIES SHALL BE A ONE-HALF PERCENT (0.5%).

3. PROPERTY CORNERS. ALL PROPERTY CORNERS SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION/GRADING ACTIVITY, AS DIRECTED BY THE CITY ENGINEER.

4. OTHER CONSTRUCTION NOTES. REFER TO SEPARATE NOTES FOR "PAVING," "GENERAL" AND "EROSION AND SEDIMENT CONTROL" REQUIREMENTS.

REMOVAL NOTES:

- (P) PROTECT IN PLACE
- (9) SAWCUT AND REMOVE AC PAVEMENT
- (10) REMOVE CONCRETE C&G.
- (11) RELOCATE OR ADJUST TO GRADE UTILITY BY OTHERS
- (12) REMOVE TREE/SHRUBS.
- (13) REMOVE TRAFFIC SIGNS
- (14) RELOCATE TRAFFIC SIGNAL EQUIPMENT. SEE TRAFFIC SIGNAL PLAN
- (15) REMOVE EXISTING STREET LIGHTS TO BE SALVAGE AND PROVIDE TO THE CITY OF TEMECULA
- (16) REMOVE RETAINING CURB / CONCRETE WALL
- (17) REMOVE EXISTING BOLLARD
- (18) REMOVE CONCRETE SIDEWALK
- (19) REMOVE CURB RAMP
- (20) REMOVE CROSS GUTTER
- (21) REMOVE DRIVEWAY APPROACH
- (22) REMOVE CURB
- (23) REMOVE RIBBON GUTTER
- (24) REMOVE AND RELOCATE MONUMENT SIGN.

LEGEND:

- GRIND AND OVERLAY LIMITS
- REMOVAL LIMITS
- EX. IMPROVEMENTS
- EX. ℄
- EX. R/W
- PROP. R/W

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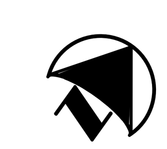

0' 20' 40' 80' 120' 160'

GRAPHIC SCALE IN FEET
1" = 40'

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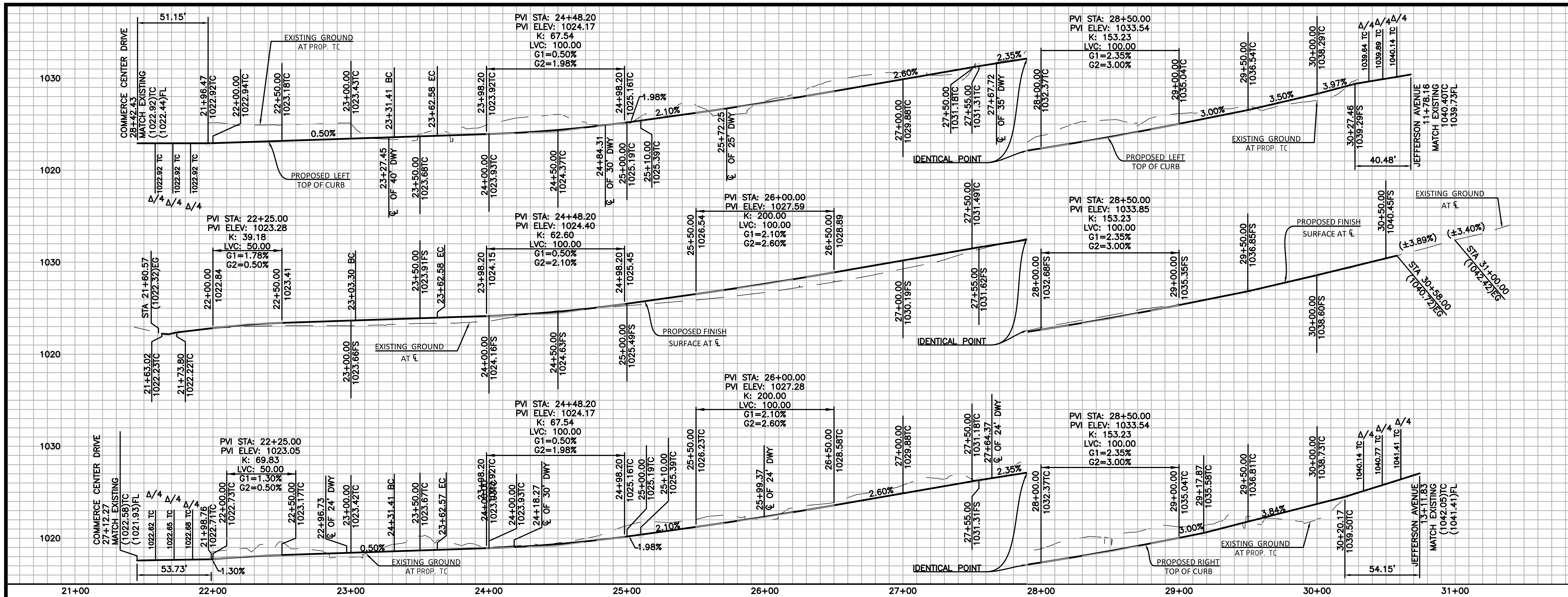
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE	SEAL:	Designed By	Drawn By	Checked By		CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS	Drawing No.
Contractor ____ Inspector ____ Date Completed ____						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal / Vertical	REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA	Plans Prepared Under Supervision Of JOHN M. BRUDIN, PE Date R.C.E. No. 41836 Expires 03-31-24			RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE: ACCEPTED BY: PATRICK A. THOMAS DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE: R.C.E. No. 44223 Expires: 06-30-2023	OVERLAND DRIVE WIDENING PROJECT NO. PW 20-11 DEMOLITION PLAN	C 07 Sheet 7 of 19

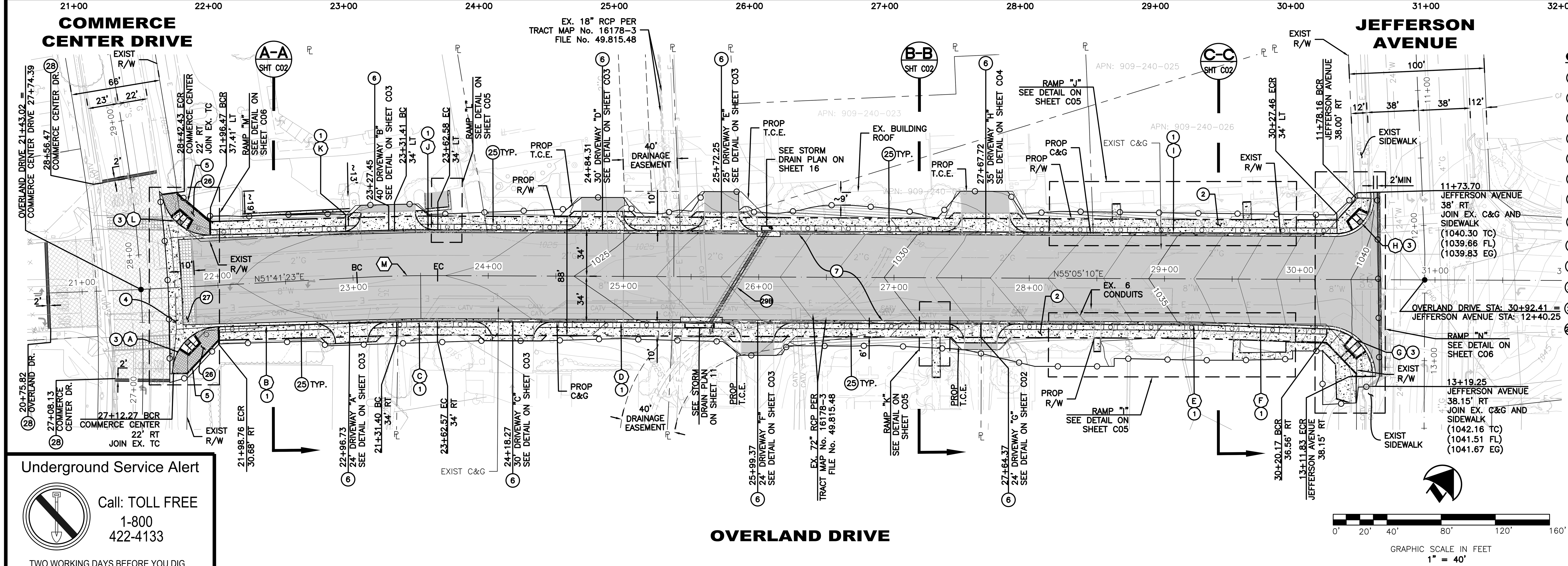


LINE AND CURVE DATA TABLE

LINE/CURVE	LENGTH	BEARING/DELTA	RADIUS	TANGENT
A	53.73'	87°57'03"	35	33.77'
B	131.75'	S53°18'01"W	–	–
C	30.11'	1°47'09"	966	15.06'
D	555.32'	S55°05'10"W	–	–
E	7.80'	1°29'21"	300	3.90'
F	94.50'	S56°34'32"	–	–
G	54.15'	88°38'55"	35.00	34.18'
H	40.48'	92°46'04"	25.00	26.24
I	664.88'	N55°05'10"E	–	–
J	32.23'	1°47'09"	1034	16.12'
K	135.95'	N53°18'01"E	–	–
L	51.10'	86°16'15"	35.00	31.30'
M	59.28'	3°23'47"	1,000	29.65'

LEGEND:

- CONCRETE PAVERS
- GRADING LIMITS
- GRIND AND OVERLAY
- (7) PROPOSED ASPHALT
- PROPOSED CONCRETE
- SAWCUT
- STAMPED ASPHALT
- (24) TRENCH REPAIR



CONSTRUCTION NOTES:

1. CONSTRUCT TYPE "A-6" CURB AND GUTTER PER CITY OF TEMECULA STD. DWG. No. 200
2. CONSTRUCT 6' SIDEWALK & 4' FURNISH ZONE PER CITY OF TEMECULA STD. DWG. No. 401
3. CONSTRUCT ADA ACCESS RAMP WITH TRUNCATED DOMES PER CITY OF TEMECULA STD. DWG. No. 402
4. CONSTRUCT CONCRETE CROSS GUTTER PER CITY OF TEMECULA STD. DWG. No. 211
5. CONSTRUCT RETAINING CURB PER DETAIL 5 ON SHEET 4
6. CONSTRUCT COMMERCIAL DRIVEWAY APPROACH PER CITY OF TEMECULA STD. DWG. No. 207A
7. CONSTRUCT 0.15' RHMA OVER 0.45' HMA OVER 0.67' CAB
8. CONSTRUCT RETAINING WALL PER CALTRANS STD PLAN B3-7B TYPE 6B (6' MAX.)

(25) CONSTRUCT TREE WELL PER CITY OF TEMECULA STD. DWG. No. 903 AND UPTOWN SPECIFIC PLAN.

(26) INSTALL 4"X16" CONCRETE PAVERS PER CITY OF TEMECULA STD. DWG. No. 934 AND UPTOWN SPECIFIC PLAN.

(27) CONSTRUCT STAMPED ASPHALT CROSS WALK WITH 8" WIDE WHITE BORDER PER UPTOWN SPECIFIC PLAN.

(28) GRIND AND OVERLAY EXISTING PAVEMENT PER DETAIL ON SHEET 4

(29B) TRENCH REPAIR PER CITY OF TEMECULA STD. DWG. No. 407

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F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK

RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By | Drawn By | Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE Date
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE:

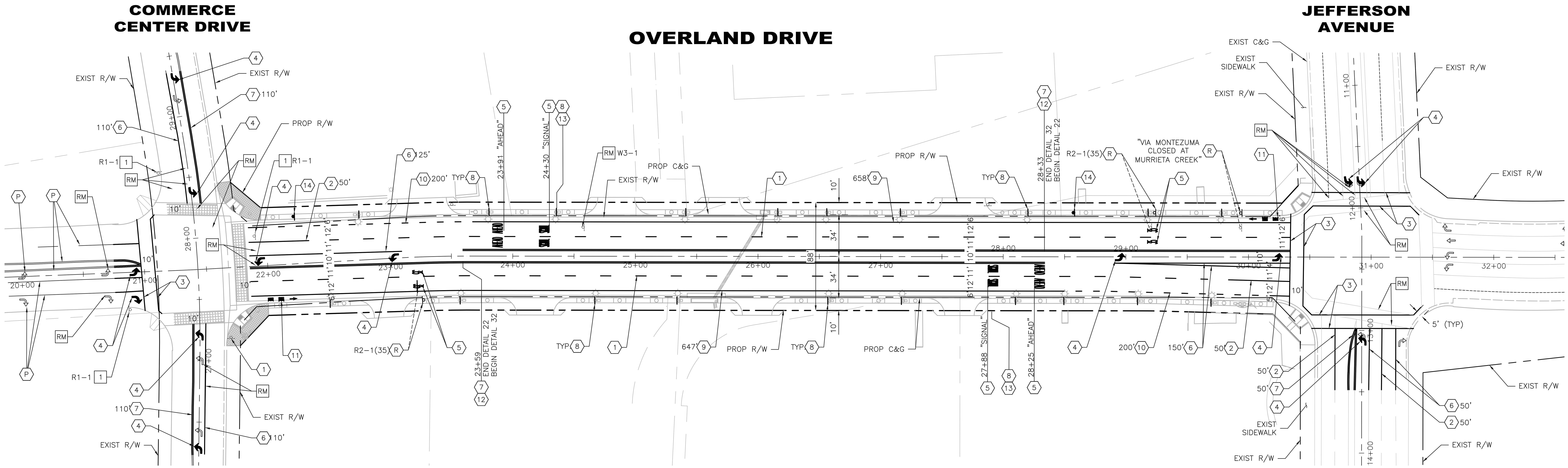
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:

R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE
WIDENING
PROJECT NO. PW 20-11
OVERLAND DRIVE IMPROVEMENTS PLAN + PROFILE

Drawing No. C 08



SIGNING AND STRIPING GENERAL NOTES:

1. STRIPING, SIGNING, OR PAVEMENT LEGENDS SHALL NOT BE INSTALLED PRIOR TO FIELD INSPECTION AND APPROVAL BY THE INSPECTOR.
2. ALL PAVEMENT MARKINGS AND SIGN LOCATIONS MUST BE INSPECTED AND APPROVED BEFORE STRIPING BEGINS. THE INSPECTOR SHALL DETERMINE THE EXACT LIMITS OF THE MATCH STRIPING.
3. ALL REGULATORY SIGNS AND WARNING SIGNS SHALL USE HI-INTENSITY DIAMOND GRADE REFLECTIVE SHEETING AND BE A MINIMUM OF 30"X30".
4. UNLESS OTHERWISE STATED, ALL STRIPING SHALL BEGIN AND TERMINATE AT QUARTER DELTA OF THE CURB RETURN, OR BACK OF THE CROSSWALK OR STOP BAR.
5. ALL R1 SIGNS WILL BE LOCATED 2 FEET BEHIND CURB AT THE B.C.R. OR AS SPECIFIED ON THE PLAN.
6. ALL STOP BARS WILL BE LOCATED AT THE PROLONGATION OF THE CENTER DELTA OF THE CURB RETURN OR BEHIND THE WHEELCHAIR ACCESS RAMPS UNLESS OTHERWISE SPECIFIED ON THE PLAN.
7. THE STOP LEGEND SHALL BE 8 FEET BEHIND THE STOP BAR. IF REQUIRED, DIRECTIONAL ARROWS SHALL ALSO BE 8 FEET BEHIND THE STOP BAR OR 8 FEET BEHIND THE STOP LEGENDS.
8. ALL PAVEMENT MARKERS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST VERSION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND CALTRANS STANDARD PLANS: A20-A THROUGH A24-E.
9. STREET NAME SIGNS SHALL BE INSTALLED AT ALL INTERSECTIONS AND MAY BE INSTALLED ABOVE THE R1 SIGN OR AS SPECIFIED ON THE PLAN.
10. THE POST MATERIAL SHALL BE "TELESPAR QWIK-PUNCH" OR APPROVED EQUAL WITH RECEPTIVE 30-INCH OR 36-INCH ANCHOR ASSEMBLY.
11. ALL PAVEMENT STRIPING AND LEGENDS SHALL BE INSTALLED PER SECTION 84-2 OF THE CALTRANS STANDARD SPECIFICATIONS.
12. ALL CONFLICTING PAVEMENT LEGENDS, STRIPING (INCLUDING RAISED PAVEMENT MARKERS), AND PAVEMENT MARKINGS SHALL BE REMOVED BY GRINDING METHOD, PRIOR TO GRIND AND OVERLAY, PER SECTION 84-9 OF THE CALTRANS STANDARD SPECIFICATIONS.
13. ALL PAINTED STRIPING SHALL BE DOUBLE COATED IN NOT LESS THAN 7 DAYS, BUT NO MORE THAN 14 DAYS FROM DATE OF INITIAL INSTALLATION.
14. ALL PAVEMENT MARKINGS, PAVEMENT LEGENDS, AND LINES 8" OR WIDER SHALL BE THERMOPLASTIC UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
15. ALL PAVEMENT STRIPING SHALL HAVE RAISED PAVEMENT MARKINGS (RPM) PER SECTION 81-3 OF THE CALTRANS STANDARD SPECIFICATIONS.
16. A 6" SOLID WHITE LEAD LINE WITH TYPE 'G' RPM'S AT 25' SPACING SHOULD BE USED FOR EACH STRIPING AND SIGNING PLAN CHECKLIST PAGE 2 LANE LINE WHERE IT BREAKS ACROSS AN INTERSECTION. 50' OF LEAD IN LINE ON THE APPROACH SIDE AND 50' ON THE LEAD OUT DEPARTURE SIDE.

LEGEND

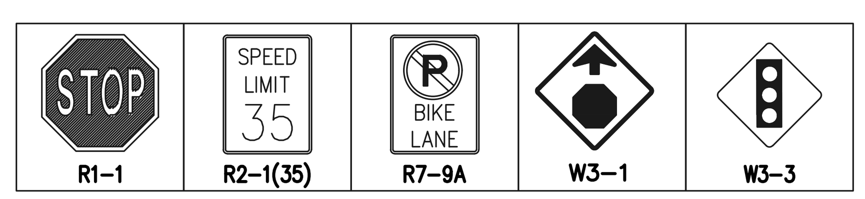
PROPOSED SIGN AND POST.

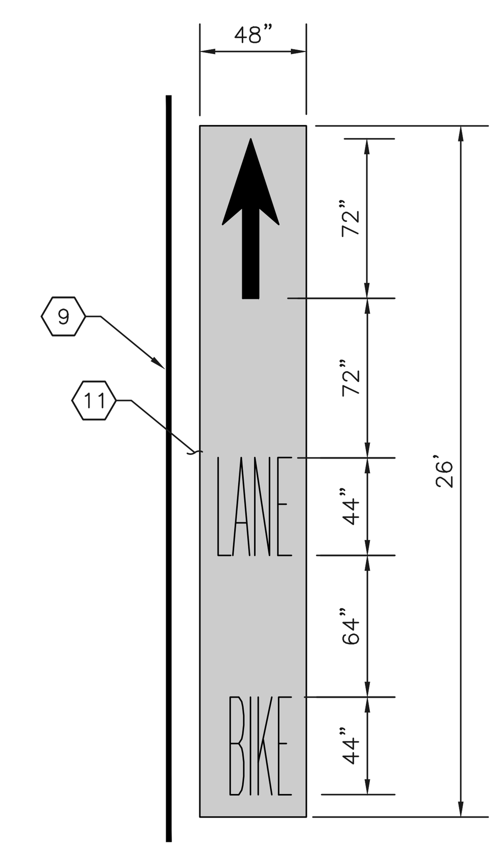
EXISTING SIGN AND POST.

PROPOSED STRIPING, MARKINGS AND/OR RAISED PAVEMENT MARKERS.

EXISTING STRIPING, MARKINGS AND/OR RAISED PAVEMENT MARKERS.

SIGN LEGEND





NOTE:
1. INSTALL "PRE MARK" THERMOPLASTIC PAVEMENT MARKINGS (WHITE LETTERING W/ GREEN BACKGROUND).
2. LEGEND SPACING PER CAMUTCD FIGURE 9C-3.
3. PLACED IMMEDIATELY AFTER EACH INTERSECTION.

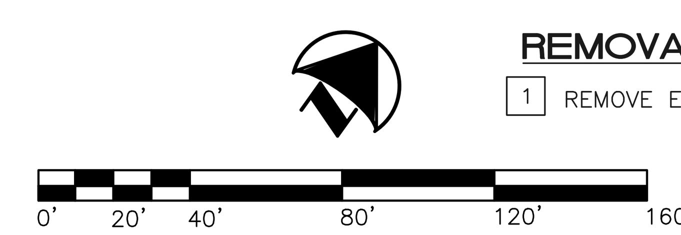
DETAIL "A"
WORD AND ARROW BIKE LANE MARKING

CONSTRUCTION NOTES:

- (R) RELOCATE EXISTING SIGN
- (P) PROTECT IN PLACE AS NOTED.
- (1) PAINT 6" WHITE LANE PER DETAIL 12 CALTRANS STD. PLAN A20A.
- (2) PAINT 6" SOLID WHITE LANE LEAD LINE EXTENSIONS.
- (3) INSTALL 12" WIDE SOLID WHITE THERMOPLASTIC CROSSWALK OR LIMIT LINE PER CALTRANS STD. PLAN A24E.
- (4) INSTALL THERMOPLASTIC TYPE IV ARROW PER CALTRANS STD. PLAN A24A.
- (5) INSTALL THERMOPLASTIC PAVEMENT MARKING PER CALTRANS STD. PLAN A24C & A24D. AS NOTED ON THE PLAN.
- (6) INSTALL THERMOPLASTIC 8'' WHITE CHANNELIZING LANE LINE PER DETAIL 38 CALTRANS STD. PLAN A20D.
- (7) PAINT 6" YELLOW NO PASSING ZONES-TWO DIRECTION PER DETAIL 22 CALTRANS STD. PLAN A20A.
- (8) INSTALL SIGN R7-9A ON STREET LIGHT POLE EVERY 60' OR PER PLAN.
- (9) PAINT 6" SOLID WHITE BIKE LANE PER DETAIL 39 CALTRANS STD. PLAN A20D.
- (10) PAINT 6" WHITE BIKE LANE PER DETAIL 39A CALTRANS STD. PLAN A20D.
- (11) INSTALL PRE-MARK THERMOPLASTIC WHITE LETTERING WITH GREEN BACKGROUND PER DETAIL "A" HEREON.
- (12) PAINT 6" YELLOW TWO-WAY LEFT TURN LANES PER DETAIL 32 CALTRANS STD. PLAN A20B.
- (13) INSTALL W3-3 SIGN.
- (14) INSTALL SIGN AND POLE R7-9A PER PLAN.
- [RM] REMOVE ALL EXISTING CONFLICTING TRAFFIC STRIPING, MARKING OR PAVEMENT ARROWS AS NOTED, INCLUDING RAISED PAVEMENT MARKERS (EXCEPT WHERE INDICATED). AREAS THAT ARE TO BE SLURRY SEALED SHALL BE GROUNDED OUT.

REMOVAL NOTES:

- [1] REMOVE EXISTING SIGN



GRAPHIC SCALE IN FEET
1" = 40'

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER, JOHN M. BRUDIN, No. 41836, CIVIL, STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 — Expires 03-31-24

RECOMMENDED BY: ______ DATE: ______
NINO ABAD, SENIOR CIVIL ENGINEER

ACCEPTED BY: ______ DATE: ______
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

CITY OF TEMECULA · OLD TRADITIONS · NEW OPPORTUNITIES · 1989

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
SIGNING AND STRIPING PLAN

Drawing No. C 09

Sheet 9 of 19

STREET LIGHT NOTES:

1. STREET LIGHT DESIGN PLANS FOR CONSTRUCTION SHALL FOLLOW THE LATEST EDITION OF THE CITY OF TEMECULA STREET AND SAFETY LIGHTING STANDARD GUIDELINES.

2. THIS PROJECT SHALL COMPLY WITH THE MT PALOMAR LIGHT POLLUTION ORDINANCE NO. 655.

3. THESE PLANS HAVE BEEN EXAMINED BY THE CITY OF TEMECULA'S ENGINEERING DIVISION TO INSURE COMPLIANCE WITH GENERAL ENGINEERING STANDARDS AND THE CITY'S DESIGN STANDARDS AND SPECIFICATIONS. THE ENGINEER–OF–WORK SHALL BEAR THE SOLE RESPONSIBILITY OF THE MATHEMATICAL DATA AND ACCURACY OF DESIGN SHOWN HEREON.

4. STREET LIGHT LOCATIONS MAY BE ADJUSTED IN THE FIELD A MAXIMUM OF 10 FEET TO AVOID EXISTING OBSTRUCTIONS SUCH AS DRIVEWAYS, CATCH BASINS, FIRE HYDRANTS, ETC. ANY DEVIATION EXCEEDING 10 FEET SHALL BE APPROVED IN WRITING BY THE CITY OF TEMECULA ENGINEERING DEPARTMENT.

5. A REVISED STREET LIGHTING PLAN SHALL BE REQUIRED FOR ANY CHANGES MADE TO THE SUBDIVISION MAPS OR DESIGN PLANS WHICH AFFECT STREET ALIGNMENTS, LOT SIZES, PARCEL SIZES, BOUNDARIES, ETC.

6. ALL REVISIONS TO IMPROVEMENT PLANS, OR MATERIAL SUBSTITUTION REQUESTS, PROPOSED DURING CONSTRUCTION SHALL BE SUBMITTED IN WRITING TO THE ENGINEERING DEPARTMENT BY THE ENGINEER OF RECORD AND SHALL FOLLOW THE PROCEDURES FOR APPROVAL OUTLINED IN THE MOST CURRENT CITY OF TEMECULA ENGINEERING DEPARTMENT DIRECTIVES.

7. IN ORDER FOR THE CITY OF TEMECULA'S LIGHTING DISTRICT TO ASSUME THE OPERATIONS AND MAINTENANCE OF A LIGHTING SYSTEM ON ANY PUBLIC STREET, THE STREET SHALL BE ACCEPTED BY THE CITY AND OPEN TO THE GENERAL PUBLIC.

8. STREET LIGHTS SHALL BE INSTALLED BEHIND THE SIDEWALK, WITH LUMINAIRE ARM ORIENTED OVER THE STREET AND PERPENDICULAR TO ITS CENTERLINE: A. ARTERIAL STREETS (6 FOOT SIDEWALK): 7'–9" FROM CURB FACE TO CENTER OF POLE FOUNDATION B. NON–ARTERIAL STREETS (6 FOOT SIDEWALK): 7'–9" FROM CURB FACE TO CENTER OF POLE FOUNDATION C. MEANDERING SIDEWALKS: 18" MIN. FROM CURB FACE TO OUTSIDE EDGE OF POLE.

9. PLACEMENT
A. ON STREETS WHERE THE SIDEWALKS ARE 5.5 FEET OR LESS IN WIDTH, EXCLUDING THE TOP OF CURB, AND ARE ADJACENT TO THE CURB, THE STREET LIGHTING ELECTROLIER STANDARDS AND PULL BOXES SHALL BE PLACED OUTSIDE THE SIDEWALK AREA UNLESS OTHERWISE SPECIFIED ON THE CITY OF TEMECULA APPROVED PLAN.

B. ON ALL STREETS, HANDHOLE/PULL BOX SHALL BE PLACED "IN–LINE" WITH STREET LIGHTING STANDARD AND SHALL NOT BE PLACED IN FRONT OF OR BEHIND STANDARDS ON SIDEWALKS WITHIN THE PATH OF TRAVEL.

10. THERE SHALL BE NO ABOVE–GROUND OBSTRUCTIONS IN ANY PORTION OF THE SIDEWALK (WHERE THE WIDTH, EXCLUSIVE OF TOP OF CURB, IS 5.5 FEET OR LESS). WHERE POWER/TELEPHONE/CABLE POLES, STREET LIGHT STANDARDS, FIRE HYDRANTS, AND CONTROL BOXES OCCUR IN THE 5.5 FOOT SIDEWALK, THE SIDEWALK SHALL BE MODIFIED PER CITY OF TEMECULA STANDARD PLAN NO. 402.

11. ALL MAST ARMS AND BRACKETS SHALL BE PERPENDICULAR TO THE CURB FACE AND 8 FEET LONG UNLESS OTHERWISE SPECIFIED ON THE CITY OF TEMECULA APPROVED PLAN.

12. ALL LIGHTS SHOWN ON THIS PLAN SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE ACCEPTANCE OF THE SYSTEM INTO THE CITY OF TEMECULA'S LIGHTING DISTRICT.

13. ALL STREET WIRING AND APPURTENANT APPARATUS SHALL BE UNDERGROUNDED.

14. STREET LIGHTS SHALL BE CONSTRUCTED PER THE CITY OF TEMECULA APPROVED PLAN. LIGHTS NOT CONSTRUCTED ACCORDING TO THE APPROVED PLAN SHALL BE REMOVED AND RELOCATED AT NO EXPENSE TO THE CITY OF TEMECULA.

15. STREET LIGHTS SHALL BE ERECTED SUCH THAT THE BASE DOOR IS PERPENDICULAR TO THE CURB AND LOCATED ON THE SIDE OF THE STREET LIGHT FACING ONCOMING TRAFFIC.

16. ALL EQUIPMENT REQUIRED HEREON FOR FURNISHING ELECTRICAL SERVICE, FOR EACH CIRCUIT, SHALL BE INSTALLED AND INSPECTED PRIOR TO ANY OTHER CONSTRUCTION ON THAT CIRCUIT.

17. THE CONTRACTOR SHALL GIVEN WRITTEN NOTICE, 72 HOURS IN ADVANCE OF REMOVAL OF A STREET LIGHT, TO ANY PUBLIC AGENCY MAINTAINING EQUIPMENT SUPPORTED BY THE STREET LIGHT.

18. FOUNDATIONS AND PULL BOXES NOT REMAINING IN SERVICE SHALL BE REMOVED. THE RESULTING EXCAVATION SHALL BE FILLED WITH MATERIAL SIMILAR TO ADJACENT MATERIAL AND SATISFACTORILY COMPACTED WITH A MECHANICAL COMPACTOR IN LAYERS NOT EXCEEDING 12 INCHES. THE SURFACE SHALL BE FINISHED TO MATCH THE ADJACENT SURFACE.

19. ALL PULL BOXES SHALL BE NO. 3 1/2. ALL STREET LIGHTING PULL BOX LIDS SHALL READ "STREET LIGHTING". PULL BOXES LOCATED ADJACENT TO DRIVEWAYS AND ALLEYS SHALL BE INSTALLED AT A MINIMUM DISTANCE OF 5 FEET FROM THE TOP OF THE DRIVEWAY "X" OR 5 FEET FROM THE TRAVEL WAY OF THE ALLEY.

20. PULL BOXES INSTALLED AT INTERSECTIONS OF LOCAL STREETS SHALL BE INSTALLED NO CLOSER TO THE INTERSECTIONS THAN THE B.C.R. OF AN ASSUMED FUTURE 35 FOOT RADIUS CURB RETURN.

21. WARNING: SAFETY CLEARANCE SHALL BE OBTAINED DAILY FROM THE AFFECTED UTILITY COMPANY BEFORE DOING ANY WORK IN CLOSE PROXIMITY TO ANY OVERHEAD ELECTRIC LINE.

22. CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING THE CONDITION OF ALL EXISTING EQUIPMENT TO BE REUSED, MODIFIED OR RETURNED TO THE CITY OF TEMECULA PUBLIC WORKS DEPARTMENT.

23. EQUIPMENT INDICATED "DISPOSE" SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE PROPERLY DISPOSED OFF–SITE BY THE CONTRACTOR.

24. CONTRACTOR SHALL REPAIR, AT HIS COST, THE DAMAGE CAUSED TO EXISTING LANDSCAPING AND IRRIGATION SYSTEMS DURING THE CONSTRUCTION OF THIS PROJECT. REPAIRS SHALL BE MADE WITHIN 5 WORKING DAYS AFTER DAMAGE OCCURS.

25. CONTRACTOR SHALL LOCATE AND PROTECT SUBSTRUCTURE(S) SHOWN HEREON AND SHALL PROVIDE FOR A MINIMUM 12 INCH HORIZONTAL CLEARANCE BETWEEN FOUNDATION AND SUBSTRUCTURES. IN THE EVENT A 12 INCH CLEARANCE CANNOT BE ACHIEVED, THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR RELOCATION OF SUBSTRUCTURES WITH THE CITY.

26. IN THE EVENT OF OVERHEAD LINES CONFLICT WITH STREET LIGHTS THE CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS WITH SOUTHERN CALIFORNIA EDISON TO RAISE THEIR OVERHEAD FACILITIES IN ORDER TO PROVIDE FOR THE FOLLOWING CLEARANCES WITH EXISTING AND/OR PROPOSED STREET LIGHTS:
A. LOW VOLTAGE: MINIMUM 3 FOOT CLEARANCE BETWEEN OVERHEAD LINES AND STREET LIGHTS.
B. HIGH VOLTAGE: MINIMUM 6 FOOT CLEARANCE BETWEEN OVERHEAD LINES AND STREET LIGHTS.

27. IN THE EVENT OF OVERHEAD COMMUNICATION LINE CONFLICT WITH STREET LIGHTS, CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO PROVIDE A MINIMUM 12 INCH CLEARANCE.

28. PROPOSED STREET LIGHT FOUNDATIONS AND PULLBOXES SHALL BE INSTALLED OUTSIDE OF ACCESS RAMP AREAS. EXISTING FOUNDATIONS AND PULLBOXES SHALL BE RECONSTRUCTED TO CLEAR ACCESS RAMPS BY A MINIMUM OF 12 INCHES.

29. CONDUIT THAT IS TO BE ABANDONED SHALL HAVE WIRES REMOVED. THE CONDUIT SHALL BE REMOVED TO A DEPTH OF AT LEAST 12 INCHES BELOW THE SURFACE AND HAVE BOTH ENDS CRIMPED OR CAPPED.

30. ELECTRICAL SYSTEMS FOR LS–3 RATE SCHEDULE STREET LIGHTS SHALL COMPLY WITH SECTION 700 LATEST EDITION OF THE GREENBOOK AND THE 2019 CALIFORNIA ELECTRICAL CODE/2017 NATIONAL ELECTRICAL CODE.

31. PROPOSED LS–3 RATE SCHEDULE STREET LIGHT FOUNDATIONS, PEDESTALS, PULLBOXES AND OTHER ASSOCIATED LS–3 STREET LIGHT SYSTEM APPURTENANCES SHALL BE INSTALLED WITHIN THE CITY RIGHT–OF–WAY.

32. STREET LIGHTING STANDARDS FOR LS–3 RATE SCHEDULE STREET LIGHTS SHALL BE CONCRETE AMERON OR APPROVED EQUAL PER CITY OF TEMECULA STREET AND SAFETY LIGHTING GUIDELINES.

33. PROPOSED LS–3 RATE SCHEDULE CONCRETE STREETLIGHT FOUNDATIONS SHALL BE IN ACCORDANCE WITH CITY OF TEMECULA STANDARD PLAN 1003.

34. AS–BUILT PLANS AND ASSET/ATTRIBUTE DATA SHALL BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF IMPROVEMENTS.

35. ALL NEW CONDUITS SHALL BE 2" PVC SCHEDULE 80 UNLESS SHOWN OTHERWISE ON PLANS.
36. LIGHTING SHALL BE MAINTAINED THROUGHOUT PROJECT.

37. LIGHTING CALCULATIONS ARE REQUIRED TO VERIFY APPROPRIATE LIGHTING LEVELS.

38. SERVICE TO ALL EXISTING LIGHTING SHALL BE MAINTAINED AT ALL TIMES.

39. CONTRACTOR SHALL FURNISH AND INSTALL STREET LIGHTING STANDARD AND LIGHT FIXTURE AS SPECIFIED UNLESS OTHERWISE SHOWN ON PLANS.

40. SCE WORK ORDER NUMBER TO BE PROVIDED AT AS–BUILT:

VOLTAGE DROP CALCULATIONS

FORMULA FOR THE CALCULATIONS:

$$\%VD = \frac{2(L)(N)(I)(R)(100)}{(CM)(V)}$$

L= DISTANCE BETWEEN FIXTURES
N= No. OF FIXTURES
I= CURRENT
R= RESISTIVITY OF COOPER CONDUCTOR
CM= AREA (MILS)
V= CIRCUIT VOLTAGE

WIRE (AWG)	CM(MILLS)
#8	16,510
#10	10,380

I= 0.4 AMP/FIXTURE
I= 0.7 AMP/FIXTURE
V= 240 V
R= 12 OHMS MIL PER FT

STREET LIGHTS WITH XHHW-2#8 WIRES CIRCUIT A @240V.

VOLTAGE DROP CIRCUITS: A-5/7						
(Circuit)	Fixtures	No. Fixtures	#8Length (main)	#10 Pole+Pull box	%VD	%VD Pole + Pullbox
A-5/7	A1-A3	1	159	30	0.038	0.011
A-5/7	A3-A5	2	180.5	30	0.144	0.023
A-5/7	A5-A7	3	100	30	0.120	0.034
A-5/7	A7-A9	4	202	30	0.192	0.045
A-5/7	A9-SC	5	160	30	0.319	0.057
TOTAL %VD					0.98	

VOLTAGE DROP CIRCUITS: A-9/11						
(Circuit)	Fixtures	No. Fixtures	#8Length (main)	#10 Pole+Pull box	%VD	%VD Pole + Pullbox
A-9/11	A2-A4	1	160.5	30	0.068	0.011
A-9/11	A4-A6	2	115	30	0.055	0.023
A-9/11	A6-A8	3	164	30	0.209	0.034
A-9/11	A8-A10	4	158	30	0.268	0.045
A-9/11	A10-SC	5	100	30	0.212	0.057
TOTAL %VD					0.98	

VOLTAGE DROP CIRCUITS: A-5/7						
(Circuit)	Fixtures	No. Fixtures	#8Length (main)	#10 Pole+Pull box	%VD	%VD Pole + Pullbox
A-5/7	A1-A3	1	159	30	0.038	0.011
A-5/7	A3-A5	2	180.5	30	0.144	0.023
A-5/7	A5-A7	3	100	30	0.120	0.034
A-5/7	A7-A9	4	202	30	0.192	0.045
A-5/7	A9-SC	5	160	30	0.319	0.057
TOTAL %VD					0.98	

VOLTAGE DROP CIRCUITS: A-6/8						
(Circuit)	Fixtures	No. Fixtures	#8Length (main)	#10 Pole+Pull box	%VD	%VD Pole + Pullbox
A-6/8	B2-B4	1	177	30	0.075	0.011
A-6/8	B4-B6	2	183	30	0.155	0.023
A-6/8	B6-B8	3	132.5	30	0.094	0.034
A-6/8	B8-B10	4	120	30	0.204	0.045
A-6/8	B10-SC	5	26	30	0.055	0.057
TOTAL % VD					0.75	

(Circuit)	%VD Total
A-5/7	0.98
A-9/11	0.98
A-2/4	0.89
A-6/8	0.75
MAXIMUN ALLOWED V.D. = 5%	

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK

RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 Expires 03–31–24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE:

ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:

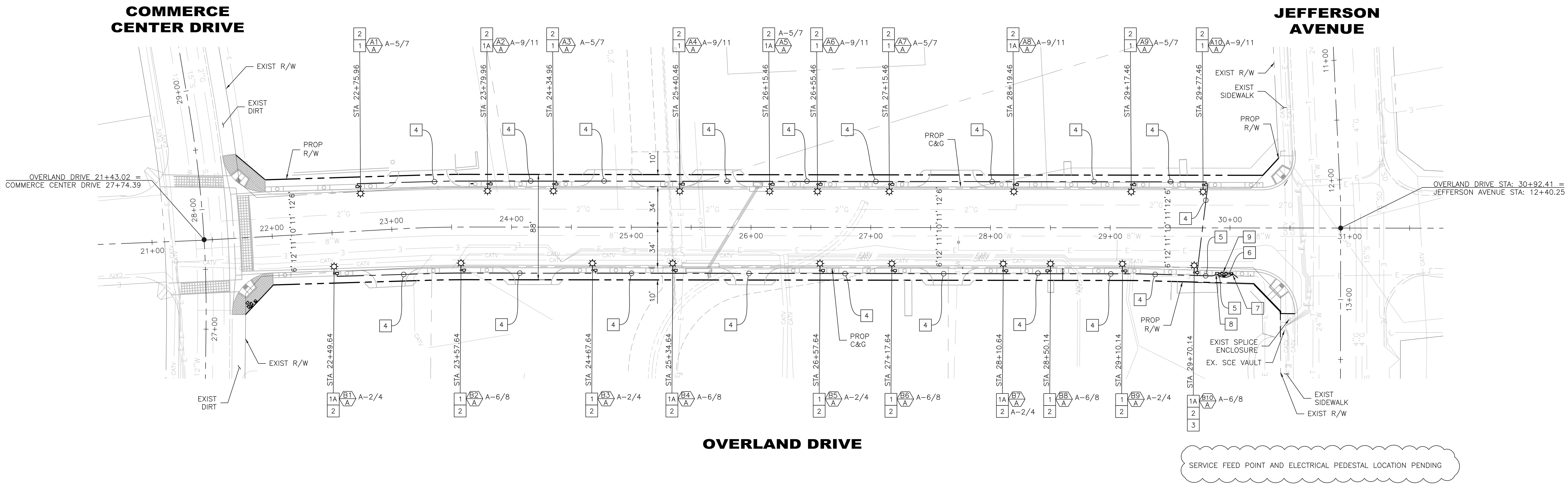
R.C.E. No. 44223 Expires: 06–30–2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

CITY OF TEMECULA 1989 OLD TRADITIONS • NEW OPPORTUNITIES

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
STREET LIGHTS GENERAL NOTES AND VOLTAGE DROP CALCULATIONS

Drawing No. C 10



SYMBOL LEGEND:

- PROPOSED STREET LIGHT
- EXISTING STREET POLE AND LIGHT
- PULL BOX NO. 3 ½ PER CITY STANDARD NO. SL-2
- ELECTRICAL SERVICE PEDESTAL PER CITY STANDARD NO. SL-2
- PROPOSED CONDUIT (CONSTRUCTION NOTES INDICATE SIZE)
- INDICATES FIXTURE ID / INDICATES FEED POINT

FIXTURE QUANTITIES

- 94 WATT LED STREET LIGHT WITH PULL BOX (20)

CONSTRUCTION NOTES:

1. INSTALL DECORATIVE PEDESTRIAN LED LIGHT WITH BANNER, 84 LEDS, 94 WATTS, 240 VOLT PER CITY STANDARD NO. 800 AND DETAIL ON SHEET 9.
   - MANUFACTURE: STERNBERG LIGHTING.
   - PRODUCT NUMBER: 1521LED-R-6ARC40T2-MDL03-SV2/OBSPM/7715P5-.250/BCC4/DBA/DBT
   - FOUNDATION PER CITY STANDARD NO. 801

1A. INSTALL DECORATIVE VEHICULAR AND PEDESTRIAN LED LIGHT WITH BANNER, 140 LEDS/84 LEDS, 158 WATTS/94 WATTS, 240 VOLT PER CITY STANDARD NO. 800 AND DETAIL ON SHEET 9.
   - MANUFACTURE: STERNBERG LIGHTING.
   PRODUCT NUMBER: 1A-1527LED-R-10ARC40T2-MDL03-SV2-EZ / OBPM 1AM-1521LED-R-6ARC40T2-MDL03-SV2-EZ / OBMO /9720ARSS /DBA / BCC4 / DBT
   - FOUNDATION PER CITY STANDARD NO. 801

2. INSTALL #3 1/2 PULL BOX PER CITY STANDARD NO. 802 AND CALTRANS STANDARD DWG. ES-8A.
3. INSTALL PHOTOELECTRIC UNIT FOR LIGHTING PER CITY STANDARD NO. 800
4. INSTALL 2" CONDUIT SCH 80 PVC -(2) XHHW-2#8 & 1#10G. BURRY 18" MIN. BELOW GRADE.
5. INSTALL 2" CONDUIT SCH 80 PVC-(4) XHHW-2#8 & 1#10G. BURRY 18" MIN. BELOW GRADE.
6. INSTALL 2" CONDUIT SCH 80 PVC, XHHW-2#8, 1#8G WITH PULL ROPE. BURY 18" BELOW GRADE.
7. EXISTING TYPE III-CF 120/240V METER SERVICE PEDESTAL, MODIFY PER TRAFFIC SIGNAL PLAN
8. INSTALL #5E PULL BOX PER CITY STANDARD NO. 802 AND CALTRANS STANDARD DWG. ES-8A.
9. PROPOSED SERVICE CABINET, PER TRAFFIC SIGNAL PLAN.

GRAPHIC SCALE IN FEET
0' 20' 40' 80' 120' 160'
1" = 40'

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

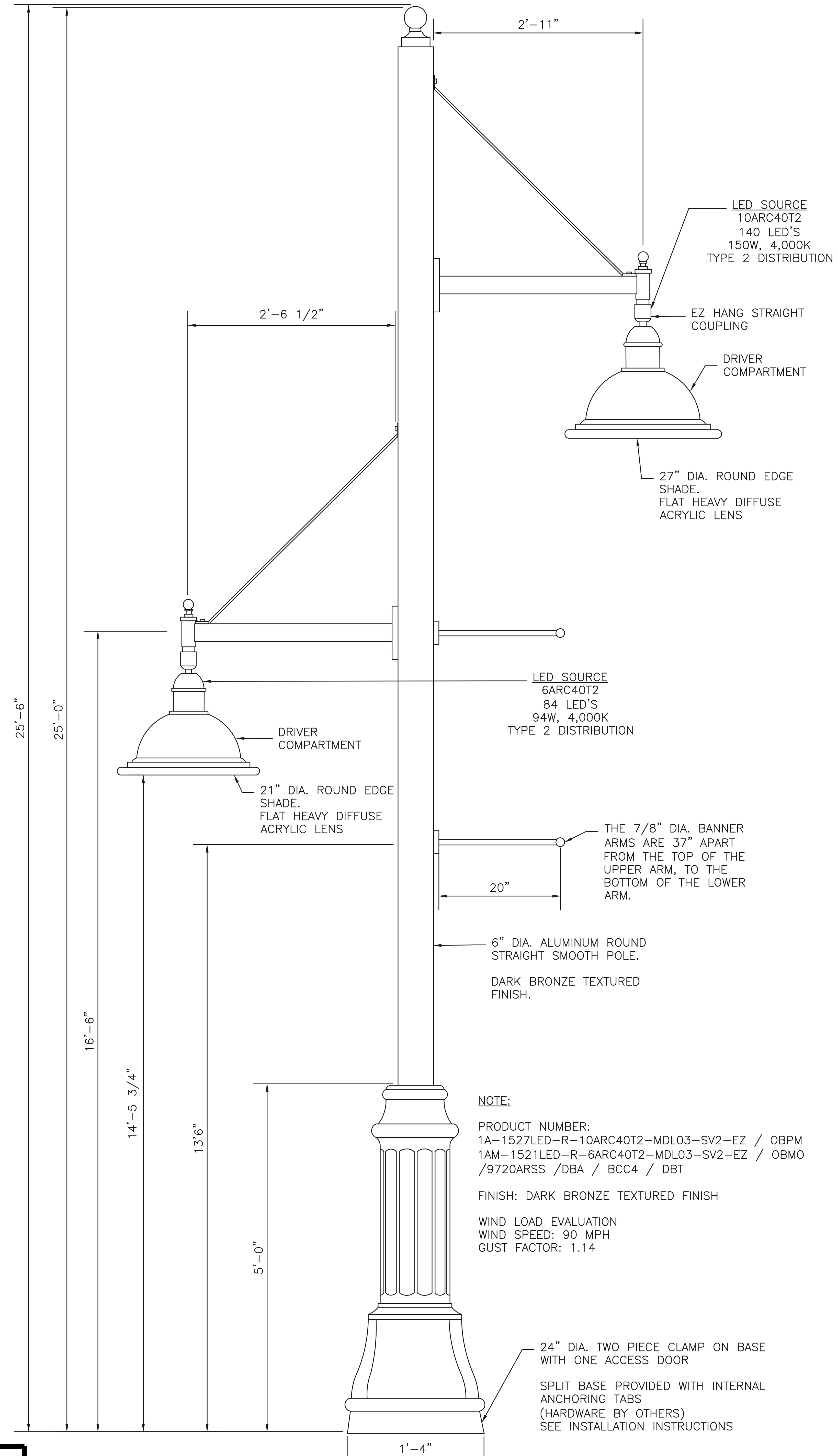
Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 — Expires 03-31-24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER — DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER — DATE:
R.C.E. No. 44223 — Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

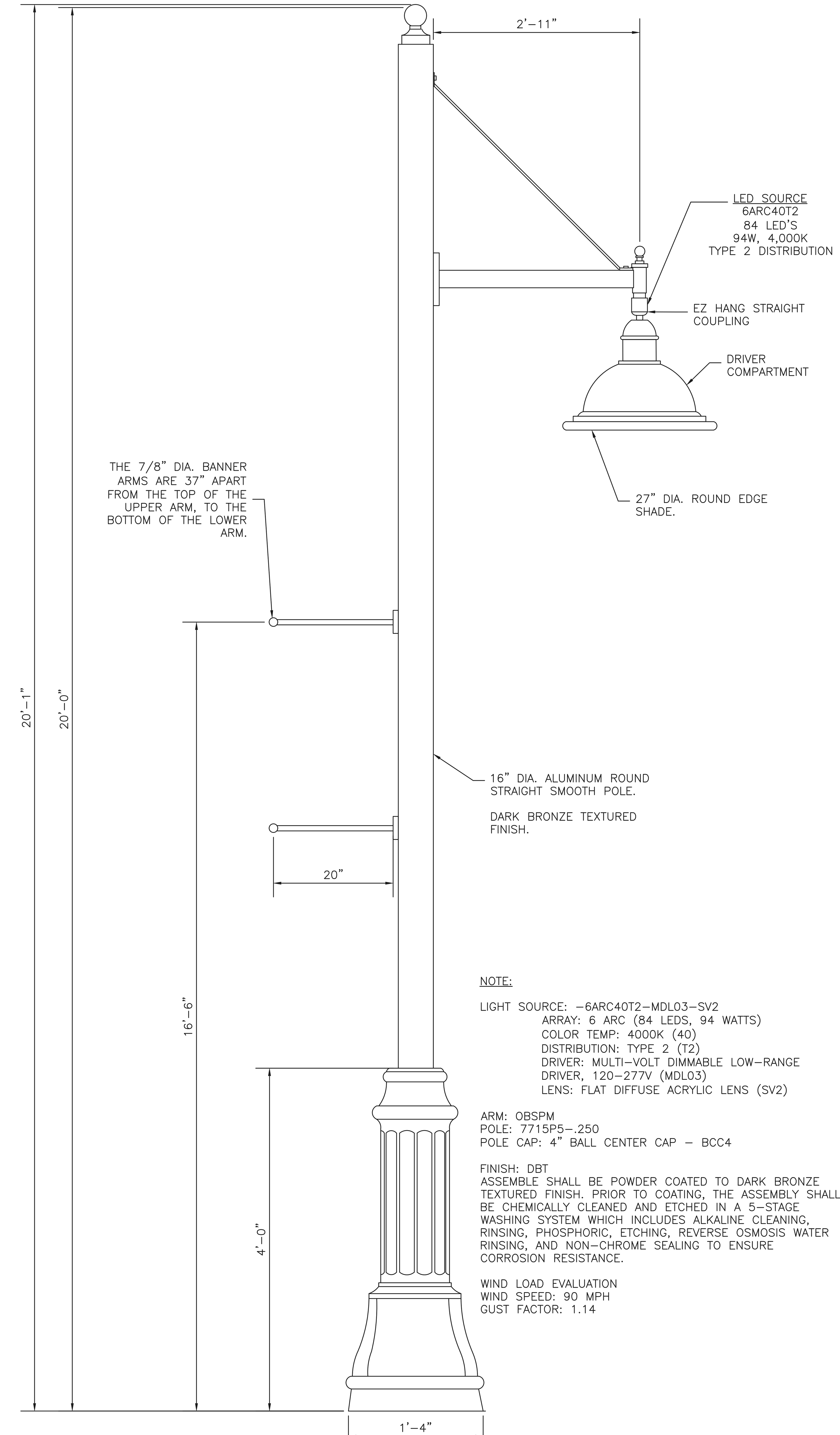
OVERLAND DRIVE WIDENING PROJECT NO. PW 20-11 STREET LIGHT PLAN

Drawing No. C 11



DECORATIVE VEHICULAR AND PEDESTRIAN LED LIGHT WITH BANNER KIT

NTS



DECORATIVE PEDESTRIAN LED LIGHT WITH BANNER KIT

NTS

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor ______						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector ______							Vertical
Date Completed ______							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date ______

R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ______ DATE: ______
NINO ABAD, SENIOR CIVIL ENGINEER

ACCEPTED BY: ______ DATE: ______
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
STREET LIGHT DETAILS

Drawing No. C 12

Sheet 12 of 19

AWG	CIRCUIT	RUN No. 1	2	3	4	5	6	7	8	9
12C CABLE	VEHICLE, PED	1	2	3	4	8	8	3	2	1
3C CABLE	PPB	1	2	3	4	8	8	3	2	1
#8	GROUND	1	1	2	2	2	4	2	1	1
#10	LUMINAIRE	2	2	2	2	2	2	2	2	2
DLC	ø1 VEHICLE	–	–	–	–	2	2	2	2	2
	ø2 VEHICLE	–	–	–	2	2	2	–	–	–
	ø3 VEHICLE	–	2	2	2	2	2	–	–	–
	ø4 VEHICLE	–	–	–	–	2	2	2	–	–
	ø5 VEHICLE	–	–	–	1	1	1	–	–	–
	ø6 VEHICLE	–	–	–	–	2	2	2	2	2
	ø7 VEHICLE	–	–	–	–	1	1	1	–	–
	ø8 VEHICLE	–	2	2	2	2	2	–	–	–
	TOTAL	–	4	4	7	14	14	7	4	4
CCTV CABLE		–	–	1	1	1	1	–	–	–
72 STRAND SMFOC		–	–	–	–	–	1	–	–	–
CONDUIT SIZE		3"(E)	3"(E)	3"(E)	3"(E)	2–4"	2–4"	4"	4"	4"
CONDUIT FILL (%)		6	14	21	29	15	16	13	9	5

CONDUCTOR SCHEDULE ▲

▲ ALL CONDUCTORS AND CONDUITS ARE NEW UNLESS OTHERWISE NOTED
(E) EXISTING CONDUIT OR CONDUCTOR
(R) NOT USED, DELETE

SEE SHEET 1 FOR TRAFFIC SIGNAL GENERAL NOTES

CONSTRUCTION NOTES:

1 RS EXISTING CONTROLLER CABINET COMPLETE. DISCONNECT ALL CABLES AND PULL BACK TO HOME RUN BOX AND PROTECT IN PLACE. FURNISH AND INSTALL A NEW 352I ATC CABINET. PULL ALL EXISTING CABLES TO NEW CABINET AND CONNECT. CABINET SHALL HAVE TWO INPUT FILES, A 32 CHANNEL OUTPUT FILE, FRONT AND BACK INTERNAL LED LIGHTS AND DOOR SWITCHES, PULL-OUT DOCUMENT DRAWER, AND CITY SPECIFIED LOCKS. CABINET SHALL BE EQUIPMENT WITH:

NEW MODEL 2070 ATC CONTROLLER WITH OMNI EX SOFTWARE
NEW IP CAPABLE CONFLICT MONITOR WITH AUXILIARY DISPLAY UNIT
NEW DETECTOR CARDS, DC ISOLATORS AND LOAD SWITCHES
NEW GTT 764 PHASE SELECTOR WITH ETHERNET CAPABILITY
NEW ETHERNET SWITCH CISCO IE-4000-4S8P4G-E

RL THE FOLLOWING EQUIPMENT FROM EXISTING CABINET TO NEW CABINET:

CCTV EQUIPMENT

ALL EQUIPMENT SHALL BE CURRENT FOR THE STATE OF CALIFORNIA "QUALIFIED PRODUCTS LIST". GDI LOAD SWITCHES WILL NOT BE ACCEPTED. THE TYPE 332 CABINET'S POWER DISTRIBUTION ASSEMBLY SHALL BE "MERCURY FREE".

2 CONTRACTOR SHALL RELOCATE EXISTING DUAL-METERED TYPE III-CF SERVICE EQUIPMENT ENCLOSURE CONTRACTOR TO CONFIRM THAT THE METER MEETS THE CURRENT CIRCUIT BREAKERS REQUIREMENTS OF: 120/240V-100A MAIN. 120V – 50A METERED SIGNALS, 240V – 40A METERED LIGHTING. 120V-15A METERED DUAL TYPE V-P.E.C. THE TYPE III-CF SERVICE ENCLOSURE'S CONTACT SWITCH SHALL BE "MERCURY FREE".

3 CONTRACTOR SHALL CONSTRUCT TYPE 332L CABINET FOUNDATION PER CALTRANS STANDARD PLAN ES-3C. RELOCATE EXISTING COMMUNICATIONS CABINET WITH EQUIPMENT COMPLETE. CONTRACTOR TO DISCONNECT EXISTING FIBER OPTIC CABLE AND PULL BACK TO FIBER SPLICE ENCLOSURE, RE-SPLICE AND RECONNECT TO ESTABLISH PREVIOUSLY EXISTING OPERATION.

4 FURNISH AND INSTALL 3" SERVICE CONDUIT WITH PULL ROPE PER SOUTHERN CALIFORNIA EDISON REQUIREMENTS. CONTRACTOR TO COORDINATE WITH SOUTHERN CALIFORNIA EDISON.

5 REMOVE AND SALVAGE EXISTING TRAFFIC SIGNAL POLE (AS INDICATED) CONTRACTOR TO RELOCATE ALL ATTACHED EQUIPMENT AND LUMINAIRE MAST ARM (AS APPLICABLE) TO NEW POLE AT NEW LOCATION AS SHOWN ON THE PLAN, INSTALLATION OF NEW POLE AND MAST ARM AS NOTED IN POLE SCHEDULED. COMPLETELY REMOVE AND DISPOSE OF EXISTING FOUNDATION TO FULL DEPTH (UNLESS OTHERWISE NOTED).

6 RETROFIT EXISTING LUMINAIRES WITH CITY APPROVED LED LUMINAIRES AND PER THE POLE SCHEDULE.

7 FURNISH AND INSTALL 6' VEHICLE DETECTOR PER CALTRANS STANDARD PLAN ES-5B AND LOOPS LAYOUT DETAIL. LIMIT LINE LOOPS SHALL BE TYPE F.

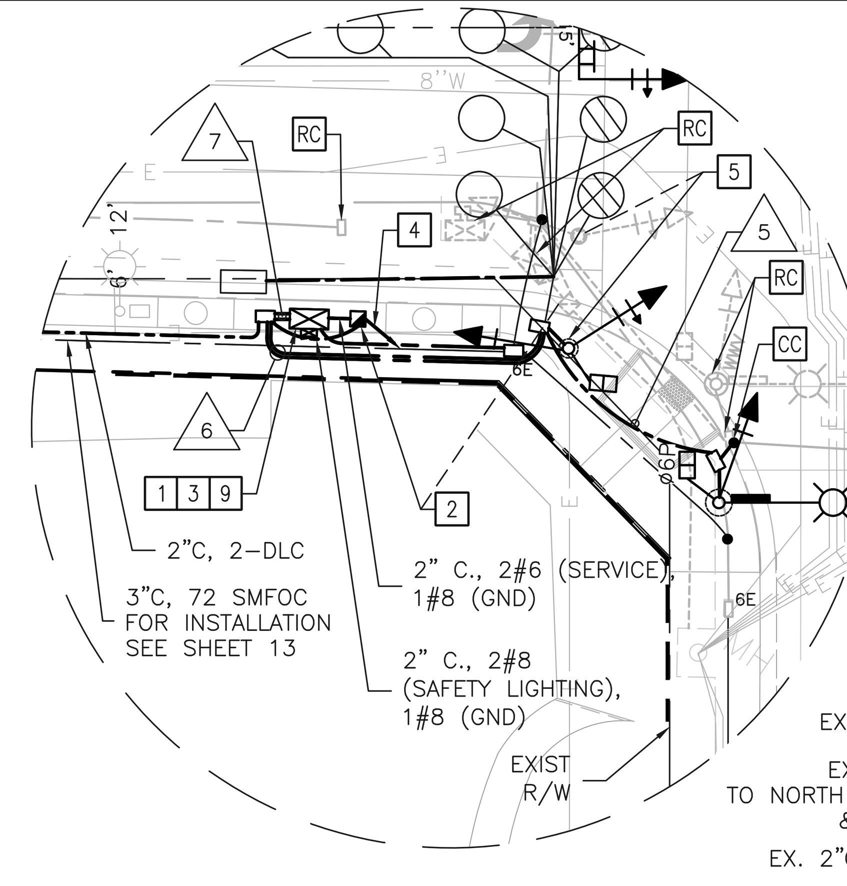
8 RS EXSITNG RSNS. FURNISH AND INSTALL NEW REFLECTORIZED STREET NAME SIGN (RSNS) PER CITY STANDARDS.

9 FURNISH AND INSTALL BATTERY BACK-UP SYSTEM IN AN EXTERNALLY SIDE MOUNTED BBS CABINET WITH GENERATOR PLUG ASSEMBLY AND MANUAL BYPASS SWITCH PER CITY OF TEMECULA SPECIFICATIONS. ALL BATTERY BACK-UP EQUIPMENT SHALL BE MOUNTED IN THE BATTERY BACK-UP CABINET AND SHALL BE WIRED PER MANUFACTURER'S SPECIFICATIONS.

10 FURNISH AND INSTALL 3'X6' MODIFIED TYPE Q BICYCLE DETECTION LOOP PER CALTRANS STANDARD PLAN ES-5B. LOOP SHALL BE PLACED 40' FROM LIMIT LINE.

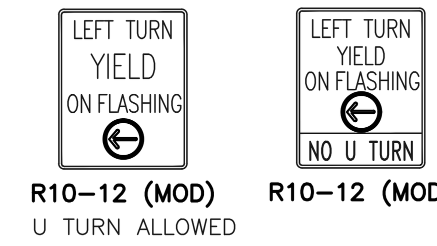
11 FURNISH AND INSTALL SIGN (AS NOTED) ON SIGNAL MAST ARM PER CALTRANS STD. PLAN ES-7N, R10-12 (MOD).

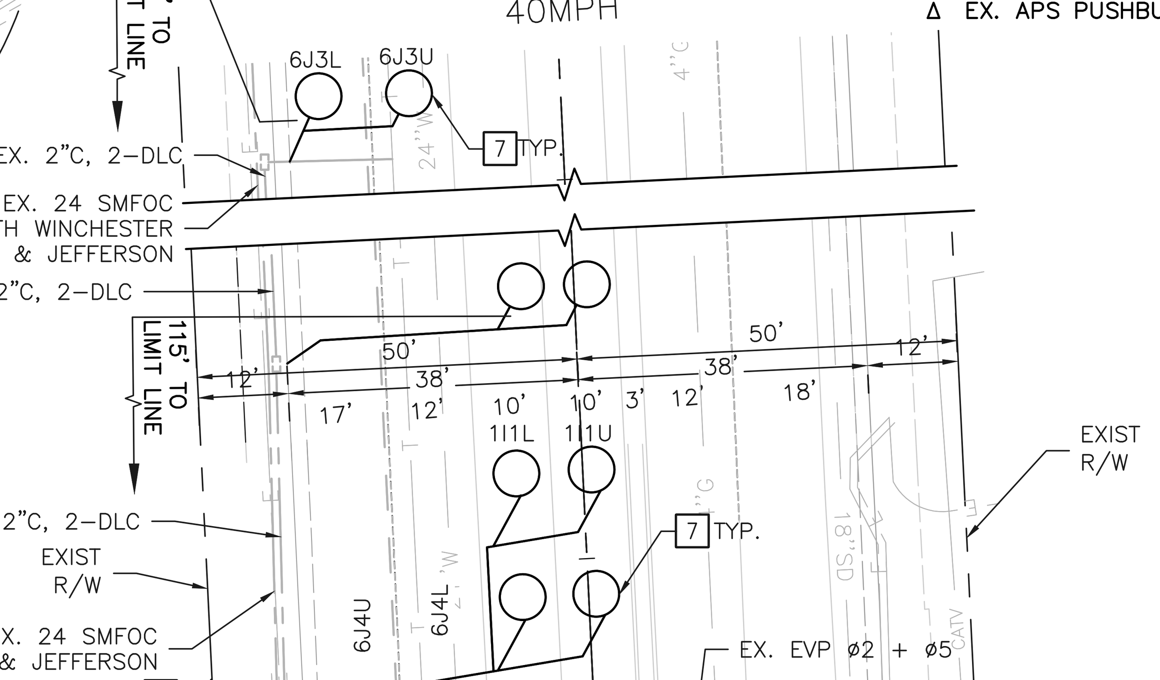
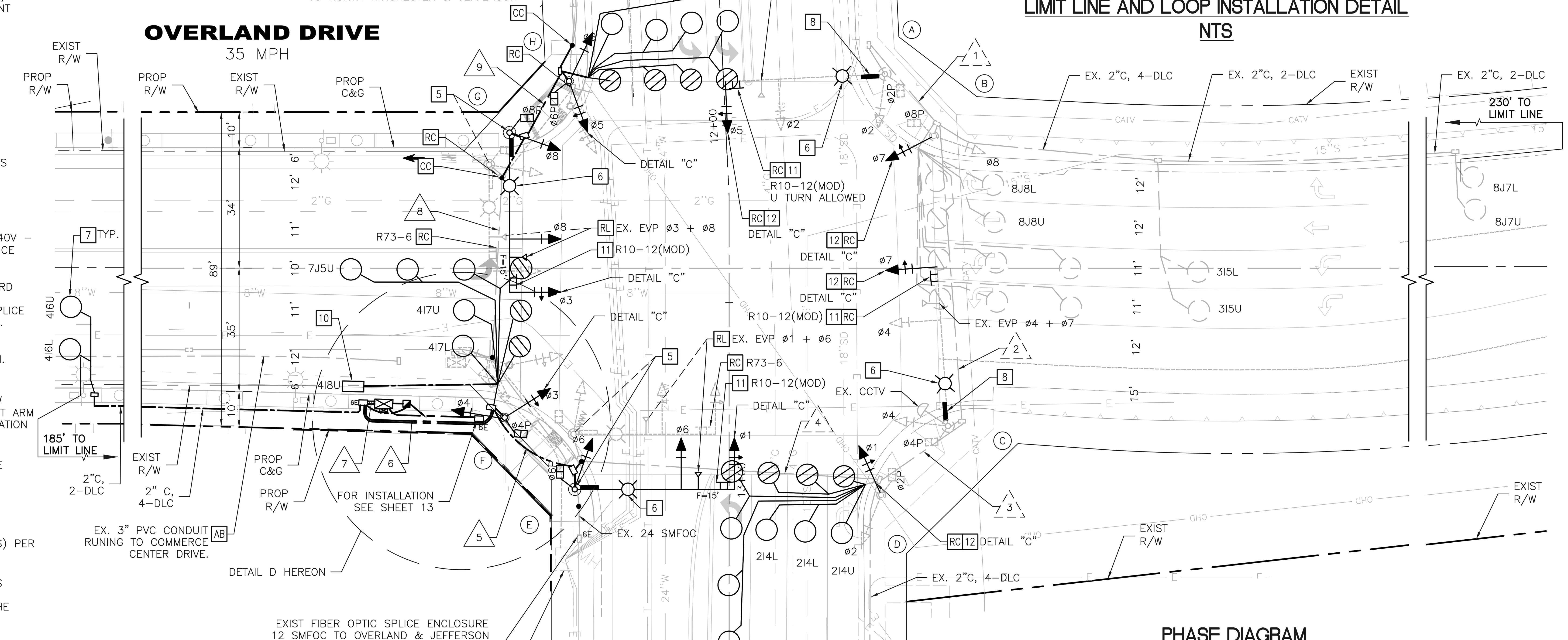
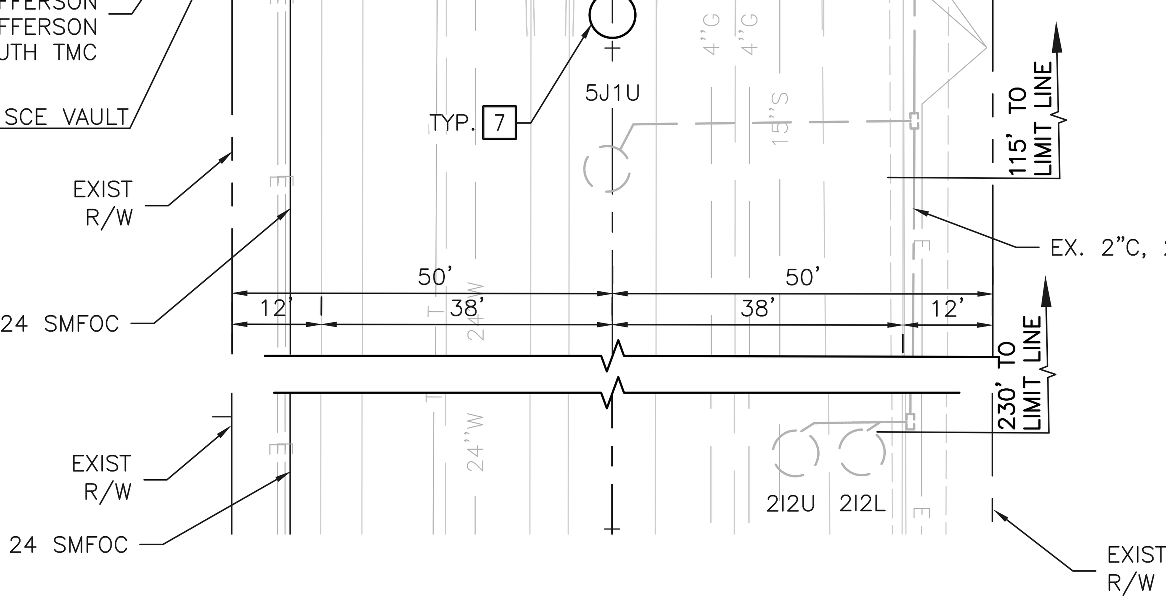
12 FURNISH AND INSTALL HEAD ON SIGNAL MAST ARM PER PLAN AND DETAIL "C" HEREON.



DETAIL D

SIGN LEGEND



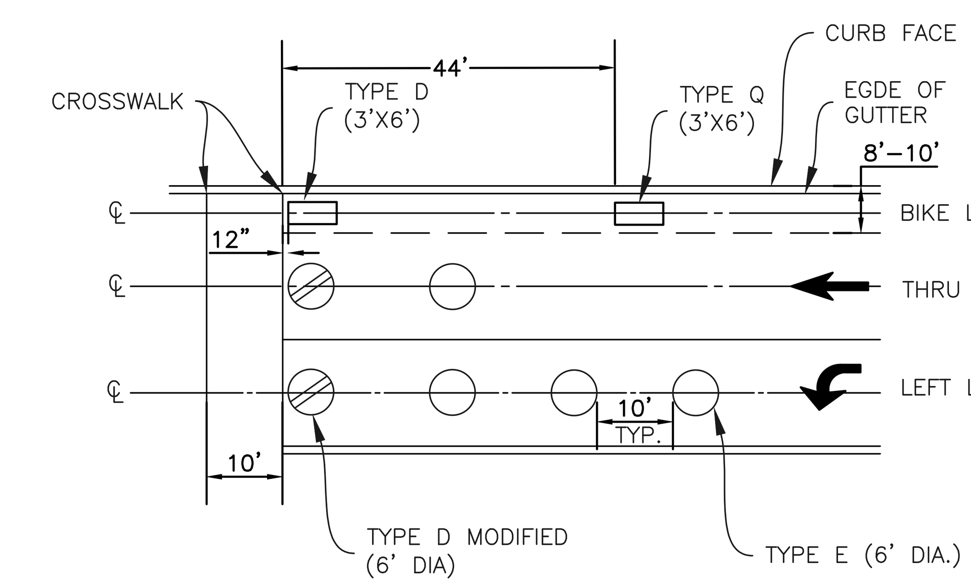




No.	STANDARD TYPE	HEIGHT	SIG. M.A	LUM. M.A	LUMINAIRE LED*	VEHICLE SIGNAL MOUNTING MAST ARM	POLE	PED SIGNAL MOUNTING	Δ PPB ϕ	QUAD	R.S.N.S	POLE LOCATION (SEE DETAIL "A") E	B	C	REMARKS
A	26-4-80	30'	45'	15'	84W(N)	2-MAS	SV-1-T	SP-1-T	8	E	Overland Dr (N)	EXISTING			–
B	1-A	10'	–	–	–	–	TV-2-T	SP-1-T	2	E	–	EXISTING			–
C	26-4-80	30'	45'	15'	84W(N)	2-MAS	SV-1-T	SP-1-T	2	S	Jefferson Avenue (N)	EXISTING			
D	1-A	10'	–	–	–	–	TV-2-T	SP-1-T	4	S	–	EXISTING			–
E	26-4-100(N)	30'	45'(N)	15'	84W(N)	2-MAS(N)	SV-1-T(N)	SP-1-T(N)	4	W(R)	Overland Dr (N)	9'	–	4'	–
F	1-A(R)	10'	–	–	–	–	TV-2-T(R)	SP-1-T(R)	6	N(R)	–	–	9'	4'	–
G	26-4-100(N)	30'	45(N)	15'	84W(N)	2-MAS(R)	SV-1-T(R)	SP-1-T(R)	6	N(R)	Jefferson Avenue (N)	3'		4'	–
H	1-A(R)	10'	–	–	–	–	TV-2-T(R)	SP-1-T(R)	4	E(R)	–	–	7'	4'	–

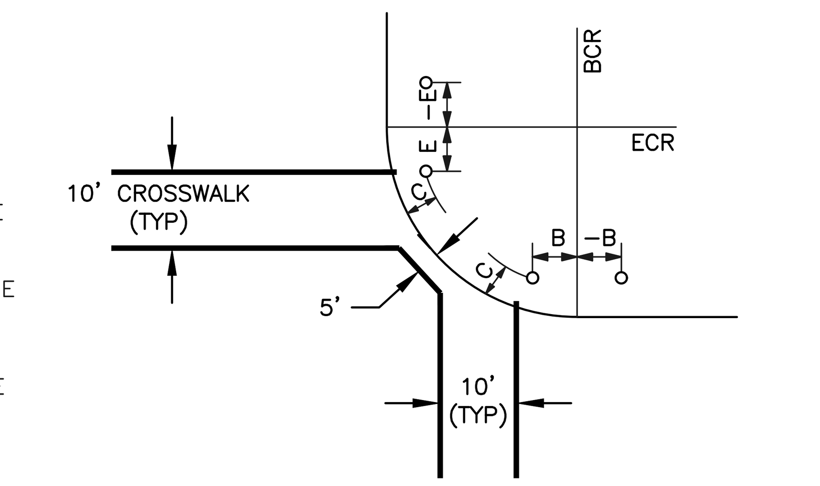
POLE SCHEDULE

ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED
(N) NEW
(R) RELOCATED
• LED LIGHTING GE MODEL #ERL1-0-09-C3-40-A-GRAY-L OR APPROVED EQUAL
Δ EX. APS PUSHBUTTON ASSEMBLY

NOTE: CONSTRUCT POLE STANDARDS TO CALTRANS 2018 STANDARDS. ALL TRAFFIC SIGNAL POLE LOCATIONS MUST BR POTHOLE AND CHECKED FOR CONFLICT BEFORE PLAN APPROVAL AND PRIOR TO ORDERING POLES. CONTRACTOR SHALL SUBMIT MATERIALS CUT SHEETS PRIOR TO ORDERING OF MATERIALS.

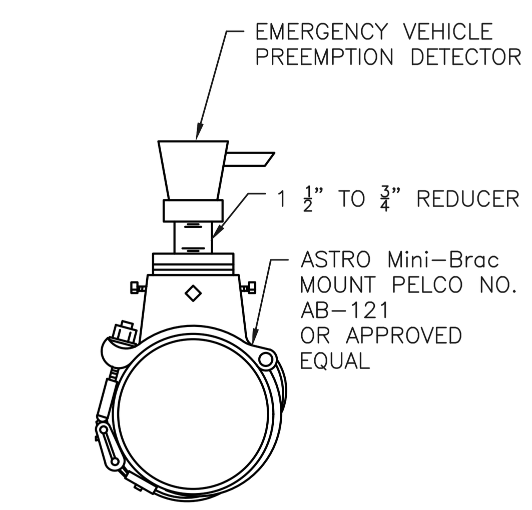


LIMIT LINE AND LOOP INSTALLATION DETAIL
NTS



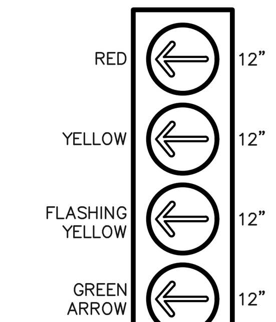
NOTES
1. CONTRACTOR MUST PROVIDE A MIN. OF 4' CLEAR SIDEWALK FOR PEDESTRIANS.

DETAIL "A"



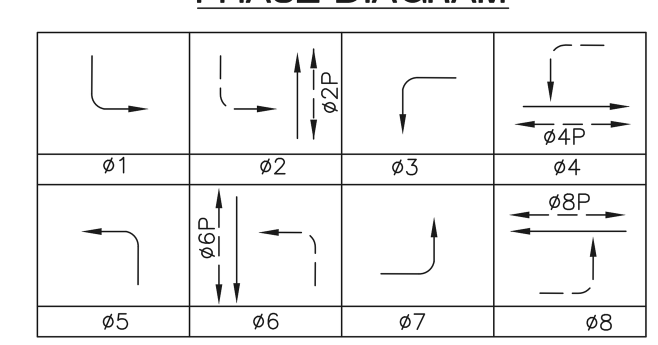
EMERGENCY VEHICLE OPTICAL SENSOR INSTALLATION

DETAIL "B"
NTS

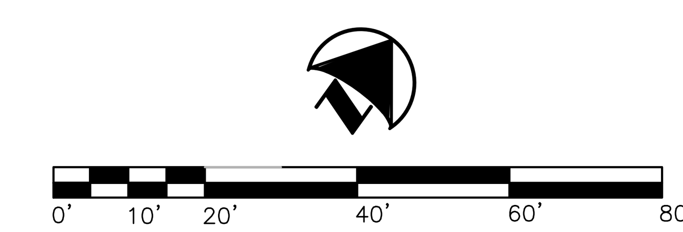


DETAIL "C"
NTS

PHASE DIAGRAM



PROTECTED PHASE
PERMISSIVE PHASE
PEDESTRIAN PHASE



GRAPHIC SCALE IN FEET
1" = 20'

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1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

AS FIRST ORDER OF WORK, THE CONTRACTOR SHALL POTHOLE POLE LOCATIONS PRIOR TO ORDERING POLES. IF CONFLICTS ARE FOUND DURING POTHOLING, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD. FAILURE TO COMPLY SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR FOR ANY LOSS OF TIME, ADDITIONAL COST, AND DAMAGE.

NOTES

CC CONNECT NEW CONDUIT TO EXISTING CONDUIT.
AB ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
RC EQUIPMENT OR MATERIAL SALVAGED AND PROVIDED TO THE CITY OF TEMECULA.
RL RELOCATE EQUIPMENT

ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK
RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By | Drawn By | Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE
Date
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: DATE:
NINO ABAD, SENIOR CIVIL ENGINEER
ACCEPTED BY: DATE:
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA
DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE
WIDENING
PROJECT NO. PW 20-11
JEFFERSON AVENUE AND OVERLAND DRIVE TRAFFIC SIGNAL PLAN

Drawing No.
C 13

AWG	CIRCUIT	RUN No. 1	2	3	4	5	6	7	8	9
12C CABLE	VEHICLE, PED	1	2	3	8	8	1	2	3	4
3C CABLE	PPB	1	2	3	8	8	1	2	3	4
#8	GROUND	1	1	1	2	2	2	1	1	1
#10	LUMINAIRE	2	2	2	2	–	–	2	2	2
DLC	ø1 VEHICLE	–	1	1	1	1	–	–	–	–
	ø2 VEHICLE	–	–	–	3	3	–	–	2	2
	ø3 VEHICLE	–	–	–	1	1	–	–	–	–
	ø4 VEHICLE	–	–	–	1	1	1	1	1	1
	ø5 VEHICLE	–	–	–	1	1	–	–	1	1
	ø6 VEHICLE	–	2	2	2	2	–	–	–	–
	ø7 VEHICLE	–	–	–	1	1	1	1	1	1
	ø8 VEHICLE	–	–	–	1	1	–	–	–	–
	TOTAL	–	3	3	11	11	2	2	5	5
CCTV CABLE		–	–	–	1	1	1	1	1	1
72 STRAND SMFOC		–	–	–	–	–	1	–	–	–
CONDUIT SIZE		4"	4"	4"	2–4"	2–4"	3" (E)	3" (E)	4" (E)	4" (E)
CONDUIT FILL (%)		6	8	10	15	15	9	14	12	15

CONDUCTOR SCHEDULE ▲

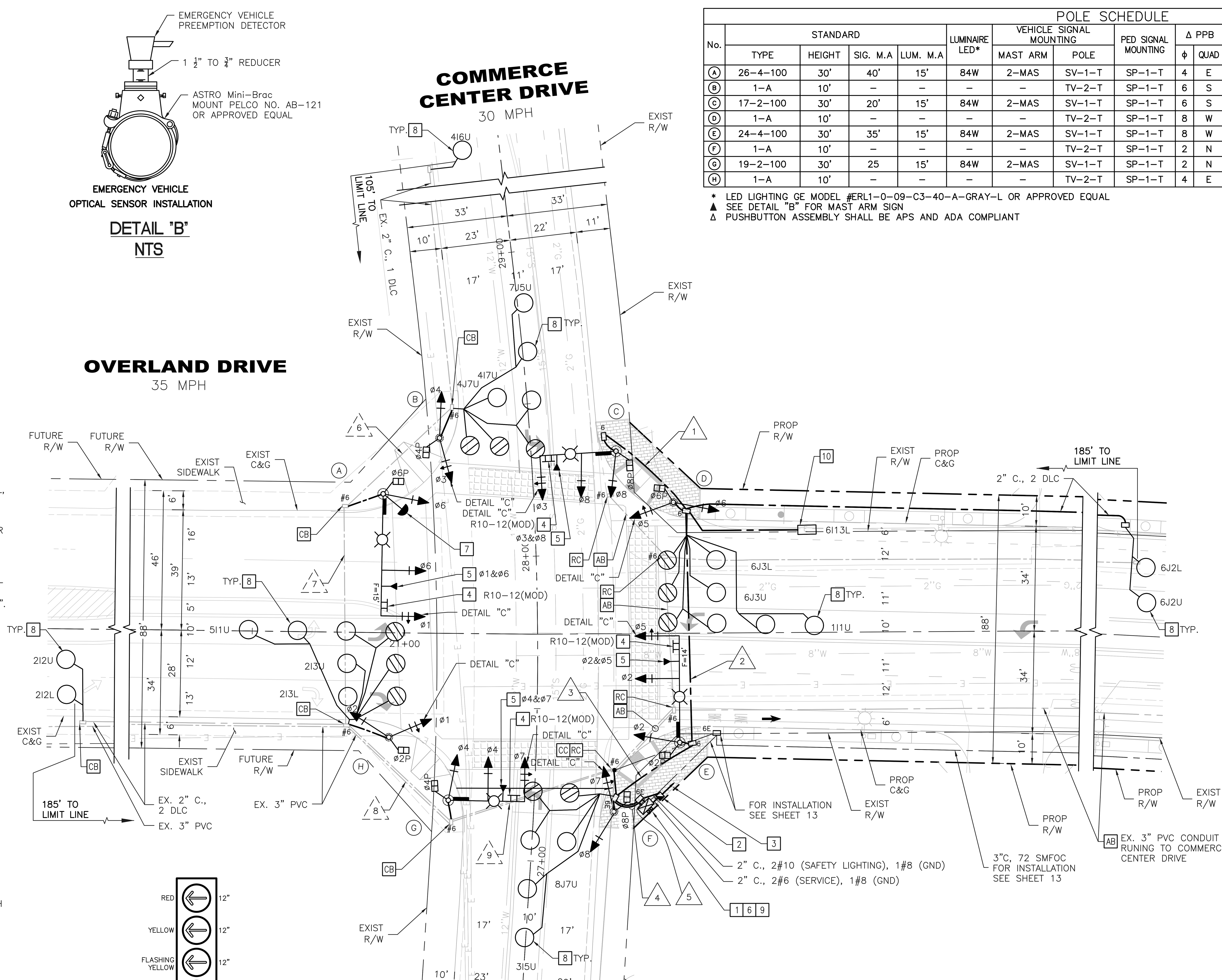
▲ ALL CONDUCTORS AND CONDUITS ARE NEW UNLESS OTHERWISE NOTED
(E) EXISTING

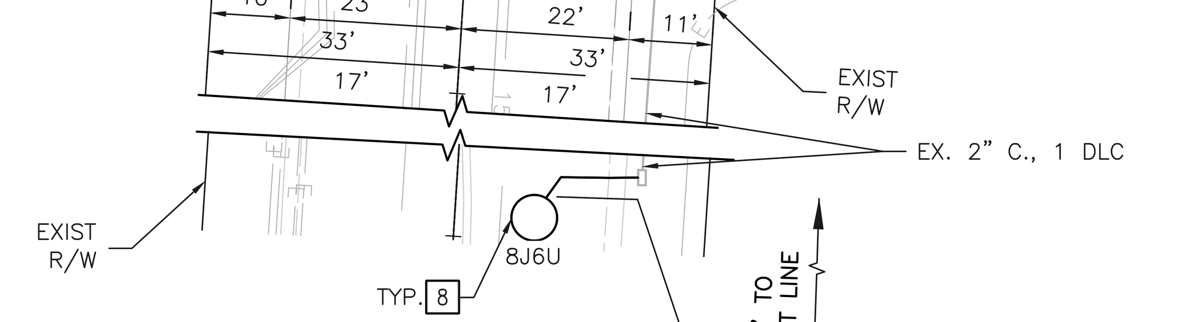
POLE SCHEDULE

No.	STANDARD TYPE	HEIGHT	SIG. M.A	LUM. M.A	LUMINAIRE LED*	VEHICLE SIGNAL MOUNTING MAST ARM	VEHICLE SIGNAL MOUNTING POLE	PED SIGNAL MOUNTING	Δ PPB ϕ	Δ PPB QUAD	R.S.N.S (PER CITY STANDARDS)	POLE LOCATION (SEE DETAIL "A") E	B	C	REMARKS
A	26–4–100	30'	40'	15'	84W	2–MAS	SV–1–T	SP–1–T	4	E	Commerce Center Dr	12'	–	4'	–
B	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	6	S	–	–	15'	4'	–
C	17–2–100	30'	20'	15'	84W	2–MAS	SV–1–T	SP–1–T	6	S	Overland Dr	10'	–	4'	–
D	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	8	W	–	–	9'	4'	–
E	24–4–100	30'	35'	15'	84W	2–MAS	SV–1–T	SP–1–T	8	W	Commerce Center Dr	9'	–	4'	–
F	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	2	N	–	–	6'	4'	–
G	19–2–100	30'	25	15'	84W	2–MAS	SV–1–T	SP–1–T	2	N	Overland Dr	10'	–	4'	–
H	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	4	E	–	–	7'	4'	–

* LED LIGHTING GE MODEL #ERL1–0–09–C3–40–A–GRAY–L OR APPROVED EQUAL
▲ SEE DETAIL "B" FOR MAST ARM SIGN
Δ PUSHBUTTON ASSEMBLY SHALL BE APS AND ADA COMPLIANT

NOTE: CONSTRUCT POLE STANDARDS TO CALTRANS 2018 STANDARDS. ALL TRAFFIC SIGNAL POLE LOCATIONS MUST BR POTHOLE AND CHECKED FOR CONFLICT BEFORE PLAN APPROVAL AND PRIOR TO ORDERING POLES. CONTRACTOR SHALL SUBMIT MATERIALS CUT SHEETS PRIOR TO ORDERING OF MATERIALS.





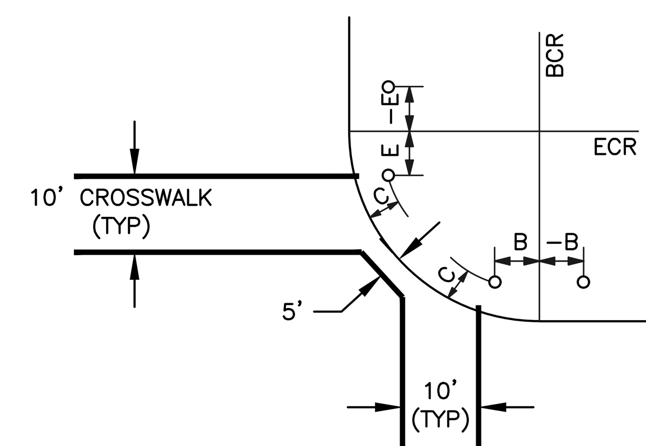
SEE SHEET 1 FOR TRAFFIC SIGNAL GENERAL NOTES

CONSTRUCTION NOTES:

1. FURNISH AND INSTALL NEW MCCAIN MODEL 352I ATC CABINET AND FOUNDATION COMPLETE PER CALTRANS STANDARD PLANS ES–3C AND 332L CABINET FOUNDATION. CABINET SHALL BE EQUIPPED WITH MCCAIN FLEX CONTROLLER ASSEMBLY RUNNING OMNI EX FIRMWARE, MODEL 2010 ECLIP CONFLICT MONITOR BY EDI, EVPE DISCRIMINATION MODULES, AND APS CONTROL MODULE. CABINET SHALL HAVE 48 INPUT ASSEMBLY CHANNEL, 16 OUTPUT ASSEMBLY CHANNEL, INTERNAL LED LIGHTS, PULL–OUT DOCUMENT DRAWER, RACK MOUNTED SURGE PROTECTOR, AND BE WIRED FOR RED MONITOR CAPABILITY. CONTRACTOR SHALL PURCHASE TRANSPARITY CONTROLLER SOFTWARE LICENSE. THE CONTROLLER SHALL INCLUDE FUNCTIONS INDICATED ON THE PLANS AND INCLUDE ALL NECESSARY CABLING AND AUXILIARY EQUIPMENT NECESSARY FOR THE INTENDED OPERATION. THE CABINET'S POLICE PANEL SHALL BE EQUIPPED WITH A CONNECTION FOR A TRAFFIC SIGNAL CONTROLLER MANUAL OVERRIDE SWITCH.
2. FURNISH AND INSTALL A DUAL–METERED TYPE III–CF SERVICE EQUIPMENT ENCLOSURE (COMMERCIAL RATED) WITH THE FOLLOWING CIRCUIT BREAKERS: 120/240V–100A MAIN. 120V – 50A METERED SIGNALS, 240V – 40A METERED LIGHTING. 120V–15A METERED DUAL TYPE V–P.E.C. THE TYPE III–CF SERVICE ENCLOSURE'S CONTACT SWITCH SHALL BE "MERCURY FREE".
3. FURNISH AND INSTALL 3" SERVICE CONDUIT WITH PULL ROPE PER SOUTHERN CALIFORNIA EDISON REQUIREMENTS. CONTRACTOR TO COORDINATE WITH SOUTHERN CALIFORNIA EDISON.
4. FURNISH AND INSTALL SIGN (AS NOTED) ON SIGNAL MAST ARM PER CALTRANS STD. PLAN ES–7N, R10–12 (MOD).
5. FURNISH AND INSTALL TOMAR EMERGENCY VEHICLE PRE–EMPTION EQUIPMENT AND REQUIRED 4–CHANNEL DISCRIMINATION EQUIPMENT IN THE CONTROLLER CABINET PER CITY OF TEMECULA SPECIFICATIONS. MOUNT EVP OPTICAL DETECTORS ON MAST ARM AS SHOWN IN DETAIL "B"
6. FURNISH AND INSTALL BATTERY BACK–UP SYSTEM IN AN EXTERNALLY SIDE MOUNTED BBS CABINET WITH GENERATOR PLUG ASSEMBLY AND MANUAL BYPASS SWITCH PER CITY OF TEMECULA SPECIFICATIONS. ALL BATTERY BACK–UP EQUIPMENT SHALL BE MOUNTED IN THE BATTERY BACK–UP CABINET AND SHALL BE WIRED PER MANUFACTURER'S SPECIFICATIONS.
7. FURNISH AND INSTALL AXIS CCTV CAMERA ON TRAFFIC SIGNAL POLE WITH WALL–AND–POLE MOUNT PER MANUFACTURERS SPECIFICATIONS AND CONNECT TO MIDSPAN CONVERTER. PROVIDE ALL PATCH CABLES AND CONNECTORS NECESSARY FOR COMMUNICATION.
8. FURNISH AND INSTALL 6' VEHICLE DETECTOR PER CALTRANS STANDARD PLAN ES–5B AND LOOPS LAYOUT DETAIL. LIMIT LINE LOOPS SHALL BE TYPE D.
9. FURNISH AND INSTALL FIBER ETHERNET SWITCH ON DIN–RAIL MOUNT WITH 2 SMALL FORM FACTOR PLUGGABLE TRANSCEIVERS AND POWER SUPPLY IN CONTROLLER CABINET. FURNISH AND INSTALL FIBER OPTIC JUMPER (2M DUPLEX LC TO SC) IN CONTROLLER CABINET. FURNISH AND INSTALL FIBER DISTRIBUTION UNIT (FDU) WITH SC 6 PORT PANEL IN CONTROLLER CABINET.
10. FURNISH AND INSTALL 3'X6' MODIFIED TYPE Q BICYCLE DETECTION LOOP PER CALTRANS STANDARD PLAN ES–5B. LOOP SHALL BE PLACED 40' FROM LIMIT LINE.

NOTES

- AB ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
- RC EQUIPMENT OR MATERIAL SALVAGED AND PROVIDED TO THE CITY OF TEMECULA.
- CB INSTALL CONDUIT INTO EXISTING PULL BOX.
- CC CONNECT NEW CONDUIT TO EXISTING CONDUIT.

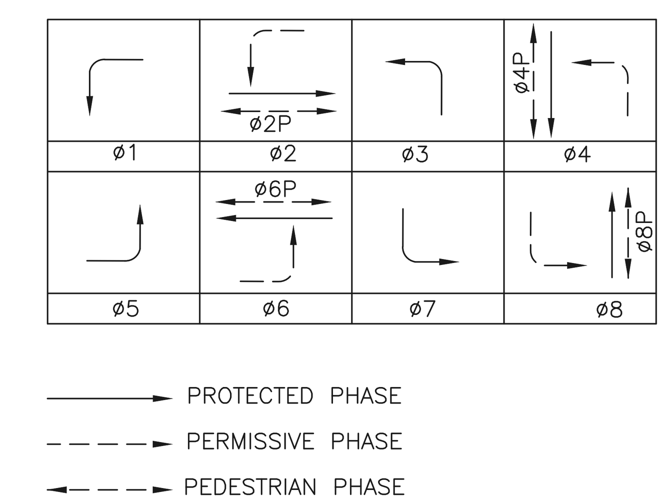


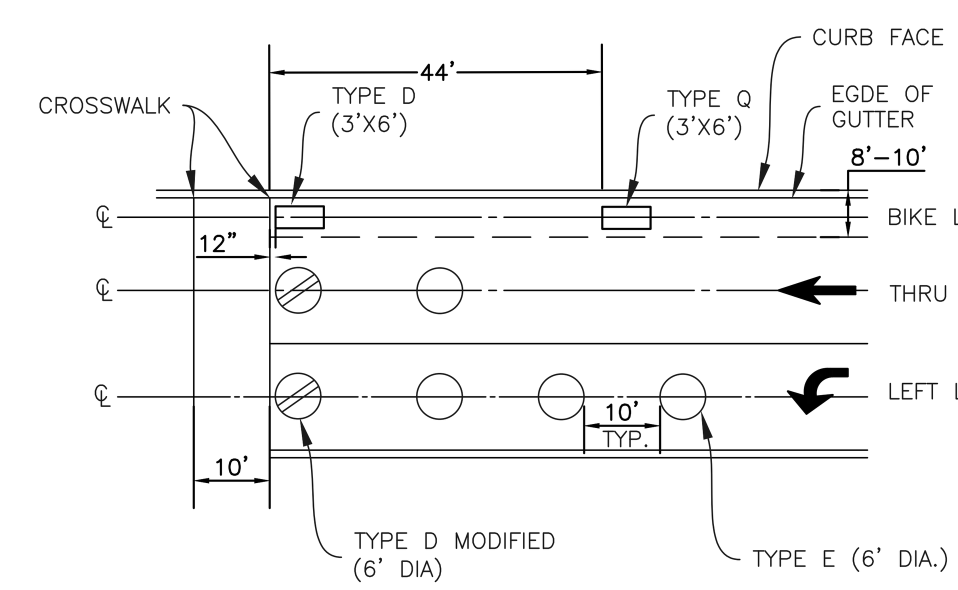
NOTES

1. CONTRACTOR MUST PROVIDE A MIN. OF 4' CLEAR SIDEWALK FOR PEDESTRIANS.

DETAIL "A"

PHASE DIAGRAM





LIMIT LINE AND LOOP INSTALLATION DETAIL
NTS

GRAPHIC SCALE IN FEET
1" = 20'

SIGN LEGEND

LEFT TURN YIELD ON FLASHING
NO U TURN
R10–12 (MOD)

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TWO WORKING DAYS BEFORE YOU DIG

AS FIRST ORDER OF WORK, THE CONTRACTOR SHALL POTHOLE POLE LOCATIONS PRIOR TO ORDERING POLES. IF CONFLICTS ARE FOUND DURING POTHOLING, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD. FAILURE TO COMPLY SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR FOR ANY LOSS OF TIME, ADDITIONAL COST, AND DAMAGE.

ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK: RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE: Horizontal / Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By | Drawn By | Checked By

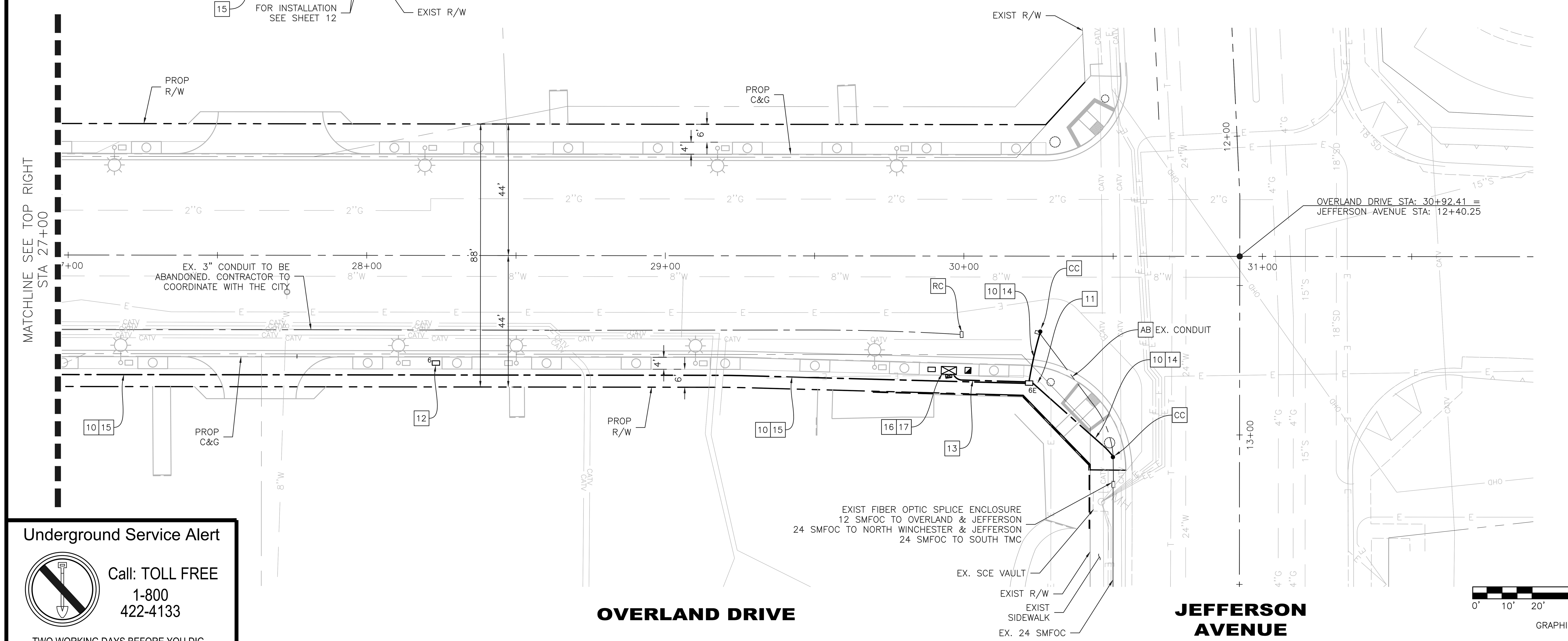
Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE
Date
R.C.E. No. 41836 Expires 03–31–24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:
R.C.E. No. 44223 Expires: 06–30–2023

CITY OF TEMECULA
DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
COMMERCE CENTER DRIVE AND OVERLAND DRIVE TRAFFIC SIGNAL PLAN

Drawing No. C 14



CONSTRUCTION NOTES:

10 INSTALL 3" SCH. 80 PVC CONDUIT WITH TRACER WIRE AND MULE TAPE. CONDUIT SWEEPS SHALL BE 45'

11 FURNISH AND INSTALL FIBER OPTIC SPLICE ENCLOSURE IN "DOUBLE-STACKED" #6 CONCRETE PULL BOX WITH FIBERLYTE PULL BOX COVER. A MINIMUM OF 100 FOOT OF SLACK IS REQUIRED.

12 FURNISH AND INSTALL "DOUBLE-STACKED" #6 CONCRETE PULL BOX WITH FIBERLYTE PULL BOX COVER. A MINIMUM OF 50 FOOT OF SLACK SHALL BE PROVIDED.

13 FURNISH AND INSTALL A 12-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK IN CONTROLLER CABINET.

14 FURNISH AND INSTALL A 24-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK.

15 FURNISH AND INSTALL A 72-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK. BURRY 18" MIN.

16 FURNISH AND INSTALL FIBER OPTIC JUMPER (2M DUPLEX LC TO SC) IN CONTROLLER CABINET.

17 FIBER DISTRIBUTION UNIT (FDU) WITH SC 6 PORT PANEL IN CONTROLLER CABINET FROM EXISTING CABINET TO NEW CABINET.

RC EQUIPMENT OR MATERIAL TO BE SALVAGED AND PROVIDED TO THE CITY OF TEMECULA.

CC CONNECT NEW CONDUIT TO EXISTING CONDUIT.

SYMBOL LEGEND:

PROPOSED PULL BOX NO. 6 OR 6E PER PLAN.

PROPOSED CONDUIT (CONSTRUCTION NOTES INDICATE SIZE).

0' 10' 20' 40' 60' 80'

GRAPHIC SCALE IN FEET
1" = 20'

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ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 Expires 03-31-24

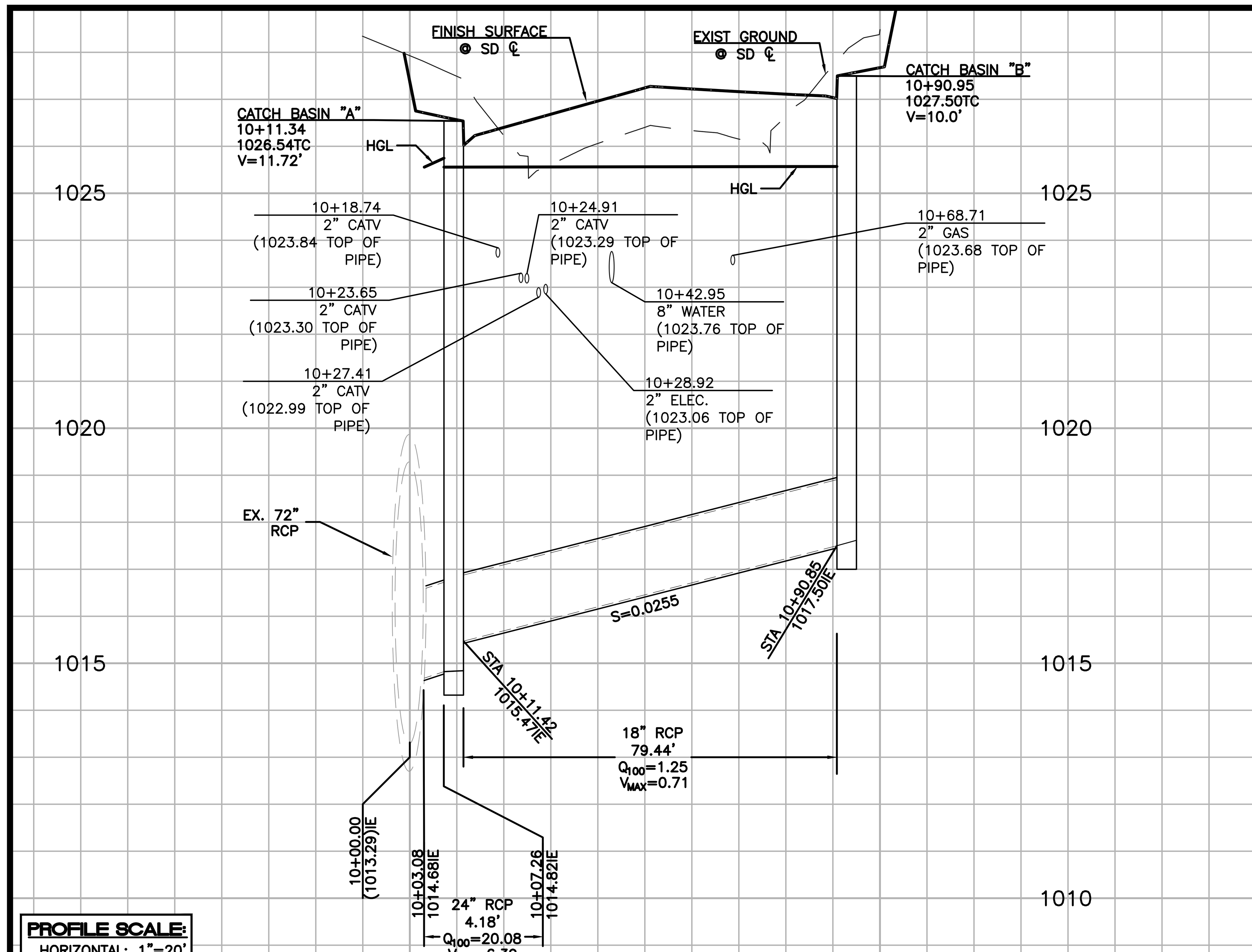
RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

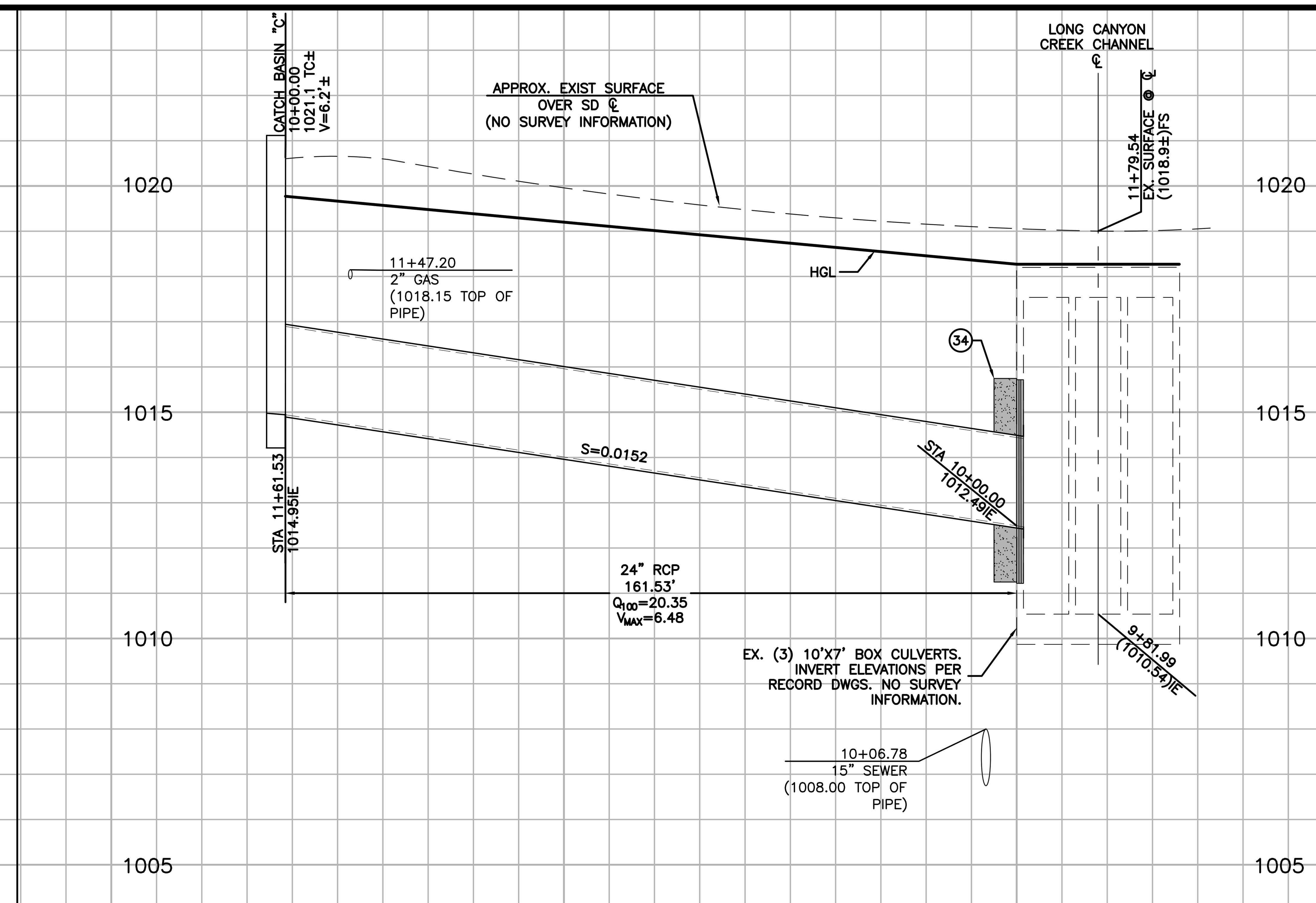
OVERLAND DRIVE
WIDENING
PROJECT NO. PW 20-11
FIBER OPTIC COMMUNICATION PLAN

Drawing No. C 15

Sheet 15 of 19



LATERAL A AND B



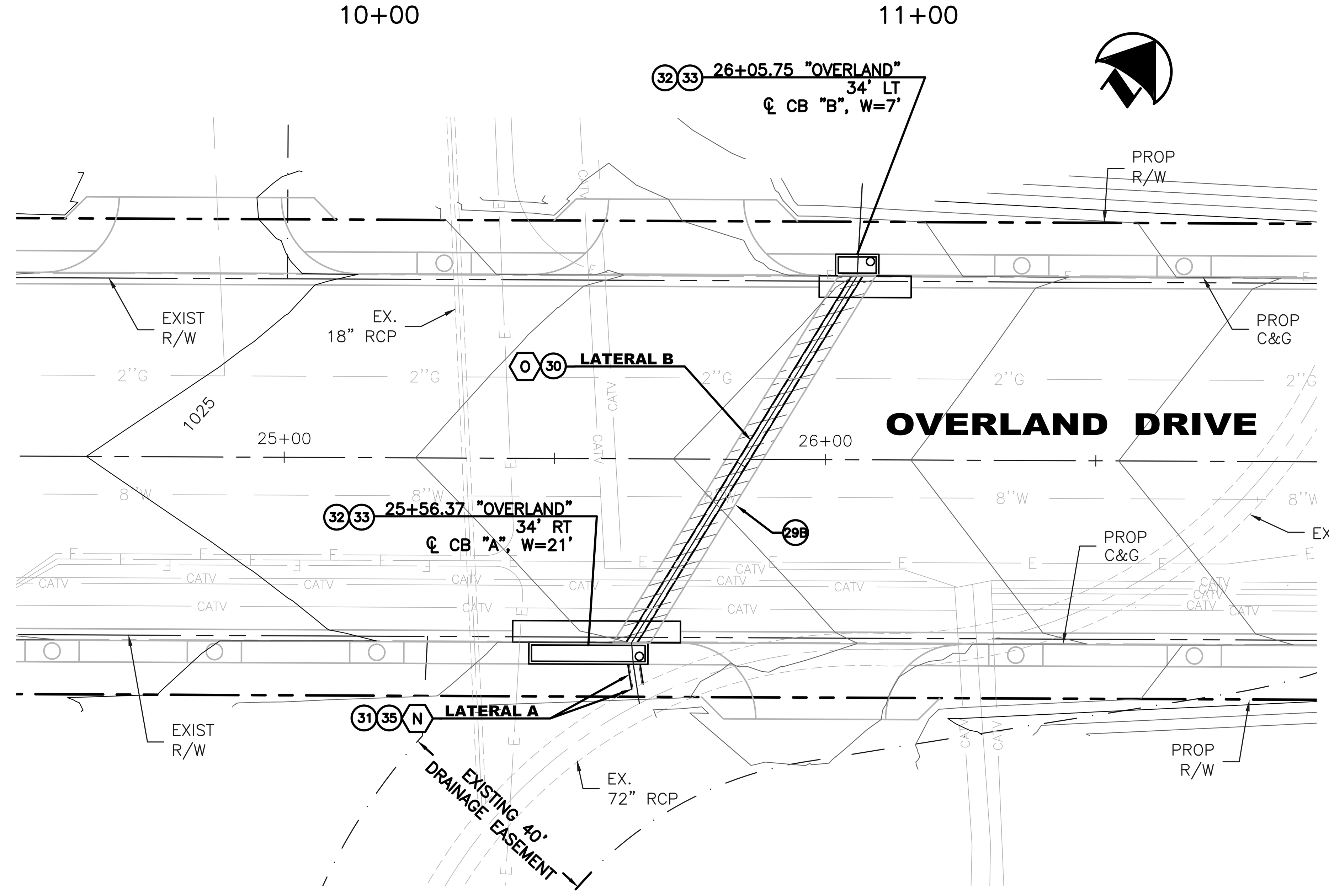
LATERAL C

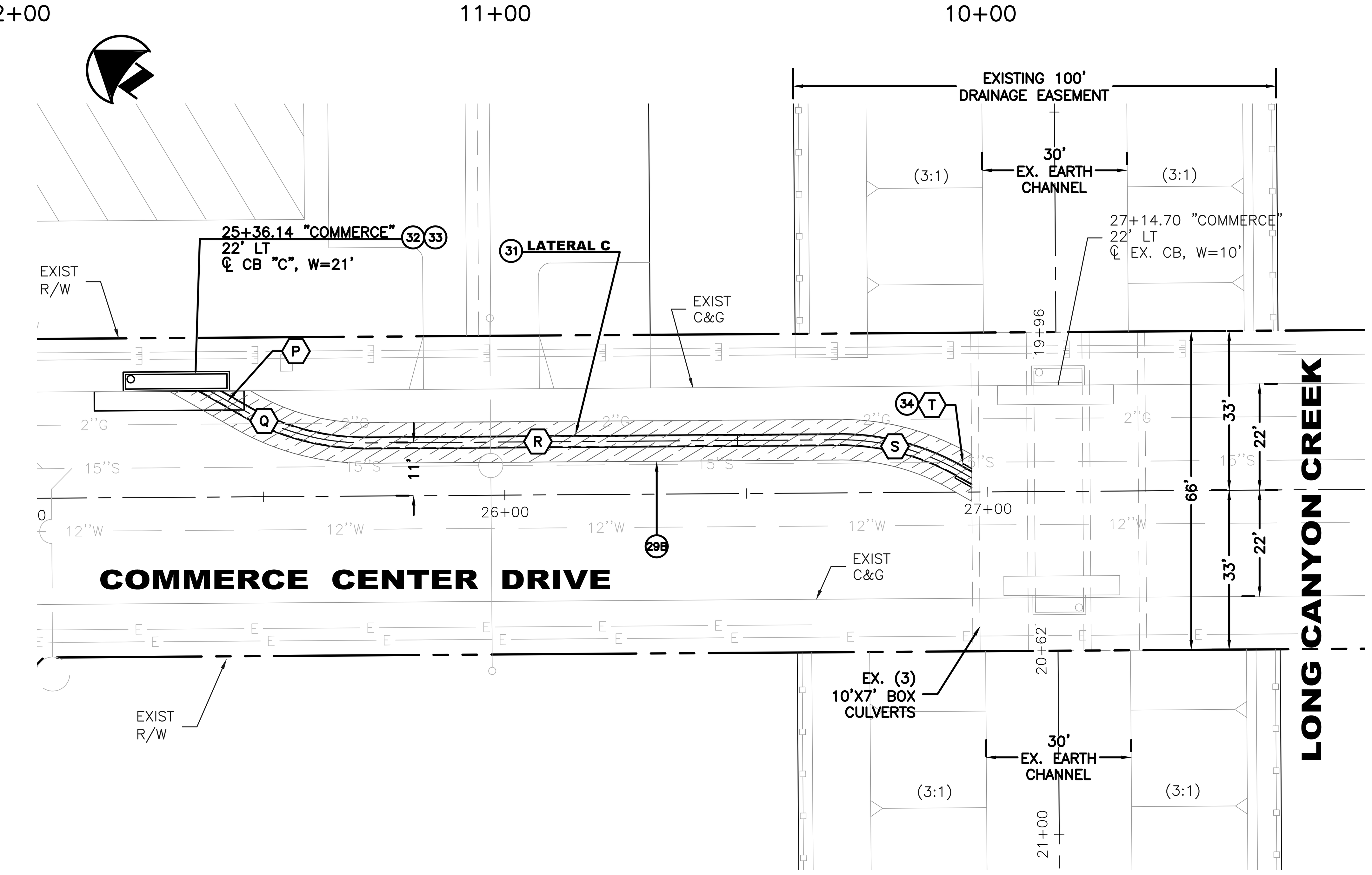
CONSTRUCTION NOTES:

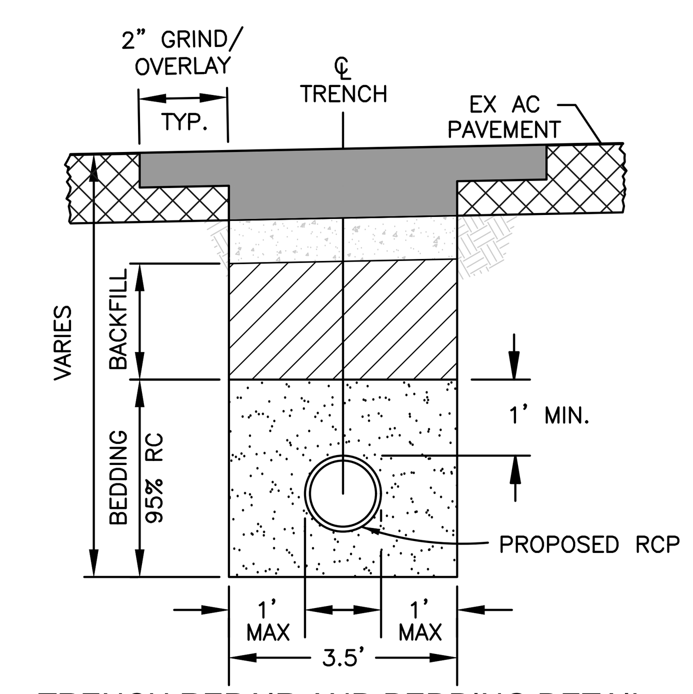
- (29B) TRENCH REPAIR PER CITY OF TEMECULA STD. DWG. NO. 407
- (30) CONSTRUCT 18" RCP (2000-D)
- (31) CONSTRUCT 24" RCP (2000-D)
- (32) CONSTRUCT CATCH BASIN No. 1 PER RCFC&WCD STD No. CB100
- (33) CONSTRUCT LOCAL DEPRESSION No 2. PER RCFC&WCD STD DWG NO. LD201, CASE B
- (34) CONSTRUCT JUNCTION STRUCTURE No. 3 PER RCFC&WCD STD. No. JS228
- (35) CONSTRUCT JUNCTION STRUCTURE No. 4 PER RCFC&WCD STD. No. JS229

LINE AND CURVE DATA TABLE

LINE/CURVE	BEARING/DELTA	LENGTH	RADIUS
N	N43°50'20"W	7.33'	——
O	N3°07'07"W	79.61'	——
P	S4°15'46"E	8.60'	——
Q	30°00'00"	26.18'	50.00'
R	S34°15'46"E	97.78'	——
S	30°00'00"	26.18'	50.00'
T	S4°15'46"E	2.80'	——







TRENCH REPAIR AND BEDDING DETAIL

NTS

0' 10' 20' 40' 60' 80'

GRAPHIC SCALE IN FEET
1" = 20'

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1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE	SEAL:
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal	REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA
Inspector							Vertical	
Date Completed								

Designed By | Drawn By | Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 — Expires 03-31-24

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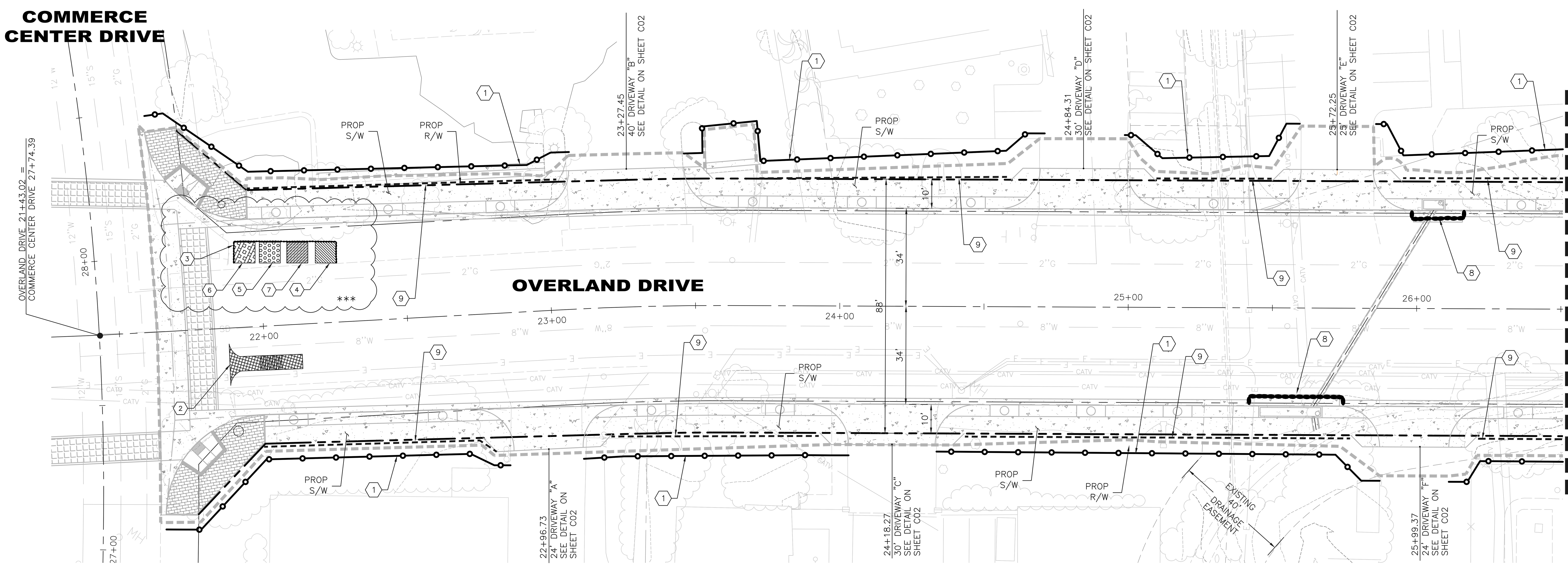
R.C.E. No. 44223 — Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
STORM DRAIN IMPROVEMENTS

Drawing No. C 16

Sheet 16 of 19



EROSION CONTROL CONSTRUCTIONS NOTES

1. SILT FENCE (SE-1).
2. STABILIZED CONSTRUCTION ENTRANCE/EXIT (TC-1) WITH RUMBLE RACKS (10'x24' MIN.).
3. SANDBAG BARRIER (SE-8).
4. MATERIAL DELIVERY AND STORAGE (WM-01).
5. VEHICLE STORAGE.
6. WASTE STORAGE AREA.
7. VEHICLE WASHING AND MAINTENANCE AREA.
8. STORM DRAIN INLET PROTECTION (SE-10).
9. FIBER ROLLS (SE-5).

LEGEND

SAND BAGS
SILT FENCE
GRADING LIMITS
STABILIZED CONSTRUCTION ENTRANCE
MATERIAL DELIVERY/STORAGE AREA
VEHICLE STORAGE AND MAINTENANCE AREA
VEHICLE WASHING AREA
FIBER ROLLS

EROSION AND SEDIMENT CONTROL NOTES:

1. FILTERED RUNOFF. ALL RUNOFF SHALL BE FILTERED PRIOR TO DISCHARGING FROM A SITE OR TO ANY TYPE OF PRIVATE OR PUBLIC STORM WATER CONVEYANCE SYSTEM (NATURAL WATERCOURSES, STREETS, GUTTERS, CONCRETE-LINED V-DITCHES, STORM DRAINS, FLOW-LINES, INLETS, OUTLETS, ETC.). ALL NON-PERMITTED DISCHARGES ARE PROHIBITED FROM ENTERING ANY STORM WATER CONVEYANCE SYSTEM YEAR-ROUND.

2. BEST MANAGEMENT PRACTICES (BMP'S). YEAR-ROUND, POLLUTION PREVENTION MEASURES, ALSO KNOWN AS BEST MANAGEMENT PRACTICES (BMP'S), MUST BE INSTALLED PRIOR TO ANY FIELD ACTIVITIES. BMP HANDBOOKS CAN BE DOWNLOADED AT HTTP: / /WWW.DOT.CA.GOV/HQ/CONSTRUC/STORMWATER/MANUALS.HTM. ADDITIONAL EROSION PREVENTION AND SEDIMENT CONTROL (WPC) MEASURES MUST BE INSTALLED AND MAINTAINED PRIOR TO AND THROUGHOUT EACH RAINY SEASON. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR WPC MEASURES THROUGHOUT THE DURATION OF THE PROJECT FOR ALL CLEARING, DISKING, GRADING, EXCAVATING AND STOCKPILING ACTIVITIES, AND ON ALL EXPOSED SLOPES AND INACTIVE PADS THROUGHOUT THE ENTIRE SITE. THE DEVELOPER/CONTRACTOR IS ALSO RESPONSIBLE FOR ANY DISCHARGES FROM SUBCONTRACTORS.

A. STOCKPILING OF BMPS. ADDITIONAL WPC MATERIALS SHALL BE STOCKPILED AT VARIOUS LOCATIONS THROUGHOUT THE SITE FOR IMMEDIATE USE WITHIN SEVEN DAYS PRIOR TO ANY FORECASTED RAIN. ON EMERGENCY SITUATIONS, THE DEVELOPER/CONTRACTOR SHALL IMMEDIATELY MAKE EQUIPMENT AND WORKERS AVAILABLE TO PROTECT THE SITE.

3. EROSION AND SEDIMENT CONTROLS. ALL WPC MEASURES SHALL BE INSPECTED, RESTORED, REPAIRED OR MODIFIED YEAR-ROUND THROUGHOUT THE SITE TO PROJECT PERIMETERS, ADJACENT PROPERTIES, ENVIRONMENTALLY SENSITIVE AREAS AND ALL PRIVATE/PUBLIC STORM WATER CONVEYANCE SYSTEMS. IF ANY EROSION OR SEDIMENT CONTROLS FAIL DURING ANY RAIN EVENT, MORE EFFECTIVE ONES WILL BE REQUIRED IN THEIR PLACE.

A. EROSION CONTROLS. EROSION CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO APPLYING AND ESTABLISHING: VEGETATIVE COVER, WOOD MULCH, STAPLED OR PINNED BLANKETS (STRAW, COCONUT OR OTHER), PLASTIC SHEETING (MINIMUM 10-MIL), POLYPROPYLENE MATS, SPRAY-ON CONTROLS TO ALL DISTURBED AREAS OR OTHER MEASURES APPROVED BY THE CITY ENGINEER. JUTE NETTING SHALL NOT BE USED AS A STAND-ALONE EROSION CONTROL. FOR SLOPES GREATER THAN 4:1, PRO DE FIBER ROLLS AND EITHER A BONDED FIBER MATRIX PRODUCT APPLIED TO A RATE OF 3500 LIB/ACRE OR A STABILIZED FIBER MATRIX PRODUCT APPLIED TO A RATE OF 10 GAL/ACRE. THE CITY ENGINEER MAY APPROVE DIFFERENT APPLICATION RATES FOR SLOPES LESS THAN 4:1.

B. SEDIMENT CONTROLS. SEDIMENT CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO: DESILTING BASINS, GRADED BERMS, FIBER ROLLS, SILT FENCES, GRAVEL BAG CHEVRONS (FILLED WITH MINIMUM 3/4" GRAVEL), CHECK DAMS, DRAINAGE INLET PROTECTION, ETC. FIBER ROLLS SHALL BE INSTALLED IN 15-FOOT INCREMENTS MEASURED ALONG THE FACE OF THE SLOPE. SILT FENCE SHALL BE INSTALLED ALONG INTERIOR STREETS AND COMBINED WITH GRAVEL-BAG OR SILT FENCE CHEVRONS INSIDE THE SIDEWALK RIGHT-OF-WAY OR BACK OF CURBS.

4. STATE CONSTRUCTION GENERAL PERMIT. IF THE PROJECT DISTURBS, EXPOSES OR STOCKPILES ONE ACRE OR MORE OF SOIL, THE SITE MUST BE COVERED UNDER THE STATE CONSTRUCTION GENERAL PERMIT. A WASTE DISCHARGE IDENTIFICATION (WDID) NUMBER, A RISK LEVEL DETERMINATION NUMBER AND THE QUALIFIED "STORM WATER POLLUTION PREVENTION PLAN" DEVELOPER (QSD) SHALL BE PRO\1DED TO THE CITY PRIOR TO ISSUANCE OF A GRADING PERMIT. A SWPPP SHALL BE IMPLEMENTED THROUGHOUT THE DURATION OF THE PROJECT AND SHALL BE READILY AVAILABLE TO CITY AND STATE INSPECTORS AND UPDATED TO REFLECT CURRENT SITE CONDITIONS DURING CONSTRUCTION. TIHE CONSTRUCTION PERMIT CAN BE DOWNLOADED AT: WWW. WATERBOARDS.CA.GOV/WATER_ISSUES/PROGRAMS/STORMWATER/CONSTRUCTION.

5. PERIMETER PROTECTION. PERIMETER PROTECTION MUST BE INSTALLED PRIOR TO ANY CLEARING ACTIVITIES. CLEARING SHALL BE LIMITED TO AREAS THAT WILL BE IMMEDIATELY GRADED OR DISTURBED. A COMBINATION OF WPC MEASURES SHALL BE IMPLEMENTED IN AREAS THAT HAVE BEEN CLEARED. ALL DISTURBED AREAS OF AN INACTIVE SITE AS DESCRIBED IN THE ENGINEERING AND CONSTRUCTION MANUAL, SHALL ALSO BE PROTECTED.

6. CONSTRUCTION ACCESS POINTS. CONSTRUCTION ACCESS POINTS SHALL BE STABILIZED WITH A COMBINATION OF ROCK AND SHAKER PLATES YEAR-ROUND TO PREVENT TRACK-OUT. INTERIOR ACCESS POINTS (ALL PROPOSED DRIVEWAYS, MATERIAL STORAGE AND STAGING AREA ENTRANCES/EXITS, ETC.) SHALL ALSO BE PROTECTED WITH ROCK TO PREVENT TRACK-OUT ONTO INTERIORS STREETS. ROUTINE STREET SWEEPING SHALL BE PERFORMED ON ALL PAVED STREETS WHERE TRACKING IS OBSERVED. VACUUM SWEEPERS SHALL BE USED WHEN STREET SWEEPING BECOMES INEFFECTIVE. CONTROLLED STREET WASHING SHALL ONLY BE ALLOWED PRIOR TO THE APPLICATION OF ASPHALT SEAL GOATS, AND ONLY WHEN ALL PERTINENT DRAINAGE INLETS ARE PROTECTED.

7. MATERIAL STORAGE. MATERIAL STORAGE AND STAGING AREAS SHALL BE ESTABLISHED. FUEL TANKS, PORTABLE TOILETS, LIQUIDS, GELS, POWDERS, LANDSCAPE MATERIALS AND STOCKPILES OF SOIL SHALL BE STORED AWAY FROM ALL PRIVATE/PUBLIC STORM WATER CONVEYANCE SYSTEMS, SIDEWALKS, RIGHT-OF-WAYS AND FLOW-LINES AND SHALL HAVE SECONDARY CONTAINMENT. INACTIVE STOCKPILES OF SOIL SHALL BE COVERED AT ALL TIMES. ACTIVE STOCKPILES SHALL BE COVERED PRIOR TO A FORECASTED RAIN.

8. CONSTRUCTION WASTE. CONSTRUCTION WASTE AND MISCELLANEOUS DEBRIS SHALL BE PLACED IN WATER-TIGHT BINS. WIRE MESH RECEPTACLES SHALL NOT BE ALLOWED. WASH-OUT STATIONS SHALL BE PROVIDED FOR CONCRETE, PAINTS, STUCCO AND OTHER LIQUID WASTE, AND SHALL BE LINED WITH PLASTIC AND LOCATED AWAY FROM PUBLIC RIGHT-OF-WAYS, FLOW LINES, ETC. PRIOR TO ANY FORECASTED RAIN, BINS AND WASH-OUTS SHALL BE COVERED WITH LIDS OR PLASTIC TARPS.

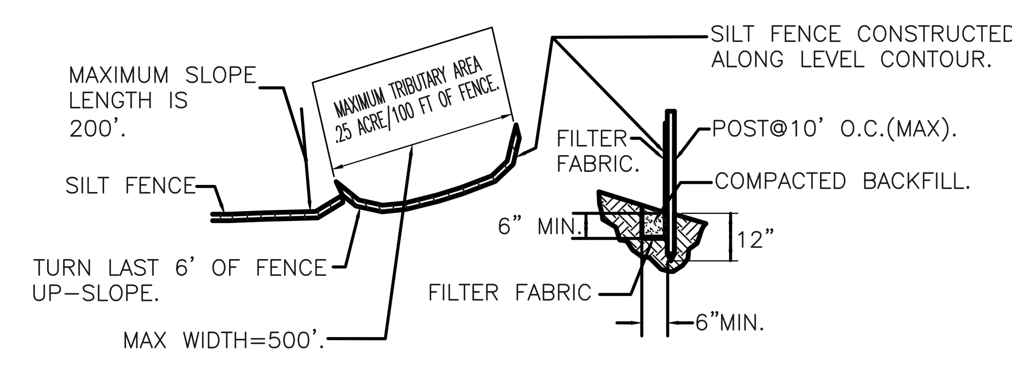
9. PORTABLE MIXERS. ALL PORTABLE MIXERS SHALL HAVE PLASTIC LINERS UNDERNEATH THEM WITH GRAVEL-BAGS PLACED ON THE DOWN-HILL SIDE OF THE LINERS TO CONTAIN DISCHARGES.

10. MAINTENANCE. ALL ONSITE AND OFFSITE FLOW LINES (I.E., V- AND BROW-DITCHES, TERRACE DRAINS, RIBBON GUTTERS, CURB GUTTERS, ETC.), STORM WATER CONVEYANCE SYSTEMS, CHECK DAMS, CHEVRONS, SILT FENCES AND DESILTING BASINS SHALL BE FREE OF SEDIMENT, CONSTRUCTION MATERIALS, WASTE, MISCELLANEOUS DEBRIS AND DETERIORATED WPC MEASURES YEAR-ROUND.

11. OBSTRUCTIONS. NO OBSTRUCTIONS, OTHER THAN BMP'S, SHALL BE ALLOWED WITHIN ANY STORM WATER CONVEYANCE SYSTEM, UNLESS ALTERNATIVE DRAINAGE FACILITIES HAVE BEEN APPROVED BY THE CITY ENGINEER.

12. OTHER CONSTRUCTION NOTES. REFER TO SEPARATE NOTES FOR 'GENERAL," 'GRADING" AND 'PAVING" REQUIREMENTS.

13. OTHER PERTINENT INFORMATION. REFER TO THE CITY OF TEMECULA MUNICIPAL CODE, TITLE 18, CHAPTER 18.18 "EROSION AND SEDIMENT CONTROL'



1 SILT FENCE
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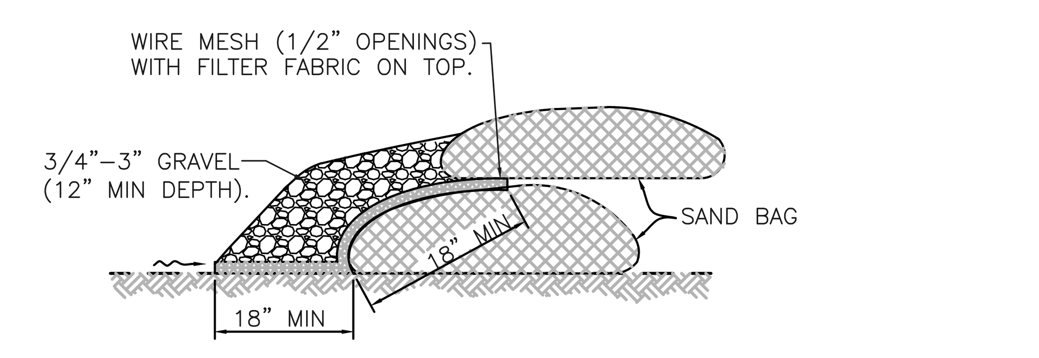

3 SAND BAGS
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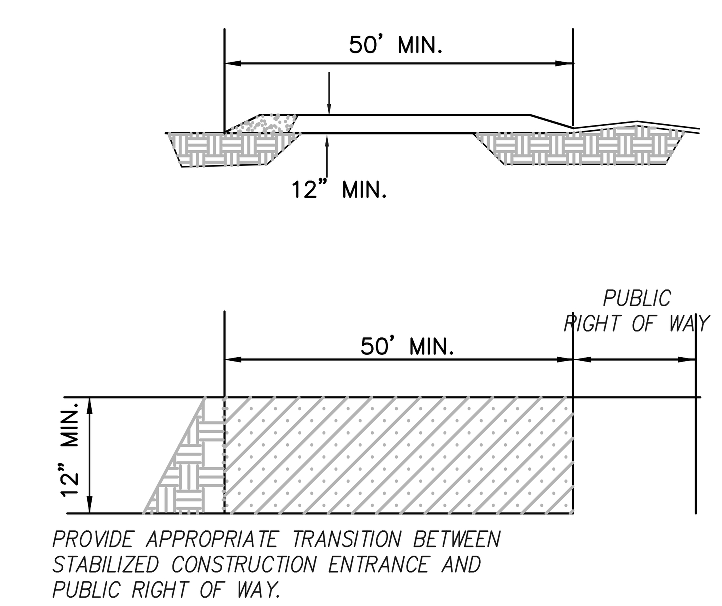

2 STABILIZED CONSTRUCTION ENTRANCE
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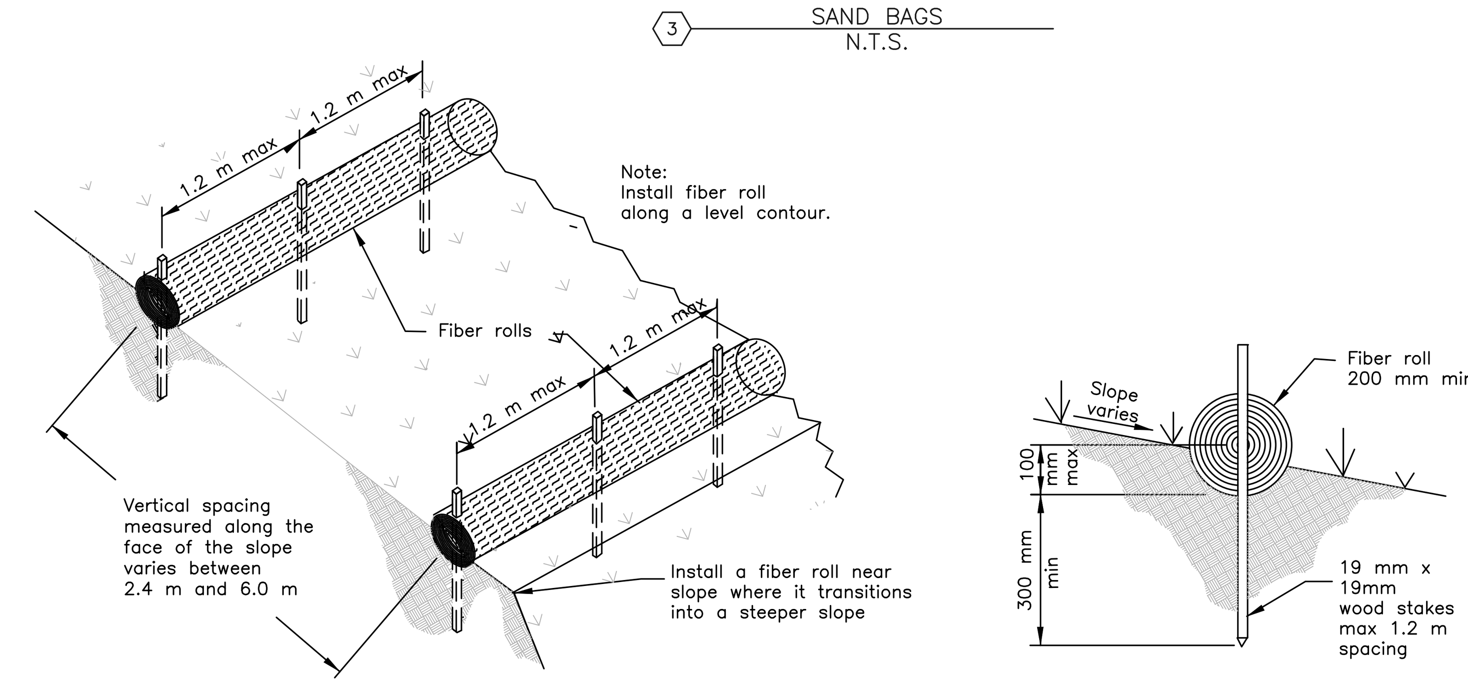

9 TYPICAL FIBER ROLL INSTALLATION
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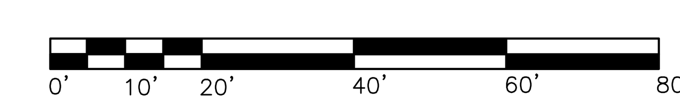

GRAPHIC SCALE IN FEET
1" = 20'

NOTE
*** STOCKPILE AND CONSTRUCTION MATERIAL TO BE PLACE OFF-SITE.
"THE CONTRACTOR SHOULD SELECT THE BEST SUITABLE STOCKPILE AREA DURING CONSTRUCTION"

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F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK
RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
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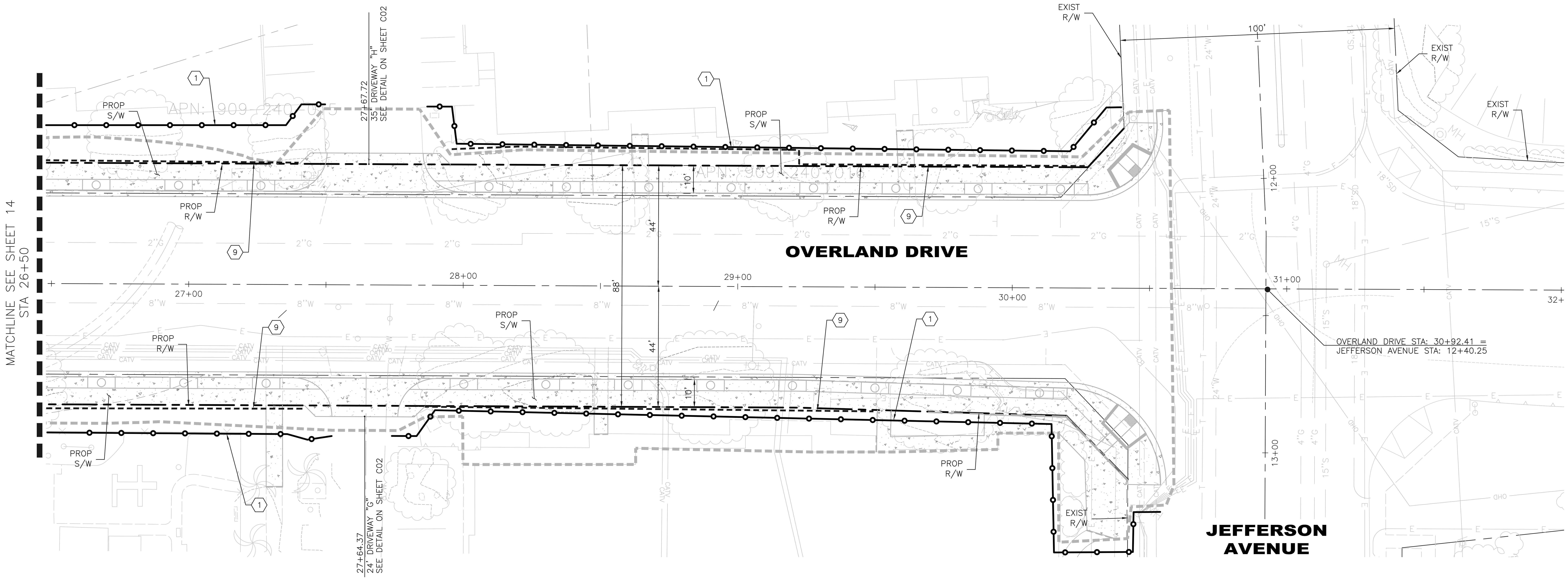
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
EROSION CONTROL

Drawing No. C 17
Sheet 17 of 19



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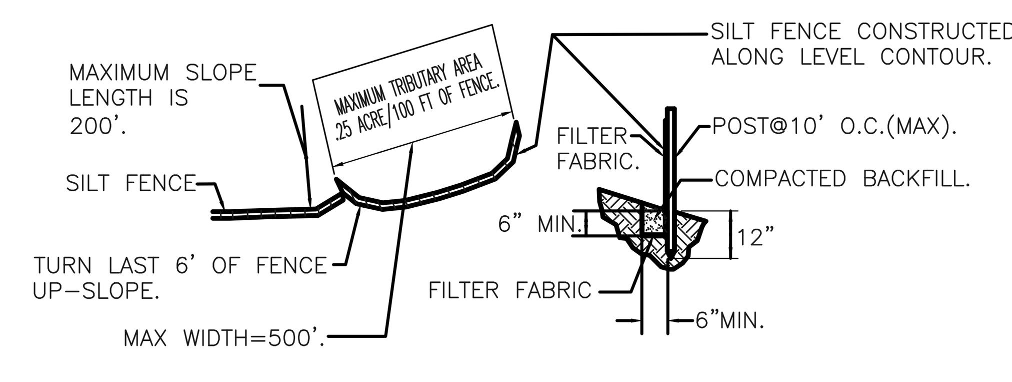
LEGEND

- SAND BAGS
- SILT FENCE
- GRADING LIMITS
- STABILIZED CONSTRUCTION ENTRANCE
- MATERIAL DELIVERY/STORAGE AREA
- VEHICLE STORAGE AND MAINTENANCE AREA
- VEHICLE WASHING AREA
- FIBER ROLLS



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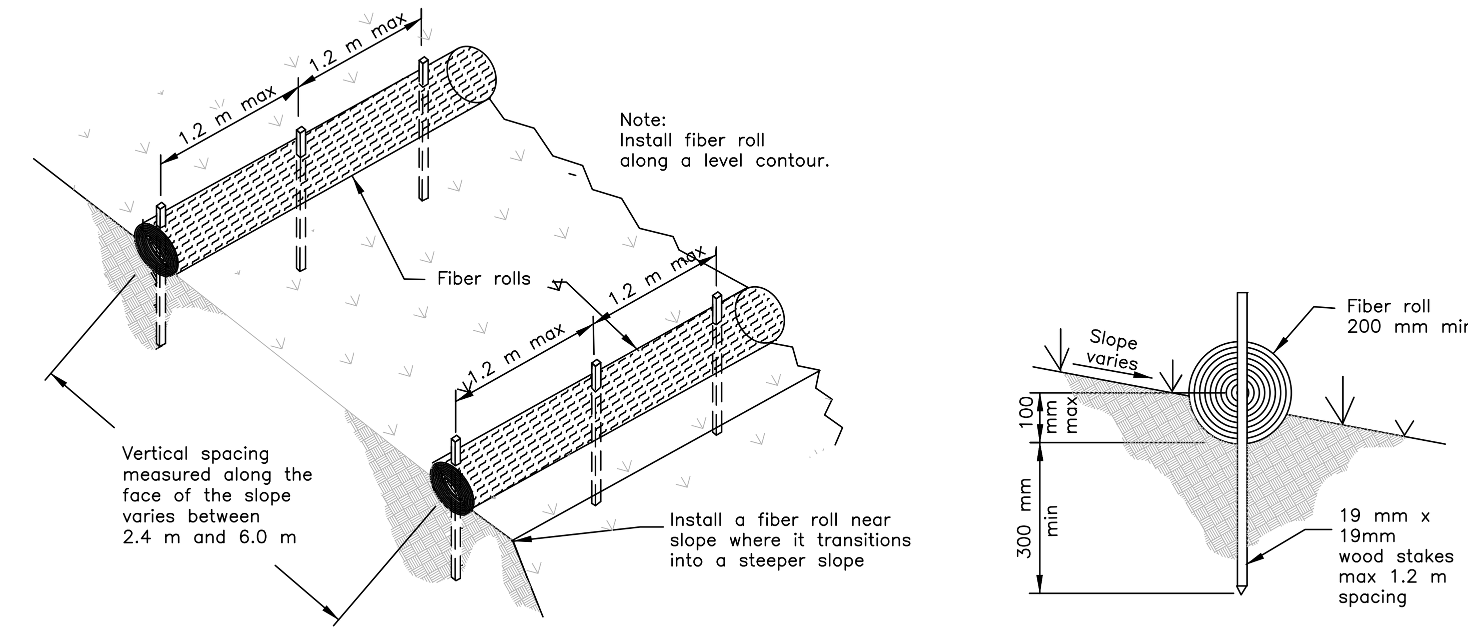

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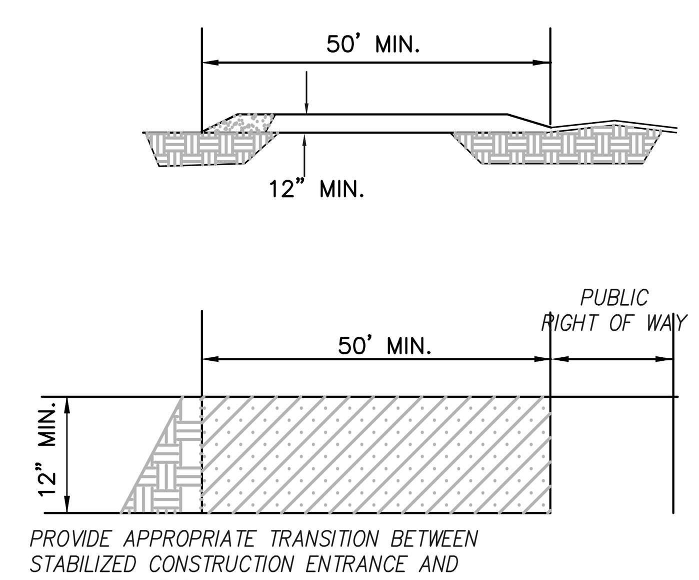

2 STABILIZED CONSTRUCTION ENTRANCE
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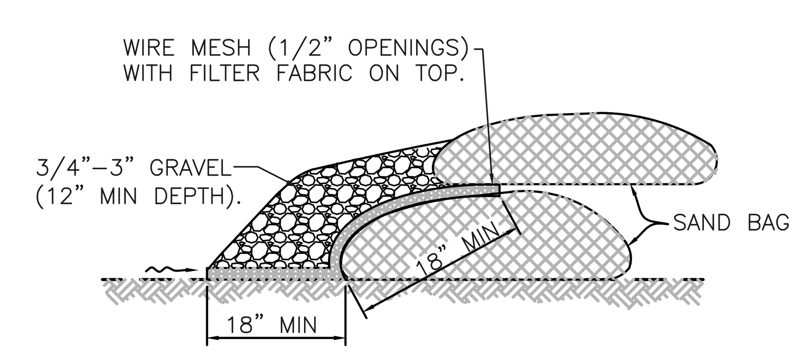

3 SAND BAGS
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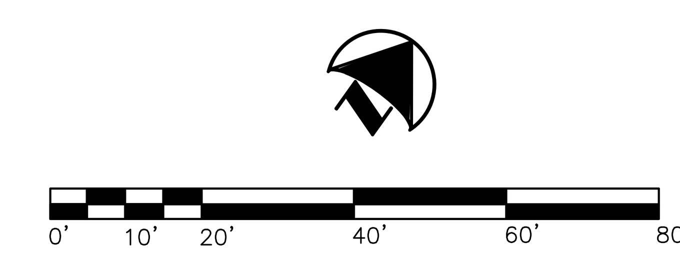

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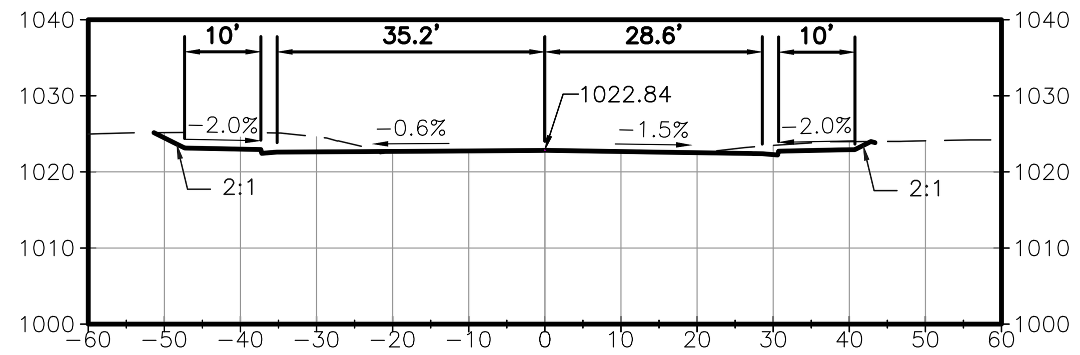
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
EROSION CONTROL

Drawing No. C 18

22+00.00



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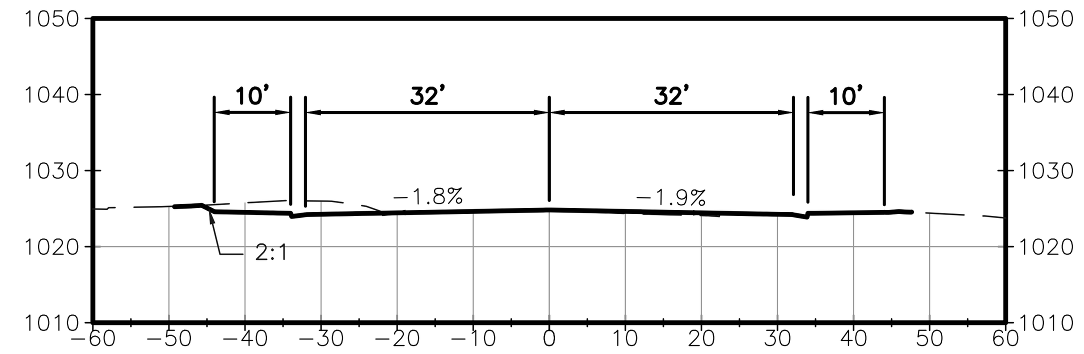

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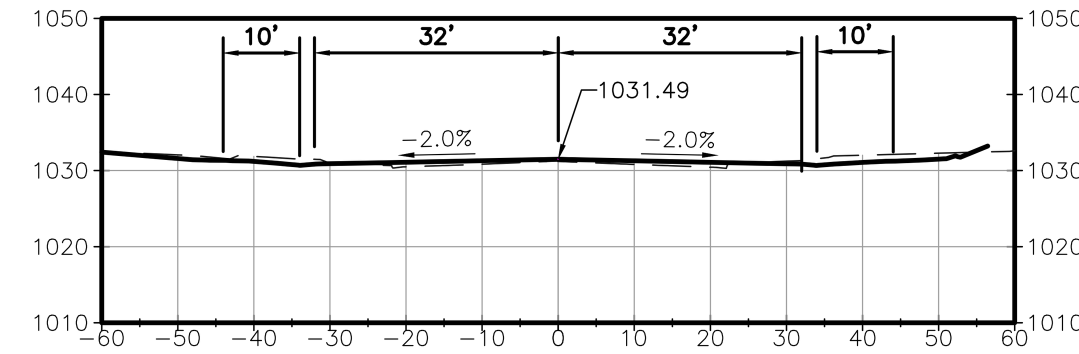

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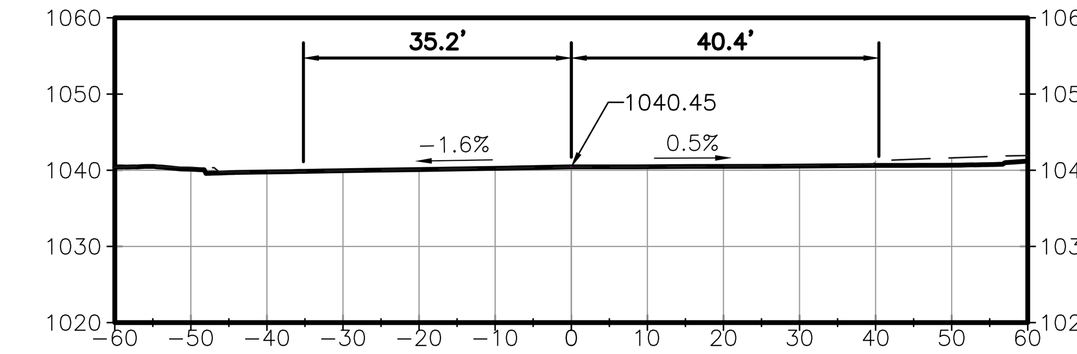

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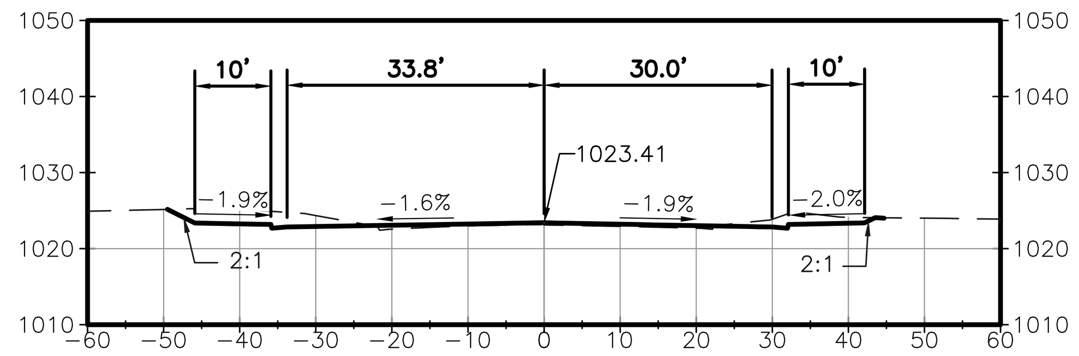

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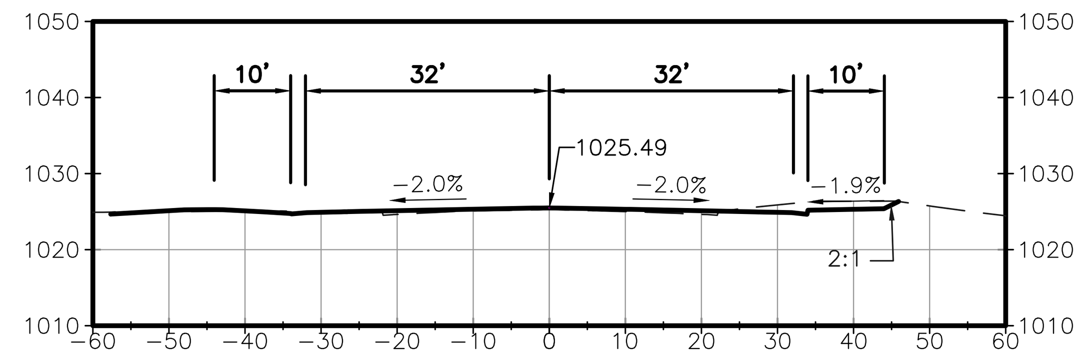

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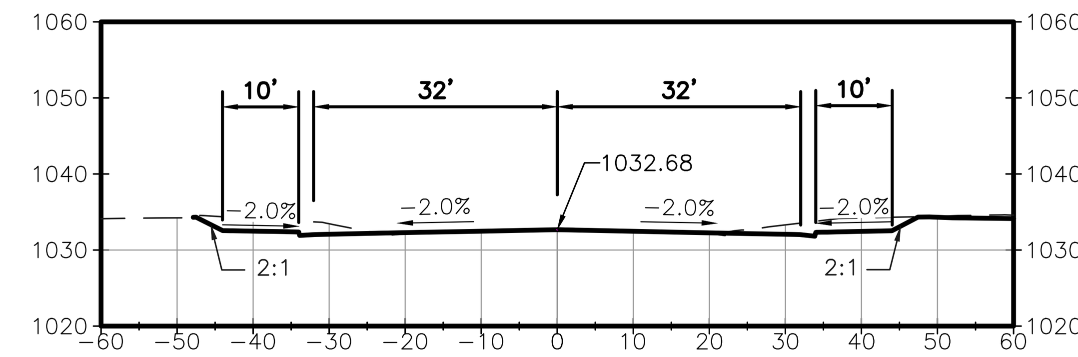
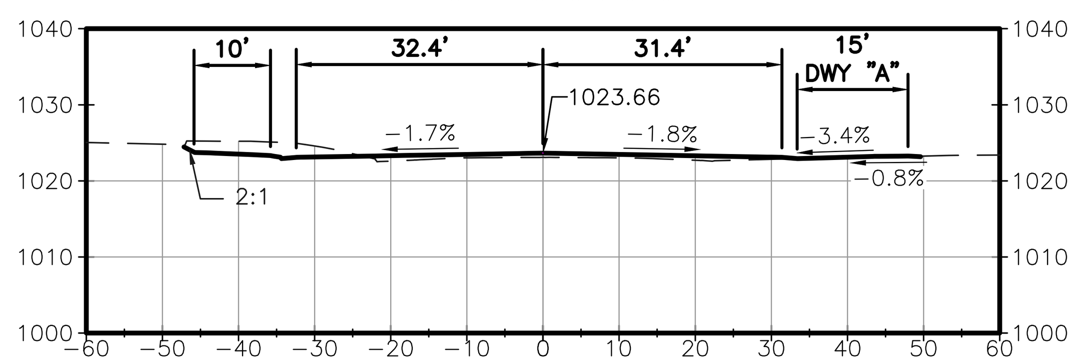


LEGEND:

EX. SURFACE

PROP. SURFACE

23+00.00



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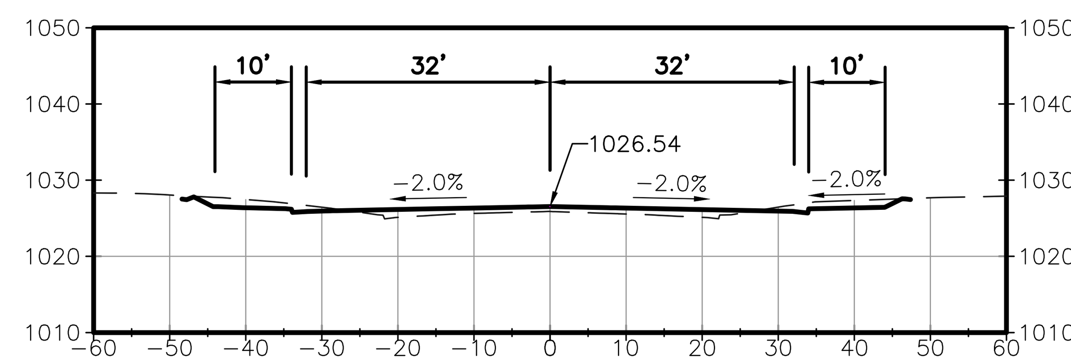

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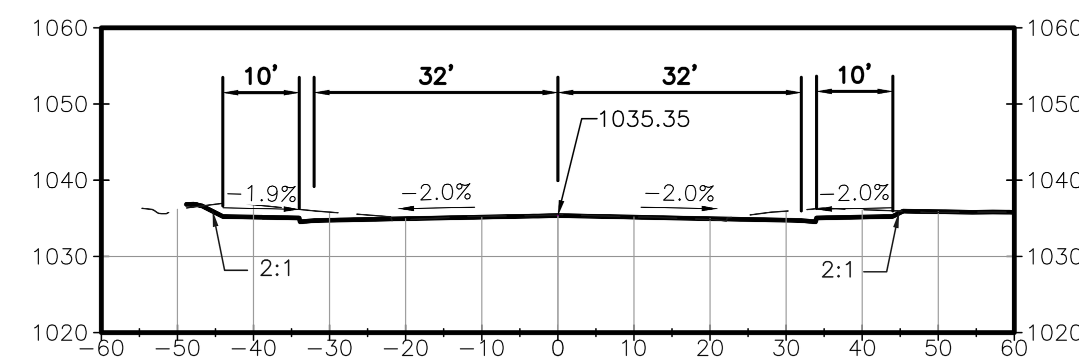

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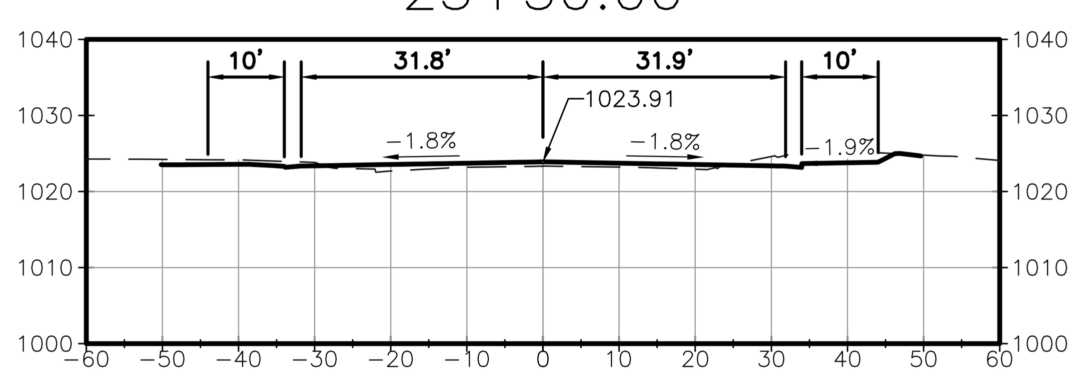

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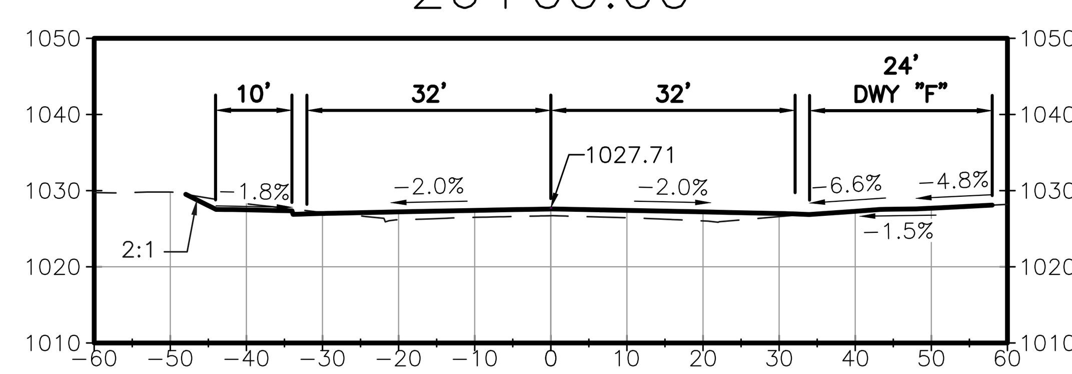

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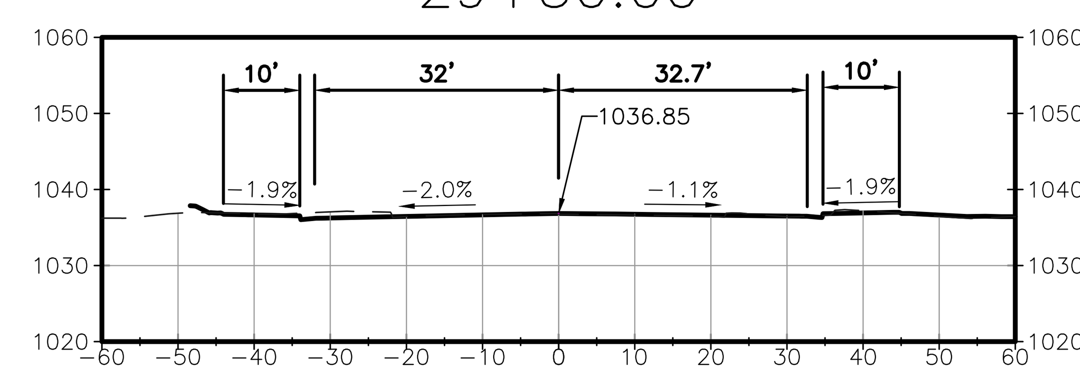

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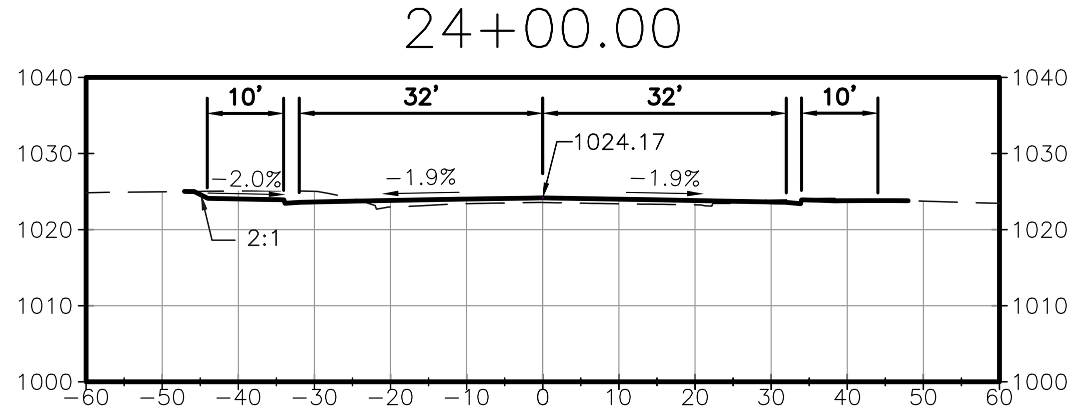

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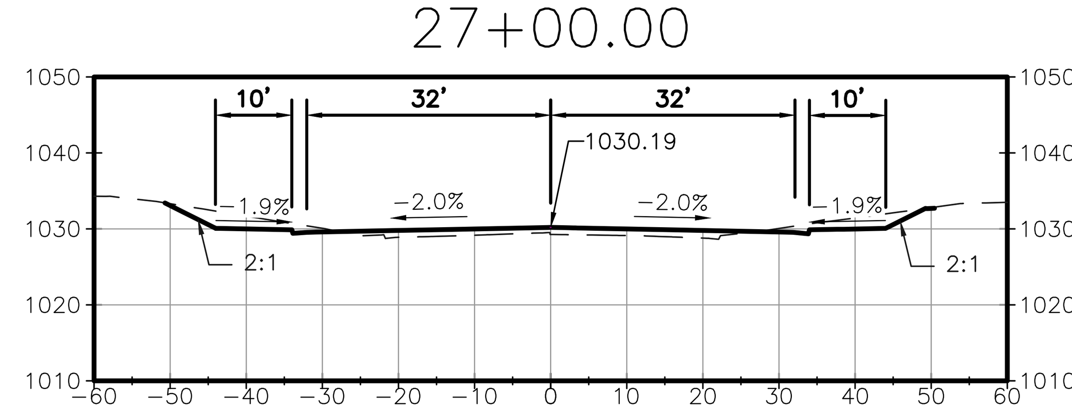

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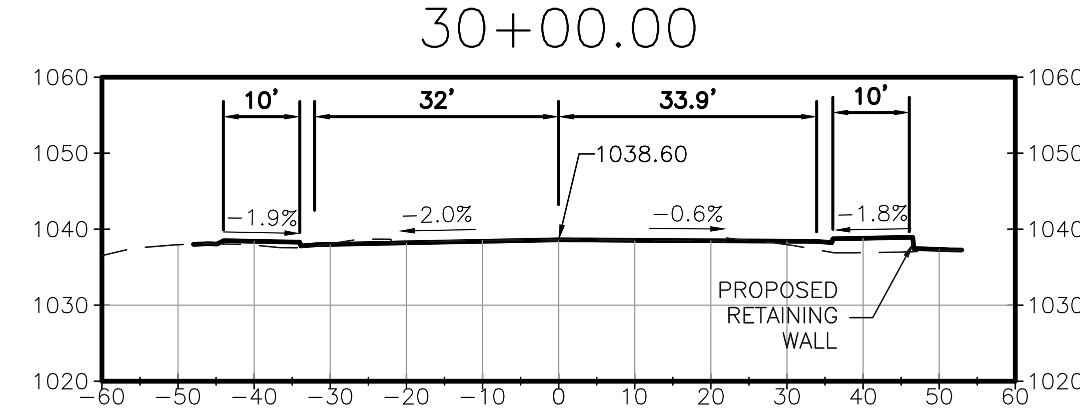


Underground Service Alert

Call: TOLL FREE

1-800
422-4133

TWO WORKING DAYS BEFORE YOU DIG

PROFILE SCALE:
HORIZONTAL: 1"=2'
VERTICAL: 1"=20'

1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

Engineering Resources of Southern California

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ____ DATE: ____
NINO ABAD, SENIOR CIVIL ENGINEER

ACCEPTED BY: ____ DATE: ____
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

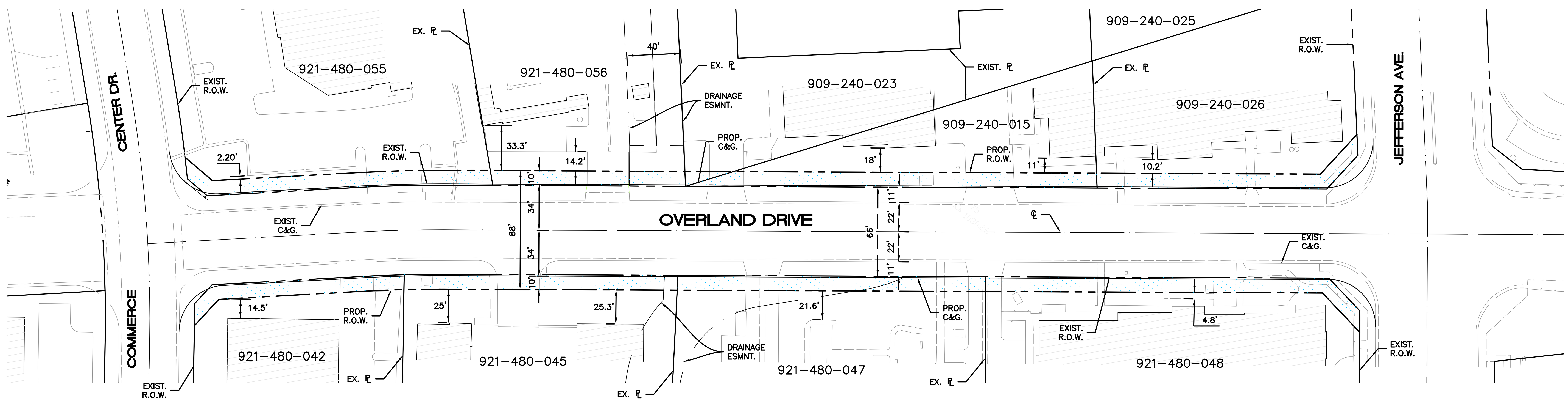
OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
SECTIONS

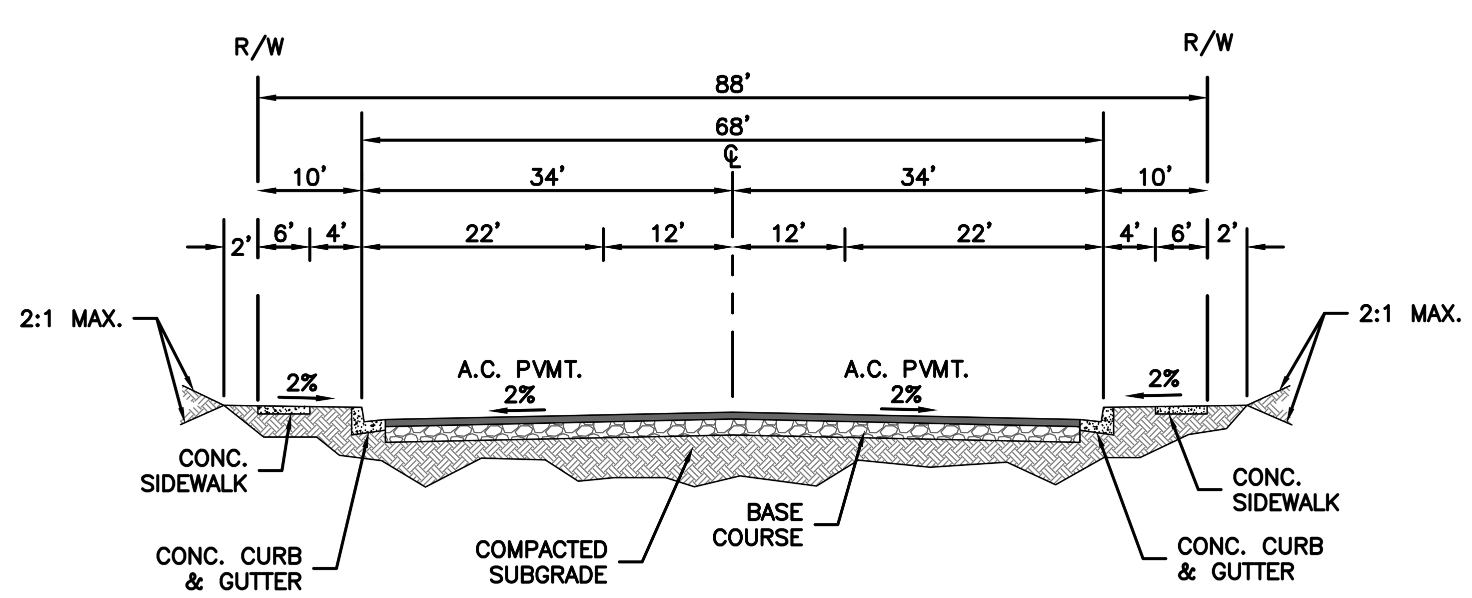
Drawing No. C 19

Sheet 19 of 19

Appendix B

Parcel Impact Data





PROPOSED TYPICAL SECTION

N.T.S.

PARCEL OWNERSHIP DATA

ASSESSOR PARCEL No. (APN)	OWNER
909–240–015	HILBERT GROUP
909–240–023	HILBERT GROUP
909–240–025	HILBERT GROUP
909–240–026	HILBERT GROUP
921–480–042	PAUL E. MANGINI
921–480–045	RED HAT PROP TEMECULA
921–480–047	JOHAN IAN HOLDINGS
921–480–048	DWB2; JAMES ROBBINS
921–480–055	LUPINE ROAD
921–480–056	RED HAT PROP TEMECULA

AREA IMPACTED

ASSESSOR PARCEL No. (APN)	AREA (FT^2)
909–240–015	3170,08
909–240–023	198,45
909–240–025	0
909–240–026	2266,78
921–480–042	1800,51
921–480–045	2231,38
921–480–047	2512,44
921–480–048	3177,86
921–480–055	2554,18
921–480–056	1581,44

LEGEND

- EXISTING RIGHT–OF–WAY
- EXISTING IMPROVEMENTS
- EXISTING CENTER LINE
- EXISTING PROPERTY LINE
- PROPOSED RIGHT–OF–WAY
- PROPOSED IMPROVEMENTS
- EXISTING BULDING
- AREA IMPACTED

Underground Service Alert

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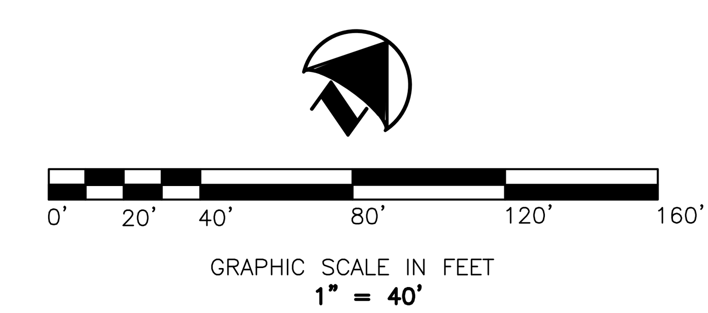
422-4133

TWO WORKING DAYS BEFORE YOU DIG



ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE	SEAL:
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173; ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal	
Inspector								
Date Completed							Vertical	

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE Date

R.C.E. No. 41836 Expires 03–31–20

RECOMMENDED BY: NINO ABAD, ASSOCIATE ENGINEER DATE:

ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:

R.C.E. No. Expires:

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE
RIGHT OF WAY ANALYSIS
PROJECT NO. PW 16–06

Drawing No.

Sheet of

Appendix C

Water Quality Management Plan

City of Temecula
WATER QUALITY MANAGEMENT PLAN (WQMP)

PROJECT NAME & PERMIT Nº:
PW20-11
OVERLAND DRIVE WIDENING
(JEFFERSON AVENUE TO COMMERCE CENTER DRIVE)

PROJECT ADDRESS:

PROJECT APN:

PREPARED BY:

Engineering Resources of Southern California, Inc.
1861 W. Redlands Boulevard
Redlands, CA 92373

(909) 890-1255
matt@erscinc.com

PREPARED FOR:

City of Temecula
41000 Main Street
Temecula, CA 92590

951-694-6444
chris.white@temeculaca.gov

DATE OF WQMP:
August 2022

APPROVED BY:

APPROVAL DATE:

Applicant's Certification

Project Name: Overland Drive Widening
Permit Number: PW 20-11

OWNER'S CERTIFICATION

I have read and understand that the City of Temecula has adopted minimum requirements for managing urban runoff, including stormwater, from land development activities, as described in the BMP Design Manual. I certify that this WQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this WQMP by City staff is confined to a review and does not relieve me, as the Applicant, of my responsibilities for project design.

I hereby declare that the design is consistent with the requirements of the City of Temecula BMP Design Manual, which is a design manual for compliance with local City of Temecula Stormwater and Urban Runoff Management and Discharge Controls Ordinance (Chapter 8.28 et seq.) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for stormwater management; as well as the requirements of the City of Temecula Engineering and Construction Manual (Chapter 18) and the City of Temecula Erosion and Sediment Control Ordinance (Chapter 18.18 et seq.).

____
Owner's Signature Date:

____
Print Name

____
Company

STOP! Before continuing this form review Chapter 1.3 of the BMP Design Manual. If the project type is listed in Table 1-2, permanent stormwater requirements do not apply to your project. Write your exempt project category in the space provided below and skip to Step 3. Do not complete Steps 1, 2, or 4 of this WQMP.

Not Applicable
Exempt Project category

Step 1: Source Control BMP Checklist

Source Control BMPs			
All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the City BMP Design Manual for information to implement source control BMPs shown in this checklist. Answer each category below pursuant to the following: • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the City BMP Design Manual. Discussion / justification must be provided and **show locations on the project plans**. Select applicable Source Controls in the Source Control BMP summary on the following page. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided.			
Source Control Requirement	**Applied?**		
4.2.1 Prevention of Illicit Discharges into the MS4	✓Yes	☐No	☐N/A
Discussion / justification: Implement SC-P. Plazas and sidewalks shall be swept regularly to prevent the accumulation of liter and debris.			
4.2.2 Storm Drain Stenciling or Signage	✓Yes	☐No	☐N/A
Discussion / justification: Stenciling or labeling proposed catch basins within the project area.			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	✓N/A
Discussion / justification: Project is a street widening. There are no outdoor materials stored in the street.			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	✓N/A
Discussion / justification: The Project is a street widening. There are no materials stored in street.			
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	✓N/A
Discussion / justification: The Project is a street widening. There are not trash storage areas in the street.			
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants No additional BMPs considered at this time.	✓Yes	☐No	☐N/A
Discussion / justification. Clearly identify which sources of runoff pollutants are discussed: Anticipated nutrients and pesticides are to be addressed using the proposed on-site source control BMP, which is to utilize native and/or drought tolerant plant species to extend practicable (lower use plants).			

Source Control BMP Summary			
Select all source control BMPs identified for your project in sections 4.2.1 through 4.2.6 above in the column on the left below. Then select “yes” if the BMP has been implemented **and shown on the project plans**, “No” if the BMP has not been implemented, or “N/A” if the BMP is not applicable to your project.			
✓ SC-A. On-site storm drain inlets	✓Yes	☐No	☐N/A
☐ SC-B. Interior floor drains and elevator shaft sump pumps	☐Yes	☐No	✓N/A
☐ SC-C. Interior parking garages	☐Yes	☐No	✓N/A
☐ SC-D1. Need for future indoor & structural pest control	☐Yes	☐No	✓N/A
✓ SC-D2. Landscape/outdoor pesticide use	✓Yes	☐No	☐N/A
☐ SC-E. Pools, spas, ponds, fountains, and other water features	☐Yes	☐No	✓N/A
☐ SC-F. Food service	☐Yes	☐No	✓N/A
☐ SC-G. Refuse areas	☐Yes	☐No	✓N/A
☐ SC-H. Industrial processes	☐Yes	☐No	✓N/A
☐ SC-I. Outdoor storage of equipment or materials	☐Yes	☐No	✓N/A
☐ SC-J. Vehicle and equipment cleaning	☐Yes	☐No	✓N/A
☐ SC-K. Vehicle/equipment repair and maintenance	☐Yes	☐No	✓N/A
☐ SC-L. Fuel dispensing areas	☐Yes	☐No	✓N/A
☐ SC-M. Loading docks	☐Yes	☐No	✓N/A
☐ SC-N. Fire sprinkler test water	☐Yes	☐No	✓N/A
☐ SC-O. Miscellaneous drain or wash water	☐Yes	☐No	✓N/A
✓ SC-P. Plazas, sidewalks, and parking lots	✓Yes	☐No	☐N/A
☐ SC-Q. Large trash generating facilities	☐Yes	☐No	✓N/A
☐ SC-R. Animal facilities	☐Yes	☐No	✓N/A
☐ SC-S. Plant nurseries and garden centers	☐Yes	☐No	✓N/A
☐ SC-T. Automotive facilities	☐Yes	☐No	✓N/A

Note: Show all source control measures applied above on the plan sheets.

Step 2: Site Design BMP Checklist

Site Design BMPs
All development projects must implement site design BMPs SD-A through SD-H where applicable and feasible. See Chapter 4.3 and Appendix E of the City BMP Design Manual for information to implement site design BMPs shown in this checklist. Answer each category below pursuant to the following: • "Yes" means the project will implement the site design BMP as described in Chapter 4.3 and/or Appendix E of the City BMP Design Manual. Discussion / justification must be provided and **show locations on the project plans**. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided.

Site Design Requirement	Applied?		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	✓Yes	☐No	☐N/A
Discussion / justification: The overall drainage pattern will remain the same as the existing conditions.			
4.3.2 Conserve Natural Areas, Soils, and Vegetation	☐Yes	☐No	✓N/A
Discussion / justification: There are no natural areas. Entire site has been previously developed.			
4.3.3 Minimize Impervious Area	☐Yes	☐No	✓N/A
Discussion / justification: The Project is intended to widen a street to accommodate additional vehicular and pedestrian traffic per City of Temecula standards and Uptown Temecula Specific Plan.			
4.3.4 Minimize Soil Compaction	☐Yes	✓No	☐N/A
Discussion / justification: The Project is widening a roadway. Soil compaction is required for pavement not to fail. Landscaping areas adjacent to sidewalks will not be compacted.			
4.3.5 Impervious Area Dispersion	✓Yes	☐No	☐N/A
Discussion / justification: The Project will widen a street to accommodate vehicular and pedestrian traffic. Additional right of way would be required to provide a proposed sidewalk with tree wells approximately every 30 feet O.C. All proposed improvements are per City standards and Uptown Temecula Specific Plan.			
4.3.6 Runoff Collection	☐Yes	✓ No	☐N/A
Discussion / justification: The Project right of way does not allow areas for runoff collection; and permeable materials will not work for a roadway with the volume of traffic Overland Drive has. Runoff from proposed sidewalks will run to Overland Drive in a sheet flow manner and travels along each gutter line and ultimately discharge to proposed and existing catch basins.			
4.3.7 Landscaping with Native or Drought Tolerant Species	✓Yes	☐No	☐N/A
Discussion / justification: The proposed landscape areas will primarily consist of native and/or drought tolerant plant species (low water use plants). Also, the water use for the proposed landscape areas is			

expected to comply with the City of Temecula Irrigation Guidelines and California Ordinance AB 1881.			
4.3.8 Harvesting and Using Precipitation	☐Yes	✓No	☐N/A
Discussion / justification: The Project right of way does not allow areas for runoff collection/harvesting.			

Step 3: Construction Stormwater BMP Checklist

Minimum Required Standard Construction Stormwater BMPs		
If you answer "Yes" to any of the questions below, your project is subject to Table 1 on the following page (Minimum Required Standard Construction Stormwater BMPs). As noted in Table 1, please select at least the minimum number of required BMPs[1], or as many as are feasible for your project. If no BMP is selected, an explanation must be given in the box provided. The following questions are intended to aid in determining construction BMP requirements for your project. **Note: All selected BMPs below must be included on the BMP plan incorporated into the construction plan sets.**		
1. Will there be soil disturbing activities that will result in exposed soil areas? (This includes minor grading and trenching.) **Reference Table 1 Items A, B, D, and E** Note: Soil disturbances NOT considered significant include, but are not limited to, change in use, mechanical/electrical/plumbing activities, signs, temporary trailers, interior remodeling, and minor tenant improvement.	✓Yes	☐No
2. Will there be asphalt paving, including patching? **Reference Table 1 Items D and F**	✓Yes	☐No
3. Will there be slurries from mortar mixing, coring, or concrete saw cutting? **Reference Table 1 Items D and F**	✓Yes	☐No
4. Will there be solid wastes from concrete demolition and removal, wall construction, or form work? **Reference Table 1 Items D and F**	✓Yes	☐No
5. Will there be stockpiling (soil, compost, asphalt, concrete, solid waste) for over 24 hours? *Contractor to select the best suitable stockpile off-site area during construction.* **Reference Table 1 Items D and F**	☐Yes	✓No
6. Will there be dewatering operations? **Reference Table 1 Items C and D**	☐Yes	✓No
7. Will there be temporary on-site storage of construction materials, including mortar mix, raw landscaping and soil stabilization materials, treated lumber, rebar, and plated metal fencing materials? *Contractor to select the best suitable stockpile off-site area during construction.* **Reference Table 1 Items E and F**	☐Yes	✓No
8. Will trash or solid waste product be generated from this project? *Contractor to select the best suitable stockpile off-site area during construction.* **Reference Table 1 Item F**	✓Yes	☐No
9. Will construction equipment be stored on site (e.g.: fuels, oils, trucks, etc.?) *Contractor to select the best suitable stockpile off-site area during construction.* **Reference Table 1 Item F**	☐Yes	✓No
10. Will Portable Sanitary Services ("Porta-potty") be used on the site? *Contractor to select the best suitable stockpile off-site area during construction.* **Reference Table 1 Item F**	☐Yes	✓No

1 Minimum required BMPs are those necessary to comply with the City of Temecula Erosion and Sediment Control Ordinance (Chapter 18.18 et seq.) and the City of Temecula Engineering and Construction Manual (Chapter 18).

Table 1. Construction Stormwater BMP Checklist

Minimum Required Best Management Practices (BMPs)	CALTRANS SW Handbook[2] Detail	✔ BMP Selected	Reference sheet No.'s where each selected BMP is shown on the plans. If no BMP is selected, an explanation must be provided.
A. Select Erosion Control Method for Disturbed Slopes (choose at least one for the appropriate season)			
Vegetation Stabilization Planting[3] (Summer)	SS-2, SS-4	☐	No Slopes on project.
Hydraulic Stabilization Hydroseeding[2] (Summer)	SS-4	☐	
Bonded Fiber Matrix or Stabilized Fiber Matrix[4] (Winter)	SS-3	☐	
Physical Stabilization Erosion Control Blanket[3] (Winter)	SS-7	☐	
B. Select erosion control method for disturbed flat areas (slope < 5%) (choose at least one)			
Will use erosion control measures from Item A on flat areas also	SS-3, 4, 7	☐	See Sheets 12 and 13 of the Plans.
Sediment Desilting Basin (must treat all site runoff)	SC-2	☐	
Mulch, straw, wood chips, soil application	SS-6, SS-8	✓	

2 State of California Department of Transportation (Caltrans). 2003. Storm Water Quality Handbooks, Construction Site Best Management Practices (BMPs) Manual. March. Available online at: http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm.

3 If Vegetation Stabilization (Planting or Hydroseeding) is proposed for erosion control it may be installed between May 1st and August 15th. Slope irrigation is in place and needs to be operable for slopes >3 feet. Vegetation must be watered and established prior to October 1st. The owner must implement a contingency physical BMP by August 15th if vegetation establishment does not occur by that date. If landscaping is proposed, erosion control measures must also be used while landscaping is being established. Established vegetation must have a subsurface mat of intertwined mature roots with a uniform vegetative coverage of 70 percent of the natural vegetative coverage or more on all disturbed areas.

4 All slopes over three feet must have established vegetative cover prior to final permit approval.

Table 1. Construction Stormwater BMP Checklist (continued)

Minimum Required Best Management Practices (BMPs)	CALTRANS SW Handbook Detail	✔ BMP Selected	Reference sheet No.'s where each selected BMP is shown on the plans. If no BMP is selected, an explanation must be provided.
C. If runoff or dewatering operation is concentrated, velocity must be controlled using an energy dissipater			
Energy Dissipater Outlet Protection[5]	SS-10	☐	Not applicable for this Project
D. Select sediment control method for all disturbed areas (choose at least one)			
Silt Fence	SC-1	✓	See Sheets 12 and 13 of the Plans
Fiber Rolls (Straw Wattles)	SC-5	✓	
Gravel & Sand Bags	SC-6 & 8	✓	
Dewatering Filtration	NS-2	☐	
Storm Drain Inlet Protection	SC-10	✓	
Engineered Desilting Basin (sized for 10-year flow)	SC-2	☐	
E. Select method for preventing offsite tracking of sediment (choose at least one)			
Stabilized Construction Entrance	TC-1	✓	See Sheets 12 and 13 of the Plans
Construction Road Stabilization	TC-2	☐	
Entrance/Exit Tire Wash	TC-3	☐	
Entrance/Exit Inspection & Cleaning Facility	TC-1	☐	
Street Sweeping and Vacuuming	SC-7	✓	
F. Select the general site management BMPs			
F.1 Materials Management			
Material Delivery & Storage	WM-1	✓	See Sheets 12 and 13 of the Plans
Spill Prevention and Control	WM-4	☐	
F.2 Waste Management[6]			
Waste Management Concrete Waste Management	WM-8	✓	See Sheets 12 and 13 of the Plans
Solid Waste Management	WM-5	✓	
Sanitary Waste Management	WM-9	☐	
Hazardous Waste Management	WM-6	☐	

Note: The Construction General Permit (Order No. 2009-0009-DWQ) also requires all projects not subject to the BMP Design Manual to comply with runoff reduction requirements through the implementation of post-construction BMPs as described in Section XIII of the order.

[5] Regional Standard Drawing D-40 – Rip Rap Energy Dissipater is also acceptable for velocity reduction.

[6] Not all projects will have every waste identified. The applicant is responsible for identifying wastes that will be onsite and applying the appropriate BMP. For example, if concrete will be used, BMP WM-8 must be selected.

Step 4: Project type determination (Standard or Priority Development Project)

Is the project part of another Priority Development Project (PDP)? If so, Standard and PDP requirements apply. Go to Step 4.1 and select "PDP"			☐ Yes ✓ No
The project is (select one): ☐ New Development ✓ Redevelopment[7]			
The total proposed newly created or replaced impervious area is:			79,842 ft^2
The total existing (pre-project) impervious area is:			47,903 ft^2
The total area disturbed by the project is:			81,362 ft^2
If the total area disturbed by the project is 1 acre (43,560 sq. ft.) or more OR the project is part of a larger common plan of development disturbing 1 acre or more, a Waste Discharger Identification (WDID) number must be obtained from the State Water Resources Control Board. **WDID:** ________________			

Is the project in any of the following categories, (a) through (f)?[8]

Yes	No		
Yes ☐	No ✓	(a)	New development projects that create 10,000 square feet or more of impervious surfaces [9](collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ✓	No ☐	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ✓	No ☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

[7] Redevelopment is defined as: The creation and/or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways; new sidewalks construction; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

[8] Applicants should note that any development project that will create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) is considered a new development.

Project type determination (continued)

Yes ☐	No ✓	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Co-permittees. See BMP Design Manual Chapter 1.4.2 for additional guidance.*
Yes ☐	No ✓	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ✓	No ☐	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See BMP Design Manual Chapter 1.4.2 for additional guidance.*

Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?

☐ No – the project is not a Priority Development Project (Standard Project).

✓ Yes – the project is a Priority Development Project (PDP).

Further guidance may be found in Chapter 1 and Table 1-2 of the BMP Design Manual.

The following is for **redevelopment PDPs only**:

The area of existing (pre-project) impervious area at the project site is: 47,903 ft² (A)
The total proposed newly created or replaced impervious area is 79,842 ft² (B)
Percent impervious surface created or replaced (B/A)*100: 166.67* %
The percent impervious surface created or replaced is (select one based on the above calculation):

☐ less than or equal to fifty percent (50%) – **only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements**

OR

✓ greater than fifty percent (50%) – **the entire project site is considered a PDP and subject to stormwater requirements**

* City provided direction on treating only incremental difference in impervious area

Step 4.1: Water Quality Management Plan requirements

Step	Answer	Progression
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete Step 4 Project Type Determination Checklist, and see PDP exemption information below. For further guidance, see Chapter 1.4 of the BMP Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply, **STOP, you have satisfied stormwater requirements.**
	✓ PDP	Standard and PDP requirements apply. **Complete Exhibit A "PDP Requirements." http://temeculaca.gov/wqmpa2**
	☐ PDP Exemption	**Go to Step 4.2 below.**

Step 4.2: Exemption to PDP definitions

Is the project exempt from PDP definitions based on either of the following:	If so:
☐ Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with City of Temecula Guidance on Green Infrastructure;	Standard Project requirements apply, AND any additional requirements specific to the type of project. City concurrence with the exemption is required. *Provide discussion and list any additional requirements below in this form.* **STOP, you have satisfied stormwater requirements.**
☐ Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the City of Temecula Guidance on Green Infrastructure.	**Complete Exhibit A "PDP Requirements." Select Green Streets Exemptions where applicable.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:	

Exhibit A
City of Temecula
PRIORITY DEVELOPMENT PROJECT REQUIREMENTS

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Attachments

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- Attachment 1a: DMA Exhibit
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- Attachment 1c: Worksheet B.1-1 DCV
- Attachment 1d: Structural Pollutant Control BMP Checklist(s)
- Attachment 1e:
- Attachment 1f:

Attachment 2: Hydromodification Control Measures
- Attachment 2a: Applicability of HMP Requirements
- Attachment 2b: HMP Exhibit(s)
- Attachment 2c: Management of Critical Coarse Sediment Yield Areas
- Attachment 2d: Flow Control Facility Design
- Attachment 2e: Geomorphic Assessment of Receiving Channels (optional)
- Attachment 2f: Vector Control Plan (if applicable)

Attachment 3: Structural BMP Maintenance Plan
- Attachment 3a: Structural BMP Maintenance Thresholds and Actions
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Attachment 4: City of Temecula PDP Structural BMP Verification for DPW Permitted Land Development Projects

Attachment 5: Copy of Plan Sheets Showing Permanent Stormwater BMPs

Attachment 6: Copy of Project's Drainage Report

Attachment 7: Copy of Project's Geotechnical and Groundwater Investigation Report

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Preparer's Certification Page

Project Name: Overland Drive Widening Improvements
Permit Application Number: PW 20-11

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of Stormwater Best Management Practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Temecula BMP Design Manual, which is a design manual for compliance with local City of Temecula Stormwater and Urban Runoff Management and Discharge Controls Ordinance (Chapter 8.28 et seq.) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for stormwater management.

I have read and understand that the City of Temecula has adopted minimum requirements for managing urban runoff, including stormwater, from land development activities, as described in the BMP Design Manual. I certify that this PDP WQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP WQMP by City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of stormwater BMPs for this project, of my responsibilities for project design.

RCE No. 41836, Expiration: 3/31/2024
Engineer of Work's Signature, PE Number & Expiration Date

John M. Brudin
Print Name

Engineering Resources of Southern California, Inc. (909) 890-1255
Company & Phone No.

____
Date

Engineer's Seal:

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Step 1: Site Information Checklist

Step 1.1: Description of Existing Site Condition and Drainage Patterns

Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	902.32 Santa Margarita, Murrieta HA, Murrieta HSA HUC 18070302

Current Status of the Site (select all that apply):

- X Existing development
- ☐ Previously graded but not built out
- ☐ Demolition completed without new construction
- ☐ Agricultural or other non-impervious use
- ☐ Vacant, undeveloped/natural

Description / Additional Information:
The Overland Drive Widening Project site begins at the intersection of Overland Drive and Jefferson Avenue and continues southwesterly to the intersection of Commerce Center Drive, about 600 ft east of Murrieta Creek. Site is surrounded by commercial and industrial buildings. The existing drainage pattern of the project runs from the intersection of Jefferson Avenue and Overland Drive, in a southwest direction via curb and gutter to ultimate discharge into curb inlet located in Commerce Center Drive, about 550 feet east of Overland Drive.

Existing Land Cover Includes (select all that apply and provide each area on site):
X Pervious Area ___0.77___ Acres (_33,459__ Square Feet)
X Impervious Areas _1.10__ Acres (__47,903___Square Feet)

Description / Additional Information:
The existing Overland Drive is paved with AC pavement and protected with curb and gutter; no public sidewalk exists within the street right of way. From existing curb line to existing right of way, the parkway is mostly grass with various driveways, utility features and private sidewalks from the adjacent businesses. The adjacent commercial/industrial businesses contribute to the runoff that traverses Overland Drive. Three sub-areas with a total land area of 16.4 acres contribute approximately Q_{100}= 41 cfs in off-site runoff to the existing project site. See Hydrology Map

How is stormwater runoff conveyed from the site? At a minimum, this description should answer:
(1) Whether existing drainage conveyance is natural or urban;
(2) Is runoff from offsite conveyed through the site? If yes, describe the offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site;
(3) Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, stormwater treatment facilities, natural or constructed channels; and
(4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations. Reference the Drainage report Attachment for detailed calculations.

Describe existing site drainage patterns:
The tributary area to Overland Drive is urban runoff via curb and gutter. Existing Runoff from offsite commercial and industrial business areas and tributary area runoff enters Overland Drive in a sheet flow manner and travels southerly along each gutter line from Jefferson Avenue to Commerce Center Drive where it then travels easterly for about 550 feet along the northerly curb line of Commerce Center Drive to an existing catch basin with Kraken Bioclean curb inlet with a media treatment flow of 0.11cfs, situated over a triple box structure and deposits the runoff from the catch basin into this structure. The triple box structure carries flow contained in an open natural channel under Commerce Center Drive. The channel begins at Jefferson Avenue and outlets at Murrieta Creek.

An existing 72” storm drain crosses under Overland Drive approximately 350 feet from its intersection with Jefferson Avenue. This SD carries flow from the commercial/industrial developments on the west side of Overland Drive to the east side of Overland Drive and deposits the runoff in the above-mentioned open channel that runs north/south approximately 600 feet east of Overland Drive. This storm drain was constructed in the mid 1980’s as part of the commercial development along Overland Drive.

Step 1.2: Description of Proposed Site Development and Drainage Patterns

Project Description / Proposed Land Use and/or Activities:
The Overland Drive Widening Project consists of the widening of Overland Drive on both sides of the street between Jefferson Avenue and Commerce Center Drive to accommodate additional vehicular and pedestrian traffic. Both intersections will be improved with modifications to the existing traffic signal at Jefferson Avenue and a new traffic signal installed at Commerce Center Drive.

Improvements to Overland Drive will include widening each side by moving the curb and gutter 12 feet, installing 10 foot sidewalk adjacent to the curb and grading to join existing grades and improvements. Asphalt pavement will be constructed in the widened area, joining existing AC pavement that will be protected in place. The typical right of way widening is 11' on each side to fit these improvements. Driveway aprons will be reconstructed and joins to existing improvements. Widening of Overland Drive is taking place to accommodate more lanes and comply with the Uptown Temecula Specific Plan and City standards.

The overall drainage pattern will remain the same as in existing conditions, with runoff from the commercial and industrial businesses entering the street, being contained within the gutter line, additionally two catch basins with Kraken Bioclean filter are being proposed along Overland Drive to convey runoff generated to existing 72" RCP. By pass runoff of DMA-A and runoff of DMA-C will drain east via gutter flow until Overland Drive and Commerce Center intersection, where runoff comingles with offsite runoff and drains south via gutter flow to finally be intercepted by proposed and existing catch basins located on the triple RCB channel crossing. Proposed catch basins and existing catch basin will capture remaining runoff generated by the project that is not being intercepted by the two catch basins on Overland Drive.

Proposed Land Cover Includes (select all that apply and provide each area on site):
Existing to Remain
☐ Pervious Area 0 Acres (0 Square Feet)
☐ Impervious Areas 0 Acres (0 Square Feet)
Existing to Be Replaced
X Pervious Area 0.03 Acres (1,520 Square Feet)
X Impervious Areas 1.10 Acres (47,903 Square Feet)
Newly Created
☐ Pervious 0 Acres (0 Square Feet)
X Impervious Areas 0.73 Acres (31,939 Square Feet)
Total
X Pervious Area 0.03 Acres (1,520 Square Feet)
X Impervious Areas 1.83 Acres (79,842 Square Feet)

Description / Additional Information:

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features): The proposed impervious area shall consist of new or replaced AC pavement, curb & gutter, and concrete sidewalk with ADA ramps.

List/describe proposed pervious features of the project (e.g., landscape areas):
Existing public landscaping will be replaced per Specific plan, and existing private landscaping will be repaired and/or replaced to the owner's satisfaction.

Describe any grading or changes to site topography: Will be no major grading or modifications to the site.
Provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, stormwater treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations. *Describe proposed site drainage patterns:* The proposed road widening will maintain centerline crown with an approximate 2% cross slope on both sides of the street. Adjacent business sites will continue to provide runoff to Overland Drive. With the widening of Overland Drive, the City is requiring treatment of the incremental increase of runoff, due to the widening. In the current condition, the only treatment of runoff from Overland Drive occurred at the catch basins located over the open channel on Commerce Center Drive, approximately 550' east of its intersection with Overland Drive. Said catch basin has a media filter system design to capture fine to coarse sediments, floatable trash, etc., conveyed in stormwater runoff. With the additional flow being captured in Overland Drive, the catch basins previously mentioned do not contain enough treatment capacity. Therefore, a method to capture and treat the incremental increase in runoff is required. ERSC is proposing to add a catch basin approximately mid-block on each side of Overland Drive that will capture the Q_{10} runoff that will be in Overland Drive up to this point. Proposed catch basins will convey runoff to an existing 72" RCP that discharges to Tract Map 16178-3 Drainage Channel and ultimately to Murrieta Creek. Kraken Bioclean curb inlet media filters will be installed in each of these basins to treat the calculated incremental increase in runoff, from a water quality standpoint. Runoff that enters Overland Drive south of these new basins will travel southerly in Overland Drive gutters to Commerce Center Drive where it comingles with offsite runoff from existing commercial and industrial areas to then travel easterly along the north gutter line of Commerce Center Drive. A new catch basin will be constructed on the north side of Commerce Center Drive which will pick up the runoff from Overland Drive and the existing runoff in Commerce Center Drive. Kraken Bioclean curb inlet media filters will be installed in this new catch basin which will treat the increase in flow due to the widening project. The new catch basin and existing catch basin will allow to captured all runoff generated by the street widening, and discharge to Tract Map 16178-3 Drainage Channel running under Commerce Center Drive, to ultimately discharge to Murrieta Creek.

Step 1.3: Other Site Requirements and Constraints

When applicable, list other site requirements or constraints that will influence stormwater management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.

Due to the lack of available area to construct BMPs, no onsite BMPs were considered to provide treatment for the proposed road widening. Therefore, alternative compliance is required to meet water quality objectives for the project. In order to treat the runoff tributaries to the project site, Kraken Inlet Bioclean curb inlet media filter units will be installed into the proposed catch basins being constructed for the project site. The Bioclean curb inlet filter is an insertable catch basin filter system design to capture fine to coarse sediments/pollutants including trash and debris, TSS, nutrients, metals, and hydrocarbons, and is listed as an approved and certified technology by the Washington State Technology Assessment Protocol – Ecology, better known as TAPE.

See Alternative Compliance calculations included in this report.

Optional Additional Information or Continuation of Previous Sections As Needed

This space provided for additional information or continuation of information from previous sections as needed.

Step 2: Strategy for Meeting PDP Performance Requirements

PDPs must implement BMPs to control pollutants in stormwater that may be discharged from a project (see Chapter 5). PDPs subject to hydromodification management requirements must implement flow control BMPs to manage hydromodification (see Chapter 6). Both stormwater pollutant control and flow control can be achieved within the same BMP(s). Projects triggering the 50% rule must address stormwater requirements for the entire site.

Structural BMPs must be verified by the City at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Chapter 1.12). Structural BMPs must be maintained into perpetuity, and the City must confirm the maintenance (see Chapter 7).

Provide a narrative description of the general strategy for pollutant control and flow control at the project site in the box below. This information must describe how the steps for selecting and designing stormwater pollutant control BMPs presented in Chapter 5.1 of the BMP Design Manual were followed, and the results (type of BMPs selected). For projects requiring flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate. At the end of this discussion, provide a summary of all the BMPs within the project including the type and number.

Describe the general strategy for BMP implementation at the site.

LID site design BMPs such as pervious pavement is not applicable for this project site given that the project is a public road widening project and the traffic volume exceeds the recommended rate for these types of LID BMPs. Additionally, rainbarrels or other forms of water collection was not possible given that there was not extra property available to house these BMPs. Therefore, retention and biofiltration BMP's are not feasible due to the nature and space availability of the project. As such, treatment BMPs were selected as the only viable water quality treatment alternative for this project.

DMA-A:

This onsite tributary drainage area receives offsite runoff from DMA -1 (offsite) via surface flow to the street. Runoff is also generated from DMA-A itself and comingles with the offsite runoff along the southern gutter flowline of Overland Drive. Overland Drive is a crowned road and acts as a divider of runoff from the north side of the street. Runoff flows from the east-west direction (from Jefferson Avenue to Commerce Center Drive) and majority is intercepted by a proposed 21-foot catch basin (catch basin “A”) near Street Sta 25+60 on the southerly side of Overland Dr. This catch basin conveys runoff to an existing 72” RCP that discharges to Tract Map 16178-3 Drainage Channel. Any runoff that bypasses the proposed 21-foot wide catch basin continues along Overland Drive via gutterflow and enters DMA-C.

DMA-B:

This onsite drainage area does not receive offsite flows. Runoff generated onsite will drain along the northerly curb and gutter in the same east-west direction. Most of the subarea runoff is intercepted by a proposed 7-foot catch basin (catch basin “B”) on Overland Drive near Street Sta 26+00, and is conveyed to the existing 72” RCP. Remaining runoff on the street continues along Overland Drive via gutterflow and enters DMA-C where will be bypassed to the proposed 21-foot wide catch basin on Commerce Center.

DMA-C:

This drainage area receives by-pass runoff from DMA-A and DMA-B and drains east via gutter flow and exits the project site at Commerce Center Drive. Runoff comingles with offsite runoff (DMA-2 Offsite) coming from the northeast and southeast properties along Commerce Center (as shown on the Alternative Compliance WQMP Exhibit). A third 21-foot catch basin (catch basin “C”) is being proposed on Commerce Center Drive ±100 ft northeast of existing catch basin to intercept mixed runoff and bypass remaining runoff to the existing 10-foot catch basin (catch basin “D”) located on the triple RCB channel crossing. The proposed and existing catch basin conveys runoff to Tract Map 16178-3 Drainage Channel. A 10-year flow will be completely intercepted by the three proposed and the existing catch basins.

Due to the limitation of the available land, no onsite BMPs were possible to provide treatment for the proposed street widening. As such, alternative compliance is required for the project. In order to treat runoff generated by the project site, (3) "Kraken" Bioclean Curb Inlet Media Filter units will be installed to the proposed catch basins “A”, “B”, and “C” that are tributary to the on and offsite runoff. The project is providing additional water quality treatment that was not provided in current existing conditions.

This project will participate in the Offsite Alternative Compliance Program to address runoff treatment controls that are required for the PDP site.

(Continue on following page as necessary.)

Description of structural BMP strategy continued **(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)**
(Continued from previous page)

ATTACHMENT 1

STORMWATER POLLUTANT CONTROL BMP SELECTION

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
	Special Considerations for Redevelopment Projects (50% Rule) see chapter 1.7 and Step 4 of Appendix A.1.	☐ Less than or equal to fifty percent (50%) ✓ Greater than fifty percent (50%)
Refer to Figure 5-1: Stormwater Pollutant Control BMP Selection Flow Chart		
Attachment 1a	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this form. See Chapter 3.3.3 for guidance	✓ Included ☐ Entire project is designed with Self-Mitigating and De-Minimis DMAs. The project is compliant with Pollution Control BMP sizing requirements. **STOP ***
Attachment 1b	Figure B.1-1: 85th Percentile 24-hour Isohyetal Map with project location	✓ Included
Attachment 1c	Worksheet B.1-1 DCV [1]	✓ Included
Attachment 1d	Applicable Site Design BMP Fact Sheet(s) from Appendix E	✓ Included ☐ Entire project is designed with Self-Retaining DMAs. The project is compliant with Pollution Control BMP sizing requirements. **STOP ***
Attachment 1e	Structural Pollutant Control BMP Checklist(s)	✓ Included
Attachment 1f	Is Onsite Alternative Compliance proposed?[2]	✓ No ☐ Yes - Include WQE worksheets
Attachment 1g	Offsite Alternative Compliance Participation Form - Pollutant Control Refer to Figure 1-3:Pathways to Participating in Offsite Alternative Compliance Program	☐ Full Compliance Onsite ✓ Partial Compliance Onsite with Offsite Alternative Compliance or Full Offsite Alternative Compliance. Document onsite structural BMPs and complete - Pollutant Control Offsite Alternative Compliance Participation Form, and - WQE worksheets

* If this box is checked, the remainder of Attachment 1 does not need to be filled out.

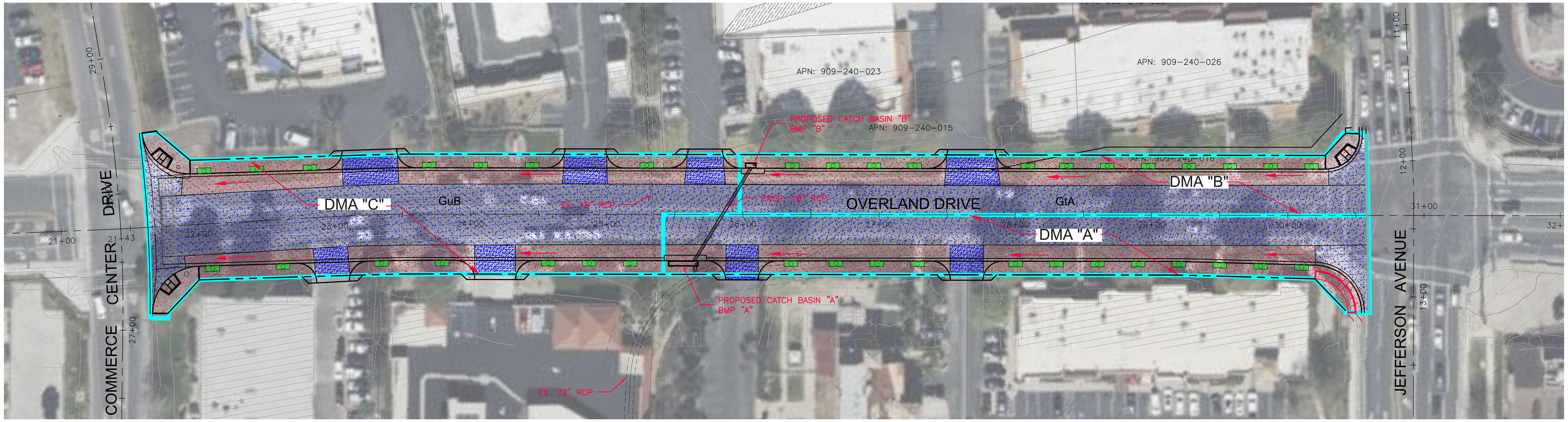
[1] All stormwater pollutant control worksheets have been automated and are available for download at: https://www.sandiegocounty.gov/content/sdc/dpw/watersheds/DevelopmentandConstruction/BMP_Design_Manual.html

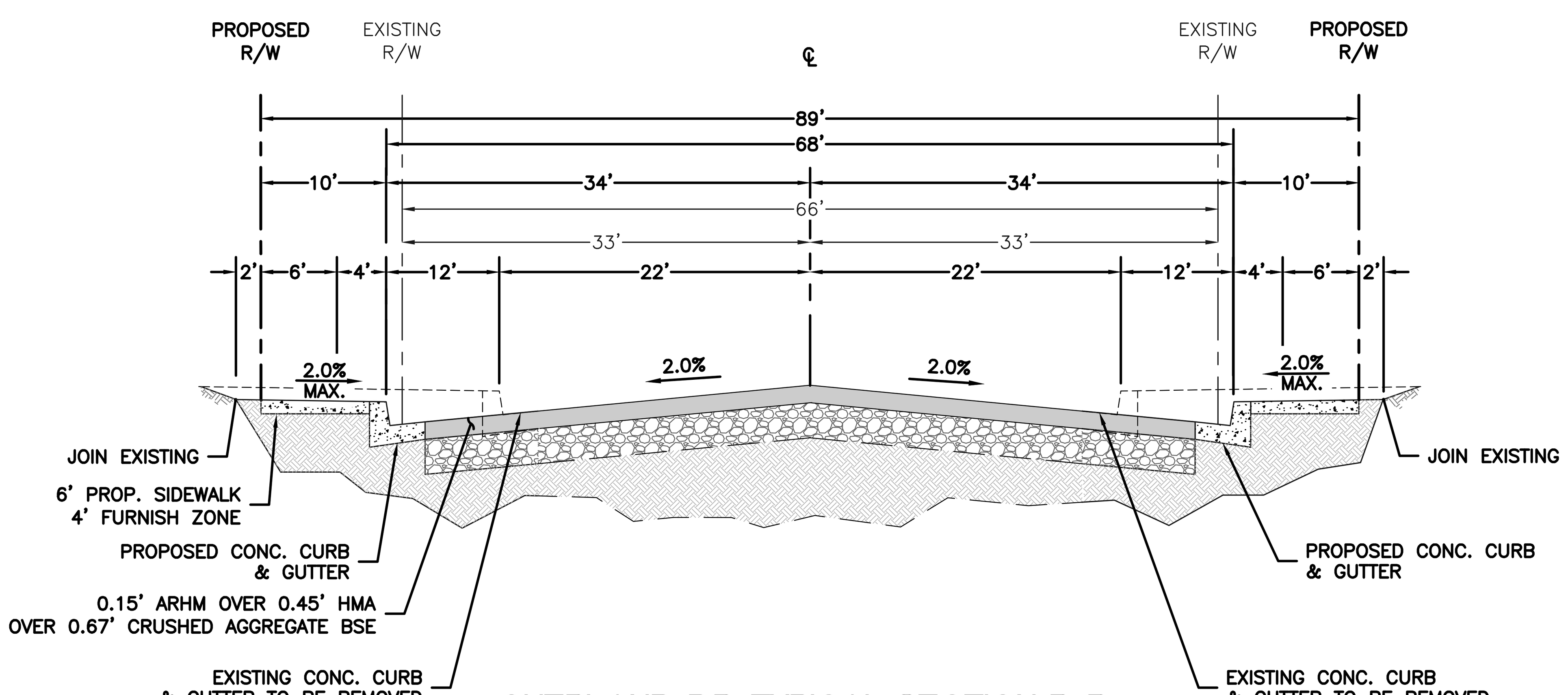
[2] Water Quality Equivalency Guidance and automated worksheets for Region 9: http://www.projectcleanwater.org/water-quality-equivalency-guidance/

Attachment 1a: DMA Exhibit Checklist

See Chapter 3.3.3 for guidance

- ✓ Point(s) of Compliance
- ✓ Project Site Boundary
- ✓ Project Disturbed Area Footprint
- ✓ Drainage management area (DMA) boundaries, DMA ID numbers, DMA areas (square footage or acreage), DMA land use and pollutants of concern, and DMA type (i.e., drains to structural BMP, self-retaining, self-mitigating, or de-minimis) Note on exhibit de-minimis areas and discuss reason they could not be included in Step 1.3 per section 5.2.2 of the manual. Include offsite areas receiving treatment to mitigate Onsite Water Quality Equivalency.
- ✓ Include summary table of worksheet inputs for each DMA.
- ☐ Include description of self-mitigating areas.
- ✓ Potential pollutant source areas and corresponding required source control BMPs (see Chapter 4, Appendix E.1, and Step 3.5)
- ☐ Proposed Site Design BMPs and surface treatments used to minimize imperviousness. Show sections, details, and dimensions of site design BMP's per chapter 5.2.3 (tree wells, dispersion areas, rain gardens, permeable pavement, rain barrels, green roofs, etc.)
- ☐ Proposed Harvest and Use BMPs
- ✓ Underlying hydrologic soil group (Web Soil Survey)
- ✓ Existing natural hydrologic features (watercourses, seeps, springs, wetlands, pond, lake)
- ✓ Existing topography and impervious areas
- ✓ Proposed grading and impervious areas. If the project is a subdivision or spans multiple lots show pervious and impervious totals for each lot.
- ✓ Existing and proposed site drainage network and connections to drainage offsite
- ☐ Potable water wells, onsite wastewater treatment systems (septic), underground utilities
- ✓ Structural BMPs (identify location, structural BMP ID No., type of BMP, and size/detail)
- ☐ Approximate depth to groundwater at each structural BMP
- ☐ Approximate infiltration rate and feasibility (full retention, partial retention, biofiltration) at each structural BMP
- ☐ Critical coarse sediment yield areas to be protected and or conveyed through the project site, if applicable.
- ☐ Temporary Construction BMPs. Include protection of source control, site design and structural BMPs during construction.





OVERLAND DR. TYPICAL SECTION B-B
STA 23+62.58 TO STA 29+17.86
N.T.S.

DRAINAGE MANAGEMENT AREA SUMMARY TABLE

DMA	IMPERVIOUS (SF)	PERVIOUS (SF)	TOTAL AREA (SF)	DCV's (CF)
DMA – A	23,244	480	23,724	1,566
DMA – B	20,201	480	20,681	1,365
DMA – C	36,397	560	36,957	2,467

LEGEND

DMA - X — DRAINAGE MANAGEMENT AREA (DMA)

DMA BOUNDARY

PROPOSED R/W

SUBAREA TOTALS

EXISTING AREA TO BE REPLACED (PERVIOUS) . . . . 1,520 SF

EXISTING AREA TO BE REPLACED (IMPERVIOUS) . . . . 47,903 SF

NEWLY CREATED AREA (IMPERVIOUS) . . . . 31,939 SF

GuB or GtA — HYDROLOGIC SOILS GROUP

Source Control BMP Summary

✓ SC-A. On-site storm drain inlets	✓Yes	☐No	☐N/A
☐ SC-B. Interior floor drains and elevator shaft sump pumps	☐Yes	☐No	✓N/A
☐ SC-C. Interior parking garages	☐Yes	☐No	✓N/A
☐ SC-D1. Need for future indoor & structural pest control	☐Yes	☐No	✓N/A
✓ SC-D2. Landscape/outdoor pesticide use	✓Yes	☐No	☐N/A
☐ SC-E. Pools, spas, ponds, fountains, and other water features	☐Yes	☐No	✓N/A
☐ SC-F. Food service	☐Yes	☐No	✓N/A
☐ SC-G. Refuse areas	☐Yes	☐No	✓N/A
☐ SC-H. Industrial processes	☐Yes	☐No	✓N/A
☐ SC-I. Outdoor storage of equipment or materials	☐Yes	☐No	✓N/A
☐ SC-J. Vehicle and equipment cleaning	☐Yes	☐No	✓N/A
☐ SC-K. Vehicle/equipment repair and maintenance	☐Yes	☐No	✓N/A
☐ SC-L. Fuel dispensing areas	☐Yes	☐No	✓N/A
☐ SC-M. Loading docks	☐Yes	☐No	✓N/A
☐ SC-N. Fire sprinkler test water	☐Yes	☐No	✓N/A
☐ SC-O. Miscellaneous drain or wash water	☐Yes	☐No	✓N/A
✓ SC-P. Plazas, sidewalks, and parking lots	✓Yes	☐No	☐N/A
☐ SC-Q. Large trash generating facilities	☐Yes	☐No	✓N/A
☐ SC-R. Animal facilities	☐Yes	☐No	✓N/A
☐ SC-S. Plant nurseries and garden centers	☐Yes	☐No	✓N/A
☐ SC-T. Automotive facilities	☐Yes	☐No	✓N/A

0' 20' 40' 80' 120' 160'
GRAPHIC SCALE IN FEET
1" = 40'

Underground Service Alert
Call: TOLL FREE
1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P:909.890.1255
F:909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE	SEAL:
Contractor ____ Inspector ____ Date Completed ____						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal / Vertical	

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 — Expires XX-XX-20

RECOMMENDED BY: ____ DATE: ____
KENDRA HANNAH
MEISTRELL, SENIOR CIVIL ENGINEER

ACCEPTED BY: ____ DATE: ____
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

R.C.E. No.____ Expires: ____

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

CITY OF TEMECULA · OLD TRADITIONS · NEW OPPORTUNITIES · 1989

OVERLAND DRIVE WIDENING
WQMP MAP - BMP EXHIBIT
PROJECT NO. PW 20-11

Drawing No.
Sheet 1 of 1

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Western Riverside Area, California

March 11, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:1,560 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 1:15,800.

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: Western Riverside Area, California
Survey Area Data: Version 13, May 27, 2020

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

Date(s) aerial images were photographed: May 15, 2018—Jun 25, 2018

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GtA	Grangeville fine sandy loam, drained, 0 to 2 percent sl opes	1.2	63.7%
GuB	Grangeville fine sandy loam, poorly drained, saline-alk ali, 0 to 5 percent slopes	0.7	36.3%
Totals for Area of Interest		**1.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Western Riverside Area, California

GtA—Grangeville fine sandy loam, drained, 0 to 2 percent sl opes

Map Unit Setting

National map unit symbol: hcvn
Elevation: 10 to 1,800 feet
Mean annual precipitation: 12 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Grangeville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grangeville

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 36 inches: fine sandy loam
H2 - 36 to 64 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A/D
Ecological site: R019XD070CA - SANDY BASIN
Hydric soil rating: No

Minor Components

Dello

Percent of map unit: 10 percent
Hydric soil rating: No

Traver

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Hydric soil rating: No

GuB—Grangeville fine sandy loam, poorly drained, saline-alk ali, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hcvq
Elevation: 10 to 1,800 feet
Mean annual precipitation: 8 to 16 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Grangeville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grangeville

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 17 inches: fine sandy loam
H2 - 17 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Available water capacity: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Ecological site: R019XD070CA - SANDY BASIN
Hydric soil rating: No

Minor Components

Traver

Percent of map unit: 5 percent
Hydric soil rating: No

Dello

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

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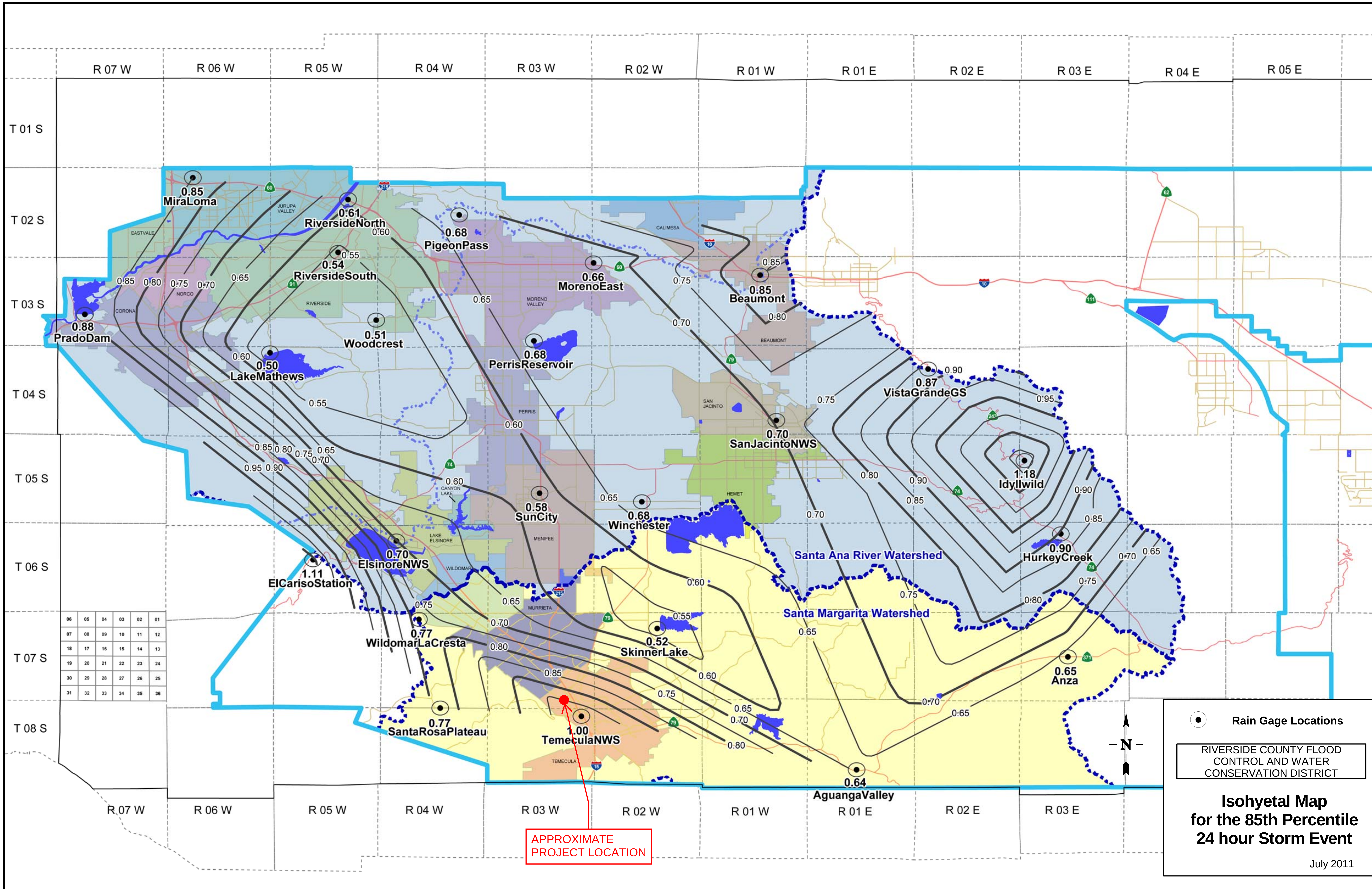
Attachment 1b: 85th Percentile 24-hour Isohyetal Map with Project Location



R 07 W
R 06 W
R 05 W
R 04 W
R 03 W
R 02 W
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R 01 E
R 02 E
R 03 E
R 04 E
R 05 E
T 01 S
T 02 S
T 03 S
T 04 S
T 05 S
T 06 S
T 07 S
T 08 S
0.85 MiraLoma
0.61 RiversideNorth
0.68 PigeonPass
0.54 RiversideSouth
0.66 MorenoEast
0.85 Beaumont
0.88 PradoDam
0.51 Woodcrest
0.68 PerrisReservoir
0.50 LakeMathews
0.87 VistaGrandeGS
0.70 SanJacintoNWS
1.18 Idyllwild
0.58 SunCity
0.68 Winchester
0.90 HurkeyCreek
0.70 ElsinoreNWS
1.11 ElCarisoStation
0.77 WildomarLaCresta
0.52 SkinnerLake
0.65 Anza
0.77 SantaRosaPlateau
1.00 TemeculaNWS
0.64 AguangaValley
Santa Ana River Watershed
Santa Margarita Watershed
APPROXIMATE PROJECT LOCATION
N
Rain Gage Locations
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
Isohyetal Map for the 85th Percentile 24 hour Storm Event
July 2011

Attachment 1c: Worksheet B.1-1 DVC On-site and Off-site

OFF-SITE DMAs

Automated Worksheet B.1-1: Calculation of Design Capture Volume (V1.3)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
Standard Drainage Basin Inputs	0	Drainage Basin ID or Name	DMA-1	DMA-2									unitless
	1	Basin Drains to the Following BMP Type	Flow-Thru	Flow-Thru									unitless
	2	85th Percentile 24-hr Storm Depth	0.90	0.90									inches
	3	Design Infiltration Rate Recommended by Geotechnical Engineer	0.000	0.000									in/hr
	4	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	261,700	340,476									sq-ft
	5	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)											sq-ft
	6	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)	25,138	14,684									sq-ft
	7	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)											sq-ft
	8	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)											sq-ft
	9	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)											sq-ft
	10	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)											sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	11	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	No	yes/no
	12	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)											sq-ft
	13	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	14	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	15	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	16	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)											sq-ft
	17	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)											sq-ft
	18	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	19	Number of Tree Wells Proposed per SD-A											#
	20	Average Mature Tree Canopy Diameter											ft
	21	Number of Rain Barrels Proposed per SD-E											#
	22	Average Rain Barrel Size											gal
Treatment Train Inputs & Calculations	23	Does BMP Overflow to Stormwater Features in Downstream Drainage?	No	No	No	No	No	No	No	No	No	No	unitless
	24	Identify Downstream Drainage Basin Providing Treatment in Series											unitless
	25	Percent of Upstream Flows Directed to Downstream Dispersion Areas											percent
	26	Upstream Impervious Surfaces Directed to Dispersion Area (Ci=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
	27	Upstream Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
Initial Runoff Factor Calculation	28	Total Tributary Area	286,838	355,160	0	0	0	0	0	0	0	0	sq-ft
	29	Initial Runoff Factor for Standard Drainage Areas	0.83	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	30	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	31	Initial Weighted Runoff Factor	0.83	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	32	Initial Design Capture Volume	17,856	23,174	0	0	0	0	0	0	0	0	cubic-feet
Dispersion Area Adjustments	33	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	34	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	35	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	36	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	37	Runoff Factor After Dispersion Techniques	0.83	0.87	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	38	Design Capture Volume After Dispersion Techniques	17,856	23,174	0	0	0	0	0	0	0	0	cubic-feet
Tree & Barrel Adjustments	39	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
	40	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	41	Final Adjusted Runoff Factor	0.83	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	42	Final Effective Tributary Area	238,076	308,989	0	0	0	0	0	0	0	0	sq-ft
	43	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	0	cubic-feet
	44	Final Design Capture Volume Tributary to BMP	17,856	23,174	0	0	0	0	0	0	0	0	cubic-feet

Worksheet B.1-1 General Notes:

A. Applicants may use this worksheet to calculate design capture volumes for up to 10 drainage areas User input must be provided for yellow shaded cells, values for all other cells will be automatically generated, errors/notifications will be highlighted in red and summarized below. Upon completion of this worksheet, proceed to the appropriate BMP Sizing worksheet(s).

ON-SITE DMAs

Automated Worksheet B.1-1: Calculation of Design Capture Volume (V1.3)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	Units
Standard Drainage Basin Inputs	0	Drainage Basin ID or Name	DMA-A	DMA-B	DMA-C								unitless
	1	Basin Drains to the Following BMP Type	Flow-Thru	Flow-Thru	Flow-Thru								unitless
	2	85th Percentile 24-hr Storm Depth	0.90	0.90	0.90								inches
	3	Design Infiltration Rate Recommended by Geotechnical Engineer	0.000	0.000	0.000								in/hr
	4	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	23,244	20,201	36,397								sq-ft
	5	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)											sq-ft
	6	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)	480	480	560								sq-ft
	7	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)											sq-ft
	8	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)											sq-ft
	9	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)											sq-ft
	10	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)											sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	11	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	No	yes/no
	12	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)											sq-ft
	13	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	14	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	15	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	16	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)											sq-ft
	17	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)											sq-ft
	18	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	19	Number of Tree Wells Proposed per SD-A											#
	20	Average Mature Tree Canopy Diameter											ft
	21	Number of Rain Barrels Proposed per SD-E											#
	22	Average Rain Barrel Size											gal
Treatment Train Inputs & Calculations	23	Does BMP Overflow to Stormwater Features in Downstream Drainage?	No	No	No	No	No	No	No	No	No	No	unitless
	24	Identify Downstream Drainage Basin Providing Treatment in Series											unitless
	25	Percent of Upstream Flows Directed to Downstream Dispersion Areas											percent
	26	Upstream Impervious Surfaces Directed to Dispersion Area (Ci=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
	27	Upstream Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
Initial Runoff Factor Calculation	28	Total Tributary Area	23,724	20,681	36,957	0	0	0	0	0	0	0	sq-ft
	29	Initial Runoff Factor for Standard Drainage Areas	0.88	0.88	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	30	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	31	Initial Weighted Runoff Factor	0.88	0.88	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	32	Initial Design Capture Volume	1,566	1,365	2,467	0	0	0	0	0	0	0	cubic-feet
Dispersion Area Adjustments	33	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	34	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	35	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	36	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	37	Runoff Factor After Dispersion Techniques	0.88	0.88	0.89	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	38	Design Capture Volume After Dispersion Techniques	1,566	1,365	2,467	0	0	0	0	0	0	0	cubic-feet
Tree & Barrel Adjustments	39	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
	40	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	41	Final Adjusted Runoff Factor	0.88	0.88	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	42	Final Effective Tributary Area	20,877	18,199	32,892	0	0	0	0	0	0	0	sq-ft
	43	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	0	cubic-feet
	44	Final Design Capture Volume Tributary to BMP	1,566	1,365	2,467	0	0	0	0	0	0	0	cubic-feet

Worksheet B.1-1 General Notes:

A. Applicants may use this worksheet to calculate design capture volumes for up to 10 drainage areas User input must be provided for yellow shaded cells, values for all other cells will be automatically generated, errors/notifications will be highlighted in red and summarized below. Upon completion of this worksheet, proceed to the appropriate BMP Sizing worksheet(s).

Attachment 1d: Applicable Site Design BMP Fact Sheet(s) from Appendix E

E.25 FT-5 Proprietary Flow-Thru Treatment Control BMPs

The purpose of this fact sheet is to help explain the potential role of proprietary BMPs in meeting flow thru treatment control BMP requirements. The fact sheet does not describe design criteria like the other fact sheets in this appendix because this information varies by BMP product model.

Criteria for Use of a Proprietary BMP as a Flow-Thru Treatment Control BMP

A proprietary BMP may be acceptable as a "flow-thru treatment control BMP" under the following conditions:

(1) The BMP is selected and sized consistent with the method and criteria described in Appendix B.6;

(2) The BMP is designed and maintained in a manner consistent with its performance certifications (See explanation in Appendix B.6); and

(3) The BMP is acceptable at the discretion of the City Engineer. In determining the acceptability of a BMP, the City Engineer should consider, as applicable, (a) the data submitted; (b) representativeness of the data submitted; (c) consistency of the BMP performance claims with pollutant control objectives; certainty of the BMP performance claims; (d) for projects within the public right of way and/or public projects: maintenance requirements, cost of maintenance activities, relevant previous local experience with operation and maintenance of the BMP type, ability to continue to operate the system in event that the vending company is no longer operating as a business; and (e) other relevant factors. If a proposed BMP is not accepted by the City Engineer, a written explanation/reason will be provided to the applicant.

Guidance for Sizing Proprietary BMPs

Proprietary flow-thru BMPs must meet the same sizing guidance as other flow-thru treatment control BMPs. Guidance for sizing flow-thru BMPs to comply with requirements of this manual is provided in Appendix B.6.

Maintenance Overview

Refer to manufacturer for maintenance information.

Attachment 1e: Structural Pollutant Control BMP Checklist

Provide the following items for each Structural BMP selected **Refer to Figure 5-2: *Stormwater Pollutant Control Structural BMP Selection Flow Chart***
DMA ID No. A Structural BMP ID No. A Construction Plan Sheet No. 1
✓ Worksheet B.3-1 Structural BMP Feasibility: Project-Scale BMP Feasibility Analysis
✓ Worksheet C.4-1: Categorization of Infiltration Feasibility Condition *Refer to Appendices C and D to complete.* ☐ Not included because the entire project will use harvest and use BMPs ☐ Worksheet` D.5-1 Infiltration & partial retention Safety Factor

Structural BMP Selection and Design (Chapter 5.5) complete an include the applicable worksheet(s) found in appendix B and design criteria checklists from the associated fact sheets found in appendix E for selected Structural BMP(s):
☐ Worksheet B.6-1 - Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐ Retention by harvest and use (HU-1)
  ☐ Continuous simulation Model
☐ Worksheet B.4-1
  ☐ Infiltration basin (INF-1)
  ☐ Bioretention (INF-2)
  ☐ Permeable pavement (INF-3)
☐ Worksheet B.5-1
  ☐ Biofiltration with partial retention (PR-1)
  ☐ Biofiltration (BF-1)
    ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2)
    ☐ Identification and Narrative of Receiving Water Pollutants of Concern
  ☐ Proprietary Biofiltration (BF-3)
    ☐ Appendix F checklist
    ☐ Identification and Narrative of Receiving Water Pollutants of Concern
☐ Worksheet B.5-3 Minimum Footprint
☐ Worksheet B.5-4 Biofiltration + Storage
☐ Selected BMPs have been designed to address the entire DCV. The DMA is compliant with Pollution Control BMP sizing requirements. **STOP ***
☐ Other (describe in discussion section below)

✓ Worksheet B.6-1 - Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
  ✓ Describe in discussion section below why the remaining BMP size could not fit on site.
  ✓ Identification and Narrative of Receiving Water Pollutants of Concern
  ✓ Selection of Flow-Thru Treatment Control BMPs with high or medium effectiveness
    ☐ FT-1 Vegetated swales
    ☐ FT-2 Media Filters
    ☐ FT-3 Sand Filters
    ☐ FT-4 Dry Extended Detention Basin
    ✓ FT-5 Proprietary flow-thru treatment control
  ✓ Pollutant Control Offsite Alternative Compliance Participation form
  ✓ Water Quality Equivalency Worksheets[20]

Purpose: ☐ Pre-treatment/forebay for another structural BMP ✓ Pollutant control only ☐ Combined pollutant control and hydromodification control (see Attachment 2) ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Chapter 1.12 of the BMP Design Manual)	Engineer of Record: Engineering Resources of Southern California, Inc. John M. Brudin, P.E. 909-890-1255
Who will be the final owner of this BMP?	☐ HOA ☐ Property Owner ✓ City ☐ Other (describe)
Who will maintain this BMP into perpetuity?	☐ HOA ☐ Property Owner ☑ City ☐ Other (describe)

Discussion (as needed):

Per Water Quality Equivalency Guidance Documents Table 2-1, pollutants of concern for the project site include Fecal Coliform, Heavy Metals, Phosphorus, and Nutrients. It is important to note that anticipated nutrients and pesticides are to be addressed using the proposed on-site source control BMP, which is to utilize native and/or drought-tolerant plant species to the extent practicable (low water use plants). Also, the water use for the proposed landscape areas is expected to comply with the City of Temecula Irrigation Guidelines and California Ordinance AB 1881. Therefore, after the on-site source control BMP, the targeted pollutants of concern from the project are phosphorus (TP), heavy metals (Tcu) and bacterial (FC).

According to TAPE testing documentation for the BioClean Curb Inlet Filter BMP, the unit removes 60% fecal coliform, 31% Total Nitrogen, 72% Total Phosphorus, and 85% TSS. Given these treatment efficiencies and that nutrients and pesticides will be addressed using an on-site source control, we have been identified as a pollutant of concern the phosphorus with a removal efficiency of 72% that will be used in the WQE calculations. Using phosphorus as pollutant of concern and the appropriate land use factor will result in the lowest subsequent earned Stormwater Pollutant control Volume and will ensure that the greatest overall water quality benefit is provided.

While TAPE removal data is not specific to Heavy Metals, according to Table B.6-2 of the BMP Design Manual, Heavy Metals are associated with suspended sediment and can be addressed by effectively removing suspended sediments. Since the BioClean Curb Inlet Filter removes 85% TSS, this can be considered as high removal effectiveness for Heavy Metals.

(Continue on subsequent pages as necessary)

* If this box is checked, Worksheet B.6-1 does not need to be filled out.

Attachment 1e: Structural Pollutant Control BMP Checklist

Provide the following items for each Structural BMP selected **Refer to Figure 5-2: *Stormwater Pollutant Control Structural BMP Selection Flow Chart***
DMA ID No. B Structural BMP ID No. B Construction Plan Sheet No. 1
✓ Worksheet B.3-1 Structural BMP Feasibility: Project-Scale BMP Feasibility Analysis
✓ Worksheet C.4-1: Categorization of Infiltration Feasibility Condition *Refer to Appendices C and D to complete.* ☐ Not included because the entire project will use harvest and use BMPs ☐ Worksheet` D.5-1 Infiltration & partial retention Safety Factor

Structural BMP Selection and Design (Chapter 5.5) complete an include the applicable worksheet(s) found in appendix B and design criteria checklists from the associated fact sheets found in appendix E for selected Structural BMP(s):
☐ Worksheet B.6-1 - Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐ Retention by harvest and use (HU-1)
  ☐ Continuous simulation Model
☐ Worksheet B.4-1
  ☐ Infiltration basin (INF-1)
  ☐ Bioretention (INF-2)
  ☐ Permeable pavement (INF-3)
☐ Worksheet B.5-1
  ☐ Biofiltration with partial retention (PR-1)
  ☐ Biofiltration (BF-1)
    ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2)
    ☐ Identification and Narrative of Receiving Water Pollutants of Concern
  ☐ Proprietary Biofiltration (BF-3)
    ☐ Appendix F checklist
    ☐ Identification and Narrative of Receiving Water Pollutants of Concern
☐ Worksheet B.5-3 Minimum Footprint
☐ Worksheet B.5-4 Biofiltration + Storage
☐ Selected BMPs have been designed to address the entire DCV. The DMA is compliant with Pollution Control BMP sizing requirements. **STOP ***
☐ Other (describe in discussion section below)

✓ Worksheet B.6-1 - Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
  ✓ Describe in discussion section below why the remaining BMP size could not fit on site.
  ✓ Identification and Narrative of Receiving Water Pollutants of Concern
  ✓ Selection of Flow-Thru Treatment Control BMPs with high or medium effectiveness
    ☐ FT-1 Vegetated swales
    ☐ FT-2 Media Filters
    ☐ FT-3 Sand Filters
    ☐ FT-4 Dry Extended Detention Basin
    ✓ FT-5 Proprietary flow-thru treatment control
  ✓ Pollutant Control Offsite Alternative Compliance Participation form
  ✓ Water Quality Equivalency Worksheets[20]

<table>
<tr><td colspan="2">Purpose:
☐ Pre-treatment/forebay for another structural BMP
✓ Pollutant control only
☐ Combined pollutant control and hydromodification control (see Attachment 2)
☐ Other (describe in discussion section below)</td></tr>
<tr><td>Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Chapter 1.12 of the BMP Design Manual)</td><td>Engineer of Record:
Engineering Resources of Southern California, Inc.
John M. Brudin, P.E.
909-890-1255</td></tr>
<tr><td>Who will be the final owner of this BMP?</td><td>☐ HOA ☐ Property Owner ✓ City
☐ Other (describe)</td></tr>
<tr><td>Who will maintain this BMP into perpetuity?</td><td>☐ HOA ☐ Property Owner ✓ City
☐ Other (describe)</td></tr>
<tr><td colspan="2">Discussion (as needed):
Per Water Quality Equivalency Guidance Documents Table 2-1, pollutants of concern for the project site include Fecal Coliform, Heavy Metals, Phosphorus, and Nutrients. It is important to note that anticipated nutrients and pesticides are to be addressed using the proposed on-site source control BMP, which is to utilize native and/or drought-tolerant plant species to the extent practicable (low water use plants). Also, the water use for the proposed landscape areas is expected to comply with the City of Temecula Irrigation Guidelines and California Ordinance AB 1881. Therefore, after the on-site source control BMP, the targeted pollutants of concern from the project are phosphorus (TP), heavy metals (Tcu) and bacterial (FC).

According to TAPE testing documentation for the BioClean Curb Inlet Filter BMP, the unit removes 60% fecal coliform, 31% Total Nitrogen, 72% Total Phosphorus, and 85% TSS. Given these treatment efficiencies and that nutrients and pesticides will be addressed using an on-site source control, we have been identified as a pollutant of concern the phosphorus with a removal efficiency of 72% that will be used in the WQE calculations. Using phosphorus as pollutant of concern and the appropriate land use factor will result in the lowest subsequent earned Stormwater Pollutant control Volume and will ensure that the greatest overall water quality benefit is provided.

While TAPE removal data is not specific to Heavy Metals, according to Table B.6-2 of the BMP Design Manual, Heavy Metals are associated with suspended sediment and can be addressed by effectively removing suspended sediments. Since the BioClean Curb Inlet Filter removes 85% TSS, this can be considered as high removal effectiveness for Heavy Metals.

(Continue on subsequent pages as necessary)</td></tr>
</table>

* If this box is checked, Worksheet B.6-1 does not need to be filled out.

Attachment 1e: Structural Pollutant Control BMP Checklist

Provide the following items for each Structural BMP selected **Refer to Figure 5-2: *Stormwater Pollutant Control Structural BMP Selection Flow Chart***
DMA ID No. C Structural BMP ID No. C Construction Plan Sheet No. 1
✓ Worksheet B.3-1 Structural BMP Feasibility: Project-Scale BMP Feasibility Analysis
✓ Worksheet C.4-1: Categorization of Infiltration Feasibility Condition *Refer to Appendices C and D to complete.* ☐ Not included because the entire project will use harvest and use BMPs ☐ Worksheet` D.5-1 Infiltration & partial retention Safety Factor

Structural BMP Selection and Design (Chapter 5.5) complete an include the applicable worksheet(s) found in appendix B and design criteria checklists from the associated fact sheets found in appendix E for selected Structural BMP(s):
☐ Worksheet B.6-1 - Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐ Retention by harvest and use (HU-1)
  ☐ Continuous simulation Model
☐ Worksheet B.4-1
  ☐ Infiltration basin (INF-1)
  ☐ Bioretention (INF-2)
  ☐ Permeable pavement (INF-3)
☐ Worksheet B.5-1
  ☐ Biofiltration with partial retention (PR-1)
  ☐ Biofiltration (BF-1)
    ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2)
    ☐ Identification and Narrative of Receiving Water Pollutants of Concern
  ☐ Proprietary Biofiltration (BF-3)
    ☐ Appendix F checklist
    ☐ Identification and Narrative of Receiving Water Pollutants of Concern
☐ Worksheet B.5-3 Minimum Footprint
☐ Worksheet B.5-4 Biofiltration + Storage
☐ Selected BMPs have been designed to address the entire DCV. The DMA is compliant with Pollution Control BMP sizing requirements. **STOP** *
☐ Other (describe in discussion section below)

✓ Worksheet B.6-1 - Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
  ✓ Describe in discussion section below why the remaining BMP size could not fit on site.
  ✓ Identification and Narrative of Receiving Water Pollutants of Concern
  ✓ Selection of Flow-Thru Treatment Control BMPs with high or medium effectiveness
    ☐ FT-1 Vegetated swales
    ☐ FT-2 Media Filters
    ☐ FT-3 Sand Filters
    ☐ FT-4 Dry Extended Detention Basin
    ✓ FT-5 Proprietary flow-thru treatment control
  ✓ Pollutant Control Offsite Alternative Compliance Participation form
  ✓ Water Quality Equivalency Worksheets[20]

Purpose: ☐ Pre-treatment/forebay for another structural BMP ✓ Pollutant control only ☐ Combined pollutant control and hydromodification control (see Attachment 2) ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Chapter 1.12 of the BMP Design Manual)	Engineer of Record: Engineering Resources of Southern California, Inc. John M. Brudin, P.E. 909-890-1255
Who will be the final owner of this BMP?	☐ HOA ☐ Property Owner ✓ City ☐ Other (describe)
Who will maintain this BMP into perpetuity?	☐ HOA ☐ Property Owner ✓ City ☐ Other (describe)

Discussion (as needed):

Per Water Quality Equivalency Guidance Documents Table 2-1, pollutants of concern for the project site include Fecal Coliform, Heavy Metals, Phosphorus, and Nutrients. It is important to note that anticipated nutrients and pesticides are to be addressed using the proposed on-site source control BMP, which is to utilize native and/or drought-tolerant plant species to the extent practicable (low water use plants). Also, the water use for the proposed landscape areas is expected to comply with the City of Temecula Irrigation Guidelines and California Ordinance AB 1881. Therefore, after the on-site source control BMP, the targeted pollutants of concern from the project are phosphorus (TP), heavy metals (Tcu) and bacterial (FC).

According to TAPE testing documentation for the BioClean Curb Inlet Filter BMP, the unit removes 60% fecal coliform, 31% Total Nitrogen, 72% Total Phosphorus, and 85% TSS. Given these treatment efficiencies and that nutrients and pesticides will be addressed using an on-site source control, we have been identified as a pollutant of concern the phosphorus with a removal efficiency of 72% that will be used in the WQE calculations. Using phosphorus as pollutant of concern and the appropriate land use factor will result in the lowest subsequent earned Stormwater Pollutant control Volume and will ensure that the greatest overall water quality benefit is provided.

While TAPE removal data is not specific to Heavy Metals, according to Table B.6-2 of the BMP Design Manual, Heavy Metals are associated with suspended sediment and can be addressed by effectively removing suspended sediments. Since the BioClean Curb Inlet Filter removes 85% TSS, this can be considered as high removal effectiveness for Heavy Metals.

(Continue on subsequent pages as necessary)

* If this box is checked, Worksheet B.6-1 does not need to be filled out.

Identification and Narrative of Receiving Water and Pollutants of Concern

Describe flow path of stormwater from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable): *Runoff from the project site drains to the Murrieta Creek (HSA 902.32 and HA 902.3), Santa Margarita River - Upper Portion (Deluz HSA 902.22, 902.21), Santa Margarita River - Lower Portion (Ysidora HSA 902.13, 902.12, 902.11), Santa Margarita Lagoon and ultimately discharges to the Pacific Ocean.*		
List any 303(d) impaired water bodies[3] within the path of stormwater from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies (see BMP Design Manual Appendix B.6.1):		
303(d) Impaired Water Body	**Pollutant(s)/Stressor(s)**	**TMDLs / WQIP Highest Priority Pollutant**
Murrieta Creek HSA 902.32 Waterbody ID - CAR9023200020010924152136	*Copper, Phosphorus, Manganese, Iron, Indicator Bacteria, Chlorpyrifos, Nitrogen, Toxicity*	*Nutrient Loading*
Santa Margarita River - Upper Portion (Deluz HSA 902.22, 902.21) Watebody ID – CAR9022200020011001141050	*Phosphorus, Toxicity, Nitrogen, Iron, Manganese, Indicator Bacteria*	*Nutrient Loading*
Santa Margarita River - Lower Portion (Ysidora HSA 902.13, 902.12, 902.11) Waterbody ID - CAR9021100019980911161346	*Nitrogen, Indicator Bacteria, Toxicity, Phosphorus, Chlorpyrifos, Benthic Community Effects.*	*Nutrient Loading*
Santa Margarita Lagoon/Pacific Ocean Waterbody ID – CAE9021100019990209155924	*Eutrophic*	*Nutrient Loading and Eutrophication*
Identification of Project Site Pollutants* *Identification of project site pollutants below is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs. Note the project must also participate in an alternative compliance program (unless prior lawful approval to meet earlier PDP requirements is demonstrated).		
Identify pollutants expected from the project site based on all proposed use(s) of the site (see BMP Design Manual Appendix B.6.):		

[3] The current list of Section 303(d) impaired water bodies can be found at http://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/#impaired

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment	☐	✓	☐
Nutrients	☐	✓	✓
Heavy Metals	☐	✓	✓
Organic Compounds	☐	✓	☐
Trash & Debris	☐	✓	☐
Oxygen Demanding Substances	☐	✓	☐
Oil & Grease	☐	✓	☐
Bacteria & Viruses	☐	✓	✓
Pesticides	☐	✓	✓

Attachment 1g: Offsite Alternative Compliance Participation Form - Pollutant Control

Refer to Chapter 1.8

Onsite Project Information	
Record ID:	PW20-11
Assessor's Parcel Number(s) [APN(s)]	Overland Drive - City Right of Way (btwn Jefferson Avenue and Commerce Center Drive)
Quantity of Pollutant Control Debits or Credits (cubic feet) ☐ Debits ✓ Credits *See Attachment 1 of the PDP WQMP	1,456.72

Offsite Project Information – Projects providing or receiving credits *(add rows as needed)*

	Record ID:	APN(s)	Project Owner/Address	Credit/Debit	Quantity (cubic feet)
1.				☐ Credit ☐ Debit	
2.				☐ Credit ☐ Debit	
3.				☐ Credit ☐ Debit	
4.				☐ Credit ☐ Debit	
5.				☐ Credit ☐ Debit	

6.				☐ Credit ☐ Debit	
Total sum of Credits and Debits (∑Credits -∑Debits) (cubic feet)					
Additional Information					
Are offsite project(s) in the same credit trading area as the onsite project?					✓ Yes ☐ No
Will projects providing credits be completed prior to completion of projects receiving credits?					✓ Yes ☐ No
Are all deficits accounted for? If No, onsite and offsite projects must be redesigned to account for all deficits.					✓ Yes ☐ No

Provide Alternative Compliance In-Lieu Fee Agreement and supporting WQE calculations as part of this attachment.

Alternative Compliance for the Overland Drive Extension Project, Temecula, CA

Per the methodology provided within the "Water Quality Equivalence Document, Region 9" by the County of San Diego, dated May 2018, the Overland Drive Extension project proposes to meet its water quality objectives by using Alternative Compliance to compensate for the portion of the PDC that cannot be treated onsite.

In order to demonstrate compliance per the aforementioned document, it is required to demonstrate that the water quality treatment deficit of the project site is exceeded by the "Earned Stormwater Pollutant Control Volume" (V_E). V_E calculation is determined equation ES-1 provided below:

Equation ES-1: Calculation of ACP Earned Stormwater Pollutant Control Volume

$$V_E = L\,(\Delta V + V_2B_2 - V_1B_1)$$

Where:

V_E: Earned Stormwater Pollutant Control Volume (ft^3)

L: Land Use Factor

ΔV: Change in Design Capture Volume ($V_1 - V_2$)

V_1: Impacted Condition Design Capture Volume for ACP

V_2: Mitigated Condition Design Capture Volume for ACP

B_1: Impacted Condition BMP Efficacy Factor

B_2: Mitigated Condition BMP Efficacy Factor

Step 1 – Project Deficit DCV Calculations

In order to assess the required mitigation volume required, the DCV of each DMA of the PDP site specific development is required. These calculations are performed using the County's Automated Worksheet B.1-1 and are provided in the pages following this discussion.

Step 2 – Treatment Intensity Calculations

It is then required to determine the BMP treatment provided capture fraction, which is obtained using the calculated design intensity (as explained in section 2.3.1.3.2.4) and time of concentration of each specific DMA. For the analysis provided in this study, it has been conservatively assumed that the Tc is the lowest possible – 5 minutes.

Per BioClean documentation, the treatment flow capacity of the Kraken Curb Inlet Filter Unit is 0.11 cfs. It should be noted that in the case of this project site, the total area includes the project site AND the adjacent ACP because both drain to the proposed biofiltration filters downstream.

Step 3 – BMP Capture

Using Figure B.4 from the guidance documentation, the BMP Provided Capture is determined (see attached documents for chart and values).

Step 4 – DCV Deficit Calculation

The treatment deficit is then calculated for each DMA. This value is the DCV for each respective DMA less the Capture as determined in Step 3.

Step 5 – Change in Design Volume

The change in design volume (ΔV) is determined by subtracting the post-project DCV from the ACP less the pre-developed DCV. This calculation excludes the project site itself in both the pre and post developed condition given that this area has already been accounted for within Step 1. For this specific project, the offsite areas to both APC locations remain unchanged in both area and land use, so there is no change in design volume (ΔV = 0).

Step 6 – Land Use Factor

The Land Use Factor (L) was determined using the Automated Spreadsheet Calculation for Worksheet A.5 where the Reference Tributary Area is the actual disturbed project site in post-developed conditions and the ACP tributary is the offsite area tributary to the BMP. The results of these spreadsheets are provided in the following pages.

Step 7 – BMP Treatment Efficacy

To determine the BMP treatment efficacy of the selected BMP, Equation 2-3 from the guidance documentation is used:

Equation 2-3: BMP Efficacy Factor for Retention and Biofiltration BMPs

$$B = E \times C$$

Where:

B: BMP Efficacy Factor

E: Pollutant Removal Efficiency (Section 2.3.1.3.1)

C: Provided Capture (Section 2.3.1.3.2)

The pollutant removal efficiency (E) was determined based upon the TAPE documentation provided by BioClean to support the Kraken curb inlet filter unit. Per this TAPE, the Kraken's average reduction of Phosphorus (TP) was rated at 72%. Given that TP is a pollutant of concern as discussed previously within the WQMP, the removal rate of 0.72 for TP was used as the treatment efficiency of the BMP.

Step 8 – Earned Volume Calculation

Using equation ES-1 provided previously within this document, the calculation of the earned volume was now possible. Given that the existing BMPs within the project site or the associated BMP tributary areas is considered as proposed, the treatment efficacy value for B_1 is zero, thus this valuation drops out of the equation leaving only:

$$E_V = L\ (\ \Delta V + \ V_2 B_2)$$

Using phosphorus as pollutant of concern and the appropriate land use factor will result in the lowest subsequent earned Stormwater Pollutant control Volume and will ensure that the greatest overall water quality benefit is provided.

Step 9 – Compliance

The total resultant earned volume calculation is then compared to the total project deficit treatment. If the earned volume is greater than the deficit volume, the alternative compliance requirements have been met.

All DMA areas and corresponding calculations and charts have been included within this attachment to the WQMP to demonstrate that the Overland Drive Widening project meets its water quality objectives with the assistance of offsite compliant BMPs.

DMA AREA CALCULATIONS

DMA-1 OFFSITE

	ft^2	Ac	C
Total Area	286838	6.58	
Roofs or Road	261700	6.01	0.9
Landscaping	25138	0.58	0.1
	Weighted C		0.83

DMA-A ONSITE

	ft^2	Ac	C
Total Area	23724	0.54	
Roofs or Road	23244	0.53	0.9
Landscaping	480	0.01	0.1
	Weighted C		0.88

DMA-B ONSITE

	ft^2	Ac	C
Total Area	20681	0.47	
Roofs or Road	20201	0.46	0.9
Landscaping	480	0.01	0.1
	Weighted C		0.88

DMA-2 OFFSITE

	ft^2	Ac	C
Total Area	355160	8.15	
Roofs or Road	340476	7.82	0.9
Landscaping	14684	0.34	0.1
	Weighted C		0.87

DMA-C ONSITE

	ft^2	Ac	C
Total Area	36957	0.85	
Roofs or Road	36397	0.84	0.9
Landscaping	560	0.01	0.1
	Weighted C		0.89

DMA-1&A TOTAL

	ft^2	Ac	C
Total Area	310562	7.13	
Roofs or Road	284944	6.54	0.9
Landscaping	25618	0.59	0.1
	Weighted C		0.83

DMA-2&C TOTAL

	ft^2	Ac	C
Total Area	392117	9.00	
Roofs or Road	376873	8.65	0.9
Landscaping	15244	0.35	0.1
	Weighted C		0.87

Step 1	**Project DVC**		
	DVC A	1566	ft^3
	DVC B	1365	ft^3
	DVC C	2467	ft^3
Step 2			
	IA, IB & IC		
	Treatment Q	0.11	cfs
	IA1 =	0.018	in/hr
	IB =	0.263	in/hr
	IC2 =	0.028	in/hr

Used Q=0.22 cfs to count for prop. and ex. Catch basins

Step 3	**BMP Capture**		
	CA =	0.18	
	CB =	0.8	
	CC =	0.25	
Step 4	**Deficit Calculation**		
	Def A	1284.12	ft^3
	Def B	273	ft^3
	Def C	1850.25	ft^3
	Total Def	3407.37	ft^3
Step 5	**Delta V1**		
	Pre DVC 1	17856	ft^3
	Post DVC 1	17856	ft^3
	Delta V1	0	ft^3
	Delta V2		
	Pre DVC 2	23174	ft^3
	Post DVC 2	23174	ft^3
	Delta V2	0	ft^3
Step 6	**L Calculation**		
	L A1	0.75	
	L C2	0.75	
Step 7	**B Calculation** Note: B_1 = 0 as no existing BMPs		
	E =	0.72	(Per TAPE)
	B_2 A	0.1296	
	B_2 B	0.576	
	B_2 C and ECB-D	0.18	
Step 8	**Earned Volume**		
	VE A =	1735.60	ft^3
	VE C =	3128.49	ft^3
	Total Earned =	4864.0932	

Earned Volume > Deficit Volume

4864.09 > 3407.37 1456.72

Project Compliance Achieved

Note: Existing catch basin media filter is being considered as proposed since it is being part of the project

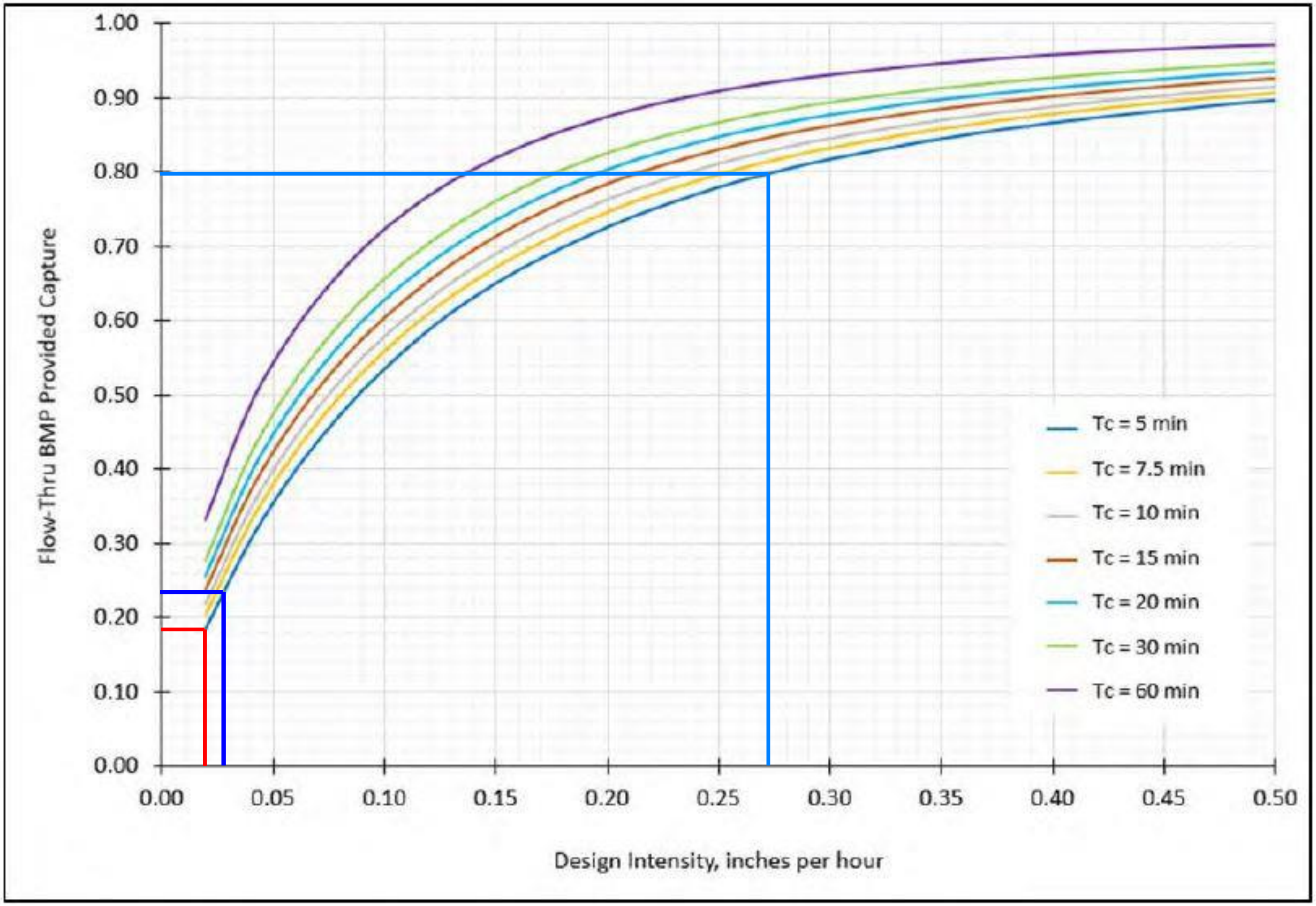


Figure B.4: Flow-Thru Provided Capture Curves

L Factor A1

Automated Spreadsheet Calculation for Worksheet A.5: Land Use Factor Determination (Version 1.0)

Land Use Designation	ACP Tributary Characteristics		Reference Tributary Characteristics [2]		Relative Pollutant Concentrations by Land Use [3]						
	Area (Acres)	Runoff Factor [1]	Area (Acres)	Runoff Factor [1]	TSS	TP	TN	TCu	TPb	TZn	FC
Agriculture	0.00	0.10		0.10	0.45	1.00	1.00	1.00	1.00	0.59	1.00
Commercial	0.00	0.80		0.80	0.13	0.16	0.16	0.56	0.48	1.00	0.87
Education	0.00	0.50		0.50	0.13	0.20	0.11	0.14	0.25	0.39	0.13
Industrial	5.50	0.90		0.90	0.13	0.19	0.15	0.54	0.68	0.89	0.49
Multi Family Residential	0.00	0.60		0.60	0.10	0.13	0.13	0.14	0.15	0.29	0.27
Orchard	0.00	0.10		0.10	0.18	0.17	0.67	1.00	1.00	0.59	0.11
Rural Residential	0.00	0.30		0.30	1.00	0.51	0.14	0.10	0.71	0.13	0.19
Single Family Residential	0.00	0.40		0.40	0.13	0.20	0.15	0.27	0.43	0.35	0.63
Transportation	0.50	0.90	0.53	0.90	0.11	0.26	0.12	0.53	0.31	0.62	0.12
Vacant / Open Space	0.58	0.10	0.01	0.10	0.16	0.10	0.10	0.12	0.10	0.10	0.10
Water	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	6.58	-	0.54	-	-	-	-	-	-	-	-
	Relative Pollutant Concentration for ACP Tributary [4]				0.13	0.19	0.15	0.53	0.64	0.86	0.46
	Relative Pollutant Concentration for Reference Tributary [4]				0.11	0.26	0.12	0.53	0.31	0.62	0.12
	Watershed Management Area				Santa Margarita River						
	Hydrologic Unit				Santa Margarita (902.00)						
	Land Use Factor [5]				-	0.75	1.23	-	-	-	3.80

Notes:

* Applicants must provide user input for yellow shaded cells. Values for all other cells will be automatically generated.

1. Revisions to default runoff factors must be supported to the satisfaction of the applicable Copermittee.

2. Applicant-Implemented ACPs must identify reference tributary characteristics that are representative of their specific PDP. Independent ACPs must reference **Table 2-3** for appropriate area and runoff factor information applicable to their watershed management area.

3. Relative Pollutant Concentrations by Land Use have been identified through examination of available EMC data. Additional information on how these relative concentrations were developed is provided in **Appendix B**

Example: An ACP Tributary with 5.25 acres of Commercial, 1.63 Acres of Education, and 2.65 acres of Transportation land uses produces a relative pollutant concentration 0.12 for Total Suspended Solids (assumes default runoff factors are applied).

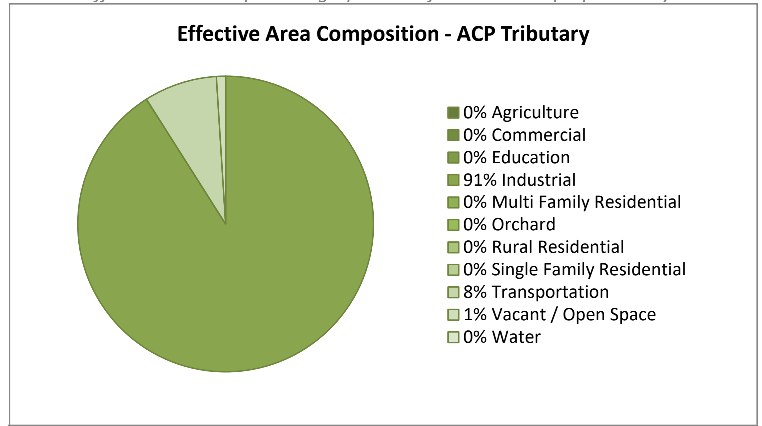
Equation 2-2:

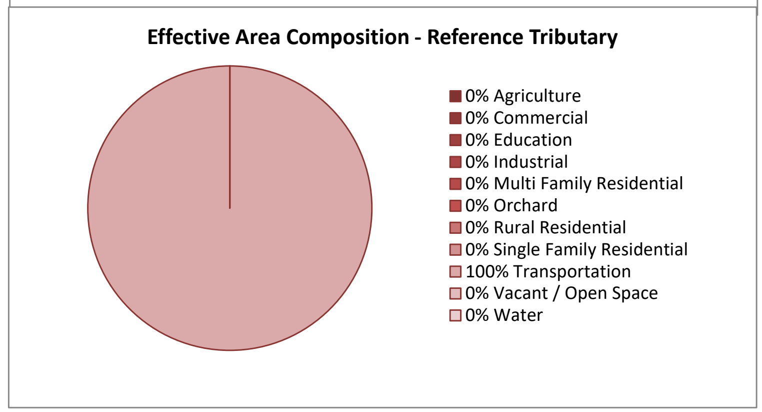
$$P_1 = \frac{\sum P_{1a} A_a C_a + P_{1b} A_b C_b + ... P_{1k} A_k C_k}{\sum A_a C_a + A_b C_b + ... A_k C_k}$$

Equation 2-2 Applied to Example:

$$P_{TSS} = \frac{(0.13x5.25x0.80) + (0.13x1.63x0.50) + (0.11x2.65x0.90)}{(5.25x0.80) + (1.63x0.50) + (2.65x0.90)} = 0.12$$

Effective area composition graphics are for illustrative purposes only.





L Factor C2

Automated Spreadsheet Calculation for Worksheet A.5: Land Use Factor Determination (Version 1.0)

Land Use Designation	ACP Tributary Characteristics		Reference Tributary Characteristics [2]		Relative Pollutant Concentrations by Land Use [3]						
	Area (Acres)	Runoff Factor [1]	Area (Acres)	Runoff Factor [1]	TSS	TP	TN	TCu	TPb	TZn	FC
Agriculture	0.00	0.10		0.10	0.45	1.00	1.00	1.00	1.00	0.59	1.00
Commercial	0.00	0.80		0.80	0.13	0.16	0.16	0.56	0.48	1.00	0.87
Education	0.00	0.50		0.50	0.13	0.20	0.11	0.14	0.25	0.39	0.13
Industrial	7.31	0.90		0.90	0.13	0.19	0.15	0.54	0.68	0.89	0.49
Multi Family Residential	0.00	0.60		0.60	0.10	0.13	0.13	0.14	0.15	0.29	0.27
Orchard	0.00	0.10		0.10	0.18	0.17	0.67	1.00	1.00	0.59	0.11
Rural Residential	0.00	0.30		0.30	1.00	0.51	0.14	0.10	0.71	0.13	0.19
Single Family Residential	0.00	0.40		0.40	0.13	0.20	0.15	0.27	0.43	0.35	0.63
Transportation	0.50	0.90	0.84	0.90	0.11	0.26	0.12	0.53	0.31	0.62	0.12
Vacant / Open Space	0.34	0.10	0.01	0.10	0.16	0.10	0.10	0.12	0.10	0.10	0.10
Water	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	8.15	-	0.85	-	-	-	-	-	-	-	-
	Relative Pollutant Concentration for ACP Tributary [4]				0.13	0.19	0.15	0.54	0.65	0.87	0.46
	Relative Pollutant Concentration for Reference Tributary [4]				0.11	0.26	0.12	0.53	0.31	0.62	0.12
	Watershed Management Area				Santa Margarita River						
	Hydrologic Unit				Santa Margarita (902.00)						
	Land Use Factor [5]				-	0.75	1.23	-	-	-	3.87

Notes:

* Applicants must provide user input for yellow shaded cells. Values for all other cells will be automatically generated.

1. Revisions to default runoff factors must be supported to the satisfaction of the applicable Copermittee.

2. Applicant-Implemented ACPs must identify reference tributary characteristics that are representative of their specific PDP. Independent ACPs must reference **Table 2-3** for appropriate area and runoff factor information applicable to their watershed management area.

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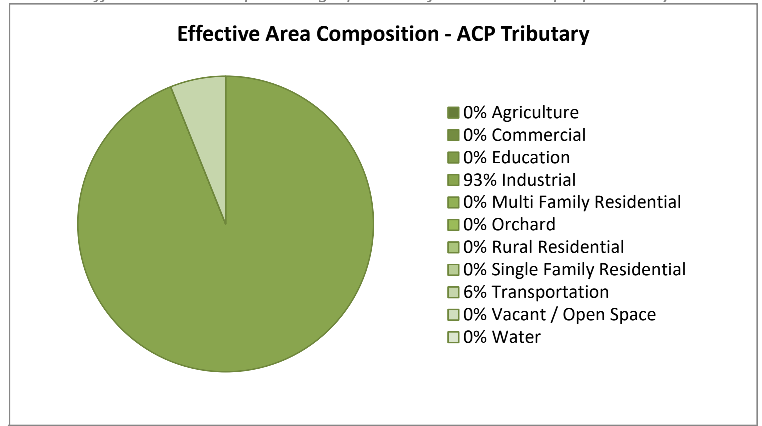
Equation 2-2:

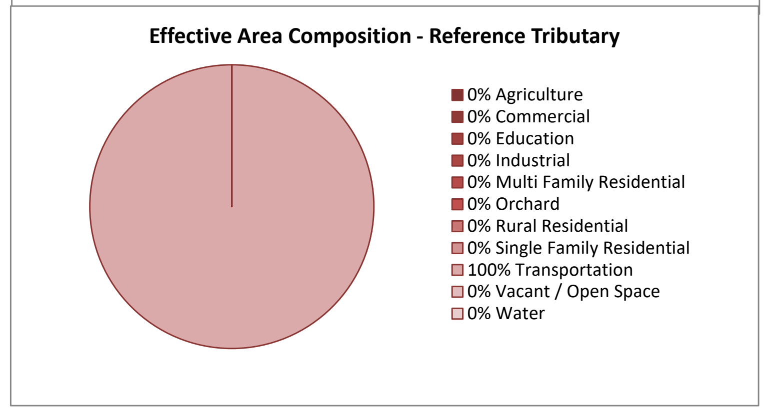
$$P_1 = \frac{\sum P_{1a}A_aC_a + P_{1b}A_bC_b + \ldots\ldots P_{1k}A_kC_k}{\sum A_aC_a + A_bC_b + \ldots\ldots A_kC_k}$$

Equation 2-2 Applied to Example:

$$P_{TSS} = \frac{(0.13x5.25x0.80) + (0.13x1.63x0.50) + (0.11x2.65x0.90)}{(5.25x0.80) + (1.63x0.50) + (2.65x0.90)} = 0.12$$

Effective area composition graphics are for illustrative purposes only.





Bio Clean
A Forterra Company

Curb Inlet Filter

A Stormwater Trash Capture Solution

OVERVIEW

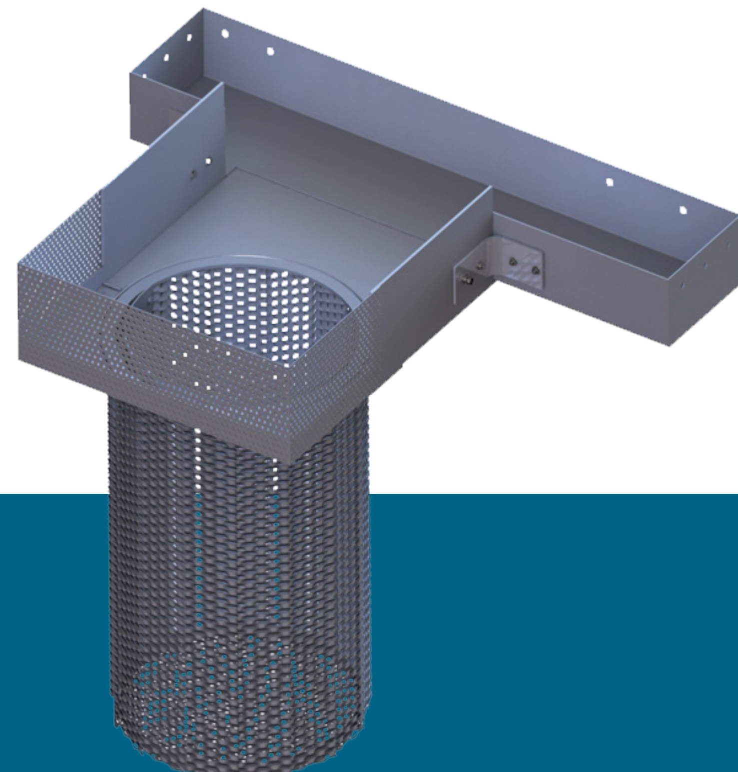
The Bio Clean Curb Inlet Filter is an insertable catch basin filter system designed to capture fine to coarse sediments, floatable trash, debris, and hydrocarbons conveyed in stormwater runoff. The filter system is available in three different model types: Full Trash Capture, Multi-Level Screening (MLS), and the revolutionary Kraken type media filter insert model.

The Curb Inlet Filter is an effective and economical solution to help property owners, developers, and municipalities meet local, state, and federal water quality requirements and regulations.

The expandable trough system is designed to convey water quality design flows through the filter basket while allowing peak flows to bypass over the trough without resuspending captured pollutants. The modular design of the trough system makes it adaptable to any size or type of curb inlet catch basin.

The Curb Inlet Filter provides easy access for maintenance from the surface without having to enter the catch basin. Maintenance service takes about 15 minutes and requires no confined space entry.

This filtration system addresses a wide array of pollutants including trash and debris, sediments, TSS, nutrients, metals, and hydrocarbons.



FULL TRASH CAPTURE TYPE

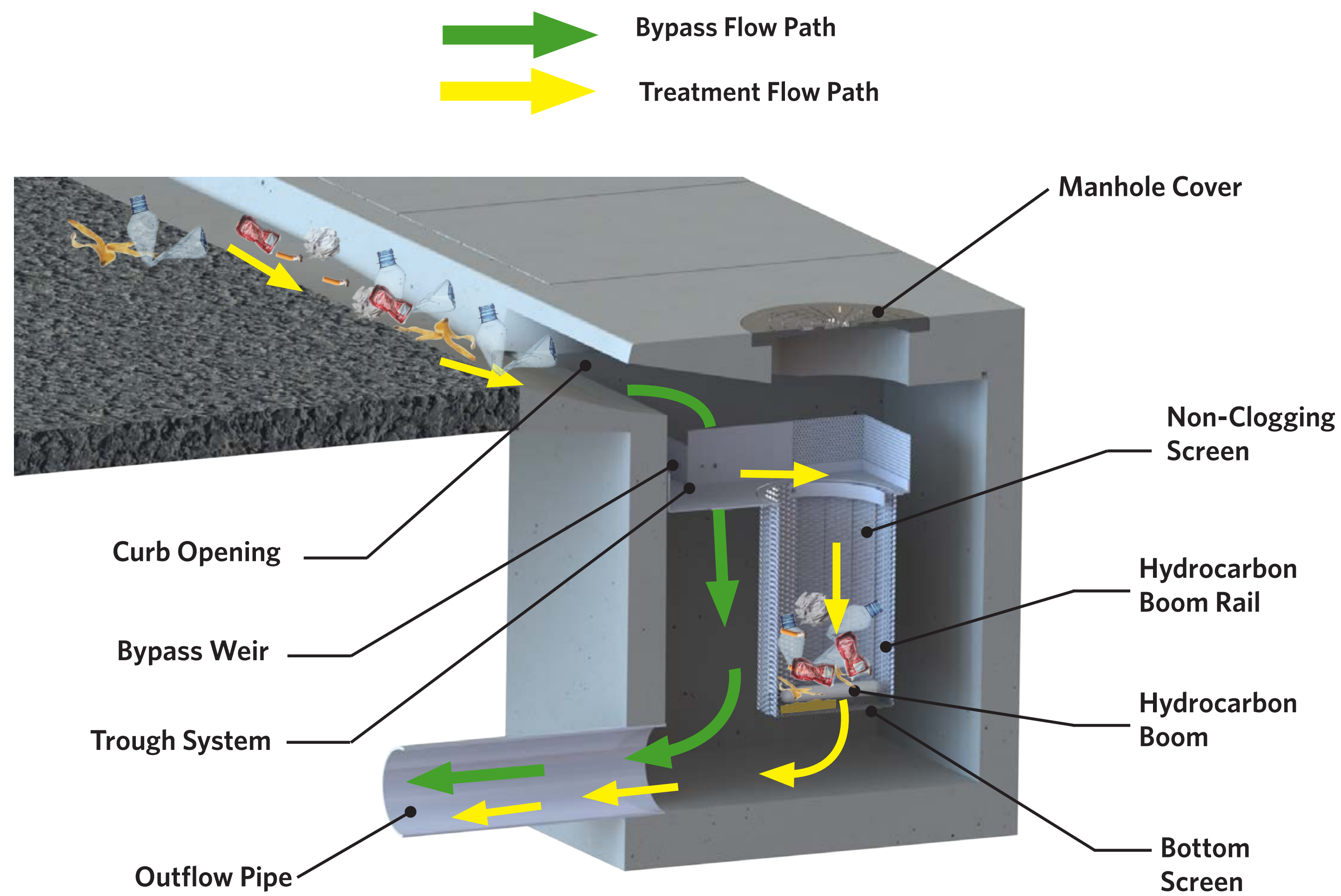
PERFORMANCE

100% REMOVAL OF TRASH AND DEBRIS	• MEETS FULL CAPTURE REQUIREMENTS

ADVANTAGES

- 8-YEAR WARRANTY
- WORKS IN ANY SIZE CATCH BASIN
- NO NETS OR GEOFABRICS
- 15+ YEARS USER LIFE
- EASIEST TO MAINTAIN TROUGH SYSTEM ALLOWS FOR 15-MINUTE OR LESS SERVICE TIME
- STAINLESS STEEL AND FIBERGLASS CONSTRUCTION

OPERATION



APPLICATIONS

- Parking Lots
- Roadways

SPECIFICATIONS

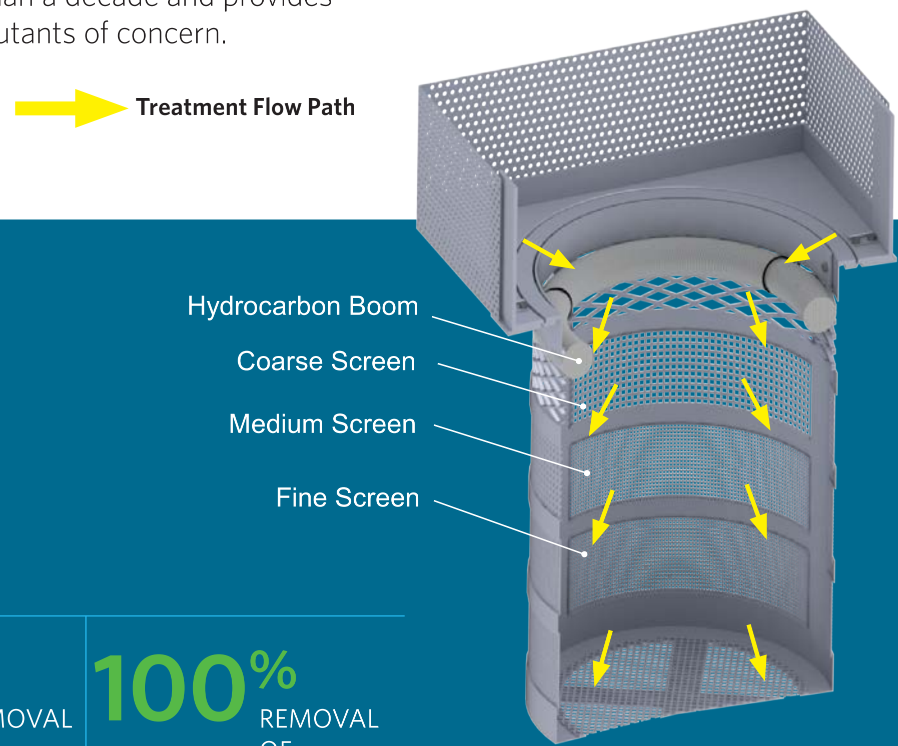
MODEL #	TREATMENT FLOW CAPACITY (cfs)	BYPASS FLOW (cfs)
BIO-CURB-FULL	2.85	UNLIMITED

Note: Treatment flow rate limited to the weir capacity - actual flow rates of the filter basket is greater than 2.85 cfs.
Various depth filter baskets available.

CURB INLET FILTER

The Bio Clean Multi-Level Screening Curb Inlet Filter is the standard configuration used for more than a decade and provides the best overall performance for all pollutants of concern.

OPERATION



MULTI-LEVEL SCREENING

PERFORMANCE

80% REMOVAL OF SEDIMENTS	100% REMOVAL OF TRASH	100% REMOVAL OF FOLIAGE

- MEDIUM LEVEL REMOVAL FOR PARTICULATE METALS AND NUTRIENTS
- INCLUDES HYDROCARBON BOOM FOR REMOVAL OF OILS AND GREASE

SPECIFICATIONS

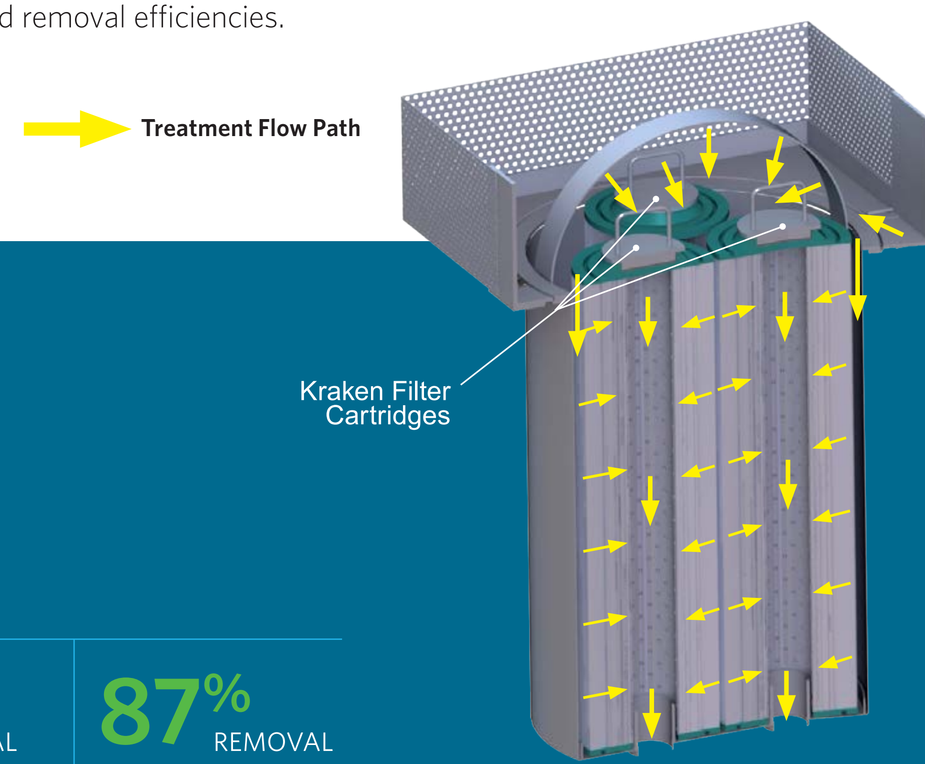
MODEL #	SCREEN TREATMENT FLOW (cfs)	BYPASS FLOW (cfs)
BIO-CURB-MLS	2.85	UNLIMITED

Note: Treatment flow rate limited to the weir capacity – actual flow rates of the filter basket is greater than 2.85 cfs. Various depth filter baskets available.

CURB INLET MEDIA FILTER

The Bio Clean Kraken Curb Inlet Media Filter is an advanced membrane filter for increased removal efficiencies.

OPERATION



KRAKEN TYPE

PERFORMANCE

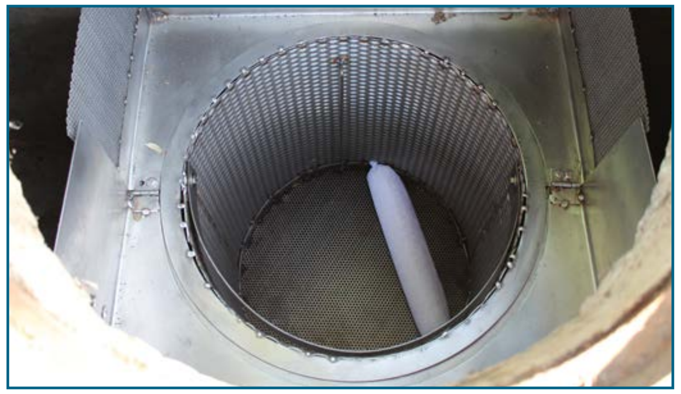
85% REMOVAL OF FINE TSS	52% REMOVAL OF COPPER	87% REMOVAL OF LEAD	
58% REMOVAL OF ZINC	60% REMOVAL OF FECAL COLIFORM (BACTERIA)	81% - 95% REMOVAL OF OILS AND GREASE (MOTOR OIL)	72% REMOVAL OF DISSOLVED PHOSPHORUS

SPECIFICATIONS

MODEL #	MEDIA TREATMENT FLOW (cfs)	BYPASS FLOW (cfs)
BIO-CURB-KMF-30	0.11	UNLIMITED

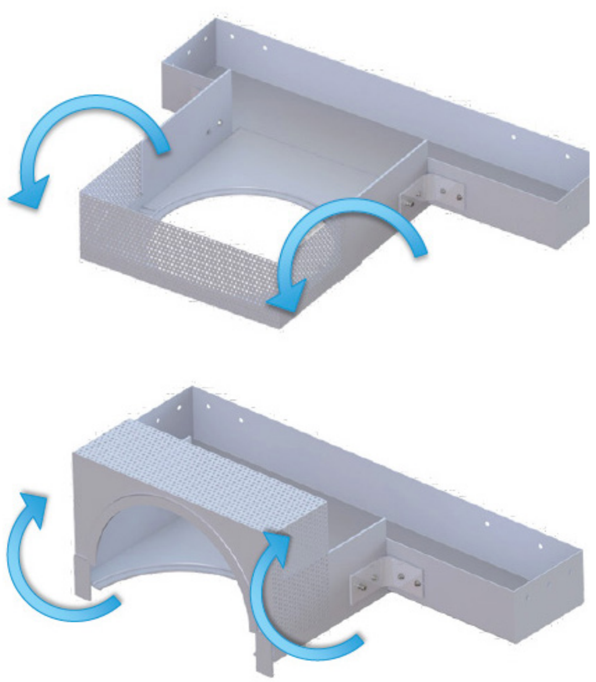
Note: Media treatment flow rate based on three 30" tall Kraken filter cartridges. Various filter basket and Kraken Filter Cartridge heights available.

INSTALLATION



Always positioned under manhole opening.

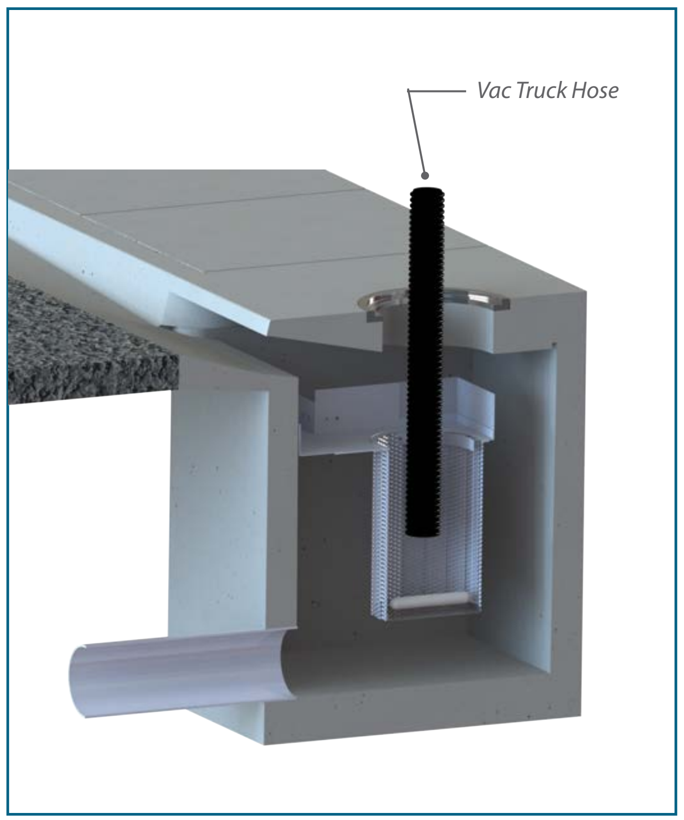
The Curb Inlet Filter features a folding weir that hinges up after the basket is removed to allow easy access to the catch basin if needed.

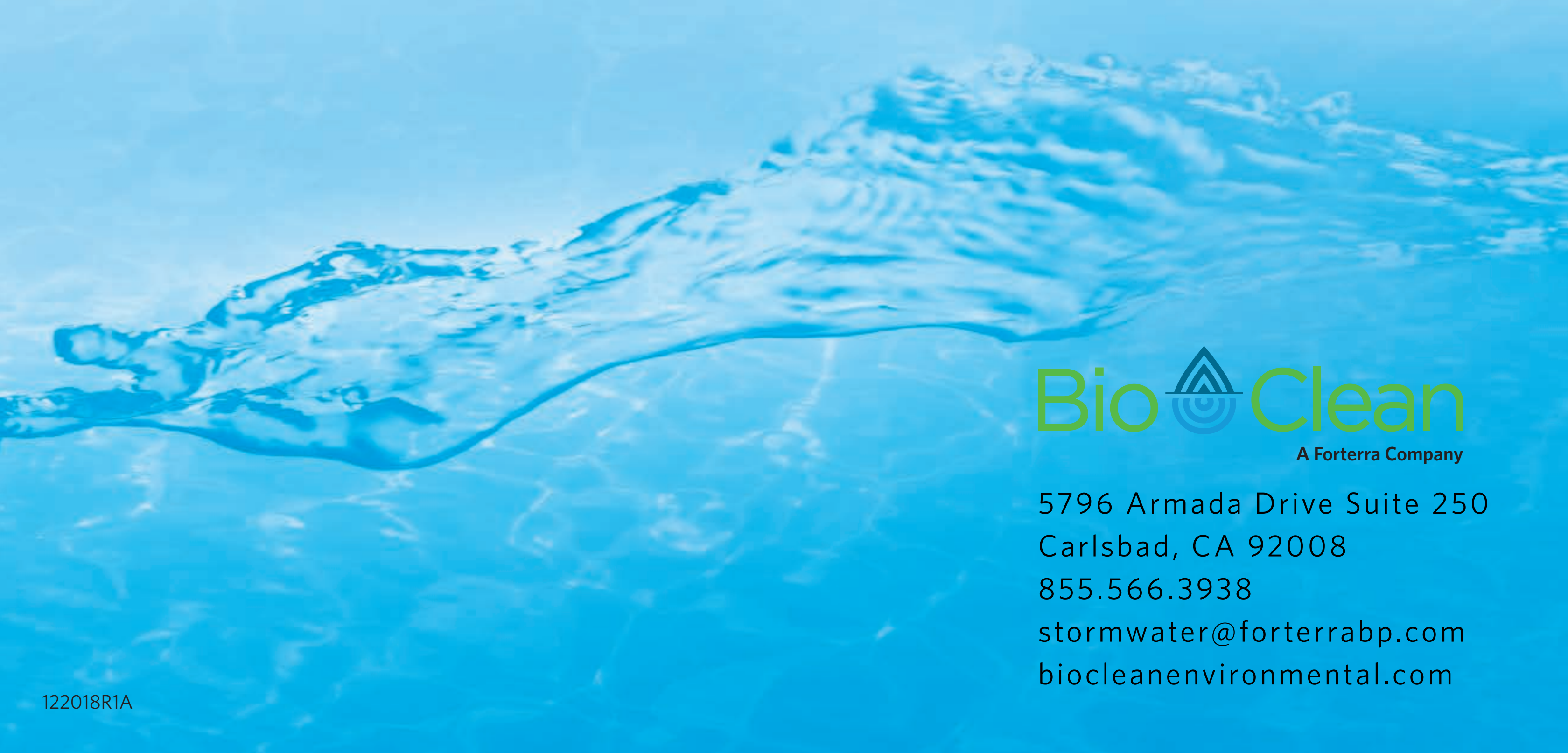


MAINTENANCE

Cleaned easily with vac truck, without catch basin entry, and about 15 minutes is required for service.

Easily removed without entry into basin.





Bio Clean
A Forterra Company

5796 Armada Drive Suite 250
Carlsbad, CA 92008
855.566.3938
stormwater@forterrabp.com
biocleanenvironmental.com

122018R1A

ATTACHMENT 2

HYDROMODIFICATION CONTROL MEASURES

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 2a	Do Hydromodification Management Requirements apply? See Chapter 1.6 and Figure 1-2.	✓ Hydromodification management controls required. ☐ Green Streets Project (Exempt from hydromodification management requirements) **STOP *** ☐ Exempt from hydromodification management requirements ☐ Include Figure 1-2 and document any "NO" answer **STOP ***
Attachment 2b	HMP Exhibits (Required) See Checklist on the back of this Attachment cover sheet. *see Chapter 6.3.1*	✓ Combined with DMA Exhibit ☐ Included
Attachment 2c	Management of Critical Coarse Sediment Yield Areas See Chapter 6.2 and Appendix H of the BMP Design Manual.	✓ Exhibit depicting onsite/ upstream CCSYAs (Figure H.1-1) AND, documentation that project avoids CCSYA per Appendix H.1. OR ☐ Sediment Supply BMPs implemented.
Attachment 2d	Structural BMP Design Calculations, Drawdown Calculations, & Overflow Design. See Chapter 6 & Appendix G of the BMP Design Manual	☐ Included ☐ Project is designed entirely with De-Minimus, Self–Mitigating, and/or qualifying Self-Retaining Areas. **STOP ***
Attachment 2e	Geomorphic Assessment of Receiving Channels. See Chapter 6.3.4 of the BMP Design Manual.	✓ low flow threshold is 0.1Q2 ☐ low flow threshold is 0.3Q2 ☐ low flow threshold is 0.5Q2
Attachment 2f	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐ Included ☐ Not required because BMPs will drain in less than 96 hours
Attachment 2g	Hydromodification Offsite Alternative Compliance form. Refer to Figure 1-3: Pathways to Participating in Offsite Alternative Compliance Program	☐ Full Compliance Onsite ✓ Offsite ACP. Document onsite structural BMPs and complete Hydromodification Offsite Alternative Compliance Participation Form, and WQE worksheets

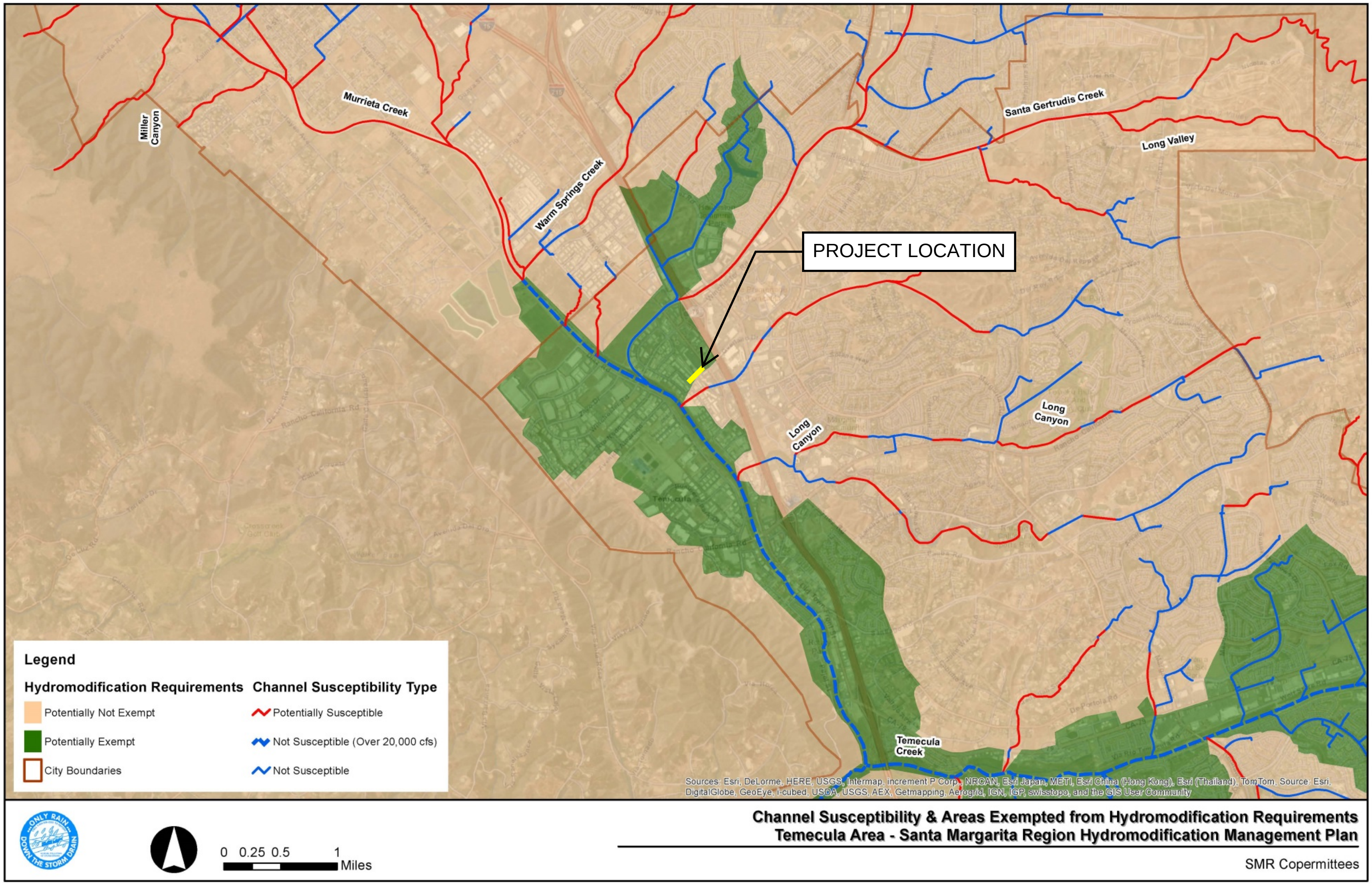
* If this box is checked, the remainder of Attachment 2 does not need to be filled out.

Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

✓ Point(s) of Compliance with name or number
✓ Project Site Boundary
☐ Project Disturbed Area Footprint
✓ Drainage management area (DMA) boundaries, DMA ID numbers, DMA areas (square footage or acreage), and DMA type (i.e., drains to structural BMP, self-retaining, self-mitigating, or de-minimis) Note on exhibit De-minimis areas and reason they could not be included. Include offsite areas receiving treatment to mitigate Onsite Water Quality Equivalency.
✓ Potential pollutant source areas and corresponding required source control BMPs (see Chapter 4, Appendix E.1, and Step 3.5)
✓ Proposed Site Design BMPs and surface treatments used to minimize imperviousness. Show sections, details, and dimensions of site design BMP's (tree wells, dispersion areas, rain gardens, permeable pavement, rain barrels, green roofs, etc.)
☐ Proposed Harvest and Use BMPs
✓ Underlying hydrologic soil group (Web Soil Survey)
☐ Existing natural hydrologic features (watercourses, seeps, springs, wetlands, pond, lake)
☐ Existing topography and impervious areas
✓ Proposed grading and impervious areas. If the project is a subdivision or spans multiple lots show pervious and impervious totals for each lot.
✓ Existing and proposed site drainage network and connections to drainage offsite
☐ Potable water wells, onsite wastewater treatment systems (septic), underground utilities
✓ Structural BMPs (identify location, structural BMP ID No., type of BMP, and size/detail)
☐ Approximate depth to groundwater at each structural BMP
☐ Approximate infiltration rate and feasibility (full retention, partial retention, biofiltration) at each structural BMP
☐ Critical coarse sediment yield areas to be protected and or conveyed through the project site.
☐ Temporary Construction BMPs. Include protection of source control, site design and structural BMPs during construction.

☐ Onsite and Offsite Critical coarse sediment yield areas to be protected
☐ Proposed design features and surface treatments used to minimize imperviousness
☐ Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)
☐ Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail)

Figure 8 - SMR Channel Susceptibility and Exemption Coverage – Temecula Area




Riverside County SWCT²
Stormwater & Water Conservation Tracking Tool
ONLY RAIN DOWN THE STORM DRAIN
Project Site
Prop. Catch Basin
MURRIETA CREEK
Tract Map 16178-3
Drainage Channel
Hydromodification Susceptibility Mapping
Not Susceptible
Santa Ana River
Potentially Susceptible
Hydromodification Exemption Areas
Potentially Not Exempt
Potentially Exempt
Leaflet

Management of Critical Coarse Sediment Yield Areas (Attachment 2c)

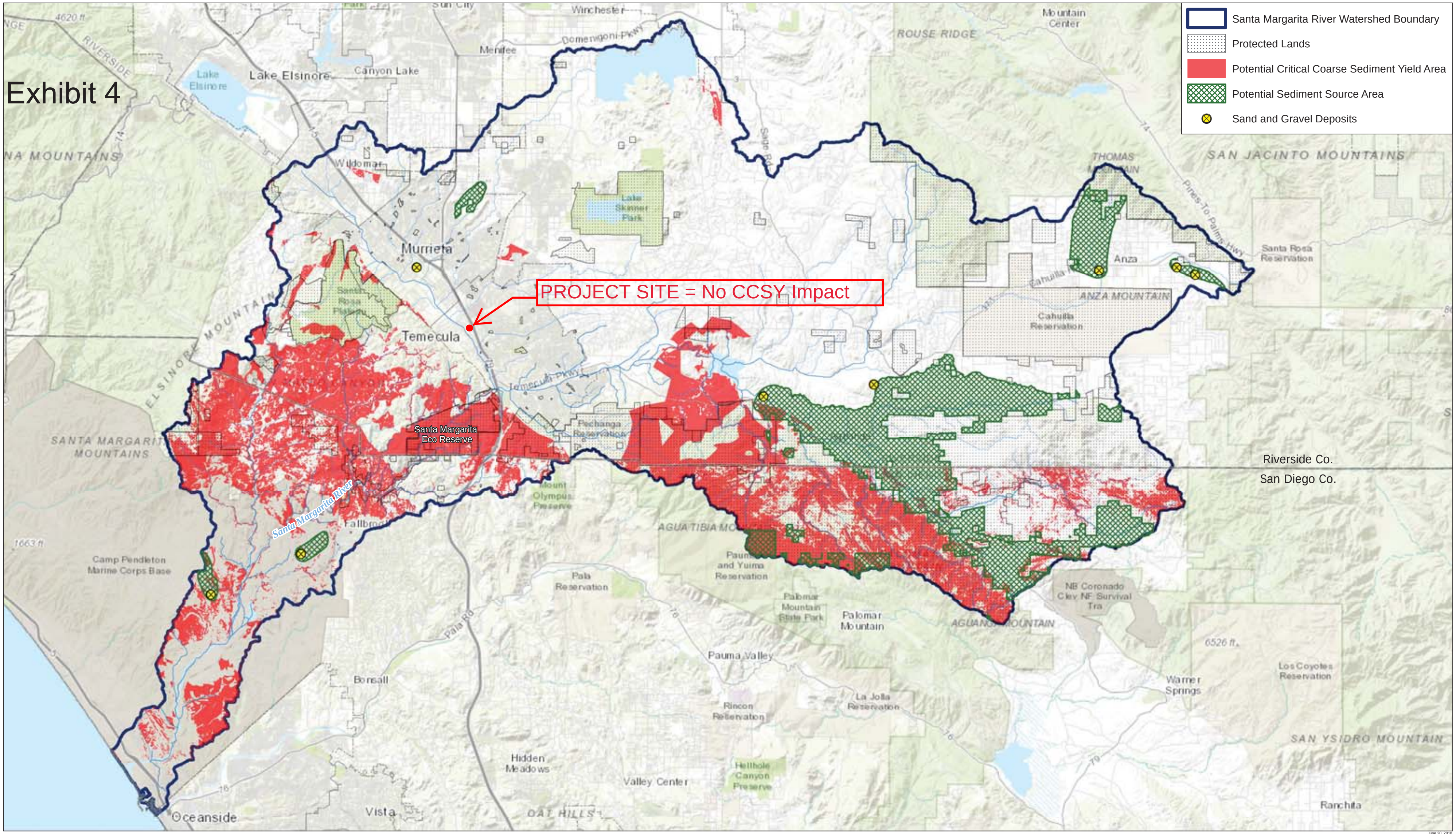
Document the findings of Site-specific Critical Coarse Sediment Analysis below. Include any calculations, and additional documentation completed as part of the analysis. Refer to Chapter 6.2 and Appendix H of the City of Temecula BMP Design Manual for additional guidance.

The project effectively manages Critical Coarse Sediment Yield Areas (CCSYAs) using the following methodology:

✓ **Step A.** A Site-Specific Critical Coarse Sediment Yield Analysis was performed:

- ☐ **Step A.1.** Determine whether the project site is a significant source of critical coarse sediment to the channel receiving runoff (refer to CCSYA mapping in Appendix H):
  - ☐ The project site is a significant source of Bed Sediment Supply. All channels on the project site are preserved or bypassed within the site plan. *(Complete Step A.2, below)*
  - ☐ The project site is a source of Bed Sediment Supply. Channels identified as verified critical coarse sediment yield areas are preserved. *(Complete Step A.2, below)*
  - ✓ The Project site is not a significant source of Bed Sediment Supply. ***(STOP,** supporting information provided with this checklist**)***
  - ☐ Impacts to verified CCSYAs cannot be avoided. *(Complete Step B, below)*
- ☐ **Step A.2.** Project site design avoids CCSYAs and maintains sediment supply pathways, documentation is provided following this checklist. (***STOP,** include supporting documentation with this checklist)*

☐ **Step B.** Sediment Supply BMPs are implemented onsite to mitigate impacts of development in CCSYAs, documentation is provided following this checklist. *(**STOP,** include supporting documentation with this checklist)*



SANTA MARGARITA RIVER WATERSHED

POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS AND POTENTIAL SEDIMENT SOURCE AREAS

wsp

Hydromodification Offsite Alternative Compliance Participation Form

Refer to Chapter 1.8

Onsite Project Information	
Record ID:	PW20-11
Assessor's Parcel Number(s) [APN(s)]	Overland Drive - City Right of Way (btwn Jefferson Avenue and Commerce Center Drive)
Quantity of Hydromodification Debits or Credits (DCIA) ☐ Debits ✓ Credits *See Attachment 1 of the PDP WQMP	7.80

Offsite Project Information – Projects providing or receiving credits *(add rows as needed)*					
	Record ID:	APN(s)	Project Owner/Address	Credit/Debit	Quantity (DCIA)
1.				☐ Credit ☐ Debit	
2.				☐ Credit ☐ Debit	
3.				☐ Credit ☐ Debit	
4.				☐ Credit ☐ Debit	
5.				☐ Credit ☐ Debit	
6.				☐ Credit ☐ Debit	
Total sum of Credits and Debits (∑Credits -∑Debits) (DCIA)					

Additional Information	
Are offsite projects in the same credit trading area as the onsite project?	✓ Yes ☐ No
Do offsite projects discharge directly to the same susceptible stream reach as the onsite project? (required for certain hydromodification scenarios)	✓ Yes ☐ No
Will projects providing credits be completed prior to completion of projects receiving credits?	✓ Yes ☐ No
Are all deficits accounted for? If No, onsite and offsite projects must be redesigned to account for all deficits.	✓ Yes ☐ No

Provide supporting WQE calculations as part of this attachment.

HYDROMODIFICATION CALCS

PDP Land Covers	Area ft^2	Area Acre	
Asphalt/Concrete	79,842	1.83	
Landscaping	1,520	0.03	
Total DCIA	79,842	1.83	***(Includes only impervious areas)***

ACP Land Covers	Area ft^2	Area Acre
Parking and Roof Areas	419,419	9.63
Landscaping	39,822	0.91
Total ACP	419,419	9.63

DCIA Effectively Managed

	Area ft^2	Area Acre
Mitigated	419,419	9.63
Required	79,842	1.83
Total Earn DCIA	339,577	**7.80**

SMRHM

PROJECT REPORT

General Model Information

Project Name:	Hydromodification Overland 03.31.2023
Site Name:	Overland Drive Widening
Site Address:	Overland Drive
City:	Temecula
Report Date:	3/31/2023
Gage:	Temecula Valley
Data Start:	1974/10/01
Data End:	2011/09/30
Timestep:	15 Minute
Precip Scale:	1.000
Version Date:	2021/06/14

POC Thresholds

Low Flow Threshold for POC1:	10 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

Landuse Basin Data
Predeveloped Land Use

DMA - ONSITE

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C D,Grass,Ste(10-20)	0.77
Pervious Total	0.77
Impervious Land Use	acre
Roads,Flat(0-5%)	1.09
Impervious Total	1.09
Basin Total	1.86

Element Flows To:

Surface	Interflow	Groundwater

DMA - OFFSITE

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C D,Grass,Flat(0-5%)	0.91
Pervious Total	0.91
Impervious Land Use	acre
Roof Area	2.7
Parking,Flat(0-5%)	6.93
Impervious Total	9.63
Basin Total	10.54

Element Flows To:

Surface	Interflow	Groundwater

Mitigated Land Use

DMA - OFFSITE

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C D,Grass,Flat(0-5%)	0.91
Pervious Total	0.91
Impervious Land Use	acre
Roof Area	2.7
Parking,Flat(0-5%)	6.93
Impervious Total	9.63
Basin Total	10.54

Element Flows To:

Surface	Interflow	Groundwater

DMA - ONSITE

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C D,Urban,Flat(0-5%)	0.03
Pervious Total	0.03
Impervious Land Use	acre
Roads,Flat(0-5%)	1.83
Impervious Total	1.83
Basin Total	1.86

Element Flows To:

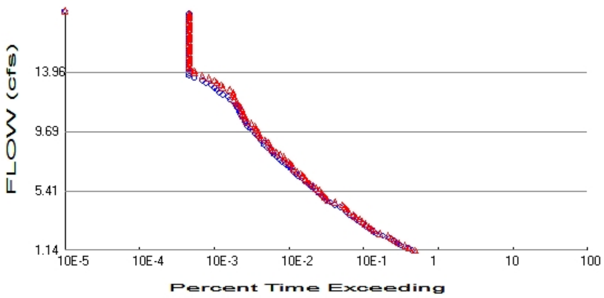
Surface	Interflow	Groundwater

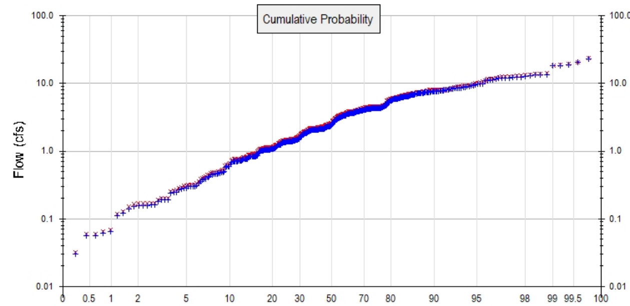
Routing Elements
Predeveloped Routing

Mitigated Routing

Analysis Results

POC 1





+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 1.68
Total Impervious Area: 10.72

Mitigated Landuse Totals for POC #1
Total Pervious Area: 0.94
Total Impervious Area: 11.46

Flow Frequency Method: Cunnane

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	11.427417
5 year	13.384532
10 year	18.229519
25 year	20.551364

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	11.720091
5 year	13.790936
10 year	18.695279
25 year	20.866959

Duration Flows

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
1.1427	5781	6261	108	Pass
1.3153	5060	5275	104	Pass
1.4879	4102	4680	114	Fail
1.6605	3599	3841	106	Pass
1.8331	3242	3393	104	Pass
2.0057	2893	3081	106	Pass
2.1783	2346	2779	118	Fail
2.3509	1899	2126	111	Fail
2.5235	1703	1792	105	Pass
2.6961	1546	1646	106	Pass
2.8687	1393	1508	108	Pass
3.0413	1277	1369	107	Pass
3.2139	1148	1252	109	Pass
3.3865	1027	1141	111	Fail
3.5591	944	1010	106	Pass
3.7316	830	947	114	Fail
3.9042	768	824	107	Pass
4.0768	718	764	106	Pass
4.2494	632	724	114	Fail
4.4220	527	671	127	Fail
4.5946	465	537	115	Fail
4.7672	412	428	103	Pass
4.9398	378	398	105	Pass
5.1124	355	376	105	Pass
5.2850	324	354	109	Pass
5.4576	297	332	111	Fail
5.6302	277	300	108	Pass
5.8028	252	270	107	Pass
5.9754	232	248	106	Pass
6.1480	212	225	106	Pass
6.3206	194	216	111	Fail
6.4931	172	198	115	Fail
6.6657	161	186	115	Fail
6.8383	149	166	111	Fail
7.0109	138	149	107	Pass
7.1835	130	148	113	Fail
7.3561	117	136	116	Fail
7.5287	106	127	119	Fail
7.7013	97	116	119	Fail
7.8739	90	112	124	Fail
8.0465	83	100	120	Fail
8.2191	78	88	112	Fail
8.3917	74	78	105	Pass
8.5643	67	74	110	Pass
8.7369	60	71	118	Fail
8.9095	59	69	116	Fail
9.0821	54	62	114	Fail
9.2546	53	55	103	Pass
9.4272	49	52	106	Pass
9.5998	45	51	113	Fail
9.7724	42	47	111	Fail
9.9450	39	47	120	Fail
10.1176	36	45	125	Fail
10.2902	35	41	117	Fail

10.4628	33	35	106	Pass
10.6354	33	34	103	Pass
10.8080	30	32	106	Pass
10.9806	29	31	106	Pass
11.1532	28	31	110	Pass
11.3258	27	30	111	Fail
11.4984	26	29	111	Fail
11.6710	25	27	108	Pass
11.8436	24	26	108	Pass
12.0161	21	24	114	Fail
12.1887	20	24	120	Fail
12.3613	17	23	135	Fail
12.5339	15	23	153	Fail
12.7065	14	21	150	Fail
12.8791	13	17	130	Fail
13.0517	12	16	133	Fail
13.2243	10	14	140	Fail
13.3969	9	13	144	Fail
13.5695	7	11	157	Fail
13.7421	6	9	150	Fail
13.9147	6	7	116	Fail
14.0873	6	7	116	Fail
14.2599	6	6	100	Pass
14.4325	6	6	100	Pass
14.6051	6	6	100	Pass
14.7776	6	6	100	Pass
14.9502	6	6	100	Pass
15.1228	6	6	100	Pass
15.2954	6	6	100	Pass
15.4680	6	6	100	Pass
15.6406	6	6	100	Pass
15.8132	6	6	100	Pass
15.9858	6	6	100	Pass
16.1584	6	6	100	Pass
16.3310	6	6	100	Pass
16.5036	6	6	100	Pass
16.6762	6	6	100	Pass
16.8488	6	6	100	Pass
17.0214	6	6	100	Pass
17.1940	6	6	100	Pass
17.3666	6	6	100	Pass
17.5391	6	6	100	Pass
17.7117	6	6	100	Pass
17.8843	6	6	100	Pass
18.0569	6	6	100	Pass
18.2295	6	6	100	Pass

The development has an increase in flow durations
of more than a 110% for the full range of flows.

Appendix
Predeveloped Schematic

Mitigated Schematic

Disclaimer

Legal Notice

Clear Creek Solutions, Inc.
6200 Capitol Blvd. Ste F
Olympia, WA. 98501
Toll Free 1(866)943-0304
Local (360)943-0304

www.clearcreeksolutions.com

ATTACHMENT 3

Structural BMP Maintenance Information

Indicate which Items are Included behind this cover sheet:

Maintenance Responsibility has been assigned to:

- ☐ Property Owner
- ☐ Special District
- ✓ City of Temecula

☐ Attachment 3 is not required because the project does not propose structural BMPs

☐ Not applicable at this time – Discretionary Project

Attachment Sequence	Contents	Checklist
Attachment 3	Standard Structural BMP Water Quality Management Plan Operation and Maintenance Agreement (BMP Design Manual Appendix A.3)	☐ Included ☐ Signed, Notarized, and Recorded* ✓ City Maintained – Do Not Record, must be reviewed & accepted by City Maintenance Dept.
Exhibit A	Legal Description	☐ Included
Exhibit B	Individual Structural BMP DMA Mapbook (WQMP Exhibits)	☐ Included ☐ Place each map on 8.5"x11" paper ☐ BMP Site layout – Clearly depict location of each BMP ☐ Legible construction details of each BMP.
Exhibit C	Structural BMP Maintenance Plan (Required)	☒ Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Exhibit D	Structural BMP Design Fact Sheets (Appendix E)	☐ Included

Note* Do not notarize & record until City staff has reviewed and approved the final Water Quality Management Plan Operation and Maintenance Agreement.

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Plan Exhibit:

Attachment 3 Exhibit C must identify:

- ✓ Purpose of the Operation and Maintenance Manual
- ✓ General description and function of all Structural BMPs implemented
- ✓ Inspection & Maintenance Documentation. Refer to Chapter 7.4
- ✓ Inspection, Maintenance, & Reporting Frequency: Refer to Chapter 7.5
- ✓ Measures to Control Maintenance Costs. Refer to Chapter 7.6
- ✓ Maintenance indicators and actions for structural BMP(s). Refer to Chapter 7.7
- ✓ Structural BMP Life Cycle Cost Analysis including Inspection, Maintenance, documentation, reporting, and replacement.

Operation and Maintenance Manual

1. Purpose of the Curb Inlet Filter (CIB) Maintenance Manual

The purpose of this manual is to provide maintenance instructions for the curb inlet filters (CIB) inserted in the catch basins located along the east, west, and north side of the Winchester Road and Nicolas Road intersection improvements. The curb inlet filters are pollution control devices designed to treat urban runoff before it enters the storm drain systems located on the project site. Regular maintenance will ensure that the CIBs function as they have been designed.

This manual will serve as a reference guide and filed manual to assist the property owner with:

- An overview of the curb inlet filters and how they function
- A description of the location of the curb inlet filters
- An understanding of the procedures required to effectively maintain the curb inlet filters on a regular basis
- Reproducible copies of the forms, logs and guidance sheets necessary for recording maintenance activities associated with the curb inlet filters.

2. General Description and Function of the Curb Inlet Filter

The curb inlet filter is composed of a shelf system and a filter basket. The shelf system includes a main trough system and weir constructed of UV coated marine grade fiberglass. The shelf directs water flow into the filter basket which is positioned directly under the manhole for easy access. The filter basket is made of UV coated marine grade fiberglass and its screens are constructed of high grade stainless steel. Along the perimeter of the filter basket is a tray containing a media filtration boom. The media filtration boom is made up of granulated oil absorbing polymers.

Pollution is mitigated by the combined multi-level screening and hydrocarbon media described above. Runoff flows through and over the filtration boom and downward into the filtration basket. Runoff flow up to the peak treatment flow rate is then processed through the filtration screens. The filter basket is designed to remove and retain debris, sediments, metals, nutrients, oxygen demanding substances, bacteria and hydrocarbons entering the filter.

3. Maintenance Responsibility

The City of Temecula is ultimately responsible for maintaining the curb inlet filters. The goal in maintaining the curb inlet filters is to ensure that filtration is occurring. Regular inspection, removal of materials collected by inlet filter insert, and replacement of the hydrocarbon boom once it becomes ineffective in performing as designed are the major components in the maintenance program. The cleaning and maintenance manual created by BioClean Environmental shall be followed.

Cleaning and Maintenance Manual

Curb Inlet Basket/Round Curb Inlet Basket

Maintenance

Maintenance: The filter is designed to allow for the use of vacuum removal of captured materials in the filter basket, serviceable by centrifugal compressor vacuum units without causing damage to the filter or any part of the mounting and attachment hardware during normal cleaning and maintenance. Filters can be cleaned and vacuumed from the manhole-opening. Entering the catch basin to clean the filters is not necessary.

Maintenance Notes:

1. Bio Clean Environmental Services, Inc. recommends cleaning and maintenance of the Curb Inlet Basket a minimum of two to four times per year or following a significant rain event that would potentially accumulate a large amount of debris to the system. The hydrocarbon boom should be replaced a minimum of twice per year or at each service as needed.
2. Any person performing maintenance activities that require entering the catch basin or handle a toxic substance have completed the proper training as required by OSHA.
3. Remove manhole lid to gain access to inlet filter insert. The filter basket should be located directly under the manhole lid. Under normal conditions, cleaning and maintenance of the Curb Inlet Basket will be performed from above ground surface.
4. Special Note: entry into an underground manhole, catch basin and stormwater vault requires training in an approved Confined Space Entry Program.
5. Remove all trash, debris, organics, and sediments collected by the inlet filter insert. Removal of the trash and debris can be done manually or with the use of a vactor truck. Manual removal of debris may be done by lifting the basket from the shelf and pulling the basket from the catch basin and dumping out the collected debris.
6. Any debris located on the shelf system can be either removed from the shelf or can be pushed into the basket and retrieved from basket.
7. Evaluation of the hydrocarbon boom shall be performed at each cleaning. If the boom is filled with hydrocarbons and oils it should be replaced. Removed boom by cutting plastic ties and remove boom. Attach new boom to basket with plastic ties through pre-drilled holes in basket.
8. Place manhole lid back on manhole opening.
9. Transport all debris, trash, organics and sediments to approved facility for disposal in accordance with local and state requirements. The hydrocarbon boom with adsorbed hydrocarbons is considered hazardous waste and need to be handled and disposed of as hazardous material. Please refer to state and local regulations for the proper disposal of used motor oil/filters.
10. Following maintenance and/or inspection, the maintenance operator shall prepare a maintenance/inspection record. The record shall include any maintenance activities performed, amount and description of debris collected, and condition of filter. The owner shall retain the maintenance/inspection record for a minimum of five years from the date of maintenance. These records shall be made available to the governing municipality for inspection upon request at any time.
11. Any toxic substance or item found in the filter is considered as hazardous material can only be handled by a certified hazardous waste trained person (minimum 24-hour hazwoper).

BIO CLEAN
ENVIRONMENTAL SERVICES, INC.

398 Via El Centro, Oceanside, CA 92058
(760 433-7640 Fax (760) 433-3176
www.biocleanenvironmental.com

4. Maintenance Indicators and Activities

Functional Maintenance:
Regular functional maintenance is required to ensure that the curb inlet filters perform in an effective manner. Functional maintenance consists of both preventative and corrective activities. Logs and guidance sheets are contained herein to use in recording the maintenance activities performed, amount and description of debris collected, and condition of filter. The owner shall retain maintenance records for a minimum of five years. The proper use and storage of these records will assure the City of Temecula that the curb inlet filters are functioning as designed.

Preventative Maintenance:
Preventative maintenance shall be performed on a regular basis. Checklists are included herein to track and record preventative maintenance activities. These activities include trash, debris, organics, and sediments removal and evaluation of the hydrocarbon boom at each cleaning.
Trash, debris, organics, and sediments removal shall be performed to ensure that runoff has adequate area to be filtered through the hydrocarbon boom and screens.

Evaluation or replacement of the hydrocarbon boom shall be performed ensure efficient removal of pollutants.

Corrective maintenance:
Corrective maintenance will be required on an emergency or non-routine basis to correct problems and restore the intended operation and safe function of the curb inlet filters.

Curb Inlet Filter Maintenance:

- Clean and maintain the curb inlet baskets at a minimum of two to four times a year or following a significant rain event that would potentially accumulate a large amount of debris to the system.
- Inspect the hydrocarbon boom at each cleaning. Replace the hydrocarbon boom if it is filled with hydrocarbons and oils. Otherwise, replace it at a minimum of twice a year.

Table 1. Typical Maintenance Activities for the Curb Inlet Filters

Design Criteria and Routine Actions	**Maintenance Indicator**	**Inspection Frequency**	**Maintenance Activity**
Inspect for trash, debris, organics and sediments in the filter basket	Presence of trash, debris, organics and sediments	Two to four times a year or following large storms	Remove all trash, debris, organics, and sediments collected
Inspect for hydrocarbons and oils in the hydrocarbon boom	Presence of hydrocarbons and oils	At each cleaning of the filter basket	Replace hydrocarbon boom at least twice a year

Maintenance Indicators:
Maintenance indicator are signs or triggers that indicate that maintenance personnel need to check the curb inlet filter for maintenance needs. The most common triggers include warnings or accounts of oil, grease, sediments, and litter accumulation. The proceeding Table 1 shows conditions and criteria that trigger the need for some specific routine maintenance activities. Emergencies may occasionally arise that would require a more urgent, critical response.

Trash, debris, organics, and sediments Disposal:
These must be transported to approved facility for disposal. The hydrocarbon boom adsorbs hydrocarbons which is deemed as hazardous waste that need to be handled and disposed of as hazardous material.

5. Inspection and Maintenance Checklist

Bio Clean
A Forterra Company

Inspection and Maintenance Report
Catch Basin Only

Project Name ______________________

Project Address ______________________ (city) (Zip Code)

Owner / Management Company ______________________

Contact ______________________ Phone ( ) –

Inspector Name ______________________ Date ____/____/______ Time ______________ AM / PM

Type of Inspection ☐ Routine ☐ollow Up ☐omplaint ☐torm Storm Event in Last 72-hours? ☐ ☐s

Weather Condition ______________________ Additional Notes ______________________

For Office Use Only
(Reviewed By)
(Date) Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Catch Basin Size	Evidence of Illicit Discharge?	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Signs of Structural Damage?	Functioning Properly or Maintenance Needed?
1	Lat: Long:							
2	Lat: Long:							
3	Lat: Long:							
4	Lat: Long:							
5	Lat: Long:							
6	Lat: Long:							
7	Lat: Long:							
8	Lat: Long:							
10	Lat: Long:							
11	Lat: Long:							
12	Lat: Long:							

Comments:

Water Quality Management Plan (WQMP)
Winchester and Nicolas Intersection, Right-of-Way

Structural Treatment BMPs	Annual O&M Costs ($)	O&M Frequency (weekly/ monthly/ quarterly)	Responsible Funding Party for Installation	Responsible Funding Party for Long-Term O&M
Curb Inlet Filter (CB#1)	$40.00	Quarterly	Developer	City of Temecula
Curb Inlet Filter (CB#2)	$40.00	Quarterly	Developer	City of Temecula
Curb Inlet Filter (CB#3)	$40.00	Quarterly	Developer	City of Temecula
Curb Inlet Filter (CB#4)	$40.00	Quarterly	Developer	City of Temecula
Curb Inlet Filter (CB#5)	$40.00	Quarterly	Developer	City of Temecula
Curb Inlet Filter (CB#6)	$40.00	Quarterly	Developer	City of Temecula
Curb Inlet Filter (CB#7)	$40.00	Quarterly	Developer	City of Temecula
Curb Inlet Filter (CB#8)	$40.00	Quarterly	Developer	City of Temecula

`

ATTACHMENT 4

City of Temecula PDP Structural BMP Verification for Permitted Land Development Projects

☐ Not applicable at this time – Discretionary Project

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City of Temecula Structural BMP Verification Form	
Project Summary Information	
Project Name	Overland Drive Widening
Record ID (e.g., grading/improvement plan number)	PW-20-11
Project Address	Overland Drive, City of Temecula
Assessor's Parcel Number(s) (APN(s))	
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Santa Margarita HUC 18070302, Murrieta HA (902.3)
Responsible Party for Construction Phase	
Developer's Name	City of Temecula
Address	41000 Main St, Temecula, CA 92590
Email Address	chris.white@temeculaca.gov
Phone Number	951) 308-6388
Engineer of Work	Chris White
Engineer's Phone Number	
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	City of Temecula
Address	41000 Main St, Temecula, CA 92590
Email Address	
Phone Number	
*Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.	

City of Temecula Structural BMP Verification Form Page 2 of 4				
Stormwater Structural Pollutant Control & Hydromodification Control BMPs* (List all from WQMP)				
Description/Type of Structural BMP	Plan Sheet #	STRUCT-URAL BMP ID#	Maintenance Agreement Recorded Doc #	Revisions
Curb Inlet Filter (CIB)	1	CB - A	N/A – City Maintained	
Curb Inlet Filter (CIB)	1	CB - B	N/A – City Maintained	
Curb Inlet Filter (CIB)	1	CB - C	N/A – City Maintained	

Note: If this is a partial verification of Structural BMPs, provide a list and map denoting Structural BMPs that have already been submitted, those for this submission, and those anticipated in future submissions.

City of Temecula Structural BMP Verification Form Page 3 of 4

Checklist for Applicant to submit to City inspector:

- ☐ Photograph of each completed Structural BMP.
- ☐ Photograph(s) of each Structural BMP during the construction process to illustrate proper construction as described in the Structural BMP Fact sheets.
- ☐ Certificates of compliance for materials as required in the Structural BMP Fact sheets.
- ☐ Infiltration Tests as required in the Structural BMP Fact sheets.

By signing below, I certify that the Structural BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the City reserves the right to inspect the above BMPs to verify compliance with the approved plans and City Ordinances. Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Please sign your name and seal.

Professional Engineer's Printed Name:

____

Professional Engineer's Signed Name:

____

Date:____

City of Temecula Structural BMP Verification Form Page 4 of 4

City - OFFICIAL USE ONLY:

For City Inspector: Verification Package #: ___________

City Inspector: ____

Date Project has/expects to close: ____

Date verification received from EOW: _____________________________________

By signing below, City Inspector concurs that every noted Structural BMP has been installed per plan.

City Inspector's Signature: ________________________________ Date: ___________________

For Land Development Staff:

Date Received from City Inspector: _______________________________________

Land Development Submittal Reviewer: ____________________________________

Land Development Reviewer concurs that the information provided for the following Structural BMPs is acceptable to enter into the Structural BMP Maintenance verification inventory:

List **acceptable** Structural BMPs:

Land Development Reviewer's Signature: ____________________ Date: ___________________

ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Stormwater BMPs, Source Control, and Site Design

Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

☐ Structural BMP(s) with ID numbers
☐ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
☐ Improvements within City Public Right-of-Way have been designed in accordance with Appendix K: Guidance on Green Infrastructure.
☐ Details and specifications for construction of structural BMP(s).
☐ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable.
☐ Signage indicating the location and boundary of source control, site design, and structural BMP(s) as required by City staff.
☐ How to access the structural BMP(s) to inspect and perform maintenance.
☐ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, benchmarks or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
☐ Include landscaping plan sheets showing vegetation and amended soil requirements for vegetated structural BMP(s), amended soil areas, dispersion areas, tree-wells, and self-mitigating areas
☐ All BMPs must be fully dimensioned on the plans
☐ Include all Construction stormwater, source control, and site design measures described in the WQMP. Can be included as separate plan sheets as necessary.
☐ When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number must be provided. Photocopies of general brochures are not acceptable.

CITY OF TEMECULA
OVERLAND DRIVE WIDENING
FROM COMMERCE CENTER DRIVE TO JEFFERSON AVENUE
PROJECT PW20-11

GENERAL NOTES:

1. STANDARDS. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE CITY'S IMPROVEMENT STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION (AND SUBSEQUENT AMENDMENTS), THE CITY'S ENGINEERING AND CONSTRUCTION MANUAL, CITY CODES AND REQUIREMENTS.
2. LICENSE/PERMIT REQUIREMENT. PRIOR TO START OF ANY WORK, A BUSINESS LICENSE SHALL BE OBTAINED FROM THE CITY.
3. ERRORS OR OMISSIONS. APPROVAL OF THESE PLANS BY THE CITY DOES NOT RELIEVE THE APPLICANT AND ENGINEER OF RECORD FROM THE RESPONSIBILITY FOR THE CORRECTION OF ERRORS OR OMISSIONS DISCOVERED DURING CONSTRUCTION.
4. UTILITIES. APPROVAL OF THESE PLANS BY THE CITY DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OR COMPLETENESS OF THE LOCATION, NOR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITIES WITHIN THE PROJECT LIMITS. ANY UTILITY DAMAGED DURING THE PERFORMANCE OF THE WORK SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE GOVERNING AGENCY BY THE CONTRACTOR, AT HIS EXPENSE.
5. SURVEY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF RECORD AND TO INSTALL STREET CENTERLINE MONUMENTS, AS REQUIRED BY RIVERSIDE COUNTY ORDINANCE NO. 461. CENTERLINE TIES SHALL BE PROVIDED TO THE CITY ENGINEER, UPON COMPLETION OF THE PROJECT AND BEFORE ACCEPTANCE IS GRANTED. ALL EXISTING MONUMENTATION (DISTURBED OR DESTROYED DURING CONSTRUCTION) SHALL BE REPLACED TO CITY STANDARDS IN ACCORDANCE WITH THE LAND SURVEYORS ACT AND THE STREETS AND HIGHWAY CODE, AND AS APPROVED BY THE CITY ENGINEER. UPON REQUEST, SURVEY CUT SHEETS SHALL BE PROVIDED TO THE CITY ENGINEER.
6. DUST CONTROL. DUST SHALL BE CONTROLLED BY WATERING OR OTHER METHODS, AS APPROVED BY THE CITY ENGINEER AND SHALL COMPLY WITH SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S (SCAQMD) RULE 403.
7. OTHER CONSTRUCTION NOTES. REFER TO SEPARATE NOTES FOR "GRADING," "EROSION AND SEDIMENT CONTROL," "PAVING" AND "TRAFFIC" REQUIREMENTS, IF APPLICABLE.

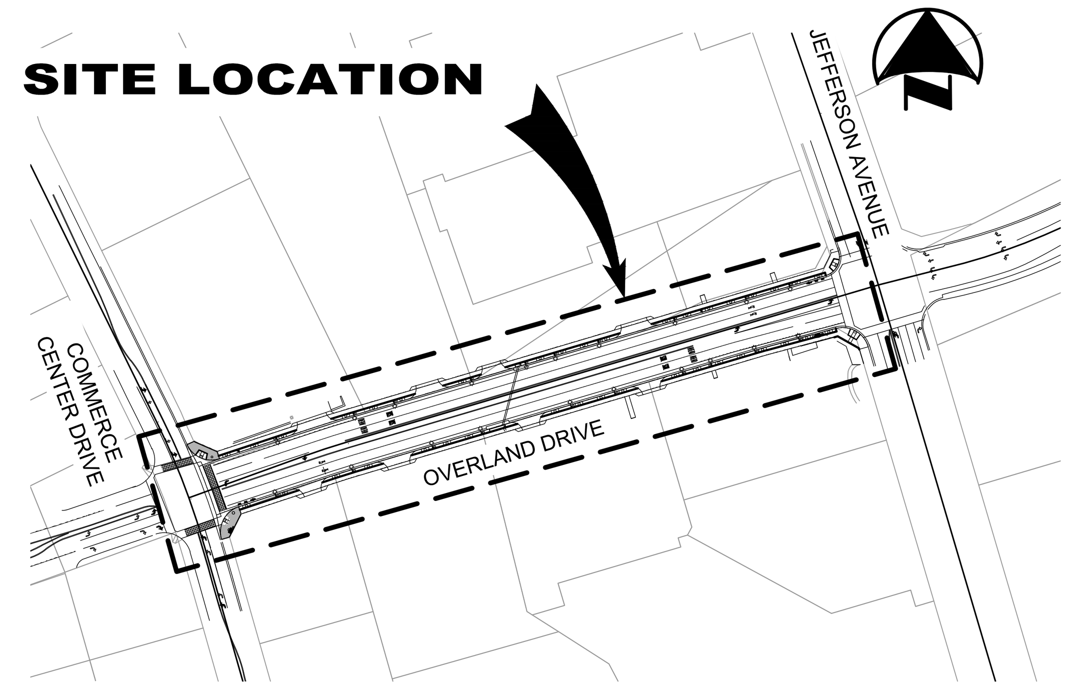
TRAFFIC SIGNAL GENERAL NOTES:

1. ALL WORK MATERIAL AND EQUIPMENT SHALL CONFORM TO THE PROVISIONS OF THE CITY OF TEMECULA TRAFFIC SIGNAL STANDARDS AND GUIDELINES, STANDARD PLANS AND STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) LATEST EDITION, AND THE SPECIAL PROVISIONS.
2. A CITY OF TEMECULA ENCROACHMENT PERMIT SHALL BE REQUIRED TO PERFORM WORK WITHIN THE PUBLIC RIGHT-OF-WAY. CITY APPROVED PLANS DO NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF OBTAINING AN ENCROACHMENT PERMIT. A COPY OF THE PERMIT SHALL BE KEPT ON THE CONSTRUCTION SITE AT ALL TIMES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A DETAILED TRAFFIC CONTROL PLAN FOR ANY LANE CLOSURES ASSOCIATED WITH THE TRAFFIC SIGNAL CONSTRUCTION.
4. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES IS APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND DEPTH OF ALL UTILITIES INCLUDING THOSE NOT SHOWN ON THE PLAN PRIOR TO START OF WORK. CONTACT UNDERGROUND SERVICE ALERT AT (800) 422-4133.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN ELECTRICAL PERMIT FROM THE CITY'S BUILDING AND SAFETY DEPARTMENT FOR THE SERVICE PEDESTAL.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND NOTIFYING AFFECTED AGENCIES AT LEAST 72 HOURS PRIOR TO START OF WORK.
7. THE CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE APPROPRIATE NUMBER OF CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
8. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER THE EXACT LOCATION OF ALL TRAFFIC SIGNAL EQUIPMENT PRIOR TO INSTALLATION.
9. EACH CONDUCTOR SHALL BE PERMANENTLY IDENTIFIED. IDENTIFICATION SHALL BE BY DIRECT LABELING, TAGS OR BANDS PERMANENTLY FASTENED TO THE CONDUCTORS. THE IDENTIFICATION SHALL BE PLACED ON EACH CONDUCTOR OR GROUP OF CONDUCTORS IN EACH PULL BOX AND NEAR THE END OF EACH CONDUCTOR WHERE THE CONDUCTORS ARE TERMINATED.
10. UNDERGROUND TRAFFIC SIGNAL CONDUCTORS BETWEEN PULL BOXES OR OTHERWISE SHALL NOT BE SPLICED.
11. ANY LANDSCAPING DAMAGED BY THE TRAFFIC SIGNAL CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER AND THE PROPERTY OWNER.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL "PUNCH LIST" ITEMS PRIOR TO TRAFFIC SIGNAL TURN-ON.

Underground Service Alert

Call: TOLL FREE
1-800
422-4133

TWO WORKING DAYS BEFORE YOU DIG



INDEX MAP
SCALE 1"=250'

LEGEND:

RIGHT OF WAY	EXISTING POST INDICATOR VALVE
EXISTING FENCE	EXISTING CONTOUR
EXISTING FLOW LINE	EXISTING SD MANHOLE
EXISTING EDGE OF PAVEMENT	PROPOSED CONTOURS
EXISTING EASEMENT	CONCRETE PAVERS
EXISTING GAS LINE	GRADING LIMITS
EXISTING WATER LINE	GRIND AND OVERLAY
EXISTING BUILDING	PROPOSED ASPHALT
PROPERTY LINE	PROPOSED CONCRETE
EXISTING SEWER	SAWCUT
EXISTING TELECOMMUNICATIONS	STAMPED ASPHALT
EXISTING ELECTRIC	REMOVAL LIMITS
EXISTING STORM DRAIN PIPE	TRENCH REPAIR
PROPOSED IMPROVEMENTS	
EXISTING POWER POLE	
EXISTING STREET LIGHT	
EXISTING FIRE HYDRANT	
EXISTING WATER VALVE	
EXISTING PALM TREE	
EXISTING TREE	
EXISTING SIGN	
EXISTING CLEANOUT	
EXISTING INLET	
EXISTING WATER METER	
EXISTING IRRIGATION	
EXISTING UTILTIY	
SEWER MANHOLE	

EARTHWORK QUANTITIES

CUT	=	5,011.80 CY.
FILL	=	755.00 CY.
TOTAL EXPORT	=	4,256.80 CY.

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM NAD 83 (2011) ZONE 6, AS DETERMINED LOCALLY BY THE LINE BETWEEN USC&GS CORS STATIONS DM7578 AND DG9734, SHOWN HEREIN AS:
N 59°34'58" W, 2010.0000 EPOCH.

ENGINEER OF WORK'S AND STATEMENT OF RESPONSIBILITIES CHARGE

I, ____________________ , HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER DESIGN ON THIS PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THE DESIGN IS CONSISTENT WITH CURRANT STANDARDS AND CITY OF TEMECULA.

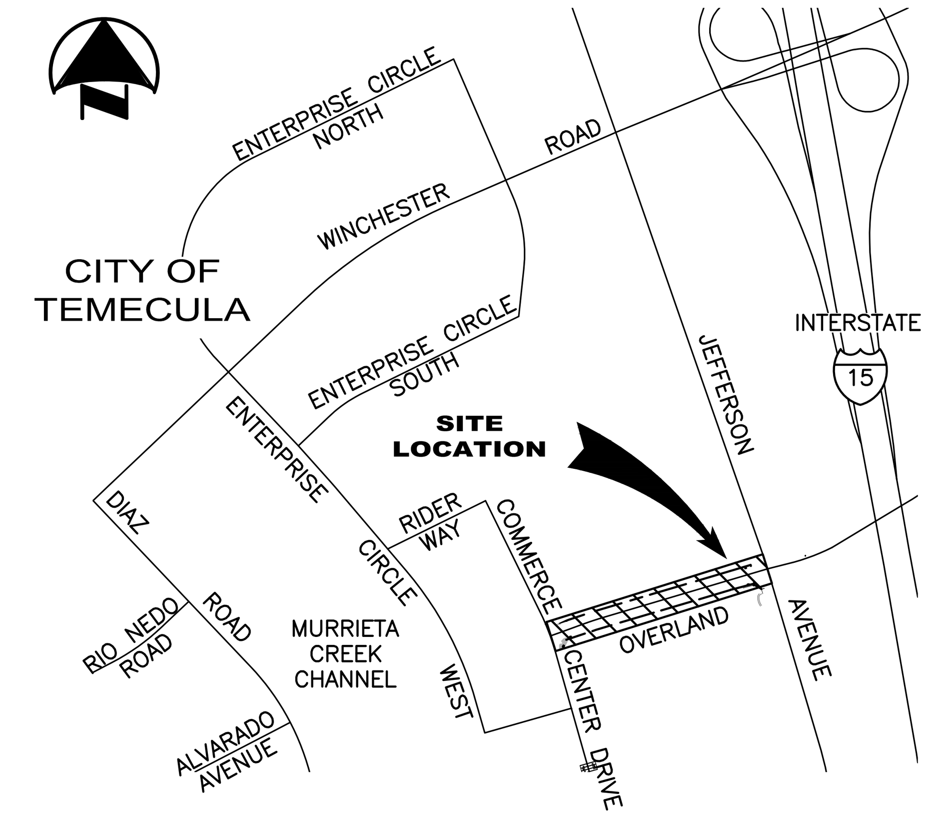
I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS OF CITY OF TEMECULA IS CONFINED TO REVIEW ONLY AND DOES NOT RELIEVE ME OF RESPONSIBILITIES FOR PROJECT DESIGN.

SIGNED ____________________ DATE ____________________
R.C.E NO. ____________________ EXP. ____________________
FIRM ENGINEERING RESOURCES OF SOUTHERN CALIFORNIA, INC.
ADDRESS 1861 W. REDLANDS BLVD., REDLANDS, CA 92373
TELEPHONE 909-890-1255

UTILITY NOTIFICATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES. FOR LOCATION OF UNDERGROUND UTILITIES, OR FOR EMERGENCY ASSISTANCE CALL:

WATER	RANCHO CALIFORNIA WATER DISTRICT (RCWD) (951) 453-9930
SEWER	EASTERN MUNICIPAL WATER DISTRICT (EMWD) (951) 928-6107
ELECTRICITY	SOUTHERN CALIFORNIA EDISON (909) 335-7891
GAS	SO CAL GAS (909) 335-7955
TELEPHONE	AT&T (714) 963-7964
CABLE TELEVISION	SPECTRUM CHARTER (951) 406-1690



VCINITY MAP
NOT TO SCALE

WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE CONSTRUCTED ACCORDING TO:
1. THE CITY OF TEMECULA DESIGN STANDARDS AND STANDARDS DRAWING FOR PUBLIC WORKS CONSTRUCTION.
2. THESE PLANS AND TECHNICAL PROVISIONS FOR CONSTRUCTION OF TRAFFIC SIGNALS & SAFETY LIGHTING.
3. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 2018 EDITION AND SUPPLEMENTS.
4. CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES 2014, REVISION 5.
5. STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS & SPECIFICATIONS 2018.

NOTE TO CONTRACTOR

CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE OR DISTURBED ADJACENT PROPERTY AND HARDSCAPE, AND SHALL REPLACE IN KIND TO MATCH EXISTING.

ENGINEERING RESOURCES OF SOUTHERN CALIFORNIA, INC. MAKES NO REPRESENTATION CONCERNING THE ESTIMATED QUANTITIES ON THESE PLANS. OTHER THAN THAT ALL SUCH FIGURES ARE PRELIMINARY ESTIMATES AND FOR PERMIT PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PREPARE HIS/HER OWN QUANTITY ESTIMATE FOR CONSTRUCTION AND OR COST PURPOSES. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY DEVIATIONS BETWEEN ESTIMATED QUANTITIES AND THE ACTUAL QUANTITIES AT THE TIME OF CONSTRUCTION.

SHEET INDEX

ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor ____________					
Inspector ____________					
Date Completed ____________					

BENCH MARK

RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
____________ Date ____________
JOHN M. BRUDIN, PE
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ____________ DATE: ______
NINO ABAD, SENIOR CIVIL ENGINEER

ACCEPTED BY: ____________ DATE: ______
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

CITY OF TEMECULA 1989 OLD TRADITIONS • NEW OPPORTUNITIES

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
TITLE SHEET

Drawing No.
C 01

Sheet 1 of 19

WORK TO BE DONE / BID ITEMS

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
P.	PROTECT IN PLACE	–	–
1.	CONSTRUCT TYPE "A-6" CURB AND GUTTER PER CITY OF TEMECULA STD. DWG. No. 200	1,455	LF
2.	CONSTRUCT 6' SIDEWALK PER CITY OF TEMECULA STD. DWG. No. 401	12,515	SF
3.	CONSTRUCT ADA ACCESS RAMP WITH TRUNCATED DOMES PER CITY OF TEMECULA STD. DWG. No. 402	4	EA
4.	CONSTRUCT CONCRETE CROSS GUTTER PER CITY OF TEMECULA STD. DWG. No. 211	1,205	SF
5.	CONSTRUCT RETAINING CURB PER DETAIL 5 ON SHEET 4	67	LF
6.	CONSTRUCT COMMERCIAL DRIVEWAY APPROACH PER CITY OF TEMECULA STD. DWG. No. 207A	4,465	SF
7.	CONSTRUCT 0.15' RHMA OVER 0.45' HMA OVER 0.67' CAB	–	–
7.1.	0.15' RHMA	632	TON
7.2.	0.45' HMA	1,896	TON
7.3.	0.67' CAB	2,822	TON
8.	CONSTRUCT RETAINING WALL PER CALTRANS STD PLAN B3-7B TYPE 6B (6' MAX)	55	LF
9.	SAWCUT AND REMOVE AC PAVEMENT	300	LF
10.	REMOVE CONCRETE C&G.	1,615	LF
11.	RELOCATE OR ADJUST TO GRADE UTILITY BY OTHERS	23	EA
12.	REMOVE TREE	18	EA
13.	REMOVE TRAFFIC SIGNS	10	EA
14.	RELOCATE TRAFFIC SIGNAL EQUIPMENT. SEE TRAFFIC SIGNAL PLAN	10	EA
15.	REMOVE EXISTING STREET LIGHTS TO BE SALVAGE AND PROVIDE TO THE CITY OF TEMECULA	5	EA
16.	REMOVE RETAINING CURB / CONCRETE WALL	150	LF
17.	REMOVE EXISTING BOLLARD	4	EA
18.	REMOVE CONCRETE SIDEWALK	1,310	SF
19.	REMOVE CURB RAMP	4	EA
20.	REMOVE CROSS GUTTER	730	SF
21.	REMOVE DRIVEWAY APPROACH	2,480	SF
22.	REMOVE CURB	310	LF
23.	REMOVE RIBBON GUTTER	30	LF
24.	REMOVE AND RELOCATE MONUMENT SIGN	4	EA
25.	CONSTRUCT TREE WELL PER CITY OF TEMECULA STD. DWG. NO. 903 AND UPTOWN SPECIFIC PLAN.	38	EA
26.	INSTALL 4"X16" CONCRETE PAVERS PER CITY OF TEMECULA STD. DWG. NO. 934 AND UPTOWN SPECIFIC PLAN.	930	SF
27.	CONSTRUCT STAMPED ASPHALT CROSS WALK WITH 8" WIDE WHITE BORDER PER UPTOWN SPECIFIC PLAN.	1,250	SF
28.	GRIND AND OVERLAY EXISTING PAVEMENT PER DETAIL ON SHEET 4	7,630	SF
29.	CONSTRUCT UNDER SIDEWALK DRAIN PIPE PER CITY OF TEMECULA STD. DWG. 303	1	EA
29A.	CONSTRUCT TYPE D-6 CURB PER CITY OF TEMECULA STD. DWG. 204A	12	LF
29B.	TRENCH REPAIR PER CITY OF TEMECULA STD. DWG. NO. 407	1,825	SF

STORM DRAIN CONSTRUCTION NOTES:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
30.	CONSTRUCT 18" RCP (2000-D)	85	LF
31.	CONSTRUCT 24" RCP (2000-D)	162	LF
32.	CONSTRUCT CATCH BASIN No. 1 PER RCFC STD NO. CB100	3	EA
33.	CONSTRUCT LOCAL DEPRESSION No2. PER RCFCD STD DWG NO. LD201, CASE B	3	EA
34.	CONSTRUCT JUNCTION STRUCTURE No. 6 PER RCFC STD. No. JS231	1	EA
35.	CONSTRUCT JUNCTION STRUCTURE No. 6 PER RCFC STD. No. JS231	1	EA

SIGNING AND STRIPING CONSTRUCTION NOTES:

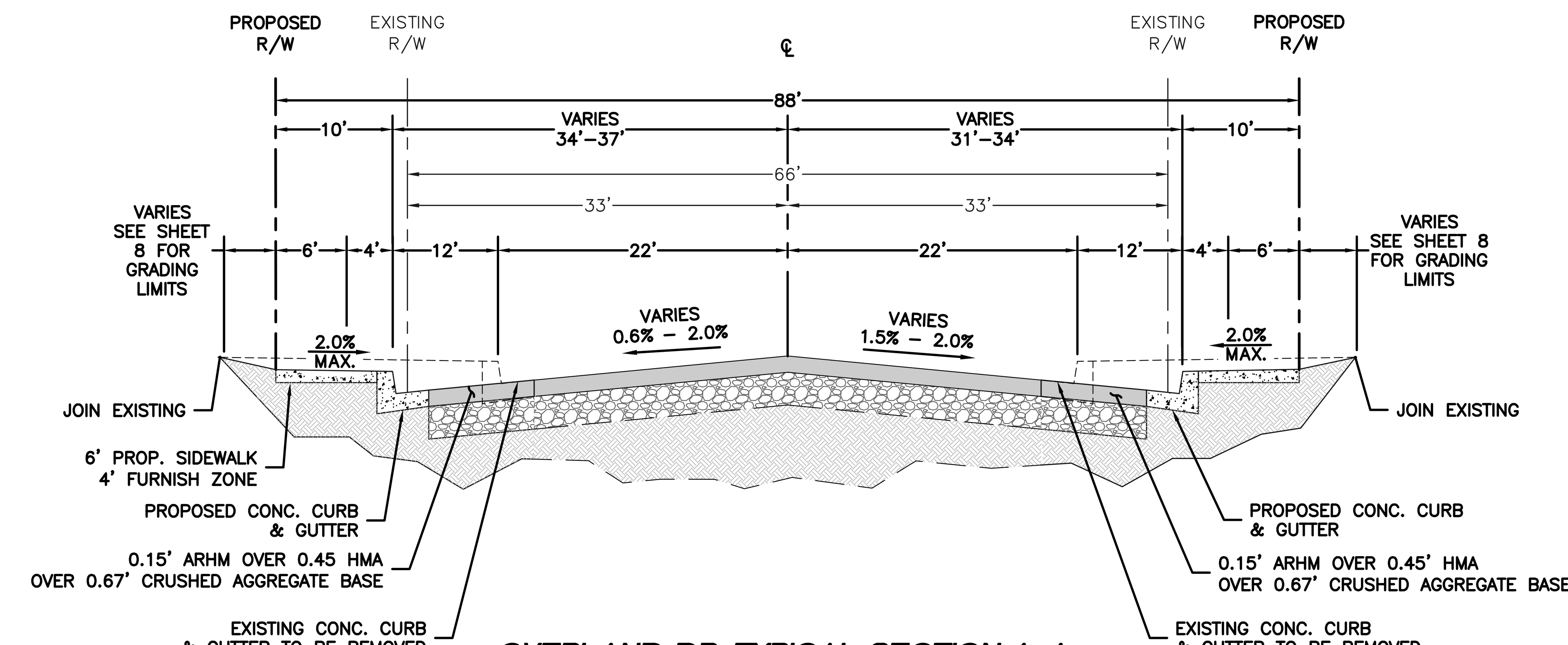
ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
1	PAINT 6" WHITE LANE PER DETAIL 12, CALTRANS STD. PLAN A20A.	1,570	LF
2	PAINT 6" SOLID WHITE LANE LEAD LINE EXTENSIONS.	200	LF
3	INSTALL 12" WIDE SOLID WHITE THERMOPLASTIC CROSSWALK OR LIMIT LINE PER CALTRANS STD. PLAN A24E.	670	LF
4	INSTALL THERMOPLASTIC TYPE IV LEFT ARROW PER CALTRANS STD. A24A.	195	SF
5	INSTALL THERMOPLASTIC PAVEMENT MARKING PER CALTRANS STD. PLAN A24C & A24D. AS NOTED ON THE PLAN.	320	SF
6	INSTALL THERMOPLASTIC 8" WHITE CHANNELIZING LANE LINE PER DETAIL 38 CALTRANS STD. PLAN A20D.	595	LF
7	PAINT 6" YELLOW NO PASSING ZONES-TWO DIRECTION PER DETAIL 22 CALTRANS STD. PLAN A20A.	745	LF
8	INSTALL SIGN R7-9A ON STREET LIGHT POLE EVERY 60' OR PER PLAN.	20	LF
9	PAINT 6" SOLID WHITE BIKE LANE PER DETAIL 39 CALTRANS STD. PLAN A20D.	1,305	LF
10	PAINT 6" WHITE BIKE LANE PER DETAIL 39A CALTRANS STD. PLAN A20D.	300	LF
11	INSTALL PRE-MARK THERMOPLASTIC WHITE LETTERING WITH GREEN BACKGROUND PER DETAIL "A" HEREON.	2	EA
12	PAINT 6" YELLOW TWO-WAY LEFT TURN LANES PER DETAIL 32 CALTRANS STD. PLAN A20B.	375	LF
13	INSTALL W3-3 SIGN.	2	EA
14	INSTALL SIGN AND POLE R7-9A PER PLAN.	1	EA
RM	REMOVE ALL EXISTING CONFLICTING TRAFFIC STRIPING, MARKING OR PAVEMENT ARROWS AS NOTED, INCLUDING RAISED PAVEMENT MARKERS (EXCEPT WHERE INDICATED). AREAS THAT ARE TO BE SLURRY SEALED SHALL BE GROUNDED OUT.	1	LS

STREET LIGHT CONSTRUCTION NOTES:

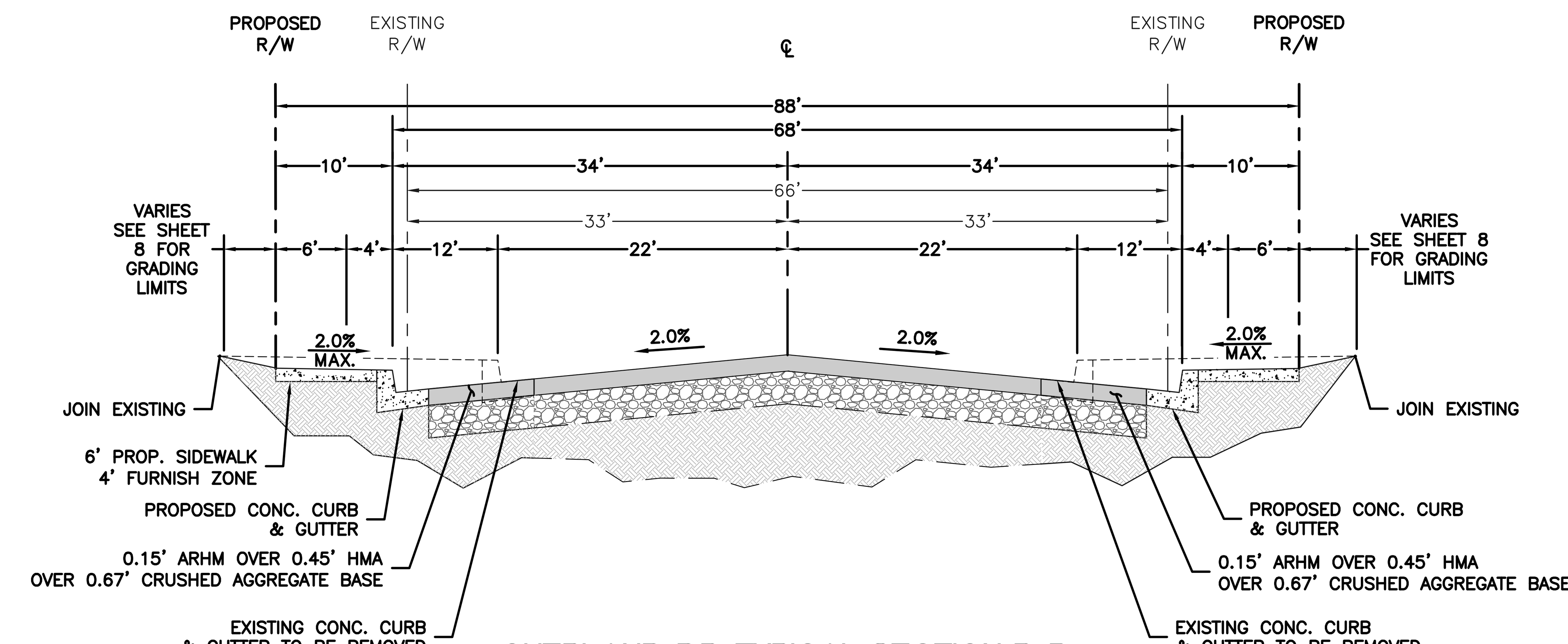
ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
1	INSTALL DECORATIVE PEDESTRIAN LED LIGHT WITH BANNER, 84 LEDS, 94 WATTS, 120 VOLT PER CITY STANDARD NO. 800 AND DETAIL ON SHEET 12. – MANUFACTURE: STERNBERG LIGHTING. – PRODUCT NUMBER: 1521LED-R-6ARC40T2-MDL03-SV2/OBSPM/7715P5-.250/BCC4/DBA/DBT – FOUNDATION PER CITY STANDARD NO. 801	13	EA
1A	INSTALL DECORATIVE VEHICULAR AND PEDESTRIAN LED LIGHT WITH BANNER, 140 LEDS/84 LEDS, 158 WATTS/94 WATTS, 240 VOLT PER CITY STANDARD NO. 800 AND DETAIL ON SHEET 12. – MANUFACTURE: STERNBERG LIGHTING. PRODUCT NUMBER: 1A-1527LED-R-10ARC40T2-MDL03-SV2-EZ / OBPM 1AM-1521LED-R-6ARC40T2-MDL03-SV2-EZ / OBMO /9720ARSS /DBA / BCC4 / DBT – FOUNDATION PER CITY STANDARD NO. 801	7	EA
2	INSTALL #3 1/2 PULL BOX PER CITY STANDARD NO. 802 AND CALTRANS STANDARD DWG. ES-8A.	20	EA
3	INSTALL PHOTOELECTRIC UNIT FOR LIGHTING PER CITY STANDARD NO. 800	1	EA
4	INSTALL 2" CONDUIT SCH 80 PVC -(2) XHHW-2#8 & 1#10G. BURRY 18" MIN. BELOW GRADE.	1,078	LF
5	INSTALL 2" CONDUIT SCH 80 PVC-(4) XHHW-2#8 & 1#10G. BURRY 36" MIN. BELOW GRADE.	30	LF
6	INSTALL 2" CONDUIT SCH 80 PVC, XHHW-2#8, 1#8G WITH PULL ROPE. BURY 18" BELOW GRADE.	5	LF
7	EXISTING TYPE III-CF 120/240V METER SERVICE PEDESTAL, MODIFY PER TRAFFIC SIGNAL PLAN.	–	–
8	INSTALL #5E PULL BOX PER CITY STANDARD NO. 802 AND CALTRANS STANDARD DWG. ES-8A.	1	EA
9	PROPOSED SERVICE CABINET, PER TRAFFIC SIGNAL PLAN.	–	–

FIBER OPTIC COMMUNICATION CONSTRUCTION NOTES:

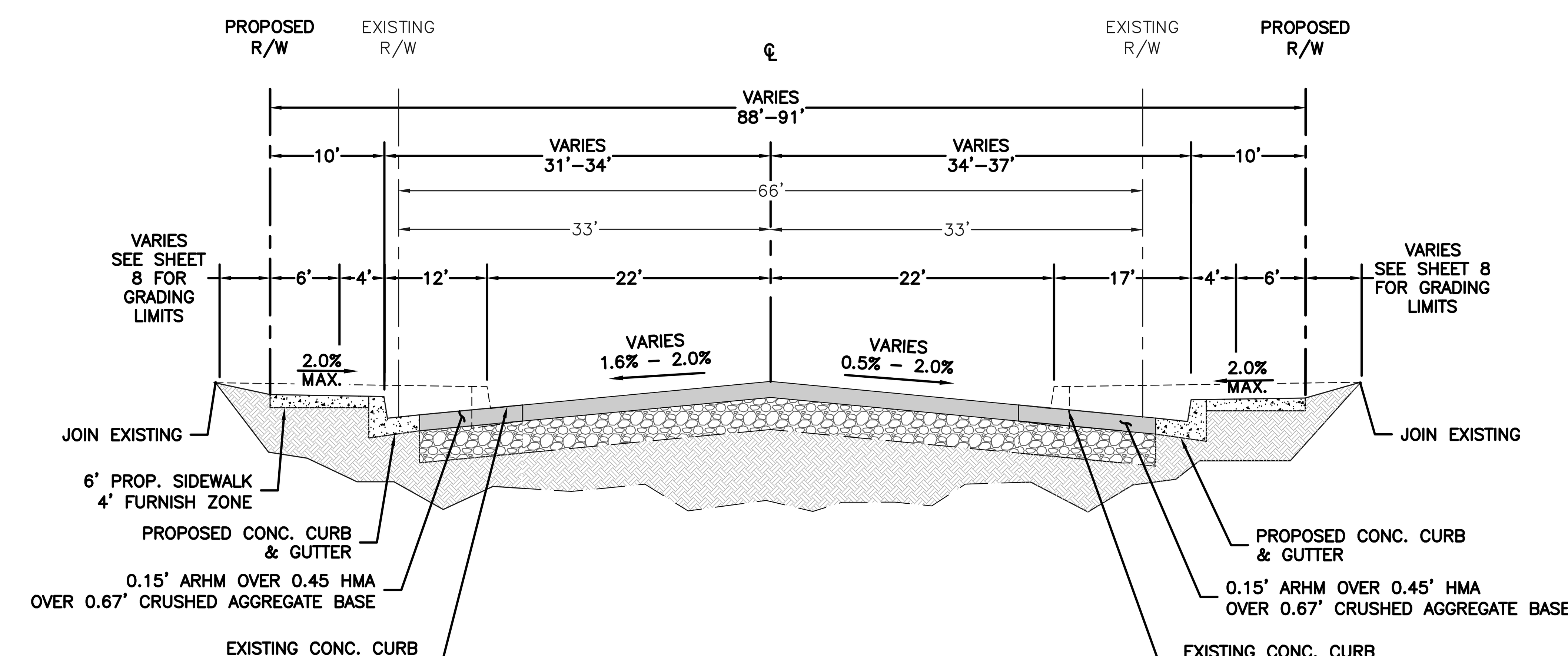
ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT
10	INSTALL 3" SCH. 80 PVC CONDUIT WITH TRACER WIRE AND MULE TAPE. CONDUIT SWEEPS SHALL BE 45°	950	LF
11	FURNISH AND INSTALL FIBER OPTIC SPLICE ENCLOSURE IN "DOUBLE-STACKED" #6 CONCRETE PULL BOX WITH FIBERLYTE PULL BOX COVER. A MINIMUM OF 100 FOOT OF SLACK IS REQUIRED.	2	EA
12	FURNISH AND INSTALL "DOUBLE-STACKED" #6 CONCRETE PULL BOX WITH FIBERLYTE PULL BOX COVER. A MINIMUM OF 50 FOOT OF SLACK SHALL BE PROVIDED.	3	EA
13	FURNISH AND INSTALL A 12-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK IN CONTROLLER CABINET.	85	LF
14	FURNISH AND INSTALL A 24-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK IN CONTROLLER CABINET.	20	LF
15	FURNISH AND INSTALL A 72-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK IN CONTROLLER CABINET. BURRY 36" MIN. BELOW GRADE.	825	LF
16	FURNISH AND INSTALL FIBER OPTIC JUMPER (2M DUPLEX LC TO SC) IN CONTROLLER CABINET.	1	LS
17	FIBER DISTRIBUTION UNIT (FDU) WITH SC 6 PORT PANEL IN CONTROLLER CABINET FROM EXISTING CABINET TO NEW CABINET.	1	LS
RC CC	EQUIPMENT OR MATERIAL TO BE SALVAGED AND PROVIDED TO THE CITY OF TEMECULA. CONNECT NEW CONDUIT TO EXISTING CONDUIT.	1	LS



OVERLAND DR. TYPICAL SECTION A-A
STA 21+96.47 TO STA 25+00.00
N.T.S.



OVERLAND DR. TYPICAL SECTION B-B
STA 25+00.00 TO STA 29+17.86
N.T.S.



OVERLAND DR. TYPICAL SECTION C-C
STA 29+17.86 TO STA 30+57.28
N.T.S.

LEGEND:

PCC IMPROVEMENTS

PROPOSED ASPHALT

Underground Service Alert

Call: TOLL FREE
1-800
422-4133

TWO WORKING DAYS BEFORE YOU DIG

ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P:909.890.1255
F:909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK: RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE: Horizontal / Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By | Drawn By | Checked By

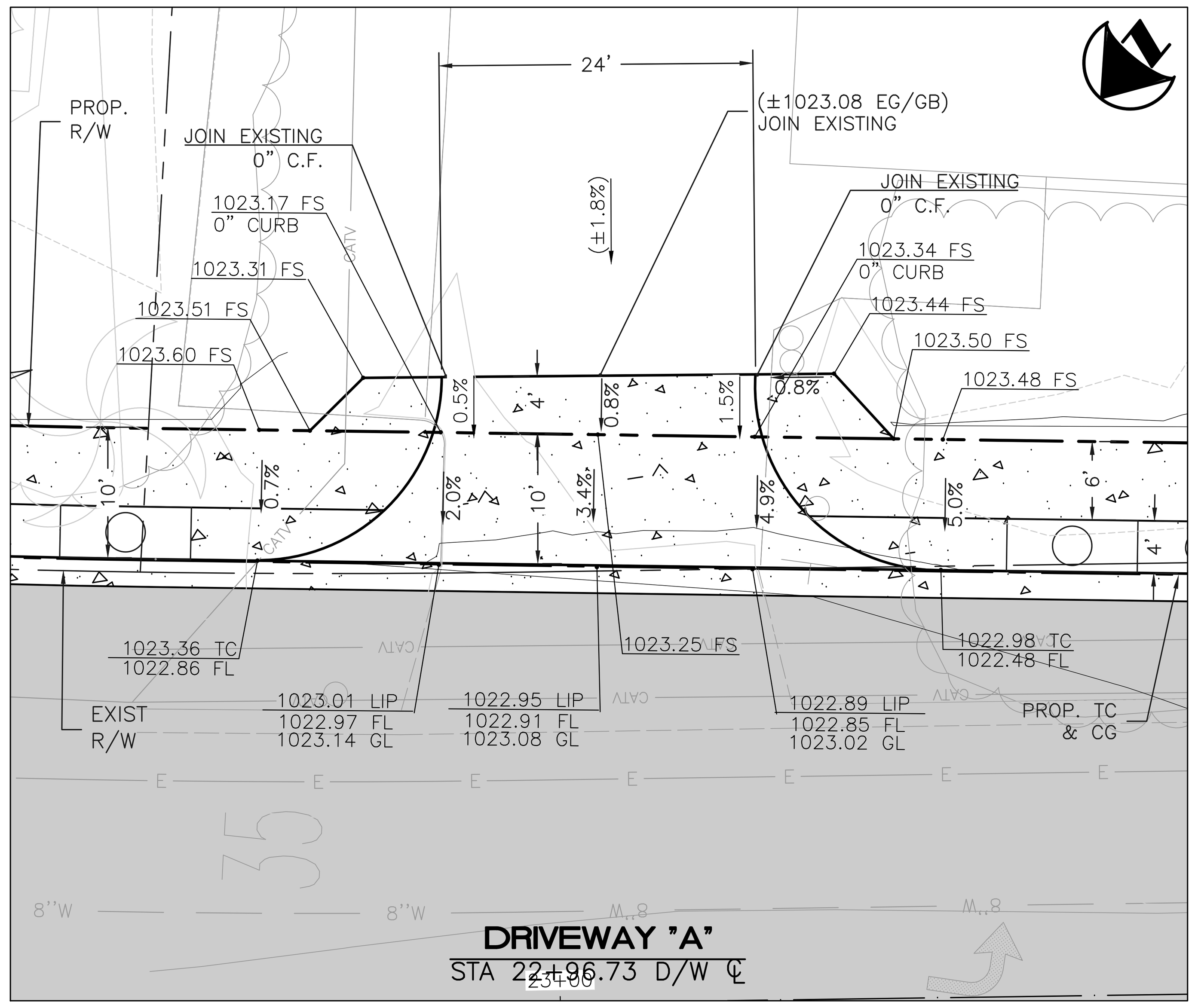
Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 Expires 03-31-24

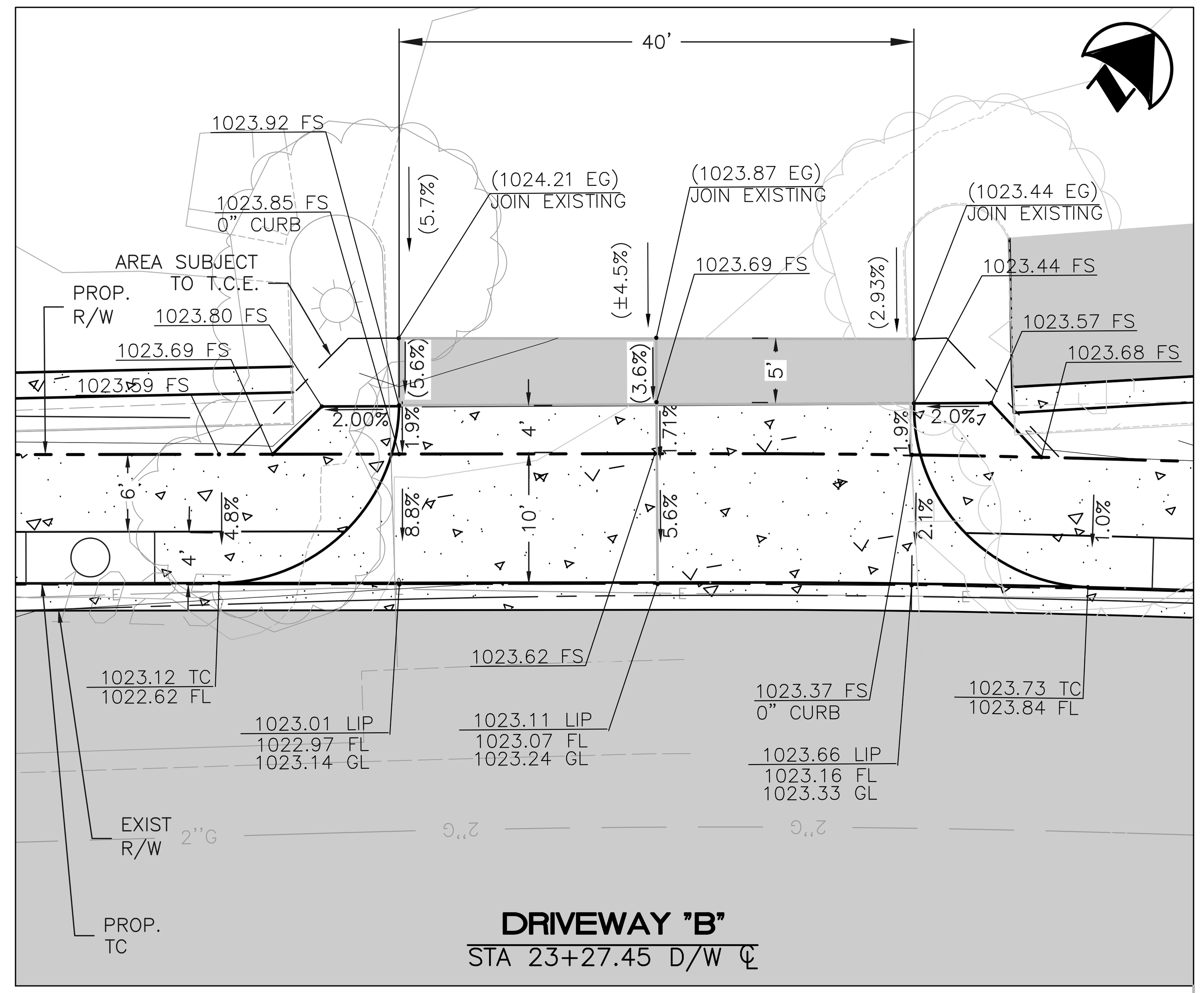
RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:
R.C.E. No. 44223 Expires: 06-30-2023

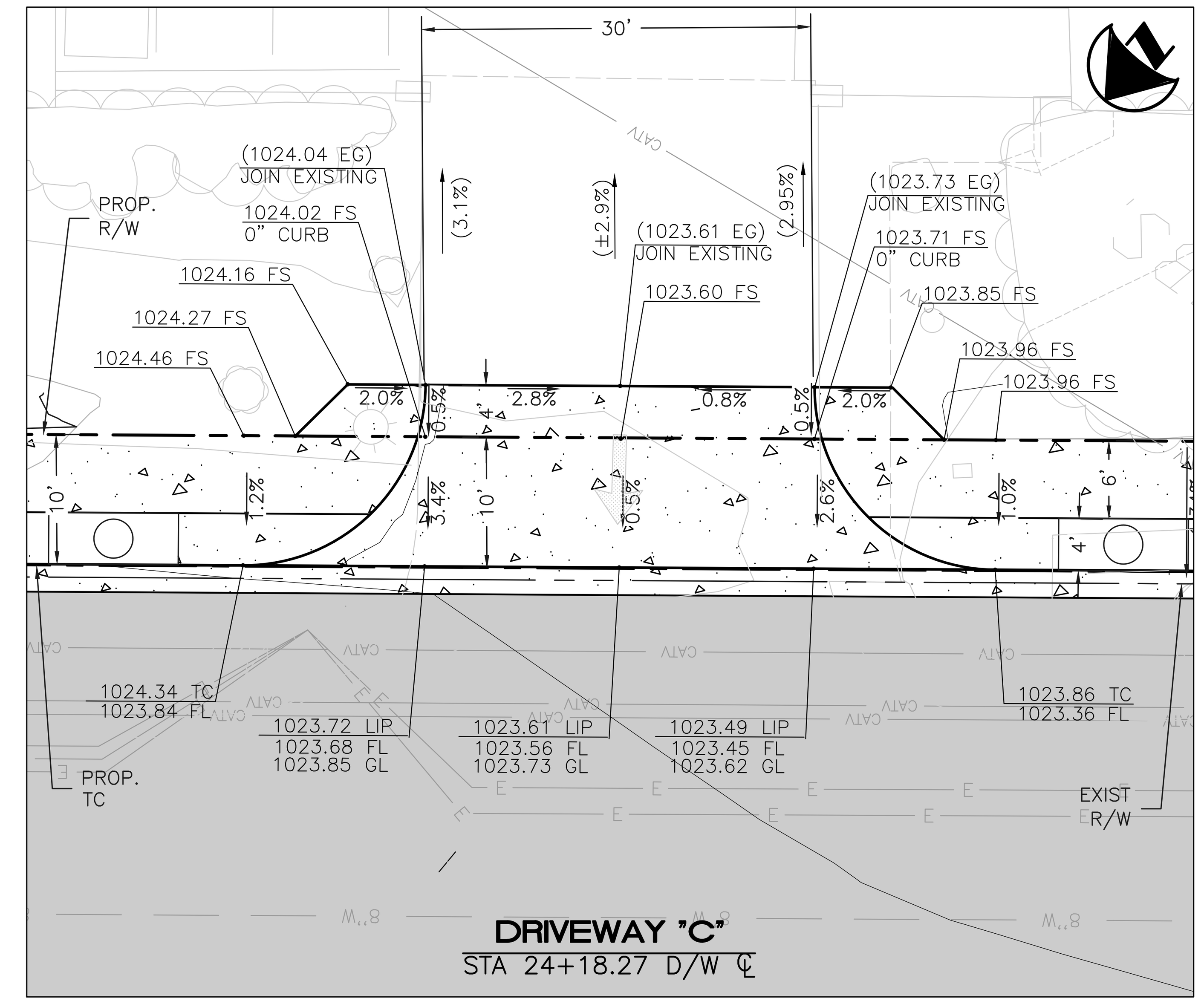
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

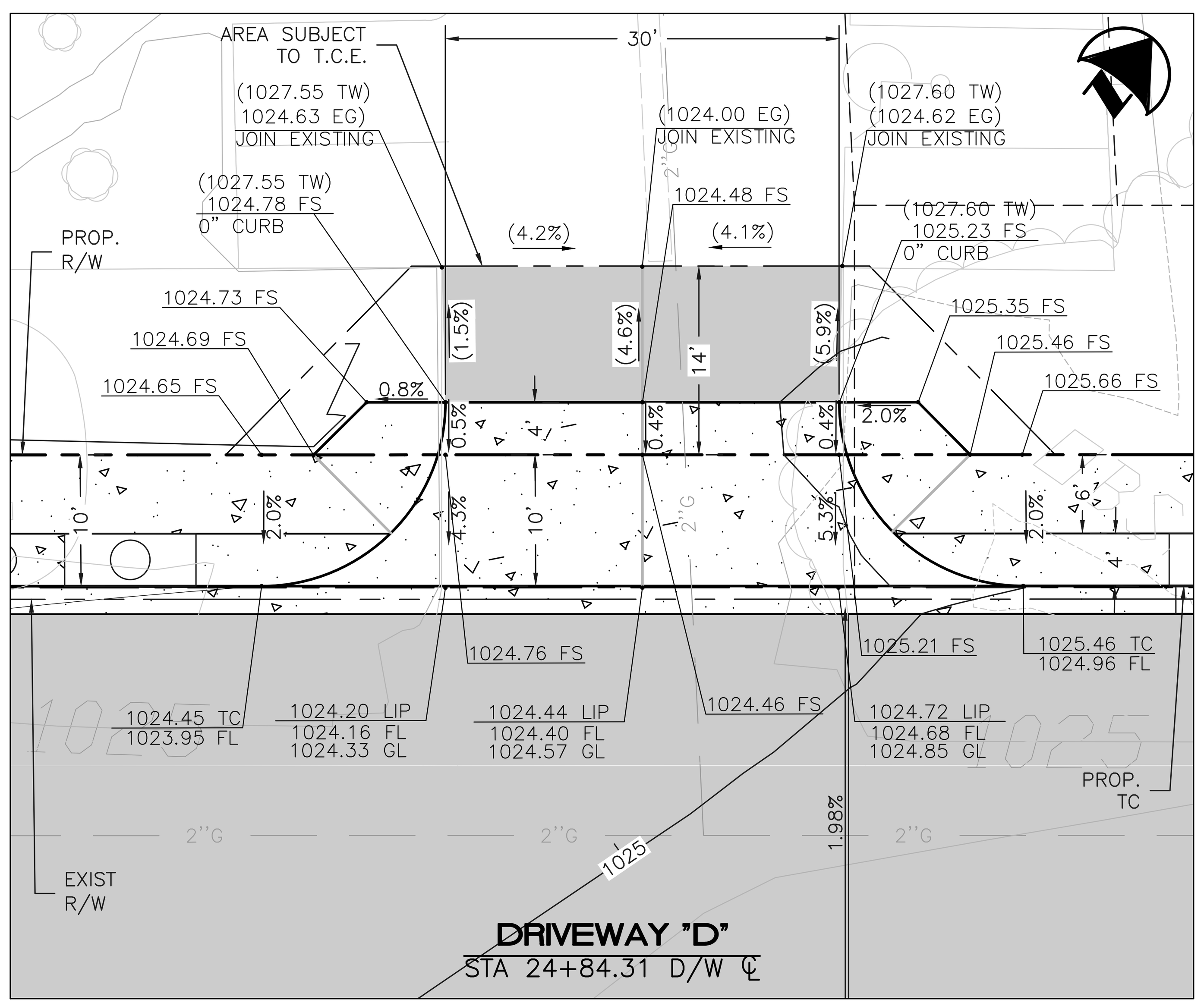
OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
GENERAL NOTES AND TYPICAL SECTIONS

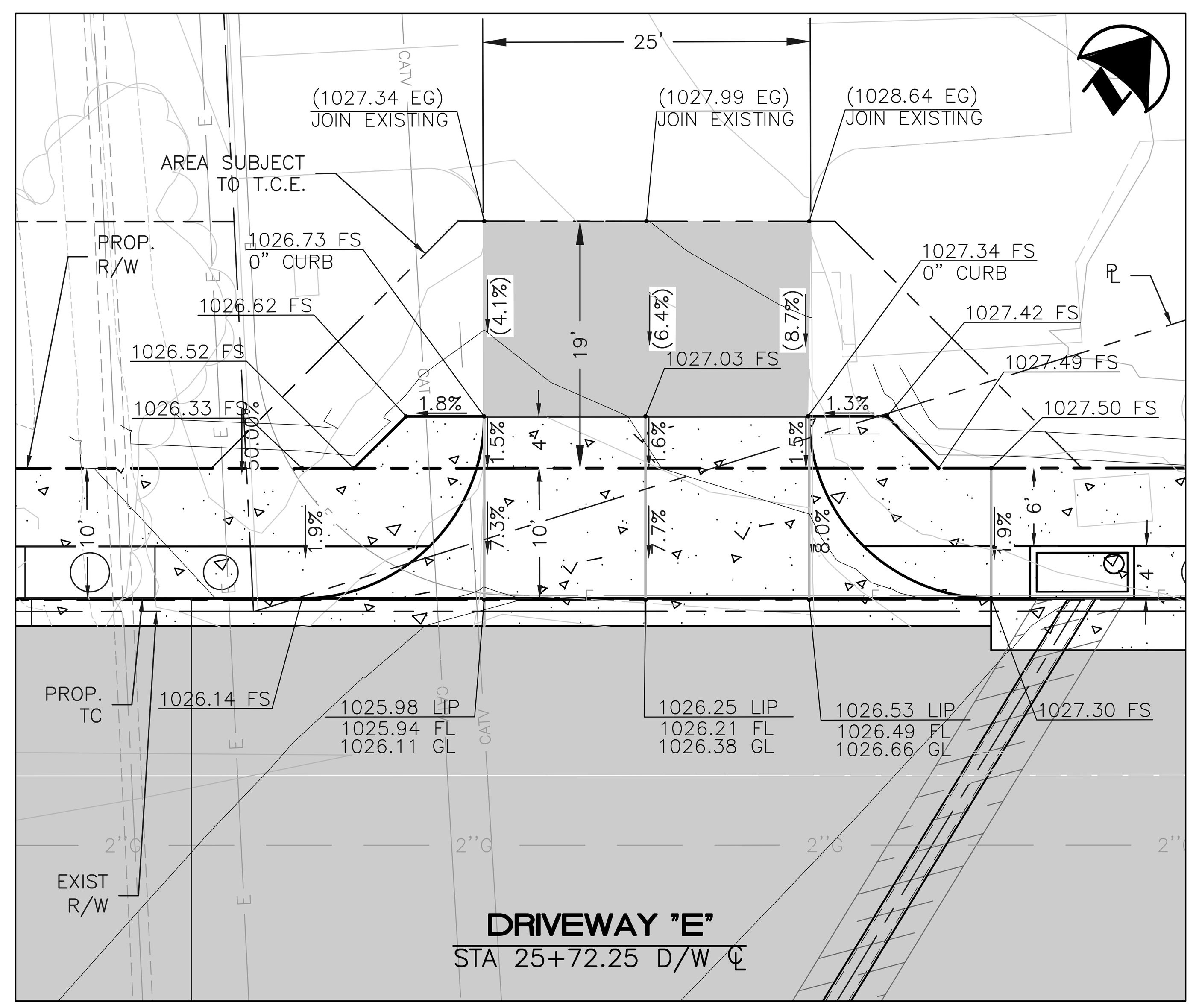
Drawing No. C 02
Sheet 2 of 19

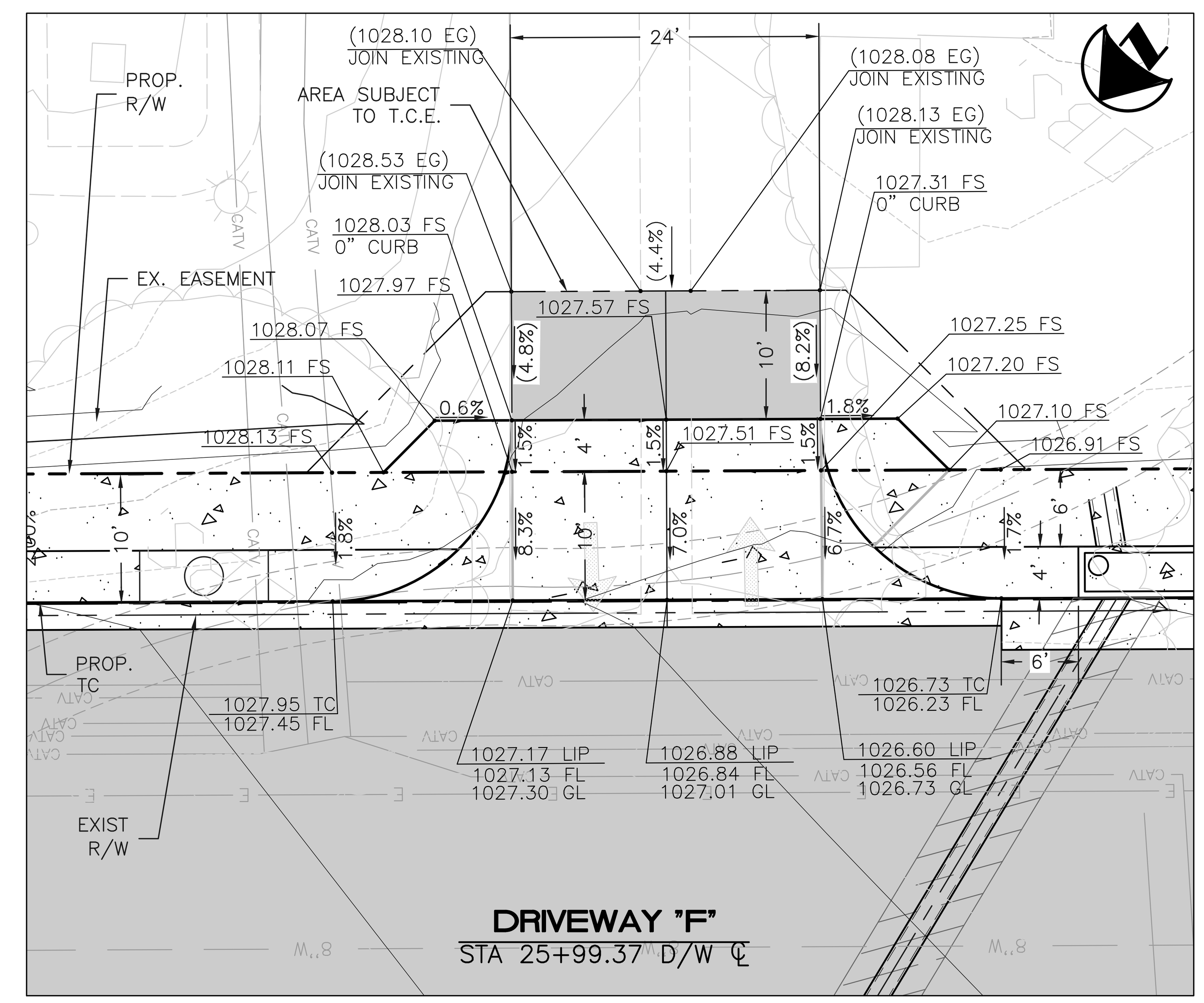












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TWO WORKING DAYS BEFORE YOU DIG

LEGEND

PROPOSED CONCRETE

PROPOSED CONCRETE

0' 5' 10' 20' 30' 40'
GRAPHIC SCALE IN FEET
1" = 10'

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK

RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL:
REGISTERED PROFESSIONAL ENGINEER
JOHN M. BRUDIN
No. 41836
CIVIL
STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 — Expires 03-31-24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER — DATE:

ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER — DATE:

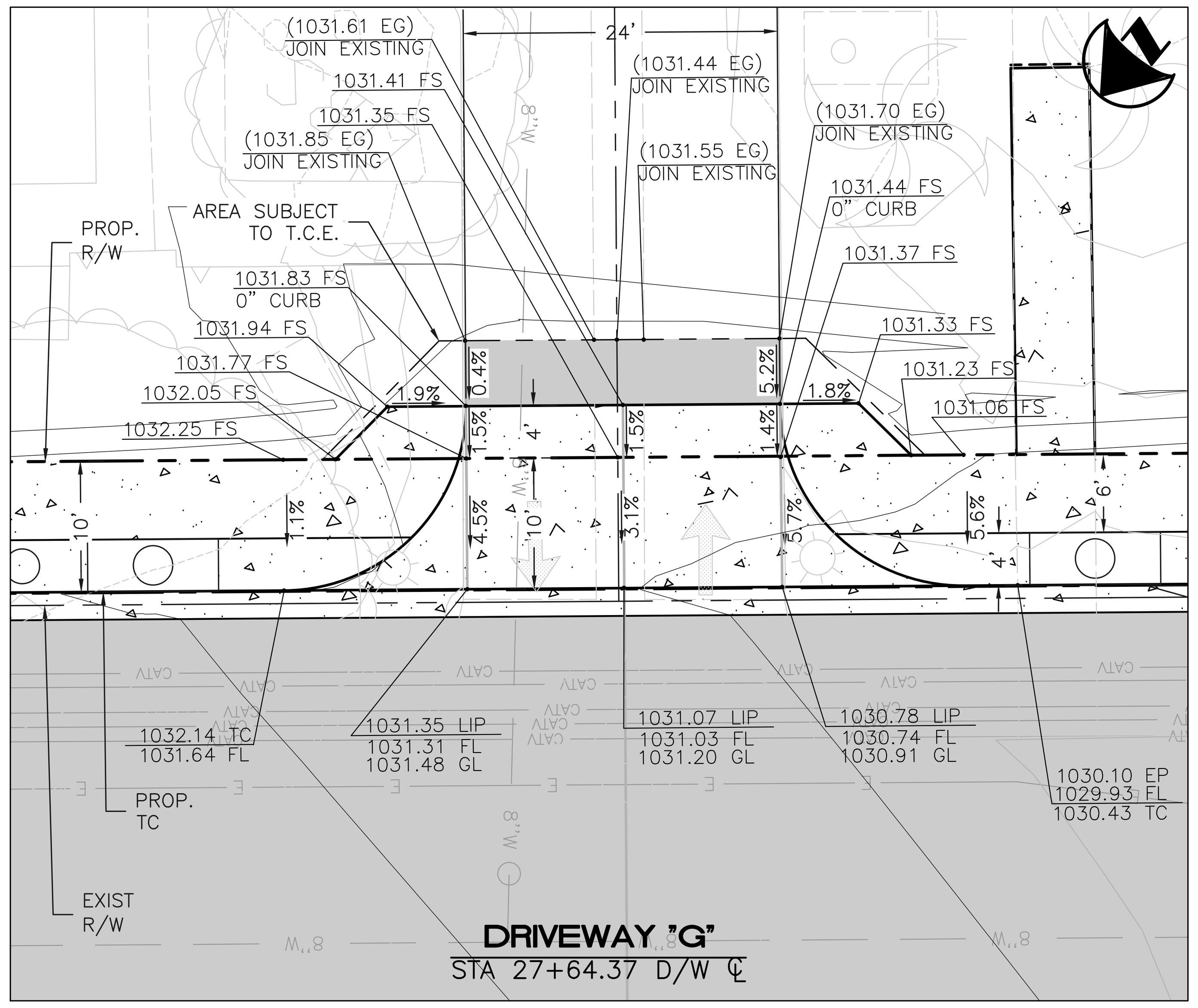
R.C.E. No. 44223 — Expires: 06-30-2023

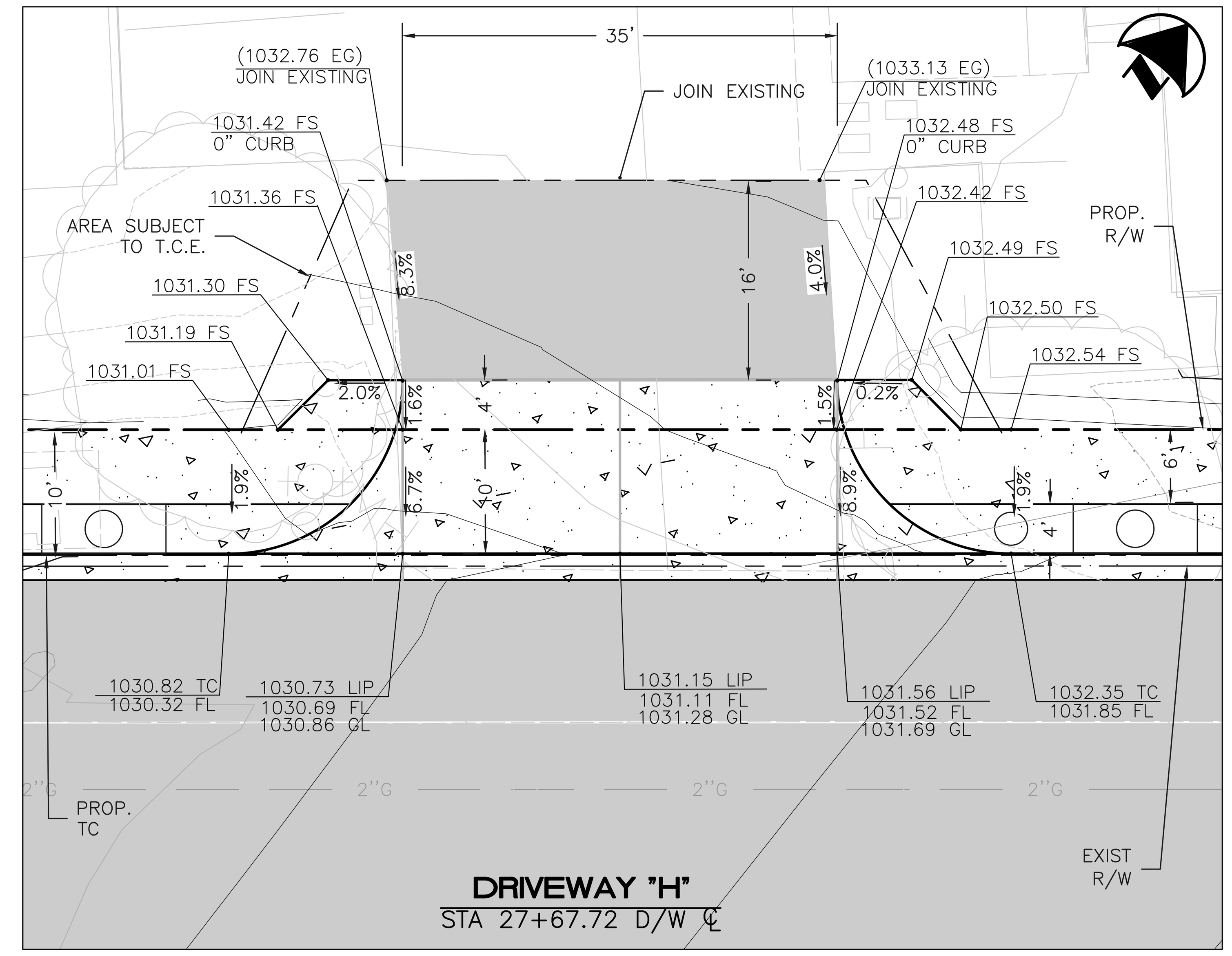
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

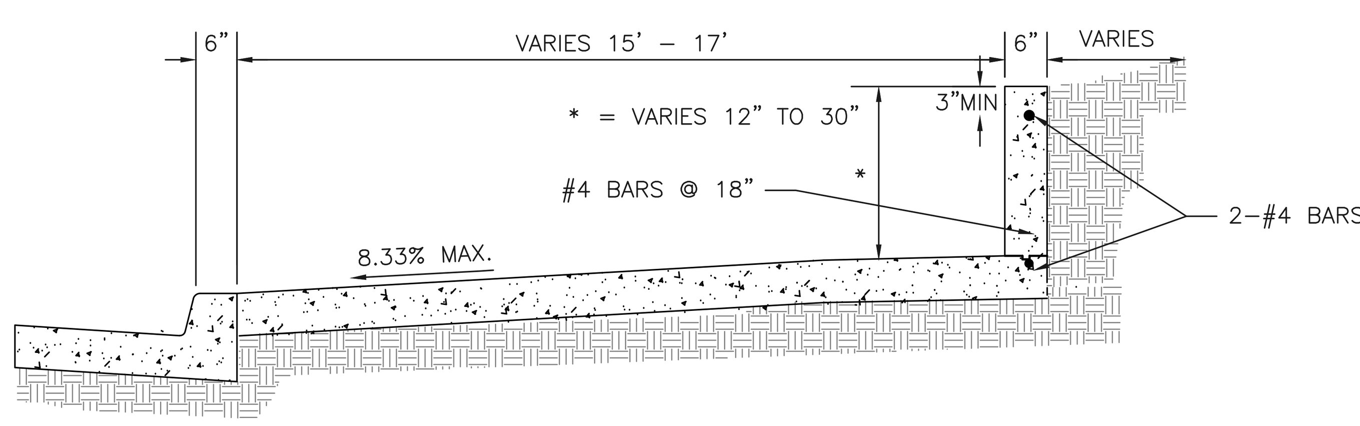
OVERLAND DRIVE
WIDENING
PROJECT NO. PW 20-11
DETAILS

Drawing No.
C 03

Sheet 3 of 19



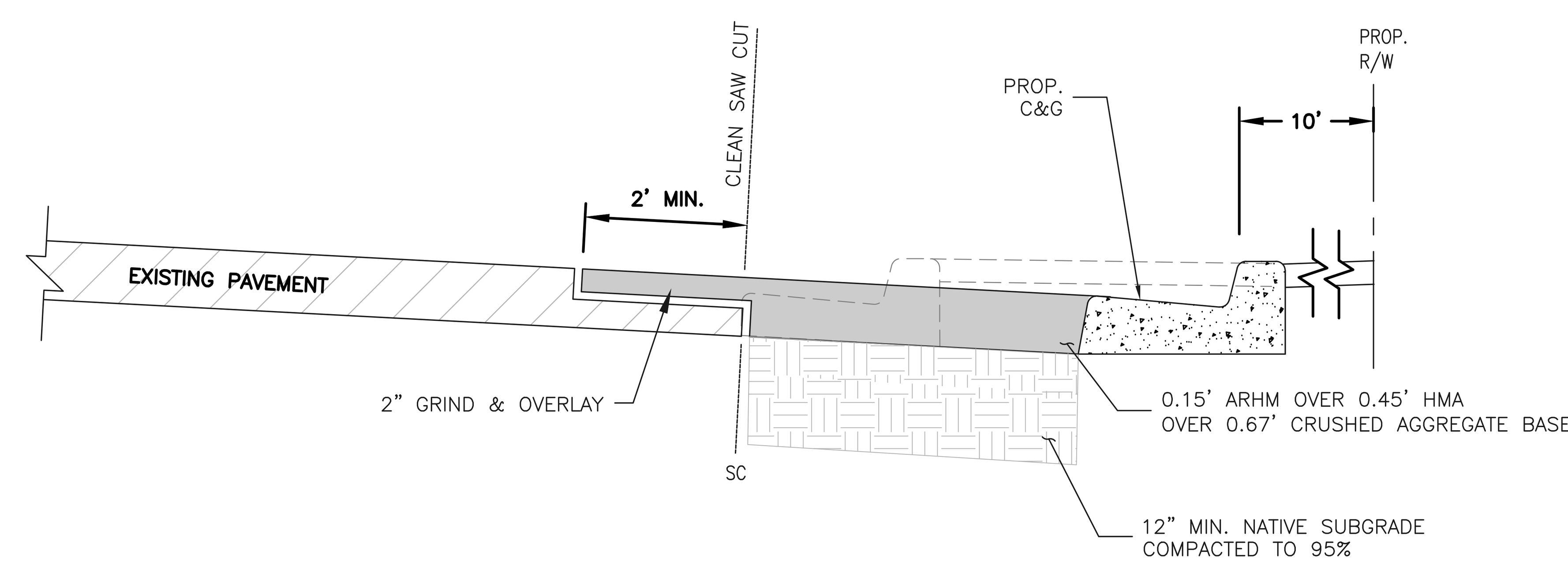




5
SHT C06

RETAINING CURB DETAIL

N.T.S.



SAWCUT - DETAIL "C"

N.T.S

LEGEND

PROPOSED CONCRETE

PROPOSED ASPHALT

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0' 5' 10' 20' 30' 40'

GRAPHIC SCALE IN FEET
1" = 10'

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F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ____ DATE: ____
NINO ABAD, SENIOR CIVIL ENGINEER

ACCEPTED BY: ____ DATE: ____
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

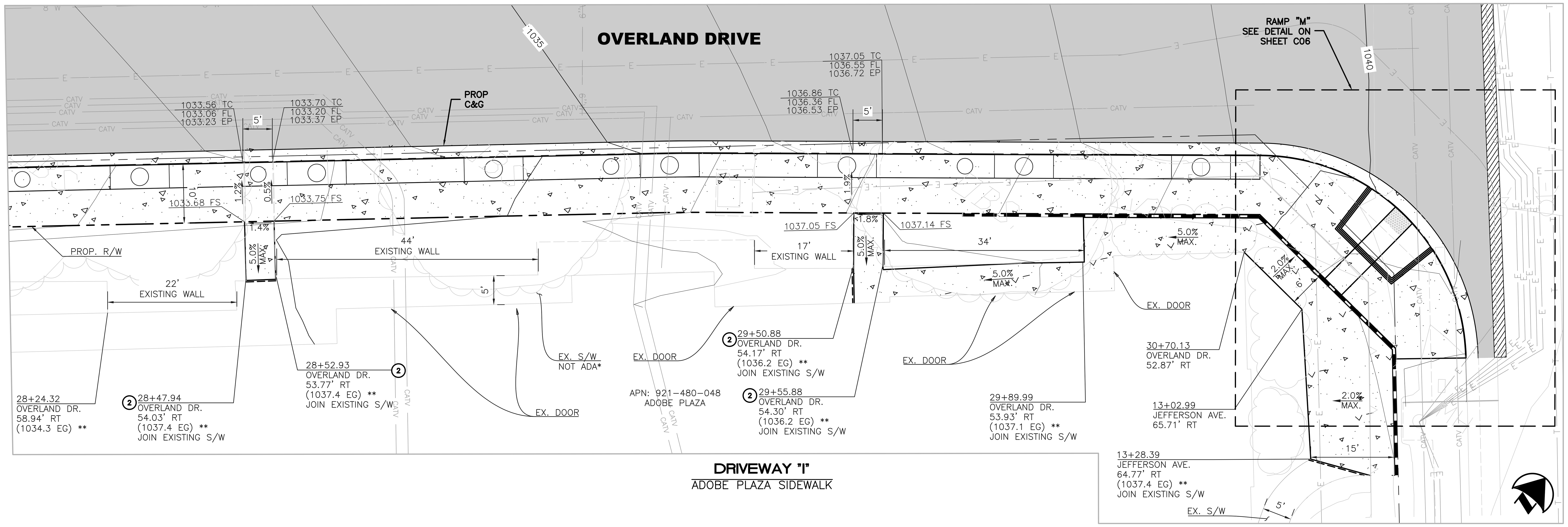
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

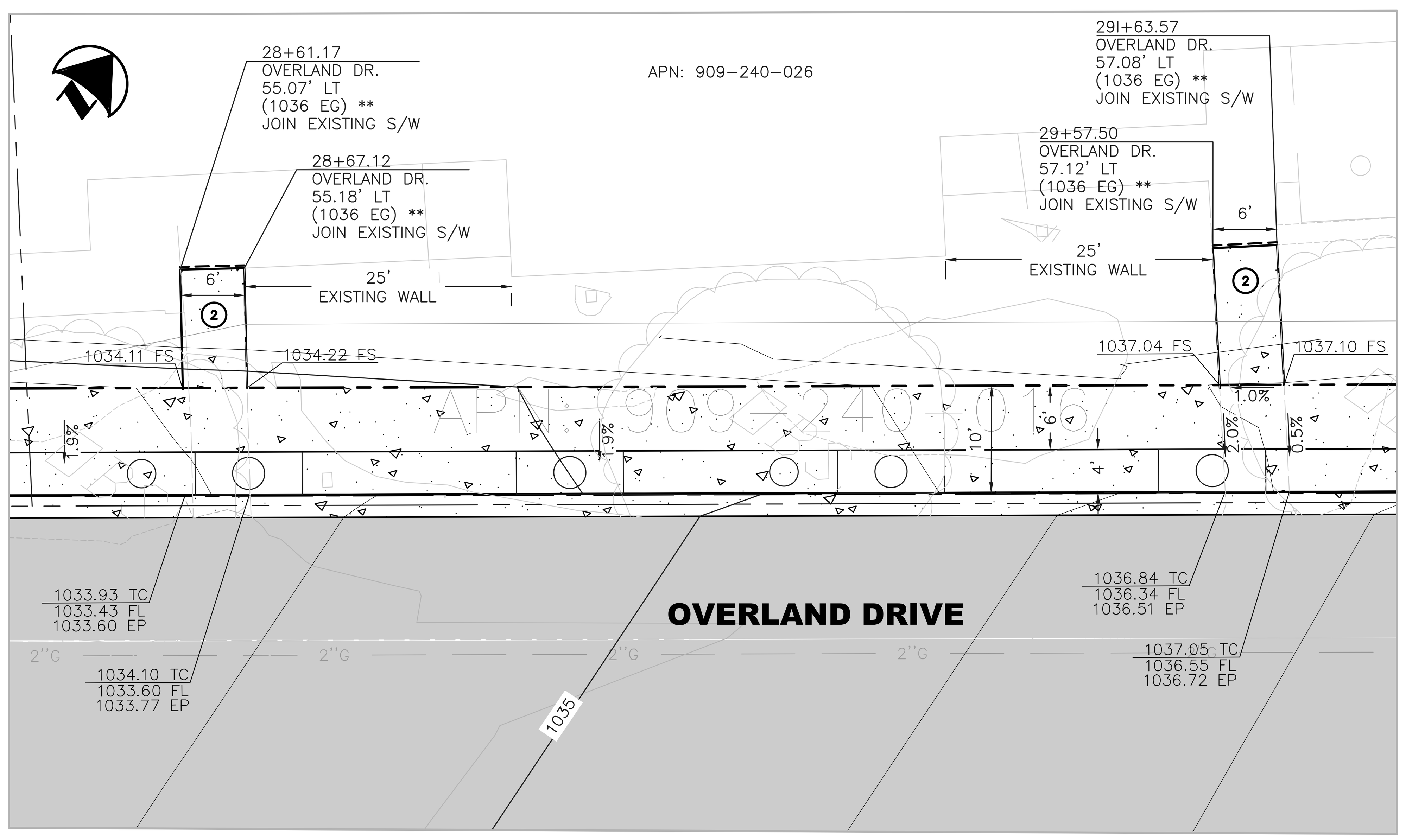
OVERLAND DRIVE
WIDENING
PROJECT NO. PW 20-11
DETAILS

Drawing No.
C 04

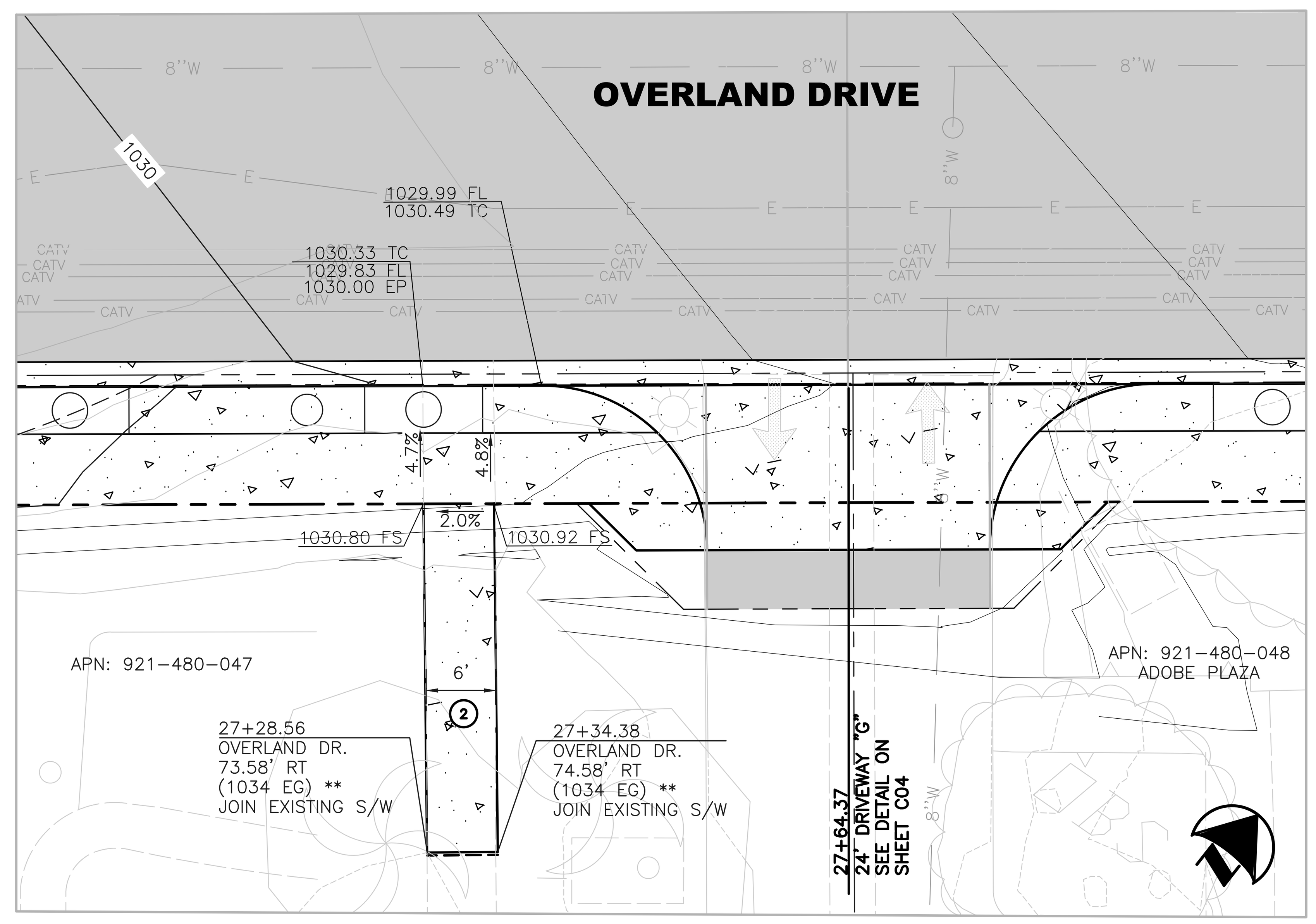
Sheet 4 of 19



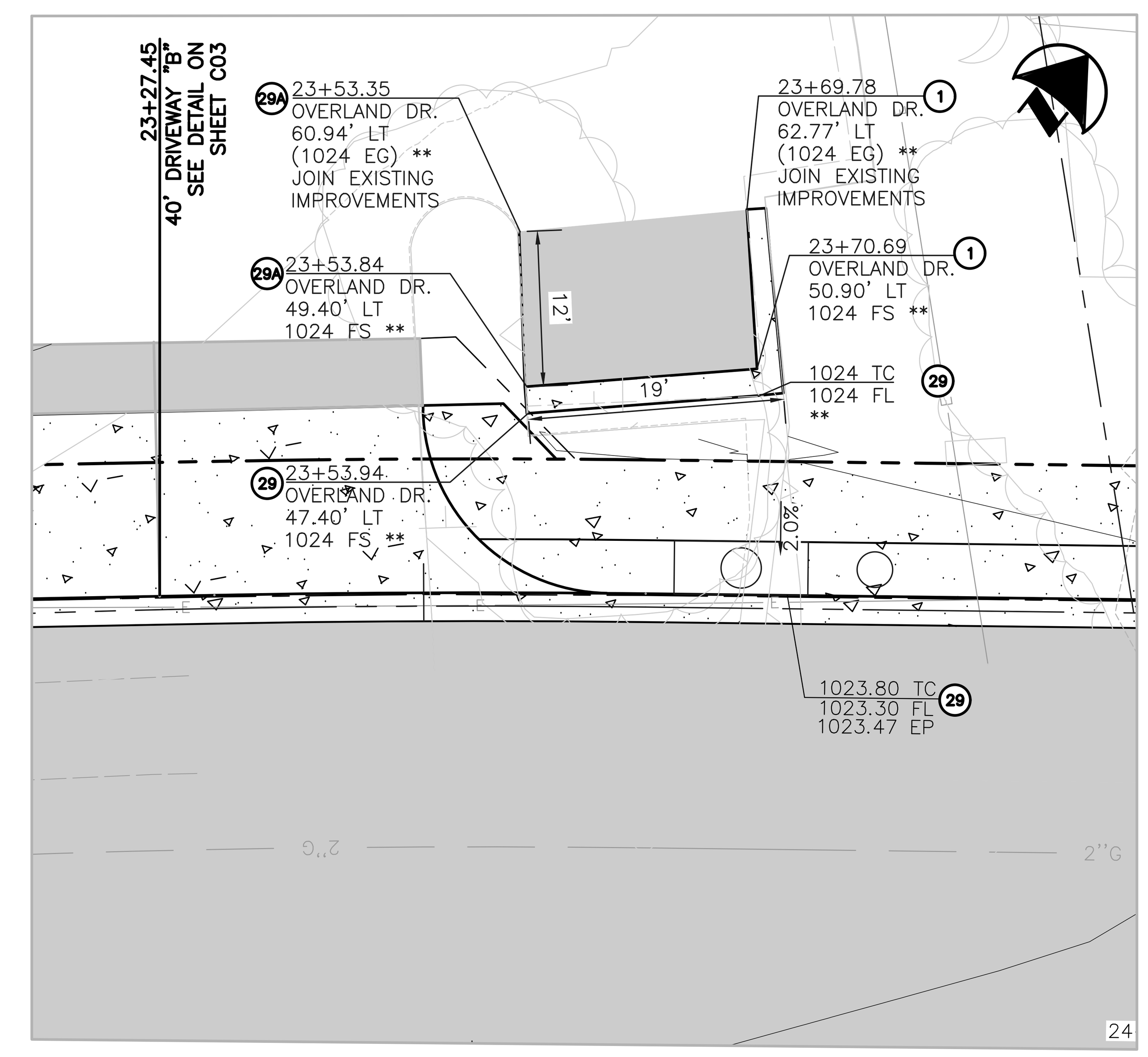
DRIVEWAY "I"
ADOBE PLAZA SIDEWALK



DRIVEWAY "J"
SIDEWALK



DRIVEWAY "K"
SIDEWALK



DRIVEWAY "L"
UNDER SIDEWALK

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NOTE
** APPROXIMATELY ELEVATION TO BE CONFIRMED WITH ADDITIONAL SURVEY.

LEGEND

PROPOSED CONCRETE

PROPOSED ASPHALT

CONSTRUCTION NOTES:

1. CONSTRUCT TYPE "A-6" CURB AND GUTTER PER CITY OF TEMECULA STD. DWG. No. 200
2. CONSTRUCT 6' SIDEWALK PER CITY OF TEMECULA STD. DWG. No. 401

(29) CONSTRUCT UNDER SIDEWALK DRAIN PIPE PER CITY OF TEMECULA STD. DWG. No. 303

(29A) CONSTRUCT TYPE D-6 CURB PER CITY OF TEMECULA STD. DWG. No. 204A

GRAPHIC SCALE IN FEET
0' 5' 10' 20' 30' 40'
1" = 10'

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK
RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By | Drawn By | Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE Date
R.C.E. No. 41836 Expires 03-31-24

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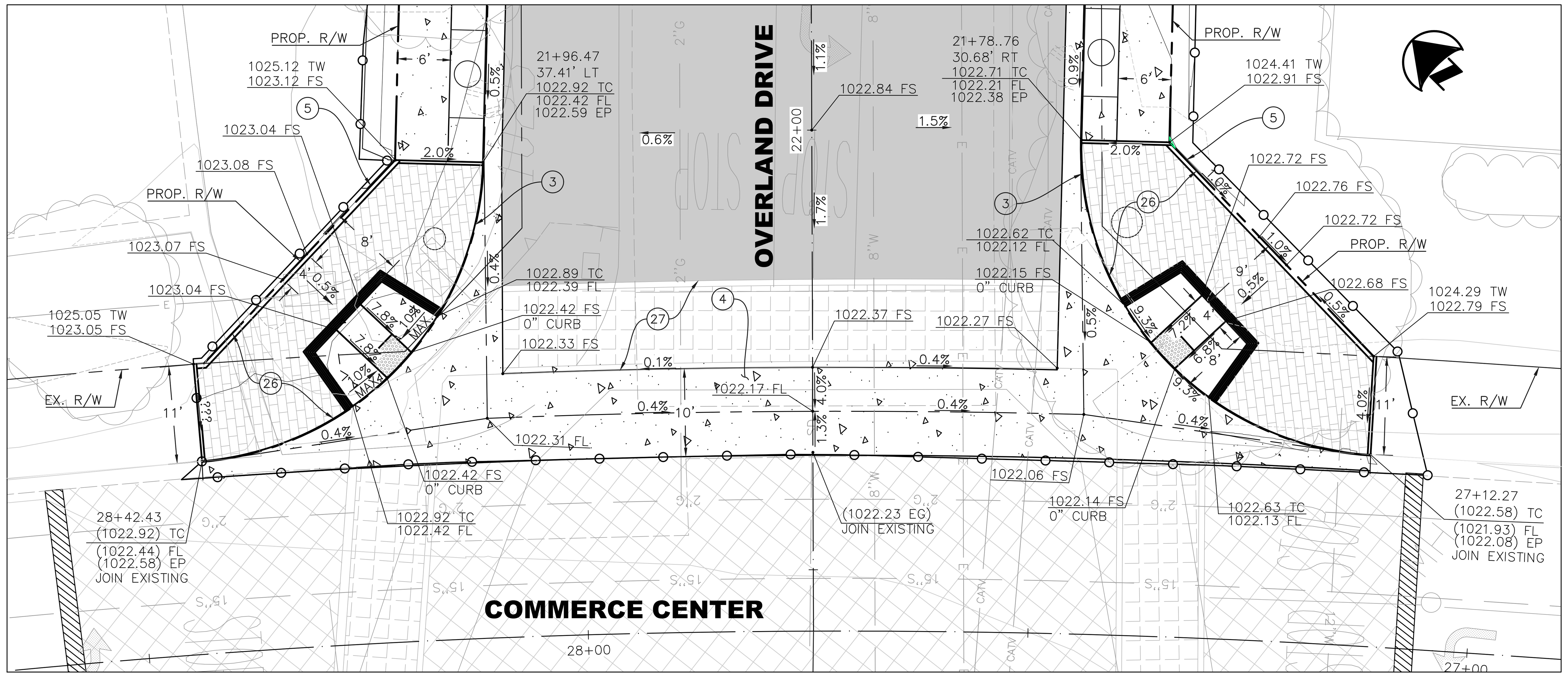
ACCEPTED BY: PATRICK A. THOMAS DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:

R.C.E. No. 44223 Expires: 06-30-2023

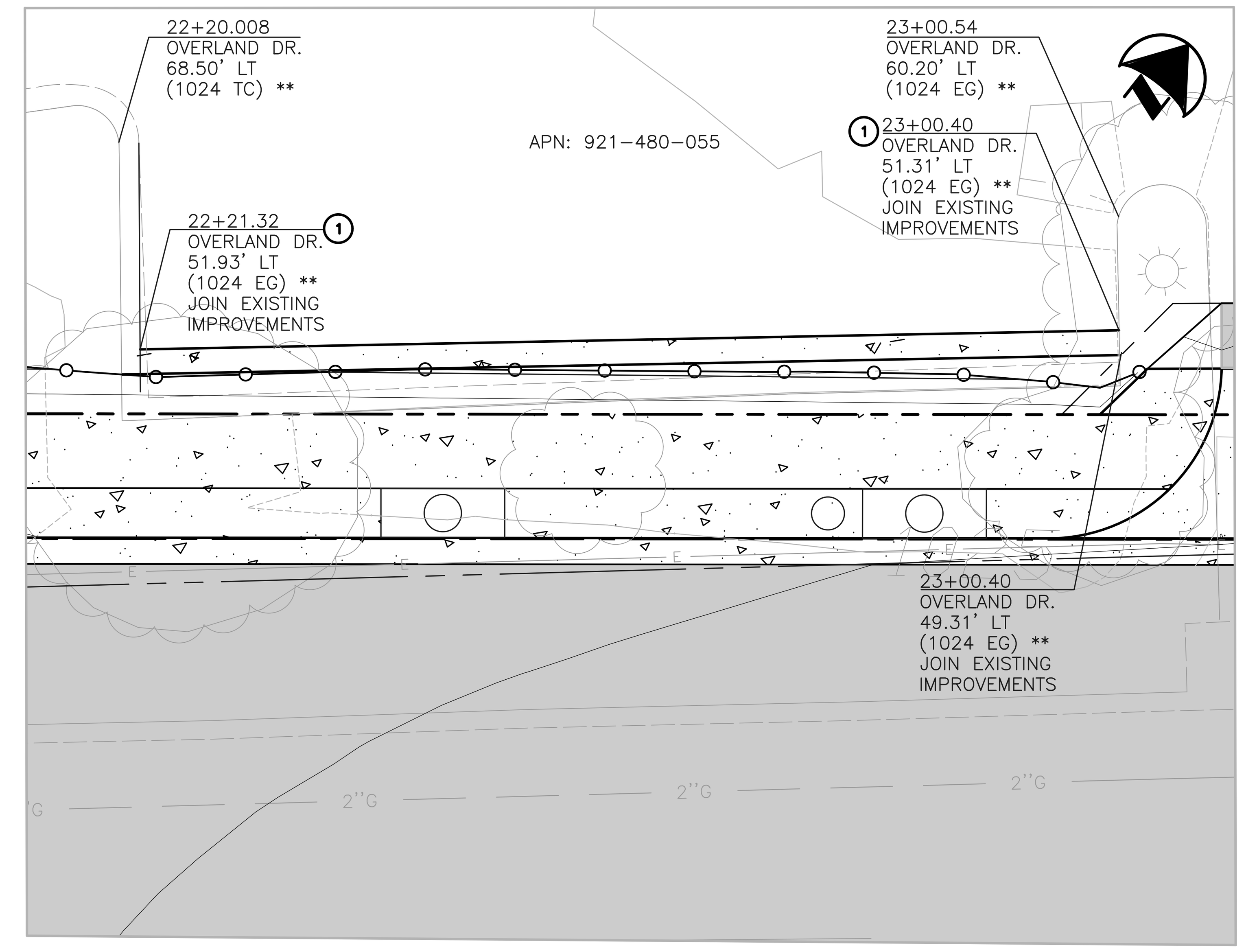
CITY OF TEMECULA
DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
DETAILS

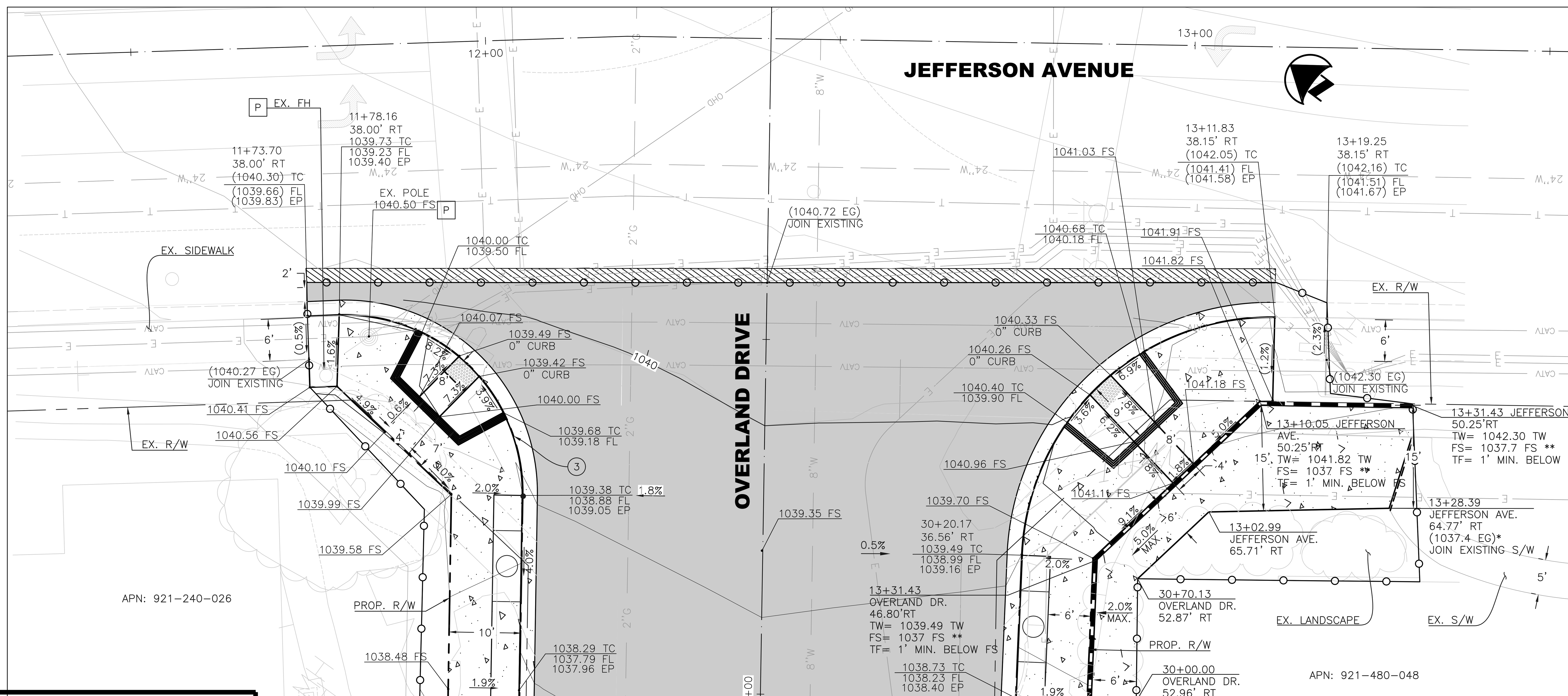
Drawing No.
C 05



DETAIL "M"
OVERLAND DRIVE AND COMMERCE CENTER



DRIVEWAY "O"
UNDER SIDEWALK



DETAIL "N"
OVERLAND DRIVE AND JEFFERSON AVENUE

CONSTRUCTION NOTES:

1. CONSTRUCT TYPE "A-6" CURB AND GUTTER PER CITY OF TEMECULA STD. DWG. No. 200
3. CONSTRUCT ADA ACCESS RAMP WITH TRUNCATED DOMES PER CITY OF TEMECULA STD. DWG. No. 402
4. CONCRETE CROSS GUTTER PER CITY OF TEMECULA STD. DWG. No. 211
5. CONSTRUCT RETAINING CURB PER DETAIL 5 ON SHEET 4
8. CONSTRUCT RETAINING WALL PER CALTRANS STD PLAN B3-7B TYPE 6B (6' MAX)
26. INSTALL 4"X16" CONCRETE PAVERS PER CITY OF TEMECULA STD. DWG. No. 934 AND UPTOWN SPECIFIC PLAN.
27. CONSTRUCT STAMPED ASPHALT CROSS WALK WITH 8" WIDE WHITE BORDER PER UPTOWN SPECIFIC PLAN.

LEGEND

CONCRETE PAVERS
GRADING LIMITS
GRIND AND OVERLAY
PROPOSED ASPHALT
PROPOSED CONCRETE
SAWCUT
STAMPED ASPHALT

NOTE
* EXISTING ELEVATION TO BE VERIFY IN THE FIELD PRIOR CONSTRUCTION. MAXIMUM SLOPES MUST NOT BE EXCEED.

** APPROXIMATELY ELEVATION TO BE CONFIRMED WITH ADDITIONAL SURVEY.

0' 5' 10' 20' 30' 40'
GRAPHIC SCALE IN FEET
1" = 10'

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TWO WORKING DAYS BEFORE YOU DIG

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE Date
R.C.E. No. 41836 Expires 03-31-24

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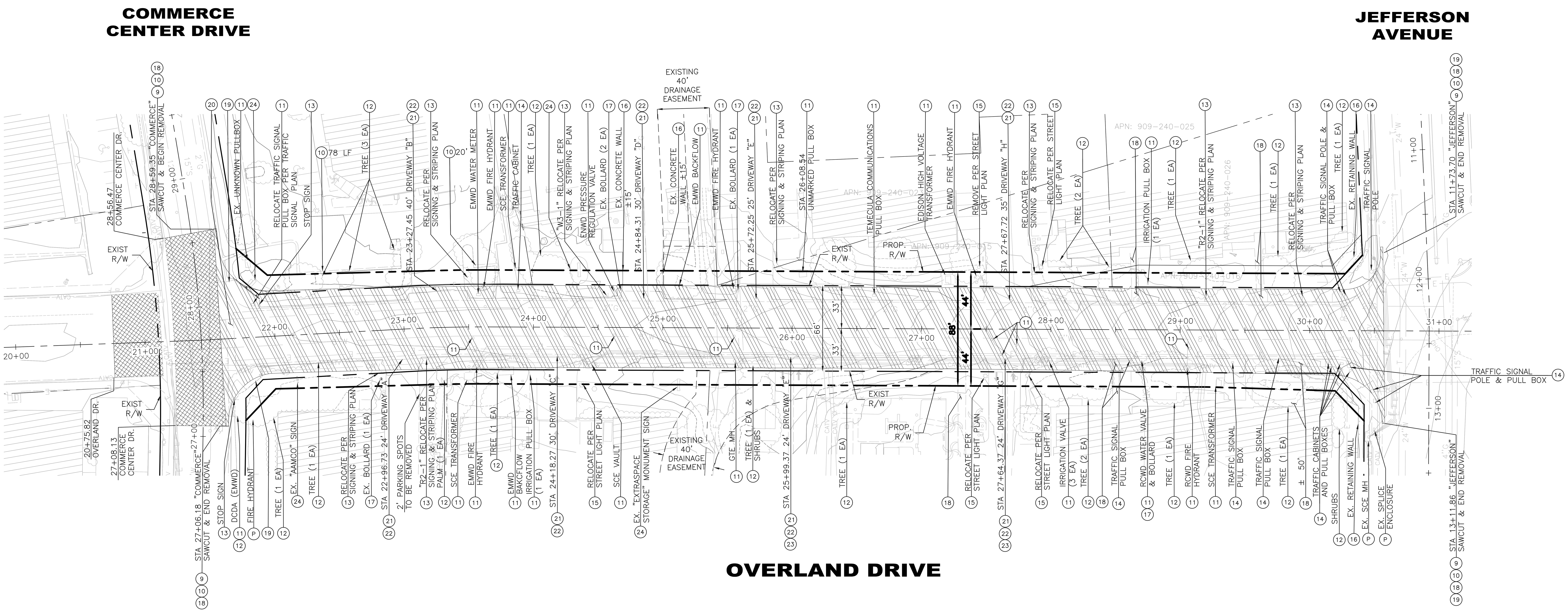
CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
DETAILS

Drawing No. C 06
Sheet 6 of 19



GRADING GENERAL NOTES:

1. STANDARDS. ALL CONSTRUCTION AND GRADING RELATED ACTIVITIES (I.E., STOCKPILING, LAND CLEARING, EROSION & SEDIMENT CONTROL, ETC.) SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 18 OF THE CITY OF TEMECULA MUNICIPAL CODE, THE ENGINEERING AND CONSTRUCTION MANUAL, ALL APPLICABLE STANDARDS, THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE (APPENDIX J) AND, IF APPLICABLE, THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES.

2. DRAINAGE.

   a. AS APPLICABLE, PROVIDE CONCRETE BROW DITCHES TO CONVEY 0-YEAR STORM FLOWS OR PROVIDE GRADED BERMS ALONG THE TOP OF ALL GRADED SLOPES OVER THREE FEET IN VERTICAL HEIGHT OR THAT ARE ADJACENT TO GRADED AREAS, TO DIRECT SURFACE RUNOFF AWAY FROM THE TOP OF SLOPES. ALL DRAINAGE DEVICES SHALL BE CONSTRUCTED PER THE APPROVED PLANS.

   b. EXISTING DRAINAGE COURSES SHALL CONTINUE TO FUNCTION AT ALL TIMES. NO OBSTRUCTION OF FLOOD PLAINS OR NATURAL WATER COURSES SHALL BE PERMITTED.

   c. TEMPORARY DRAINAGE SHALL BE PROVIDED UNTIL PERMANENT DRAINAGE STRUCTURES ARE INSTALLED .PROTECTIVE MEASURES SHALL BE IMPLEMENTED TO PROTECT ADJOINING AND DOWNSTREAM PROPERTIES FROM SILT DEPOSITION AND PONDING WATER DURING CONSTRUCTION/GRADING OPERATIONS.

   d. APPROVED PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT ADJOINING PROPERTIES DURING THE GRADING PROJECT.

   e. DRAINAGE EASEMENTS SHALL BE KEPT CLEAR OF ALL OBSTRUCTIONS; NO BUILDING OR WALLS SHALL BE PLACED WITHIN THE LIMITS OF EASEMENTS.

   f. THE MINIMUM GRADE FOR CONCRETE SURFACE DRAINAGE FACILITIES SHALL BE A ONE-HALF PERCENT (0.5%).

3. PROPERTY CORNERS. ALL PROPERTY CORNERS SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION/GRADING ACTIVITY, AS DIRECTED BY THE CITY ENGINEER.

4. OTHER CONSTRUCTION NOTES. REFER TO SEPARATE NOTES FOR "PAVING," "GENERAL" AND "EROSION AND SEDIMENT CONTROL" REQUIREMENTS.

REMOVAL NOTES:

- (P) PROTECT IN PLACE
- (9) SAWCUT AND REMOVE AC PAVEMENT
- (10) REMOVE CONCRETE C&G.
- (11) RELOCATE OR ADJUST TO GRADE UTILITY BY OTHERS
- (12) REMOVE TREE/SHRUBS.
- (13) REMOVE TRAFFIC SIGNS
- (14) RELOCATE TRAFFIC SIGNAL EQUIPMENT. SEE TRAFFIC SIGNAL PLAN
- (15) REMOVE EXISTING STREET LIGHTS TO BE SALVAGE AND PROVIDE TO THE CITY OF TEMECULA
- (16) REMOVE RETAINING CURB / CONCRETE WALL
- (17) REMOVE EXISTING BOLLARD
- (18) REMOVE CONCRETE SIDEWALK
- (19) REMOVE CURB RAMP
- (20) REMOVE CROSS GUTTER
- (21) REMOVE DRIVEWAY APPROACH
- (22) REMOVE CURB
- (23) REMOVE RIBBON GUTTER
- (24) REMOVE AND RELOCATE MONUMENT SIGN.

LEGEND:

- GRIND AND OVERLAY LIMITS
- REMOVAL LIMITS
- EX. IMPROVEMENTS
- EX. ℄
- EX. R/W
- PROP. R/W

GRAPHIC SCALE IN FEET
1" = 40'

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK: RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE: Horizontal / Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER — JOHN M. BRUDIN — No. 41836 — CIVIL — STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

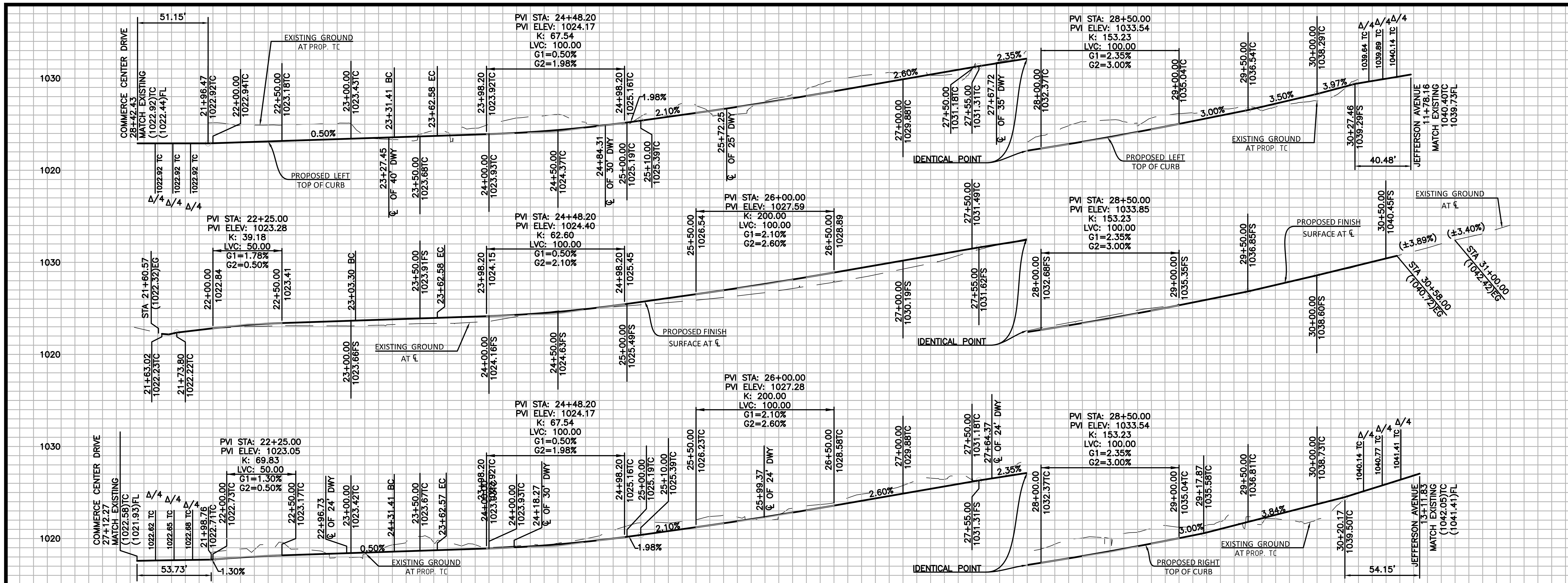
Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 — Expires 03-31-24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER — DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER — DATE:
R.C.E. No. 44223 — Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
DEMOLITION PLAN

Drawing No. C 07

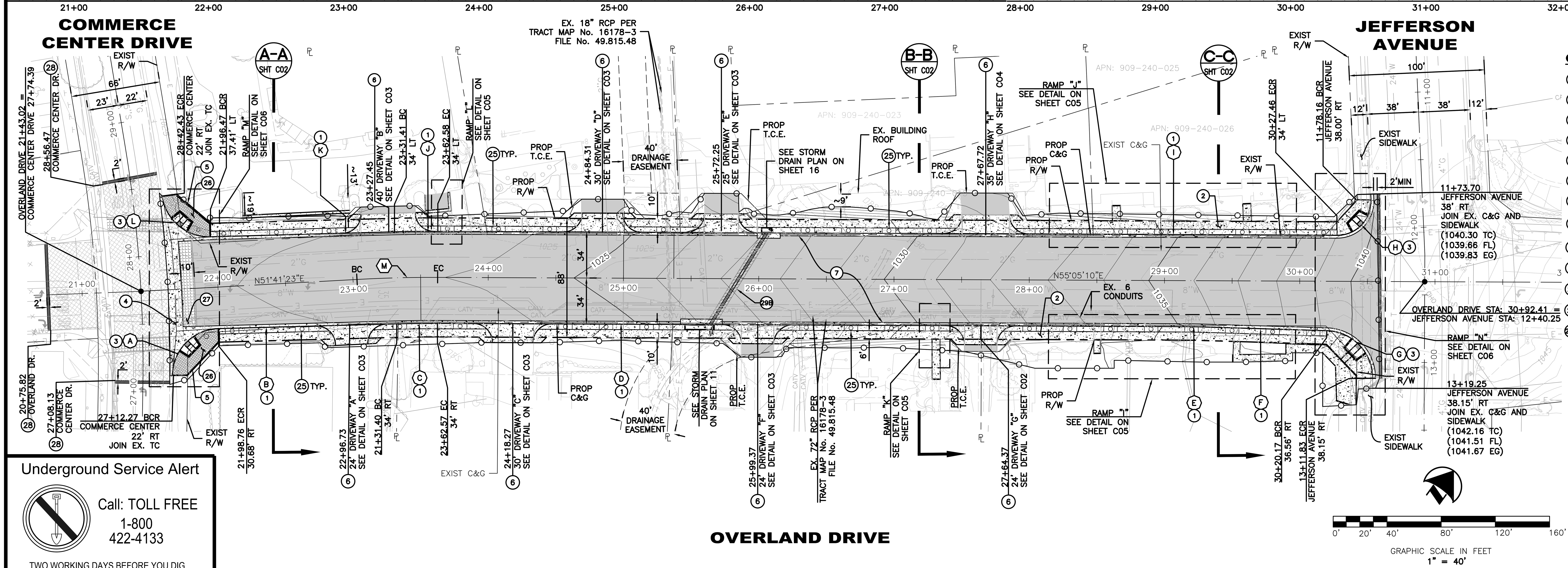


LINE AND CURVE DATA TABLE

LINE/CURVE	LENGTH	BEARING/DELTA	RADIUS	TANGENT
A	53.73'	87°57'03"	35	33.77'
B	131.75'	S53°18'01"W	–	–
C	30.11'	1°47'09"	966	15.06'
D	555.32'	S55°05'10"W	–	–
E	7.80'	1°29'21"	300	3.90'
F	94.50'	S56°34'32"	–	–
G	54.15'	88°38'55"	35.00	34.18'
H	40.48'	92°46'04"	25.00	26.24
I	664.88'	N55°05'10"E	–	–
J	32.23'	1°47'09"	1034	16.12'
K	135.95'	N53°18'01"E	–	–
L	51.10'	86°16'15"	35.00	31.30'
M	59.28'	3°23'47"	1,000	29.65'

LEGEND:

- CONCRETE PAVERS
- GRADING LIMITS
- GRIND AND OVERLAY
- (7) PROPOSED ASPHALT
- PROPOSED CONCRETE
- SAWCUT
- STAMPED ASPHALT
- (24) TRENCH REPAIR



CONSTRUCTION NOTES:

1. CONSTRUCT TYPE "A-6" CURB AND GUTTER PER CITY OF TEMECULA STD. DWG. No. 200
2. CONSTRUCT 6' SIDEWALK & 4' FURNISH ZONE PER CITY OF TEMECULA STD. DWG. No. 401
3. CONSTRUCT ADA ACCESS RAMP WITH TRUNCATED DOMES PER CITY OF TEMECULA STD. DWG. No. 402
4. CONSTRUCT CONCRETE CROSS GUTTER PER CITY OF TEMECULA STD. DWG. No. 211
5. CONSTRUCT RETAINING CURB PER DETAIL 5 ON SHEET 4
6. CONSTRUCT COMMERCIAL DRIVEWAY APPROACH PER CITY OF TEMECULA STD. DWG. No. 207A
7. CONSTRUCT 0.15' RHMA OVER 0.45' HMA OVER 0.67' CAB
8. CONSTRUCT RETAINING WALL PER CALTRANS STD PLAN B3-7B TYPE 6B (6' MAX.)
25. CONSTRUCT TREE WELL PER CITY OF TEMECULA STD. DWG. No. 903 AND UPTOWN SPECIFIC PLAN.
26. INSTALL 4"X16" CONCRETE PAVERS PER CITY OF TEMECULA STD. DWG. No. 934 AND UPTOWN SPECIFIC PLAN.
27. CONSTRUCT STAMPED ASPHALT CROSS WALK WITH 8" WIDE WHITE BORDER PER UPTOWN SPECIFIC PLAN.
28. GRIND AND OVERLAY EXISTING PAVEMENT PER DETAIL ON SHEET 4
29B. TRENCH REPAIR PER CITY OF TEMECULA STD. DWG. No. 407

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK: RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE: Horizontal / Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By | Drawn By | Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE Date

R.C.E. No. 41836 Expires 03-31-24

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ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:

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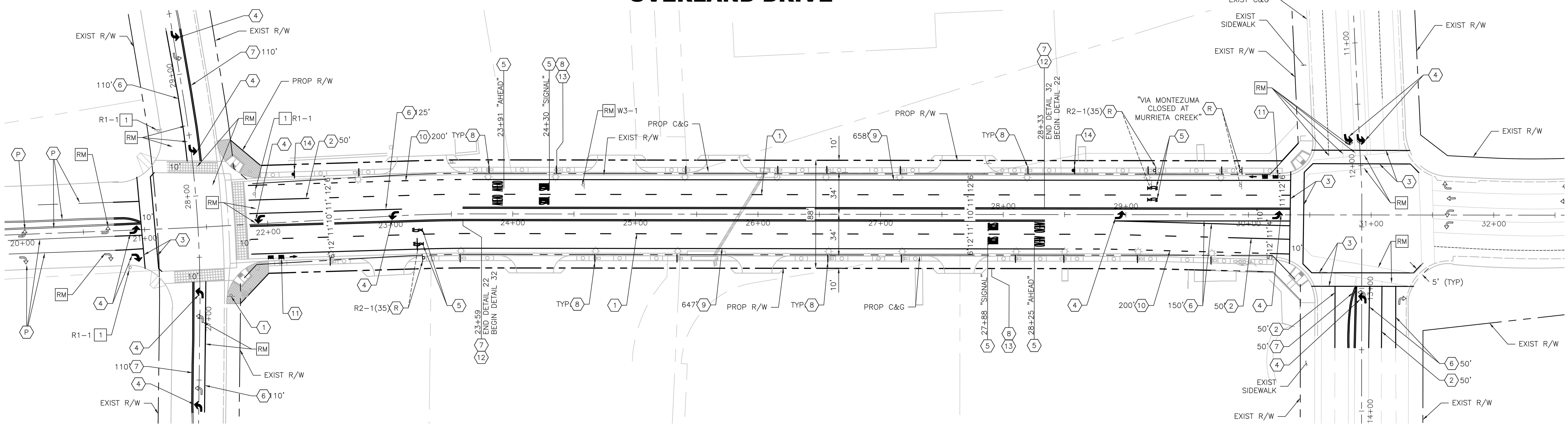
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
OVERLAND DRIVE IMPROVEMENTS PLAN + PROFILE

Drawing No. C 08

Sheet 8 of 19



SIGNING AND STRIPING GENERAL NOTES:

1. STRIPING, SIGNING, OR PAVEMENT LEGENDS SHALL NOT BE INSTALLED PRIOR TO FIELD INSPECTION AND APPROVAL BY THE INSPECTOR.
2. ALL PAVEMENT MARKINGS AND SIGN LOCATIONS MUST BE INSPECTED AND APPROVED BEFORE STRIPING BEGINS. THE INSPECTOR SHALL DETERMINE THE EXACT LIMITS OF THE MATCH STRIPING.
3. ALL REGULATORY SIGNS AND WARNING SIGNS SHALL USE HI-INTENSITY DIAMOND GRADE REFLECTIVE SHEETING AND BE A MINIMUM OF 30"X30".
4. UNLESS OTHERWISE STATED, ALL STRIPING SHALL BEGIN AND TERMINATE AT QUARTER DELTA OF THE CURB RETURN, OR BACK OF THE CROSSWALK OR STOP BAR.
5. ALL R1 SIGNS WILL BE LOCATED 2 FEET BEHIND CURB AT THE B.C.R. OR AS SPECIFIED ON THE PLAN.
6. ALL STOP BARS WILL BE LOCATED AT THE PROLONGATION OF THE CENTER DELTA OF THE CURB RETURN OR BEHIND THE WHEELCHAIR ACCESS RAMPS UNLESS OTHERWISE SPECIFIED ON THE PLAN.
7. THE STOP LEGEND SHALL BE 8 FEET BEHIND THE STOP BAR. IF REQUIRED, DIRECTIONAL ARROWS SHALL ALSO BE 8 FEET BEHIND THE STOP BAR OR 8 FEET BEHIND THE STOP LEGENDS.
8. ALL PAVEMENT MARKERS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST VERSION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND CALTRANS STANDARD PLANS: A20-A THROUGH A24-E.
9. STREET NAME SIGNS SHALL BE INSTALLED AT ALL INTERSECTIONS AND MAY BE INSTALLED ABOVE THE R1 SIGN OR AS SPECIFIED ON THE PLAN.
10. THE POST MATERIAL SHALL BE "TELESPAR QWIK-PUNCH" OR APPROVED EQUAL WITH RECEPTIVE 30-INCH OR 36-INCH ANCHOR ASSEMBLY.
11. ALL PAVEMENT STRIPING AND LEGENDS SHALL BE INSTALLED PER SECTION 84-2 OF THE CALTRANS STANDARD SPECIFICATIONS.
12. ALL CONFLICTING PAVEMENT LEGENDS, STRIPING (INCLUDING RAISED PAVEMENT MARKERS), AND PAVEMENT MARKINGS SHALL BE REMOVED BY GRINDING METHOD, PRIOR TO GRIND AND OVERLAY, PER SECTION 84-9 OF THE CALTRANS STANDARD SPECIFICATIONS.
13. ALL PAINTED STRIPING SHALL BE DOUBLE COATED IN NOT LESS THAN 7 DAYS, BUT NO MORE THAN 14 DAYS FROM DATE OF INITIAL INSTALLATION.
14. ALL PAVEMENT MARKINGS, PAVEMENT LEGENDS, AND LINES 8" OR WIDER SHALL BE THERMOPLASTIC UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
15. ALL PAVEMENT STRIPING SHALL HAVE RAISED PAVEMENT MARKINGS (RPM) PER SECTION 81-3 OF THE CALTRANS STANDARD SPECIFICATIONS.
16. A 6" SOLID WHITE LEAD LINE WITH TYPE 'G' RPM'S AT 25' SPACING SHOULD BE USED FOR EACH STRIPING AND SIGNING PLAN CHECKLIST PAGE 2 LANE LINE WHERE IT BREAKS ACROSS AN INTERSECTION. 50' OF LEAD IN LINE ON THE APPROACH SIDE AND 50' ON THE LEAD OUT DEPARTURE SIDE.

LEGEND

PROPOSED SIGN AND POST.

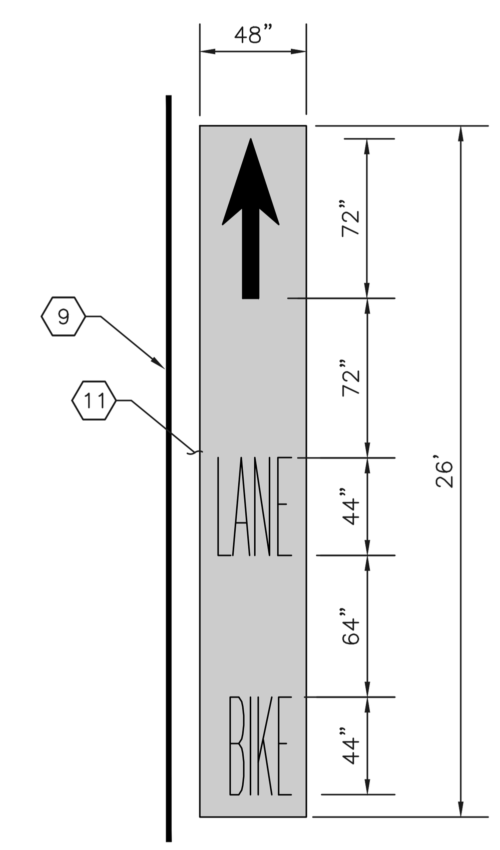
EXISTING SIGN AND POST.

PROPOSED STRIPING, MARKINGS AND/OR RAISED PAVEMENT MARKERS.

EXISTING STRIPING, MARKINGS AND/OR RAISED PAVEMENT MARKERS.

SIGN LEGEND

R1-1	R2-1(35)	R7-9A	W3-1	W3-3



NOTE:
1. INSTALL "PRE MARK" THERMOPLASTIC PAVEMENT MARKINGS (WHITE LETTERING W/ GREEN BACKGROUND).
2. LEGEND SPACING PER CAMUTCD FIGURE 9C-3.
3. PLACED IMMEDIATELY AFTER EACH INTERSECTION.

DETAIL "A"
WORD AND ARROW BIKE LANE MARKING

CONSTRUCTION NOTES:

(R) RELOCATE EXISTING SIGN

(P) PROTECT IN PLACE AS NOTED.

(1) PAINT 6" WHITE LANE PER DETAIL 12 CALTRANS STD. PLAN A20A.

(2) PAINT 6" SOLID WHITE LANE LEAD LINE EXTENSIONS.

(3) INSTALL 12" WIDE SOLID WHITE THERMOPLASTIC CROSSWALK OR LIMIT LINE PER CALTRANS STD. PLAN A24E.

(4) INSTALL THERMOPLASTIC TYPE IV ARROW PER CALTRANS STD. PLAN A24A.

(5) INSTALL THERMOPLASTIC PAVEMENT MARKING PER CALTRANS STD. PLAN A24C & A24D. AS NOTED ON THE PLAN.

(6) INSTALL THERMOPLASTIC 8" WHITE CHANNELIZING LANE LINE PER DETAIL 38 CALTRANS STD. PLAN A20D.

(7) PAINT 6" YELLOW NO PASSING ZONES-TWO DIRECTION PER DETAIL 22 CALTRANS STD. PLAN A20A.

(8) INSTALL SIGN R7-9A ON STREET LIGHT POLE EVERY 60' OR PER PLAN.

(9) PAINT 6" SOLID WHITE BIKE LANE PER DETAIL 39 CALTRANS STD. PLAN A20D.

(10) PAINT 6" WHITE BIKE LANE PER DETAIL 39A CALTRANS STD. PLAN A20D.

(11) INSTALL PRE-MARK THERMOPLASTIC WHITE LETTERING WITH GREEN BACKGROUND PER DETAIL "A" HEREON.

(12) PAINT 6" YELLOW TWO-WAY LEFT TURN LANES PER DETAIL 32 CALTRANS STD. PLAN A20B.

(13) INSTALL W3-3 SIGN.

(14) INSTALL SIGN AND POLE R7-9A PER PLAN.

(RM) REMOVE ALL EXISTING CONFLICTING TRAFFIC STRIPING, MARKING OR PAVEMENT ARROWS AS NOTED, INCLUDING RAISED PAVEMENT MARKERS (EXCEPT WHERE INDICATED). AREAS THAT ARE TO BE SLURRY SEALED SHALL BE GROUNDED OUT.

REMOVAL NOTES:

1 REMOVE EXISTING SIGN

0' 20' 40' 80' 120' 160'

GRAPHIC SCALE IN FEET
1" = 40'

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TWO WORKING DAYS BEFORE YOU DIG

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 — Expires 03-31-24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER — DATE:

ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER — DATE:

R.C.E. No. 44223 — Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE
WIDENING
PROJECT NO. PW 20-11
SIGNING AND STRIPING PLAN

Drawing No. C 09

STREET LIGHT NOTES:

1. STREET LIGHT DESIGN PLANS FOR CONSTRUCTION SHALL FOLLOW THE LATEST EDITION OF THE CITY OF TEMECULA STREET AND SAFETY LIGHTING STANDARD GUIDELINES.

2. THIS PROJECT SHALL COMPLY WITH THE MT PALOMAR LIGHT POLLUTION ORDINANCE NO. 655.

3. THESE PLANS HAVE BEEN EXAMINED BY THE CITY OF TEMECULA'S ENGINEERING DIVISION TO INSURE COMPLIANCE WITH GENERAL ENGINEERING STANDARDS AND THE CITY'S DESIGN STANDARDS AND SPECIFICATIONS. THE ENGINEER-OF-WORK SHALL BEAR THE SOLE RESPONSIBILITY OF THE MATHEMATICAL DATA AND ACCURACY OF DESIGN SHOWN HEREON.

4. STREET LIGHT LOCATIONS MAY BE ADJUSTED IN THE FIELD A MAXIMUM OF 10 FEET TO AVOID EXISTING OBSTRUCTIONS SUCH AS DRIVEWAYS, CATCH BASINS, FIRE HYDRANTS, ETC. ANY DEVIATION EXCEEDING 10 FEET SHALL BE APPROVED IN WRITING BY THE CITY OF TEMECULA ENGINEERING DEPARTMENT.

5. A REVISED STREET LIGHTING PLAN SHALL BE REQUIRED FOR ANY CHANGES MADE TO THE SUBDIVISION MAPS OR DESIGN PLANS WHICH AFFECT STREET ALIGNMENTS, LOT SIZES, PARCEL SIZES, BOUNDARIES, ETC.

6. ALL REVISIONS TO IMPROVEMENT PLANS, OR MATERIAL SUBSTITUTION REQUESTS, PROPOSED DURING CONSTRUCTION SHALL BE SUBMITTED IN WRITING TO THE ENGINEERING DEPARTMENT BY THE ENGINEER OF RECORD AND SHALL FOLLOW THE PROCEDURES FOR APPROVAL OUTLINED IN THE MOST CURRENT CITY OF TEMECULA ENGINEERING DEPARTMENT DIRECTIVES.

7. IN ORDER FOR THE CITY OF TEMECULA'S LIGHTING DISTRICT TO ASSUME THE OPERATIONS AND MAINTENANCE OF A LIGHTING SYSTEM ON ANY PUBLIC STREET, THE STREET SHALL BE ACCEPTED BY THE CITY AND OPEN TO THE GENERAL PUBLIC.

8. STREET LIGHTS SHALL BE INSTALLED BEHIND THE SIDEWALK, WITH LUMINAIRE ARM ORIENTED OVER THE STREET AND PERPENDICULAR TO ITS CENTERLINE: A. ARTERIAL STREETS (6 FOOT SIDEWALK): 7'-9" FROM CURB FACE TO CENTER OF POLE FOUNDATION B. NON-ARTERIAL STREETS (6 FOOT SIDEWALK): 7'-9" FROM CURB FACE TO CENTER OF POLE FOUNDATION C. MEANDERING SIDEWALKS: 18" MIN. FROM CURB FACE TO OUTSIDE EDGE OF POLE.

9. PLACEMENT
A. ON STREETS WHERE THE SIDEWALKS ARE 5.5 FEET OR LESS IN WIDTH, EXCLUDING THE TOP OF CURB, AND ARE ADJACENT TO THE CURB, THE STREET LIGHTING ELECTROLIER STANDARDS AND PULL BOXES SHALL BE PLACED OUTSIDE THE SIDEWALK AREA UNLESS OTHERWISE SPECIFIED ON THE CITY OF TEMECULA APPROVED PLAN.

B. ON ALL STREETS, HANDHOLE/PULL BOX SHALL BE PLACED "IN-LINE" WITH STREET LIGHTING STANDARD AND SHALL NOT BE PLACED IN FRONT OF OR BEHIND STANDARDS ON SIDEWALKS WITHIN THE PATH OF TRAVEL.

10. THERE SHALL BE NO ABOVE-GROUND OBSTRUCTIONS IN ANY PORTION OF THE SIDEWALK (WHERE THE WIDTH, EXCLUSIVE OF TOP OF CURB, IS 5.5 FEET OR LESS). WHERE POWER/TELEPHONE/CABLE POLES, STREET LIGHT STANDARDS, FIRE HYDRANTS, AND CONTROL BOXES OCCUR IN THE 5.5 FOOT SIDEWALK, THE SIDEWALK SHALL BE MODIFIED PER CITY OF TEMECULA STANDARD PLAN NO. 402.

11. ALL MAST ARMS AND BRACKETS SHALL BE PERPENDICULAR TO THE CURB FACE AND 8 FEET LONG UNLESS OTHERWISE SPECIFIED ON THE CITY OF TEMECULA APPROVED PLAN.

12. ALL LIGHTS SHOWN ON THIS PLAN SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE ACCEPTANCE OF THE SYSTEM INTO THE CITY OF TEMECULA'S LIGHTING DISTRICT.

13. ALL STREET WIRING AND APPURTENANT APPARATUS SHALL BE UNDERGROUNDED.

14. STREET LIGHTS SHALL BE CONSTRUCTED PER THE CITY OF TEMECULA APPROVED PLAN. LIGHTS NOT CONSTRUCTED ACCORDING TO THE APPROVED PLAN SHALL BE REMOVED AND RELOCATED AT NO EXPENSE TO THE CITY OF TEMECULA.

15. STREET LIGHTS SHALL BE ERECTED SUCH THAT THE BASE DOOR IS PERPENDICULAR TO THE CURB AND LOCATED ON THE SIDE OF THE STREET LIGHT FACING ONCOMING TRAFFIC.

16. ALL EQUIPMENT REQUIRED HEREON FOR FURNISHING ELECTRICAL SERVICE, FOR EACH CIRCUIT, SHALL BE INSTALLED AND INSPECTED PRIOR TO ANY OTHER CONSTRUCTION ON THAT CIRCUIT.

17. THE CONTRACTOR SHALL GIVEN WRITTEN NOTICE, 72 HOURS IN ADVANCE OF REMOVAL OF A STREET LIGHT, TO ANY PUBLIC AGENCY MAINTAINING EQUIPMENT SUPPORTED BY THE STREET LIGHT.

18. FOUNDATIONS AND PULL BOXES NOT REMAINING IN SERVICE SHALL BE REMOVED. THE RESULTING EXCAVATION SHALL BE FILLED WITH MATERIAL SIMILAR TO ADJACENT MATERIAL AND SATISFACTORILY COMPACTED WITH A MECHANICAL COMPACTOR IN LAYERS NOT EXCEEDING 12 INCHES. THE SURFACE SHALL BE FINISHED TO MATCH THE ADJACENT SURFACE.

19. ALL PULL BOXES SHALL BE NO. 3 1/2. ALL STREET LIGHTING PULL BOX LIDS SHALL READ "STREET LIGHTING". PULL BOXES LOCATED ADJACENT TO DRIVEWAYS AND ALLEYS SHALL BE INSTALLED AT A MINIMUM DISTANCE OF 5 FEET FROM THE TOP OF THE DRIVEWAY "X" OR 5 FEET FROM THE TRAVEL WAY OF THE ALLEY.

20. PULL BOXES INSTALLED AT INTERSECTIONS OF LOCAL STREETS SHALL BE INSTALLED NO CLOSER TO THE INTERSECTIONS THAN THE B.C.R. OF AN ASSUMED FUTURE 35 FOOT RADIUS CURB RETURN.

21. WARNING: SAFETY CLEARANCE SHALL BE OBTAINED DAILY FROM THE AFFECTED UTILITY COMPANY BEFORE DOING ANY WORK IN CLOSE PROXIMITY TO ANY OVERHEAD ELECTRIC LINE.

22. CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING THE CONDITION OF ALL EXISTING EQUIPMENT TO BE REUSED, MODIFIED OR RETURNED TO THE CITY OF TEMECULA PUBLIC WORKS DEPARTMENT.

23. EQUIPMENT INDICATED "DISPOSE" SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE PROPERLY DISPOSED OFF-SITE BY THE CONTRACTOR.

24. CONTRACTOR SHALL REPAIR, AT HIS COST, THE DAMAGE CAUSED TO EXISTING LANDSCAPING AND IRRIGATION SYSTEMS DURING THE CONSTRUCTION OF THIS PROJECT. REPAIRS SHALL BE MADE WITHIN 5 WORKING DAYS AFTER DAMAGE OCCURS.

25. CONTRACTOR SHALL LOCATE AND PROTECT SUBSTRUCTURE(S) SHOWN HEREON AND SHALL PROVIDE FOR A MINIMUM 12 INCH HORIZONTAL CLEARANCE BETWEEN FOUNDATION AND SUBSTRUCTURES. IN THE EVENT A 12 INCH CLEARANCE CANNOT BE ACHIEVED, THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR RELOCATION OF SUBSTRUCTURES WITH THE CITY.

26. IN THE EVENT OF OVERHEAD LINES CONFLICT WITH STREET LIGHTS THE CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS WITH SOUTHERN CALIFORNIA EDISON TO RAISE THEIR OVERHEAD FACILITIES IN ORDER TO PROVIDE FOR THE FOLLOWING CLEARANCES WITH EXISTING AND/OR PROPOSED STREET LIGHTS:
A. LOW VOLTAGE: MINIMUM 3 FOOT CLEARANCE BETWEEN OVERHEAD LINES AND STREET LIGHTS.
B. HIGH VOLTAGE: MINIMUM 6 FOOT CLEARANCE BETWEEN OVERHEAD LINES AND STREET LIGHTS.

27. IN THE EVENT OF OVERHEAD COMMUNICATION LINE CONFLICT WITH STREET LIGHTS, CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO PROVIDE A MINIMUM 12 INCH CLEARANCE.

28. PROPOSED STREET LIGHT FOUNDATIONS AND PULLBOXES SHALL BE INSTALLED OUTSIDE OF ACCESS RAMP AREAS. EXISTING FOUNDATIONS AND PULLBOXES SHALL BE RECONSTRUCTED TO CLEAR ACCESS RAMPS BY A MINIMUM OF 12 INCHES.

29. CONDUIT THAT IS TO BE ABANDONED SHALL HAVE WIRES REMOVED. THE CONDUIT SHALL BE REMOVED TO A DEPTH OF AT LEAST 12 INCHES BELOW THE SURFACE AND HAVE BOTH ENDS CRIMPED OR CAPPED.

30. ELECTRICAL SYSTEMS FOR LS-3 RATE SCHEDULE STREET LIGHTS SHALL COMPLY WITH SECTION 700 LATEST EDITION OF THE GREENBOOK AND THE 2019 CALIFORNIA ELECTRICAL CODE/2017 NATIONAL ELECTRICAL CODE.

31. PROPOSED LS-3 RATE SCHEDULE STREET LIGHT FOUNDATIONS, PEDESTALS, PULLBOXES AND OTHER ASSOCIATED LS-3 STREET LIGHT SYSTEM APPURTENANCES SHALL BE INSTALLED WITHIN THE CITY RIGHT-OF-WAY.

32. STREET LIGHTING STANDARDS FOR LS-3 RATE SCHEDULE STREET LIGHTS SHALL BE CONCRETE AMERON OR APPROVED EQUAL PER CITY OF TEMECULA STREET AND SAFETY LIGHTING GUIDELINES.

33. PROPOSED LS-3 RATE SCHEDULE CONCRETE STREETLIGHT FOUNDATIONS SHALL BE IN ACCORDANCE WITH CITY OF TEMECULA STANDARD PLAN 1003.

34. AS-BUILT PLANS AND ASSET/ATTRIBUTE DATA SHALL BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF IMPROVEMENTS.

35. ALL NEW CONDUITS SHALL BE 2" PVC SCHEDULE 80 UNLESS SHOWN OTHERWISE ON PLANS.
36. LIGHTING SHALL BE MAINTAINED THROUGHOUT PROJECT.

37. LIGHTING CALCULATIONS ARE REQUIRED TO VERIFY APPROPRIATE LIGHTING LEVELS.

38. SERVICE TO ALL EXISTING LIGHTING SHALL BE MAINTAINED AT ALL TIMES.

39. CONTRACTOR SHALL FURNISH AND INSTALL STREET LIGHTING STANDARD AND LIGHT FIXTURE AS SPECIFIED UNLESS OTHERWISE SHOWN ON PLANS.

40. SCE WORK ORDER NUMBER TO BE PROVIDED AT AS-BUILT:

VOLTAGE DROP CALCULATIONS

FORMULA FOR THE CALCULATIONS:

$$\%VD = \frac{2(L)(N)(I)(R)(100)}{(CM)(V)}$$

L= DISTANCE BETWEEN FIXTURES
N= No. OF FIXTURES
I= CURRENT
R= RESISTIVITY OF COOPER CONDUCTOR
CM= AREA (MILS)
V= CIRCUIT VOLTAGE

WIRE (AWG)	CM(MILLS)
#8	16,510
#10	10,380

I= 0.4 AMP/FIXTURE
I= 0.7 AMP/FIXTURE
V= 240 V
R= 12 OHMS MIL PER FT

STREET LIGHTS WITH XHHW-2#8 WIRES CIRCUIT A @240V.

VOLTAGE DROP CIRCUITS: A-5/7						
(Circuit)	Fixtures	No. Fixtures	#8Length (main)	#10 Pole+Pull box	%VD	%VD Pole + Pullbox
A-5/7	A1-A3	1	159	30	0.038	0.011
A-5/7	A3-A5	2	180.5	30	0.144	0.023
A-5/7	A5-A7	3	100	30	0.120	0.034
A-5/7	A7-A9	4	202	30	0.192	0.045
A-5/7	A9-SC	5	160	30	0.319	0.057
TOTAL %VD					0.98	

VOLTAGE DROP CIRCUITS: A-9/11						
(Circuit)	Fixtures	No. Fixtures	#8Length (main)	#10 Pole+Pull box	%VD	%VD Pole + Pullbox
A-9/11	A2-A4	1	160.5	30	0.068	0.011
A-9/11	A4-A6	2	115	30	0.055	0.023
A-9/11	A6-A8	3	164	30	0.209	0.034
A-9/11	A8-A10	4	158	30	0.268	0.045
A-9/11	A10-SC	5	100	30	0.212	0.057
TOTAL %VD					0.98	

VOLTAGE DROP CIRCUITS: A-5/7						
(Circuit)	Fixtures	No. Fixtures	#8Length (main)	#10 Pole+Pull box	%VD	%VD Pole + Pullbox
A-5/7	A1-A3	1	159	30	0.038	0.011
A-5/7	A3-A5	2	180.5	30	0.144	0.023
A-5/7	A5-A7	3	100	30	0.120	0.034
A-5/7	A7-A9	4	202	30	0.192	0.045
A-5/7	A9-SC	5	160	30	0.319	0.057
TOTAL %VD					0.98	

VOLTAGE DROP CIRCUITS: A-6/8						
(Circuit)	Fixtures	No. Fixtures	#8Length (main)	#10 Pole+Pull box	%VD	%VD Pole + Pullbox
A-6/8	B2-B4	1	177	30	0.075	0.011
A-6/8	B4-B6	2	183	30	0.155	0.023
A-6/8	B6-B8	3	132.5	30	0.094	0.034
A-6/8	B8-B10	4	120	30	0.204	0.045
A-6/8	B10-SC	5	26	30	0.055	0.057
TOTAL % VD					0.75	

(Circuit)	%VD Total
A-5/7	0.98
A-9/11	0.98
A-2/4	0.89
A-6/8	0.75
MAXIMUN ALLOWED V.D. = 5%	

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK
RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE
WIDENING
PROJECT NO. PW 20-11
STREET LIGHTS GENERAL NOTES AND VOLTAGE DROP CALCULATIONS

Drawing No.
C 10

SYMBOL LEGEND:

- PROPOSED STREET LIGHT
- EXISTING STREET POLE AND LIGHT
- PULL BOX NO. 3 ½ PER CITY STANDARD NO. SL-2
- ELECTRICAL SERVICE PEDESTAL PER CITY STANDARD NO. SL-2
- PROPOSED CONDUIT (CONSTRUCTION NOTES INDICATE SIZE)
- INDICATES FIXTURE ID / INDICATES FEED POINT

FIXTURE QUANTITIES

- 94 WATT LED STREET LIGHT WITH PULL BOX (20)

CONSTRUCTION NOTES:

1. INSTALL DECORATIVE PEDESTRIAN LED LIGHT WITH BANNER, 84 LEDS, 94 WATTS, 240 VOLT PER CITY STANDARD NO. 800 AND DETAIL ON SHEET 9.
   - MANUFACTURE: STERNBERG LIGHTING.
   - PRODUCT NUMBER: 1521LED-R-6ARC40T2-MDL03-SV2/OBSPM/7715P5-.250/BCC4/DBA/DBT
   - FOUNDATION PER CITY STANDARD NO. 801

1A. INSTALL DECORATIVE VEHICULAR AND PEDESTRIAN LED LIGHT WITH BANNER, 140 LEDS/84 LEDS, 158 WATTS/94 WATTS, 240 VOLT PER CITY STANDARD NO. 800 AND DETAIL ON SHEET 9.
   - MANUFACTURE: STERNBERG LIGHTING.
   PRODUCT NUMBER: 1A-1527LED-R-10ARC40T2-MDL03-SV2-EZ / OBPM 1AM-1521LED-R-6ARC40T2-MDL03-SV2-EZ / OBMO /9720ARSS /DBA / BCC4 / DBT
   - FOUNDATION PER CITY STANDARD NO. 801

2. INSTALL #3 1/2 PULL BOX PER CITY STANDARD NO. 802 AND CALTRANS STANDARD DWG. ES-8A.
3. INSTALL PHOTOELECTRIC UNIT FOR LIGHTING PER CITY STANDARD NO. 800
4. INSTALL 2" CONDUIT SCH 80 PVC -(2) XHHW-2#8 & 1#10G. BURRY 18" MIN. BELOW GRADE.
5. INSTALL 2" CONDUIT SCH 80 PVC-(4) XHHW-2#8 & 1#10G. BURRY 18" MIN. BELOW GRADE.
6. INSTALL 2" CONDUIT SCH 80 PVC, XHHW-2#8, 1#8G WITH PULL ROPE. BURY 18" BELOW GRADE.
7. EXISTING TYPE III-CF 120/240V METER SERVICE PEDESTAL, MODIFY PER TRAFFIC SIGNAL PLAN
8. INSTALL #5E PULL BOX PER CITY STANDARD NO. 802 AND CALTRANS STANDARD DWG. ES-8A.
9. PROPOSED SERVICE CABINET, PER TRAFFIC SIGNAL PLAN.

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GRAPHIC SCALE IN FEET
0' 20' 40' 80' 120' 160'
1" = 40'

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
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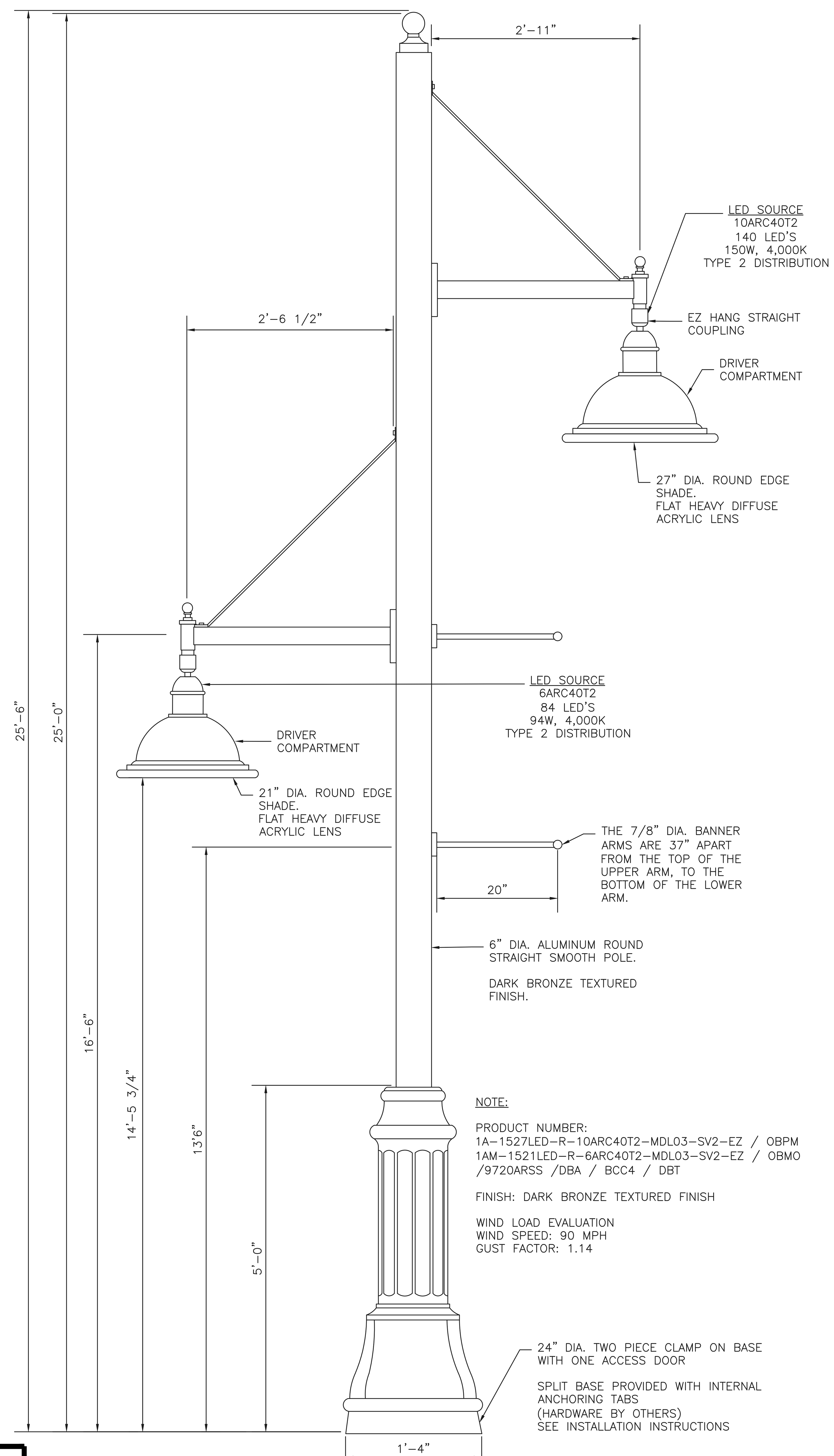
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
STREET LIGHT PLAN

Drawing No. C 11

Sheet 11 of 19



NOTE:

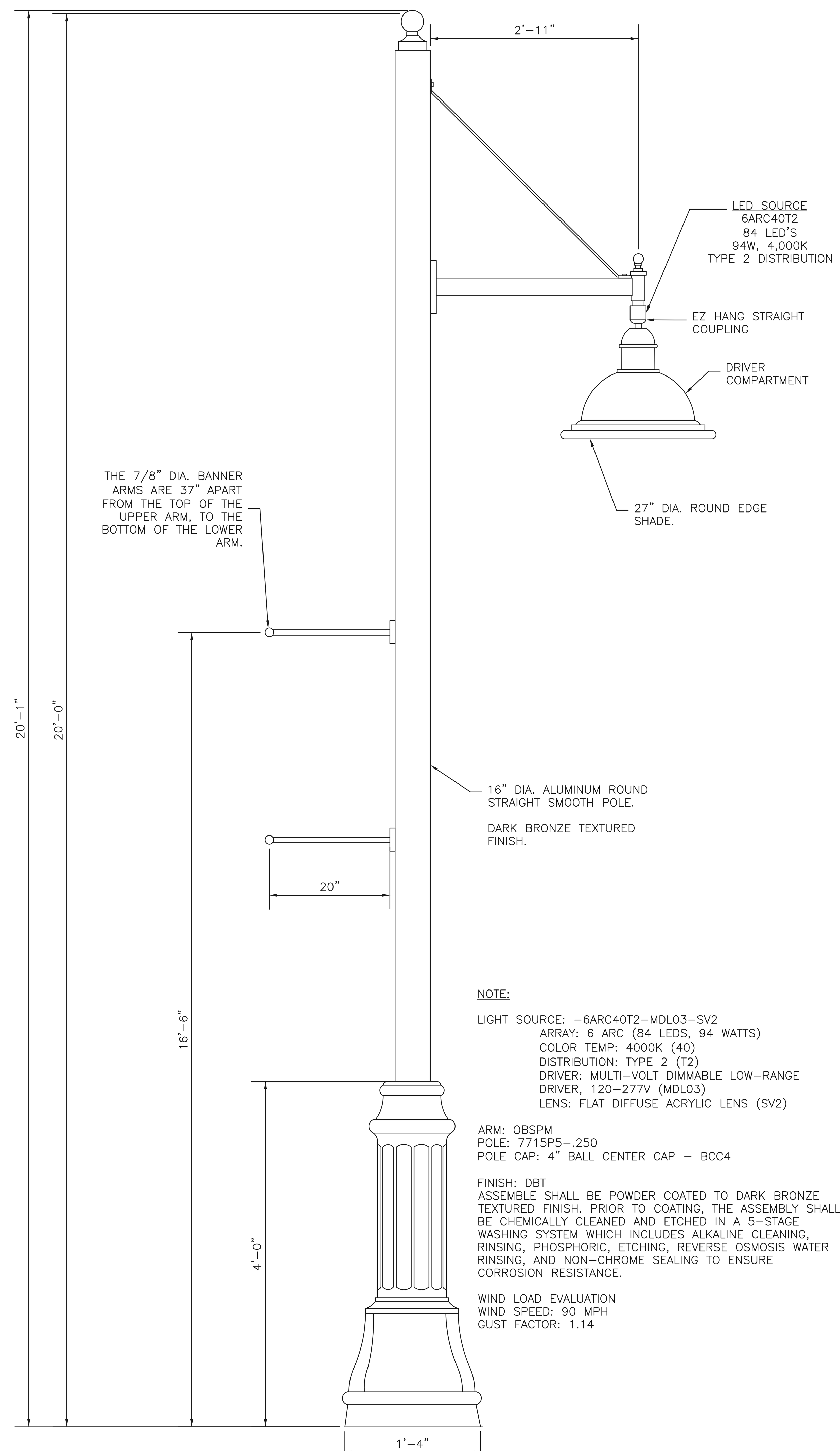
PRODUCT NUMBER:
1A-1527LED-R-10ARC40T2-MDL03-SV2-EZ / OBPM
1AM-1521LED-R-6ARC40T2-MDL03-SV2-EZ / OBMO /9720ARSS /DBA / BCC4 / DBT

FINISH: DARK BRONZE TEXTURED FINISH

WIND LOAD EVALUATION
WIND SPEED: 90 MPH
GUST FACTOR: 1.14

DECORATIVE VEHICULAR AND PEDESTRIAN LED LIGHT WITH BANNER KIT

NTS



NOTE:

LIGHT SOURCE: -6ARC40T2-MDL03-SV2
ARRAY: 6 ARC (84 LEDS, 94 WATTS)
COLOR TEMP: 4000K (40)
DISTRIBUTION: TYPE 2 (T2)
DRIVER: MULTI-VOLT DIMMABLE LOW-RANGE DRIVER, 120-277V (MDL03)
LENS: FLAT DIFFUSE ACRYLIC LENS (SV2)

ARM: OBSPM
POLE: 7715P5-.250
POLE CAP: 4" BALL CENTER CAP - BCC4

FINISH: DBT
ASSEMBLE SHALL BE POWDER COATED TO DARK BRONZE TEXTURED FINISH. PRIOR TO COATING, THE ASSEMBLY SHALL BE CHEMICALLY CLEANED AND ETCHED IN A 5-STAGE WASHING SYSTEM WHICH INCLUDES ALKALINE CLEANING, RINSING, PHOSPHORIC, ETCHING, REVERSE OSMOSIS WATER RINSING, AND NON-CHROME SEALING TO ENSURE CORROSION RESISTANCE.

WIND LOAD EVALUATION
WIND SPEED: 90 MPH
GUST FACTOR: 1.14

DECORATIVE PEDESTRIAN LED LIGHT WITH BANNER KIT

NTS

Underground Service Alert

Call: TOLL FREE
1-800
422-4133

TWO WORKING DAYS BEFORE YOU DIG

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Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE Date
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
STREET LIGHT DETAILS

Drawing No. C 12

Sheet 12 of 19

CONDUCTOR SCHEDULE ▲										
AWG	RUN No.									
	CIRCUIT	1	2	3	4	5	6	7	8	9
12C CABLE	VEHICLE, PED	1	2	3	4	8	8	3	2	1
3C CABLE	PPB	1	2	3	4	8	8	3	2	1
#8	GROUND	1	1	2	2	2	4	2	1	1
#10	LUMINAIRE	2	2	2	2	2	–	2	2	–
DLC	ø1 VEHICLE	–	–	–	–	2	2	2	2	2
	ø2 VEHICLE	–	–	–	2	2	2	–	–	–
	ø3 VEHICLE	–	2	2	2	2	2	–	–	–
	ø4 VEHICLE	–	–	–	–	2	2	2	–	–
	ø5 VEHICLE	–	–	–	1	1	1	–	–	–
	ø6 VEHICLE	–	–	–	–	2	2	2	2	2
	ø7 VEHICLE	–	–	–	–	1	1	1	–	–
	ø8 VEHICLE	–	2	2	2	2	2	–	–	–
	TOTAL	–	4	4	7	14	14	7	4	4
CCTV CABLE		–	–	1	1	1	1	–	–	–
72 STRAND SMFOC		–	–	–	–	–	1	–	–	–
CONDUIT SIZE		3"(E)	3"(E)	3"(E)	3"(E)	2–4"	2–4"	4"	4"	4"
CONDUIT FILL (%)		6	14	21	29	15	16	13	9	5

▲ ALL CONDUCTORS AND CONDUITS ARE NEW UNLESS OTHERWISE NOTED
(E) EXISTING CONDUIT OR CONDUCTOR
(R) NOT USED, DELETE

SEE SHEET 1 FOR TRAFFIC SIGNAL GENERAL NOTES

CONSTRUCTION NOTES:

1 RS EXISTING CONTROLLER CABINET COMPLETE. DISCONNECT ALL CABLES AND PULL BACK TO HOME RUN BOX AND PROTECT IN PLACE. FURNISH AND INSTALL A NEW 352I ATC CABINET. PULL ALL EXISTING CABLES TO NEW CABINET AND CONNECT. CABINET SHALL HAVE TWO INPUT FILES, A 32 CHANNEL OUTPUT FILE, FRONT AND BACK INTERNAL LED LIGHTS AND DOOR SWITCHES, PULL-OUT DOCUMENT DRAWER, AND CITY SPECIFIED LOCKS. CABINET SHALL BE EQUIPMENT WITH:

NEW MODEL 2070 ATC CONTROLLER WITH OMNI EX SOFTWARE
NEW IP CAPABLE CONFLICT MONITOR WITH AUXILIARY DISPLAY UNIT
NEW DETECTOR CARDS, DC ISOLATORS AND LOAD SWITCHES
NEW GTT 764 PHASE SELECTOR WITH ETHERNET CAPABILITY
NEW ETHERNET SWITCH CISCO IE-4000-4S8P4G-E

RL THE FOLLOWING EQUIPMENT FROM EXISTING CABINET TO NEW CABINET:

CCTV EQUIPMENT

ALL EQUIPMENT SHALL BE CURRENT FOR THE STATE OF CALIFORNIA "QUALIFIED PRODUCTS LIST". GDI LOAD SWITCHES WILL NOT BE ACCEPTED. THE TYPE 332 CABINET'S POWER DISTRIBUTION ASSEMBLY SHALL BE "MERCURY FREE".

2 CONTRACTOR SHALL RELOCATE EXISTING DUAL-METERED TYPE III-CF SERVICE EQUIPMENT ENCLOSURE CONTRACTOR TO CONFIRM THAT THE METER MEETS THE CURRENT CIRCUIT BREAKERS REQUIREMENTS OF: 120/240V-100A MAIN. 120V – 50A METERED SIGNALS, 240V – 40A METERED LIGHTING. 120V-15A METERED DUAL TYPE V-P.E.C. THE TYPE III-CF SERVICE ENCLOSURE'S CONTACT SWITCH SHALL BE "MERCURY FREE".

3 CONTRACTOR SHALL CONSTRUCT TYPE 332L CABINET FOUNDATION PER CALTRANS STANDARD PLAN ES-3C. RELOCATE EXISTING COMMUNICATIONS CABINET WITH EQUIPMENT COMPLETE. CONTRACTOR TO DISCONNECT EXISTING FIBER OPTIC CABLE AND PULL BACK TO FIBER SPLICE ENCLOSURE, RE-SPLICE AND RECONNECT TO ESTABLISH PREVIOUSLY EXISTING OPERATION.

4 FURNISH AND INSTALL 3" SERVICE CONDUIT WITH PULL ROPE PER SOUTHERN CALIFORNIA EDISON REQUIREMENTS. CONTRACTOR TO COORDINATE WITH SOUTHERN CALIFORNIA EDISON.

5 REMOVE AND SALVAGE EXISTING TRAFFIC SIGNAL POLE (AS INDICATED) CONTRACTOR TO RELOCATE ALL ATTACHED EQUIPMENT AND LUMINAIRE MAST ARM (AS APPLICABLE) TO NEW POLE AT NEW LOCATION AS SHOWN ON THE PLAN, INSTALLATION OF NEW POLE AND MAST ARM AS NOTED IN POLE SCHEDULED. COMPLETELY REMOVE AND DISPOSE OF EXISTING FOUNDATION TO FULL DEPTH (UNLESS OTHERWISE NOTED).

6 RETROFIT EXISTING LUMINAIRES WITH CITY APPROVED LED LUMINAIRES AND PER THE POLE SCHEDULE.

7 FURNISH AND INSTALL 6' VEHICLE DETECTOR PER CALTRANS STANDARD PLAN ES-5B AND LOOPS LAYOUT DETAIL. LIMIT LINE LOOPS SHALL BE TYPE F.

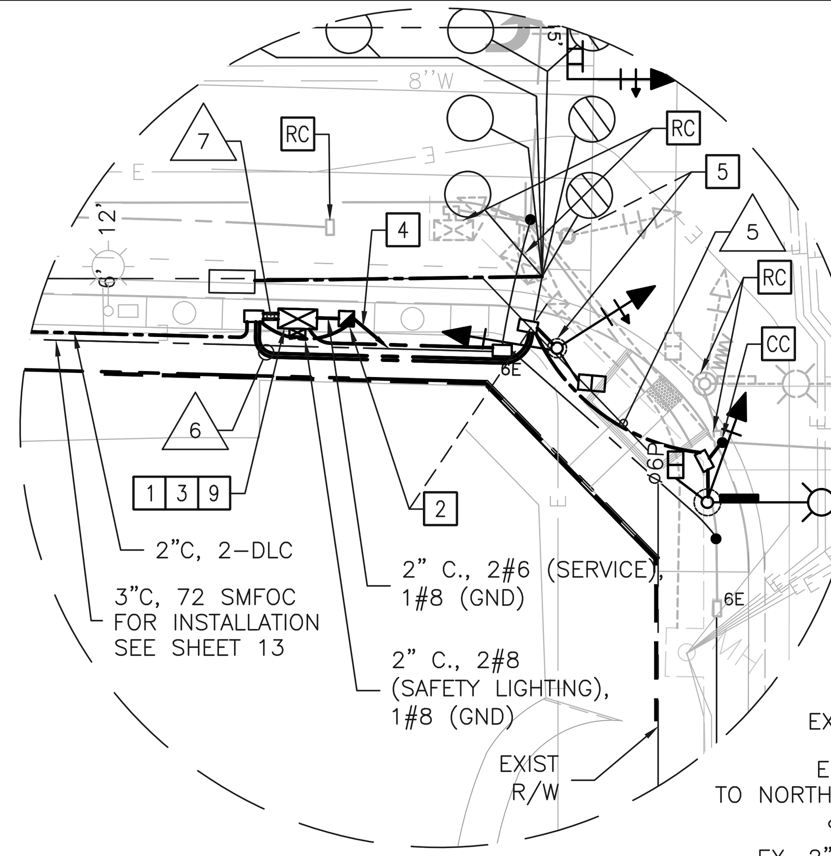
8 RS EXSITNG RSNS. FURNISH AND INSTALL NEW REFLECTORIZED STREET NAME SIGN (RSNS) PER CITY STANDARDS.

9 FURNISH AND INSTALL BATTERY BACK-UP SYSTEM IN AN EXTERNALLY SIDE MOUNTED BBS CABINET WITH GENERATOR PLUG ASSEMBLY AND MANUAL BYPASS SWITCH PER CITY OF TEMECULA SPECIFICATIONS. ALL BATTERY BACK-UP EQUIPMENT SHALL BE MOUNTED IN THE BATTERY BACK-UP CABINET AND SHALL BE WIRED PER MANUFACTURER'S SPECIFICATIONS.

10 FURNISH AND INSTALL 3'X6' MODIFIED TYPE Q BICYCLE DETECTION LOOP PER CALTRANS STANDARD PLAN ES-5B. LOOP SHALL BE PLACED 40' FROM LIMIT LINE.

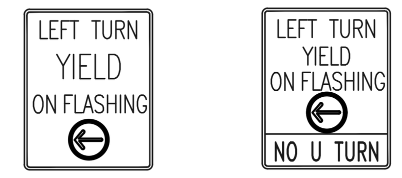
11 FURNISH AND INSTALL SIGN (AS NOTED) ON SIGNAL MAST ARM PER CALTRANS STD. PLAN ES-7N, R10-12 (MOD).

12 FURNISH AND INSTALL HEAD ON SIGNAL MAST ARM PER PLAN AND DETAIL "C" HEREON.



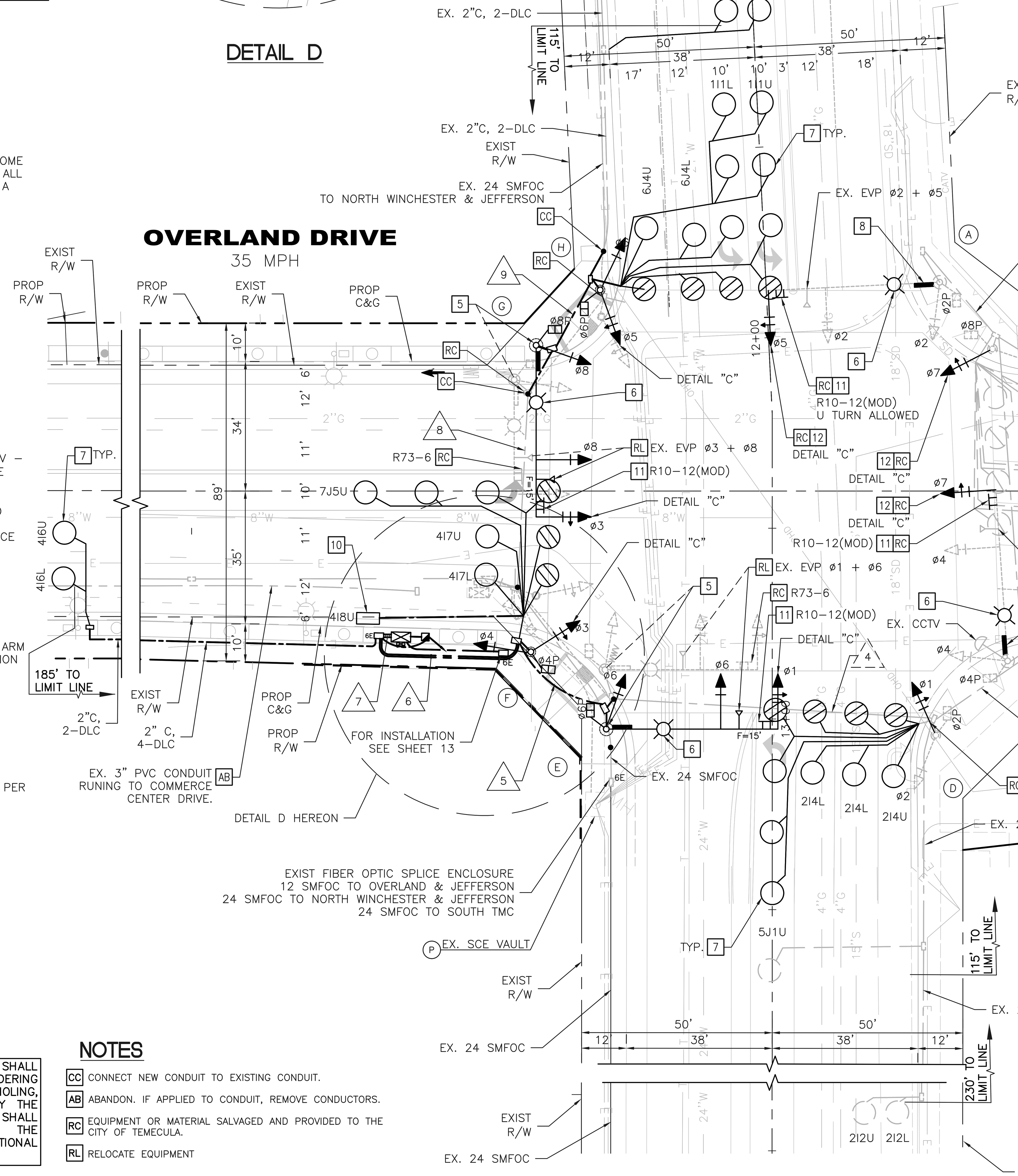
DETAIL D

SIGN LEGEND



R10-12 (MOD)
U TURN ALLOWED

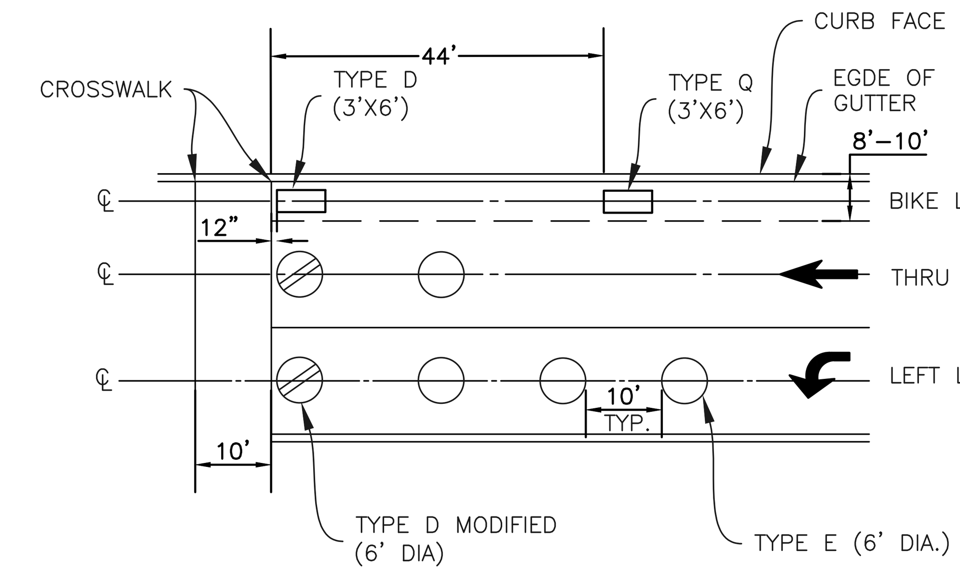
R10-12 (MOD)



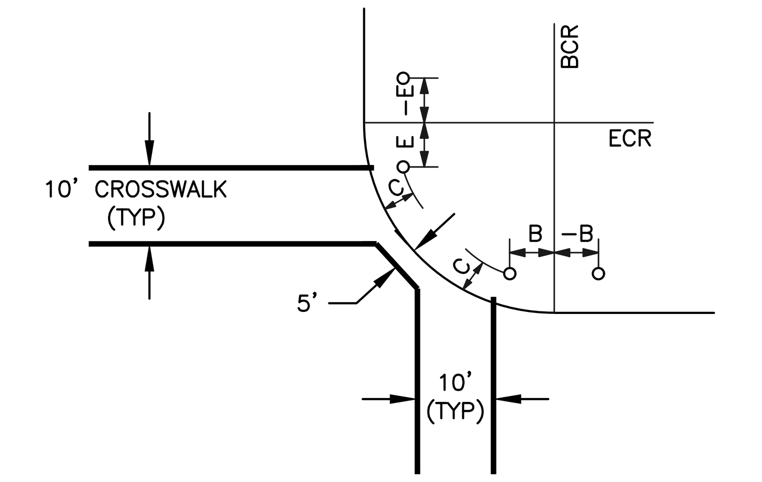
POLE SCHEDULE															
No.	STANDARD				LUMINAIRE LED*	VEHICLE SIGNAL MOUNTING		PED SIGNAL MOUNTING	Δ PPB		R.S.N.S	POLE LOCATION (SEE DETAIL "A")			REMARKS
	TYPE	HEIGHT	SIG. M.A	LUM. M.A		MAST ARM	POLE		φ	QUAD		E	B	C	
Ⓐ	26-4-80	30'	45'	15'	84W(N)	2-MAS	SV-1-T	SP-1-T	8	E	Overland Dr (N)	EXISTING			–
Ⓑ	1-A	10'	–	–	–	–	TV-2-T	SP-1-T	2	E	–	EXISTING			–
Ⓒ	26-4-80	30'	45'	15'	84W(N)	2-MAS	SV-1-T	SP-1-T	2	S	Jefferson Avenue (N)	EXISTING			
Ⓓ	1-A	10'	–	–	–	–	TV-2-T	SP-1-T	4	S	–	EXISTING			–
Ⓔ	26-4-100(N)	30'	45'(N)	15'	84W(N)	2-MAS(N)	SV-1-T(N)	SP-1-T(N)	4	W(R)	Overland Dr (N)	9'	–	4'	–
Ⓕ	1-A(R)	10'	–	–	–	–	TV-2-T(R)	SP-1-T(R)	6	N(R)	–	–	9'	4'	–
Ⓖ	26-4-100(N)	30'	45(N)	15'	84W(N)	2-MAS(R)	SV-1-T(R)	SP-1-T(R)	6	N(R)	Jefferson Avenue (N)	3'		4'	–
Ⓗ	1-A(R)	10'	–	–	–	–	TV-2-T(R)	SP-1-T(R)	4	E(R)	–	–	7'	4'	–

ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED
(N) NEW
(R) RELOCATED
* LED LIGHTING GE MODEL #ERL1-0-09-C3-40-A-GRAY-L OR APPROVED EQUAL
Δ EX. APS PUSHBUTTON ASSEMBLY

NOTE: CONSTRUCT POLE STANDARDS TO CALTRANS 2018 STANDARDS. ALL TRAFFIC SIGNAL POLE LOCATIONS MUST BR POTHOLE AND CHECKED FOR CONFLICT BEFORE PLAN APPROVAL AND PRIOR TO ORDERING POLES. CONTRACTOR SHALL SUBMIT MATERIALS CUT SHEETS PRIOR TO ORDERING OF MATERIALS.

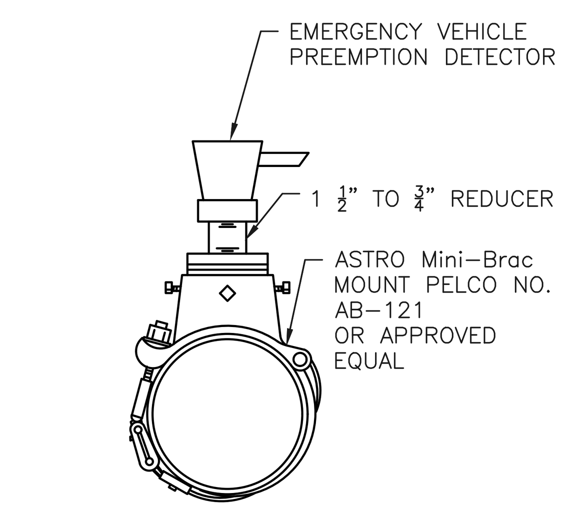


LIMIT LINE AND LOOP INSTALLATION DETAIL
NTS



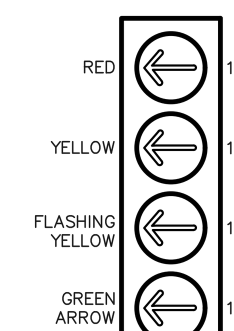
NOTES
1. CONTRACTOR MUST PROVIDE A MIN. OF 4' CLEAR SIDEWALK FOR PEDESTRIANS.

DETAIL "A"



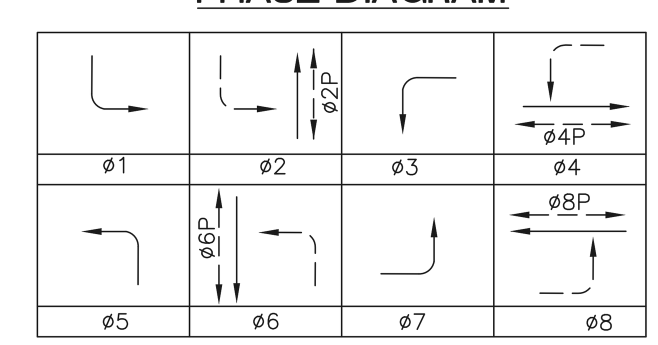
EMERGENCY VEHICLE OPTICAL SENSOR INSTALLATION

DETAIL "B"
NTS

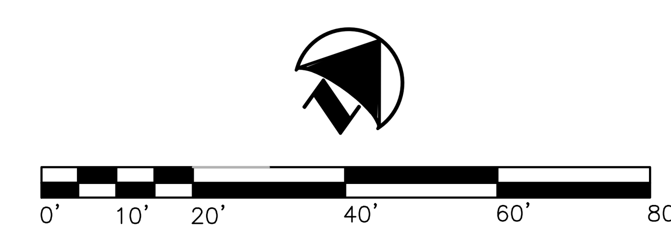


DETAIL "C"
NTS

PHASE DIAGRAM



PROTECTED PHASE
PERMISSIVE PHASE
PEDESTRIAN PHASE



GRAPHIC SCALE IN FEET
1" = 20'

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TWO WORKING DAYS BEFORE YOU DIG

AS FIRST ORDER OF WORK, THE CONTRACTOR SHALL POTHOLE POLE LOCATIONS PRIOR TO ORDERING POLES. IF CONFLICTS ARE FOUND DURING POTHOLING, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD. FAILURE TO COMPLY SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR FOR ANY LOSS OF TIME, ADDITIONAL COST, AND DAMAGE.

NOTES

CC CONNECT NEW CONDUIT TO EXISTING CONDUIT.
AB ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
RC EQUIPMENT OR MATERIAL SALVAGED AND PROVIDED TO THE CITY OF TEMECULA.
RL RELOCATE EQUIPMENT

ERSC INC.COM
Engineering Resources of Southern California
1861 West Redlands Blvd.
Redlands, CA 92373
P: 909.890.1255
F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK
RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE Date
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ____ DATE: ____
NINO ABAD, SENIOR CIVIL ENGINEER
ACCEPTED BY: ____ DATE: ____
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. No. 44223 Expires: 06-30-2023

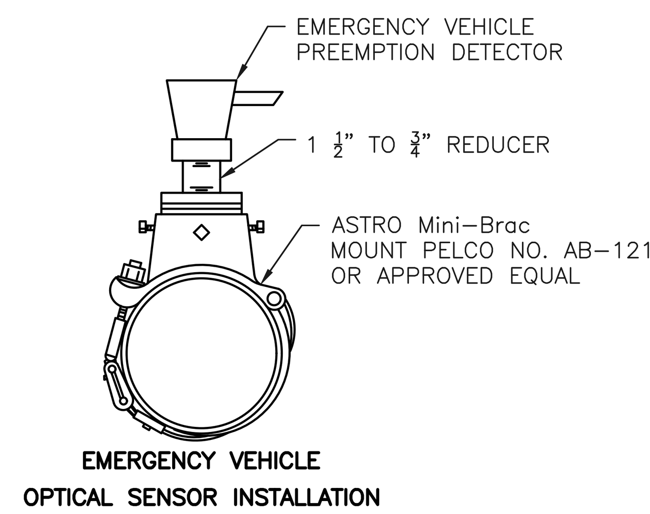
CITY OF TEMECULA
DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
JEFFERSON AVENUE AND OVERLAND DRIVE TRAFFIC SIGNAL PLAN

Drawing No.
C 13

CONDUCTOR SCHEDULE ▲										
AWG	RUN No.									
	CIRCUIT	1	2	3	4	5	6	7	8	9
12C CABLE	VEHICLE, PED	1	2	3	8	8	1	2	3	4
3C CABLE	PPB	1	2	3	8	8	1	2	3	4
#8	GROUND	1	1	1	2	2	2	1	1	1
#10	LUMINAIRE	2	2	2	2	–	–	2	2	2
DLC	ø1 VEHICLE	–	1	1	1	1	–	–	–	–
	ø2 VEHICLE	–	–	–	3	3	–	–	2	2
	ø3 VEHICLE	–	–	–	1	1	–	–	–	–
	ø4 VEHICLE	–	–	–	1	1	1	1	1	1
	ø5 VEHICLE	–	–	–	1	1	–	–	1	1
	ø6 VEHICLE	–	2	2	2	2	–	–	–	–
	ø7 VEHICLE	–	–	–	1	1	1	1	1	1
	ø8 VEHICLE	–	–	–	1	1	–	–	–	–
	TOTAL	–	3	3	11	11	2	2	5	5
CCTV CABLE		–	–	–	1	1	1	1	1	1
72 STRAND SMFOC		–	–	–	–	1	–	–	–	–
CONDUIT SIZE		4"	4"	4"	2–4"	2–4"	3" (E)	3" (E)	4" (E)	4" (E)
CONDUIT FILL (%)		6	8	10	15	15	9	14	12	15

▲ ALL CONDUCTORS AND CONDUITS ARE NEW UNLESS OTHERWISE NOTED
(E) EXISTING

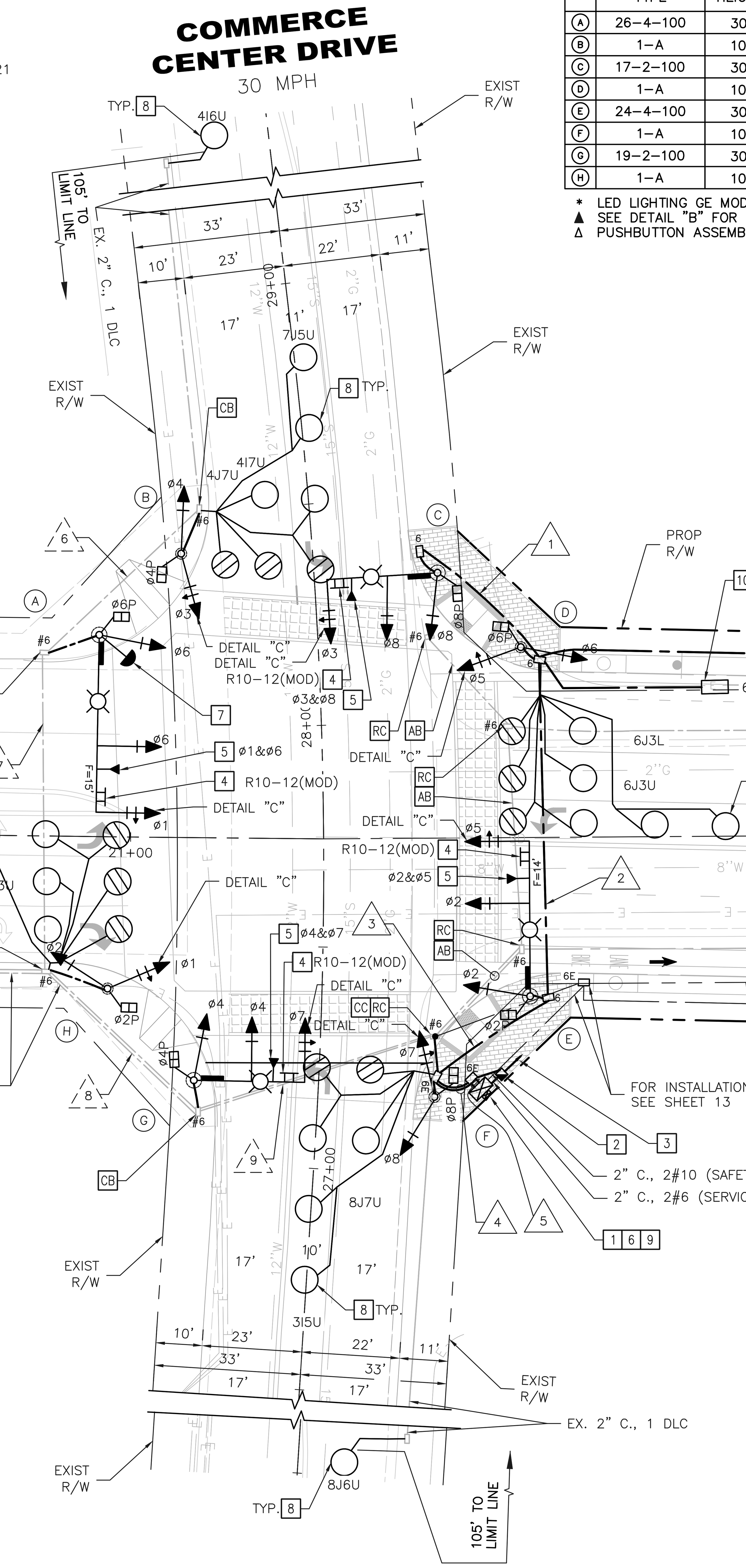


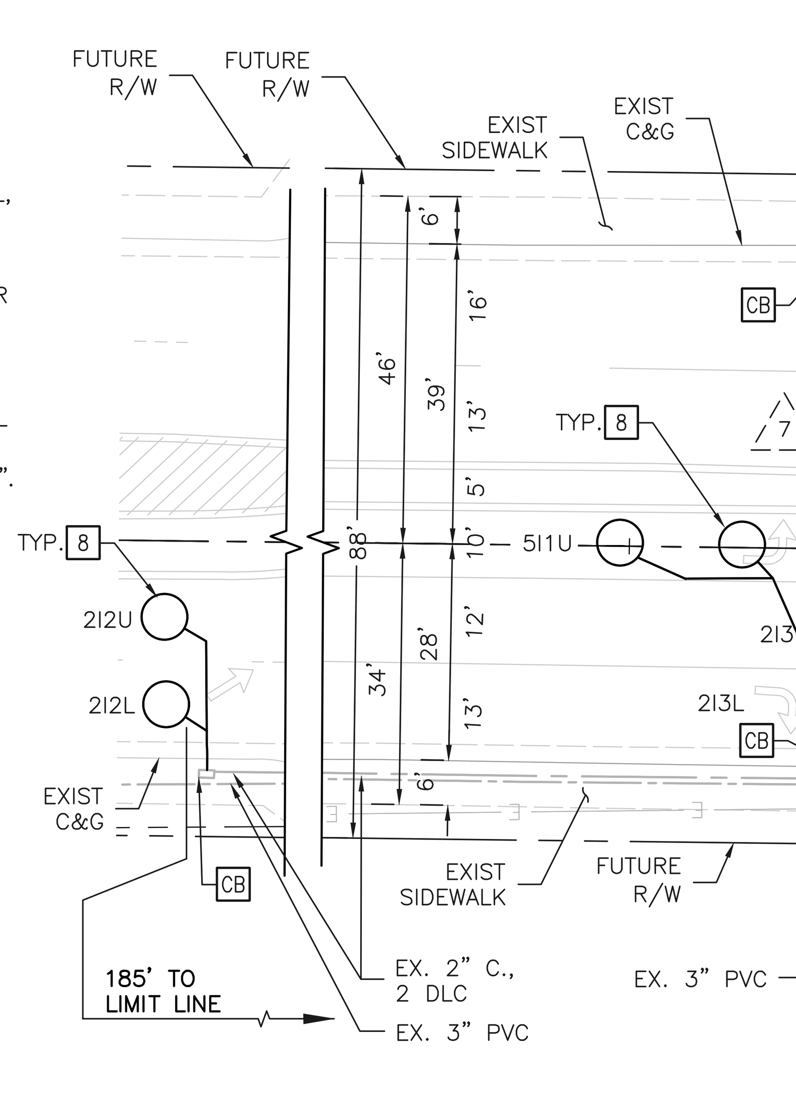
DETAIL "B"
NTS

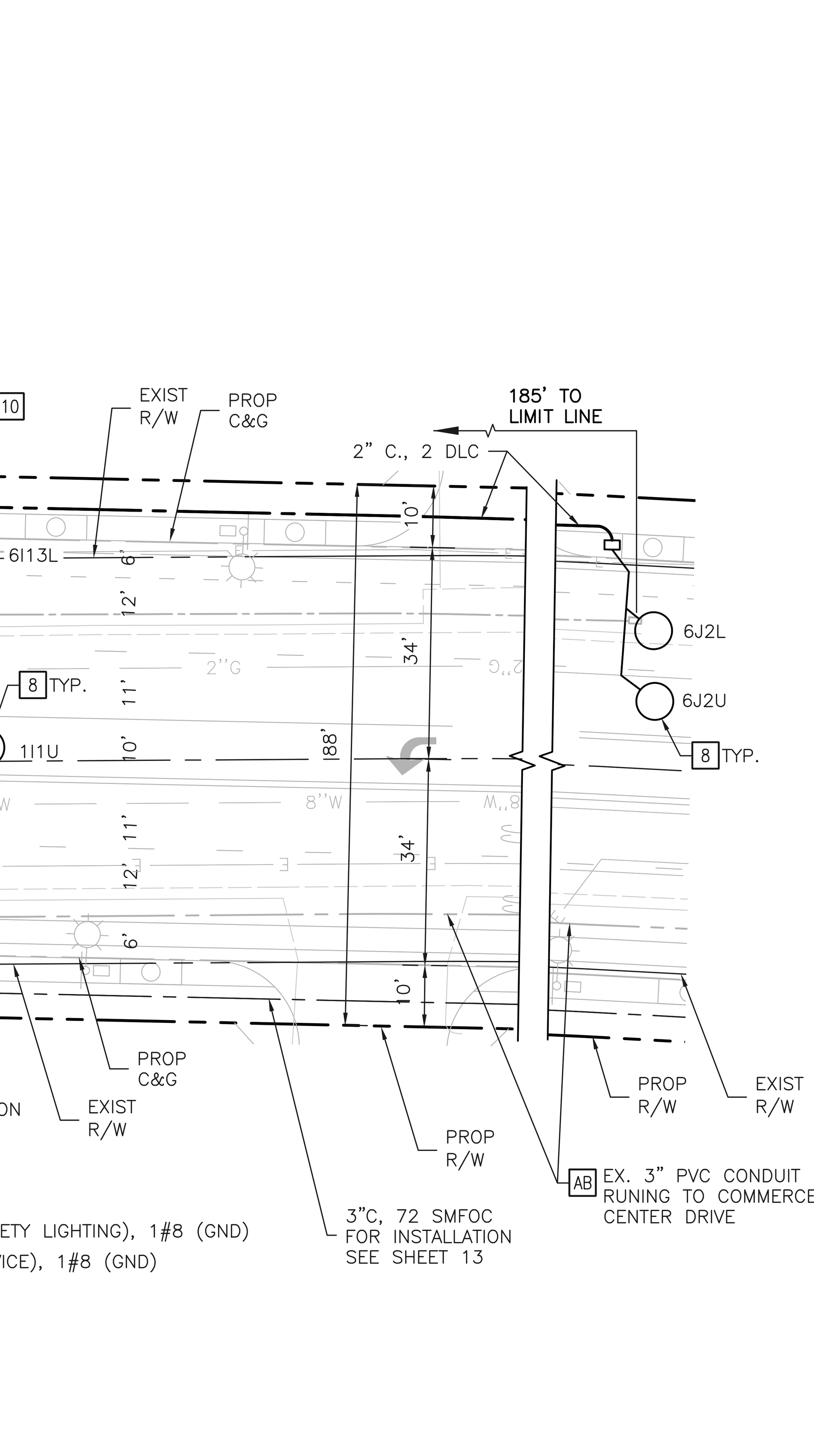
POLE SCHEDULE															
No.	STANDARD				LUMINAIRE LED*	VEHICLE SIGNAL MOUNTING		PED SIGNAL MOUNTING	Δ PPB		R.S.N.S (PER CITY STANDARDS)	POLE LOCATION (SEE DETAIL "A")			REMARKS
	TYPE	HEIGHT	SIG. M.A	LUM. M.A		MAST ARM	POLE		ϕ	QUAD		E	B	C	
A	26–4–100	30'	40'	15'	84W	2–MAS	SV–1–T	SP–1–T	4	E	Commerce Center Dr	12'	–	4'	–
B	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	6	S	–	–	15'	4'	–
C	17–2–100	30'	20'	15'	84W	2–MAS	SV–1–T	SP–1–T	6	S	Overland Dr	10'	–	4'	
D	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	8	W	–	–	9'	4'	–
E	24–4–100	30'	35'	15'	84W	2–MAS	SV–1–T	SP–1–T	8	W	Commerce Center Dr	9'	–	4'	–
F	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	2	N	–	–	6'	4'	–
G	19–2–100	30'	25	15'	84W	2–MAS	SV–1–T	SP–1–T	2	N	Overland Dr	10'	–	4'	–
H	1–A	10'	–	–	–	–	TV–2–T	SP–1–T	4	E	–	–	7'	4'	–

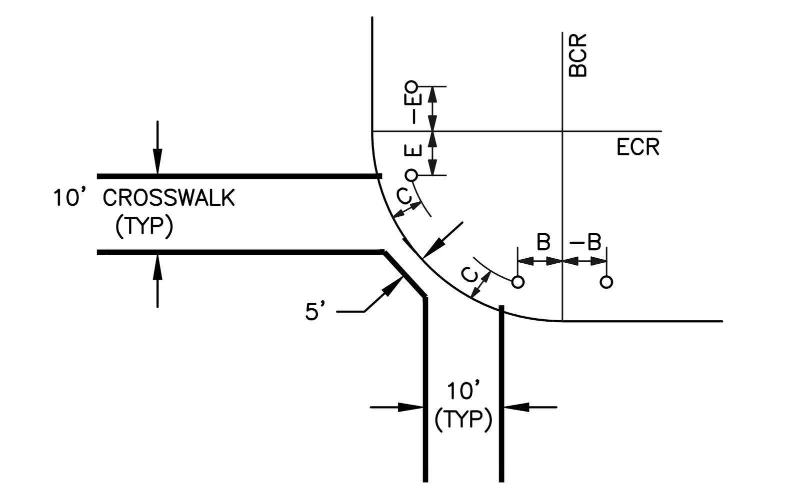
* LED LIGHTING GE MODEL #ERL1–0–09–C3–40–A–GRAY–L OR APPROVED EQUAL
▲ SEE DETAIL "B" FOR MAST ARM SIGN
Δ PUSHBUTTON ASSEMBLY SHALL BE APS AND ADA COMPLIANT

NOTE: CONSTRUCT POLE STANDARDS TO CALTRANS 2018 STANDARDS. ALL TRAFFIC SIGNAL POLE LOCATIONS MUST BR POTHOLE AND CHECKED FOR CONFLICT BEFORE PLAN APPROVAL AND PRIOR TO ORDERING POLES. CONTRACTOR SHALL SUBMIT MATERIALS CUT SHEETS PRIOR TO ORDERING OF MATERIALS.









NOTES

1. CONTRACTOR MUST PROVIDE A MIN. OF 4' CLEAR SIDEWALK FOR PEDESTRIANS.

DETAIL "A"

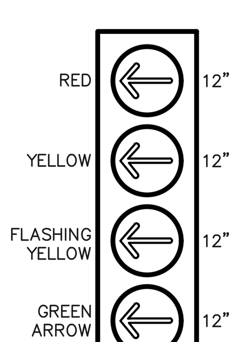
SEE SHEET 1 FOR TRAFFIC SIGNAL GENERAL NOTES

CONSTRUCTION NOTES:

1. FURNISH AND INSTALL NEW MCCAIN MODEL 352I ATC CABINET AND FOUNDATION COMPLETE PER CALTRANS STANDARD PLANS ES–3C AND 332L CABINET FOUNDATION. CABINET SHALL BE EQUIPPED WITH MCCAIN FLEX CONTROLLER ASSEMBLY RUNNING OMNI EX FIRMWARE, MODEL 2010 ECLIP CONFLICT MONITOR BY EDI, EVPE DISCRIMINATION MODULES, AND APS CONTROL MODULE. CABINET SHALL HAVE 48 INPUT ASSEMBLY CHANNEL, 16 OUTPUT ASSEMBLY CHANNEL, INTERNAL LED LIGHTS, PULL–OUT DOCUMENT DRAWER, RACK MOUNTED SURGE PROTECTOR, AND BE WIRED FOR RED MONITOR CAPABILITY. CONTRACTOR SHALL PURCHASE TRANSPARITY CONTROLLER SOFTWARE LICENSE. THE CONTROLLER SHALL INCLUDE FUNCTIONS INDICATED ON THE PLANS AND INCLUDE ALL NECESSARY CABLING AND AUXILIARY EQUIPMENT NECESSARY FOR THE INTENDED OPERATION. THE CABINET'S POLICE PANEL SHALL BE EQUIPPED WITH A CONNECTION FOR A TRAFFIC SIGNAL CONTROLLER MANUAL OVERRIDE SWITCH.
2. FURNISH AND INSTALL A DUAL–METERED TYPE III–CF SERVICE EQUIPMENT ENCLOSURE (COMMERCIAL RATED) WITH THE FOLLOWING CIRCUIT BREAKERS: 120/240V–100A MAIN. 120V – 50A METERED SIGNALS, 240V – 40A METERED LIGHTING. 120V–15A METERED DUAL TYPE V–P.E.C. THE TYPE III–CF SERVICE ENCLOSURE'S CONTACT SWITCH SHALL BE "MERCURY FREE".
3. FURNISH AND INSTALL 3" SERVICE CONDUIT WITH PULL ROPE PER SOUTHERN CALIFORNIA EDISON REQUIREMENTS. CONTRACTOR TO COORDINATE WITH SOUTHERN CALIFORNIA EDISON.
4. FURNISH AND INSTALL SIGN (AS NOTED) ON SIGNAL MAST ARM PER CALTRANS STD. PLAN ES–7N, R10–12 (MOD).
5. FURNISH AND INSTALL TOMAR EMERGENCY VEHICLE PRE–EMPTION EQUIPMENT AND REQUIRED 4–CHANNEL DISCRIMINATION EQUIPMENT IN THE CONTROLLER CABINET PER CITY OF TEMECULA SPECIFICATIONS. MOUNT EVP OPTICAL DETECTORS ON MAST ARM AS SHOWN IN DETAIL "B"
6. FURNISH AND INSTALL BATTERY BACK–UP SYSTEM IN AN EXTERNALLY SIDE MOUNTED BBS CABINET WITH GENERATOR PLUG ASSEMBLY AND MANUAL BYPASS SWITCH PER CITY OF TEMECULA SPECIFICATIONS. ALL BATTERY BACK–UP EQUIPMENT SHALL BE MOUNTED IN THE BATTERY BACK–UP CABINET AND SHALL BE WIRED PER MANUFACTURER'S SPECIFICATIONS.
7. FURNISH AND INSTALL AXIS CCTV CAMERA ON TRAFFIC SIGNAL POLE WITH WALL–AND–POLE MOUNT PER MANUFACTURERS SPECIFICATIONS AND CONNECT TO MIDSPAN CONVERTER. PROVIDE ALL PATCH CABLES AND CONNECTORS NECESSARY FOR COMMUNICATION.
8. FURNISH AND INSTALL 6' VEHICLE DETECTOR PER CALTRANS STANDARD PLAN ES–5B AND LOOPS LAYOUT DETAIL. LIMIT LINE LOOPS SHALL BE TYPE D.
9. FURNISH AND INSTALL FIBER ETHERNET SWITCH ON DIN–RAIL MOUNT WITH 2 SMALL FORM FACTOR PLUGGABLE TRANSCEIVERS AND POWER SUPPLY IN CONTROLLER CABINET. FURNISH AND INSTALL FIBER OPTIC JUMPER (2M DUPLEX LC TO SC) IN CONTROLLER CABINET. FURNISH AND INSTALL FIBER DISTRIBUTION UNIT (FDU) WITH SC 6 PORT PANEL IN CONTROLLER CABINET.
10. FURNISH AND INSTALL 3'X6' MODIFIED TYPE Q BICYCLE DETECTION LOOP PER CALTRANS STANDARD PLAN ES–5B. LOOP SHALL BE PLACED 40' FROM LIMIT LINE.

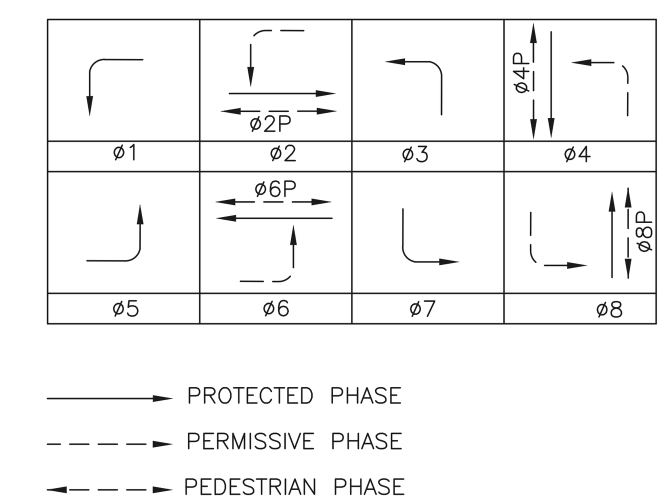
NOTES

- AB ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
- RC EQUIPMENT OR MATERIAL SALVAGED AND PROVIDED TO THE CITY OF TEMECULA.
- CB INSTALL CONDUIT INTO EXISTING PULL BOX.
- CC CONNECT NEW CONDUIT TO EXISTING CONDUIT.

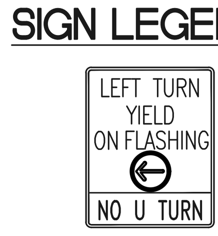


DETAIL "C"
NTS

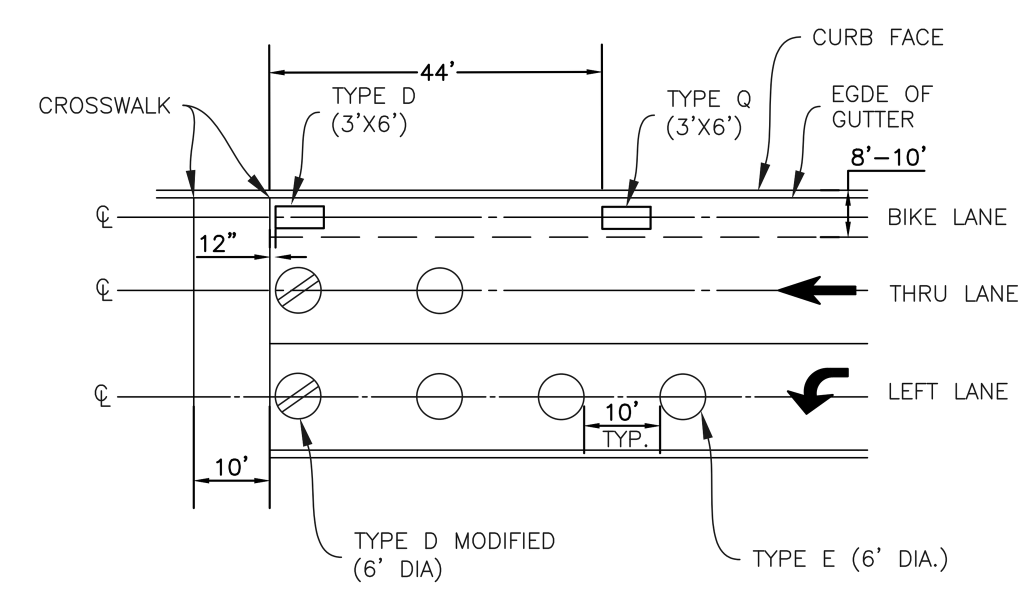
PHASE DIAGRAM



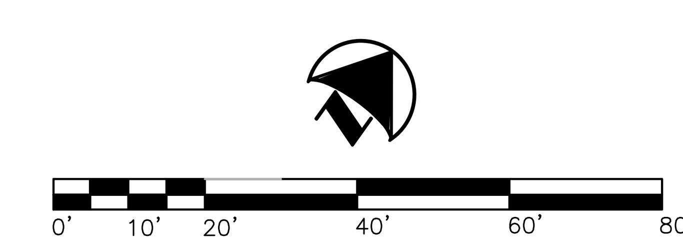
SIGN LEGEND



R10–12 (MOD)



LIMIT LINE AND LOOP INSTALLATION DETAIL
NTS



GRAPHIC SCALE IN FEET
1" = 20'

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AS FIRST ORDER OF WORK, THE CONTRACTOR SHALL POTHOLE POLE LOCATIONS PRIOR TO ORDERING POLES. IF CONFLICTS ARE FOUND DURING POTHOLING, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF RECORD. FAILURE TO COMPLY SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR FOR ANY LOSS OF TIME, ADDITIONAL COST, AND DAMAGE.

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Redlands, CA 92373
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F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE	SEAL
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal	REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA
Inspector							Vertical	
Date Completed								

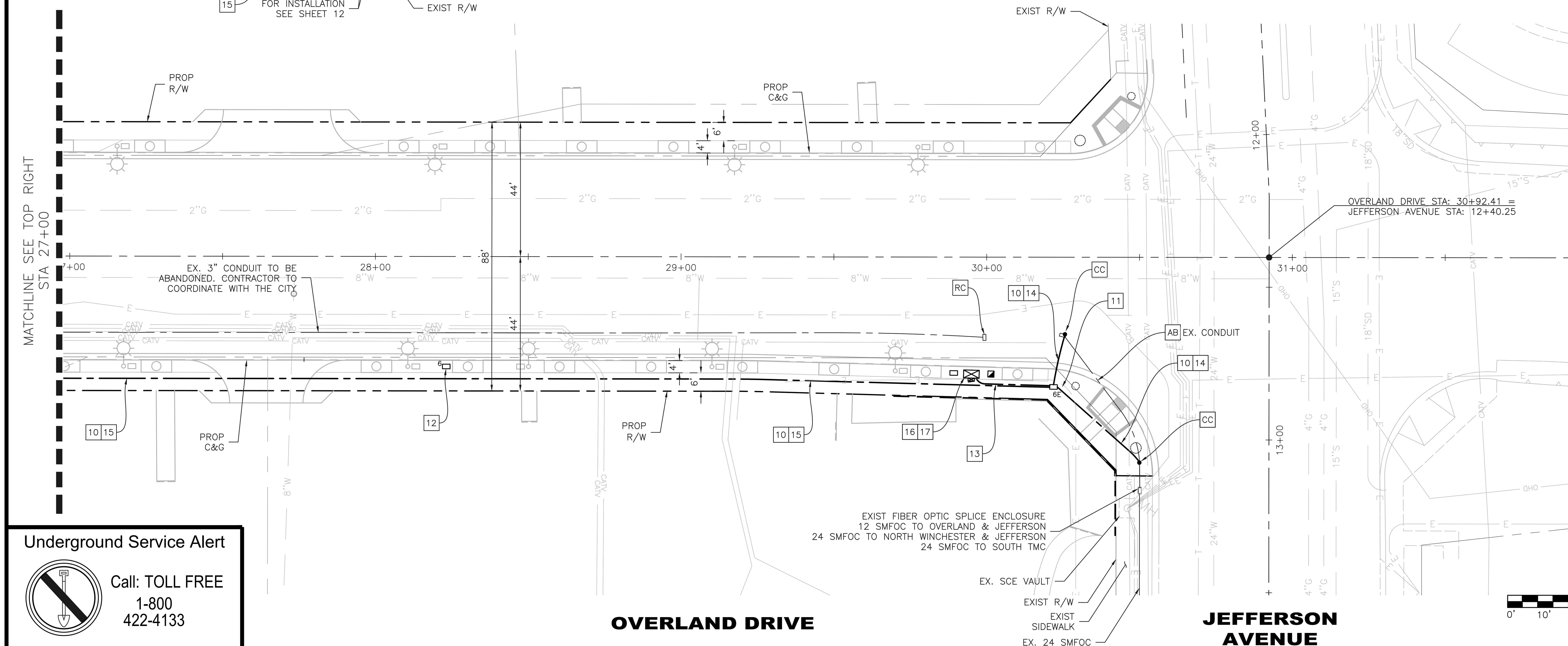
Designed By | Drawn By | Checked By
Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 Expires 03–31–24

RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER DATE:
R.C.E. No. 44223 Expires: 06–30–2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
COMMERCE CENTER DRIVE AND OVERLAND DRIVE TRAFFIC SIGNAL PLAN

Drawing No. C 14



CONSTRUCTION NOTES:

- 10 INSTALL 3" SCH. 80 PVC CONDUIT WITH TRACER WIRE AND MULE TAPE. CONDUIT SWEEPS SHALL BE 45°
- 11 FURNISH AND INSTALL FIBER OPTIC SPLICE ENCLOSURE IN "DOUBLE-STACKED" #6 CONCRETE PULL BOX WITH FIBERLYTE PULL BOX COVER. A MINIMUM OF 100 FOOT OF SLACK IS REQUIRED.
- 12 FURNISH AND INSTALL "DOUBLE-STACKED" #6 CONCRETE PULL BOX WITH FIBERLYTE PULL BOX COVER. A MINIMUM OF 50 FOOT OF SLACK SHALL BE PROVIDED.
- 13 FURNISH AND INSTALL A 12-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK IN CONTROLLER CABINET.
- 14 FURNISH AND INSTALL A 24-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK.
- 15 FURNISH AND INSTALL A 72-STRAND SINGLE MODE FIBER OPTIC (SMFO) BREAKOUT CABLE WITH 30' OF SLACK. BURRY 18" MIN.
- 16 FURNISH AND INSTALL FIBER OPTIC JUMPER (2M DUPLEX LC TO SC) IN CONTROLLER CABINET.
- 17 FIBER DISTRIBUTION UNIT (FDU) WITH SC 6 PORT PANEL IN CONTROLLER CABINET FROM EXISTING CABINET TO NEW CABINET.
- RC EQUIPMENT OR MATERIAL TO BE SALVAGED AND PROVIDED TO THE CITY OF TEMECULA.
- CC CONNECT NEW CONDUIT TO EXISTING CONDUIT.

SYMBOL LEGEND:

- PROPOSED PULL BOX NO. 6 OR 6E PER PLAN.
- PROPOSED CONDUIT (CONSTRUCTION NOTES INDICATE SIZE).

0' 10' 20' 40' 60' 80'
GRAPHIC SCALE IN FEET
1" = 20'

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK: RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE: Horizontal / Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By | Drawn By | Checked By

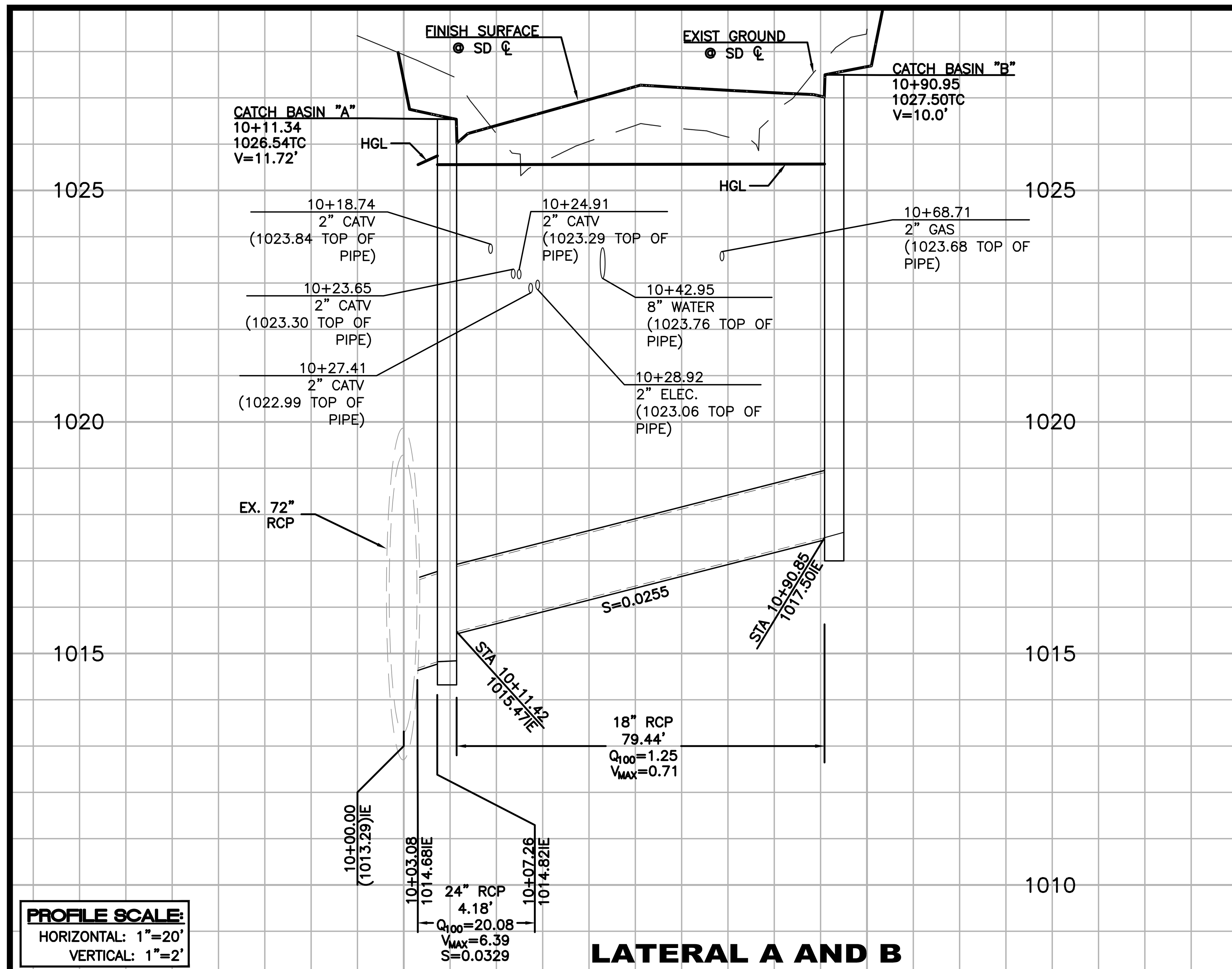
Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE   Date
R.C.E. No. 41836   Expires 03-31-24

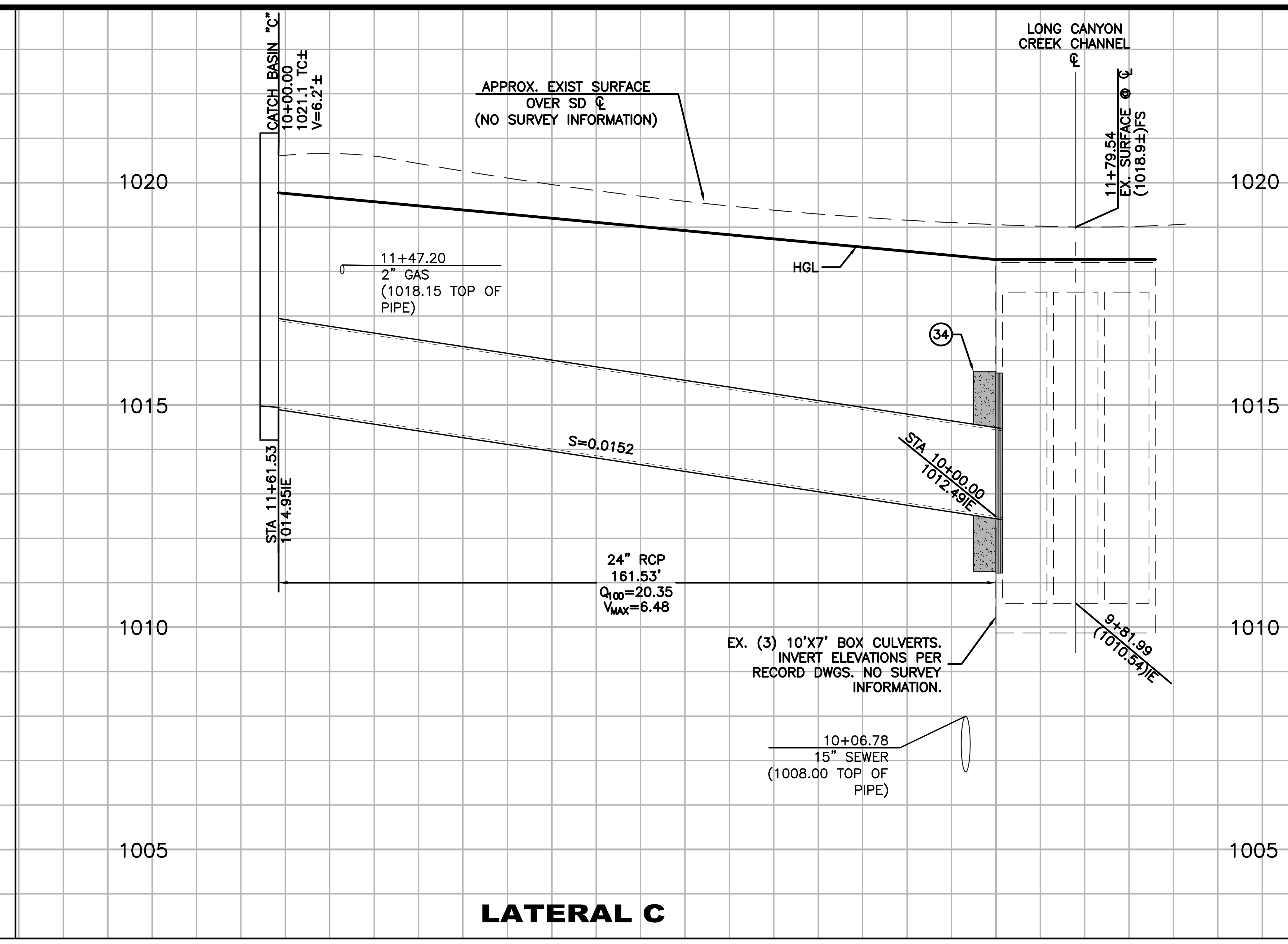
RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER   DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER   DATE:
R.C.E. No. 44223   Expires: 06-30-2023

CITY OF TEMECULA   DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
FIBER OPTIC COMMUNICATION PLAN

Drawing No. C 15
Sheet 15 of 19





CONSTRUCTION NOTES:

(298) TRENCH REPAIR PER CITY OF TEMECULA STD. DWG. NO. 407

(30) CONSTRUCT 18" RCP (2000–D)

(31) CONSTRUCT 24" RCP (2000–D)

(32) CONSTRUCT CATCH BASIN No. 1 PER RCFC&WCD STD No. CB100

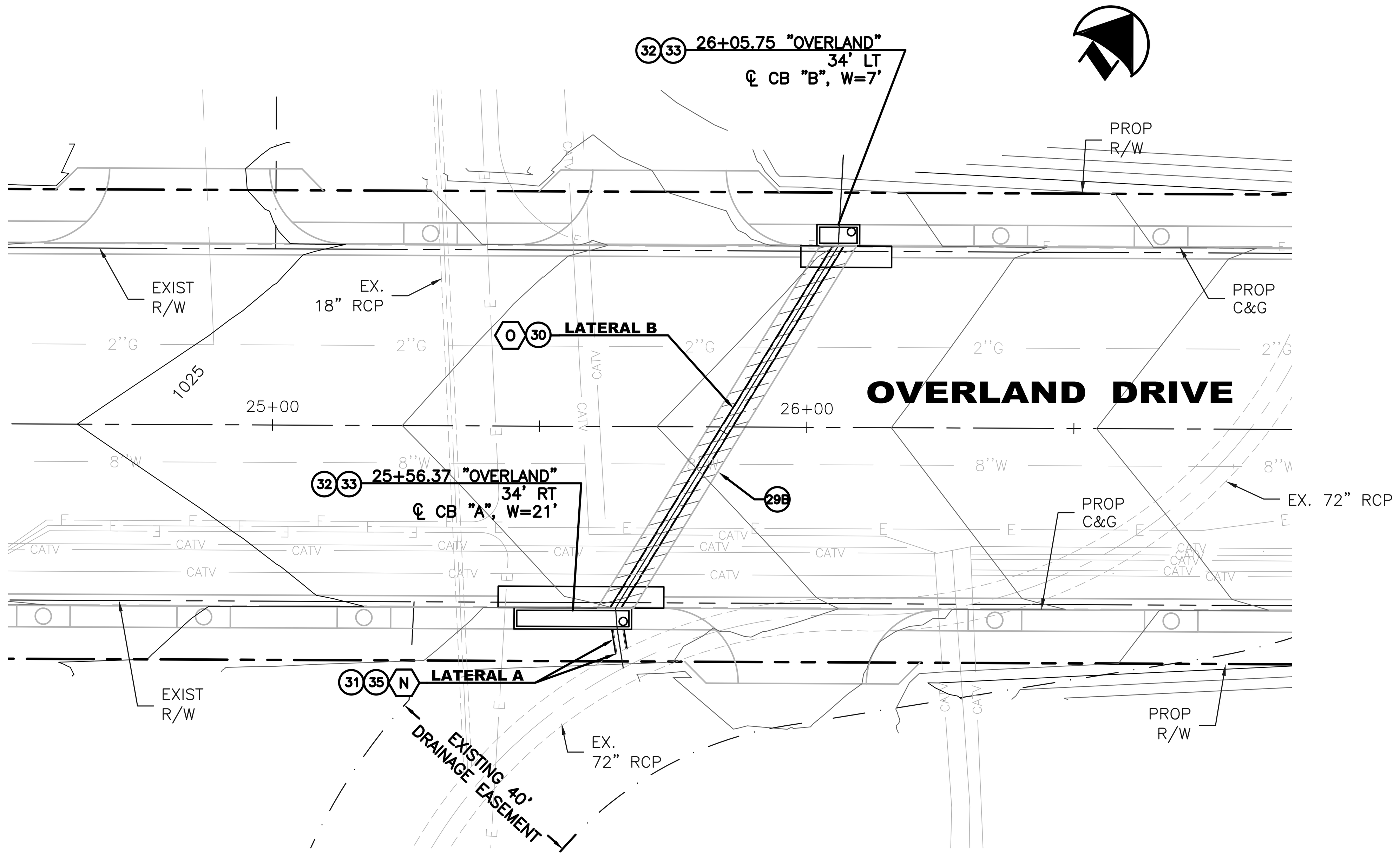
(33) CONSTRUCT LOCAL DEPRESSION No 2. PER RCFC&WCD STD DWG NO. LD201, CASE B

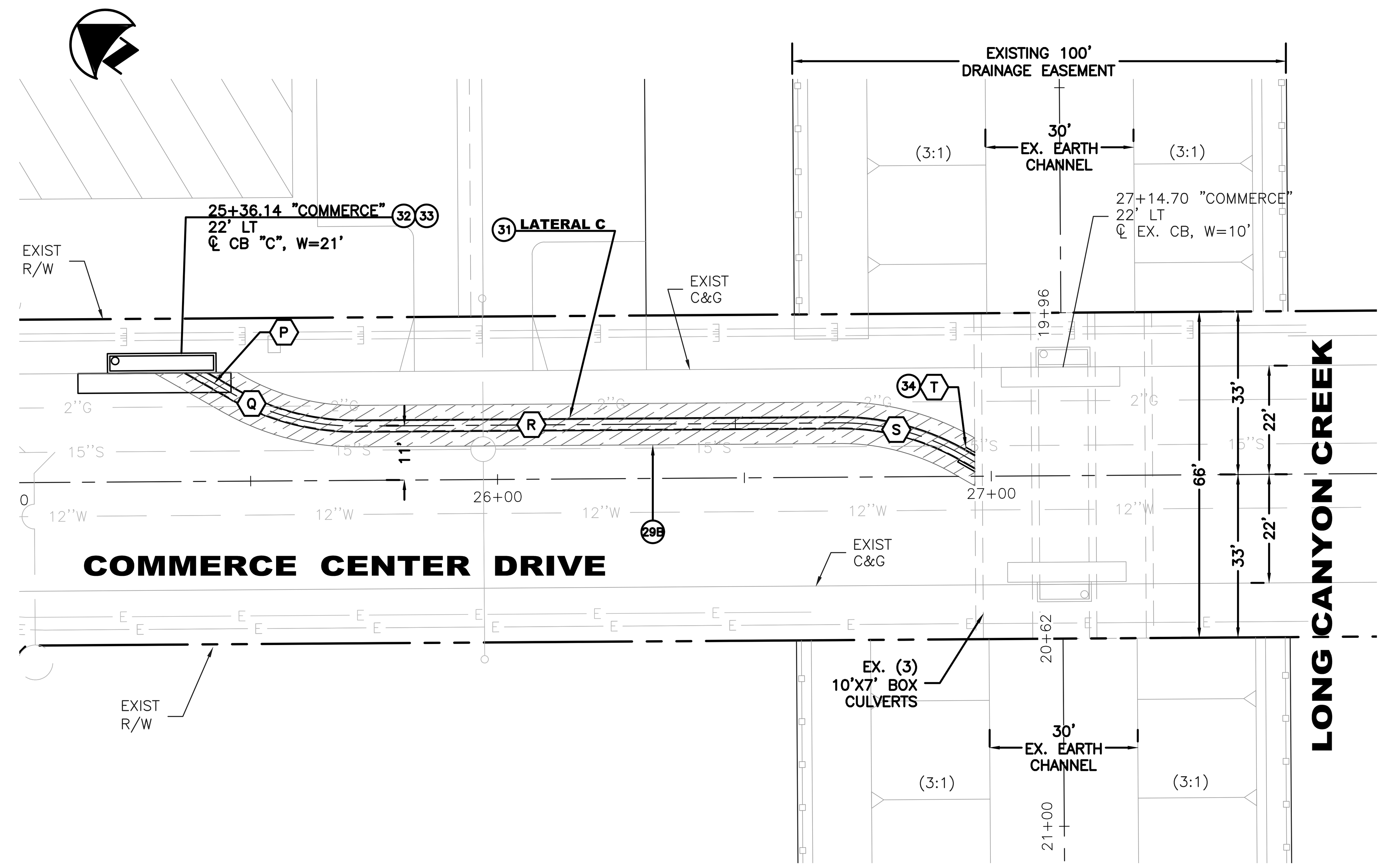
(34) CONSTRUCT JUNCTION STRUCTURE No. 3 PER RCFC&WCD STD. No. JS228

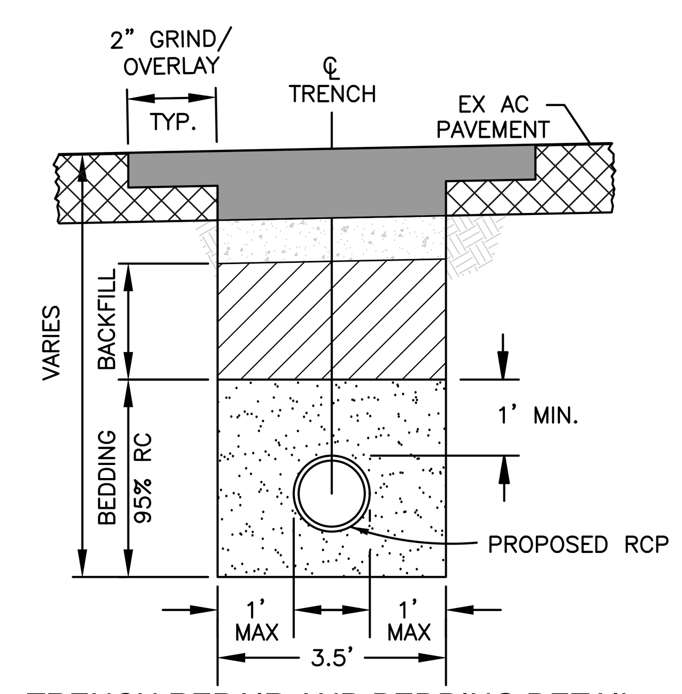
(35) CONSTRUCT JUNCTION STRUCTURE No. 4 PER RCFC&WCD STD. No. JS229

LINE AND CURVE DATA TABLE

LINE/CURVE	BEARING/DELTA	LENGTH	RADIUS
N	N43°50'20"W	7.33'	——
O	N3°07'07"W	79.61'	——
P	S4°15'46"E	8.60'	——
Q	30°00'00"	26.18'	50.00'
R	S34°15'46"E	97.78'	——
S	30°00'00"	26.18'	50.00'
T	S4°15'46"E	2.80'	——







TRENCH REPAIR AND BEDDING DETAIL

NTS

0' 10' 20' 40' 60' 80'

GRAPHIC SCALE IN FEET

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By | Drawn By | Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ____ DATE: ____
NINO ABAD, SENIOR CIVIL ENGINEER

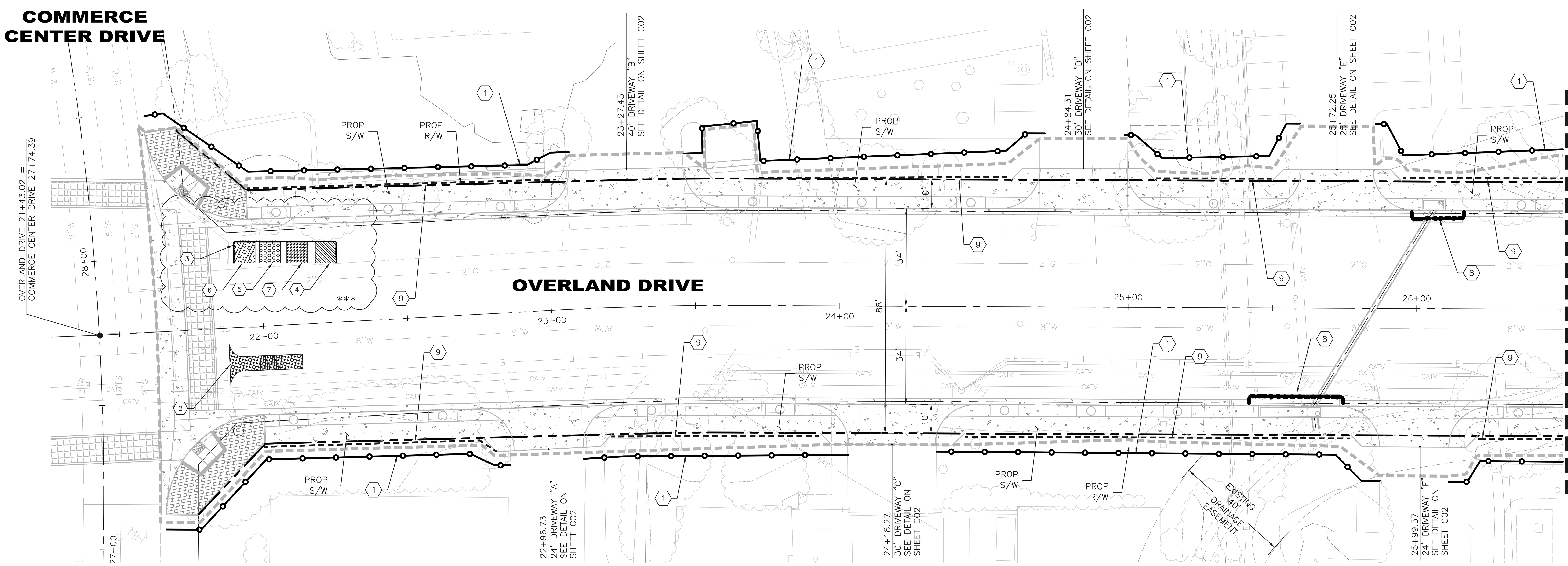
ACCEPTED BY: ____ DATE: ____
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

R.C.E. No. 44223 Expires 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
STORM DRAIN IMPROVEMENTS

Drawing No. C 16



EROSION CONTROL CONSTRUCTIONS NOTES

1. SILT FENCE (SE-1).
2. STABILIZED CONSTRUCTION ENTRANCE/EXIT (TC-1) WITH RUMBLE RACKS (10'x24' MIN.).
3. SANDBAG BARRIER (SE-8).
4. MATERIAL DELIVERY AND STORAGE (WM-01).
5. VEHICLE STORAGE.
6. WASTE STORAGE AREA.
7. VEHICLE WASHING AND MAINTENANCE AREA.
8. STORM DRAIN INLET PROTECTION (SE-10).
9. FIBER ROLLS (SE-5).

LEGEND

- SAND BAGS
- SILT FENCE
- GRADING LIMITS
- STABILIZED CONSTRUCTION ENTRANCE
- MATERIAL DELIVERY/STORAGE AREA
- VEHICLE STORAGE AND MAINTENANCE AREA
- VEHICLE WASHING AREA
- FIBER ROLLS

EROSION AND SEDIMENT CONTROL NOTES:

1. FILTERED RUNOFF. ALL RUNOFF SHALL BE FILTERED PRIOR TO DISCHARGING FROM A SITE OR TO ANY TYPE OF PRIVATE OR PUBLIC STORM WATER CONVEYANCE SYSTEM (NATURAL WATERCOURSES, STREETS, GUTTERS, CONCRETE-LINED V-DITCHES, STORM DRAINS, FLOW-LINES, INLETS, OUTLETS, ETC.). ALL NON-PERMITTED DISCHARGES ARE PROHIBITED FROM ENTERING ANY STORM WATER CONVEYANCE SYSTEM YEAR-ROUND.

2. BEST MANAGEMENT PRACTICES (BMP'S). YEAR-ROUND, POLLUTION PREVENTION MEASURES, ALSO KNOWN AS BEST MANAGEMENT PRACTICES (BMP'S), MUST BE INSTALLED PRIOR TO ANY FIELD ACTIVITIES. BMP HANDBOOKS CAN BE DOWNLOADED AT HTTP: / /WWW.DOT.CA.GOV/HQ/CONSTRUC/STORMWATER/MANUALS.HTM. ADDITIONAL EROSION PREVENTION AND SEDIMENT CONTROL (WPC) MEASURES MUST BE INSTALLED AND MAINTAINED PRIOR TO AND THROUGHOUT EACH RAINY SEASON. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR WPC MEASURES THROUGHOUT THE DURATION OF THE PROJECT FOR ALL CLEARING, DISKING, GRADING, EXCAVATING AND STOCKPILING ACTIVITIES, AND ON ALL EXPOSED SLOPES AND INACTIVE PADS THROUGHOUT THE ENTIRE SITE. THE DEVELOPER/CONTRACTOR IS ALSO RESPONSIBLE FOR ANY DISCHARGES FROM SUBCONTRACTORS.

A. STOCKPILING OF BMPS. ADDITIONAL WPC MATERIALS SHALL BE STOCKPILED AT VARIOUS LOCATIONS THROUGHOUT THE SITE FOR IMMEDIATE USE WITHIN SEVEN DAYS PRIOR TO ANY FORECASTED RAIN. ON EMERGENCY SITUATIONS, THE DEVELOPER/CONTRACTOR SHALL IMMEDIATELY MAKE EQUIPMENT AND WORKERS AVAILABLE TO PROTECT THE SITE.

3. EROSION AND SEDIMENT CONTROLS. ALL WPC MEASURES SHALL BE INSPECTED, RESTORED, REPAIRED OR MODIFIED YEAR-ROUND THROUGHOUT THE SITE TO PROJECT PERIMETERS, ADJACENT PROPERTIES, ENVIRONMENTALLY SENSITIVE AREAS AND ALL PRIVATE/PUBLIC STORM WATER CONVEYANCE SYSTEMS. IF ANY EROSION OR SEDIMENT CONTROLS FAIL DURING ANY RAIN EVENT, MORE EFFECTIVE ONES WILL BE REQUIRED IN THEIR PLACE.

A. EROSION CONTROLS. EROSION CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO APPLYING AND ESTABLISHING: VEGETATIVE COVER, WOOD MULCH, STAPLED OR PINNED BLANKETS (STRAW, COCONUT OR OTHER), PLASTIC SHEETING (MINIMUM 10-MIL), POLYPROPYLENE MATS, SPRAY-ON CONTROLS TO ALL DISTURBED AREAS OR OTHER MEASURES APPROVED BY THE CITY ENGINEER. JUTE NETTING SHALL NOT BE USED AS A STAND-ALONE EROSION CONTROL. FOR SLOPES GREATER THAN 4:1, PRO DE FIBER ROLLS AND EITHER A BONDED FIBER MATRIX PRODUCT APPLIED TO A RATE OF 3500 LIB/ACRE OR A STABILIZED FIBER MATRIX PRODUCT APPLIED TO A RATE OF 10 GAL/ACRE. THE CITY ENGINEER MAY APPROVE DIFFERENT APPLICATION RATES FOR SLOPES LESS THAN 4:1.

B. SEDIMENT CONTROLS. SEDIMENT CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO: DESILTING BASINS, GRADED BERMS, FIBER ROLLS, SILT FENCES, GRAVEL BAG CHEVRONS (FILLED WITH MINIMUM 3/4" GRAVEL), CHECK DAMS, DRAINAGE INLET PROTECTION, ETC. FIBER ROLLS SHALL BE INSTALLED IN 15-FOOT INCREMENTS MEASURED ALONG THE FACE OF THE SLOPE. SILT FENCE SHALL BE INSTALLED ALONG INTERIOR STREETS AND COMBINED WITH GRAVEL-BAG OR SILT FENCE CHEVRONS INSIDE THE SIDEWALK RIGHT-OF-WAY OR BACK OF CURBS.

4. STATE CONSTRUCTION GENERAL PERMIT. IF THE PROJECT DISTURBS, EXPOSES OR STOCKPILES ONE ACRE OR MORE OF SOIL, THE SITE MUST BE COVERED UNDER THE STATE CONSTRUCTION GENERAL PERMIT. A WASTE DISCHARGE IDENTIFICATION (WDID) NUMBER, A RISK LEVEL DETERMINATION NUMBER AND THE QUALIFIED "STORM WATER POLLUTION PREVENTION PLAN" DEVELOPER (QSD) SHALL BE PRO\1DED TO THE CITY PRIOR TO ISSUANCE OF A GRADING PERMIT. A SWPPP SHALL BE IMPLEMENTED THROUGHOUT THE DURATION OF THE PROJECT AND SHALL BE READILY AVAILABLE TO CITY AND STATE INSPECTORS AND UPDATED TO REFLECT CURRENT SITE CONDITIONS DURING CONSTRUCTION. TIHE CONSTRUCTION PERMIT CAN BE DOWNLOADED AT: WWW. WATERBOARDS.CA.GOV/WATER_ISSUES/PROGRAMS/STORMWATER/CONSTRUCTION.

5. PERIMETER PROTECTION. PERIMETER PROTECTION MUST BE INSTALLED PRIOR TO ANY CLEARING ACTIVITIES. CLEARING SHALL BE LIMITED TO AREAS THAT WILL BE IMMEDIATELY GRADED OR DISTURBED. A COMBINATION OF WPC MEASURES SHALL BE IMPLEMENTED IN AREAS THAT HAVE BEEN CLEARED. ALL DISTURBED AREAS OF AN INACTIVE SITE AS DESCRIBED IN THE ENGINEERING AND CONSTRUCTION MANUAL, SHALL ALSO BE PROTECTED.

6. CONSTRUCTION ACCESS POINTS. CONSTRUCTION ACCESS POINTS SHALL BE STABILIZED WITH A COMBINATION OF ROCK AND SHAKER PLATES YEAR-ROUND TO PREVENT TRACK-OUT. INTERIOR ACCESS POINTS (ALL PROPOSED DRIVEWAYS, MATERIAL STORAGE AND STAGING AREA ENTRANCES/EXITS, ETC.) SHALL ALSO BE PROTECTED WITH ROCK TO PREVENT TRACK-OUT ONTO INTERIORS STREETS. ROUTINE STREET SWEEPING SHALL BE PERFORMED ON ALL PAVED STREETS WHERE TRACKING IS OBSERVED. VACUUM SWEEPERS SHALL BE USED WHEN STREET SWEEPING BECOMES INEFFECTIVE. CONTROLLED STREET WASHING SHALL ONLY BE ALLOWED PRIOR TO THE APPLICATION OF ASPHALT SEAL GOATS, AND ONLY WHEN ALL PERTINENT DRAINAGE INLETS ARE PROTECTED.

7. MATERIAL STORAGE. MATERIAL STORAGE AND STAGING AREAS SHALL BE ESTABLISHED. FUEL TANKS, PORTABLE TOILETS, LIQUIDS, GELS, POWDERS, LANDSCAPE MATERIALS AND STOCKPILES OF SOIL SHALL BE STORED AWAY FROM ALL PRIVATE/PUBLIC STORM WATER CONVEYANCE SYSTEMS, SIDEWALKS, RIGHT-OF-WAYS AND FLOW-LINES AND SHALL HAVE SECONDARY CONTAINMENT. INACTIVE STOCKPILES OF SOIL SHALL BE COVERED AT ALL TIMES. ACTIVE STOCKPILES SHALL BE COVERED PRIOR TO A FORECASTED RAIN.

8. CONSTRUCTION WASTE. CONSTRUCTION WASTE AND MISCELLANEOUS DEBRIS SHALL BE PLACED IN WATER-TIGHT BINS. WIRE MESH RECEPTACLES SHALL NOT BE ALLOWED. WASH-OUT STATIONS SHALL BE PROVIDED FOR CONCRETE, PAINTS, STUCCO AND OTHER LIQUID WASTE, AND SHALL BE LINED WITH PLASTIC AND LOCATED AWAY FROM PUBLIC RIGHT-OF-WAYS, FLOW LINES, ETC. PRIOR TO ANY FORECASTED RAIN, BINS AND WASH-OUTS SHALL BE COVERED WITH LIDS OR PLASTIC TARPS.

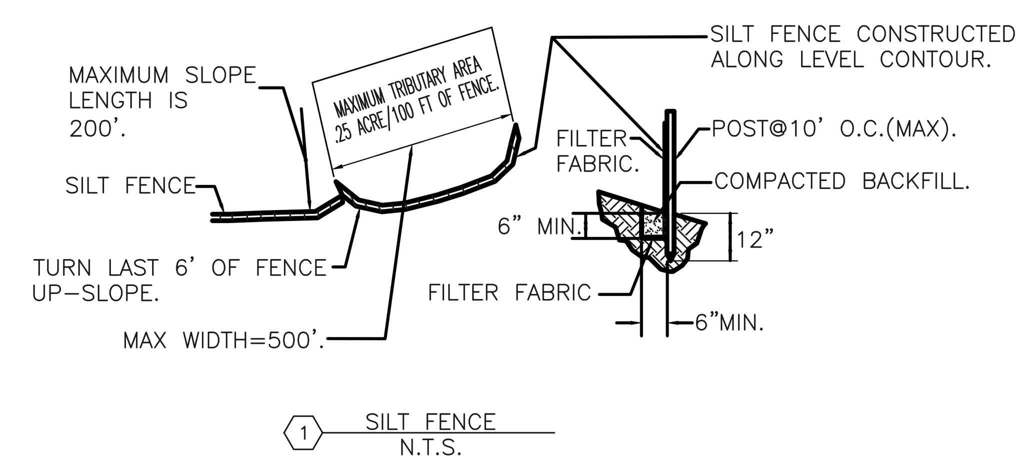
9. PORTABLE MIXERS. ALL PORTABLE MIXERS SHALL HAVE PLASTIC LINERS UNDERNEATH THEM WITH GRAVEL-BAGS PLACED ON THE DOWN-HILL SIDE OF THE LINERS TO CONTAIN DISCHARGES.

10. MAINTENANCE. ALL ONSITE AND OFFSITE FLOW LINES (I.E., V- AND BROW-DITCHES, TERRACE DRAINS, RIBBON GUTTERS, CURB GUTTERS, ETC.), STORM WATER CONVEYANCE SYSTEMS, CHECK DAMS, CHEVRONS, SILT FENCES AND DESILTING BASINS SHALL BE FREE OF SEDIMENT, CONSTRUCTION MATERIALS, WASTE, MISCELLANEOUS DEBRIS AND DETERIORATED WPC MEASURES YEAR-ROUND.

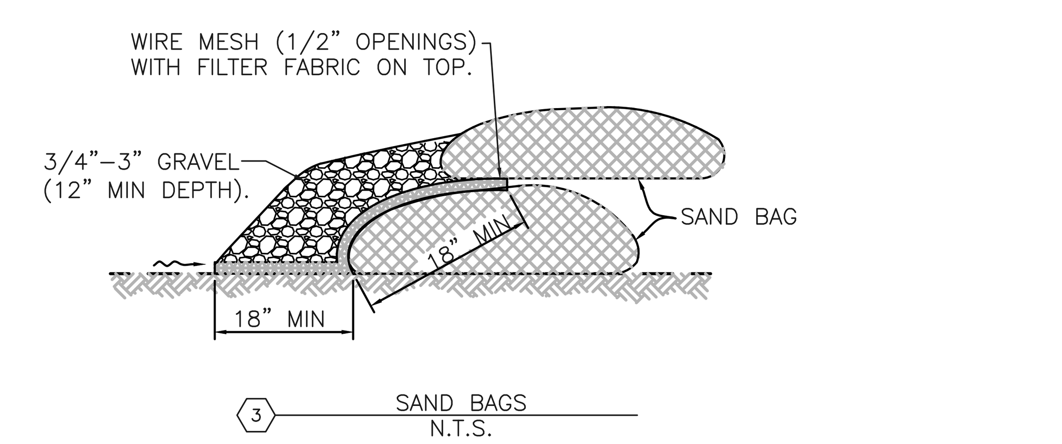
11. OBSTRUCTIONS. NO OBSTRUCTIONS, OTHER THAN BMP'S, SHALL BE ALLOWED WITHIN ANY STORM WATER CONVEYANCE SYSTEM, UNLESS ALTERNATIVE DRAINAGE FACILITIES HAVE BEEN APPROVED BY THE CITY ENGINEER.

12. OTHER CONSTRUCTION NOTES. REFER TO SEPARATE NOTES FOR 'GENERAL," 'GRADING" AND 'PAVING" REQUIREMENTS.

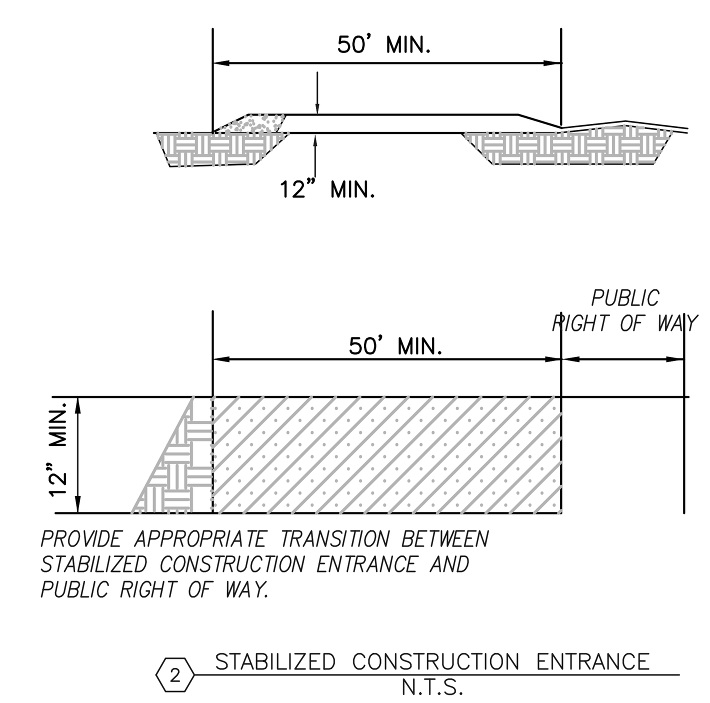
13. OTHER PERTINENT INFORMATION. REFER TO THE CITY OF TEMECULA MUNICIPAL CODE, TITLE 18, CHAPTER 18.18 "EROSION AND SEDIMENT CONTROL'



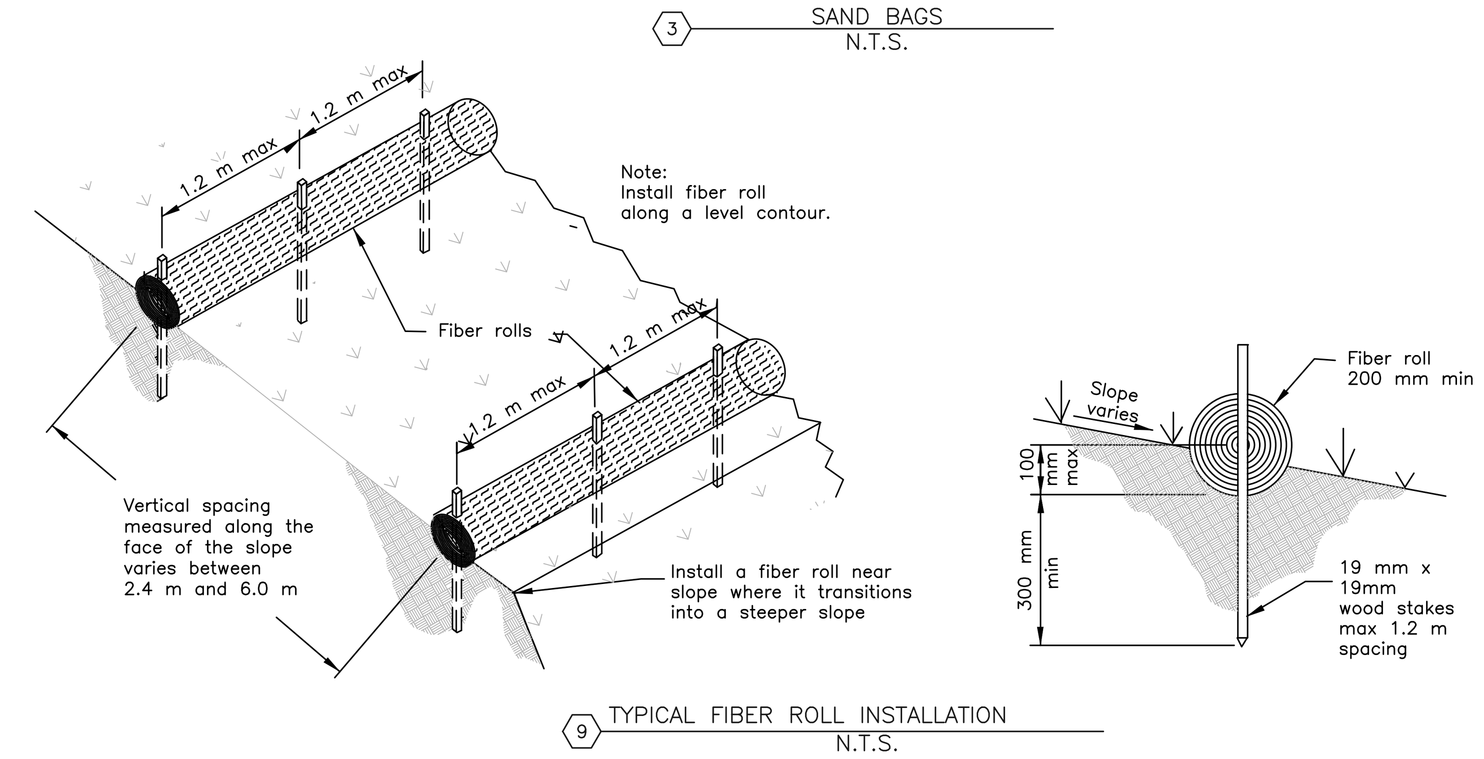
1 SILT FENCE
N.T.S.



3 SAND BAGS
N.T.S.



2 STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



9 TYPICAL FIBER ROLL INSTALLATION
N.T.S.

GRAPHIC SCALE IN FEET
1" = 20'

0' 10' 20' 40' 60' 80'

NOTE
*** STOCKPILE AND CONSTRUCTION MATERIAL TO BE PLACE OFF-SITE.
"THE CONTRACTOR SHOULD SELECT THE BEST SUITABLE STOCKPILE AREA DURING CONSTRUCTION"

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK
RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ______ DATE: ______
NINO ABAD, SENIOR CIVIL ENGINEER

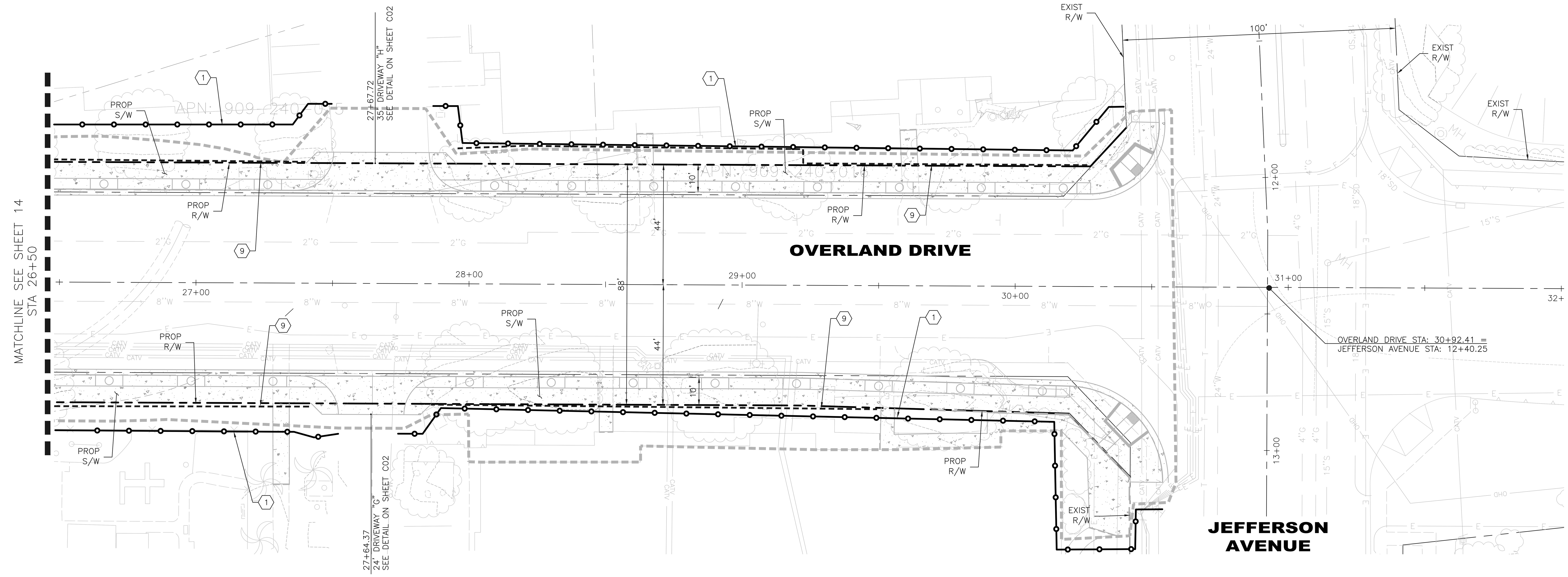
ACCEPTED BY: ______ DATE: ______
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

CITY OF TEMECULA 1989 OLD TRADITIONS • NEW OPPORTUNITIES

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
EROSION CONTROL

Drawing No.
C 17



EROSION CONTROL CONSTRUCTIONS NOTES

1. SILT FENCE (SE-1).
2. STABILIZED CONSTRUCTION ENTRANCE/EXIT (TC-1) WITH RUMBLE RACKS (10'x24' MIN.).
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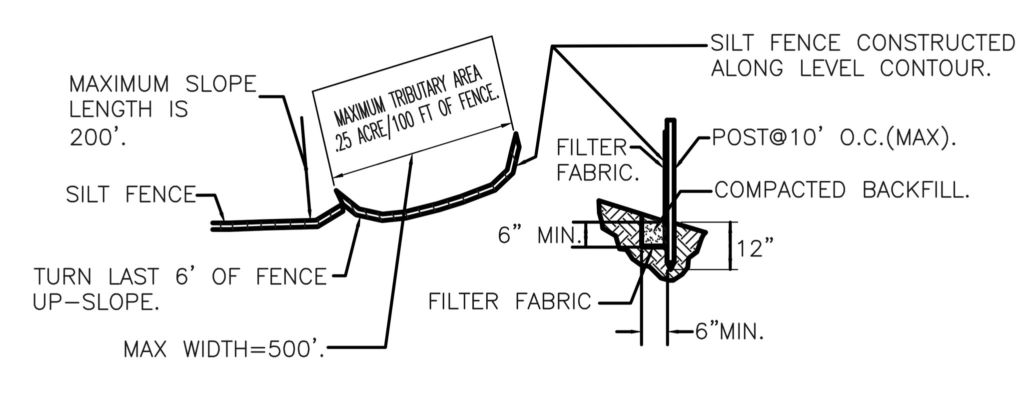
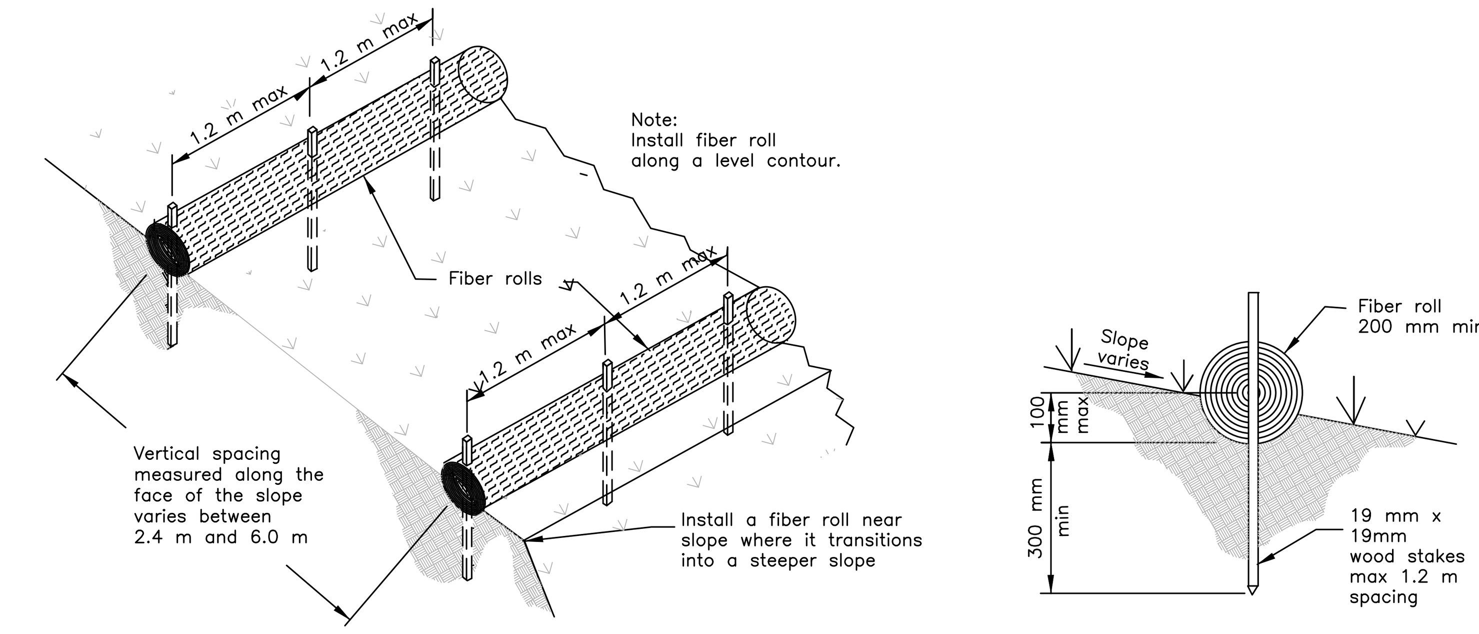
8. STORM DRAIN INLET PROTECTION (SE-10).
9. FIBER ROLLS (SE-5).

LEGEND

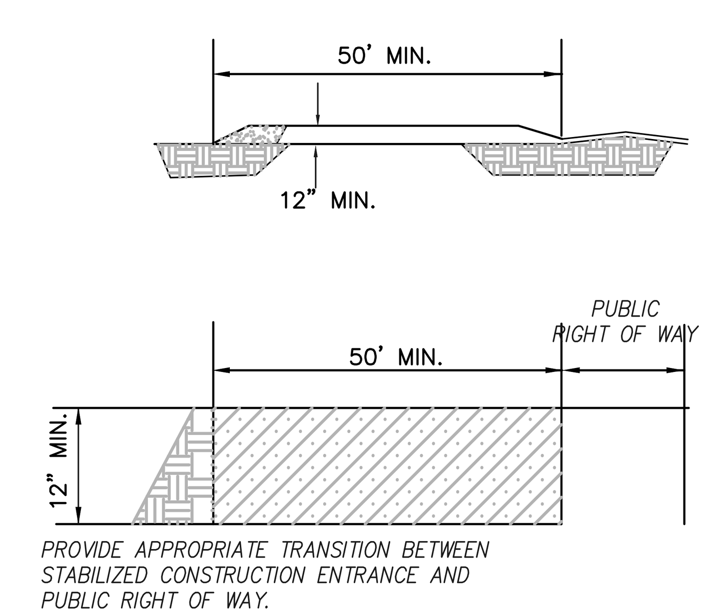
- SAND BAGS
- SILT FENCE
- GRADING LIMITS
- STABILIZED CONSTRUCTION ENTRANCE
- MATERIAL DELIVERY/STORAGE AREA
- VEHICLE STORAGE AND MAINTENANCE AREA
- VEHICLE WASHING AREA
- FIBER ROLLS



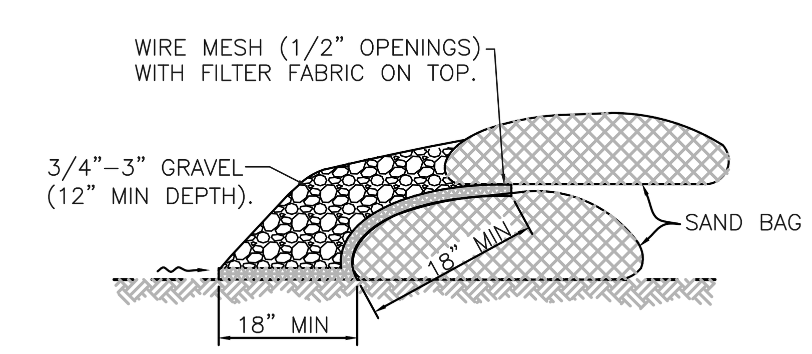
1 SILT FENCE
N.T.S.



9 TYPICAL FIBER ROLL INSTALLATION
N.T.S.



2 STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



3 SAND BAGS
N.T.S.

0' 10' 20' 40' 60' 80'
GRAPHIC SCALE IN FEET
1" = 20'

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422-4133
TWO WORKING DAYS BEFORE YOU DIG

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE — Date
R.C.E. No. 41836 — Expires 03-31-24

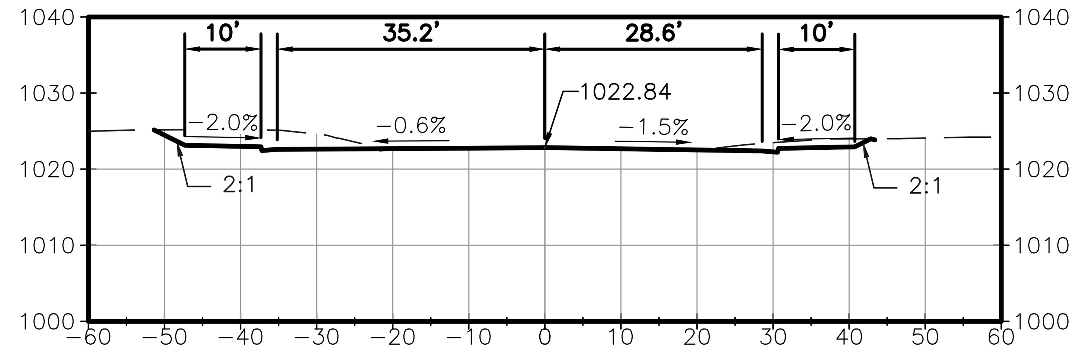
RECOMMENDED BY: NINO ABAD, SENIOR CIVIL ENGINEER — DATE:
ACCEPTED BY: PATRICK A. THOMAS, DIRECTOR OF PUBLIC WORKS/CITY ENGINEER — DATE:
R.C.E. No. 44223 — Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
EROSION CONTROL

Drawing No. C 18
Sheet 18 of 19

22+00.00



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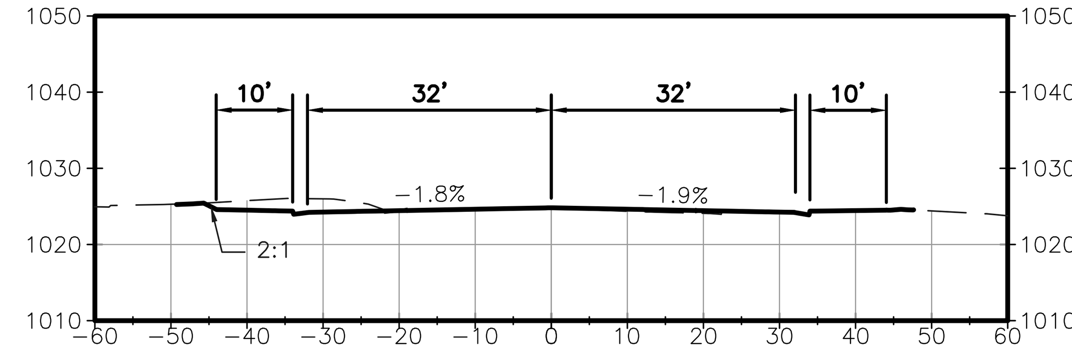

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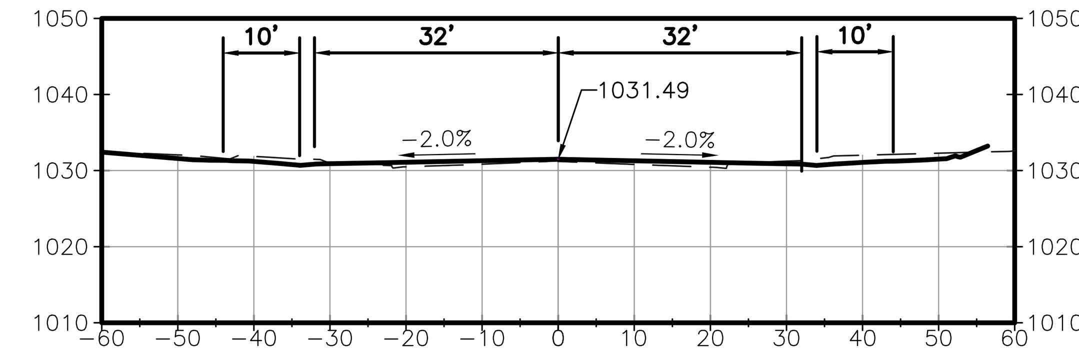

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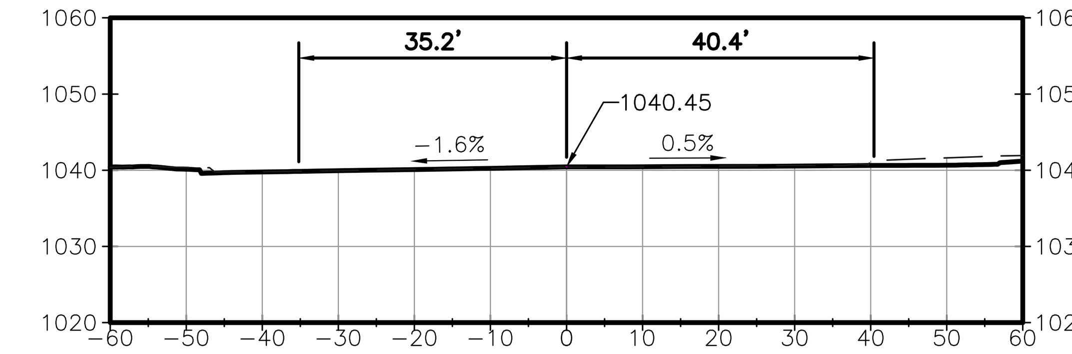

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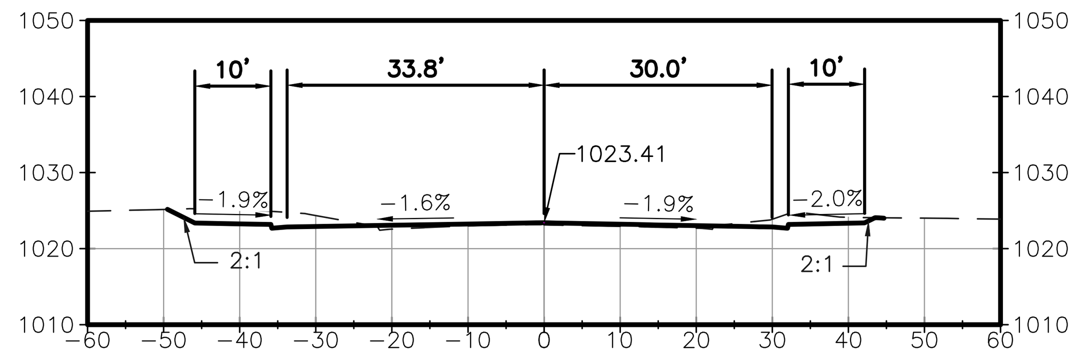

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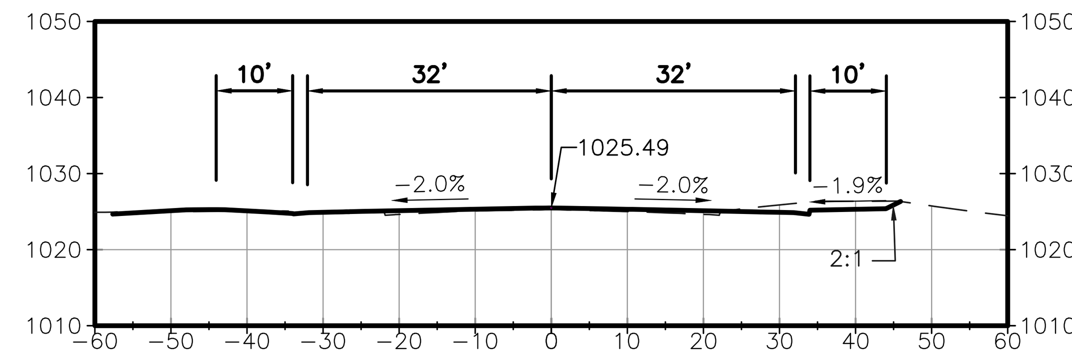

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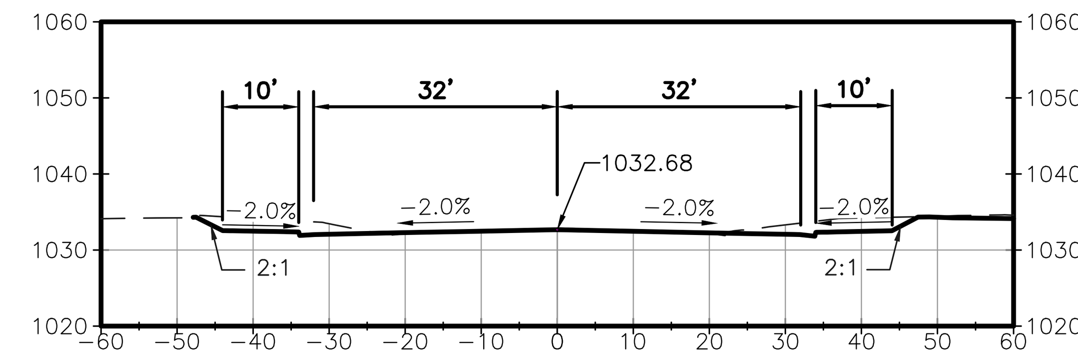
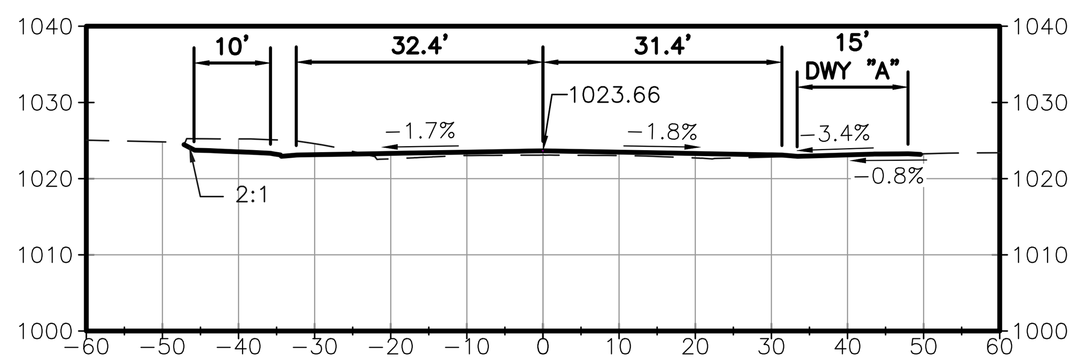


LEGEND:

EX. SURFACE

PROP. SURFACE

23+00.00



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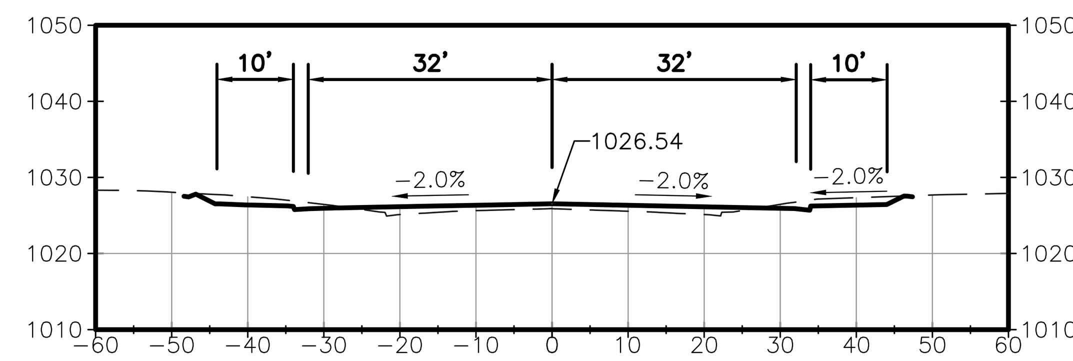

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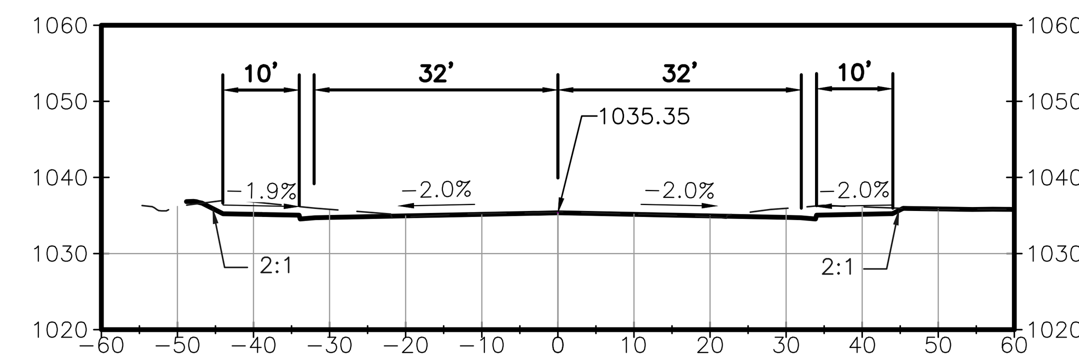

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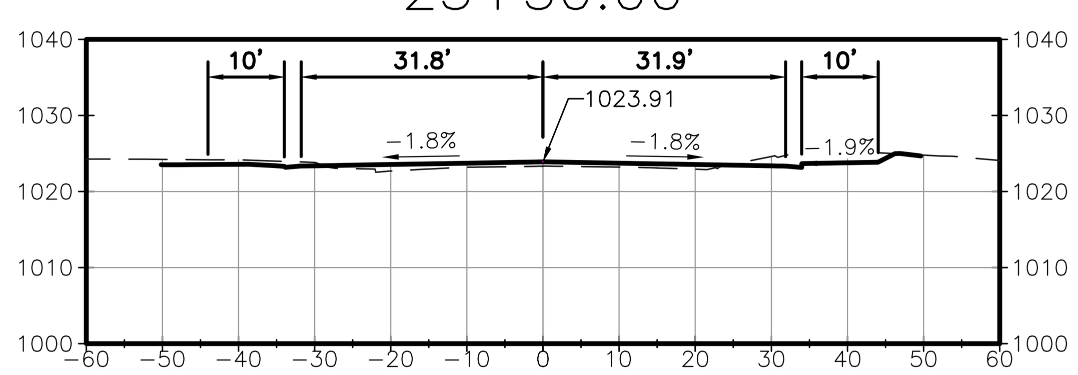

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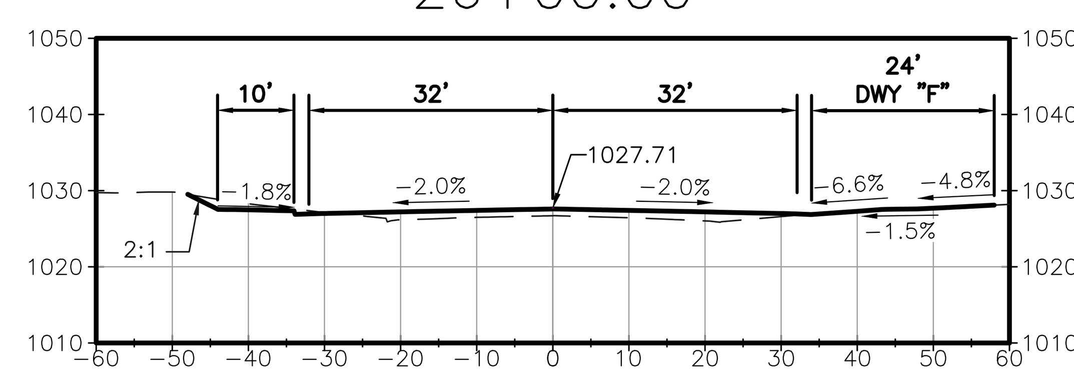

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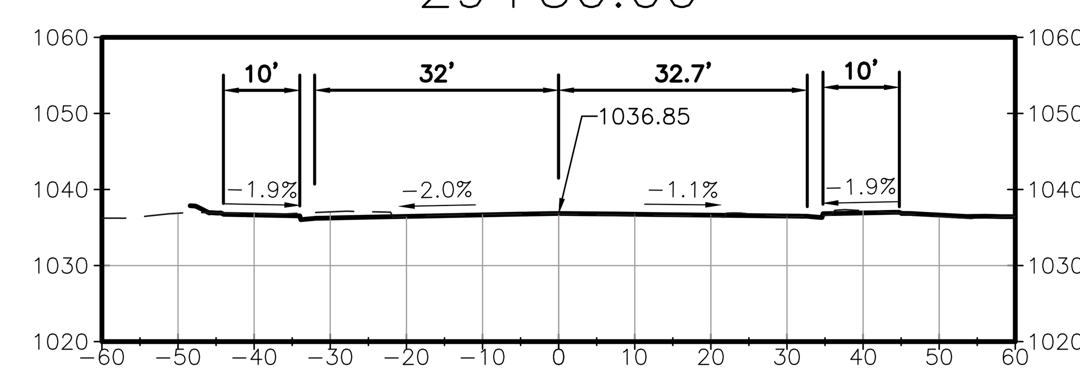

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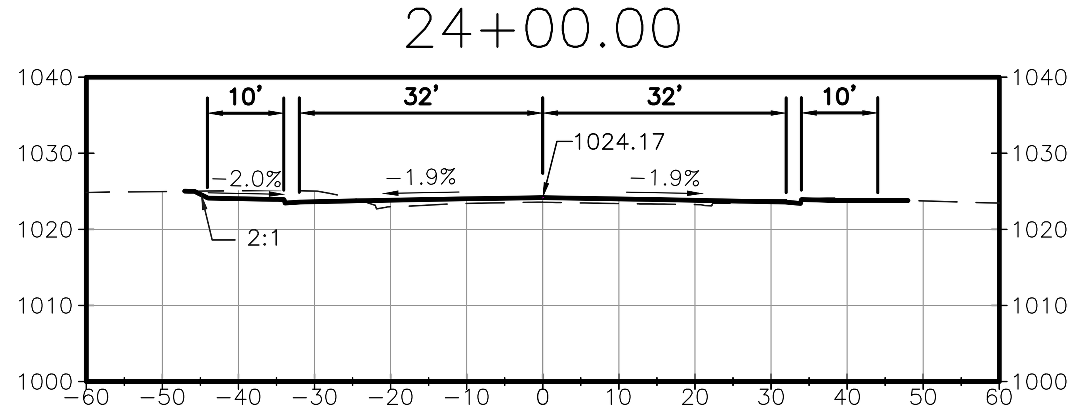

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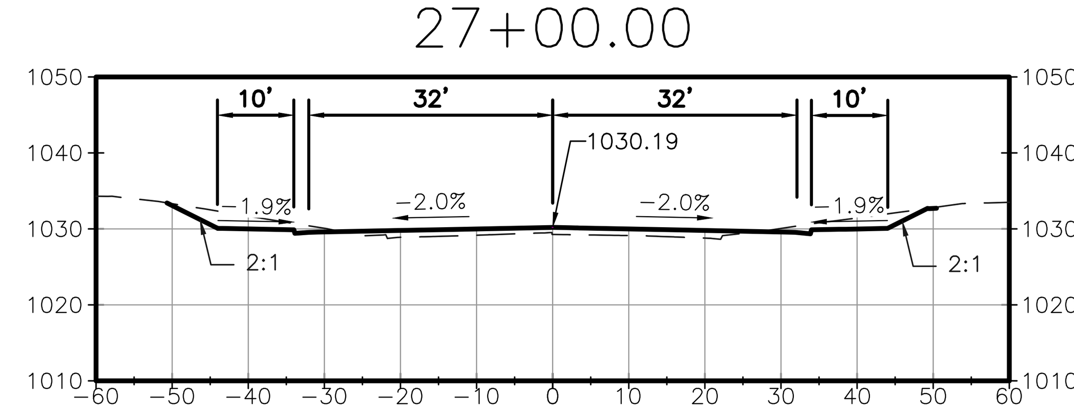

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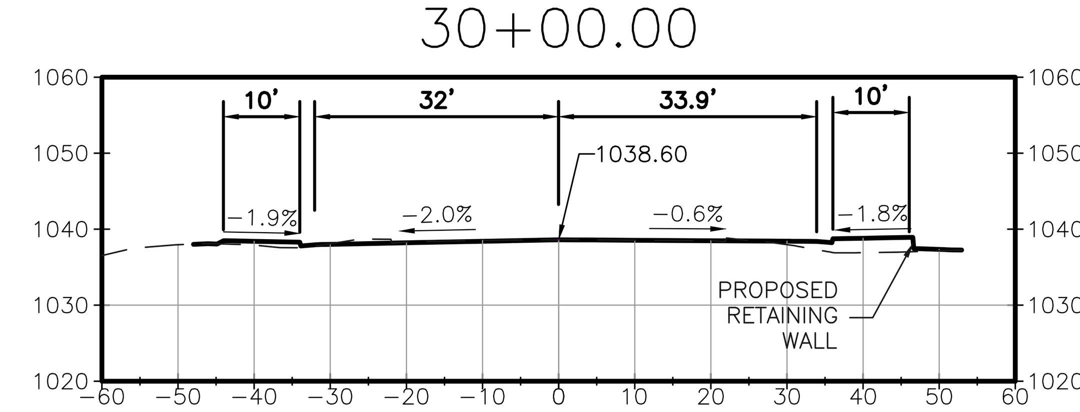

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TWO WORKING DAYS BEFORE YOU DIG

PROFILE SCALE:
HORIZONTAL: 1"=2'
VERTICAL: 1"=20'

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Redlands, CA 92373
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F: 909.890.0995

Engineering Resources of Southern California

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE
Contractor						*RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)*	Horizontal
Inspector							Vertical
Date Completed							

SEAL: REGISTERED PROFESSIONAL ENGINEER · JOHN M. BRUDIN · No. 41836 · CIVIL · STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date

R.C.E. No. 41836 — Expires 03-31-24

RECOMMENDED BY: ________ DATE: ____
NINO ABAD, SENIOR CIVIL ENGINEER

ACCEPTED BY: ________ DATE: ____
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
SECTIONS

Drawing No. C 19

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ATTACHMENT 6

Copy of Project's Drainage Report

Use this checklist to ensure the required information has been included on the Drainage Report:

☐ The project is required to prepare and submit a CEQA Drainage Study in compliance with Riverside County Flood Control and Water Conservation District Hydrology Manual:
http://rcflood.org/downloads/Planning/Hydrology%20Manual%20-%20Complete.pdf
In addition to the guideline, the study shall include the following but not limited to:

☐ The final CEQA Drainage report shall be signed, stamped and dated by the responsible Registered Civil Engineer.

☐ In the narrative of the report please provide a summary table of: pre- and post-development C, Tc, I, A, V100, Q100 without mitigation and Q100 with mitigation for each area (or point) where drainage discharges from the project. Peak runoff rates (cfs), velocities (fps) and identification of all erosive velocities (at all points of discharge) calculations for pre-development and post-development. The comparisons should be made about the same discharge points for each drainage basin affecting the site and adjacent properties.

☐ Summary/Conclusion: Please discuss whether the proposed project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or offsite? Provide reasons and mitigations proposed.

☐ Discuss whether the proposed project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? Provide reasons and mitigations proposed.

☐ Discuss whether the proposed project would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Provide reasons and mitigations proposed.

☐ Discuss whether the proposed project would place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, including County Floodplain Maps. Provide reasons and mitigations proposed.

☐ Discuss whether the proposed project would place structures within a 100-year flood hazard area, which would impede or redirect flood flows.

☐ Discuss whether the proposed project would expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam.

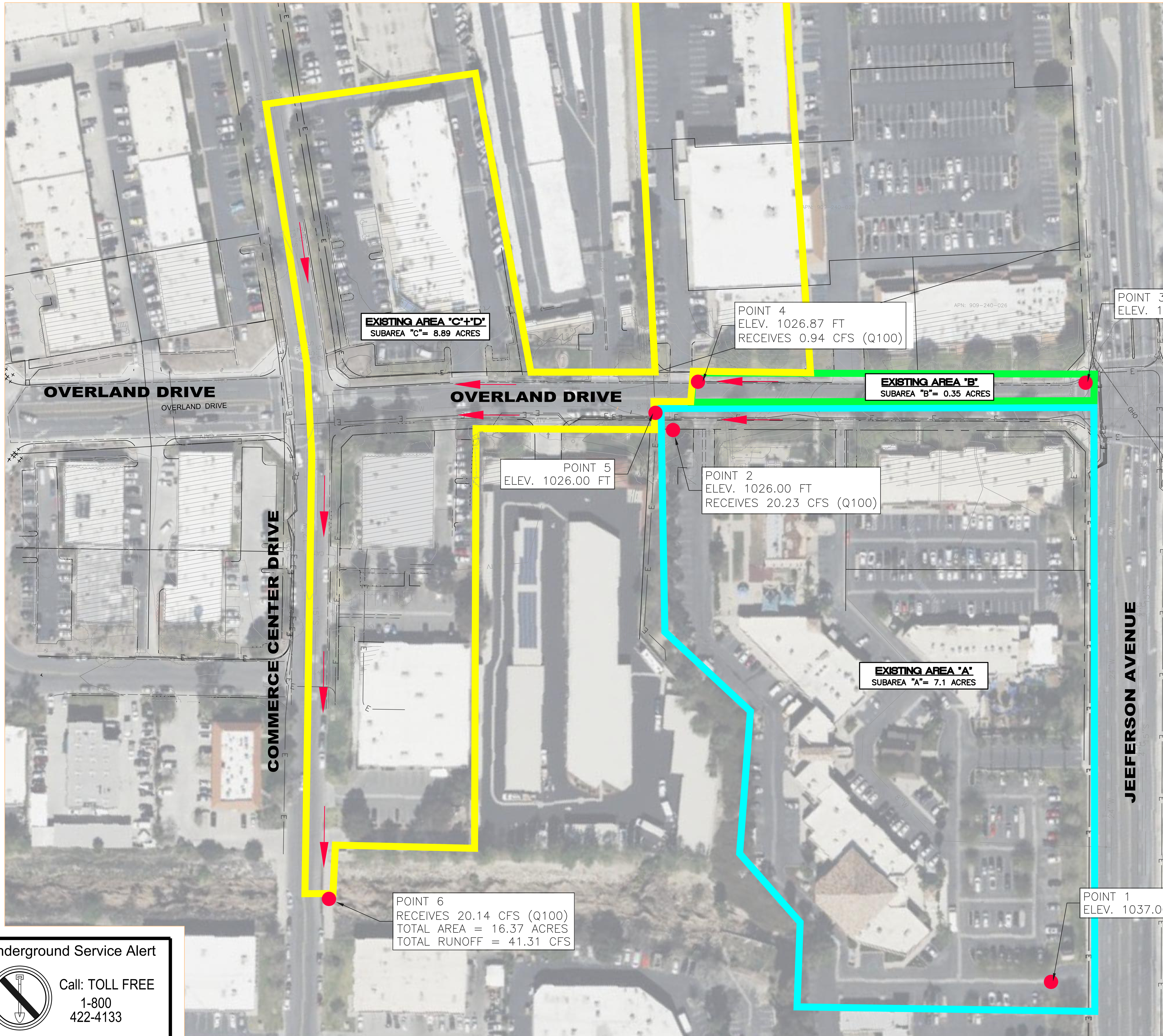
✓ Provide existing and proposed Hydrology Maps for each phase. The maps shall show existing and proposed culverts, discharge point with A & Q, flow path direction for each drainage basin. Show existing FEMA floodplain/floodway which flow through the property. A minimum map size is 11"x17".

☐ Provide Hydrologic Soil Group Map.
☐ Provide Rainfall Isopluvials for 100 Year Rainfall Event - 6 Hours and 24 Hours Maps.
☐ The report should have numbered pages and a corresponding Table of Contents.
☐ Improvements within City Public Right-of-Way have been designed in accordance with Appendix K: Guidance on Green Infrastructure.

BMP’s have been designed to safely convey the 100-year flood

If hardcopy or CD is not attached, the following information should be provided:

Title:
Prepared By:
Date:



FOR CONTINUATION SEE TOP RIGHT

0' 240' 60' 120' 180' 160'

GRAPHIC SCALE IN FEET
1" = 60'

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE	BENCH MARK	SCALE	SEAL:
Contractor ______ Inspector ______ Date Completed ______						RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)	Horizontal Vertical	REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of

JOHN M. BRUDIN, PE — Date ______

R.C.E. No. 41836 — Expires 03-31-24

RECOMMENDED BY: ______ DATE: ______
NINO ABAD, SENIOR CIVIL ENGINEER

ACCEPTED BY: ______ DATE: ______
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER

R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

CITY OF TEMECULA 1989 OLD TRADITIONS • NEW OPPORTUNITIES

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
HYDROLOGY MAP - EXISTING CONDITION

Drawing No.

Sheet of 16

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                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
        Rational Hydrology Study        Date: 03/16/23  File:EXOVERLAND10.out
------------------------------------------------------------------------
OVERLAND DRIVE WIDENING
10 YEAR FLOW
EXISTING CONDITION

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6158

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Murrieta,Tmc,Rnch CaNorco ] area used.
10 year storm 10 minute intensity =  2.360(In/Hr)
10 year storm 60 minute intensity =  0.880(In/Hr)
100 year storm 10 minute intensity =  3.480(In/Hr)
100 year storm 60 minute intensity =  1.300(In/Hr)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.880(In/Hr)
Slope of intensity duration curve = 0.5500




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       1.000 to Point/Station       2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  1037.000(Ft.)
Bottom (of initial area) elevation =  1026.000(Ft.)
Difference in elevation =    11.000(Ft.)
Slope =    0.01100  s(percent)=      1.10
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.718 min.
Rainfall intensity =      2.161(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.885
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     13.629(CFS)
Total initial stream area =       7.130(Ac.)
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Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       3.000 to Point/Station       4.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of street segment elevation =  1040.700(Ft.)
End of street segment elevation =  1026.870(Ft.)
Length of street segment  =   450.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  22.000(Ft.)
Distance from crown to crossfall grade break  =  20.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.025
Slope from grade break to crown (v/hz)  =   0.025
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  11.000(Ft.)
Slope from curb to property line (v/hz) =   0.100
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     13.963(CFS)
Depth of flow =   0.427(Ft.), Average velocity =   5.456(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  14.097(Ft.)
Flow velocity =   5.46(Ft/s)
Travel time =    1.37 min.     TC =   13.09  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.884
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.033(In/Hr) for a    10.0 year storm
Subarea runoff =      0.629(CFS) for      0.350(Ac.)
Total runoff =     14.258(CFS)  Total area =       7.480(Ac.)
Street flow at end of street =     14.258(CFS)
Half street flow at end of street =     14.258(CFS)
Depth of flow =   0.430(Ft.), Average velocity =   5.484(Ft/s)
Flow width (from curb towards crown)=  14.212(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       5.000 to Point/Station       6.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of street segment elevation =  1026.000(Ft.)
End of street segment elevation =  1020.000(Ft.)
Length of street segment  =   950.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  22.000(Ft.)
Distance from crown to crossfall grade break  =  20.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  11.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
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 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     20.931(CFS)
Depth of flow =   0.597(Ft.), Average velocity =   3.097(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =    4.87(Ft.)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  22.000(Ft.)
Flow velocity =   3.10(Ft/s)
Travel time =    5.11 min.     TC =   18.20  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.881
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      1.696(In/Hr) for a    10.0 year storm
Subarea runoff =     13.286(CFS) for      8.890(Ac.)
Total runoff =     27.544(CFS)  Total area =      16.370(Ac.)
Street flow at end of street =     27.544(CFS)
Half street flow at end of street =     27.544(CFS)
Depth of flow =   0.651(Ft.), Average velocity =   3.330(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =    7.56(Ft.)
Flow width (from curb towards crown)=  22.000(Ft.)
End of computations, total study area =          16.37 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  75.0
```

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                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
        Rational Hydrology Study        Date: 03/16/23  File:EXOVERLAND100.out
------------------------------------------------------------------------
OVERLAND DRIVE WIDENING
100 YEAR FLOW
EXISTING CONDITION

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6158

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Murrieta,Tmc,Rnch CaNorco ] area used.
10 year storm 10 minute intensity =  2.360(In/Hr)
10 year storm 60 minute intensity =  0.880(In/Hr)
100 year storm 10 minute intensity =  3.480(In/Hr)
100 year storm 60 minute intensity =  1.300(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.300(In/Hr)
Slope of intensity duration curve = 0.5500




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       1.000 to Point/Station       2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  1037.000(Ft.)
Bottom (of initial area) elevation =  1026.000(Ft.)
Difference in elevation =    11.000(Ft.)
Slope =    0.01100  s(percent)=       1.10
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.718 min.
Rainfall intensity =      3.192(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.889
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     20.233(CFS)
Total initial stream area =        7.130(Ac.)
```

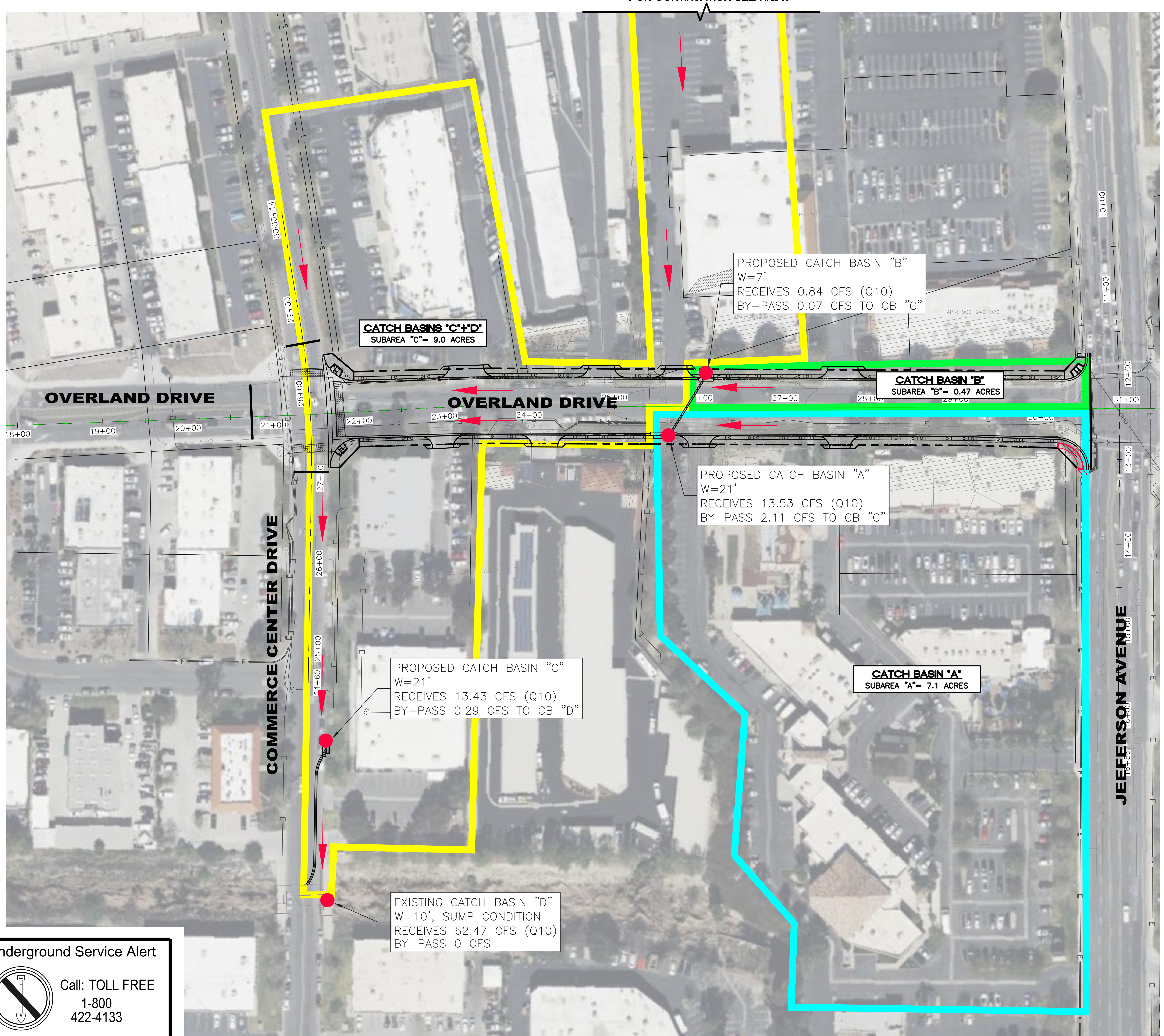
```
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       3.000 to Point/Station       4.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of street segment elevation =  1040.700(Ft.)
End of street segment elevation =  1026.870(Ft.)
Length of street segment  =   450.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  22.000(Ft.)
Distance from crown to crossfall grade break  =  20.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.025
Slope from grade break to crown (v/hz)  =   0.025
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  11.000(Ft.)
Slope from curb to property line (v/hz) =   0.100
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     20.729(CFS)
Depth of flow =   0.486(Ft.), Average velocity =   6.013(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  16.425(Ft.)
Flow velocity =   6.01(Ft/s)
Travel time =    1.25 min.     TC =   12.96  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.888
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      3.019(In/Hr) for a   100.0 year storm
Subarea runoff =      0.939(CFS) for      0.350(Ac.)
Total runoff =     21.172(CFS)  Total area =       7.480(Ac.)
Street flow at end of street =     21.172(CFS)
Half street flow at end of street =     21.172(CFS)
Depth of flow =   0.489(Ft.), Average velocity =   6.045(Ft/s)
Flow width (from curb towards crown)=  16.559(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       5.000 to Point/Station       6.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of street segment elevation =  1026.000(Ft.)
End of street segment elevation =  1020.000(Ft.)
Length of street segment  =   950.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  22.000(Ft.)
Distance from crown to crossfall grade break  =  20.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  11.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
```

```
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     31.283(CFS)
Depth of flow =   0.678(Ft.), Average velocity =   3.443(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =    8.90(Ft.)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  22.000(Ft.)
Flow velocity =   3.44(Ft/s)
Travel time =    4.60 min.     TC =   17.56  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.887
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.555(In/Hr) for a   100.0 year storm
Subarea runoff =     20.140(CFS) for      8.890(Ac.)
Total runoff =     41.311(CFS)  Total area =      16.370(Ac.)
Street flow at end of street =     41.311(CFS)
Half street flow at end of street =     41.311(CFS)
Depth of flow =   0.738(Ft.), Average velocity =   3.750(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =   11.90(Ft.)
Flow width (from curb towards crown)=  22.000(Ft.)
End of computations, total study area =           16.37 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  75.0
```



0' 240' 60' 120' 180' 160'
GRAPHIC SCALE IN FEET
1" = 60'

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Redlands, CA 92373
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F: 909.890.0995

CONSTRUCTION RECORD	DATE	BY	REVISIONS	ACC'D	DATE
Contractor					
Inspector					
Date Completed					

BENCH MARK
RIVERSIDE COUNTY FLOOD CONTROL BENCH MARK No. Z10320 AN 1/2" IP, WITH RCFC TRI STAR CAP. 173' ± EAST OF DIAZ RD CL AND 34' ± NORTH BLOCK WALL, FLUSH ELEVATION: 1028.38 (NAVD88)

SCALE
Horizontal
Vertical

SEAL: REGISTERED PROFESSIONAL ENGINEER JOHN M. BRUDIN No. 41836 CIVIL STATE OF CALIFORNIA

Designed By	Drawn By	Checked By

Plans Prepared Under Supervision Of
JOHN M. BRUDIN, PE Date
R.C.E. No. 41836 Expires 03-31-24

RECOMMENDED BY: ______ DATE: ______
NINO ABAD, SENIOR CIVIL ENGINEER

ACCEPTED BY: ______ DATE: ______
PATRICK A. THOMAS
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. No. 44223 Expires: 06-30-2023

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

OVERLAND DRIVE WIDENING
PROJECT NO. PW 20-11
HYDROLOGY MAP

Drawing No.

Sheet of 16

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
        Rational Hydrology Study        Date: 03/16/23  File:OVERLAND10.out
------------------------------------------------------------------------
OVERLAND DRIVE WIDENING
10 YEAR PROPOSED CONDITION
CB DESIGN

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6158

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Murrieta,Tmc,Rnch CaNorco ] area used.
10 year storm 10 minute intensity =  2.360(In/Hr)
10 year storm 60 minute intensity =  0.880(In/Hr)
100 year storm 10 minute intensity =  3.480(In/Hr)
100 year storm 60 minute intensity =  1.300(In/Hr)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.880(In/Hr)
Slope of intensity duration curve = 0.5500





++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       1.000 to Point/Station       2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  1037.000(Ft.)
Bottom (of initial area) elevation =  1026.700(Ft.)
Difference in elevation =    10.300(Ft.)
Slope =    0.01030  s(percent)=       1.03
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.873 min.
Rainfall intensity =      2.145(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.885
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     13.529(CFS)
Total initial stream area =        7.130(Ac.)
```

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Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       3.000 to Point/Station       4.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of street segment elevation =  1040.700(Ft.)
End of street segment elevation =  1027.800(Ft.)
Length of street segment  =   450.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  34.000(Ft.)
Distance from crown to crossfall grade break  =  32.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  10.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     13.975(CFS)
Depth of flow =   0.413(Ft.), Average velocity =   5.043(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  16.390(Ft.)
Flow velocity =   5.04(Ft/s)
Travel time =    1.49 min.     TC =   13.36  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.884
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.010(In/Hr) for a    10.0 year storm
Subarea runoff =      0.835(CFS) for      0.470(Ac.)
Total runoff =     14.364(CFS)  Total area =       7.600(Ac.)
Street flow at end of street =     14.364(CFS)
Half street flow at end of street =     14.364(CFS)
Depth of flow =   0.416(Ft.), Average velocity =   5.077(Ft/s)
Flow width (from curb towards crown)=  16.566(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       5.000 to Point/Station       6.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of street segment elevation =  1026.700(Ft.)
End of street segment elevation =  1020.000(Ft.)
Length of street segment  =   950.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  22.000(Ft.)
Distance from crown to crossfall grade break  =  20.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  11.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
```

```
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     21.108(CFS)
Depth of flow =   0.589(Ft.), Average velocity =   3.233(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =    4.45(Ft.)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  22.000(Ft.)
Flow velocity =   3.23(Ft/s)
Travel time =    4.90 min.     TC =   18.26  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.881
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      1.693(In/Hr) for a    10.0 year storm
Subarea runoff =     13.429(CFS) for      9.000(Ac.)
Total runoff =     27.793(CFS)  Total area =      16.600(Ac.)
Street flow at end of street =     27.793(CFS)
Half street flow at end of street =     27.793(CFS)
Depth of flow =   0.642(Ft.), Average velocity =   3.477(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =    7.08(Ft.)
Flow width (from curb towards crown)=  22.000(Ft.)
End of computations, total study area =          16.60 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  75.0
```

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
        Rational Hydrology Study        Date: 03/16/23  File:OVERLAND100.out
------------------------------------------------------------------------
OVERLAND DRIVE WIDENING
100 YEAR PROPOSED CONDITION
CB DESIGN

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6158

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Murrieta,Tmc,Rnch CaNorco ] area used.
10 year storm 10 minute intensity =  2.360(In/Hr)
10 year storm 60 minute intensity =  0.880(In/Hr)
100 year storm 10 minute intensity =  3.480(In/Hr)
100 year storm 60 minute intensity =  1.300(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.300(In/Hr)
Slope of intensity duration curve = 0.5500




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       1.000 to Point/Station       2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  1037.000(Ft.)
Bottom (of initial area) elevation =  1026.700(Ft.)
Difference in elevation =    10.300(Ft.)
Slope =    0.01030  s(percent)=       1.03
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.873 min.
Rainfall intensity =      3.169(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.889
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     20.085(CFS)
Total initial stream area =        7.130(Ac.)
```

```
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       3.000 to Point/Station       4.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of street segment elevation =  1040.700(Ft.)
End of street segment elevation =  1027.800(Ft.)
Length of street segment  =   450.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  34.000(Ft.)
Distance from crown to crossfall grade break  =  32.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  10.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     20.747(CFS)
Depth of flow =   0.467(Ft.), Average velocity =   5.557(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  19.100(Ft.)
Flow velocity =   5.56(Ft/s)
Travel time =    1.35 min.     TC =   13.22  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.888
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.987(In/Hr) for a   100.0 year storm
Subarea runoff =      1.247(CFS) for      0.470(Ac.)
Total runoff =     21.332(CFS)  Total area =       7.600(Ac.)
Street flow at end of street =     21.332(CFS)
Half street flow at end of street =     21.332(CFS)
Depth of flow =   0.471(Ft.), Average velocity =   5.596(Ft/s)
Flow width (from curb towards crown)=  19.306(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       5.000 to Point/Station       6.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________
Top of street segment elevation =  1026.700(Ft.)
End of street segment elevation =  1020.000(Ft.)
Length of street segment  =   950.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  22.000(Ft.)
Distance from crown to crossfall grade break  =  20.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  11.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
```

```
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     31.547(CFS)
Depth of flow =   0.668(Ft.), Average velocity =   3.594(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =    8.40(Ft.)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  22.000(Ft.)
Flow velocity =   3.59(Ft/s)
Travel time =    4.41 min.     TC =   17.63  min.
 Adding area flow to street
COMMERCIAL subarea type
Runoff Coefficient = 0.887
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  75.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.550(In/Hr) for a   100.0 year storm
Subarea runoff =     20.347(CFS) for      9.000(Ac.)
Total runoff =     41.680(CFS)  Total area =      16.600(Ac.)
Street flow at end of street =     41.680(CFS)
Half street flow at end of street =     41.680(CFS)
Depth of flow =   0.729(Ft.), Average velocity =   3.890(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =   11.44(Ft.)
Flow width (from curb towards crown)=  22.000(Ft.)
End of computations, total study area =          16.60 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  75.0
```

```
  CIVILCADD/CIVILDESIGN  Engineering Software, (c) 2004   Version 7.0
--------------------------------------------------------------------
Overland Widening Drive
Street Capacity and CB "A" Inlet Capacity
10-year Flow
W=21
--------------------------------------------------------------------


Program License Serial Number 6158

--------------------------------------------------------------------
                *** Street Flow +Inlet Analysis ***

        Upstream (headworks) Elevation =   1040.700(Ft.)
        Downstream (outlet) Elevation =   1026.700(Ft.)
        Runoff/Flow Distance =    500.000(Ft.)
        Maximum flow rate in channel(s) =     13.530(CFS)
--------------------------------------------------------------------


Top of street segment elevation =   1040.700(Ft.)
End of street segment elevation =   1026.700(Ft.)
Length of street segment  =   500.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  34.000(Ft.)
Distance from crown to crossfall grade break  =  30.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  10.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150

Half street cross section data points:
   X-coordinate (Ft.)    Y-coordinate (Ft.)
               0.0000                0.7000 right of way
              10.0000                0.5000 top of curb
              10.0000                0.0000 flow line
              12.0000                0.1250 gutter end
              14.0000                0.1650 grade break
              44.0000                0.7650 crown



CURB INLET TYPE STREET DRAIN, Opening Height =      8.960(In.)

Street Inlet Calculations:
Street flow in street inlet depression =     13.530(CFS)
 Gutter depression depth =      4.000(In.)
 Gutter depression width =      4.000(Ft.)
Depth of flow =   0.646(Ft.)
Average velocity =   5.309(Ft/s)
Total flow rate in 1/2 street =  13.530(CFS)
U.S. DOT Hydraulic Engineering Circular No. 12 inlet calculations:
 Street flow half width at start of inlet =     13.385(Ft.)
 Flow rate in gutter section of street = Qw =     11.119(CFS)
 Given inlet length  L =     21.000(Ft.)
 Ratio of frontal flow to total flow = E0 =  0.8218
```

```
Half street cross section data points through curb inlet:
                 X-coordinate (Ft.)   Y-coordinate (Ft.)
               0.0000                1.0333 right of way
              10.0000                0.8333 top of curb
              10.0000                0.0000 flow line
              14.0000                0.4583 gutter/depression end
              14.0000                0.4583 grade break
              44.0000                1.0583 crown
 Length required for total flow interception = Lt
 Lt = .6 * Q^0.42 * Slope^.3 * (1/(n*Se)^.6 =     32.633(Ft.)
 where Manning's n = 0.0150 and Slope = street slope =  0.0280
 Se = Equivalent Street x-slope including depression =  0.0885
 Efficiency = 1 - (1-L/Lt)^1.8 =  0.8438

Remaining flow in street below inlets =      2.113(CFS)
Depth of flow =   0.237(Ft.)
Average velocity =   3.191(Ft/s)
Total flow rate in 1/2 street =   2.113(CFS)
Streetflow hydraulics:
Halfstreet flow width (curb to crown) =   7.597(Ft.)
Average flow velocity =   3.19(Ft/s)

Channel including Gutter and area towards property line:
        Flow Width =      2.000(Ft.)   Flow Area =      0.349(Sq.Ft)
        Velocity =      4.010(Ft/s)  Flow Rate =      1.399(CFS)
        Froude No. = 1.6919

Channel from outside edge of gutter towards grade break:
        Flow Width =      2.000(Ft.)   Flow Area =      0.184(Sq.Ft)
        Velocity =      2.822(Ft/s)  Flow Rate =      0.519(CFS)
        Froude No. = 1.6401

Channel from grade break to crown:
        Flow Width =      3.597(Ft.)   Flow Area =      0.129(Sq.Ft)
        Velocity =      1.510(Ft/s)  Flow Rate =      0.195(CFS)
        Froude No. = 1.4026

Total flow rate in street =      2.113(CFS)



--------------------------------------------------------------------
```

```
  CIVILCADD/CIVILDESIGN  Engineering Software, (c) 2004   Version 7.0
--------------------------------------------------------------------
Overland Drive Widening
Street Capacity and CB "B" Inlet Capacity
10-year Flow
W=7
--------------------------------------------------------------------


Program License Serial Number 6158

--------------------------------------------------------------------
                *** Street Flow +Inlet Analysis ***

        Upstream (headworks) Elevation =   1040.700(Ft.)
        Downstream (outlet) Elevation =   1027.800(Ft.)
        Runoff/Flow Distance =    450.000(Ft.)
        Maximum flow rate in channel(s) =      0.840(CFS)
--------------------------------------------------------------------


Top of street segment elevation =   1040.700(Ft.)
End of street segment elevation =   1027.800(Ft.)
Length of street segment  =   450.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  34.000(Ft.)
Distance from crown to crossfall grade break  =  30.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  10.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150

Half street cross section data points:
   X-coordinate (Ft.)    Y-coordinate (Ft.)
               0.0000                0.7000 right of way
              10.0000                0.5000 top of curb
              10.0000                0.0000 flow line
              12.0000                0.1250 gutter end
              14.0000                0.1650 grade break
              44.0000                0.7650 crown



CURB INLET TYPE STREET DRAIN, Opening Height =      8.960(In.)

Street Inlet Calculations:
Street flow in street inlet depression =      0.840(CFS)
 Gutter depression depth =      4.000(In.)
 Gutter depression width =      4.000(Ft.)
Depth of flow =   0.229(Ft.)
Average velocity =   3.666(Ft/s)
Total flow rate in 1/2 street =   0.840(CFS)
U.S. DOT Hydraulic Engineering Circular No. 12 inlet calculations:
 Street flow half width at start of inlet =      4.000(Ft.)
 Flow rate in gutter section of street = Qw =      0.840(CFS)
 Given inlet length  L =      7.000(Ft.)
 Ratio of frontal flow to total flow = E0 =  1.0000
```

```
Half street cross section data points through curb inlet:
                 X-coordinate (Ft.)   Y-coordinate (Ft.)
               0.0000                 1.0333 right of way
              10.0000                 0.8333 top of curb
              10.0000                 0.0000 flow line
              14.0000                 0.4583 gutter/depression end
              14.0000                 0.4583 grade break
              44.0000                 1.0583 crown
 Length required for total flow interception = Lt
 Lt = .6 * Q^0.42 * Slope^.3 * (1/(n*Se)^.6 =      9.319(Ft.)
 where Manning's n = 0.0150 and Slope = street slope =  0.0287
 Se = Equivalent Street x-slope including depression =  0.1033
 Efficiency = 1 - (1-L/Lt)^1.8 =  0.9182

Remaining flow in street below inlets =      0.069(CFS)
Depth of flow =   0.070(Ft.)
Average velocity =   1.729(Ft/s)
Total flow rate in 1/2 street =   0.069(CFS)
Streetflow hydraulics:
Halfstreet flow width (curb to crown) =   2.000(Ft.)
Average flow velocity =   1.73(Ft/s)

Channel including Gutter and area towards property line:
        Flow Width =      1.128(Ft.)   Flow Area =      0.040(Sq.Ft)
        Velocity =      1.729(Ft/s)  Flow Rate =      0.069(CFS)
        Froude No. = 1.6234

Channel from outside edge of gutter towards grade break:
        Flow Width =      0.000(Ft.)   Flow Area =      0.000(Sq.Ft)
        Velocity =      0.000(Ft/s)  Flow Rate =      0.000(CFS)
        Froude No. = 0.0000

Channel from grade break to crown:
        Flow Width =      0.000(Ft.)   Flow Area =      0.000(Sq.Ft)
        Velocity =      0.000(Ft/s)  Flow Rate =      0.000(CFS)
        Froude No. = 0.0000

Total flow rate in street =      0.069(CFS)




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  CIVILCADD/CIVILDESIGN  Engineering Software, (c) 2004   Version 7.0
--------------------------------------------------------------------
Overland Drive Widening
Street Capacity and CB "C" Inley Capacity
10-year Flow
W=21'
--------------------------------------------------------------------


Program License Serial Number 6158

--------------------------------------------------------------------
                *** Street Flow +Inlet Analysis ***

        Upstream (headworks) Elevation =   1026.700(Ft.)
        Downstream (outlet) Elevation =   1020.000(Ft.)
        Runoff/Flow Distance =    950.000(Ft.)
        Maximum flow rate in channel(s) =     13.430(CFS)
--------------------------------------------------------------------


Top of street segment elevation =   1026.700(Ft.)
End of street segment elevation =   1020.000(Ft.)
Length of street segment  =   950.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  22.000(Ft.)
Distance from crown to crossfall grade break  =  18.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  10.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150

Half street cross section data points:
   X-coordinate (Ft.)    Y-coordinate (Ft.)
               0.0000                0.7000 right of way
              10.0000                0.5000 top of curb
              10.0000                0.0000 flow line
              12.0000                0.1250 gutter end
              14.0000                0.1650 grade break
              32.0000                0.5250 crown



CURB INLET TYPE STREET DRAIN, Opening Height =      8.960(In.)

Street Inlet Calculations:
Street flow in street inlet depression =     13.430(CFS)
 Gutter depression depth =      4.000(In.)
 Gutter depression width =      4.000(Ft.)
Depth of flow =   0.761(Ft.)
Average velocity =   3.046(Ft/s)
Total flow rate in 1/2 street =  13.430(CFS)
U.S. DOT Hydraulic Engineering Circular No. 12 inlet calculations:
 Street flow half width at start of inlet =     19.111(Ft.)
 Flow rate in gutter section of street = Qw =      8.815(CFS)
 Given inlet length  L =     21.000(Ft.)
 Ratio of frontal flow to total flow = E0 =  0.6564
```

```
Half street cross section data points through curb inlet:
                 X-coordinate (Ft.)   Y-coordinate (Ft.)
               0.0000                 1.0333 right of way
              10.0000                 0.8333 top of curb
              10.0000                 0.0000 flow line
              14.0000                 0.4583 gutter/depression end
              14.0000                 0.4583 grade break
              32.0000                 0.8183 crown
 Length required for total flow interception = Lt
 Lt = .6 * Q^0.42 * Slope^.3 * (1/(n*Se)^.6 =     23.813(Ft.)
 where Manning's n = 0.0150 and Slope = street slope =  0.0071
 Se = Equivalent Street x-slope including depression =  0.0747
 Efficiency = 1 - (1-L/Lt)^1.8 =  0.9786

Remaining flow in street below inlets =      0.287(CFS)
Depth of flow =   0.161(Ft.)
Average velocity =   1.245(Ft/s)
Total flow rate in 1/2 street =   0.287(CFS)
Streetflow hydraulics:
Halfstreet flow width (curb to crown) =   3.816(Ft.)
Average flow velocity =   1.25(Ft/s)

Channel including Gutter and area towards property line:
        Flow Width =      2.000(Ft.)   Flow Area =      0.198(Sq.Ft)
        Velocity =      1.375(Ft/s)  Flow Rate =      0.272(CFS)
        Froude No. = 0.7709

Channel from outside edge of gutter towards grade break:
        Flow Width =      1.816(Ft.)   Flow Area =      0.033(Sq.Ft)
        Velocity =      0.469(Ft/s)  Flow Rate =      0.015(CFS)
        Froude No. = 0.6128

Channel from grade break to crown:
        Flow Width =      0.000(Ft.)   Flow Area =      0.000(Sq.Ft)
        Velocity =      0.000(Ft/s)  Flow Rate =      0.000(CFS)
        Froude No. = 0.9163

Total flow rate in street =      0.287(CFS)



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  CIVILCADD/CIVILDESIGN  Engineering Software, (c) 2004   Version 7.0
--------------------------------------------------------------------
Overland Drive Widening
Existing CB "D" Inlet Capacity @ Bridge
10-year Flow
W=10' WHEN CB "C" W=21
--------------------------------------------------------------------


Program License Serial Number 6158

--------------------------------------------------------------------
                *** Street Flow +Inlet Analysis ***

        Upstream (headworks) Elevation =   1020.000(Ft.)
        Downstream (outlet) Elevation =   1019.100(Ft.)
        Runoff/Flow Distance =    179.000(Ft.)
        Maximum flow rate in channel(s) =      2.470(CFS)
--------------------------------------------------------------------


Top of street segment elevation =   1020.000(Ft.)
End of street segment elevation =   1019.100(Ft.)
Length of street segment  =   179.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  22.000(Ft.)
Distance from crown to crossfall grade break  =  18.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =  10.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150

Half street cross section data points:
   X-coordinate (Ft.)    Y-coordinate (Ft.)
               0.0000                0.7000 right of way
              10.0000                0.5000 top of curb
              10.0000                0.0000 flow line
              12.0000                0.1250 gutter end
              14.0000                0.1650 grade break
              32.0000                0.5250 crown



CURB INLET TYPE STREET DRAIN, Opening Height =      8.960(In.)

Street Inlet Calculations:
Street flow in street inlet depression =      2.470(CFS)
 Gutter depression depth =      4.000(In.)
 Gutter depression width =      4.000(Ft.)
Depth of flow =   0.504(Ft.)
Average velocity =   2.148(Ft/s)
Total flow rate in 1/2 street =   2.470(CFS)
U.S. DOT Hydraulic Engineering Circular No. 12 inlet calculations:
 Street flow half width at start of inlet =      6.272(Ft.)
 Flow rate in gutter section of street = Qw =      2.446(CFS)
 Given inlet length  L =     10.000(Ft.)
 Ratio of frontal flow to total flow = E0 =  0.9904
```

```
Half street cross section data points through curb inlet:
                 X-coordinate (Ft.)   Y-coordinate (Ft.)
               0.0000                 1.0333 right of way
              10.0000                 0.8333 top of curb
              10.0000                 0.0000 flow line
              14.0000                 0.4583 gutter/depression end
              14.0000                 0.4583 grade break
              32.0000                 0.8183 crown
 Length required for total flow interception = Lt
 Lt = .6 * Q^0.42 * Slope^.3 * (1/(n*Se)^.6 =      8.736(Ft.)
 where Manning's n = 0.0150 and Slope = street slope =  0.0050
 Se = Equivalent Street x-slope including depression =  0.1025
 Efficiency = 1 - (1-L/Lt)^1.8 =  1.0000

Remaining flow in street below inlets =      0.000(CFS)
Zero flow remaining in street



Total flow rate in street =      0.000(CFS)




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ATTACHMENT 7

Copy of Project's Geotechnical and Groundwater Investigation Report

☐ This attachment is empty because a geotechnical and groundwater report is not required.

If hardcopy or CD is not attached, the following information should be provided:

Title: Geotechnical/Pavement Design Report Overland Drive Widening Project (PW20-11)
Prepared By: Leighton Consulting, Inc
Date: August 18, 2021

The geotechnical and groundwater investigation report must address the following key elements, and where appropriate, mitigation recommendations must be provided.

✓ Identify areas of the project site where infiltration is likely to be feasible and provide justifications for selection of those areas based on soil types, slopes, proximity to existing features, etc. Include completed and signed Worksheet C.4-1 (see Appendix I).

✓ Investigate, evaluate and estimate the vertical infiltration rates and capacities in accordance with the guidance provided in Appendix D which describes infiltration testing and appropriate factor of safety to be applied for infiltration testing results. The site may be broken into sub-basins, each of which has different infiltration rates or capacities.

✓ Describe the infiltration/ percolation test results and correlation with published infiltration/ percolation rates based on soil parameters or classification. Recommend providing design infiltration/percolation rate(s) at the sub-basins. Use Worksheet D.5-1 (see Appendix I).

☐ Investigate the subsurface geological conditions and geotechnical conditions that would affect infiltration or migration of water toward structures, slopes, utilities, or other features. Describe the anticipated flow path of infiltrated water. Indicate if the water will flow into pavement sections, utility trench bedding, wall drains, foundation drains, or other permeable improvements.

✓ Investigate depth to groundwater and the nature of the groundwater. Include an estimate of the high seasonal groundwater elevations.

☐ Evaluate proposed use of the site (industrial use, residential use, etc.), soil and groundwater data and provide a concluding opinion whether proposed storm water infiltration could cause adverse impacts to groundwater quality and if it does cause impacts whether the impacts could be reasonably mitigated or not.

☐ Estimate the maximum allowable infiltration rates and volumes that could occur at the site that would avoid damage to existing and proposed structures, utilities, slopes, or other features. In addition the report must indicate if the recommended infiltration rate is appropriate based on the conditions exposed during construction.

☐ Provide a concluding opinion regarding whether or not the proposed onsite storm water infiltration/percolation BMP will result in soil piping, daylight water seepage, slope instability, or ground settlement.

☐ Recommend measures to substantially mitigate or avoid any potentially detrimental effects of the storm water infiltration BMPs or associated soil response on existing or proposed improvements or structures, utilities, slopes or other features within and adjacent to the site. For example, minimize soil compaction.

 Provide guidance for the selection and location of infiltration BMPs, including the minimum separations between such infiltration BMPs and structures, streets, utilities, manufactured and existing slopes, engineered fills, utilities or other features. Include guidance for measures that could be used to reduce the minimum separations or to mitigate the potential impacts of infiltration BMPs.

GEOTECHNICAL/PAVEMENT DESIGN REPORT
OVERLAND DRIVE WIDENING PROJECT (PW20-11)
CITY OF TEMECULA, CALIFORNIA

Prepared For **ENGINEERING RESOURCES OF SOUTHERN CALIFORNIA, INC.**
1861 W. REDLANDS BOULEVARD
REDLANDS, CA 92373

Prepared By **LEIGHTON CONSULTING, INC.**
41715 ENTERPRISE CIRCLE N, SUITE 104
TEMECULA CA 92590

Project No. 12939.001

Issue Date August 18, 2021

August 18, 2021

Project No. 12939.001

Engineering Resources of Southern California, Inc.
1861 W. Redlands Boulevard
Redlands, CA 92373

Attention: Mr. Matt Brudin, P.E.

Subject: Geotechnical/Pavement Design Report
Overland Drive Widening Project (PW20-11)
City of Temecula, California

In accordance with your request, we are pleased to present herewith the results of our geotechnical evaluation of the subject project. Based on the results of our evaluation, it is our opinion that the proposed roadway improvements are generally feasible from a geotechnical perspective provided the recommendations included in this report are implemented during design and construction phases. Please note that further testing and/or field verification should be performed to confirm the actual site/subgrade conditions exposed during construction and provide additional recommendations, when warranted.

The opportunity to be of service is sincerely appreciated. If you should have any questions, please do not hesitate to call our office.

Respectfully submitted,

LEIGHTON CONSULTING, INC.

Simon I. Saiid, GE 2641
Principal Engineer
Ext. 8013 ssaid@leightongroup.com

Mitchel S. Bornyasz, CEG 2416
Project Geologist
Ext. 8925 mbornyasz@leightongroup.com

Distribution: (1) Addressee (PDF)

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1.0 INTRODUCTION

1.1 Purpose and Scope of Work

The purpose of this report is to provide geotechnical recommendations for design and construction of the proposed roadway improvements. Our scope of work included the following:

- Review of our our previous pavement evaluation report (Leighton, 2013) performed for this road alignment which included coring existing pavement at two locations.
- A site reconnaissance and excavation of three percolation/infiltration tests located along the alignment. Percolation testing generally followed procedures by Riverside County Flood Control for Design of Low Impact Development Best Management Practices. Approximate locations of these and previous borings are depicted on Figure 3. The results on percolation testing are included in Appendix C.
- Geotechnical laboratory testing of selected soil samples collected during this exploration. Current and previous test results are presented in Appendix B.
- Geotechnical engineering analysis performed or as directed by a California registered Geotechnical Engineer (GE).
- Preparation of this report, presenting our findings, conclusions and geotechnical recommendations for earthwork construction.

1.2 Site Description / Proposed Improvements

City of Temecula project Number PW20-11 consists of widening Overland Drive from Jefferson Avenue to Commerce Center Drive, to two lanes in each direction, and the completion of missing segments of sidewalk, streetlights and the installation of a traffic signal at Commerce Center Drive.

This segment of Overland Drive currently consists of undivided single traffic lanes in each direction and curbs on both sides (mostly no sidewalks). Areas behind curbs are currently landscaped along the majority of the alignment with limited hardscape improvements, irrigated turf, ornamental plantings and mature trees locally. Drainage pipes/culverts currently cross Overland at various locations and ultimately discharge into Murrieta Creek. Numerous buried utilities are present within the existing and future expanded right of way of existing roadway.

For the purpose of pavement design and based on information available, the traffic index for a 20-year design life for this portion of Overland Drive is 8 (TI=8).

2.0 FIELD EXPLORATION AND LABORATORY TESTING

2.1 Field Exploration

Our field exploration consisted of the excavation of three (3) percolation/infiltration tests excavated along the proposed widening of the alignment to provide basis for earthwork construction and infiltration estimates. Prior to excavation, the boring locations were marked for coordination with Underground Service Alert (USA). Due to an abundance of existing buried utilities and localized encroachment conflicts, the test holes were augered by hand to minimize impacts on existing improvements. During exploration disturbed/bulk samples were collected from the excavations for further laboratory testing and evaluation. Approximate locations of the exploratory borings from this and the previous investigations are depicted on the *Boring Location Map* (Figure 3). Sampling was conducted by a staff engineer from our firm. After logging and sampling, the excavations were utilized for the infiltration/percolation testing and then backfilled with the soil cuttings generated during the excavation. The exploration logs are included in Appendix A.

2.2 Laboratory Testing

Laboratory tests were performed on representative bulk samples collected during our field exploration to determine the geotechnical engineering properties of subsurface materials. The following laboratory tests were performed:

- Expansion Index,
- Maximum density and moisture content relationships,
- Corrosivity,
- R-value.

The laboratory tests were performed in general conformance with ASTM or California Test Methods. Results of laboratory testing are included in Appendix B.

3.0 SUMMARY OF GEOLOGIC FINDINGS

3.1 Regional Geologic Setting

The site is located within the Peninsular Ranges geomorphic province in southwestern California. This region is characterized by steep, elongated mountain ranges and valleys that generally trend northwestward. Tectonic activity along the numerous fault zones in the area has created the landscape present today. Specifically, the site is located along the southernmost portion of a fault controlled down dropped graben, known as the Elsinore Trough. The Elsinore Trough is bounded on the northeast by the Wildomar Fault segment of the Elsinore Fault Zone (On-Site) and on the southwest by the Murrieta Creek and Willard faults (See Figure 2).

3.2 Subsurface Conditions / Earth Materials

Based on our field explorations, the areas of site improvements are locally covered by artificial fill and underlain by alluvial soils. These units are discussed in the following sections in order of increasing age. A more detailed description of each unit is provided on the logs of excavations in Appendix A.

- **Artificial Fill:** Artificial fill was encountered along the project alignment in the excavations varying in depth from 0 to 1.5 feet below ground surface (BGS). As encountered locally in our excavations, the fill is loose to medium dense and generally consists of silt (ML) and silty to clayey sand (SM/SC).
- **Alluvium:** Alluvium was encountered beneath the artificial fill along the proposed alignment. The alluvium predominantly consists of loose to medium dense, silty to clayey sand (SC/SM) and interbedded sandy silt with sand (ML) at depth. The results of our laboratory testing on representative soil samples indicate that these soils possess R-Values ranging from 19 to 35.

3.3 Surface and Groundwater

No surface or ground water was observed at the time of our field explorations along the proposed alignment. Depth to groundwater records from nearby exploration (Leighton, 2020) indicate groundwater at a depth of approximately 20 to 35 feet BGS in the area. However, groundwater conditions can fluctuate seasonally and also be directly-impacted by other factors not observed at the time of our field explorations.

3.4 Seismicity

As is common for virtually all of Southern California, strong ground shaking can be expected at the site during moderate to severe earthquakes in this region. Intensity of ground shaking at a given location depends primarily upon earthquake magnitude, site distance from the source, and site response (soil type) characteristics. The seismic coefficients were calculated utilizing an interactive program on current United States Geological Survey (USGS) website using ASCE 7-16 procedures, as well as USGS Unified Hazard Maps. Based on our explorations and review, the site will be underlain by relatively soft sedimentary deposits and dense older alluvium at greater depth. As such, the site is classified as a Class D site, and the site-specific seismic coefficients following this USGS general procedure are as listed in Table 1 below.

Table 1. 2019 CBC Seismic Coefficients per USGS General Procedure

CBC Categorization/Coefficient	Value$_1$
Site Longitude (decimal degrees)	-117.16250
Site Latitude (decimal degrees)	33.51591
Site Class Definition	**D**
Mapped Spectral Response Acceleration at 0.2s Period, S_s	**1.59 g**
Mapped Spectral Response Acceleration at 1s Period, S_1	**0.59 g**
Adjusted Spectral Response Acceleration at 0.2s Period, S_{MS}	**1.59 g**
Adjusted Spectral Response Acceleration at 1s Period, S_{M1}	**1.01 g**
Design Spectral Response Acceleration at 0.2s Period, S_{DS}	**1.06g**
Design Spectral Response Acceleration at 1s Period, S_{D1}	**0.67 g**
Site-Specific Modified Peak Ground Acceleration, PGA_m	**0.78 g**
Note: The seismic coefficients for Site Class D follows Exception (2) in Section 11.4.8 of ASCE 7-16 that assumes a fundamental period of vibration less than 0.5s for the proposed structures. The project structural engineer should confirm such assumption or else a site–specific ground motion analysis will be required	

g = Gravity acceleration

3.5 Secondary Seismic Hazards

Secondary seismic hazards such as ground rupture, liquefaction, and lateral spreading are discussed below.

3.5.1 Ground Rupture

The area of proposed improvements is located within a portion of the mapped Alquist-Priolo Earthquake Fault Zone for the Elsinore fault and active faults are mapped crossing the proposed alignment (CGS, 2018, Bryant, 2007). As such, ground surface rupture hazard exist within this alignment.

3.5.2 Dynamic Settlement / Liquefaction

Liquefaction of saturated cohesionless soils can be caused by strong ground motion resulting from earthquakes. Soil liquefaction is a phenomenon in which saturated, cohesionless soils lose their strength due to the build-up of excess pore water pressure during cyclic loading such as that induced by earthquakes. As such, saturated sandy alluvial deposits along the alignment may be susceptible to liquefaction hazard. The site is located in an area mapped with very high liquefaction potential (Riverside, 2021).

3.6 Slope Stability

While specific development plans are not final at the time of this report, construction of fill slopes up to 5-feet in height at 2:1 (horizontal to vertical) can be anticipated. Based on the observed soil characteristics, properly constructed fill slopes of 2:1 or less inclination will be generally feasible. Slope instability of natural landforms is not considered an issue at this site.

Constructed slopes should be provided with appropriate surface drainage features and landscaped (with drought tolerant vegetation) as soon as possible after grading to minimize the potential for erosion. Brow ditches should be constructed at the top of cut slopes. Drainage should be directed such that surface runoff on the slope face is minimized.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 General

The proposed roadway improvements are feasible from a geotechnical viewpoint provided that the following recommendations are incorporated into the design and construction phases of development. Based on our review of published geologic hazard maps and the results of this geotechnical exploration, the two main geologic/geotechnical concerns that may affect the constructability cost and long-term performance of the proposed improvements are as follows:

- The near surface undocumented artificial fill and alluvial soils are relatively loose/compressible and as such excessive differential settlement should be expected if subjected to additional loads.
- As indicated in Section 3.5, surface fault rupture and liquefaction hazards are present within the proposed alignment. Mitigation measures to prevent such hazards are generally considered impractical and/or cost prohibitive for this type of project. As such, it is more practical to repair any potential damage if such hazards are to occur in the future.

4.2 General Earthwork Considerations

Earthwork associated with the proposed improvements should be performed in accordance with applicable City standards, “Standard Specifications for Public Works Construction” (Green Book, latest edition), and the recommendations included in the text of this report. The General Earthwork and Grading Specifications in Appendix C, are general grading specifications provided for typical grading projects and some of the recommendations may not be strictly applicable to this project. In case of conflict, the specific recommendations contained in the text of this report supersede those included in Appendix C.

4.3 Subgrade Preparation and Remedial Earthwork

Prior to earthwork, the areas to receive fill and/or new pavement should be cleared and stripped of debris, deleterious material, organics, and vegetation. Cleared and grubbed material that may be encountered or created should be removed and appropriately disposed of off-site. Voids created by removal of buried/unsuitable materials should be backfilled with properly compacted soil in general accordance with the recommendations of this report. Specific remedial grading recommendations for the proposed improvements should be as follows:

- **New Road Embankment / Pavement and Miscellaneous Retaining walls and/or Drainage Structures:** The upper 3 feet of soils/alluvium below planned subgrade or footing elevation should be over-excavated (OX) and recompacted. The horizontal limits of OX below footings or fills should be equivalent to the vertical OX (projected down and away at a 1:1 slope from the outside edge of footings/fill). Localized areas of deeper or shallower OX may be required, depending on the actual conditions encountered during construction.

- **<u>Street Sidewalks</u>:** In landscape or unpaved areas that are going to receive fill, a minimum of 2-foot OX should be anticipated prior to placement of new fill or sidewalks. The OX should extend horizontally a minimum distance of 2 feet from edges of new fills or improvement. The required OX depth should be further verified during construction.

After remedial removal described above is completed, the exposed subgrade surface should be scarified, moisture conditioned and compacted to at least 90 percent relative compaction (per ASTM D1557). Further field evaluation by the geotechnical consultant during construction may require localized additional removal and compaction. Excavations should be performed in accordance with the project plans, specifications, and all applicable OSHA requirements.

4.4 Fill Materials

Onsite soils should generally be suitable as fill materials for street subgrade provided they are free of rocks over 6 inches in diameter and organic matter. Fill should be compacted in uniform horizontal lifts by mechanical means to at least 90 percent relative compaction as determined per ASTM D 1557 (Modified Proctor) or as required per City standards.

Import soils and/or borrow sites, if needed, should be evaluated by the geotechnical consultant prior to import. Import soils should be uncontaminated, granular in nature, free of organic material (loss on ignition less-than 2 percent), have a low expansion potential (EI<51) and R-value greater than 40 if to be used in upper 12 inches of street subgrade.

4.5 Shrinkage

The volume changes of excavated onsite materials upon compaction is expected to vary with depth of excavation, location, material type and compaction effort during grading. As such, the in-place and compacted densities of these materials vary and accurate determination of shrinkage for any specific area cannot be made, especially in the case of this project where soils vary considerably from one area to another. For preliminary planning purposes and based on our field observations, we recommend that a shrinkage factor of 10 percent to 15 percent be applied for the proposed remedial grading.

4.6 Utility Trenches

Utility trenches should be backfilled with compacted fill in accordance with Sections 306-1 of the Standard Specifications for Public Works Construction (“Greenbook”), latest edition. Fill material above the pipe zone should be placed in lifts not exceeding 8 inches in un-compacted thickness and should be compacted to at least 90 percent relative compaction (per ASTM D1557) by mechanical means only. Site soils may generally be suitable as trench backfill provided these soils are screened of rocks over 3 inches in diameter and organic matter.

Excavation of utility trenches should be performed in accordance with the project plans, specifications and the California Construction Safety Orders (latest edition). The contractor should be responsible for providing a “competent person” as defined in Article 6 of the California Construction Safety Orders. Contractors should be advised that sandy soils (such as fills generated from the onsite fill and alluvium) could make excavations particularly unsafe if all safety precautions are not properly implemented. In addition, excavations at or near the toe of slopes and/or parallel to slopes may be highly unstable due to the increased driving force and load on the trench wall. Spoil piles from the excavation(s) and construction equipment should be kept away from the sides of the trenches. Leighton does not consult in the area of safety engineering.

4.7 Preliminary Pavement Design

The preliminary pavement design provided below is based on the Caltrans Highway Design Manual (HDM) and applicable City street standards. Based on testing of the collected samples, R-values of the near-surface soils vary from 19 to 35. City of Temecula minimum pavement section for a traffic index of 8 is 6 inches HMA over 8 inches aggregate base (AB). The recommended pavement section based conservatively on an average R-value of 27 is presented in table below.

Table 2. Preliminary Pavement Design

Street	Design R-value	Traffic Index	Pavement Structural Sections (in.)
Overland Drive	27	8	6 AC / 11 AB

-AC is asphalt concrete conforming to applicable City Standards, Greenbook. and Caltrans Standard Specs
-AB is aggregate base (CAB, Class 2 AB or CMB) conforming to applicable City Standard, Greenbook, and Caltrans Standard Specifications

Pavement design and construction should also conform to applicable City and industry standards. Final pavement section may differ from that stated in table 2 above depending on actual R-value of subgrade soils during construction. The Caltrans pavement section design calculations were based on a pavement life of approximately 20 years with a normal amount of flexible pavement maintenance.

Although not anticipated on this project, any imported materials placed within the upper 2.5 feet of finished grade should have a minimum R-value of 40 and should be non-corrosive and of low expansion. Other construction materials such as aggregates, asphalt, and Portland cement should be imported from local commercial sources. No potential sources for import materials have been pre-tested for this project. Therefore, prior to import, the materials should be tested and approved by the Geotechnical Engineer.

4.8 Retaining Walls / Culverts

Retaining wall earth pressures are a function of the amount of wall yielding horizontally under load. If the wall can yield enough to mobilize full shear strength of backfill soils, then the wall can be designed for "active" pressure. If the wall cannot yield under the applied load, the shear strength of the soil cannot be mobilized and the earth pressure will be higher. Such walls should be designed for "at rest" conditions. If a structure moves toward the soils, the resulting resistance developed by the soil is the "passive" resistance. Retaining walls backfilled with non-expansive soils should be designed using the following equivalent fluid pressures:

Table 3. Retaining Wall Design Earth Pressures (Static, Drained)

Loading Conditions	Equivalent Fluid Density (pcf)	
	Level Backfill	2:1 Backfill
Active	35	55
At-Rest	55	65
Passive*	300	150 (2:1, sloping down)

* This assumes level condition in front of the wall will remain for the duration of the project, not to exceed 3,000 psf at depth. If sloping down (2:1) grades exist in front of walls, then they should be designed using passive values reduced to ½ of level backfill passive resistance values.

Unrestrained (yielding) cantilever walls should be designed for the active equivalent-fluid weight value provided above for very low to low expansive soils that are free draining. In the design of walls restrained from movement at the top (non-yielding) such as basement or elevator pit/utility vaults, the at-rest equivalent fluid weight value should be used. Total depth of retained earth for design of cantilever walls should be measured as the vertical distance below the ground surface measured at the wall face for stem design, or measured at the heel of the footing for overturning and sliding calculations. Should a sloping backfill other than a 2:1 (horizontal:vertical) be constructed above the wall (or a backfill is loaded by an adjacent surcharge load), the equivalent fluid weight values provided above should be re-evaluated on an individual case basis by us. Non-standard wall designs should also be reviewed by us prior to construction to check that the proper soil parameters have been incorporated into the wall design.

All retaining walls should be provided with appropriate drainage. The outlet pipe should be sloped to drain to a suitable outlet. Typical wall drainage design is illustrated in Appendix D, *Retaining Wall Backfill and Subdrain Detail*. Wall backfill should be non-expansive (EI < 21) sands compacted by mechanical methods to a minimum of 90 percent relative compaction (ASTM D 1557). Clayey site soils should not be used as wall backfill. Walls should not be backfilled until wall concrete attains the 28-day compressive strength and/or as determined by the Structural Engineer that the wall is structurally capable of supporting backfill. Lightweight compaction equipment should be used, unless otherwise approved by the Structural Engineer.

4.9 Corrosion Potential

Caltrans *Corrosion Guidelines* (Caltrans, 2018) state that a site is considered to be corrosive to foundation elements or underground structures if one or more of the following conditions exist for the soil and/or water samples taken at the site:

- Chloride concentration greater than or equal to 500 ppm
- Sulfate concentration greater than or equal to 1,500 ppm
- pH of 5.5 or less

Based on our laboratory testing on a representative soil sample, the onsite soils are considered to be non-corrosive to foundation elements or underground structures.

4.10 Percolation/Infiltration Testing

Three (3) percolation tests were performed for preliminary screening along the proposed alignment (see, Figure 3) in general accordance with the procedures of the Riverside County Flood Control and Water Conservation District (RCFC&WCD) Design Handbook (RCFC, 2018). Percolation tests were performed at a depth of approximately 3 to 4 feet BGS.

Results reported below are the averaged ending rate readings in inch per hour. The infiltration rates were estimated using the “Porchet Method”. No factor of safety value has been applied to these rates. Field test data are included in Appendix A and the test results are summarized below:

Summary of Infiltration Test Results

Test Hole #	Depth BGS (ft)	Infiltration Rate (in/hr)	Soil Description
P-1	4.0	0.95	Silty SAND (SM)
P-2	3.25	0.93	Silty SAND (SM)
P-3	3.5	0.90	Silty SAND (SM)

4.11 Construction Observation

Observation and testing should be performed by Leighton’s representatives during excavation/construction. It should be anticipated that the substrata exposed during construction may vary from that encountered in the test borings. Reasonably continuous construction observation and review during the proposed improvements allows for evaluation of the actual soil conditions and the ability to provide appropriate revisions where required during construction.

Site preparation, removal of unsuitable soils, trench excavation, shoring, approval of imported earth materials, fill placement of bedding and backfill, and other site geotechnically-related operations should be observed and tested by Leighton.

5.0 LIMITATIONS

This report was necessarily based in part upon data obtained from a limited number of observances, site visits, soil samples, tests, analyses, histories of occurrences, spaced subsurface explorations and limited information on historical events and observations. Such information is necessarily incomplete. The nature of many sites is such that differing characteristics can be experienced within small distances and under various climatic conditions. Changes in subsurface conditions can and do occur over time. This evaluation was performed with the understanding that the proposed improvements are as described in Section 1.1 of this report.

The client is referred to Appendix E regarding important information provided by the Geoprofessional Business Association (GBA) on geotechnical engineering studies and reports and their applicability.

This report was prepared for our Client based on their needs, directions, and requirements at the time of our investigation. This report is not authorized for use by, and is not to be relied upon by any party except our Client, and its successors and assigns as owner of the property, with whom Leighton has contracted for the work. Use of or reliance on this report by any other party is at that party's risk. Unauthorized use of or reliance on this report constitutes an agreement to defend and indemnify Leighton from and against any liability which may arise as a result of such use or reliance, regardless of any fault, negligence, or strict liability of Leighton.

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Project: 12939.001	Eng/Geol: SIS/MSB
Scale: 1 " = 2,000 '	Date: August 2021

Base Map: ESRI ArcGIS Online 2021

Author: Leighton Geomatics (btran)

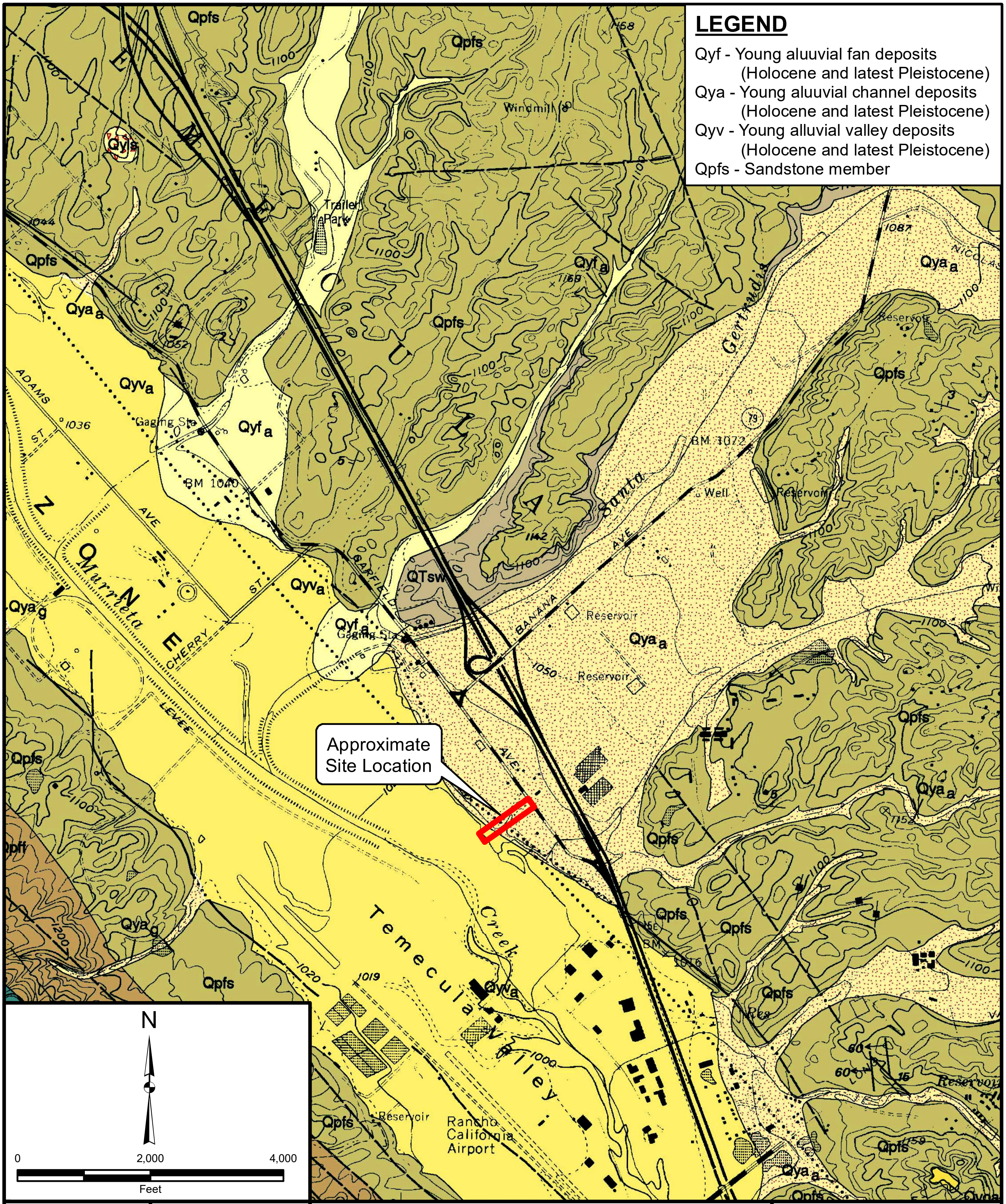
SITE LOCATION MAP

Overlan Drive Widening (PW20-11)
Temecula , California

FIGURE 1

Leighton

Map Saved as V:\Drafting\12939\001\Maps\12939-001_F01_SLM_2021-08-06.mxd on 8/3/2021 1:09:04 PM



Project: 12939.001	Eng/Geol: SIS/MSB
Scale: 1 " = 2,000 '	Date: August 2021

Base Map: Preliminary Geologic Map of the Murrieta Quadrangle Riverside County, California by M.P. Kennedy, 1975-76; and D.M. Morton, 1967-68, 93

Author: Leighton Geomatics (btran)

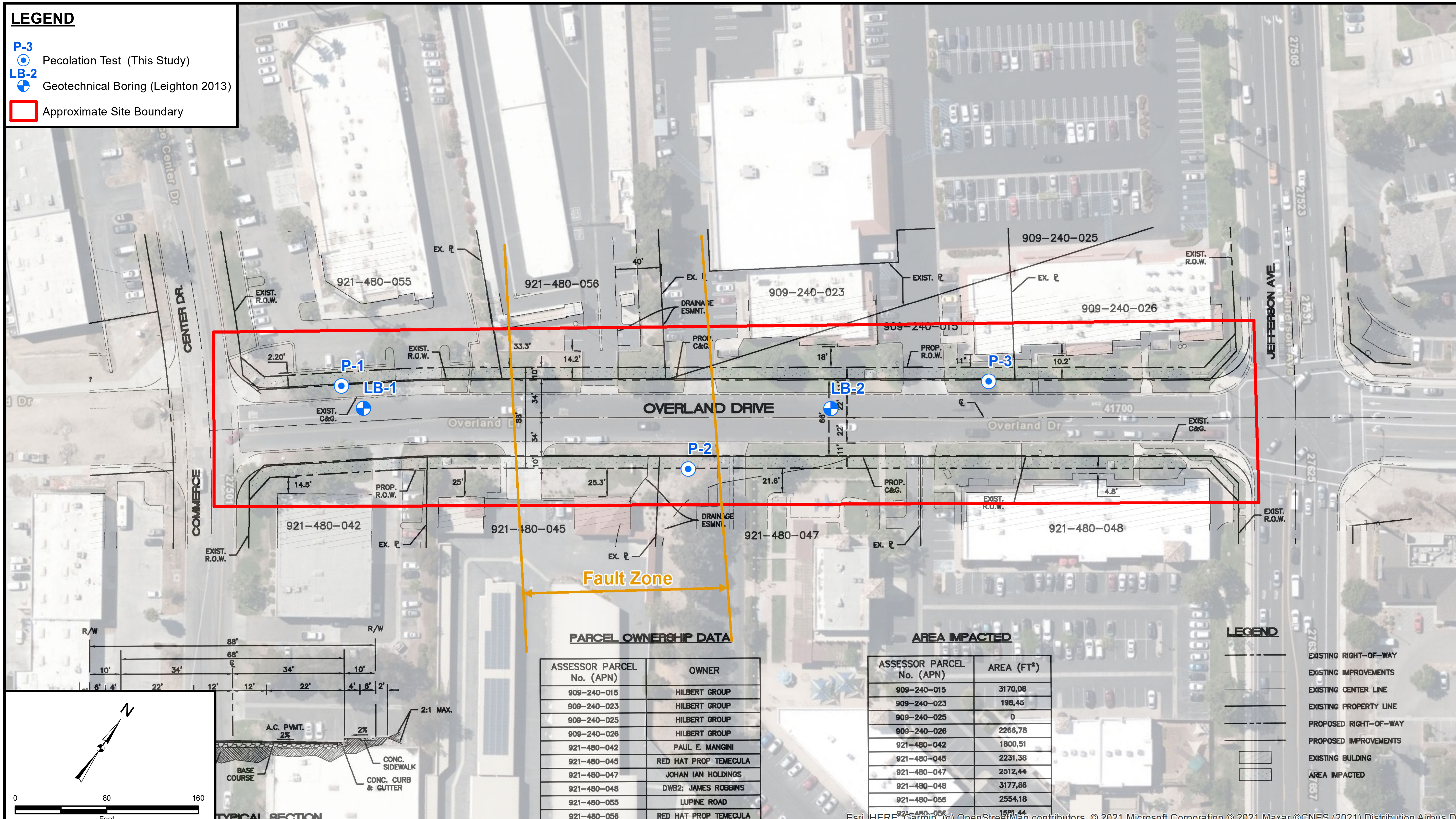
REGIONAL GEOLOGY MAP

Overlan Drive Widening (PW20-11)
Temecula , California

FIGURE 2

Leighton

Map Saved as V:\Drafting\12939\001\Maps\12939-001_F02_RGM_2021-08-06.mxd on 8/6/2021 11:36:13 AM



PARCEL OWNERSHIP DATA

ASSESSOR PARCEL No. (APN)	OWNER
909-240-015	HILBERT GROUP
909-240-023	HILBERT GROUP
909-240-025	HILBERT GROUP
909-240-026	HILBERT GROUP
921-480-042	PAUL E. MANGINI
921-480-045	RED HAT PROP TEMECULA
921-480-047	JOHAN IAN HOLDINGS
921-480-048	DWB2; JAMES ROBBINS
921-480-055	LUPINE ROAD
921-480-056	RED HAT PROP TEMECULA

AREA IMPACTED

ASSESSOR PARCEL No. (APN)	AREA (FT^2)
909-240-015	3170,08
909-240-023	198,45
909-240-025	0
909-240-026	2266,78
921-480-042	1800,51
921-480-045	2231,38
921-480-047	2512,44
921-480-048	3177,86
921-480-055	2554,18
921-480-056	1581,44

Project: 12939.001	Eng/Geol: SIS/MSB
Scale: 1 " = 80 '	Date: August 2021

Base Map: ESRI ArcGIS Online 2021
Overland drive right of way analysis, project no. PW 16-06 by ERSC Engineering
Author: Leighton Geomatics (btran)

BORING LOCATION PLAN

Overlan Drive Widening (PW20-11)
Temecula , California

FIGURE 3

Leighton

Map Saved as V:\Drafting\12939\001\Maps\12939-001_F03_BLP_2021-08-06.mxd on 8/6/2021 11:20:30 AM

APPENDIX A

Logs of Exploratory Borings (This and Previous Explorations)

The attached subsurface exploration logs and related information depict subsurface conditions only at the locations indicated and at the particular date designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these logged locations. The passage of time may result in altered subsurface conditions due to environmental changes. In addition, any stratification lines on the logs represent the approximate boundary between sampling intervals and soil types; and the transition may be gradual.

GEOTECHNICAL BORING LOG P-01

Project No.	12939.001	**Date Drilled**	7-22-21
Project	Overland Widening	**Logged By**	DP
Drilling Co.	Leighton	**Hole Diameter**	8"
Drilling Method	Hand Auger	**Ground Elevation**	+/- 1030 ft'
Location	See Boring Location Map	**Sampled By**	DP

SOIL DESCRIPTION

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	Soil Description	Type of Tests
	0							ML	**Artificial Fill (Afu)** SANDY SILT, firm, dark brown, moist, fine sand	
				B1				SM	**Quaternary Alluvium (Qal)** SILTY SAND, medium dense, yellowish brown, slightly moist, fine sand, RV = 23	RV
	5								Boring Terminated at 3 Feet 6 Inch(es) No Groundwater Encountered Boring Backfilled with Soil Cuttings	
	10									
	15									
	20									
	25									
	30									

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

Leighton

*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG P-02

Project No.	12939.001	**Date Drilled**	7-22-21
Project	Overland Widening	**Logged By**	DP
Drilling Co.	Leighton	**Hole Diameter**	8"
Drilling Method	Hand Auger	**Ground Elevation**	+/- 1030 ft'
Location	See Boring Location Map	**Sampled By**	DP

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION *This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.*	Type of Tests
	0							SM	**Quaternary Alluvium (Qal)** SILTY SAND, medium dense, yellowish brown, slightly moist, fine sand	
				B1						CR
	5								Boring Terminated at 3 Feet 1 Inch(es) No Groundwater Encountered Boring Backfilled with Soil Cuttings	
	10									
	15									
	20									
	25									
	30									

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

Leighton

GEOTECHNICAL BORING LOG P-03

Project No.	12939.001	**Date Drilled**	7-22-21
Project	Overland Widening	**Logged By**	DP
Drilling Co.	Leighton	**Hole Diameter**	8"
Drilling Method	Hand Auger	**Ground Elevation**	+/- 1030 ft'
Location	See Boring Location Map	**Sampled By**	DP

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
									This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
	0							ML	**Artificial Fill (Afu)** SANDY SILT, firm, dark brown, moist, fine sand	
				B1				SM	**Quaternary Alluvium (Qal)** SILTY SAND, medium dense, yellowish brown, slightly moist, fine sand, RV = 19	RV
	5								Boring Terminated at 3 Feet 6 Inch(es) No Groundwater Encountered Boring Backfilled with Soil Cuttings	
	10									
	15									
	20									
	25									
	30									

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
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- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

Leighton

*** * * This log is a part of a report by Leighton and should not be used as a stand-alone document. * * ***

GEOTECHNICAL BORING LOG B-1

Project No.	10022.001	**Date Drilled**	3-18-13
Project	Temecula Pavement Rehabilitation	**Logged By**	JTD
Drilling Co.	2-R Drilling	**Hole Diameter**	8"
Drilling Method	H - 140lb - Auto - 30" Drop	**Ground Elevation**	'
Location	Overland Parkway Sta 13+90	**Sampled By**	JTD

SOIL DESCRIPTION

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	Soil Description	Type of Tests
	0								@ Surface: 2.75"AC/11.25"DG	
				R-1 B-1	7 12 19	126	10	SC-SM	SILTY, CLAYEY SAND, medium dense, dark gray, moist, fine to coarse grained sand, RV=35	RV
				R-2	8 9 10	110	15		SILTY, CLAYEY SAND, loose, gray, moist, fine to medium grained sand	
	5								Drilled to 5' Sampled to 5' Groundwater not encountered Backfilled with Cuttings	
	10									
	15									
	20									
	25									
	30									

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

*** * * This log is a part of a report by Leighton and should not be used as a stand-alone document. * * ***

GEOTECHNICAL BORING LOG B-2

Project No.	10022.001	**Date Drilled**	3-18-13
Project	Temecula Pavement Rehabilitation	**Logged By**	JTD
Drilling Co.	2R-Drilling	**Hole Diameter**	8"
Drilling Method	H - 140lb - Auto - 30" Drop	**Ground Elevation**	'
Location	Overland Parkway Sta 18+05	**Sampled By**	JTD

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0								@ Surface: 3.25"AC/12"DG	
				R-1 B-1	15 21 21	122	14	SC	CLAYEY SAND, medium dense, dark gray, moist, fine to coarse grained sand, MD=130.5 @ 9.0%	MD
				R-2	6 5 6	86	20		CLAY with SAND, stiff, dark gray, moist to wet, fine to medium grained sand, organics	
	5									
									Drilled to 5' Sampled to 5' Groundwater not encountered Backfilled with Cuttings	
	10									
	15									
	20									
	25									
	30									

SOIL DESCRIPTION: This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

*** * * This log is a part of a report by Leighton and should not be used as a stand-alone document. * * ***

APPENDIX B

Laboratory Test Results (This and Previous Explorations)

Leighton

TESTS for SULFATE CONTENT CHLORIDE CONTENT and pH of SOILS

Project Name: ERSC Overland Dr. Widening | Tested By : F. Mina | Date: 07/30/21

Project No. : 12939.001 | Data Input By: M. Vinet | Date: 07/30/21

Boring No.	P-2			
Sample No.	B-1			
Sample Depth (ft)	3.0			
Soil Identification:	Silty Sand (SM)			
Wet Weight of Soil + Container (g)	100.00			
Dry Weight of Soil + Container (g)	100.00			
Weight of Container (g)	0.00			
Moisture Content (%)	0.00			
Weight of Soaked Soil (g)	100.00			

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	1			
Crucible No.	1			
Furnace Temperature (°C)	850			
Time In / Time Out	Timer			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	25.1075			
Wt. of Crucible (g)	25.1032			
Wt. of Residue (g) (A)	0.0043			
PPM of Sulfate (A) x 41150	176.95			
PPM of Sulfate, Dry Weight Basis	**177**			

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	30			
ml of AgNO3 Soln. Used in Titration (C)	1.2			
PPM of Chloride (C -0.2) * 100 * 30 / B	100			
PPM of Chloride, Dry Wt. Basis	**100**			

pH TEST, DOT California Test 643

pH Value	**8.00**			
Temperature °C	21.0			

SOIL RESISTIVITY TEST
DOT CA TEST 643

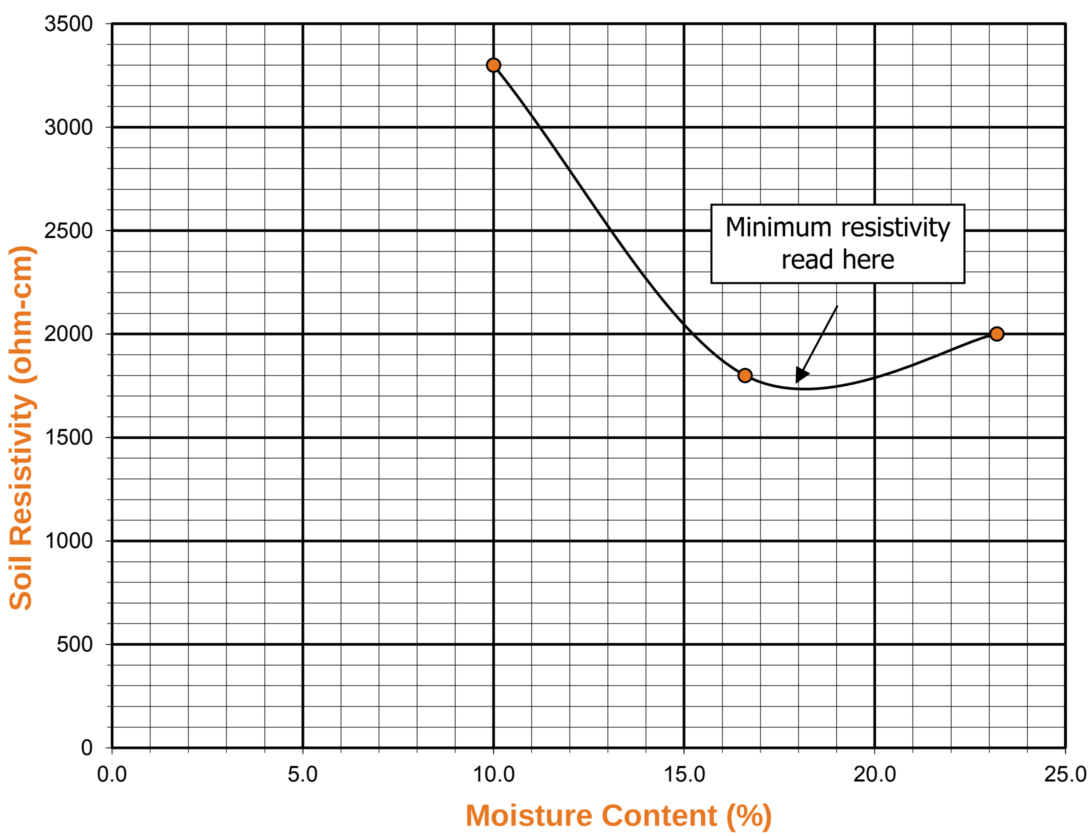
Project Name:	ERSC Overland Dr. Widening	Tested By :	F. Mina	Date:	07/30/21
Project No. :	12939.001	Data Input By:	M. Vinet	Date:	07/30/21
Boring No.:	P-2	Depth (ft.) :	3.0		
Sample No. :	B-1				
Soil Identification:*	Silty Sand (SM)				

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	50	10.00	3300	3300
2	83	16.60	1800	1800
3	116	23.20	2000	2000
4				
5				

Moisture Content (%) (MCi)	0.00
Wet Wt. of Soil + Cont. (g)	100.00
Dry Wt. of Soil + Cont. (g)	100.00
Wt. of Container (g)	0.00
Container No.	A
Initial Soil Wt. (g) (Wt)	500.00
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH: pH	Soil pH: Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 643	
1750	**18.0**	**177**	**100**	**8.00**	**21.0**



MODIFIED PROCTOR COMPACTION TEST

ASTM D 1557

Project Name:	TEMECULA PAVEMENT REHAB.	Tested By :	RS	Date:	3-20-13
Project No.:	10022.001	Input By :	JMB	Date:	3-21-13
Location:	**B-2**	Depth (ft.)	1.5-3.5		
Sample No. :	**B-1**				
Soil Identification:	CLAYEY SAND WITH FEW GRAVEL (SC), grayish olive.				

Preparation Method: [X] Moist [ ] Dry — [ ] Mechanical Ram [X] Manual Ram

Mold Volume (ft³) 0.03317 — *Ram Weight = 10 lb.; Drop = 18 in.*

Moisture Added (ml)	0	50	-50	-100		
TEST NO.	1	2	3	4	5	6
Wt. Compacted Soil + Mold (g)	6314	6259	6358	6294		
Weight of Mold (g)	4209	4209	4209	4209		AS-REC
Net Weight of Soil (g)	2105	2050	2149	2085		M/C
Wet Weight of Soil + Cont. (g)	982.2	915.2	1356.7	1292.4		734.6
Dry Weight of Soil + Cont. (g)	895.4	814.5	1249.8	1218.7		682.8
Weight of Container (g)	140.2	81.0	136.8	214.9		230.6
Moisture Content (%)	11.5	13.7	9.6	7.3		11.5
Wet Density (pcf)	139.9	136.2	142.8	138.6		
Dry Density (pcf)	125.5	119.8	130.3	129.1		

Maximum Dry Density (pcf) **130.5** **Optimum Moisture Content (%)** **9.0**

PROCEDURE USED

[ ] **Procedure A**
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
May be used if +#4 is 20% or less

[X] **Procedure B**
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
Use if +#4 is >20% and +3/8 in. is 20% or less

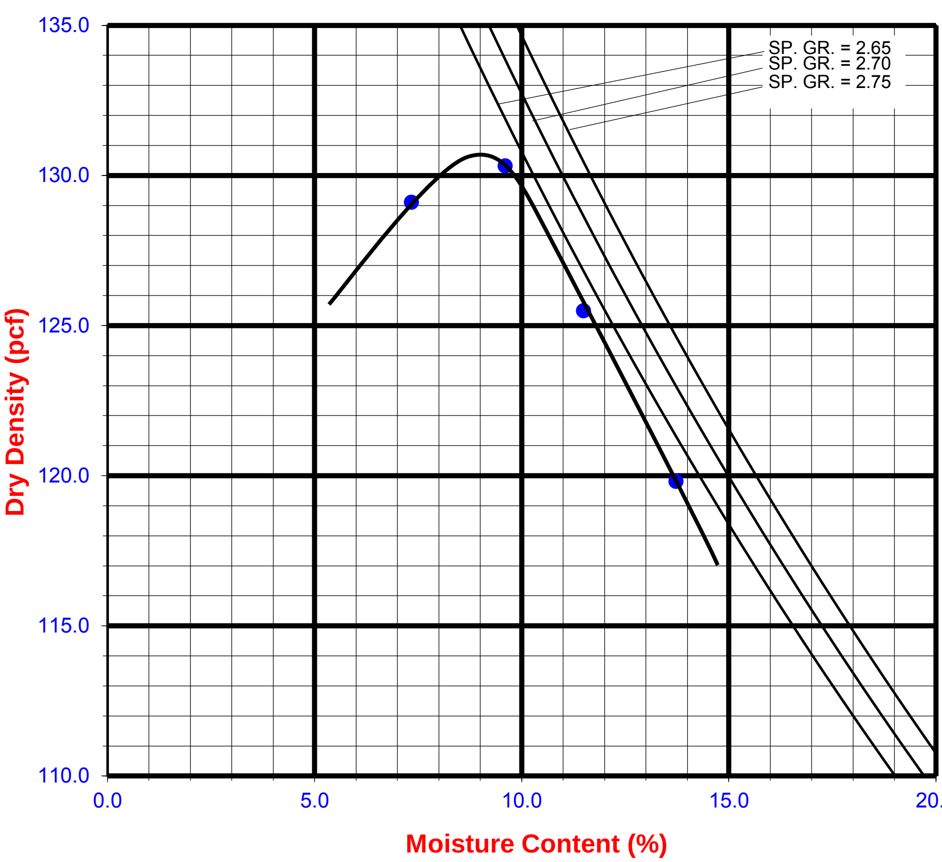
[ ] **Procedure C**
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)
Use if +3/8 in. is >20% and +¾ in. is <30%

Particle-Size Distribution:

GR:SA:FI

Atterberg Limits:

LL,PL,PI



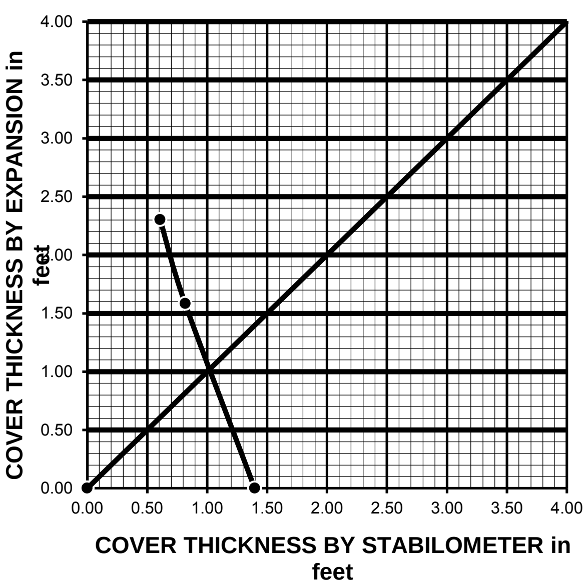
Leighton

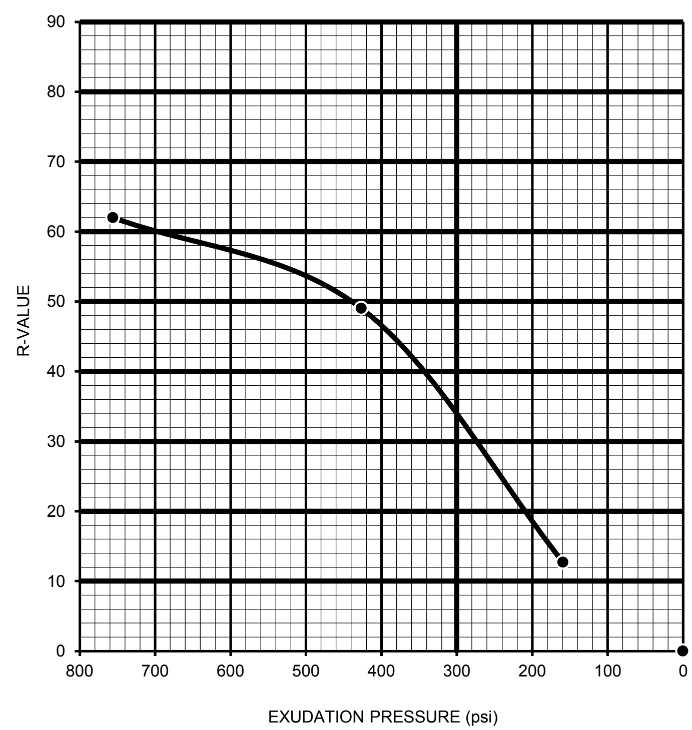
R-VALUE TEST RESULTS

Project Name:	TEMECULA PAVEMENT REHAB.	Date:	3/21/13
Project Number:	10022.001	Technician:	MRV
Boring Number:	**B-1**	Depth (ft.):	1.5-3.5
Sample Number:	**B-1**	Sample Location:	**
Sample Description:	CLAYEY SAND WITH TRACE GRAVEL (SC), olive.		

TEST SPECIMEN	**A**	**B**	**C**
MOISTURE AT COMPACTION %	9.6	10.7	13.0
HEIGHT OF SAMPLE, Inches	2.38	2.42	2.52
DRY DENSITY, pcf	126.1	124.8	118.7
COMPACTOR AIR PRESSURE, psi	185	160	100
EXUDATION PRESSURE, psi	756	426	159
EXPANSION, Inches x 10exp-4	61	42	0
STABILITY Ph 2,000 lbs (160 psi)	40	59	125
TURNS DISPLACEMENT	3.97	4.14	4.81
R-VALUE UNCORRECTED	65	51	13
R-VALUE CORRECTED	62	49	13

DESIGN CALCULATION DATA	**a**	**b**	**c**
GRAVEL EQUIVALENT FACTOR	1.0	1.0	1.0
TRAFFIC INDEX	5.0	5.0	5.0
STABILOMETER THICKNESS, ft.	0.61	0.82	1.40
EXPANSION PRESSURE THICKNESS, ft.	2.30	1.58	0.00





R-VALUE BY EXPANSION:	36
R-VALUE BY EXUDATION:	35
EQUILIBRIUM R-VALUE:	35

Rev. 08-04

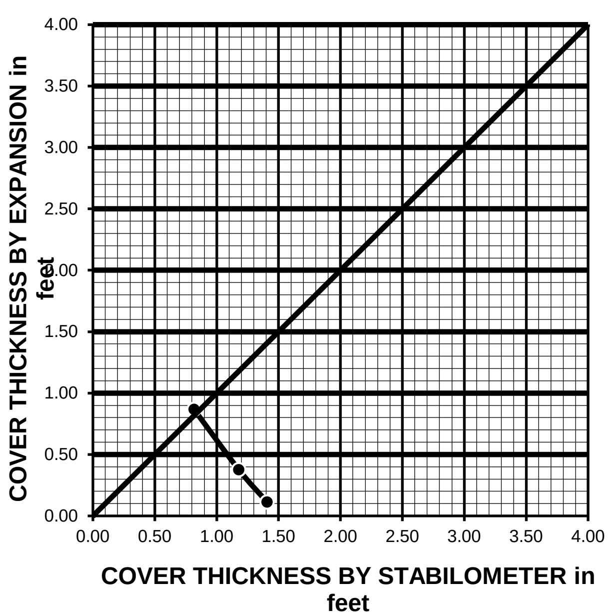
R-VALUE TEST RESULTS
ASTM D 2844

Project Name:	ERSC Overland Dr. Widening	Date:	7/29/21
Project Number:	12939.001	Technician:	F. Mina
Boring Number:	P-1	Depth (ft.):	3.5
Sample Number:	B-1	Sample Location:	N/A
Sample Description:	Silty asnd (SM), Very Dark Yellowish Brown.		

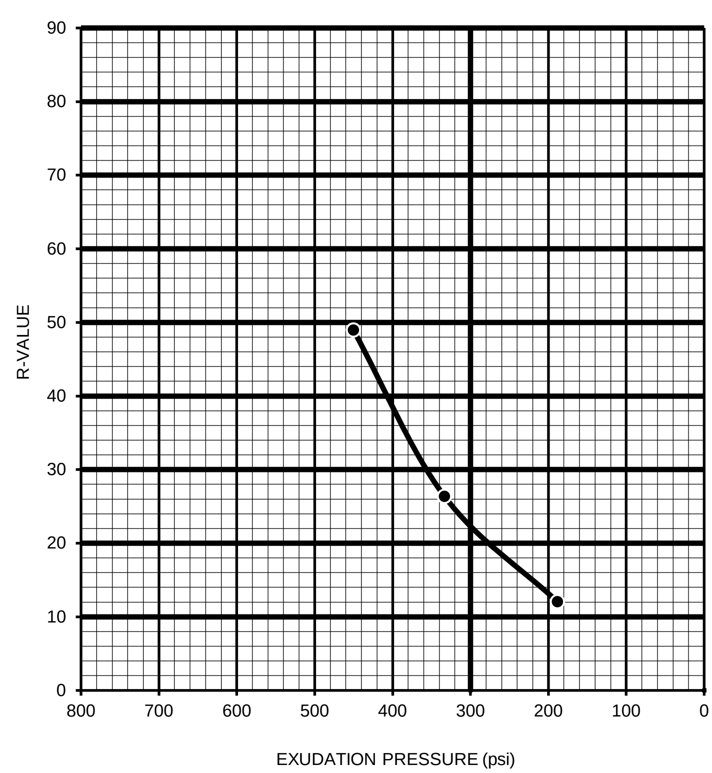
TEST SPECIMEN	A	B	C
MOISTURE AT COMPACTION %	11.4	12.5	13.6
HEIGHT OF SAMPLE, Inches	2.50	2.55	2.54
DRY DENSITY, pcf	115.5	118.1	111.0
COMPACTOR AIR PRESSURE, psi	175	150	125
EXUDATION PRESSURE, psi	450	333	189
EXPANSION, Inches x 10exp-4	23	10	3
STABILITY Ph 2,000 lbs (160 psi)	56	93	125
TURNS DISPLACEMENT	4.84	5.03	5.10
R-VALUE UNCORRECTED	49	26	12
R-VALUE CORRECTED	49	26	12

DESIGN CALCULATION DATA	a	b	c
GRAVEL EQUIVALENT FACTOR	1.0	1.0	1.0
TRAFFIC INDEX	5.0	5.0	5.0
STABILOMETER THICKNESS, ft.	0.82	1.18	1.41
EXPANSION PRESSURE THICKNESS, ft.	0.87	0.38	0.11

EXPANSION PRESSURE CHART



EXUDATION PRESSURE CHART



R-VALUE BY EXPANSION:	45
R-VALUE BY EXUDATION:	23
EQUILIBRIUM R-VALUE:	23

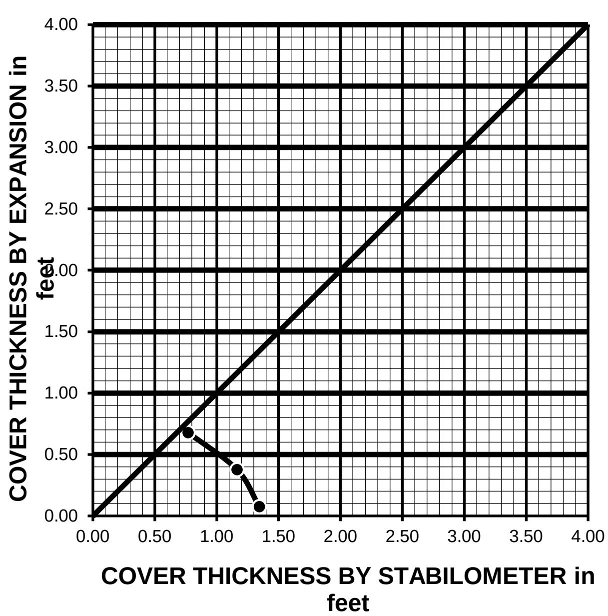
R-VALUE TEST RESULTS
ASTM D 2844

Project Name:	ERSC Overland Dr. Widening	Date:	7/29/21
Project Number:	12939.001	Technician:	F. Mina
Boring Number:	P-3	Depth (ft.):	3.5
Sample Number:	B-1	Sample Location:	N/A
Sample Description:	Silty asnd (SM), Very Dark Brown.		

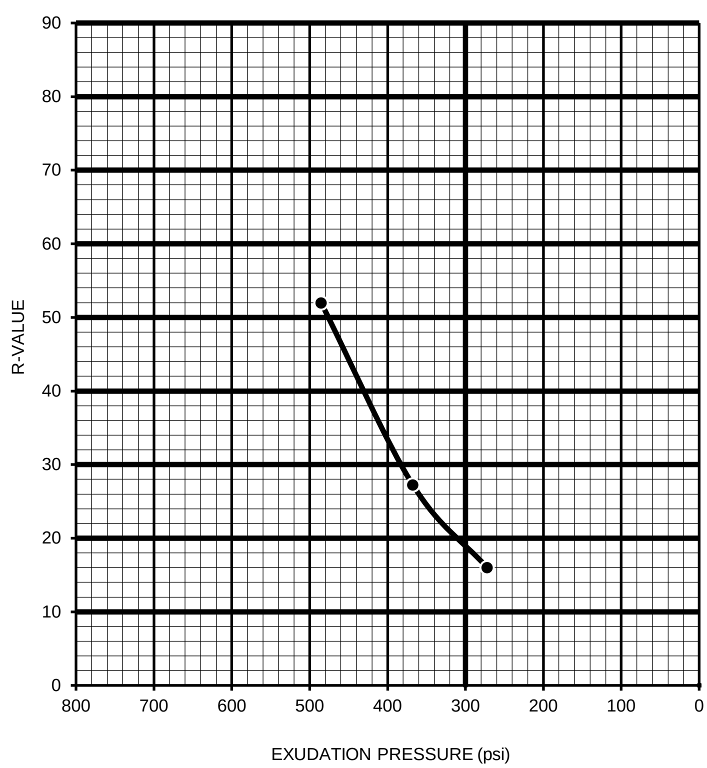
TEST SPECIMEN	A	B	C
MOISTURE AT COMPACTION %	10.5	11.6	12.8
HEIGHT OF SAMPLE, Inches	2.48	2.49	2.59
DRY DENSITY, pcf	116.9	114.4	115.4
COMPACTOR AIR PRESSURE, psi	200	175	150
EXUDATION PRESSURE, psi	485	368	272
EXPANSION, Inches x 10exp-4	18	10	2
STABILITY Ph 2,000 lbs (160 psi)	55	95	120
TURNS DISPLACEMENT	4.41	4.57	4.72
R-VALUE UNCORRECTED	52	27	15
R-VALUE CORRECTED	52	27	16

DESIGN CALCULATION DATA	a	b	c
GRAVEL EQUIVALENT FACTOR	1.0	1.0	1.0
TRAFFIC INDEX	5.0	5.0	5.0
STABILOMETER THICKNESS, ft.	0.77	1.16	1.34
EXPANSION PRESSURE THICKNESS, ft.	0.68	0.38	0.08

EXPANSION PRESSURE CHART



EXUDATION PRESSURE CHART



R-VALUE BY EXPANSION:	55
R-VALUE BY EXUDATION:	19
EQUILIBRIUM R-VALUE:	19

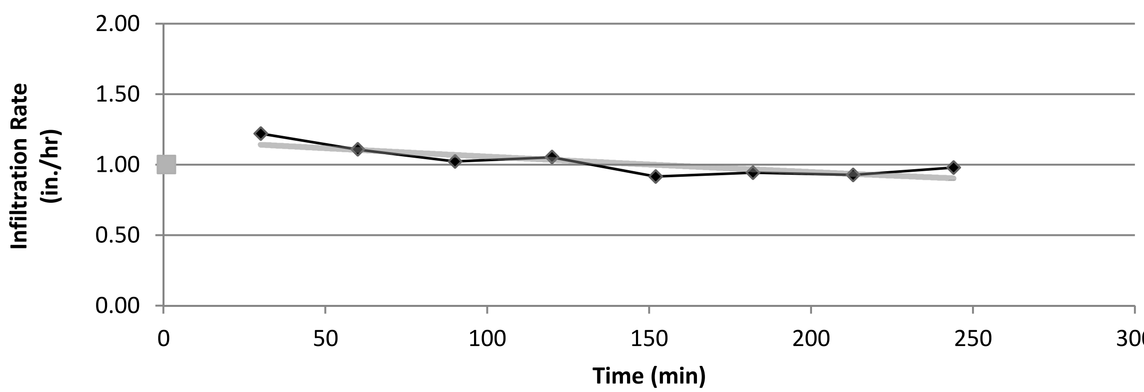
APPENDIX C

Percolation Testing Data Sheets

Test Hole Number:	P-1	Project	Overland
Date Excavated:	7/22/2021	Project Number	12939.001

Tested by:	DAP	**Effective Depth of Test Hole (in.)	42
Date Tested	7/23/2021	Diameter (in.)	8
Soil Unit:	Compacted Fill	Effective Radius (in)	4
USCS Soil Type:	SM	Temperature (F)	75

Interval Number	Time		Δt (min)	Total Time (min)	Initial Water Depth (inches)	Final Water Depth (inches)	Change In Water Level (inches)	Infiltration Rate* (inches/hour)	Percolation Rate (minute/inch)
1	1:40	2:10	30	30	10.0	19.0	9.00	1.22	3.3
2	2:10	2:40	30	60	7.0	16.0	9.00	1.11	3.3
3	2:40	3:10	30	90	9.3	17.1	7.88	1.02	3.8
4	3:10	3:40	30	120	8.0	16.4	8.38	1.05	3.6
5	3:40	4:12	32	152	10.1	17.5	7.38	0.92	4.3
6	4:12	4:42	30	182	10.5	17.6	7.06	0.94	4.2
7	4:43	5:13	30	213	11.5	18.3	6.75	0.93	4.4
8	5:14	5:44	30	244	10.2	17.6	7.38	0.98	4.1



* Based on Porchet Method ** Hole Depth at Start 48 Inches

Percolation Test Data

P-1

Project Number: *12939.001*
Project Name: *Overland*

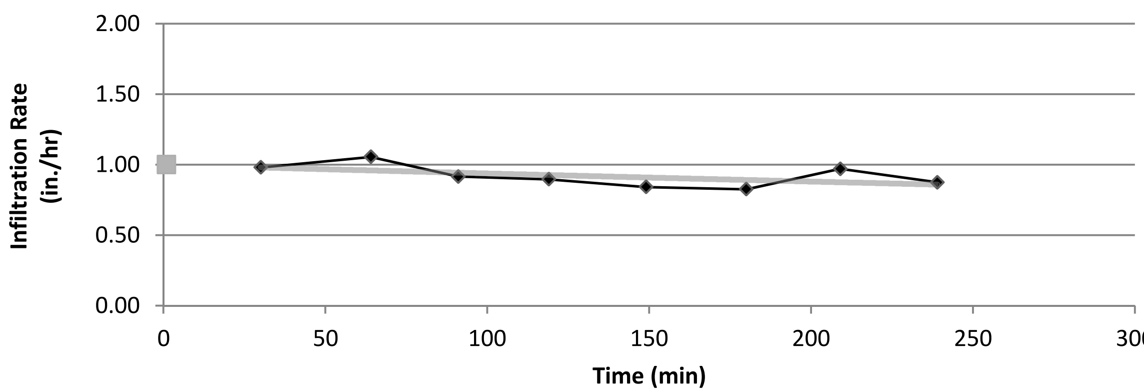
Date: *7/23/2021*

Leighton

Test Hole Number:	P-2	Project	Overland
Date Excavated:	7/22/2021	Project Number	12939.001

Tested by:	DAP	**Effective Depth of Test Hole (in.)	37
Date Tested	7/23/2021	Diameter (in.)	8
Soil Unit:	Compacted Fill	Effective Radius (in)	4
USCS Soil Type:	SM	Temperature (F)	75

Interval Number	Time		Δt (min)	Total Time (min)	Initial Water Depth (inches)	Final Water Depth (inches)	Change In Water Level (inches)	Infiltration Rate* (inches/hour)	Percolation Rate (minute/inch)
1	1:44	2:14	30	30	2.4	10.4	8.00	0.98	3.8
2	2:15	2:48	33	64	3.0	12.1	9.13	1.06	3.6
3	2:49	3:15	26	91	4.4	10.6	6.25	0.92	4.2
4	3:16	3:44	28	119	3.4	10.1	6.75	0.90	4.1
5	3:45	4:15	30	149	4.6	11.1	6.56	0.84	4.6
6	4:16	4:47	31	180	4.0	10.8	6.75	0.83	4.6
7	4:48	5:17	29	209	2.1	9.8	7.75	0.97	3.7
7	5:18	5:48	30	239	2.6	9.8	7.19	0.88	4.2



* Based on Porchet Method ** Hole Depth at Start 48 Inches

Percolation Test Data

P-2

Project Number: *12939.001*
Project Name: *Overland*

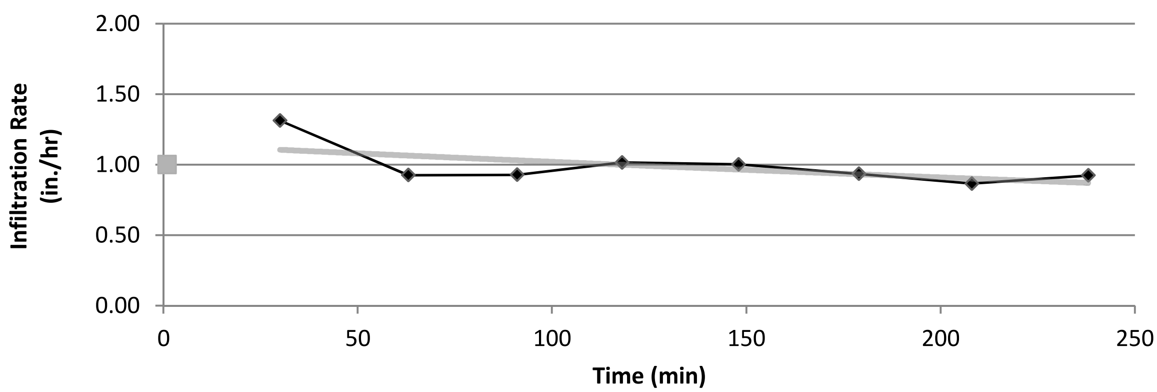
Date: *7/23/2021*

Leighton

Test Hole Number:	P-3	Project	Overland
Date Excavated:	7/22/2021	Project Number	12939.001

Tested by:	DAP	**Effective Depth of Test Hole (in.)	42
Date Tested	7/23/2021	Diameter (in.)	8
Soil Unit:	Compacted Fill	Effective Radius (in)	4
USCS Soil Type:	SM	Temperature (F)	75

Interval Number	Time		Δt (min)	Total Time (min)	Initial Water Depth (inches)	Final Water Depth (inches)	Change In Water Level (inches)	Infiltration Rate* (inches/hour)	Percolation Rate (minute/inch)
1	1:47	2:17	30	30	1.0	13.1	12.13	1.31	2.5
2	2:17	2:50	33	63	7.5	15.8	8.25	0.93	4.0
3	2:51	3:18	27	91	6.0	13.2	7.19	0.93	3.8
4	3:19	3:46	27	118	4.4	12.5	8.13	1.02	3.3
5	3:47	4:17	30	148	4.1	13.0	8.88	1.00	3.4
6	4:18	4:49	31	179	4.6	13.1	8.50	0.94	3.6
7	4:50	5:19	29	208	5.1	12.4	7.38	0.87	3.9
8	5:20	5:50	30	238	5.1	13.1	8.06	0.92	3.7



* Based on Porchet Method ** Hole Depth at Start 48 Inches

Percolation Test Data

P-3

Project Number: 12939.001
Project Name: Overland

Date: 7/23/2021

Leighton

APPENDIX D

General Earthwork and Grading Specifications

APPENDIX D

LEIGHTON CONSULTING, INC.
EARTHWORK AND GRADING GUIDE SPECIFICATIONS

TABLE OF CONTENTS

D-1.0 GENERAL

D-1.1 <u>Intent</u>

These Earthwork and Grading Guide Specifications are for grading and earthwork shown on the current, approved grading plan(s) and/or indicated in the Leighton Consulting, Inc. geotechnical report(s). These Guide Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the project-specific recommendations in the geotechnical report shall supersede these Guide Specifications. Leighton Consulting, Inc. shall provide geotechnical observation and testing during earthwork and grading. Based on these observations and tests, Leighton Consulting, Inc. may provide new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

D-1.2 <u>Role of Leighton Consulting, Inc.</u>

Prior to commencement of earthwork and grading, Leighton Consulting, Inc. shall meet with the earthwork contractor to review the earthwork contractor's work plan, to schedule sufficient personnel to perform the appropriate level of observation, mapping and compaction testing. During earthwork and grading, Leighton Consulting, Inc. shall observe, map, and document subsurface exposures to verify geotechnical design assumptions. If observed conditions are found to be significantly different than the interpreted assumptions during the design phase, Leighton Consulting, Inc. shall inform the owner, recommend appropriate changes in design to accommodate these observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include (1) natural ground after clearing to receiving fill but before fill is placed, (2) bottoms of all "remedial removal" areas, (3) all key bottoms, and (4) benches made on sloping ground to receive fill.

Leighton Consulting, Inc. shall observe moisture-conditioning and processing of the subgrade and fill materials, and perform relative compaction testing of fill to determine the attained relative compaction. Leighton Consulting, Inc. shall provide *Daily Field Reports* to the owner and the Contractor on a routine and frequent basis.

D-1.3 <u>The Earthwork Contractor</u>

The earthwork contractor (Contractor) shall be qualified, experienced and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Guide

Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing grading and backfilling in accordance with the current, approved plans and specifications.

The Contractor shall inform the owner and Leighton Consulting, Inc. of changes in work schedules at least one working day in advance of such changes so that appropriate observations and tests can be planned and accomplished. The Contractor shall not assume that Leighton Consulting, Inc. is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish earthwork and grading in accordance with the applicable grading codes and agency ordinances, these Guide Specifications, and recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of Leighton Consulting, Inc., unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, adverse weather, etc., are resulting in a quality of work less than required in these specifications, Leighton Consulting, Inc. shall reject the work and may recommend to the owner that earthwork and grading be stopped until unsatisfactory condition(s) are rectified.

D-2.0 PREPARATION OF AREAS TO BE FILLED

D-2.1 <u>Clearing and Grubbing</u>

Vegetation, such as brush, grass, roots and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies and Leighton Consulting, Inc.. Care should be taken not to encroach upon or otherwise damage native and/or historic trees designated by the Owner or appropriate agencies to remain. Pavements, flatwork or other construction should not extend under the “drip line” of designated trees to remain.

Leighton Consulting, Inc. shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 3 percent of organic materials (by dry weight: ASTM D 2974). Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area. As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed.

D-2.2 Processing

Existing ground that has been declared satisfactory for support of fill, by Leighton Consulting, Inc., shall be scarified to a minimum depth of 6 inches (15 cm). Existing ground that is not satisfactory shall be over-excavated as specified in the following Section D-2.3. Scarification shall continue until soils are broken down and free of large clay lumps or clods and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

D-2.3 Overexcavation

In addition to removals and over-excavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be over-excavated to competent ground as evaluated by Leighton Consulting, Inc. during grading. All undocumented fill soils under proposed structure footprints should be excavated

D-2.4 Benching

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), (>20 percent grade) the ground shall be stepped or benched. The lowest bench or key shall be a minimum of 15 feet (4.5 m) wide and at least 2 feet (0.6 m) deep, into competent material as evaluated by Leighton Consulting, Inc.. Other benches shall be excavated a minimum height of 4 feet (1.2 m) into competent material or as otherwise recommended by Leighton Consulting, Inc.. Fill placed on ground sloping flatter than 5:1 (horizontal to vertical units), (<20 percent grade) shall also be benched or otherwise over-excavated to provide a flat subgrade for the fill.

D-2.5 Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by Leighton Consulting, Inc. as suitable to receive fill. The Contractor shall obtain a written acceptance (*Daily Field Report*) from Leighton Consulting, Inc. prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys and benches.

D-3.0 FILL MATERIAL

D-3.1 Fill Quality

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by Leighton Consulting, Inc. prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to Leighton Consulting, Inc. or mixed with other soils to achieve satisfactory fill material.

D-3.2 Oversize

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 6 inches (15 cm), shall not be buried or placed in fill unless location, materials and placement methods are specifically accepted by Leighton Consulting, Inc.. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 feet (3 m) measured vertically from finish grade, or within 2 feet (0.61 m) of future utilities or underground construction.

D-3.3 Import

If importing of fill material is required for grading, proposed import material shall meet the requirements of Section D-3.1, and be free of hazardous materials ("contaminants") and rock larger than 3-inches (8 cm) in largest dimension. All import soils shall have an Expansion Index (EI) of 20 or less and a sulfate content no greater than (≤) 500 parts-per-million (ppm). A representative sample of a potential import source shall be given to Leighton Consulting, Inc. at least four full working days before importing begins, so that suitability of this import material can be determined and appropriate tests performed.

D-4.0 FILL PLACEMENT AND COMPACTION

D-4.1 Fill Layers

Approved fill material shall be placed in areas prepared to receive fill, as described in Section D-2.0, above, in near-horizontal layers not exceeding 8 inches (20 cm) in loose thickness. Leighton Consulting, Inc. may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers, and only if the building officials with the appropriate jurisdiction approve. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

D-4.2 Fill Moisture Conditioning

Fill soils shall be watered, dried back, blended and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM) Test Method D 1557.

D-4.3 Compaction of Fill

After each layer has been moisture-conditioned, mixed, and evenly spread, each layer shall be uniformly compacted to not-less-than (≥) 90 percent of the maximum dry density as determined by ASTM Test Method D 1557. In some cases, structural fill may be specified (see project-specific geotechnical report) to be uniformly compacted to at-least (≥) 95 percent of the ASTM D 1557 modified Proctor laboratory maximum dry density. For fills thicker than (>) 15 feet (4.5 m), the portion of fill deeper than 15 feet below proposed finish grade shall be compacted to 95 percent of the ASTM D 1557 laboratory maximum density. Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

D-4.4 Compaction of Fill Slopes

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by back rolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet (1 to 1.2 m) in fill elevation, or by other methods producing satisfactory results acceptable to Leighton Consulting, Inc.. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of the ASTM D 1557 laboratory maximum density.

D-4.5 Compaction Testing

Field-tests for moisture content and relative compaction of the fill soils shall be performed by Leighton Consulting, Inc.. Location and frequency of tests shall be at our field representative(s) discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

D-4.6 Compaction Test Locations

Leighton Consulting, Inc. shall document the approximate elevation and horizontal coordinates of each density test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that Leighton

Consulting, Inc. can determine the test locations with sufficient accuracy. Adequate grade stakes shall be provided.

D-5.0 EXCAVATION

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by Leighton Consulting, Inc. during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by Leighton Consulting, Inc. based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, then observed and reviewed by Leighton Consulting, Inc. prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by Leighton Consulting, Inc..

D-6.0 TRENCH BACKFILLS

D-6.1 Safety

The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations. Work should be performed in accordance with Article 6 of the *California Construction Safety Orders*, 2009 Edition or more current (see also: http://www.dir.ca.gov/title8/sb4a6.html).

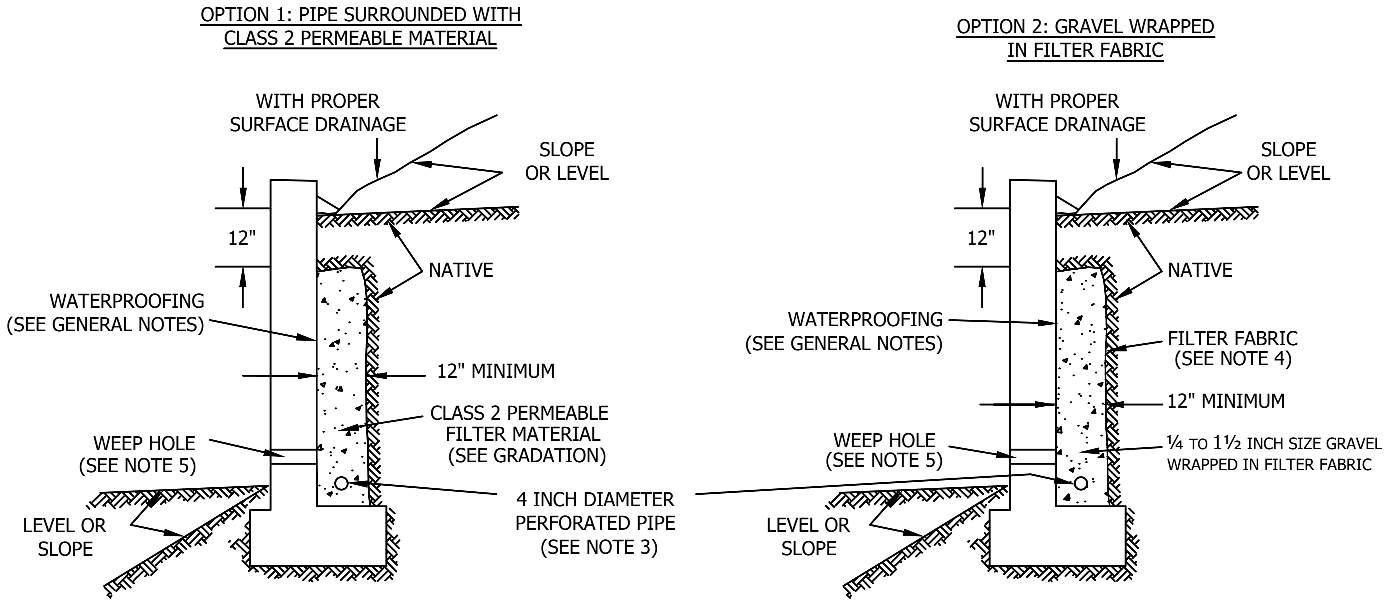
D-6.2 Bedding and Backfill

All utility trench bedding and backfill shall be performed in accordance with applicable provisions of the 2015 Edition of the *Standard Specifications for Public Works Construction* (Green Book). Bedding material shall have a Sand Equivalent greater than 30 (SE>30). Bedding shall be placed to 1-foot (0.3 m) over the top of the conduit, and densified by jetting in areas of granular soils, if allowed by the permitting agency. Otherwise, the pipe-bedding zone should be backfilled with Controlled Low Strength Material (CLSM) consisting of at least one sack of Portland cement per cubic-yard of sand, and conforming to Section 201-6 of the 2015 Edition of the *Standard Specifications for Public Works Construction* (Green Book). Backfill over the bedding zone shall be placed and densified mechanically to a minimum of 90 percent of relative compaction (ASTM D 1557) from 1 foot (0.3 m) above the top of the conduit to the surface. Backfill above the pipe zone shall **not** be jetted. Jetting of the bedding around the conduits shall be observed by Leighton Consulting, Inc. and backfill above the pipe zone (bedding) shall be observed and tested by Leighton Consulting, Inc..

D-6.3 Lift Thickness

Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to Leighton Consulting, Inc. that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method, and only if the building officials with the appropriate jurisdiction approve.

SUBDRAIN OPTIONS AND BACKFILL WHEN NATIVE MATERIAL HAS EXPANSION INDEX OF ≤ 50



Class 2 Filter Permeable Material Gradation
Per Caltrans Specifications

Sieve Size	Percent Passing
1"	100
3/4"	90-100
3/8"	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

GENERAL NOTES:

* Waterproofing should be provided where moisture nuisance problem through the wall is undesirable.
* Water proofing of the walls is not under purview of the geotechnical engineer
* All drains should have a gradient of 1 percent minimum
*Outlet portion of the subdrain should have a 4-inch diameter solid pipe discharged into a suitable disposal area designed by the project engineer. The subdrain pipe should be accessible for maintenance (rodding)
*Other subdrain backfill options are subject to the review by the geotechnical engineer and modification of design parameters.

Notes:
1) Sand should have a sand equivalent of 30 or greater and may be densified by water jetting.
2) 1 Cu. ft. per ft. of 1/4- to 1 1/2-inch size gravel wrapped in filter fabric
3) Pipe type should be ASTM D1527 Acrylonitrile Butadiene Styrene (ABS) SDR35 or ASTM D1785 Polyvinyl Chloride plastic (PVC), Schedule 40, Armco A2000 PVC, or approved equivalent. Pipe should be installed with perforations down. Perforations should be 3/8 inch in diameter placed at the ends of a 120-degree arc in two rows at 3-inch on center (staggered)
4) Filter fabric should be Mirafi 140NC or approved equivalent.
5) Weephole should be 3-inch minimum diameter and provided at 10-foot maximum intervals. If exposure is permitted, weepholes should be located 12 inches above finished grade. If exposure is not permitted such as for a wall adjacent to a sidewalk/curb, a pipe under the sidewalk to be discharged through the curb face or equivalent should be provided. For a basement-type wall, a proper subdrain outlet system should be provided.
6) Retaining wall plans should be reviewed and approved by the geotechnical engineer.
7) Walls over six feet in height are subject to a special review by the geotechnical engineer and modifications to the above requirements.

RETAINING WALL BACKFILL AND SUBDRAIN DETAIL FOR WALLS 6 FEET OR LESS IN HEIGHT

WHEN NATIVE MATERIAL HAS EXPANSION INDEX OF ≤ 50

Leighton

APPENDIX E

GBA-Important Information about This Geotechnical Report

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept* *responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are <u>not</u> final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are <u>Not</u> Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will <u>not</u> of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are <u>not</u> building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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Appendix D

Air Quality and Greenhouse Gas Modeling Results

Overland Drive Widening Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Overland Drive Widening
Construction Start Date	7/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	18.6
Location	33.51584561164134, -117.16274304269668
County	Riverside-South Coast
City	Temecula
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5549
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Asphalt Surfaces	3.90	Acre	3.90	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	38.5	37.6	37.3	78.7	0.09	1.91	3.10	4.70	1.66	1.16	2.66	—	9,924	9,924	0.37	0.35	5.37	10,044
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	37.6	37.9	24.6	74.7	0.06	1.56	0.41	1.58	1.34	0.09	1.34	—	6,181	6,181	0.25	0.06	0.04	6,202
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.80	7.69	9.64	19.2	0.02	0.50	0.38	0.88	0.44	0.14	0.58	—	2,469	2,469	0.10	0.04	0.25	2,483
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.42	1.40	1.76	3.50	< 0.005	0.09	0.07	0.16	0.08	0.03	0.11	—	409	409	0.02	0.01	0.04	411

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	38.5	37.6	37.3	78.7	0.09	1.91	3.10	4.70	1.66	1.16	2.66	—	9,924	9,924	0.37	0.35	5.37	10,044
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	37.6	37.9	24.6	74.7	0.06	1.56	0.41	1.58	1.34	0.09	1.34	—	6,181	6,181	0.25	0.06	0.04	6,202
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	7.80	7.69	9.64	19.2	0.02	0.50	0.38	0.88	0.44	0.14	0.58	—	2,469	2,469	0.10	0.04	0.25	2,483
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.42	1.40	1.76	3.50	< 0.005	0.09	0.07	0.16	0.08	0.03	0.11	—	409	409	0.02	0.01	0.04	411

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.61	3.03	24.9	25.1	0.06	0.99	—	0.99	0.91	—	0.91	—	6,156	6,156	0.25	0.05	—	6,177
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.21	0.17	1.43	1.44	< 0.005	0.06	—	0.06	0.05	—	0.05	—	354	354	0.01	< 0.005	—	355
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.26	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	58.6	58.6	< 0.005	< 0.005	—	58.8
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.15	0.13	2.20	0.00	0.00	0.36	0.36	0.00	0.09	0.09	—	393	393	0.02	0.01	1.44	399
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.1	21.1	< 0.005	< 0.005	0.04	21.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.49	3.49	< 0.005	< 0.005	0.01	3.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	38.4	37.5	31.5	76.6	0.07	1.91	—	1.91	1.66	—	1.66	—	7,012	7,012	0.28	0.06	—	7,036
Dust From Material Movement	—	—	—	—	—	—	2.12	2.12	—	0.92	0.92	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.42	2.36	1.98	4.83	< 0.005	0.12	—	0.12	0.10	—	0.10	—	442	442	0.02	< 0.005	—	443
Dust From Material Movement	—	—	—	—	—	—	0.13	0.13	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.43	0.36	0.88	< 0.005	0.02	—	0.02	0.02	—	0.02	—	73.2	73.2	< 0.005	< 0.005	—	73.4

Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.14	0.12	2.08	0.00	0.00	0.34	0.34	0.00	0.08	0.08	—	371	371	0.02	0.01	1.36	377
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.8	21.8	< 0.005	< 0.005	0.04	22.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.60	3.60	< 0.005	< 0.005	0.01	3.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.08	8.28	35.2	39.6	0.07	1.57	—	1.57	1.43	—	1.43	—	7,726	7,726	0.31	0.06	—	7,752
Dust From Material Movement	—	—	—	—	—	—	2.22	2.22	—	0.93	0.93	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.48	2.02	2.28	< 0.005	0.09	—	0.09	0.08	—	0.08	—	444	444	0.02	< 0.005	—	446
Dust From Material Movement	—	—	—	—	—	—	0.13	0.13	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.37	0.42	< 0.005	0.02	—	0.02	0.01	—	0.01	—	73.6	73.6	< 0.005	< 0.005	—	73.8
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.17	0.14	2.52	0.00	0.00	0.42	0.42	0.00	0.10	0.10	—	449	449	0.02	0.02	1.65	456
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	1.94	0.47	0.01	0.03	0.46	0.49	0.03	0.13	0.16	—	1,749	1,749	0.03	0.28	3.73	1,836
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.1	24.1	< 0.005	< 0.005	0.04	24.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.12	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	101	101	< 0.005	0.02	0.09	106
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.99	3.99	< 0.005	< 0.005	0.01	4.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	16.7	16.7	< 0.005	< 0.005	0.02	17.5

3.7. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.78	2.32	18.2	21.9	0.05	0.70	—	0.70	0.65	—	0.65	—	4,873	4,873	0.20	0.04	—	4,890

Paving	—	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.15	1.15	1.38	< 0.005	0.04	—	0.04	0.04	—	0.04	—	307	307	0.01	< 0.005	—	308
Paving	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.21	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.8	50.8	< 0.005	< 0.005	—	51.0
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.16	1.88	0.00	0.00	0.41	0.41	0.00	0.09	0.09	—	403	403	0.02	0.02	0.04	408
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.7	25.7	< 0.005	< 0.005	0.04	26.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.26	4.26	< 0.005	< 0.005	0.01	4.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Site Restoration (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	37.6	36.8	24.6	74.6	0.06	1.56	—	1.56	1.34	—	1.34	—	6,160	6,160	0.25	0.05	—	6,181
Architectural Coatings	—	1.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.43	4.34	2.89	8.79	0.01	0.18	—	0.18	0.16	—	0.16	—	726	726	0.03	0.01	—	728
Architectural Coatings	—	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.81	0.79	0.53	1.60	< 0.005	0.03	—	0.03	0.03	—	0.03	—	120	120	< 0.005	< 0.005	—	121
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.7	20.7	< 0.005	< 0.005	< 0.005	20.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.47	2.47	< 0.005	< 0.005	< 0.005	2.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	7/1/2025	7/29/2025	5.00	21.0	—
Site Preparation	Site Preparation	7/30/2025	8/29/2025	5.00	23.0	—
Grading	Grading	9/2/2025	9/30/2025	5.00	21.0	—
Paving	Paving	10/1/2025	10/31/2025	5.00	23.0	—
Site Restoration	Architectural Coating	11/1/2025	12/31/2025	5.00	43.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Cranes	Diesel	Average	1.00	8.00	367	0.29
Demolition	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

Demolition	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Demolition	Graders	Diesel	Average	1.00	6.00	148	0.41
Demolition	Off-Highway Tractors	Diesel	Average	1.00	8.00	38.0	0.44
Demolition	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	1.00	367	0.40
Demolition	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Demolition	Signal Boards	Diesel	Average	1.00	8.00	6.00	0.82
Demolition	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Site Preparation	Cranes	Diesel	Average	1.00	8.00	367	0.29
Site Preparation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Site Preparation	Crushing/Proc. Equipment	Gasoline	Average	1.00	8.00	12.0	0.85
Site Preparation	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Site Preparation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Site Preparation	Off-Highway Tractors	Diesel	Average	1.00	8.00	38.0	0.44
Site Preparation	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Signal Boards	Diesel	Average	1.00	8.00	6.00	0.82
Site Preparation	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Crushing/Proc. Equipment	Gasoline	Average	1.00	1.00	12.0	0.85
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

Grading	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Off-Highway Tractors	Diesel	Average	1.00	8.00	38.0	0.44
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Grading	Signal Boards	Diesel	Average	1.00	8.00	6.00	0.82
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Aerial Lifts	Diesel	Average	1.00	8.00	46.0	0.31
Grading	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Grading	Cranes	Diesel	Average	1.00	8.00	367	0.29
Grading	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Paving	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Paving	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Paving	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Paving	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Paving	Off-Highway Tractors	Diesel	Average	1.00	8.00	38.0	0.44
Paving	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Signal Boards	Diesel	Average	1.00	8.00	6.00	0.82
Paving	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37

Paving	Tractors/Loaders/Backh	Diesel	Average	1.00	7.00	84.0	0.37
Paving	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Paving	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Paving	Surfacing Equipment	Diesel	Average	1.00	8.00	399	0.30
Site Restoration	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Site Restoration	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Site Restoration	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Restoration	Cranes	Diesel	Average	1.00	8.00	367	0.29
Site Restoration	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Site Restoration	Crushing/Proc. Equipment	Gasoline	Average	1.00	8.00	12.0	0.85
Site Restoration	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Site Restoration	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Site Restoration	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Site Restoration	Off-Highway Tractors	Diesel	Average	1.00	8.00	38.0	0.44
Site Restoration	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Site Restoration	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Site Restoration	Rough Terrain Forklifts	Diesel	Average	1.00	8.00	96.0	0.40
Site Restoration	Signal Boards	Diesel	Average	1.00	8.00	6.00	0.82
Site Restoration	Surfacing Equipment	Diesel	Average	1.00	8.00	399	0.30
Site Restoration	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Site Restoration	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Restoration	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Site Restoration	Aerial Lifts	Diesel	Average	1.00	6.00	46.0	0.31

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	35.0	14.7	LDA,LDT1,LDT2
Demolition	Vendor	0.00	6.90	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	33.0	14.7	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.90	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	40.0	14.7	LDA,LDT1,LDT2
Grading	Vendor	0.00	6.90	HHDT,MHDT
Grading	Hauling	25.4	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Site Restoration	—	—	—	—
Site Restoration	Worker	2.00	14.7	LDA,LDT1,LDT2
Site Restoration	Vendor	0.00	6.90	HHDT,MHDT
Site Restoration	Hauling	0.00	20.0	HHDT
Site Restoration	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	39.0	14.7	LDA,LDT1,LDT2
Paving	Vendor	0.00	6.20	HHDT,MHDT

Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Site Restoration	0.00	0.00	0.00	0.00	10,193

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	46.0	0.00	—
Grading	—	4,257	49.9	0.00	—
Paving	0.00	0.00	0.00	0.00	3.90

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Asphalt Surfaces	3.90	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	26.3	annual days of extreme heat
Extreme Precipitation	4.75	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	11.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	69.6

AQ-PM	28.7
AQ-DPM	41.0
Drinking Water	74.2
Lead Risk Housing	14.3
Pesticides	68.6
Toxic Releases	12.0
Traffic	96.9
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	0.00
Haz Waste Facilities/Generators	91.7
Impaired Water Bodies	93.4
Solid Waste	0.00
Sensitive Population	—
Asthma	34.6
Cardio-vascular	83.6
Low Birth Weights	36.4
Socioeconomic Factor Indicators	—
Education	62.9
Housing	28.7
Linguistic	52.5
Poverty	60.9
Unemployment	73.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract

Economic	—
Above Poverty	50.23739253
Employed	66.08494803
Median HI	35.71153599
Education	—
Bachelor's or higher	47.7223149
High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	40.33106634
Active commuting	37.53368408
Social	—
2-parent households	8.020017965
Voting	63.18490953
Neighborhood	—
Alcohol availability	63.62119851
Park access	20.82638265
Retail density	29.07737713
Supermarket access	35.76286411
Tree canopy	71.33324779
Housing	—
Homeownership	28.53843193
Housing habitability	58.30873861
Low-inc homeowner severe housing cost burden	56.14012575
Low-inc renter severe housing cost burden	77.23598101
Uncrowded housing	43.53907353
Health Outcomes	—

Insured adults	43.96253048
Arthritis	9.9
Asthma ER Admissions	72.5
High Blood Pressure	16.4
Cancer (excluding skin)	15.0
Asthma	32.2
Coronary Heart Disease	19.3
Chronic Obstructive Pulmonary Disease	16.6
Diagnosed Diabetes	58.5
Life Expectancy at Birth	72.6
Cognitively Disabled	29.3
Physically Disabled	63.7
Heart Attack ER Admissions	30.9
Mental Health Not Good	44.5
Chronic Kidney Disease	35.4
Obesity	41.1
Pedestrian Injuries	96.2
Physical Health Not Good	42.2
Stroke	29.9
Health Risk Behaviors	—
Binge Drinking	38.6
Current Smoker	34.1
No Leisure Time for Physical Activity	49.6
Climate Change Exposures	—
Wildfire Risk	59.2
SLR Inundation Area	0.0
Children	71.1

Elderly	45.2
English Speaking	50.1
Foreign-born	42.3
Outdoor Workers	79.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	93.0
Traffic Density	71.3
Traffic Access	23.0
Other Indices	—
Hardship	48.7
Other Decision Support	—
2016 Voting	65.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	65.0
Healthy Places Index Score for Project Location (b)	38.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Applicant provided.
Construction: Off-Road Equipment	Applicant provided.
Construction: Trips and VMT	Applicant provided.

Appendix E

Biological Resources Assessment

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April 17, 2024
Project No: 21-11590

Lori Askew, Principal Engineer
Engineering Resources of Southern California
1861 West Redlands Boulevard
Redlands, California 92373
askew@erscinc.com

Subject: Biological Resources Technical Memo – Overland Drive Widening Project, City of Temecula

Dear Ms. Askew:

Rincon Consultants, Inc. (Rincon) is pleased to support Engineering Resources of Southern California (ERSC) in preparing this Biological Resources Assessment (BRA) Technical Memo for the proposed City of Temecula (City) – Overland Drive Widening Project (project). Rincon completed the following technical assessment necessary for the California Environmental Quality Act (CEQA) documentation.

Project Description

The current Overland Drive configuration is symmetrical to the centerline and includes two 22-foot travel lanes with 11 additional feet of right-of-way (ROW) on either side, resulting in an overall ROW width of 66 feet. The proposed configuration would include a 12-foot travel lane and an 11-foot travel lane in both directions with a single 10-foot center turn lane, totaling five total lanes. The proposed configuration would also include six-foot Class II bike lanes and an additional 10 feet of ROW on either side with new contiguous sidewalks. The resulting overall new ROW width would be 88 feet, consistent with the City of Temecula ROW requirements for secondary arterial roadways.

The project would require modifications to the existing traffic signals at the intersection of Overland Drive with Jefferson Avenue, along with the replacement of traffic signal poles at the southern approach of this intersection. A new four-leg traffic signal would also be installed at the intersection of Overland Drive with Commerce Center Drive. The project would result in the removal of existing curb and gutter along both sides of Overland Drive's entire length, in addition to the removal of concrete cross gutters, block retaining walls, driveway aprons, sidewalk pavement, existing lighting, and landscaping. The project would also involve the replacement of 18 ornamental street trees (nine on the northern side of Overland Drive and nine on the southern side of Overland Drive) and the construction of 20 new tree wells (10 on the northern side of Overland Drive and 10 on the southern side of Overland Drive).

Other project improvements would include the removal of one existing streetlight on the northern side of Overland Drive, the relocation of four existing streetlights (one on the northern side of Overland Drive and three on the southern side of Overland Drive), and the installation of 16 streetlights (nine on the northern side of Overland Drive and seven on the southern side of Overland Drive). Thirteen of the 20 new streetlights would consist of 20-foot poles intended for pedestrian lighting, while the remaining seven streetlights would consist of 25.5-foot poles intended for both vehicular and pedestrian lighting. All streetlights would utilize light-emitting diode and would be shielded downwards.

New catch basins would be constructed on both sides of Overland Drive, ultimately connecting to an existing 72-inch storm drainpipe. Any runoff generated south of these two catch basins would be collected by another new catch basin constructed on Commerce Center Drive within the project area, located southeast of Overland Drive's intersection with Commerce Center Drive. This catch basin would discharge into the nearby Murrieta Creek channel. All new catch basins would be fitted with curb inlet filters.

The project would also modify existing underground drainage infrastructure from the southeast corner of the Overland Drive and Commerce Center Drive intersection to an outlet where the drainage infrastructure meets an existing drainage ditch located approximately 500 feet south of the intersection on Commerce Center Drive. Project implementation would cut out a portion of the concrete culvert underneath Commerce Center Drive and connect the proposed pipe to the culvert to adequately convey underground flows in the drainage infrastructure to the drainage ditch.

The project would require the acquisition of permanent ROW and public access easements. Overall, the following Assessor's Parcel Numbers would be impacted by the proposed project: 909-240-015, 909-240-016, 909-240-023, 909-240-026, 921-480-042, 921-480-045, 921-480-047, 921-480-048, 921-480-055, and 921-480-056.

Project Location

Overland Drive is located south of Winchester Road and west of Interstate 15, in the city of Temecula. Specifically, the segment of roadway to be widened herein is bordered by Jefferson Avenue on the eastern extent and Commerce Center Drive on the western extent.

The project area lies between both recently completed improvements and other improvements that are currently being designed by outside consultants. Recently completed improvements include the Overland overpass and associated approach roadway improvements east of the project area. Proposed improvements currently under design include a bridge over Murrieta Creek, approach roadways, and storm drain improvements. The regional location of the project site is provided in Figure 1 and the project site location map is provided in Figure 2.

Methodology

Regulatory Overview

Regulated or sensitive resources studied and analyzed herein include special status plant and wildlife species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, and locally protected resources, such as protected trees. The background literature review included sensitive plant species and sensitive wildlife species observed within five miles of the project site.

Environmental Statutes

Potential impacts to biological resources were analyzed based on the following statutes and existing conservation plans:

- California Environmental Quality Act (CEQA)

- Federal Endangered Species Act (ESA)
- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- Western Riverside County Multiple Species Habitat Conservation Plan (WR-MSHCP 2003)
- City of Temecula Municipal Code Chapter 8.48 Heritage Tree Ordinance

Guidelines for Determining CEQA Significance

The following threshold criteria, as defined by the CEQA Guidelines Appendix G Initial Study Checklist, were used to evaluate potential environmental effects. Based on these criteria, the proposed project would have a significant effect on biological resources if it would:

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

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

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas, etc.) through direct removal, filling, hydrological interruption, or other means.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Literature Review

Prior to the field survey, a literature review was conducted to establish the environmental and regulatory setting of the proposed project. The literature review included review of the U.S. Department of Agriculture (USDA) *Soil Survey for the Western Riverside Area* (2022b), *Temecula, CA,* USGS 7.5-minute topographic quadrangle, literature detailing the habitat requirements of subject species, and aerial photographs (Google Earth 2022 and topographic maps USGS 2022). The WR-MSHCP, species accounts, and other reference materials were reviewed for habitat assessment requirements as well as habitat suitability elements for special status species. The primary objective of the habitat assessment was to evaluate the project sites' potential to support special status species as well as to determine the applicability of other WR-MSHCP and CEQA requirements as they pertain to the proposed project.

The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB; CDFW 2022a), Biogeographic Information and Observation System (BIOS; CDFW 2022b) and United States Fish and Wildlife Service (USFWS) Critical Habitat Portal (USFWS 2022a) and Information for Planning and Consultation (IPaC; USFWS 2022b) system were reviewed to determine if any special status wildlife, plant or vegetation communities were previously recorded within five miles of the project site. Map review of the U.S. Forest Service (USFS) managed National Wild and Scenic River System was performed to assess whether wild or scenic rivers occurred on site (USFS 2022). The *National Wetlands Inventory* (NWI; USFWS 2022c) was reviewed to determine if any wetland and/or non-wetland waters had been previously documented and mapped on or in the vicinity of the proposed study area. Other resources reviewed included the California Native Plant Society (CNPS) online *Inventory of Rare and Endangered Plants of California* (CNPS 2022), and CDFW *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2022c). Nomenclature of vegetation communities and land cover types generally follow *A Manual of California Vegetation, Second Edition* (Sawyer et. al. 2009), as modified to reflect existing site conditions.

Field Reconnaissance Survey

The field reconnaissance survey was conducted to document existing site conditions and the potential presence of sensitive biological resources, including sensitive plant and wildlife species, sensitive plant communities, and habitat for nesting birds. Rincon biologist Jared Reed conducted the initial reconnaissance survey on March 15, 2022, from 9:45 AM to 10:45 AM, a subsequent reconnaissance survey on July 8, 2022, from 9:00 AM to 9:45 AM, and a spot check site visit on April 15, 2024 from 11:30 AM to 12:00 PM. The biologist surveyed the project site on foot and visually inspected the surrounding 100-foot buffer area (Study Area) with the aid of binoculars (8 x 32) as necessary.

During the survey, the biologist noted general site characteristics, documented vegetation, wildlife species observed, and took representative photographs of the project site (Attachment 1). Vegetation consisted of only ornamental species in an entirely developed land cover. Data gathered from the field survey was checked for quality and consistency, and all species were identified to the finest taxonomic level possible. Conditions during the survey ranged from 60-67 degrees Fahrenheit (°F), clear skies, and winds of 0-2 miles per hour.

Existing Conditions

Physical Characteristics

The project site is located in arid western Riverside County, which is characterized by long, hot, dry summers and short, relatively wet winters. Average temperatures range from 65 to 96°F during the summer and 41 to 65°F during the winter. The average annual precipitation in the region is 10.34 inches (United States Climate Data 2022).

Current land use at the project site and vicinity consisted of developed areas and other industrial developments. The proposed project is surrounded by commercial land uses. Existing land uses in the direct project footprint follow the regional pattern and include commercial/industrial and commercial/retail development, storage facilities, and a preschool. The staging area is comprised of a paved parking lot and a vacant dirt lot. The Rincon biologist did not observe any wetlands or waters within or near the project site, with the exception of a small portion of Murrieta Creek that is within the 100-foot buffer associated with the staging area and a tributary to Murrieta Creek that conveys flows through a culvert under Commerce Center Drive at the southeast end of the project site.

Watershed and Drainages

The project site is within the Santa Margarita Watershed, which encompasses a land area of roughly 750 square miles. The Santa Margarita Watershed is located in northern San Diego and southwestern Riverside Counties. The watershed borders the San Jacinto Watershed to the northwest and the San Luis Rey Watershed to the south. Rainfall at the project site drains to Murrieta Creek and the tributary drainage described above. Murrieta Creek conveys flows to the Santa Margarita River, which originates where the Temecula and Murrieta Creek systems meet.

Topography and Soils

Topography throughout the project site was relatively level with elevations ranging from 1,022 feet above mean sea level (msl) in the western extent to approximately 1,045 feet above msl in the eastern extent of the project site. The project site primarily consists of level asphalt roadway and grass covered parkways with ornamental trees and shrubs within a developed commercial area. The roadway is surrounded by local businesses. A USDA Natural Resources Conservation Service (NRCS) soils map is included in Figure 3. Based on Rincon's observations of soil surface conditions during the reconnaissance survey, the soils on site have been heavily altered by existing road and commercial land developments. No soils present at the project sites are included on the *National Hydric Soils List* (USDA NRCS 2021c).

The USDA NRCS Web Soil Survey delineates 2 soil map units found within the project sites:

- Grangeville fine sandy loam, drained, 0 to 2 percent slopes
- Grangeville fine sandy loam, poorly drained, saline-alkali, 0 to 5 percent slopes

Site specific soil observations are no longer consistent with those mapped by the USDA NRCS Web Soil Survey due to the developed nature of the project site. These two soil map units can be organized into one soil series described below.

Grangeville Soils

Grangeville sandy loam soils are moderately well drained soils. These soils occur in alluvial fans and are alluvium derived from granite. A typical profile consists of sandy loam soils textures down to 17 inches and sandy clay loam extending down to 60 inches. Available storage is moderate (about 7.2 inches), and the runoff class is very low.

Vegetation Communities and Land Cover Types

Despite the urbanized nature of the region the project site is within, there are six vegetation communities/land cover types in the Study Area: Developed, Disturbed, Non-Native Grassland, Arroyo Willow Thickets, Upland Mustards, and Cattail Marshes (Figure 4).

Developed

Developed land cover is the dominant land cover type found in the Study Area, which consists of developments such as commercial and industrial buildings, asphalt roads, and landscaped areas. These areas have been constructed upon or otherwise physically altered to an extent that natural vegetation is no longer supported. Native plants within the landscaped areas included species such as chaparral lotus (*Acmispon grandiflorus* var. *grandiflorus*), common fiddleneck (*Amsinckia intermedia*), horseweed (*Erigeron canadensis*), rattlesnake sandmat (*Euphorbia albomarginata*), telegraph weed (*Heterotheca grandiflora*), and popcorn flower (*Plagiobothrys* sp.). Dominant non-native and ornamental species included London plane (*Platanus* x *hispanica*), fescue (*Festuca* sp.), pepper tree (*Schinus molle*), and various ornamental palm trees. Native, non-native, and ornamental plant species were observed along roadsides during the field survey; each species is listed in Attachment 3. This land cover type comprises 13.26 acres of the Study Area.

Disturbed

Within the Study Area, disturbed areas are areas that are comprised of vacant, dirt lots and dirt access roads that are devoid of vegetation. One of these areas comprises a portion of the staging area southwest of Enterprise Circle West. Disturbed land cover is also located along the access road between the staging area and the northeast bank of Murrieta Creek. Disturbed areas are in the southwest portion and comprise 0.49 acre of the Study Area.

Non-Native Grassland

This vegetation type is located between the dirt access road and northeast streambank of Murrieta Creek in the southwest portion of the Study Area. Dominant species within the community include brome (*Bromus* spp.), shortpod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), Russian thistle (*Salsola tragus*), and telegraph weed. Non-native grassland is limited to the southwest portion and comprises 0.27 acre of the Study Area.

Arroyo Willow Thickets

Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance) is associated with the northeast margin of Murrieta Creek and limited to the southwest edge of the Study Area. This vegetation type is dominated by dense stands of arroyo willow (*Salix lasiolepis*) interspersed with red willow (*Salix laevigata*), Gooding's black willow (*Salix gooddingii*), and mulefat (*Baccharis salicifolia*). Arroyo willow thickets comprise 0.21 acre of the Study Area.

Upland Mustards

Upland mustards (*Brassica* [*nigra*] and Other Mustards Semi-Natural Herbaceous Stands) are areas that are dominated by mustards. This vegetation community is located in the upland areas immediately adjacent to the tributary drainage that crosses Commerce Center Drive in the southern portion of the Study Area. Shortpod mustard is the dominant species. Upland mustards comprise 0.16 acre of the Study Area.

Cattails Marshes

Cattail marshes (*Typha* [*angustifolia*, *domingensis*, *latifolia*] Herbaceous Alliance) occurs where soils are periodically flooded. This vegetation type is limited to the tributary drainage that crosses Commerce Center Drive in the southern portion of the Study Area. The dominant vegetative species is broad-leaved cattail (*Typha latifolia*). Cattail marshes comprise 0.15 acre of the Study Area.

General Wildlife

The project site provides minimal habitat for wildlife species that commonly occur within urban communities in Riverside County. Common urban-adapted avian species were observed on site during the survey, such as Nuttall's woodpecker (*Dryobates nuttallii*), western bluebird (*Sialia mexicana*), yellow-rumped warbler (*Setophaga coronata*), European starling (*Sturnus vulgaris*), western kingbird (*Tyrannus verticalis*), black phoebe (*Sayornis nigricans*), song sparrow (*Melospiza melodia*), American crow (*Corvus brachyrhynchos*), Eurasian collared-dove (*Streptopelia decaocto*), house finch (*Haemorhous mexicanus*), Anna's hummingbird (*Calypte anna*), house sparrow (*Passer domesticus*), ring-billed gull (*Larus delawarensis*), and California towhee (*Melozone crissalis*). No mammals were observed within the project site or surrounding 100-foot buffer area. Western fence lizard (*Sceloporus occidentalis*) was the only reptile and American bullfrog (*Rana catesbeiana*) was the only amphibian observed within the Study Area.

Sensitive Biological Resources

Based on review of aerial photographs and the field reconnaissance survey, Rincon evaluated the potential presence of sensitive biological resources on and adjacent to the site.

Special Status Species

Local, state, and federal agencies regulate special status species and generally require an assessment of their presence or potential presence to be conducted prior to the approval of a proposed project. Assessments for the potential occurrence of special status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB, species occurrence records from other sites in the vicinity of the study area, and previous reports for the project site. The potential for each special status species to occur in the study areas was evaluated according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Low Potential.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

The literature review identified 45 sensitive plant species and 37 sensitive wildlife species within five miles of the Study Area (Attachment 2; Table 1). Three sensitive plant communities, southern interior basalt flow vernal pool, southern willow scrub, and valley needlegrass grassland, were identified within five miles of the Study Area. One of the identified sensitive plant communities, southern willow scrub, was observed within the Study Area during the field survey. This community is associated with the arroyo willow thicket along the northeast margin of Murrieta Creek and is at the southwest edge of the Study Area. One special status wildlife species, least Bell's vireo (*Vireo bellii pusillus*), is known to occur in Murrieta Creek near the Study Area.

Special Status Plant Species

The Study Area is located within a highly developed urban area, surrounded by existing commercial development. Due to the lack of specific habitat types or suitable substrates as well as the high levels of historic and existing disturbance, special status plant species are not expected to occur on-site. The observed native plants are not considered special-status species, nor are they considered Heritage Trees under Chapter 8.48 of the City of Temecula Municipal Code (2021).

Special Status Wildlife Species

Due to the lack of native vegetation communities and specific habitats in most areas of the Study Area, as well as high levels of historic and existing disturbance and isolation from native habitats, the project site is not suitable for most special status wildlife species. The literature review identified 37 special status wildlife species recorded within five miles of the Study Area. One species, least Bell's vireo, is known to occur within the arroyo willow thicket along Murrieta Creek near the Study Area. Sensitive wildlife species identified in the CNDDB search may occur within the portions of the Study Area that encompass Murrieta Creek and the tributary drainage, but are not expected to occur on the project site itself due to lack of suitable habitat (e.g., riparian, scrub, woodland).

Low quality or marginal foraging and/or nesting habitat for urbanized wildlife species occurs along the roadsides within the ornamental vegetation. Higher quality foraging and/or nesting habitat occurs along Murrieta Creek and the tributary drainage. The small and fragmented landscaped areas may contain low quality habitat; although, it is highly unlikely for sensitive species to occur.

Nesting Birds

Ornamental shrubs and trees found within urban/developed areas along Overland Drive and Commerce Center Drive and the riparian vegetation within Murrieta Creek and the tributary drainage may provide suitable nesting habitat for several common avian species observed during the reconnaissance survey. Bird nests and eggs are protected by CFGC 3503 and the MBTA. Common species such as black phoebe, song sparrow, American crow, and house finch have the potential to nest in shrubs and trees, even in highly disturbed settings. During the field survey one inactive nest was observed in a London plane tree in the northeast portion of the project site, Attachment 1 (Photograph 15). Bird species observed during the survey did not exhibit signs of nesting behavior. Overall, the project site is considered low quality for less common nesting birds due to lack of vegetation and the sites proximity to heavily travelled roadways.

Sensitive Plant Communities

No sensitive plant communities as identified by the CNDDB or local ordinances, or riparian habitat, are present on the project site. However, arroyo willow thicket is present in Murrieta Creek at the southwest edge of the Study Area.

City of Temecula Municipal Code (2021), Chapter 8.48 states “The purpose of this ordinance is to protect and preserve Oak, California Bay Laurel, California Black Walnut, California Holly, and California Sycamore trees as well as other trees of special significance to the community; and to justify special efforts to preserve and protect them from development activity.” None of the tree species observed during the field reconnaissance survey are subject to this ordinance.

Jurisdictional Waters and Wetlands

The Study Area consists primarily of developed areas adjacent to urban roadways. The majority of surrounding land use includes streets, sidewalks, and commercially developed areas intermixed with isolated areas where landscaped grass and trees are present. The NWI identified a 2.24-acre riverine habitat that historically crossed over Overland Drive on the western extent of the project site. This aquatic feature previously mapped within the project site is no longer present and the field survey confirmed that no water features exist on-site. It is important to note that the riverine habitat was mapped based on interpretations of aerial imagery from 1974. The streams and/or wetlands that previously existed have since been removed due to recent commercial developments.

Murrieta Creek, a 40.87-acre riverine intermittent streambed, seasonally flooded, lies 0.13 mile west-southwest of the western terminus of the project site. Any water which may have historically existed at Overland Drive has been diverted underground and likely drains toward this system. No direct point sources of water currently feed into the project site.

The tributary drainage described above conveys flows through a culvert under Commerce Center Drive in the south portion of the Study Area. This drainage is not mapped by the NWI but is mapped as ephemeral by the NHD. Based on the observed vegetative structure of this drainage, however, the drainage was determined to convey flows at least seasonally and has at least an intermittent hydroperiod.

No hydric soils are present on the project site. However, Murrieta Creek and the tributary drainage are subject to the jurisdiction of the United States Army Corps of Engineers (USACE), San Diego Regional Water Quality Control Board (RWQCB), and CDFW.

Riparian/Riverine, Vernal Pool and Fairy Shrimp Habitat

Riparian/riverine areas are lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or depend on a nearby freshwater source or areas that contain a freshwater flow during all or a portion of the year (Riverside County, 2003). These areas may support one or more species listed in the WR-MSHCP. Vernal pools are seasonal wetlands that occur in depressions, typically have wetland indicators that represent all three parameters (soils, vegetation, and hydrology), and are defined based on vernal pool indicator plant species during the wetter portion of the growing season, but normally lack wetland indicators associated with vegetation and/or hydrology during the drier portion of the growing season.

The project site and components were assessed as required by the WR-MSHCP. Based upon the findings of Rincon's reconnaissance survey, no riparian/riverine habitat is present with the exception of Murrieta Creek and the associated tributary as the project site lacks hydric soils, significant hydrophytic vegetation, and wetland hydrology. The project site is heavily disturbed due to urban development, and is currently either unvegetated, developed, or dominated by ornamental species not conducive to supporting riparian/riverine habitats. Additionally, no vernal pools or fairy shrimp habitat were observed within the project site, and it is underlain by moderately to excessively well-drained soils. However, both Murrieta Creek and the tributary drainage are considered riparian/riverine areas.

Wildlife Movement

According to the Regional Conservation Authority (RCA) MSHCP Information Map, the west portion of the Study Area is located within MSHCP Criteria Cell 6783. However, the Study Area is not located within Public-Quasi Public Reserve Lands or within a Core or Linkage (RCA 2024). The CDFW BIOS (2022b) does not include any mapped essential habitat connectivity areas in the immediate vicinity of the site. The project site is separated from essential habitat connectivity areas by public roadways and commercial areas, and therefore the site, with the exception of Murrieta Creek and the associated tributary, is not expected to contribute to a significant wildlife migratory corridor. However, Murrieta Creek serves as an important wildlife corridor, but is only partially located within the Study Area at its southwest edge.

Conservation Plans

The Study Area is located within the boundaries of the WR-MSHCP. The northeast and southwest portions of the Study Area are located within a burrowing owl (*Athene cunicularia*) [BUOW] species survey area. However, suitable BUOW habitat is not present within the project site. The central and west portions of the Study Area are located within MSHCP Criteria Cell 6783; however, no conservation criteria apply to the project as the Study Area is within an urbanized and developed area and conservation criteria for Cell 6783 applies to Murrieta Creek and an upstream tributary only. Additionally, the Study Area is not within Public/Quasi Public conserved lands. The closest Public/Quasi-Public conserved land is located approximately 1.79 miles west-northwest of the site at Santa Gertrudis Creek (Riverside County 2022).

Impact Analysis and Mitigation Measures

Special Status Species

As mentioned above, 45 sensitive plant species and 37 sensitive wildlife species are known to occur or have potential to occur within a five-mile radius of the site. Due to the lack of specific habitats or suitable substrates as well as the high levels of historic and ongoing disturbance, sensitive plant species are not expected to occur on the site. Therefore, there will be no impacts to sensitive plant species.

Sensitive wildlife species identified in the CNDDB search may occur within the portions of the Study Area that encompass Murrieta Creek and the tributary drainage, but are not expected to occur on the project site itself due to lack of suitable habitat (e.g., riparian, scrub, woodland). Sensitive wildlife species are determined to be absent or have a low potential to occur in the project areas due to low quality or marginal foraging and/or nesting habitat in this highly altered urban setting.

Should avian species utilize the site for nesting or foraging in the future, there is potential for impacts from construction activities. To avoid and minimize the potential for impacts to nesting birds, implementation of Mitigation Measure BIO-1 is recommended to reduce impacts to a less than significant level.

As described under existing conditions, the project site contains trees that could provide suitable nesting habitat for several common avian species. One inactive nest was photographed in the northeast portion of the project site, Attachment 1 (Photograph 15). The London plane tree is located along the roadside of Overland Drive. If project activities are to take place during nesting bird season (i.e., from March to August), a pre-construction survey is recommended to identify active nests. In order to avoid all direct impacts to nesting birds/habitat we recommend active nests should be pre-emptively removed and relocated prior to construction if the trees are occupied. Indirect impacts such as construction noise and increased human presence could disturb nests if they are present in adjacent trees, although common birds observed during the field survey are considered to be urban adapted bird species and indirect impacts would be less than significant. To ensure avoidance of direct or indirect impacts, implementation of Mitigation Measure BIO-1 requires pre-construction nesting bird surveys to minimize all impacts to nesting birds to a less-than-significant level.

Mitigation Measure

BIO-1 Pre-construction Nesting Bird Surveys

Migratory or other common nesting birds are protected by the California Fish and Game Code (CFGC) Sections 3503 and 3503.5, and the Migratory Bird Treaty Act (MBTA), and may nest in ornamental trees, grass, bare ground, man-made structures, and shrubs on-site. Construction of the project thus has the potential to directly (by destroying a nest) or indirectly (construction noise, dust, and other human disturbances that may cause a nest to fail) impact nesting birds protected under the CFGC and MBTA. The following measure is recommended to maintain compliance with CFGC Sections 3503 and 3503.5 and the MBTA with respect to nesting birds:

- If construction activities take place during the bird nesting season (generally February 1 through August 31, but variable based on seasonal and annual climatic conditions), as determined by a qualified biologist, nesting bird surveys should be performed by a qualified biologist within three days prior to project activities to determine the presence/absence, location, and status of any active nests on-site and within 100 feet of the site. The biologist should provide a written memorandum of results and findings
- If nesting birds are found on site, a construction buffer of appropriate size (as determined by the qualified biologist) should be implemented around the active nests and demarcated with fencing or flagging. If ground/burrow nesting birds are identified, demarcation materials that will not provide perching habitat for predatory bird species should be used. Nests should be monitored at a minimum of once per week by the qualified biologist until it has been determined that the nest is no longer being used by either the young or adults. No ground disturbance should occur within this buffer until the qualified biologist confirms that the breeding/nesting is complete, and all the young have fledged and are capable of surviving independently of the nest. If project activities must occur

within the buffer, they should be conducted at a distance that will prevent project-related disturbances, as determined by the qualified biologist.

- If no nesting birds are observed during pre-construction surveys, no further actions would be necessary.
- If construction is delayed or paused for more than two weeks during the nesting season, the preconstruction nesting bird survey should be repeated.

With implementation of the above mitigation measure, impacts to nesting birds would be avoided.

Sensitive Plant Communities

Arroyo willow thicket, a sensitive plant community, is along the northeast margin of Murrieta Creek at the southwest edge of the Study Area; however, this plant community is not anticipated to be impacted as it is outside of the staging area. The project site itself does not contain riparian habitat or any other sensitive natural plant community. The existing sparsely landscaped ornamental species, i.e., London plane tree, Mexican fan palm (*Washingtonia robusta*), pepper tree, and gum tree (*Eucalyptus* sp.), are not considered sensitive under CDFW.

Jurisdictional Waters and Wetlands

Portions of Murrieta Creek and the tributary drainage are within the southwest and south portions of the Study Area, respectively. However, the project site itself does not contain any jurisdictional drainages or wetlands. The project site is comprised of developed, paved, and disturbed areas and contains minimal vegetational features, which are all considered to be ornamental vegetation to supplement landscaping and aesthetics of the area. The project site location is far enough from Murrieta Creek to ensure that road widening activities would avoid any impacts to the creek. Project improvements at the tributary drainage culvert under Commerce Center Drive would only involve cutting out a portion of the concrete culvert to connect the proposed pipe outlet to the culvert and would not involve removal of any riparian habitat. No impacts to jurisdictional waters and wetlands are therefore expected as a result of the proposed project.

Riparian/Riverine, Vernal Pool and Fairy Shrimp Habitat

Based upon the findings of Rincon's reconnaissance survey and literature review of the project site and 100-foot buffer area, the construction footprint would be confined to the identified project site primarily consisting of a developed roadway and ornamental landscaping. No riparian/riverine habitat occurs within the proposed project site; and therefore, no further action related to riparian/riverine habitat is required pursuant to the WR-MSHCP. Additionally, no jurisdictional water feature under the jurisdiction of the USACE, RWQCB, or CDFW is located within the project site. Project improvements at the tributary drainage culvert under Commerce Center Drive would only involve cutting out a portion of the concrete culvert to connect the proposed pipe outlet to the culvert and would not involve removal of any riparian habitat. No impacts to riparian/riverine areas are therefore expected as a result of the proposed project.

The project site is not conducive to supporting vernal pools or vernal pool species. No vernal pool or fairy shrimp habitat occurs within the project site; and therefore, no further actions related to vernal pools are required pursuant to the WR-MSHCP.

Wildlife Movement

The project site is not located within an essential habitat connectivity area or Public-Quasi Public Reserve Lands or within a Core or Linkage (RCA 2024). In addition, CDFW BIOS (2021b) does not include any mapped essential habitat connectivity areas within the immediate vicinity of the sites. The closest mapped California essential habitat connectivity area is located approximately 0.93 mile to the east of the project site near the Temecula Elementary School and a designated 385.48 acres California essential habitat connectivity area is approximately 1.56 miles to the west. The sites are separated from these habitat connectivity areas by existing developments, paved roadways, heavily traveled transportation corridors, including Diaz Road and Interstate 15 freeway, and are therefore not expected to contribute to a significant migratory wildlife corridor. No impacts to wildlife movement are expected.

Local Policies and Ordinances

The proposed project is located within the County of Riverside Stephens' Kangaroo Rat Plan and Fee Area. County of Riverside Ordinance No. 663 (Stephen's Kangaroo Rat Mitigation Fee Ordinance) requires that all proposed development projects located within the fee area are reviewed to determine the most appropriate course of action to ensure the survival of the species through one or more of the following: (1) on-site mitigation of impacts to the Stephens' Kangaroo Rat through the reservation or addition of lands included within or immediately adjacent to a potential habitat reserve site, or (2) payment of the Mitigation Fee or (3) any combination of (1) and (2) consistent with the intent and purpose of the ordinance. The proposed project site lacks suitable grassland, coastal scrub, and sagebrush habitat to support Stephens' Kangaroo Rat and is located directly adjacent to urban roadways. In addition, the project site is highly fragmented and surrounded by commercial development. Therefore, the proposed project would not result in impacts to or loss of suitable habitat for Stephens' Kangaroo Rat.

The City Municipal Code, Chapter 8.48 protects specific tree species not located within the project site. None of the trees within the project area are designated as a Heritage Tree pursuant to Section 8.48.160 of this Ordinance. All trees found within the project site are listed in Attachment 3. Additionally, the project is less than five acres it does not require a tree inventory pursuant to the 8.48.150 Heritage Tree Preservation and Protection Plan. No other resources protected by local policies or ordinances are present on the sites.

Conservation Plans

The proposed project is located within the boundaries of the WR-MSHCP. The northeast portion of the site is located within a BUOW species survey area but not within a designated study area identified for any other MSHCP covered species. Suitable BUOW habitat is not present within the project site. The central and west portions of the project site are located within MSHCP Criteria Cell 6783; however, no conservation criteria apply to the project site. Additionally, the project site is not within Public/Quasi Public conserved lands. The closest Public/Quasi-Public conserved land is located approximately 0.35-mile west-northwest of Overland Drive and Commerce Center Drive at the Santa Gertrudis Creek. Based on the project's distance and separation from Public/Quasi-Public lands and the existing development between them, the proposed project is not expected to impact this conserved area. BUOW was not observed during the reconnaissance-level biological resources field survey and no burrows were observed. Most of the project site is fully developed and the disturbed area associated with the Staging

Area does not contain any potentially suitable BUOW burrows. Construction activities would not encroach upon BUOW active burrows or WR-MSHCP covered areas.

Conclusion

The implementation of BIO-1 Pre-construction Nesting Bird Surveys would serve to fully mitigate any direct and indirect impacts; additionally, any project-related disturbances would not rise above current existing levels found at the project sites, as the adjacent areas contain streets, sidewalks, and commercially developed areas.

Thank you for the opportunity to provide this Biological Resources Assessment. Please contact the undersigned with any questions.

Sincerely,
Rincon Consultants, Inc.

Jared Reed
Senior Biologist/Project Manager

Angie Harbin
Director – Natural Resources

Attachments

Figures

Attachment 1 Project Site Photographs

Attachment 2 Special Status Species Potential for Occurrence

Attachment 3 Observed Plant Species List

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Figure 1 Regional Location

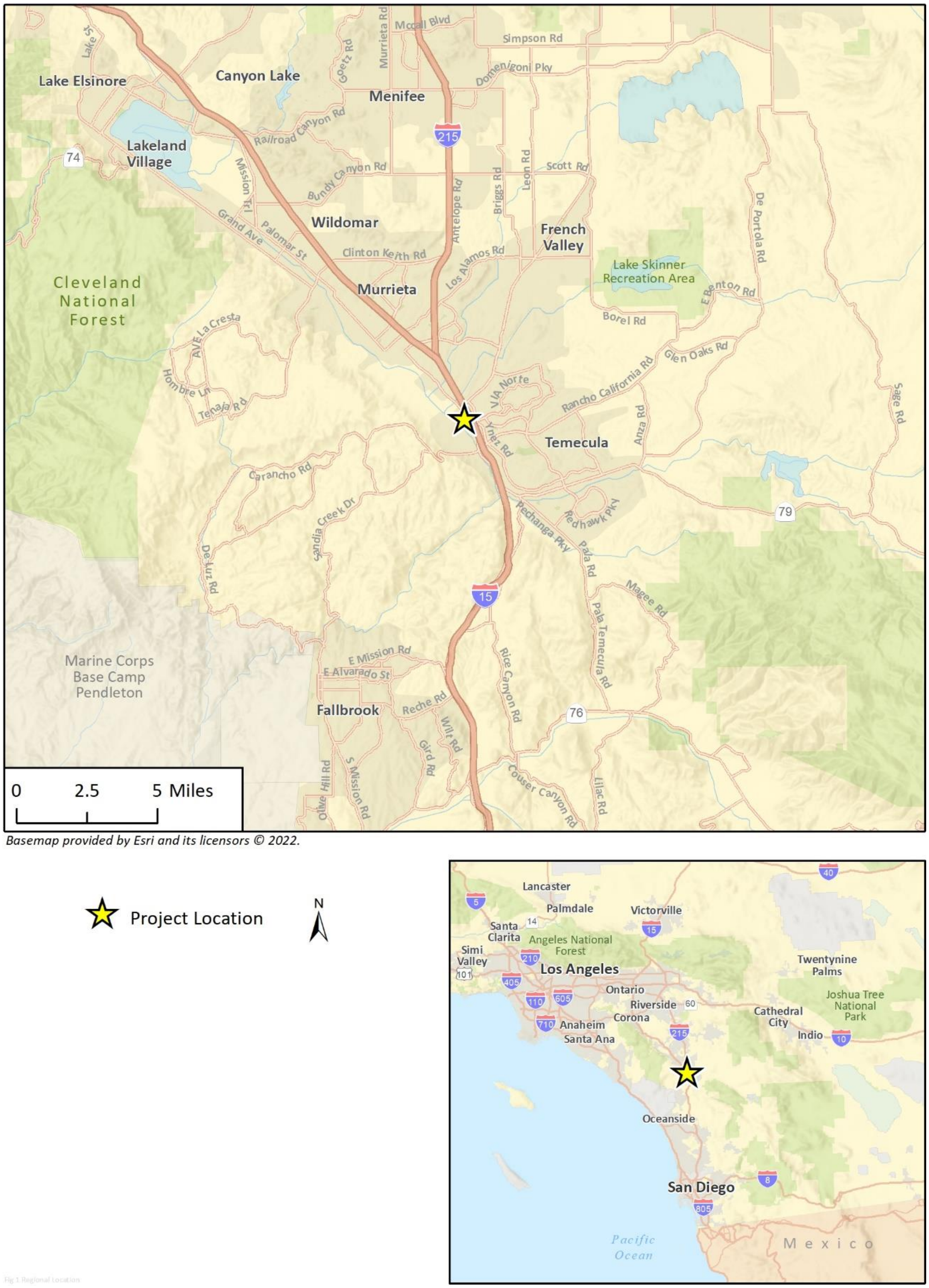

Figure 2 Project Location

Figure 3 USDA NRCS Soils Map

Imagery provided by ESRI, Microsoft Bing, and their licensors © 2024.
Additional data provided by the Natural Resource Conservation Service Soil Survey Geography, 2024.

Figure 4 Vegetation Communities and Land Cover Types

Imagery provided by ESRI, Microsoft Bing, and their licensors © 2024.

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Fig 4 Vegetation and Land Cover

Attachment 1

Project Site Photographs

Photograph 1. Corner of Jefferson Avenue and Overland Drive facing north.

Photograph 2. Northeast-facing view of Jefferson Avenue and Overland Drive intersection.

Photograph 3. Southwest-facing view of project site along Overland Drive. Ornamental trees and grass are present.

Photograph 4. Vacant dirt lot within Staging Area facing southwest. Murrieta Creek riparian habitat in background.

Photograph 5. Project site facing southwest, consisting of primarily ornamental landscaping.

Photograph 6. Southwest-facing view of Overland Drive and Commerce Center Drive intersection.

Photograph 7. Project site facing north from near Overland Drive and Commerce Center Drive intersection.

Photograph 8. Overland Drive and Commerce Center Drive facing southwest.

Photograph 9. South-facing view of Commerce Center Drive from south edge of project site.

Photograph 10. North-facing view of Overland Drive and Commerce Center Drive intersection.

Photograph 11. Project site facing northeast in south portion of project site.

Photograph 12. Project site facing northeast.

Photograph 13. Project site facing southwest along northeast side of Overland Drive. Mostly weedy vegetation is shown.

Photograph 14. Tributary drainage northeast of Commerce Center Drive with cattail marshes and upland mustards.

Photograph 15. Inactive nest in London plane tree in northeast portion of project site.

Photograph 16. Project site facing west from near Overland Drive and Jefferson Avenue intersection.

Attachment 2

Special Status Species Potential for Occurrence

Table 1 Special Status Species Potential for Occurrence

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Plants and Lichens				
Abronia villosa var. *aurita* chaparral sand-verbena	None/None G5T2?/S2 1B.1	Annual herb. Chaparral, coastal scrub, desert dunes. Sandy.Elevations: 245-5250ft. (75-1600m.) Blooms (Jan)Mar-Sep.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Allium munzii Munz's onion	FE/SCT G1/S1 1B.1	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Clay, mesic. Elevations: 975-3510ft. (297-1070m.) Blooms Mar-May.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Almutaster pauciflorus alkali marsh aster	None/None G4/S1S2 2B.2	Perennial herb. Meadows and seeps. Alkaline. Elevations: 785-2625ft. (240-800m.) Blooms Jun-Oct.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Ambrosia pumila San Diego ambrosia	FE/None G1/S1 1B.1	Perennial rhizomatous herb. Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Alkaline (sometimes), clay (sometimes), disturbed areas (often), sandy (sometimes). Elevations: 65-1360ft. (20-415m.) Blooms Apr-Oct.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Amsinckia douglasiana Douglas' fiddleneck	None/None G4/S4 4.2	Annual herb. Cismontane woodland, valley and foothill grassland. Dry. Elevations: 0-6400ft. (0-1950m.) Blooms Mar-May.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Arctostaphylos rainbowensis Rainbow manzanita	None/None G2/S2 1B.1	Perennial evergreen shrub. Chaparral. Usually found in gabbro chaparral. Elevations: 675-2200ft. (205-670m.) Blooms Dec-Mar.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Astragalus pachypus var. *jaegeri* Jaeger's milk-vetch	None/None G4T1/S1 1B.1	Perennial shrub. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Rocky (sometimes), sandy (sometimes). Elevations: 1200-3200ft. (365-975m.) Blooms Dec-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Berberis nevinii Nevin's barberry	FE/SCE G1/S1 1B.1	Perennial evergreen shrub. Chaparral, cismontane woodland, coastal scrub, riparian scrub. Gravelly (sometimes), sandy (sometimes). Elevations: 230-2705ft. (70-825m.) Blooms (Feb)Mar-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Brodiaea orcuttii Orcutt's brodiaea	None/None G2/S2 1B.1	Perennial bulbiferous herb. Chaparral, cismontane woodland, closed-cone coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools. Clay, Mesic. Elevations: 100-5550ft. (30-1692m.) Blooms May-Jul.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Brodiaea santarosae Santa Rosa Basalt brodiaea	None/None G1/S1 1B.2	Perennial bulbiferous herb. Valley and foothill grassland. Santa Rosa Basalt. Elevations: 1855-3430ft. (565-1045m.) Blooms May-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Calochortus catalinae Catalina mariposa lily	None/None G3G4/S3S4 4.2	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. In heavy soils, open slopes, openings in brush. Elevations: 50-2295ft. (15-700m.) Blooms (Feb)Mar-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Calochortus weedii var. *intermedius* intermediate mariposa-lily	None/None G3G4T2/S3 1B.2	Perennial bulbiferous herb. Chaparral, coastal scrub, valley and foothill grassland. Rocky. Elevations: 345-2805ft. (105-855m.) Blooms May-Jul.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Centromadia pungens ssp. *laevis* smooth tarplant	None/None G3G4T2/S2 1B.1	Annual herb. Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland. Alkaline. Elevations: 0-2100ft. (0-640m.) Blooms Apr-Sep.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Chorizanthe parryi var. *parryi* Parry's spineflower	None/None G3T2/S2 1B.1	Annual herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Openings, Rocky (sometimes), sandy (sometimes). Elevations: 900-4005ft. (275-1220m.) Blooms Apr-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Chorizanthe polygonoides var. *longispina* long-spined spineflower	None/None G5T3/S3 1B.2	Annual herb. Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools. Clay (often). Elevations: 100-5020ft. (30-1530m.) Blooms Apr-Jul.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Clinopodium chandleri San Miguel savory	None/None G3/S2 1B.2	Perennial shrub. Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Gabbroic (sometimes), rocky (sometimes). Elevations: 395-3525ft. (120-1075m.) Blooms Mar-Jul.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Convolvulus simulans small-flowered morning-glory	None/None G4/S4 4.2	Annual herb. Chaparral, coastal scrub, valley and foothill grassland. Clay, seeps, serpentinite. Elevations: 100-2430ft. (30-740m.) Blooms Mar-Jul.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Cryptantha wigginsii Wiggins' cryptantha	None/None G2/S1 1B.2	Annual herb. Coastal scrub. Often on clay soils. Elevations: 65-900ft. (20-275m.) Blooms Feb-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Deinandra paniculata paniculate tarplant	None/None G4/S4 4.2	Annual herb. Coastal scrub, valley and foothill grassland, vernal pools. Usually in vernally mesic sites. Sometimes in vernal pools or on mima mounds near them. Elevations: 80-3085ft. (25-940m.) Blooms (Mar)Apr-Nov.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Dudleya viscida sticky dudleya	None/None G2/S2 1B.2	Perennial herb. Chaparral, cismontane woodland, coastal bluff scrub, coastal scrub. On north and south-facing cliffs and banks. Elevations: 35-1805ft. (10-550m.) Blooms May-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Eryngium aristulatum var. *parishii* San Diego button-celery	FE/SCE G5T1/S1 1B.1	Annual/perennial herb. Coastal scrub, valley and foothill grassland, vernal pools. San Diego mesa hardpan and claypan vernal pools and southern interior basalt flow vernal pools; usually surrounded by scrub. Elevations: 65-2035ft. (20-620m.) Blooms Apr-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Erythranthe diffusa Palomar monkeyflower	None/None G4/S3 4.3	Annual herb. Chaparral, lower montane coniferous forest. Sandy or gravelly soils. Elevations: 4005-6005ft. (1220-1830m.) Blooms Apr-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Harpagonella palmeri Palmer's grapplinghook	None/None G4/S3 4.2	Annual herb. Chaparral, coastal scrub, valley and foothill grassland. Clay soils; open grassy areas within shrubland. Elevations: 65-3135ft. (20-955m.) Blooms Mar-May.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Holocarpha virgata ssp. *elongata* graceful tarplant	None/None G5T3/S3 4.2	Annual herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Elevations: 195-3610ft. (60-1100m.) Blooms May-Nov.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Hordeum intercedens vernal barley	None/None G3G4/S3S4 3.2	Annual herb. Coastal dunes, coastal scrub, valley and foothill grassland, vernal pools. Vernal pools, dry, saline streambeds, alkaline flats. 5-.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
		Elevations: 15-3280ft. (5-1000m.) Blooms Mar-Jun.		
Horkelia cuneata var. *puberula* mesa horkelia	None/None G4T1/S1 1B.1	Perennial herb. Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. Elevations: 230-2660ft. (70-810m.) Blooms Feb-Jul(Sep).	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Juglans californica Southern California black walnut	None/None G4/S4 4.2	Perennial deciduous tree. Chaparral, cismontane woodland, coastal scrub, riparian woodland. Slopes, canyons, alluvial habitats. Elevations: 165-2955ft. (50-900m.) Blooms Mar-Aug.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Juncus acutus ssp. *leopoldii* southwestern spiny rush	None/None G5T5/S4 4.2	Perennial rhizomatous herb. Coastal dunes, marshes and swamps, meadows and seeps. Moist saline places. Elevations: 10-2955ft. (3-900m.) Blooms (Mar)May-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Juncus luciensis Santa Lucia dwarf rush	None/None G3/S3 1B.2	Annual herb. Chaparral, great basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools. Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. Elevations: 985-6695ft. (300-2040m.) Blooms Apr-Jul.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	None/None G4T2/S2 1B.1	Annual herb. Marshes and swamps, playas, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1-. Elevations: 5-4005ft. (1-1220m.) Blooms Feb-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Lathyrus splendens pride-of-California	None/None G4/S4 4.3	Perennial herb. Chaparral. Sandy to gravelly soils. Elevations: 655-5005ft. (200-1525m.) Blooms Mar-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	None/None G5T3/S3 4.3	Annual herb. Chaparral, coastal scrub. Dry soils, shrubland. 4-. Elevations: 5-2905ft. (1-885m.) Blooms Jan-Jul.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Microseris douglasii ssp. *platycarpha* small-flowered microseris	None/None G4T4/S4 4.2	Annual herb. Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools. Alkaline clay in river bottoms. Elevations: 50-3510ft. (15-1070m.) Blooms Mar-May.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Mielichhoferia shevockii Shevock's copper moss	None/None G2/S2 1B.2	Moss. Cismontane woodland. Moss on metamorphic rocks containing heavy metals; mesic sites. On rocks along roads, in same habitat as Mielichhoferia elongata. Elevations: 2460-4595ft. (750-1400m.)	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Myosurus minimus ssp. *apus* little mousetail	None/None G5T2Q/S2 3.1	Annual herb. Valley and foothill grassland, vernal pools. Alkaline soils. Elevations: 65-2100ft. (20-640m.) Blooms Mar-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Navarretia fossalis spreading navarretia	FT/None G2/S2 1B.1	Annual herb. Chenopod scrub, marshes and swamps, playas, vernal pools. San Diego hardpan and San Diego claypan vernal pools; in swales and vernal pools, often surrouded by other habitat types. Elevations: 100-2150ft. (30-655m.) Blooms Apr-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Navarretia prostrata prostrate vernal pool navarretia	None/None G2/S2 1B.2	Annual herb. Coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. Elevations: 10-3970ft. (3-1210m.) Blooms Apr-Jul.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Orcuttia californica California Orcutt grass	FE/SCE G1/S1 1B.1	Annual herb. Vernal pools. Elevations: 50-2165ft. (15-660m.) Blooms Apr-Aug.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Polygala cornuta var. *fishiae* Fish's milkwort	None/None G5T4/S4 4.3	Perennial deciduous shrub. Chaparral, cismontane woodland, riparian woodland. Scree slopes, brushy ridges, and along creeks; often with oaks. Elevations: 330-3280ft. (100-1000m.) Blooms May-Aug.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Pseudognaphalium leucocephalum white rabbit-tobacco	None/None G4/S2 2B.2	Perennial herb. Chaparral, cismontane woodland, coastal scrub, riparian woodland. Sandy, gravelly sites. Elevations: 0-6890ft. (0-2100m.) Blooms (Jul)Aug-Nov(Dec).	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Quercus engelmannii Engelmann oak	None/None G3/S3 4.2	Perennial deciduous tree. Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevations: 165-4265ft. (50-1300m.) Blooms Mar-Jun.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Scutellaria bolanderi ssp. *austromontana* southern mountains skullcap	None/None G4T3/S3 1B.2	Perennial rhizomatous herb. Chaparral, cismontane woodland, lower montane coniferous forest. In gravelly soils on streambanks or in mesic sites in oak or pine woodland. Elevations: 1395-6560ft. (425-2000m.) Blooms Jun-Aug.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Sphaerocarpos drewiae bottle liverwort	None/None G1/S1 1B.1	Ephemeral liverwort. Chaparral, coastal scrub. Liverwort in openings; on soil. Elevations: 295-1970ft. (90-600m.)	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Symphyotrichum defoliatum San Bernardino aster	None/None G2/S2 1B.2	Perennial rhizomatous herb. Cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, meadows and seeps, valley and foothill grassland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas. Elevations: 5-6695ft. (2-2040m.) Blooms Jul-Nov.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Tetracoccus dioicus Parry's tetracoccus	None/None G2G3/S2 1B.2	Perennial deciduous shrub. Chaparral, coastal scrub. Stony, decomposed gabbro soil. Elevations: 540-3280ft. (165-1000m.) Blooms Apr-May.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Invertebrates				
Bombus crotchii Crotch bumble bee	None/None G3G4/S1S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Branchinecta lynchi vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Euphydryas editha quino quino checkerspot butterfly	FE/None G5T1T2/ S1S2	Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego counties. Hills and mesas near the coast. Need high densities of food plants Plantago erecta, P. insularis, and Orthocarpus purpurescens.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Linderiella occidentalis California linderiella	None/None G2G3/S2S3	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and total dissolved solids.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Linderiella santarosae Santa Rosa Plateau fairy shrimp	None/None G1G2/S1	Found only in the vernal pools on Santa Rosa Plateau in Riverside County. Southern basalt flow vernal pools.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Streptocephalus woottoni Riverside fairy shrimp	FE/None G1G2/S1S2	Endemic to Western Riverside, Orange, and San Diego counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. Inhabit seasonally astatic pools filled by winter/spring rains. Hatch in warm water later in the season.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Fish				
Gila orcuttii arroyo chub	None/None G2/S2 SSC	Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave and San Diego river basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Amphibians				
Spea hammondii western spadefoot	None/None G2G3/S3 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Reptiles				
Anniella stebbinsi Southern California legless lizard	None/None G3/S3 SSC	Generally south of the Transverse Range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Arizona elegans occidentalis California glossy snake	None/None G5T2/S2 SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Aspidoscelis hyperythra orange-throated whiptail	None/None G5/S2S3 WL	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food: termites.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Aspidoscelis tigris stejnegeri coastal whiptail	None/None G5T5/S3 SSC	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Crotalus ruber red-diamond rattlesnake	None/None G4/S3 SSC	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Emys marmorata western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Phrynosoma blainvillii coast horned lizard	None/None G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Plestiodon skiltonianus interparietalis Coronado skink	None/None G5T5/S2S3 WL	Grassland, chaparral, pinon-juniper and juniper sage woodland, pine-oak and pine forests in Coast Ranges of Southern California. Prefers early successional stages or open areas. Found in rocky areas close to streams and on dry hillsides.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Thamnophis hammondii two-striped gartersnake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Birds				
Aimophila ruficeps canescens southern California rufous-crowned sparrow	None/None G5T3/S3 WL	Resident in Southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Aquila chrysaetos golden eagle	None/None G5/S3 FP WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Artemisiospiza belli belli Bell's sage sparrow	None/None G5T2T3/S3 WL	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range. Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yds apart.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Athene cunicularia burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Buteo regalis ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Buteo swainsoni Swainson's hawk	None/ST G5/S3	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Circus hudsonius northern harrier	None/None G5/S3 SSC	Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT/SE G5T2T3/S1	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Elanus leucurus white-tailed kite	None/None G5/S3S4 FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Eremophila alpestris actia California horned lark	None/None G5T4Q/S4 WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Nycticorax nycticorax black-crowned night heron	None/None G5/S4	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Polioptila californica californica coastal California gnatcatcher	FT/None G4G5T3Q/S2 SSC	Obligate, permanent resident of coastal sage scrub below 2500 ft in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Vireo bellii pusillus least Bell's vireo	FE/SE G5T2/S2	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Mammals				
Chaetodipus californicus femoralis Dulzura pocket mouse	None/None G5T3/S3 SSC	Found in a variety of habitats including coastal scrub, chaparral, and grassland in San Diego County, Baja California, and Mexico. Attracted to grass-chaparral edges.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Chaetodipus fallax fallax northwestern San Diego pocket mouse	None/None G5T3T4/ S3S4 SSC	Inhabits coastal sage scrub, sagebrush scrub, grasslands, and chaparral communities. Found in open, sandy areas in southwestern California and northern Baja California. Prefers moderately gravelly and rocky substrates.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Dipodomys merriami parvus San Bernardino kangaroo rat	FE/SCE G5T1/S1 SSC	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood plains. Needs early to intermediate seral stages.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Dipodomys stephensi Stephens' kangaroo rat	FE/ST G2/S2	Found primarily in annual & perennial grasslands, but also occurs in coastal scrub & sagebrush with sparse canopy cover. Prefers buckwheat, chamise, brome grass & filaree. Will burrow into firm soil and use the burrows of California ground squirrels and pocket gophers. Occurs only in southern California.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Eumops perotis californicus western mastiff bat	None/None G4G5T4/ S3S4 SSC	Occurs in open, semi-arid to arid habitats, including coniferiferous and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces and caves, and buildings. Roosts typically occur high above ground.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Lepus californicus bennettii San Diego black-tailed jackrabbit	None/None G5T3T4/ S3S4 SSC	Occurs in Los Angeles, San Bernardino, Riverside, and San Diego Counties of southern California. Typically found in open shrub habitats. Will also occur in woodland habitats with open understory adjacent to shrublands.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Perognathus longimembris brevinasus Los Angeles pocket mouse	None/None G5T2/S1S2 SSC	Lower elevation grasslands and coastal sage communities in and around the Los Angeles Basin. Open ground with fine, sandy soils. May not dig extensive burrows, hiding under weeds and dead leaves instead.	Not Expected	No suitable habitat for this species is present on-site. Project site is fully developed.
Sensitive Natural Communities				
Southern Interior Basalt Flow Vernal Pool	None/None G1/S1.2	Floodplains of streams and rivers are needed in order to form.	Not Present	No suitable habitat for this natural community is present on-site. Project site is fully developed.
Southern Willow Scrub	None/None G3/S2.1	Consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat.	Not Present	No suitable habitat for this natural community is present on-site. Project site is fully developed.
Valley Needlegrass Grassland	None/None G3/S3.1	All topographic locations. Soils may be deep with high clay content, loamy, sandy, or silty derived from mudstone, sandstone, or serpentine substrates	Not Present	No suitable habitat for this natural community is present on-site. Project site is fully developed.

Regional Vicinity refers to within a 5-mile search radius of site.

Status (Federal/State)
FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

CRPR (CNPS California Rare Plant Rank)
1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere
3 = Need more information (Review List)
4 = Limited Distribution (Watch List)

CRPR Threat Code Extension
.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Other Statuses
G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows
T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority
? – Inexact numeric rank

Attachment 3

Observed Plant Species List

Table 2 Observed Plant Species List

Scientific Name[1]	Common Name	Status
Acacia sp.	wattle	Waif
Acmispon grandiflorus var. *grandiflorus*	chaparral lotus	Native
Agapanthus praecox	agapanthus	Waif
Ailanthus altissima	tree of heaven	Introduced
Amsinckia intermedia	common fiddleneck	Native
Carduus pycnocephalus	Italian thistle	Introduced
Cirsium vulgare	bull thistle	Introduced
Cistus sp.	rock rose	Introduced
Datura wrightii	jimson weed	Native
Erigeron bonariensis	flax-leaved horseweed	Introduced
Erigeron canadensis	horseweed	Native
Erodium cicutarium	red stemmed filaree	Introduced
Eucalyptus sp.	gum tree	Introduced
Eucalyptus globulus	blue gum	Introduced
Euphorbia albomarginata	rattlesnake sandmat	Native
Festuca sp.	fescue	Introduced
Helminthotheca echioides	bristly ox-tongue	Introduced
Heterotheca grandiflora	telegraph weed	Native
Hirschfeldia incana	shortpod mustard	Introduced
Hordeum murinum	wall barley	Introduced
Malva parviflora	cheeseweed	Introduced
Matricaria sp.	pineapple weed	Introduced
Medicago polymorpha	California burclover	Introduced
Melilotus oficinale	yellow sweet clover	Introduced
Nicotiana glauca	tree tobacco	Introduced
Oenothera elata	Hooker's evening primrose	Native
Olea europaea	European olive	Introduced
Oncosiphon piluliferum	stinknet	Introduced
Pinus sp.	pine tree	Introduced
Pittosporum sp.	pittosporum	Introduced
Plagiobothrys sp.	popcorn flower	Native
Platanus x hispanica	London plane tree	Introduced
Poa annua	annual blue grass	Introduced
Pseudognaphalium sp.	cudweed	Native
Pyracantha koidzumii	Taiwan firethorn	Introduced
Quercus sp.	ornamental oak tree	Introduced
Rhaphiolepis indica	Indian hawthorn	Introduced

Scientific Name[1]	Common Name	Status
Salix lasiolepis	arroyo willow	Native
Salsola tragus	Russian thistle	Introduced
Schinus molle	Peruvian pepper tree	Introduced
Schismus barbatus	Mediterranean schismus	Introduced
Sisymbrium irio	London rocket	Introduced
Sonchus asper	prickly sow-thistle	Introduced
Sonchus oleraceus	common sow-thistle	Introduced
Syagrus romanzoffiana	queen palm	Introduced
Taraxacum oficinale	common dandelion	Introduced
Tribulus terrestris	puncture vine	Introduced
Trifolium sp.	tomcat clover	Introduced
Typha latifolia	broad-leaved cattail	Native
Washingtonia robusta	Mexican fan palm	Introduced
Xanthium strumarium	cocklebur	Native

Appendix F

Master Plan

Overland Drive Widening Project

Last Updated: April 3 2024

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors **[1]**:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Air Compressors	1	8	367	0.48	Demolition Phase	1,564
Concrete/Industrial Saws	1	8	81	0.73	Demolition Phase	584
Cranes	1	8	231	0.29	Demolition Phase	595
Dumpers/Tenders	1	8	16	0.38	Demolition Phase	60
Excavators	1	8	158	0.38	Demolition Phase	533
Generator Sets	1	8	84	0.74	Demolition Phase	614
Graders	1	6	187	0.41	Demolition Phase	511
Off-Highway Tractors	1	8	124	0.44	Demolition Phase	485
Off-Highway Trucks	1	8	402	0.38	Demolition Phase	1,357
Rubber Tired Dozers	1	1	247	0.4	Demolition Phase	110
Scrapers	1	8	367	0.48	Demolition Phase	1,564
Signal Boards	1	8	6	0.82	Demolition Phase	49
Sweepers/Scrubbers	1	8	64	0.46	Demolition Phase	291
Tractors/Loaders/Backhoes	1	6	97	0.37	Demolition Phase	266
Cranes	1	8	231	0.29	Site Preparation Phase	652
Crawler Tractors	1	8	212	0.43	Site Preparation Phase	887
Crushing/Proc. Equipment	1	8	85	0.78	Site Preparation Phase	717
Dumpers/Tenders	1	8	16	0.38	Site Preparation Phase	66
Excavators	1	8	158	0.38	Site Preparation Phase	584
Generator Sets	1	8	84	0.74	Site Preparation Phase	672
Off-Highway Tractors	1	8	124	0.44	Site Preparation Phase	531
Off-Highway Trucks	1	8	402	0.38	Site Preparation Phase	1,486
Rubber Tired Dozers	1	8	247	0.4	Site Preparation Phase	961
Scrapers	1	8	367	0.48	Site Preparation Phase	1,713
Signal Boards	1	8	6	0.82	Site Preparation Phase	53
Sweepers/Scrubbers	1	8	64	0.46	Site Preparation Phase	318
Tractors/Loaders/Backhoes	1	8	97	0.37	Site Preparation Phase	388
Aerial Lifts	1	8	63	0.31	Grading Phase	193
Concrete/Industrial Saws	1	8	81	0.73	Grading Phase	584
Cranes	1	8	231	0.29	Grading Phase	595
Crawler Tractors	1	8	212	0.43	Grading Phase	810
Crushing/Proc. Equipment	1	8	85	0.78	Grading Phase	655
Dumpers/Tenders	1	8	16	0.38	Grading Phase	60
Excavators	1	8	158	0.38	Grading Phase	533
Generator Sets	1	8	84	0.74	Grading Phase	614
Graders	1	6	187	0.41	Grading Phase	511
Off-Highway Tractors	1	8	124	0.44	Grading Phase	485
Off-Highway Trucks	1	8	402	0.38	Grading Phase	1,357
Rubber Tired Dozers	1	6	247	0.4	Grading Phase	658
Scrapers	1	8	367	0.48	Grading Phase	1,564
Signal Boards	1	8	6	0.82	Grading Phase	49
Sweepers/Scrubbers	1	8	64	0.46	Grading Phase	291
Tractors/Loaders/Backhoes	1	7	97	0.37	Grading Phase	310
Air Compressors	1	8	82	0.48	Paving	389
Cement and Mortar Mixers	1	6	9	0.56	Paving	37
Concrete/Industrial Saws	1	8	81	0.73	Paving	584

Dumpers/Tenders	1	8	16	0.38	Paving	60
Generator Sets	1	8	84	0.74	Paving	614
Off-Highway Tractors	1	8	124	0.44	Paving	485
Off-Highway Trucks	1	8	402	0.38	Paving	1,357
Pavers	1	7	130	0.42	Paving	424
Paving Equipment	1	8	132	0.36	Paving	422
Rollers	1	7	80	0.38	Paving	263
Signal Boards	1	8	6	0.82	Paving	49
Skid Steer Loaders	1	8	65	0.37	Paving	237
Surfacing Equipment	1	8	263	0.3	Paving	701
Sweepers/Scrubbers	1	8	64	0.46	Paving	291
Tractors/Loaders/Backhoes	1	7	97	0.37	Paving	310
Trenchers	1	8	78	0.5	Paving	385
Aerial Lifts	1	6	63	0.31	Site Restoration Phase	145
Air Compressors	1	8	82	0.48	Site Restoration Phase	389
Cement and Mortar Mixers	1	8	9	0.56	Site Restoration Phase	50
Concrete/Industrial Saws	1	8	81	0.73	Site Restoration Phase	584
Cranes	1	8	231	0.29	Site Restoration Phase	595
Crawler Tractors	1	8	212	0.43	Site Restoration Phase	810
Crushing/Proc. Equipment	1	8	85	0.78	Site Restoration Phase	655
Dumpers/Tenders	1	8	16	0.38	Site Restoration Phase	60
Forklifts	1	8	89	0.2	Site Restoration Phase	176
Generator Sets	1	8	84	0.74	Site Restoration Phase	614
Off-Highway Tractors	1	8	124	0.44	Site Restoration Phase	485
Off-Highway Trucks	1	8	402	0.38	Site Restoration Phase	1,357
Rollers	1	8	80	0.38	Site Restoration Phase	300
Rough Terrain Forklifts	1	8	100	0.4	Site Restoration Phase	395
Signal Boards	1	8	6	0.82	Site Restoration Phase	49
Surfacing Equipment	1	8	263	0.3	Site Restoration Phase	701
Sweepers/Scrubbers	1	8	64	0.46	Site Restoration Phase	291
Tractors/Loaders/Backhoes	1	8	97	0.37	Site Restoration Phase	354
Trenchers	1	8	78	0.5	Site Restoration Phase	385
					Total Fuel Used	**41,869**
						(Gallons)

Construction Phase	Days of Operation
Demolition Phase	21
Site Preparation Phase	23
Grading Phase	21
Building Construction Phase	0
Paving Phase	23
Site Restoration Phase	43
Total Days	131

WORKER TRIPS

Constuction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
Demolition Phase	24.1	35	14.7	448.32
Site Preparation Phase	24.1	33	14.7	462.96
Grading Phase	24.1	40	14.7	512.37
Building Construction Phase	24.1	0	14.7	0.00
Paving Phase	24.1	40	14.7	561.16
Site Restoration Phase	24.1	2	14.7	52.46

			Total	2,037.26

HAULING AND VENDOR TRIPS

Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
Demolition Phase	7.5	0	20.0	0.00
Site Preparation Phase	7.5	0	20.0	0.00
Grading Phase	7.5	0	20.0	0.00
Building Construction Phase	7.5	0	20.0	0.00
Paving Phase	7.5	0	20.0	0.00
Site Restoration Phase	7.5	0	20.0	0.00
			Total	-
VENDOR TRIPS				
Demolition Phase	7.5	0	6.9	0.00
Site Preparation Phase	7.5	0	6.9	0.00
Grading Phase	7.5	0	6.9	0.00
Building Construction Phase	7.5	0	6.9	0.00
Paving Phase	7.5	0	6.9	0.00
Site Restoration Phase	7.5	0	6.9	0.00
			Total	-

Total Gasoline Consumption (gallons)	**2,037**
Total Diesel Consumption (gallons)	**41,869**

Sources:

[1] United States Environmental Protection Agency. 2021. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES3.0.2* . September. Available at: https://www.epa.gov/system/files/documents/2021-08/420r21021.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2021. *National Transportation Statistics* . Available at: https://www.bts.gov/topics/national-transportation-statistics.

Appendix G

Noise Study

Noise Study Report
Overland Drive Widening Project
City of Temecula

Prepared for:

City of Temecula

Prepared by:

ENTECH CONSULTING GROUP
PLANNING • ENVIRONMENTAL • CONSTRUCTION MANAGEMENT

June 2022

Contents

Tables

Figures

1.0 INTRODUCTION

For CEQA purposes, the noise analysis centers around whether an increase in the future noise level would result in a significant effect. A comparison is made between existing noise levels to the predicted noise level with the project. Under CEQA, the assessment entails looking at the noise impact's existing setting and determining how large or perceptible any noise increase would be in the given area. Critical factors considered include the uniqueness of the setting, the noise receptors' sensitive nature, the magnitude of the noise increase, the number of residences affected, and the absolute noise level. As the project is located with the City of Temecula, the CEQA analysis will also take into consideration the applicability of complying with the City of Temecula Noise Ordinance, General Plan Noise Element, and other applicable city policies for protecting sensitive land use categories in the project area as well as complying with CEQA threshold requirements. Pursuant to Appendix G of the CEQA Guidelines, a noise analysis will be performed to determine whether the proposed project will result in:

- 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 other agencies' applicable standards?
- Excessive groundborne vibration or groundborne noise levels?
- Expose people residing or working in the project area to excessive noise levels for the project if it is 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?

2.0 PROJECT DESCRIPTION

Project Need

The existing Overland Drive roadway is configured with two lanes of traffic in each direction east of Jefferson Avenue. Overland Drive currently drops to one lane of traffic in each direction west of Jefferson Avenue, creating a bottleneck that increases travel times and greenhouse gas (GHG) emissions due to traffic congestion. The existing configuration of Overland Drive also results in impediments to pedestrian mobility due to the gap in sidewalk on both sides of the roadway between Jefferson Avenue and Commerce Center Drive. The proposed project would widen approximately 890 feet of Overland Drive between Jefferson Avenue and Commerce Center Drive from its existing two-lane collector roadway to a four-lane undivided secondary arterial roadway with a center two-way-left-turn-lane.

Project Purpose and Objectives

The Overland Drive Widening Project proposes operational and safety enhancements along Overland Drive from Jefferson Avenue to Commerce Center Drive and continuing south along Commerce Center Drive to provide a 4-lane undivided secondary arterial roadway facility consistent with the Circulation Element of the City of Temecula’s General Plan. The project improvements and include widening the existing roadway to remove the bottleneck and implement new pedestrian and bicycle facilities. The project will also construct new sidewalks and Class II bike lanes on both side of the street.

Project Description

The proposed project is located within the northwestern portion of the City of Temecula in Riverside County, California as shown below in Figure 2-1. The project site on Overland Drive extends from Jefferson Avenue approximately 950 feet west to Commerce Center Drive before continuing approximately 500 feet south on Commerce Center Drive to an existing drainage ditch. Project location is shown in Figure 2-2. Adjacent land uses are characterized as commercial, industrial, and retail uses. Existing land uses in the direct project area include commercial, industrial, retail development, storage facilities, and a preschool. The project area lies between both recently completed improvements and other improvements that are currently being designed.

The current Overland Drive configuration includes two 22-foot travel lanes with 11 additional feet of right-of-way (ROW) on either side, resulting in an overall ROW width of 66 feet. The proposed configuration would include a 12-foot travel lane and an 11-foot travel lane in both directions with a single 10-foot center turn lane. The proposed configuration would also include six-foot Class II bike lanes and an additional ten feet of ROW on either side with new contiguous sidewalks, resulting in an overall ROW width of 88 feet, consistent with the City of Temecula ROW requirements for secondary arterial roadways.

The project would impact both public and private property. Specifically, public improvements would include modifications to traffic signals and removal of some existing curb and gutter, pavement, and streetlights. Private improvements would result in the acquisition of permanent ROW and the removal of paved and concrete driveways, barrier curbs, block walls, and landscaping.

Utility Impacts

Various utilities also impacted within the project area include water, sewer, power, and telephone communications. As the widening of Overland Drive would impact the curb returns on the southerly leg of the Overland Drive and Jefferson Avenue intersection, two existing traffic signal poles with mast arms would be relocated. Similarly, an existing metal power pole on the westerly curb return of the Overland Drive and Jefferson Avenue intersection would be relocated. The project would also modify existing underground drainage infrastructure from the southeast corner of the Overland Drive and Commerce Center Drive intersection to an outlet where the drainage infrastructure meets an existing drainage ditch located approximately 500 feet south of the intersection on Commerce Center Drive.

Construction

Construction is anticipated to commence in July 2023 and last for approximately 6 months, ending in late December 2023. Construction would require one lane of the affected public roadways to be closed at any given time. To that end, a traffic control plan is proposed that would regulate worker parking, construction staging, roadway improvements and potential traffic detours during project construction. Construction staging and laydown areas would be provided outside of the public ROW. Worker parking would be provided on public streets adjacent to the project site. The City would post signage along the alignment and on roadways leading up to it before and during construction to give advance warning of road closures and detours.

Construction would occur five (5) days per week to expedite the work and minimize traffic impacts. Limited weekend work may occur to accommodate the project schedule at the discretion of the City; however, total working days per month are not expected to exceed 22 days. Heavy equipment utilized during construction of the project would include aerial lifts, backhoes, cement and mortar mixers, concrete/industrial saws, compressors, cranes, tractors, crushing/processing equipment, dozers, dumpers/tenders, excavators, forklifts, generators, graders, front-end loaders, skid steer loaders, off-highway trucks and tractors, paving equipment, post drivers, rollers, scrapers, signal boards, surfacing equipment, sweepers/scrubbers, and trenchers. Construction tasks would include demolition, grading and excavation, site preparation, paving, and site restoration. Excavation is anticipated at a depth of up to three feet below ground surface.

The project would require approximately 834 cubic yards of excavation, of which approximately 339 cubic yards would be used as backfill. Approximately 495 cubic yards of soil and 2373 cubic yards of asphalt are anticipated to be exported from the project site. Overall, the project would result in approximately 0.55 acres of temporary impacts and 2.66 acres of permanent impacts for a total impact area of 3.21 acres. In accordance with the Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ), the proposed project would implement a Stormwater Pollution Prevention Plan (SWPPP) that would include the use of best management practices (BMPs) during project construction.

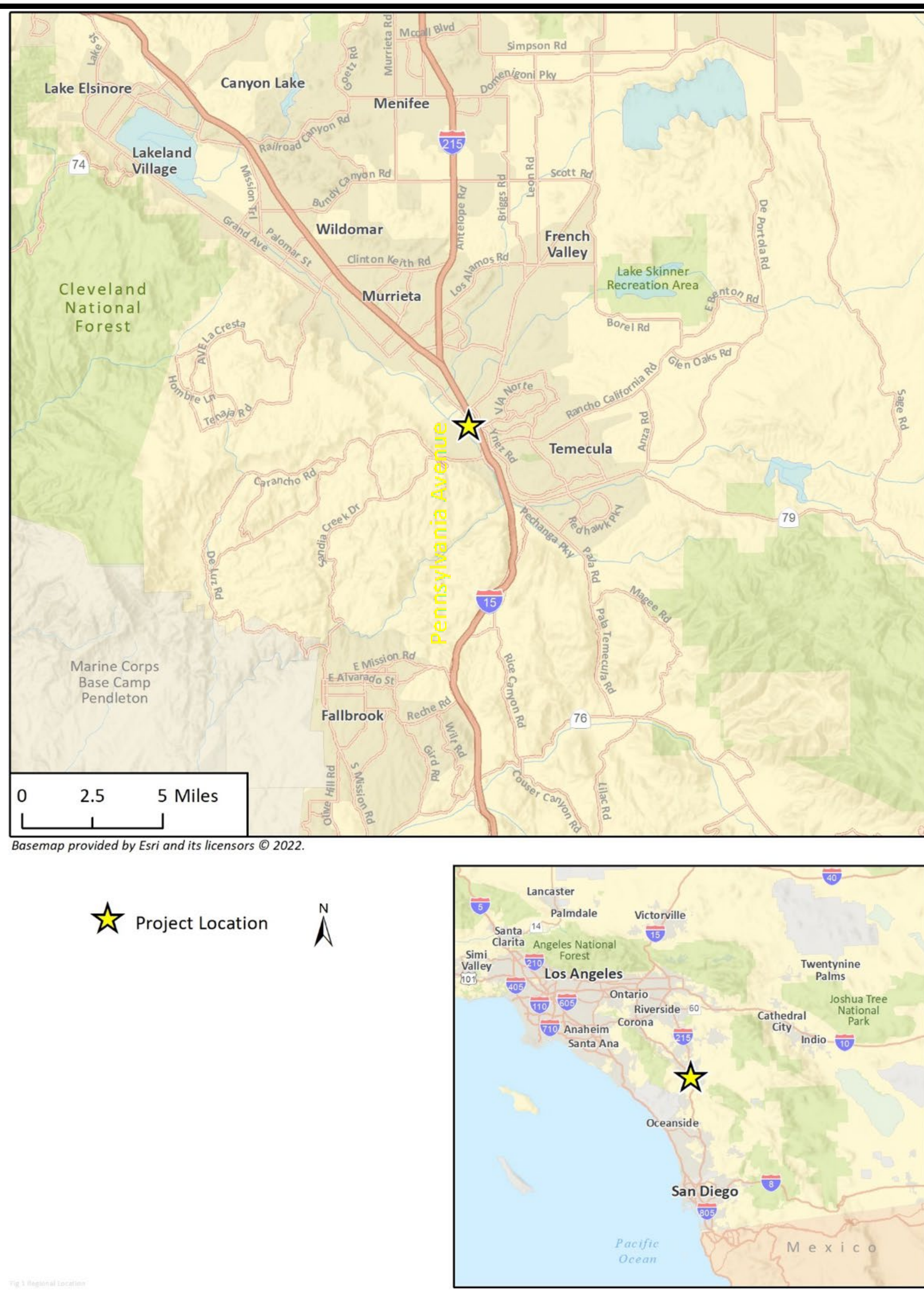


Figure 2-1. Regional Map

Imagery provided by ESRI, Microsoft Bing and their licensors © 2022.

FigX Project Site Plan_20220512

Figure 2-2. Project Vicinity Map

3.0 FUNDAMENTALS OF NOISE

Table 3-1 presents a glossary of general acoustical terminology used in this analysis.

Table 3-1. Definition of Acoustical Terms

Term	Definition
Noise	Whether something is perceived as a noise event is influenced by the type of sound, the perceived importance of the sound, and its appropriateness in the setting, the time of day and the type of activity during which the noise occurs, and the sensitivity of the listener.
Sound	For purposes of this analysis, sound is a physical phenomenon generated by vibrations that result in waves that travel through a medium, such as air, and result in auditory perception by the human brain.
Frequency	Sound frequency is measured in Hertz (Hz), which is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates several times per second. When the drum skin vibrates 100 times per second, it generates a sound pressure wave oscillating at 100 Hz, and this pressure oscillation is perceived by the ear/brain as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of sensitivity of the best human ear.
Amplitude or Level	It is measured in decibels (dB) using a logarithmic scale. A sound level of zero dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above approximately 110 dB begin to be felt inside the human ear as discomfort and eventually pain at 120 dB and higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about one to two dB. A three to five dB change is readily perceived. The average person usually perceives a change in the sound level of about 10 dB as a doubling (or decreasing by 10 dB, halving) of the sound's loudness.
Sound pressure	Sound level is usually expressed by reference to a known standard. This report refers to sound pressure level (SPL or Lp). In expressing sound pressure on a logarithmic scale, the sound pressure is compared to a reference value of 20 micropascals (µPa). Lp depends not only on the power of the source but also on the distance from the source and the acoustical characteristics of the space surrounding the source.
A-weighting	Sound from a tuning fork contains a single frequency (a pure tone), but most sounds one hears in the environment do not consist of a single frequency and instead are composed of a broadband of frequencies differing in sound level. The

	method commonly used to quantify environmental sounds consists of evaluating all frequencies of a sound according to a weighting system that reflects the typical frequency-dependent sensitivity of average healthy human hearing. This is called "A-weighting," and the decibel level measured is referred to as dBA. In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA "curve" of decibel adjustment per octave band center frequency (OBCF) from a "flat" or unweighted SPL.
Equivalent sound level	Although sound level value may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a mixture of noise from distant sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor, L_{eq}, may be used to describe sound that is changing in level. L_{eq} is the energy-average dBA during a measured time interval. It is the "equivalent" constant sound level that would have to be produced by a given source to equal the acoustic energy contained in the fluctuating sound level measured.
L_{max} and L_{min}	Additionally, it is often desirable to know the range of amplitudes for the noise source(s) under study. This is typically accomplished by reporting the L_{max} and L_{min} indicators that represent the root mean square (RMS) maximum and minimum noise levels during a given monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the "noise floor."
Statistical sound values	The statistical noise descriptors L10, L50, and L90, are commonly used to describe environmental noise's time-varying character. These noise levels exceeded during 10, 50, and 90 percent of a stated time interval. Sound levels associated with L10 typically describe transient or short-term events, while levels associated with L90 describe the "steady-state" (or most prevalent) background noise conditions.
Day-night sound level	Average sound exposure over 24 hours is often presented as a day-night average, or time-weighted, sound level (L_{dn}). L_{dn} values are calculated from hourly L_{eq} values, with the L_{eq} values for the nighttime period (10 p.m. to 7 a.m.) increased by 10 dB to reflect the greater disturbance potential from nighttime sounds.

In addition, sound is characterized by both its amplitude and frequency (or pitch). The human ear does not hear all frequencies equally. In particular, the ear deemphasizes low and very high frequencies. To approximate the sensitivity of human hearing, the A-weighted decibel scale (dBA) is used. On this scale, the human range of hearing extends from approximately 3- dBA to around 140 dBA. **Table 3-2** includes examples of A-weighted noise levels from common indoor and outdoor activities.

Table 3-2. Typical A-Weighted Noise Levels

Common Outdoor Noise	Noise Level (dBA)	Common Indoor Noise
	— 110 —	Rock band (noise to some, music to others)
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher in neighboring room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

SOURCE: Caltrans, 1998.

Using the decibel scale, sound levels from two or more sources cannot be directly added together to determine the overall sound level. Instead, the combination of two sounds at the same level yields an increase of 3 dBA. The smallest recognizable change in sound levels is approximately 1 dBA. A 3-dBA increase is generally considered perceptible, whereas a 5-dBA increase is readily perceptible. Most people judge a 10-dBA increase as an approximate doubling of the sound loudness.

Two of the primary factors that reduce levels of environmental sounds are increasing the distance between the sound source to the receiver and having intervening obstacles such as walls, buildings, or terrain features between the sound source and the receiver. Factors that increase the loudness of environmental sounds include moving the sound source closer to the receiver, sound enhancements caused by reflections, and focusing caused by various meteorological conditions.

3.1 Effects of Noise on People

Noise is generally loud, unpleasant, unexpected, or undesired sound typically associated with human activity that is a nuisance or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance)
- Interference effects (e.g., communication, sleep, and learning interference)
- Physiological effects (e.g., startle response)
- Physical effects (e.g., hearing loss)

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects refer to interruption of daily activities and include interference with human communication activities, such as normal conversations, watching television, telephone conversations, and interference with sleep. Sleep interference effects can include both awakening and arousal to a lesser state of sleep. With regard to the subjective effects, the responses of individuals to similar noise events are diverse and are influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Overall, a wide variation of tolerance to noise exists, based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). The more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- A 3 dBA change in noise levels is considered a barely perceivable difference outside of the laboratory.
- A change in noise levels of 5 dBA is considered to be a readily perceivable difference.
- A change in noise levels of 10 dBA is subjectively heard as a doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a straightforward additive fashion but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

3.2 Noise Attenuation

Stationary point sources of noise, including stationary, mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the noise from the source. Soft sites have an absorbent ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3-dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans 2013).

Physical barriers between the noise source and the receiving property are also useful in reducing noise levels. Effective noise barriers can lower noise levels by 10 to 15dBA, which would substantially cut the loudness of traffic noise. A noise barrier is more effective when placed closest to the noise source or receiver, depending upon site geometry. However, there is a limitation on the effectiveness of a noise barrier. Noise barriers must block the line of sight between the receiving property and the noise source. When this occurs, a noise barrier can achieve a 5-dBA noise level reduction. This may require the noise barrier to be sufficiently long and high enough to block the view of a road to reduce traffic noise.

3.3 Fundamentals of Vibration

Vibration is energy transmitted in waves through the ground or human-made structures. These energy waves generally dissipate with distance from the vibration source. Familiar sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earthmoving equipment. As described in the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment (FTA 2018), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most commonly used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the PPV amplitude ratio to the RMS amplitude. Peak particle velocity is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (FTA 2018). The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by human-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment.

The effects of ground-borne vibration include movement of the building floors, the rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration levels exceed the perception threshold by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 in/sec PPV (FTA 2018).

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold of perception for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is considered to be the approximate dividing line between barely perceptible and distinctly perceptible levels for many people (FTA 2018).

4.0 Regulatory Framework

The proposed project area's governing regulatory framework includes federal, state, and local agencies that enforce noise standards and specific regulations that govern project development, emitted pollutants, and ambient air quality status for the region.

4.1 Federal Regulations and Standards

There are no federal noise standards that directly regulate environmental noise related to the proposed project's construction or operation. With regard to noise exposure and workers, the Office of Safety and Health Administration (OSHA) regulations safeguard the hearing of workers exposed to occupational noise. Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 Code of Federal Regulations (CFR), Part 205, Subpart B. The federal truck pass-by noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

Federal Transit Authority Vibration Standards

The FTA has adopted vibration standards to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in **Table 4-1**.

Table 4-1. Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12
SOURCE: FTA, 2018.	

The FTA has also adopted the following standards for groundborne vibration impacts related to human annoyance: Vibration Category 1 – High Sensitivity, Vibration Category 2 – Residential, and Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations, such as vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and research operations. Category 2 refers to all residential land uses and buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment but still have the potential for activity interference. The vibration thresholds associated with human annoyance for these three land-use categories are shown in **Table 4-2**. No thresholds have been adopted or recommended for commercial and office uses.

Table 4-2. Groundborne Vibration Impact Criteria for General Assessment

Land Use Category	Frequent Events [a]	Occasional Events [b]	Infrequent Events [c]
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB[d]	65 VdB[d]	65 VdB[d]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

[a] Frequent Events" is defined as more than 70 vibration events of the same source per day.
[b] Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
[c] Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day.
[d] This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes.
SOURCE: FTA, 2018

4.2. State Standards

Senate Bill 860

In the State of California, State Senate Bill 860, which became effective January 1, 1976, directed the California Office of Noise Control within the State Department of Health Services to prepare the *Guidelines for the Preparation and Content of Noise Elements of the General Plan*.[1] One purpose of these guidelines was to provide sufficient information concerning the community's noise environment so that noise could be considered in the land-use planning process. As part of this publication, Land Use Compatibility Standards were developed in four categories: Normally Acceptable, Conditionally Acceptable, Normally Unacceptable, and Clearly Unacceptable. These categories were based on earlier work done by the U.S. Department of Housing and Urban Development.

The interpretation of these four categories is as follows:

Normally Acceptable: Specified land use is satisfactory without special insulation.

Conditionally Acceptable: New development requires a detailed analysis of noise insulation requirements.

Normally Unacceptable: New development is discouraged and requires a detailed analysis of insulation features.

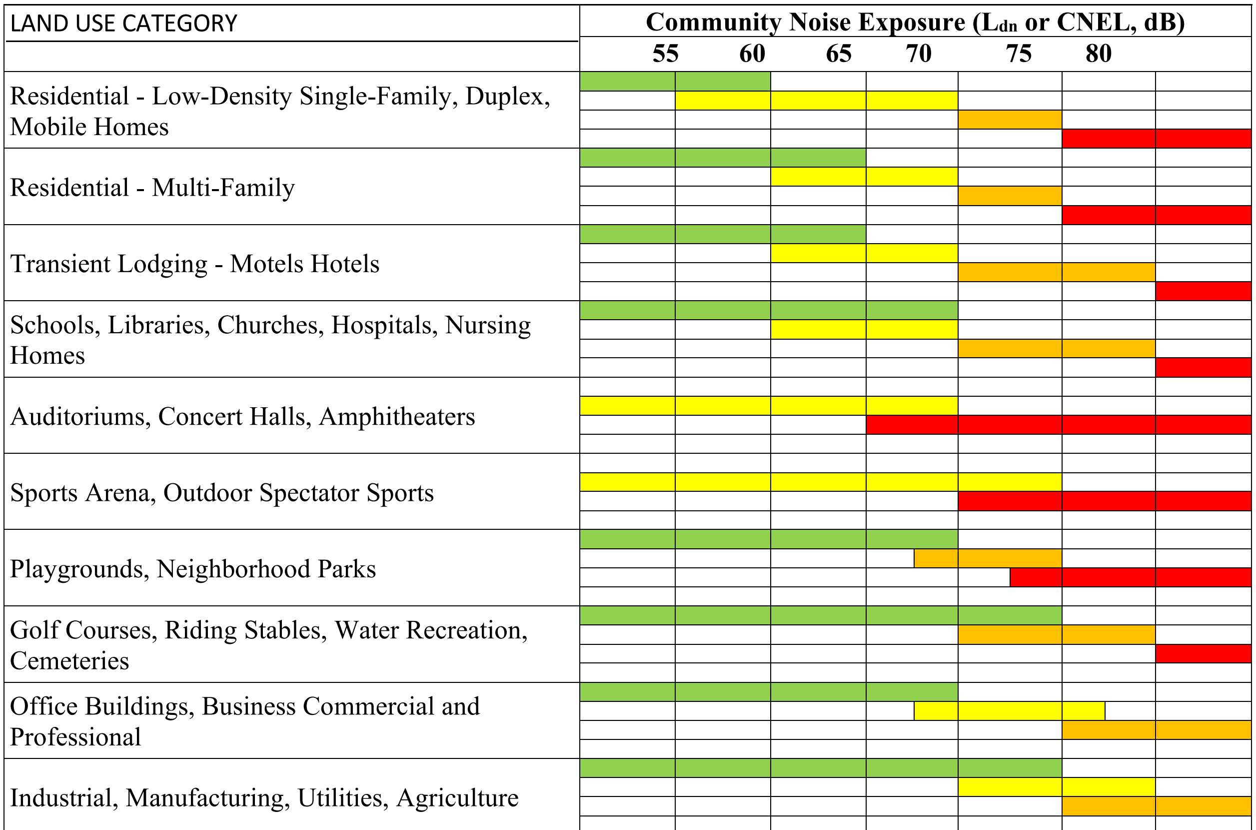
Clearly Unacceptable: New development should not be undertaken.

The state has developed a land-use compatibility matrix for community noise environments that further defines four categories of acceptance and assigns CNEL values to them. In addition, the State Building Code (Part 2, Title 24, California Code of Regulations) establishes uniform minimum noise insulation performance standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment

[1] State of California, General Plan Guidelines, Governor's Office of Planning and Research, October, 2003.

houses, and residential units other than detached single-family residences from the effects of excessive noise, including, but not limited to, hearing loss or impairment and interference with speech and sleep. Residential structures to be located where the CNEL or L_{dn} is 60 dBA or greater are required to provide sound insulation to limit the interior CNEL to a maximum of 45 dBA. An acoustic or noise analysis report prepared by an experienced acoustic engineer is required to issuance a building permit for these structures. Conversely, land use changes that result in increased noise levels at residences of 60 dBA or greater must be considered in the evaluation of impacts to ambient noise levels. **Table 4-3**, *Land Use Compatibility for Community Noise Environments*, graphically depicts noise levels' acceptability for various uses.

Table 4-3. Land Use Compatibility Matrix



Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditioning, will normally suffice.

Normally Unacceptable - New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable - New construction or development should generally not be undertaken.

SOURCE:
Adapted from: Governor's Office of Planning and Research. 2003. State of California General Plan Guidelines. Appendix C, Noise Element Guidelines, Figure 2. Sacramento, CA.

4.3 Community Noise Assessment Criteria

4.3.1 Local Standards

The City of Temecula has included goals and policies within the General Plan Noise Element to minimize mobile-source generated noise levels. The following goals, policies, and implementation programs apply to this project as they apply to roadway improvement projects.

Goal 1 Separate significant noise generators from sensitive receptors.

- Policy 1.2 Limit the hours of construction activity next to residential areas to reduce noise intrusion in the early morning, late evening, weekends and holidays.

- Policy 1.3 Use information from the noise contour map in the General Plan in the development review process to prevent the location of sensitive land uses near major stationary noise sources.

Goal 3 Minimize the impact of noise levels throughout the community through land use planning.

- Policy 3.1 Enforce and maintain acceptable noise limit standards.

- Policy 3.2 Work with the County of Riverside and the City of Murrieta to minimize or avoid land use/noise conflicts prior to project approvals.

- Policy 3.4 Evaluate potential noise conflicts for individual sites and projects, and require mitigation of all significant noise impacts as a condition of project approval.

Goal 4 Minimize impacts from transportation noise sources.

- Policy 4.2 Ensure the effective enforcement of City, State and federal noise standards by all City Divisions.

- Policy 4.4 Coordinate with Caltrans to ensure the inclusion of noise mitigation measures in the design of new highways or improvement projects in the Planning Area.

Implementation Program N-1 Noise/Land Use Compatibility Standards

- Incorporate measures into all development projects to attenuate exterior and interior noise to acceptable levels. The City's noise compatibility standards for each General Plan land use designation are provided in Table N-1. These standards shall be adhered to and implemented during review of all development projects.

- Review development proposals to ensure that the noise standards and compatibility criteria are met. Require mitigation measures, where necessary, to reduce noise levels to meet the noise standards and compatibility criteria.

Implementation Program N-2 City and State Noises Regulations

- Require all non-emergency construction activity to comply with the limits (maximum noise levels, hours and days of activity) established in State and City noise regulations (Title 24 California Code of Regulations, Temecula Development Code and Chapter 8.32 of the Municipal Code).

- Require proposed industrial or commercial projects located near residential areas to demonstrate that the project, when constructed, will meet with City noise reduction requirements. · Review the City Noise Control Ordinance for adequacy and amend as needed to address community needs and development patterns.

City of Temecula Municipal Code

Title 9 – Public Peace, Morals and Welfare, Chapter 9.2 – Noise Control

Section 9.20.010 of the Temecula Municipal Code (TMC) states the purpose of Chapter 9.20 is to establish criteria and standards for regulating noise levels within the City and implementing the noise provisions contained in the City's General Plan. For this project, the capital improvements made along Overland Drive are exempt as outlined below under Chapter 9.20.030.

TMC 9.20.030 - Exemptions

Sound emanating from the following sources is exempt from the provisions of this chapter:

A. Facilities owned or operated by or for a governmental agency.

B. Community events on public or private property hosted or sponsored by the city.

C. Capital improvement projects of a governmental agency.

D. The maintenance or repair of public properties.

Public Works Construction on Overland Drive for this project is not exempt as outlined in TMC 9.20.030. However, the City of Temecula will make reasonable efforts to limit construction hours as outlined in TMC 9.20.60D to protect the health, safety, or general welfare of Temecula residents.

TMC 9.20.60D – Construction Noise Limits.

No person shall engage in or conduct construction activity, when the construction site is within one quarter mile of an occupied residence, between the hours of 6:30 pm and 7:00 am, Monday through Friday, and shall only engage in or conduct construction activity between the hours of 7:00 am and 6:30 pm on Saturday. No construction activity shall be undertaken on Sunday and nationally recognized holidays unless exempted by Section 9.20.070 of the Temecula Municipal Code. Public works projects of any federal, state or local entity or emergency work by public utilities are exempt from the provisions of this subsection. Residents working on their homes or property are exempt from the prohibition of construction activities on Sundays and holidays and shall only engage in or conduct construction activity between the hours of 7 am and 6:30 pm when working on Sundays and holidays. The city council may, by formal action, exempt projects from the provisions of this chapter.

The regulations and policies discussed above are intended to protect the community from excessive noise and vibration to ensure residents' and workers' quality of life in the City. The City is responsible for the continued enforcement of federal, state, and local regulations pertaining to noise generation and impacts and implementing Safety Element policies and applicable regulations of the TMC to ensure continued protection of the community from excessive noise and vibration in the future growth and development.

In community noise assessment, changes in noise levels greater than 3 dBA are often identified as “barely perceptible” while changes of 5 dBA are “ready perceptible.” In the range of 1 dBA to 3 dBA, people who are very sensitive to noise may perceive a slight change in noise level.

In laboratory testing situations, humans can detect noise level changes of slightly less than 1 dBA. However, in a community situation, noise exposure is extended over a long-time period, and changes in noise levels occur over the years rather than the immediate comparison made in a laboratory situation. Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dBA, and 3 dBA appears to be appropriate for most people.

Off-Site Impact Criteria

Transportation-related noise impacts associated with the development of the project were evaluated. Noise level increases and impacts attributable to the development of the proposed project are estimated by comparing the “with project” traffic volume to the “without project” traffic volume. For purposes of this study, roadway noise impacts would be considered significant if the project increases noise levels above allowable noise exposure levels, as shown in **Table 4.4.** *Significance Changes in Operational Roadway Noise Exposure*.

Table 4.4 Significance Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA Ldn or Leq)	Allowable Noise Exposure Increase (dBA Ldn or Leq)
45-49	7
50-54	5
55-59	3
60-64	2
65-69	1
69-74	1

Source: City of Temecula General Plan Noise/Land Use Compatibility Matrix (Table N-2)

5.0 THRESHOLDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines states that a project could have a significant adverse effect related to noise if any of the following would occur:

- 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 other agencies' applicable standards?
- Excessive groundborne vibration or groundborne noise levels?
- Expose people residing or working in the project area to excessive noise levels for the project if it is 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?
- Roadway noise that exceeds the allowable noise exposure levels listed in Table 4.4

6.0 EXISTING NOISE

The existing noise environment was characterized by collecting field noise measurements at sensitive residential properties within the project area. Three (3) short-term measurements were taken at residential locations within the project area. The noise measurements were performed on May 31, 2022. Appendix A includes the field monitoring forms, and Figure 6-1 shows the monitoring locations.

6.1 Measurement Procedure and Criteria

Short-term noise measurements were taken using a Larson Davis Type 1 precision sound level meter. All noise meters were programmed in “slow” mode to record noise levels in the “A” weighted form. The sound level meters and microphones were mounted on a tripod, five feet above the ground, and equipped with a windscreen during all measurements. The sound level meter was calibrated before the monitoring using a CAL200 calibrator. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

6.2 Noise Measurement Locations

Noise monitoring locations were selected near the project site. Noise measurement locations 1 through 3 were monitored for 15 minutes. R-1 is located at intersection northeast of the project site at Overland Drive and Jefferson Avenue near an extended stay hotel. R-2 is located along Overland Drive, adjacent to a preschool, and R-3 is located at the western limit of the project site adjacent to a retail plaza at the corner of Overland Drive and Commerce Center Drive.

Table 6-1. Existing (Ambient) Short-Term Noise Level Measurements[1,3]				
Noise Monitoring Location ID[2]	**Description**	**Time of Measurement[3]**	**Primary Noise Source**	**Noise Levels (L_{eq} dBA)**
R-1	Extended Stay Hotel at Overland and Jefferson	10:55 am	Traffic	66.0
R-2	Temecula Montessori Academy along Overland Drive	11:30 am	Traffic	63.4
R-3	Corner of Overland Drive and Commerce Center Drive	11:50 am	Traffic	64.2

1 Noise measurements were taken on May 31, 2022

2 See Figure 6.1 for the location of the monitoring sites and Appendix A for Field Monitoring Forms.

3 Taken with Larson Davis Type 1 noise meter

Figure 6-1 Short Term Measurement Locations

7.0 METHODOLOGY

The following section outlines the analysis methods utilized to predict future noise and vibration levels from the proposed project's construction and operation.

7.1 Construction

7.1.1 Noise Analysis Methods

The assessment of the construction noise impacts must be relatively general at this phase of the project because many of the decisions affecting noise will be at the Contractor's discretion. However, an assessment based on the type of equipment expected to be used by the Contractor can provide a reasonable estimate of potential noise impacts and the need for noise mitigation. A worst-case construction noise scenario was developed to estimate the loudest activities occurring at the project site. Pile driving and blasting activities are not anticipated; therefore, the loudest construction activities are centered around the movement of heavy construction equipment during excavation, grading operations, and the erection of buildings. Noise levels were estimated based on a worst-case scenario, which assumed all pieces of equipment would be operating simultaneously during each construction phase. The calculated noise level was then compared to the respective local noise regulation to determine if construction would cause a short-term noise impact at nearby sensitive land uses along Overland Drive. Receiver distance to the construction activity along with the construction equipment operating at the maximum load will have the greatest influence on construction noise levels experienced at sensitive land uses along Overland Drive, approximately 150 feet away from the project site.

7.1.2 Vibration Analysis Methods

Groundborne vibration levels resulting from construction activities within the project area were estimated using the FTA data in its Transit Noise and Vibration Impact Assessment Manual (FTA, 2018). Potential vibration levels resulting from the proposed project's construction activities are identified at the nearest off-site sensitive receptor location and compared to the FTA damage criteria, as shown previously in Table 2-4.

7.2 Operational Noise & Vibration Analysis

7.2.1 Operational Traffic Noise Analysis Methods

The project roadway noise impacts from vehicular traffic were predicted using the FHWA-TNM 2.5 Model. The FHWA TNM 2.5 Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to account for: the roadway classification (e.g., collector, secondary, major, or arterial), the active roadway width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), traffic volumes on nearby roadways, the travel speed, the percentages of automobiles, medium trucks, and heavy trucks, and the site conditions (“hard” or “soft” relates to the adsorption of the ground, pavement, or landscaping).

7.2.2 Operational Traffic Vibration Analysis

As a conservative measure, the vibration vs. distance curve obtained from the Caltrans Transportation and Construction Vibration Guidance Manual will be used to represent worst-case vibration levels from traffic noise. These vibration levels will be compared to the Caltrans and FTA vibration annoyance criteria, as shown previously in Tables 2-6 and 2-7 for Continuous Sources. These criteria will be utilized to evaluate the level of significance associated with vibration effects from traffic.

7.3 Predicted Noise and Vibration Impacts

This section discusses the noise and vibration impacts compared to the applicable noise significance thresholds. When a significant impact has been set forth, mitigation measures to address that potential impact are presented, along with determining whether the impact will continue to be significant after implementing the mitigation measure.

7.3.1 Cause 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;

Permanent Impacts

The Traffic Noise Model 2.5 (TNM) and the project's traffic data, provided by the City's traffic consultant, were utilized to predict Existing, Future 2024, and 2045 project noise levels. **Table 7-1** presents existing and future noise levels. Changes in noise levels between existing and 2024 are negligible (less than 3 dBA increase) and remain unnoticeable under 2045 future with project conditions compared to a 2045 no build scenario. Due to the negligible change in noise levels, operational noise impacts are less-than-significant.

TABLE 7.1. EXISTING AND FUTURE TRAFFIC NOISE LEVELS

Location	2022	2024			2045			Allowable Noise Exposure Increase (dBA)	Allowable Noise Exposure Exceeded
	Existing Noise Levels L_{eq} (dBA)	No Build Noise Levels L_{eq} (dBA)	With Project Noise Levels L_{eq} (dBA)	Project Increase over Existing	No Build Noise Levels L_{eq} (dBA)	With Project Noise Levels L_{eq} (dBA)	Project Increase over Existing		
R1	49.9	50.1	50.4	0.5	51.8	51.6	-0.2	7	No
R2	58.7	58.9	59.6	0.9	61.0	62.7	1.7	3	No
R3	62.1	62.3	63.0	0.7	64.8	65.2	0.4	1	No

As shown in **Table 7-1**, changes in noise levels between existing and 2024 are less than 3 dBA increase. Noise levels increase under 2045 future over existing conditions with project conditions but do not exceed the City of Temecula noise exposure levels.

Temporary Impacts

The operation of heavy-duty equipment would produce noise. Construction noise levels were estimated using FTA guidance (FTA, 2018), which provides a method for calculating noise levels for the two noisiest pieces of equipment operating in each construction phase using reference noise levels for individual pieces of equipment. Full power operation for a time period of one hour was assumed because most construction equipment operates continuously for periods of one hour or more at some point in the construction period. No ground effects were considered. The closest sensitive receptors is a preschool 150 feet south of Overland Drive. The noise levels associated with equipment used during the various construction phases are shown in **Table 7-2**. As shown in **Table 7-2**, during each phase of construction, the noise level would have the potential to exceed existing background noise levels.

Construction-related noise at the nearest sensitive receptors would reach up-to an estimated exterior maximum unmitigated noise level of 80.8 dBA (Table 7.2). This temporary increase in construction noise would be readily perceivable. The structure itself would reduce interior noise levels. Typical noise attenuation within structures with open windows is about 17 dBA, while the noise attenuation with closed windows is about 25 dBA (NCHRP 1971). Considering these attenuation factors, maximum interior noise levels during construction are anticipated to be maintained at or below approximately 56 dBA in structures with closed windows.

Actual construction noise levels may be lower than predicted noise levels depending upon construction phasing and the implementation of typical best management practices such as reducing equipment idling, operating equipment with mufflers, limiting equipment operating hours, utilizing construction staging techniques that buffer noise emanating from the project boundary to the nearest sensitive receptors and maintaining construction equipment in good working order. These best management practices have been effective in reducing construction noise levels within acceptable maximum allowable levels.

Although the City of Temecula Noise Ordinances is exempted from established base ambient and maximum exterior and interior noise levels provided under TMC section 9.20.040, it is recommended that the City incorporates the best management practices consistent with the implementation measures listed in the General Plan. Construction noise impacts at the site of the closest sensitive receptors along Overland Drive are unlikely to be sustained during the entire construction period but will occur only when heavy construction equipment is operating near the Project site perimeter.

Adherence to local noise ordinances and implementation of construction Best Management Practices, such as limiting construction operating hours between 7:30 am to 6:30 pm would reduce construction impacts at sensitive receptors to less than significant.

TABLE 7.2. CONSTRUCTION EQUIPMENT BY PHASE WITH ASSOCIATED MAXIMUM 1-hr L_{eq}

Equipment Type	Number of equipment	dBA at 150 feet	Predicted Noise Levels (dBA) 1-hr L_{eq} at Nearest Sensitive Receptor
Demolition			
Air Compressors	1	79	80.1
Cranes	1	71	
Concrete/Industrial Saws	1	80	
Dumpers/Tenders	1	67	
Excavators	1	71	
Generators	1	71	
Off-highway Tractors	1	67	
Off-highway Trucks	1	67	
Rubber Tired Dozers	1	65	
Scrapers	1	74	
Signal Boards	1	63	
Sweepers/Scrubbers	1	72	
Tractors/Loaders/Backhoes	2	71	
Site Preparation			
Cranes	1	71	80.8
Crawler Tractors	1	71	
Crushing/Processing Equipment	1	81	
Dumpers/Tenders	1	67	
Excavators	1	71	
Generators	1	71	
Graders	1	76	
Off-highway Tractors	1	67	
Off-highway Trucks	1	67	
Rubber Tired Dozers	1	65	
Scrapers	1	74	
Signal Boards	1	63	
Sweepers/Scrubbers	1	72	
Tractors/Loaders/Backhoes	1	71	
Grading/Excavation			
Aerial Lifts	1	66	80.8
Cranes	1	71	
Concrete/Industrial Saws	1	80	
Crushing/Processing Equipment	1	81	
Dumpers/Tenders	1	67	
Excavators	1	71	
Generators	1	71	

Equipment Type	Number of equipment	dBA at 150 feet	Predicted Noise Levels (dBA) 1-hr L_{eq} at Nearest Sensitive Receptor
Graders	1	76	
Off-highway Tractors	1	67	
Off-highway Trucks	1	67	
Rubber Tired Dozers	1	65	
Scrapers	1	74	
Signal Boards	1	63	
Sweepers/Scrubbers	1	72	
Tractors/Loaders/Backhoes	1	71	
Paving			
Cement and Mortar Mixers	1	76	80.1
Air Compressors	1	79	
Concrete/Industrial Saws	1	80	
Dumpers/Tenders	1	67	
Generators	1	71	
Off-highway Tractors	1	67	
Off-highway Trucks	1	67	
Pavers	1	68	
Paving Equipment	1	69	
Rollers	1	71	
Signal Boards	1	63	
Sweepers/Scrubbers	1	72	
Skid Steer Loaders	1	70	
Surfacing Equipment	1	71	
Trenchers	1	72	
Tractors/Loaders/Backhoes	1	71	
Site Restoration			
Aerial Lifts	1	76	80.8
Air Compressors	1	79	
Cement and Mortar Mixers	1	76	
Concrete/Industrial Saws	1	80	
Cranes	1	71	
Crawler Tractors	1	71	
Crushing/Processing Equipment	1	81	
Dumpers/Tenders	1	67	
Forklifts	1	66	
Generators	1	71	
Graders	1	76	
Off-highway Tractors	1	67	
Off-highway Trucks	1	67	

Equipment Type	Number of equipment	dBA at 150 feet	Predicted Noise Levels (dBA) 1-hr L_{eq} at Nearest Sensitive Receptor
Rollers	1	71	
Rough Terrain Forklifts	1	71	
Signal Boards	1	63	
Sweepers/Scrubbers	1	72	
Skid Steer Loaders	1	70	
Surfacing Equipment	1	71	
Tractors/Loaders/Backhoes	1	71	
Site Restoration 2			
Tractors/Loaders/Backhoes	1	71	72.2
Trenchers	1	72	

7.3.2 Expose persons to or generate excessive groundborne vibration or groundborne noise levels;

As a result of the proposed project's construction, groundborne vibration may occur from heavy equipment during demolition, grading, and paving. Based on the FTA's reference vibration levels, a large bulldozer represents the peak source of vibration with a reference level of 0.089 (in/sec) at a distance of 25 feet. At the nearest residential receptor along Overland Drive, approximately 150 feet south of project site, the vibration level would be 0.011 in/sec (63.6 VdB). Using the construction vibration assessment annoyance criteria provided by the FTA for infrequent events, as shown in **Tables 4-1** and **4-2**, the proposed project site will not include nor require equipment, facilities, or activities that would result in causing building damage or perceptible human response (annoyance) that exceeds the FTA criteria of 0.2 in/sec or 80 VdB respectively. Further, vibration impacts at the site of the closest sensitive receptor are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating near the Project site perimeter. Moreover, construction at the Project site will be restricted to daytime hours consistent with City requirements, thereby eliminating potential vibration impact during the sensitive nighttime hours. On this basis, the potential for the proposed project to result in persons' exposure to or generation of excessive ground-borne vibration is determined to be less than significant.

Groundborne vibration from vehicular traffic rarely causes a disturbance within buildings located in urban environments unless the pavement surface is uneven or the receptor is highly sensitive (e.g., a scientific research establishment) to groundborne vibration. Therefore, groundborne vibration levels within the project are not expected to increase as a result of the implementation of the Proposed Project.

7.3.3 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?

The nearest airport is French Valley Airport. The project site is 5.1 miles from the airport and is outside of its noise contour. The proposed project will not generate operational noise levels that would increase the noise within the existing environment. Therefore, the proposed project area would not exposure people working in the project area to excessive noise levels associated with aircraft.

8.0 REFERENCES

Caltrans. (2013) Caltrans Transportation and Construction Vibration Guidance Manual

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City of Temecula. (2021). City of Temecula Municipal Code. Temecula, California.pdf (nonoise.org)

City of Temecula. (2005). City of Temecula General Plan Noise-PDF (temeculaca.gov)

STC Traffic, Inc (2022). Overland Drive Widening Project Traffic Impact Analysis

Federal Transit Administration. (2018, September). Chapter 7 (Vibration) and Chapter 12 (Construction Noise). Transit Noise and Vibration Impact Assessment.

US Department of Housing and Urban Development (HUD). (1991). Chapter 5. The Noise Guidebook.

US Department of Transportation, Federal Highway Administration (FHWA). (2006). Highway Construction Handbook.

Appendix A Noise Monitoring Forms

FIELD NOISE MEASUREMENT

ENTECH CONSULTING GROUP
PLANNING • ENVIRONMENTAL • CONSTRUCTION MANAGEMENT

Project: Overland Dr Project-Short-term monitoring locations

I D

Site ID: R-1 Engineer (s): Entech

Date: 0 5 3 1 2 0 2 2 Start Time: 1 0 : 5 5

Property Owner: Extended Stay Hotel

Address: 27622 Jefferson Ave, Temecula, CA 92590

WEATHER

Temp. _______ ºF Hum. _______ % R.H. Wind Spd: _______ mph

Wind Dir.: NW N NE / W Calm E / SW S SE

Sky:				
	☐ OVRCST	☐ PARTLY CLOUDY	x CLEAR	x SUNNY
	☐ FOG	☐ RAIN	☐ OTHER: _______________	

SOUND

SLM ID: _______________ Calibration: (94) dBA (94) dBA

SLM Record ID: # _____ Duration: 1 5 : 0 0 L_{eq} 66 dBA

NOISE SOURCE

Contamination:
- ☐ Aircraft
- ☐ Rustling leaves
- ☐ Dogs barking
- ☐ Birds
- ☐ Children playing
- ☐ Other___________

Major Source:	☐ Rail	☐ Aircraft
☐ Traffic	☐ Industrial	☐ Other__________

Traffic Count Duration: M M : S S

Dir.	Auto		M. Truck		H. Truck		Bus		Motorcycle	
	Count	Speed (mph)	Count	Speed (mph)	Count	Speed (mph)	Count	Speed (mph)	Count	Speed (mph)

Speed Estimated By:
- ☐ Radar ☐ Driving
- ☐ Other_____________

FILING

Photo: Camera ID ___________ File #: ______________________________

Video: Camera ID ___________ File #: ______________________________

TOPO & COMMENTS

Pavement:	Terrain:	Land Use:
☐ Hard	☐ Flat	Cu._____
☐ Soft	☐ Uneven	Fu._____
☐ Mixed	☐ Shape	

Δ Elev.

COMMENTS

ENTECH CONSULTING GROUP
PLANNING • ENVIRONMENTAL • CONSTRUCTION MANAGEMENT

FIELD NOISE MEASUREMENT

Project: Overland Dr Project-Short-term monitoring locations

I D

Site ID: R-2

Engineer (s): Entech

Date: 0 5 3 1 2 0 2 2

Start Time: 1 1 : 3 0

Property Owner: Temecula Montessori School

Address: 27635 Jefferson Ave, Temecula, CA 92590

WEATHER

Temp. _______ ºF   Hum. _______ % R.H.   Wind Spd: _______ mph

Wind Dir.: NW N NE / W Calm E / SW S SE

Sky:				
	☐ OVRCST	☐ PARTLY CLOUDY	x CLEAR	x SUNNY
	☐ FOG	☐ RAIN	☐ OTHER: ______________	

SOUND

SLM ID: ______________

Calibration: (94) dBA   (94) dBA

SLM Record ID: # _____

Duration: 1 5 : 0 0

L_{eq} 63.4 dBA

NOISE SOURCE

Contamination:
- ☐ Aircraft
- ☐ Rustling leaves
- ☐ Dogs barking
- ☐ Birds
- ☐ Children playing
- ☐ Other___________

Major Source: ☐ Traffic ☐ Rail ☐ Industrial ☐ Aircraft ☐ Other__________

Traffic Count Duration: M M : S S

Dir.	Auto		M. Truck		H. Truck		Bus		Motorcycle	
	Count	Speed (mph)	Count	Speed (mph)	Count	Speed (mph)	Count	Speed (mph)	Count	Speed (mph)

Speed Estimated By: ☐ Radar ☐ Driving ☐ Other____________

FILING

Photo: Camera ID __________ File #: ______________________

Video: Camera ID __________ File #: ______________________

TOPO & COMMENTS

Pavement:	Terrain:	Land Use:
☐ Hard	☐ Flat	Cu.____
☐ Soft	☐ Uneven	Fu.____
☐ Mixed	☐ Shape	

Δ Elev.

COMMENTS

Entech Consulting Group
Planning • Environmental • Construction Management

FIELD NOISE MEASUREMENT

Project: Overland Dr Project-Short-term monitoring locations

I D

Site ID: R-3 Engineer (s): Entech

Date: 0 5 3 1 2 0 2 2 Start Time: 1 1 : 5 0

Property Owner: Corner of Commerce Center Dr

Address: 27496 Overland Commerce Center, Temecula, CA 92590

WEATHER

Temp. _______ ºF Hum. _______ % R.H. Wind Spd: _______ mph

Wind Dir.: NW N NE / W Calm E / SW S SE

Sky:			
☐ OVRCST	☐ PARTLY CLOUDY	x CLEAR	x SUNNY
☐ FOG	☐ RAIN	☐ OTHER: ________	

SOUND

SLM ID: ________ Calibration: (94) dBA (94) dBA

SLM Record ID: # _____ Duration: 1 5 : 0 0 L_{eq} 64.2 **dBA**

NOISE SOURCE

Contamination:
- ☐ Aircraft
- ☐ Rustling leaves
- ☐ Dogs barking
- ☐ Birds
- ☐ Children playing
- ☐ Other________

Speed Estimated By:
- ☐ Radar ☐ Driving
- ☐ Other________

Major Source: ☐ Traffic ☐ Rail ☐ Industrial ☐ Aircraft ☐ Other________

Traffic Count Duration: M M : S S

Dir.	Auto		M. Truck		H. Truck		Bus		Motorcycle	
	Count	Speed (mph)	Count	Speed (mph)	Count	Speed (mph)	Count	Speed (mph)	Count	Speed (mph)

FILING

Photo: Camera ID ________ File #: ________

Video: Camera ID ________ File #: ________

TOPO & COMMENTS

Pavement:	Terrain:	Land Use:
☐ Hard	☐ Flat	Cu.____
☐ Soft	☐ Uneven	Fu.____
☐ Mixed	☐ Shape	

Δ Elev.

COMMENTS

Appendix B TNM Input Files

Existing	
ST-1 (Extended Stay Hotel)	49.9
ST-2 (Montessori School)	58.7
No Build – 2024	
ST-1 (Extended Stay Hotel)	50.1
ST-2 (Montessori School)	58.9
Build – 2024	
ST-1 (Extended Stay Hotel)	50.4
ST-2 (Montessori School)	59.6
No Build – 2045	
ST-1 (Extended Stay Hotel)	51.8
ST-2 (Montessori School)	61
Project – 2045	
ST-1 (Extended Stay Hotel)	51.6
ST-2 (Montessori School)	62.7

Existing								Percentage
	Total							98.00
NB Overland A2 EB outbound	555	Cars	544	35	1	544	35	2.00
		M. Trucks	11	35		11	35	0.00
		H. Trucks	0	35		0	0	
		Buses	0	35		0	0	
NB Overland B1 EB inbound	641	Cars	628	35	2	314	35	
		M. Trucks	13	35		6	35	
		H. Trucks	0	35		0	0	
		Buses	0	35		0	0	
SB Overland B 1 WB outbound	303	Cars	297	35	1	297	35	
		M. Trucks	6	35		6	35	
		H. Trucks	0	35		0	0	
		Buses	0	35		0	0	
NB Euclid D 2 WB inbound	251	Cars	246	35	2	123	35	
		M. Trucks	5	35		3	35	
		H. Trucks	0	35		0	0	
		Buses	0	35		0	0	

2024 Traffic									Percentage
	Total								98.00
NB Overland A2 EB outbound	577	Cars	565	35	2	283	35		2.00
		M. Trucks	12	35		6	35		0.00
		H. Trucks	0	35		0	0		
		Buses	0	35		0	0		
NB Overland B1 EB inbound	666	Cars	653	35	3	218	35		
		M. Trucks	13	35		4	35		
		H. Trucks	0	35		0	0		
		Buses	0	35		0	0		
SB Overland B 1 WB outbound	315	Cars	309	35	2	154	35		
		M. Trucks	6	35		3	35		
		H. Trucks	0	35		0	0		
		Buses	0	35		0	0		
NB Euclid D 2 WB inbound	263	Cars	258	35	3	86	35		
		M. Trucks	5	35		2	35		
		H. Trucks	0	35		0	0		
		Buses	0	35		0	0		

2045 Traffic								Percentage
	Total							98.00
NB Overland A2 EB outbound	975	Cars	956	35	2	478	35	2.00
		M. Trucks	20	35		10	35	0.00
		H. Trucks	0	35		0	0	
		Buses	0	35		0	0	
NB Overland B1 EB inbound	955	Cars	936	35	3	312	35	
		M. Trucks	19	35		6	35	
		H. Trucks	0	35		0	0	
		Buses	0	35		0	0	
SB Overland B 1 WB outbound	470	Cars	461	35	2	230	35	
		M. Trucks	9	35		5	35	
		H. Trucks	0	35		0	0	
		Buses	0	35		0	0	
NB Euclid D 2 WB inbound	505	Cars	495	35	3	165	35	
		M. Trucks	10	35		3	35	
		H. Trucks	0	35		0	0	
		Buses	0	35		0	0	

Input data (Roads and Terrain)

NB Overland A-1-1	x	y	altitude(ft)
NB Overland A-1-1	23.3	960.2	1023.5
NB Overland A-1-2	92	1014.4	1027
NB Overland A-1-3	142.3	1054.9	1026.4
NB Overland A-1-4	184.8	1090.7	1024.9
NB Overland A-1-5	268.9	1151.4	1027.9
NB Overland A-1-6	375.7	1226.5	1030.9
NB Overland A-1-7	510	1322	1036.3
NB Overland A-1-8	603.4	1387	1041

NB Overland B-1-1	x	y	altitude(ft)
NB Overland B-1-1	605.3	1387.9	1041.4
NB Overland B-1-2	669.3	1432.2	1044.5
NB Overland B-1-3	735.1	1478.2	1042.2
NB Overland B-1-4	773.7	1507.6	1041.5

NB Overland B-2-1	x	y	altitude(ft)
NB Overland B-2-1	601.3	1396.4	1039.8
NB Overland B-2-2	666.4	1442.9	1043.9
NB Overland B-2-3	718.3	1480.7	1042.9
NB Overland B-2-4	757.2	1508.9	1041.1
NB Overland B-2-5	765.3	1521.6	1040.9

SB Overland B-1-1	x	y	altitude(ft)
SB Overland B-1-1	759.9	1524.2	1041
SB Overland B-1-2	639.9	1441.4	1042.3
SB Overland B-1-3	571.8	1390.5	1035.1
SB Overland B-1-4	508.6	1338.6	1036.4
SB Overland B-1-5	418.6	1275.1	1032.9
SB Overland B-1-6	323.2	1208.5	1029.6
SB Overland B-1-7	248.9	1154.3	1026.6
SB Overland B-1-8	130.3	1065.4	1026.8

SB Overland A-1-1	x	y	altitude(ft)
SB Overland A-1-1	122.3	1067	1027.1
SB Overland A-1-2	60.4	1017.7	1024.6
SB Overland A-1-3	7.2	977.7	1021.9

SB Overland A-2-1	x	y	altitude(ft)
SB Overland A-2-1	131.9	1056.5	1026.7
SB Overland A-2-2	74	1010.3	1025.4
SB Overland A-2-3	15.5	966	1022.9

NB Overland A-1-1	x	y	altitude(ft)
NB Overland A-1-1	21.2	963.1	1023.3
NB Overland A-1-2	94.6	1018.9	1027.4
NB Overland A-1-3	171.6	1077.4	1025.6
NB Overland A-1-4	280.5	1156.8	1028.4
NB Overland A-1-5	396.7	1238.5	1033.1
NB Overland A-1-6	536.4	1337.6	1037.7
NB Overland A-1-7	604	1387.3	1041.2

NB Overland A-2-1	x	y	altitude(ft)
NB Overland A-2-1	27.7	954.9	1024
NB Overland A-2-2	98.9	1009.2	1027.6
NB Overland A-2-3	164.6	1058.5	1026.5
NB Overland A-2-4	286.8	1147.7	1028.7

NB Overland A-2-5	399.9	1227.3	1034.1
NB Overland A-2-6	511.3	1307.2	1036.1
NB Overland A-2-7	610.2	1378	1043

NB Overland B-1-1	x	y	altitude(ft)
NB Overland B-1-1	599.7	1395.8	1039.5
NB Overland B-1-2	662.8	1440.8	1043.7
NB Overland B-1-3	757.3	1508.5	1041.1
NB Overland B-1-4	765.4	1521.3	1040.9

NB Overland B-2-1	x	y	altitude(ft)
NB Overland B-2-1	606.1	1386.7	1041.8
NB Overland B-2-2	654.6	1421.4	1043.8
NB Overland B-2-3	709	1458.6	1043.7
NB Overland B-2-4	774.6	1505.7	1041.6

NB Overland B-3-1	x	y	altitude(ft)
NB Overland B-3-1	612.1	1378.5	1043.2
NB Overland B-3-2	683.8	1428.6	1045.3
NB Overland B-3-3	735.5	1464.8	1042.5
NB Overland B-3-4	780.7	1497.2	1042.1

SB Overland B-1-1	x	y	altitude(ft)
SB Overland B-1-1	759.6	1524.7	1041.1
SB Overland B-1-2	647.9	1446.1	1042.8
SB Overland B-1-3	567.6	1386.6	1034.8
SB Overland B-1-4	454.1	1304.9	1034
SB Overland B-1-5	331.8	1217.6	1029.7
SB Overland B-1-6	247.2	1155.4	1026.5
SB Overland B-1-7	128.4	1065.1	1026.9

SB Overland B-2-1	x	y	altitude(ft)
SB Overland B-2-1	752.7	1533.8	1041.7
SB Overland B-2-2	632.5	1448.5	1042.1
SB Overland B-2-3	539.5	1382	1034.8
SB Overland B-2-4	410.2	1289.5	1033
SB Overland B-2-5	325.9	1228.4	1029.6
SB Overland B-2-6	252.4	1175.4	1026.8
SB Overland B-2-7	121	1078.1	1027.3

SB Overland A-1-1	x	y	altitude(ft)
SB Overland A-1-1	130.9	1058.6	1026.7
SB Overland A-1-2	64.3	1007.4	1024.6
SB Overland A-1-3	13.3	969.5	1022.6

SB Overland A-2-1	x	y	altitude(ft)
SB Overland A-2-1	126	1066.5	1027
SB Overland A-2-2	64.3	1019.2	1025
SB Overland A-2-3	8.6	977.2	1022

SB Overland A-3-1	x	y	altitude(ft)
SB Overland A-3-1	118.7	1076.1	1027.4
SB Overland A-3-2	62.8	1032.5	1025.4
SB Overland A-3-3	2.3	986.2	1021.7

NB Overland A-1-1	x	y	altitude(ft)				
NB Overland A-1-1	35.9	947.3	1024.6	6	35.9	947.3	1024.6
NB Overland A-1-2	164.8	1050.6	1027.1	5	164.8	1050.6	1027.1
NB Overland A-1-3	307	1152.5	1029.6	4	307	1152.5	1029.6

NB Overland A-1-4	422.6	1235	1035.3	3	422.6	1235	1035.3
NB Overland A-1-5	514	1301	1036.2	2	514	1301	1036.2
NB Overland A-1-6	616.2	1373.3	1043.5	1	616.2	1373.3	1043.5
NB Overland A-2-1	x	y	altitude(ft)				
NB Overland A-2-1	30.4	955.3	1024.1				
NB Overland A-2-2	159.6	1058.9	1026.5				
NB Overland A-2-3	311	1168.1	1029.5				
NB Overland A-2-4	422.4	1247.2	1034.5				
NB Overland A-2-5	517.7	1315.4	1036.7				
NB Overland A-2-6	608.8	1380.7	1042.8				
NB Overland B-1-1	x	y	altitude(ft)				
NB Overland B-1-1	618.4	1374.6	1043.8				
NB Overland B-1-2	694.8	1429.6	1045				
NB Overland B-1-3	784.1	1493.2	1042.4				
NB Overland B-2-1	x	y	altitude(ft)				
NB Overland B-2-1	611.3	1382.2	1042.9				
NB Overland B-2-2	700.4	1445.6	1044.6				
NB Overland B-2-3	778.7	1500.3	1041.9				
NB Overland B-3-1	x	y	altitude(ft)				
NB Overland B-3-1	605.3	1390.7	1041.2				
NB Overland B-3-2	689	1450.3	1044.9				
NB Overland B-3-3	772.2	1510.1	1041.4				
SB Overland B-1-1	x	y	altitude(ft)				
SB Overland B-1-1	751.5	1536.5	1041.9				
SB Overland B-1-2	610.4	1434.9	1041.2				
SB Overland B-1-3	481.4	1343.8	1035.7				
SB Overland B-1-4	349.2	1250.9	1029.9				
SB Overland B-1-5	231.7	1166.1	1026.2				
SB Overland B-1-6	156.8	1112.7	1025.7				
SB Overland B-1-7	115.7	1080.9	1027.6				
SB Overland B-2-1	x	y	altitude(ft)				
SB Overland B-2-1	757.9	1527.8	1041.2				
SB Overland B-2-2	658.3	1456.1	1043.6				
SB Overland B-2-3	559.1	1385.8	1034.4				
SB Overland B-2-4	423.2	1289.5	1033.1				
SB Overland B-2-5	286.5	1191.6	1028.8				
SB Overland B-2-6	163.8	1104.4	1025.3				
SB Overland B-2-7	123	1072.9	1027.2				
SB Overland A-1-1	x	y	altitude(ft)				
SB Overland A-1-1	113.8	1079.4	1027.7				
SB Overland A-1-2	54.2	1032.5	1025.2				
SB Overland A-1-3	0	990.4	1021.8				
SB Overland A-2-1	x	y	altitude(ft)				
SB Overland A-2-1	121.2	1071	1027.2				
SB Overland A-2-2	67.9	1029	1025.5				
SB Overland A-2-3	7	981.8	1021.7				
SB Overland A-3-1	x	y	altitude(ft)				
SB Overland A-3-1	128.8	1062.3	1026.9				
SB Overland A-3-2	67.9	1014.5	1025.1				
SB Overland A-3-3	14.5	972	1022.5				

Receivers

ST-1 (Extended Stay Hotel)	783.4	1664.2	1046.1
ST-2 (Montessori School)	468.8	1205	1036.4

Intersection

1	AM	PM
rt	181	84
thru	536	533
lt	140	577
lt	74	170
thru	81	424
rt	23	47
lt	45	72
thru	246	744
rt	108	643
rt	254	231
thru	234	147
lt	233	228
	2155	3900

	Inbound	AM	PM
1	NB	399	1459
	SB	857	1194
	EB	178	641
2	WB	721	606
	Outbound		
3	NB	574	1145
	SB	792	808
	EB	329	1644
4	WB	460	303
	Check	-	-

2	AM	PM
rt	0	6
thru	4	20
lt	15	130
lt	2	2
thru	32	239
rt	11	28
lt	16	18
thru	17	29
rt	48	186
rt	67	78
thru	162	61
lt	159	112
	533	909

	Inbound	AM	PM
1	NB	81	233
	SB	19	156
	EB	45	269
2	WB	388	251
	Outbound		
3	NB	86	109
	SB	174	160
	EB	95	555
4	WB	178	85
	Check	-	-

Intersection

	1 AM	PM
rt	189	87
thru	558	555
lt	146	600
lt	77	176
thru	84	441
rt	24	49
lt	46	75
thru	256	774
rt	112	669
rt	265	240
thru	244	153
lt	243	237
	2244	4056

	Inbound	AM	PM
1	NB	414	1518
	SB	893	1242
	EB	185	666
2	WB	752	630
	Outbound		
3	NB	598	1190
	SB	825	841
	EB	342	1710
4	WB	479	315
	Check	-	-

	2 AM	PM
rt	0	7
thru	4	21
lt	15	136
lt	2	2
thru	33	248
rt	11	29
lt	17	19
thru	18	30
rt	50	193
rt	69	82
thru	169	64
lt	165	117
	553	948

	Inbound	AM	PM
1	NB	85	242
	SB	19	164
	EB	46	279
2	WB	403	263
	Outbound		
3	NB	89	114
	SB	180	167
	EB	98	577
4	WB	186	90
	Check	-	-

Intersection

1	AM	PM
rt	325	150
thru	690	930
lt	330	520
lt	140	225
thru	205	650
rt	55	80
lt	135	100
thru	430	750
rt	175	750
rt	300	280
thru	420	220
lt	400	400
	3605	5055

	Inbound	AM	PM
1	NB	740	1600
	SB	1345	1600
	EB	400	955
2	WB	1120	900
	Outbound		
3	NB	870	1255
	SB	1145	1410
	EB	710	1920
4	WB	880	470
	Check	-	-

2	AM	PM
rt	10	10
thru	5	25
lt	30	155
lt	5	5
thru	170	600
rt	50	120
lt	65	65
thru	20	35
rt	80	220
rt	80	95
thru	530	275
lt	190	135
	1235	1740

	Inbound	AM	PM
1	NB	165	320
	SB	45	190
	EB	225	725
2	WB	800	505
	Outbound		
3	NB	105	135
	SB	245	280
	EB	280	975
4	WB	605	350
	Check	-	-

Appendix C RCNM Modeling Runs

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/20/2022
Case Descriptior Demolition

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R1	Commercial	66	66	66

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Air Compressors	No	75		88.9	300	0
Crane	No	16		80.6	300	0
Concrete/Industrial Saws	No	20		89.6	300	0
Dumpers/Tenders	No	75		76.5	300	0
Excavator	No	40		80.7	300	0
Generator	No	50		80.6	300	0
Off-highway Tractors	No	75		76.5	300	0
Off-highway Trucks	No	75		76.5	300	0
Rubber Tired Dozers	No	10		74.7	300	0
Scraper	No	40		83.6	300	0
Signal Boards	No	75		72.8	300	0
Sweepers/Scrubbers	No	75		81.6	300	0
Tractors/Loaders/Backhoes	No	50		80	300	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Air Compressors	73.3	72.1	N/A	N/A	N/A	N/A	N/A
Crane	65	57	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	74	67	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Excavator	65.1	61.2	N/A	N/A	N/A	N/A	N/A
Generator	65.1	62.1	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Rubber Tired Dozers	59.1	49.1	N/A	N/A	N/A	N/A	N/A
Scraper	68	64	N/A	N/A	N/A	N/A	N/A
Signal Boards	57.2	56	N/A	N/A	N/A	N/A	N/A
Sweepers/Scrubbers	66	64.8	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes	64.4	61.4	N/A	N/A	N/A	N/A	N/A
Total	74	75.4	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R2	Commercial	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Air Compressors	No	75		88.9	150	0
Crane	No	16		80.6	150	0
Concrete/Industrial Saws	No	20		89.6	150	0
Dumpers/Tenders	No	75		76.5	150	0
Excavator	No	40		80.7	150	0
Generator	No	50		80.6	150	0
Off-highway Tractors	No	75		76.5	150	0
Off-highway Trucks	No	75		76.5	150	0
Rubber Tired Dozers	No	10		74.7	150	0
Scraper	No	40		83.6	150	0
Signal Boards	No	75		72.8	150	0
Sweepers/Scrubbers	No	75		81.6	150	0
Tractors/Loaders/Backhoes	No	50		80	150	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax
Air Compressors	79.4	78.1	N/A	N/A	N/A	N/A	N/A
Crane	71	63	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	80.1	73.1	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	67	65.7	N/A	N/A	N/A	N/A	N/A
Excavator	71.2	67.2	N/A	N/A	N/A	N/A	N/A
Generator	71.1	68.1	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	67	65.7	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	67	65.7	N/A	N/A	N/A	N/A	N/A
Rubber Tired Dozers	65.2	55.2	N/A	N/A	N/A	N/A	N/A
Scraper	74	70.1	N/A	N/A	N/A	N/A	N/A
Signal Boards	63.3	62	N/A	N/A	N/A	N/A	N/A
Sweepers/Scrubbers	72.1	70.8	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes	70.5	67.4	N/A	N/A	N/A	N/A	N/A
Total	80.1	81.4	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night

R3	Commercial	64.2	64.2	64.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Air Compressors	No	75		88.9	350	0
Crane	No	16		80.6	350	0
Concrete/Industrial Saws	No	20		89.6	350	0
Dumpers/Tenders	No	75		76.5	350	0
Excavator	No	40		80.7	350	0
Generator	No	50		80.6	350	0
Off-highway Tractors	No	75		76.5	350	0
Off-highway Trucks	No	75		76.5	350	0
Rubber Tired Dozers	No	10		74.7	350	0
Scraper	No	40		83.6	350	0
Signal Boards	No	75		72.8	350	0
Sweepers/Scrubbers	No	75		81.6	350	0
Tractors/Loaders/Backhoes	No	50		80	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Air Compressors	72	70.7	N/A	N/A	N/A	N/A	N/A
Crane	63.6	55.7	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	72.7	65.7	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Excavator	63.8	59.8	N/A	N/A	N/A	N/A	N/A
Generator	63.7	60.7	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Rubber Tired Dozers	57.8	47.8	N/A	N/A	N/A	N/A	N/A
Scraper	66.7	62.7	N/A	N/A	N/A	N/A	N/A
Signal Boards	55.9	54.6	N/A	N/A	N/A	N/A	N/A
Sweepers/Scrubbers	64.7	63.4	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes	63.1	60.1	N/A	N/A	N/A	N/A	N/A
Total	72.7	74.1	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: ########
Case Description: Site Preparation

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R1	Commercia	66	66	66

			Equipment			
			Spec	Actual	Recepto	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%	(dBA)	(dBA)	(feet)	(dBA)
Grader	No	40	85		300	0
Crane	No	16		80.6	300	0
Crawler Tractors	No	75		80	300	0
Crushing/Processing Equipmen	No	75		90.3	300	0
Dumpers/Tenders	No	75		76.5	300	0
Excavator	No	40		80.7	300	0
Generator	No	50		80.6	300	0
Grader	No	40	85		300	0
Off-highway Tractors	No	75		76.5	300	0
Off-highway Trucks	No	75		76.5	300	0
Rubber Tired Dozers	No	10		74.7	300	0
Scraper	No	40		83.6	300	0
Signal Boards	No	75		72.8	300	0
Sweepers/Scrubbers	No	75		81.6	300	0
Tractors/Loaders/Backhoes	No	50		80	300	0

			Results					
	Calculated (dBA)			Noise Limits (dBA)				
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	69.4	65.5	N/A	N/A	N/A	N/A	N/A	N/A
Crane	65	57	N/A	N/A	N/A	N/A	N/A	N/A
Crawler Tractors	64.4	63.2	N/A	N/A	N/A	N/A	N/A	N/A
Crushing/Processing Equipmen	74.7	73.5	N/A	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	60.9	59.7	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	65.1	61.2	N/A	N/A	N/A	N/A	N/A	N/A
Generator	65.1	62.1	N/A	N/A	N/A	N/A	N/A	N/A
Grader	69.4	65.5	N/A	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	60.9	59.7	N/A	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	60.9	59.7	N/A	N/A	N/A	N/A	N/A	N/A
Rubber Tired Dozers	59.1	49.1	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	68	64	N/A	N/A	N/A	N/A	N/A	N/A
Signal Boards	57.2	56	N/A	N/A	N/A	N/A	N/A	N/A

Sweepers/Scrubbers		66	64.8	N/A	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes		64.4	61.4	N/A	N/A	N/A	N/A	N/A	N/A
	Total	74.7	76.5	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R2	Commercia	63.4	63.4	63.4

Description	Impact Device	Usage(%	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Recepto Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		150	0
Crane	No	16		80.6	150	0
Crawler Tractors	No	75		80	150	0
Crushing/Processing Equipmen	No	75		90.3	150	0
Dumpers/Tenders	No	75		76.5	150	0
Excavator	No	40		80.7	150	0
Generator	No	50		80.6	150	0
Grader	No	40	85		150	0
Off-highway Tractors	No	75		76.5	150	0
Off-highway Trucks	No	75		76.5	150	0
Rubber Tired Dozers	No	10		74.7	150	0
Scraper	No	40		83.6	150	0
Signal Boards	No	75		72.8	150	0
Sweepers/Scrubbers	No	75		81.6	150	0
Tractors/Loaders/Backhoes	No	50		80	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)					
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	75.5	71.5	N/A	N/A	N/A	N/A	N/A	N/A
Crane	71	63	N/A	N/A	N/A	N/A	N/A	N/A
Crawler Tractors	70.5	69.2	N/A	N/A	N/A	N/A	N/A	N/A
Crushing/Processing Equipmen	80.8	79.5	N/A	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	67	65.7	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	71.2	67.2	N/A	N/A	N/A	N/A	N/A	N/A
Generator	71.1	68.1	N/A	N/A	N/A	N/A	N/A	N/A
Grader	75.5	71.5	N/A	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	67	65.7	N/A	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	67	65.7	N/A	N/A	N/A	N/A	N/A	N/A
Rubber Tired Dozers	65.2	55.2	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	74	70.1	N/A	N/A	N/A	N/A	N/A	N/A
Signal Boards	63.3	62	N/A	N/A	N/A	N/A	N/A	N/A

Sweepers/Scrubbers		72.1	70.8	N/A	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes		70.5	67.4	N/A	N/A	N/A	N/A	N/A	N/A
	Total	80.8	82.6	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R3	Commercia	64.2	64.2	64.2

			Equipment			
			Spec	Actual	Recepto	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%	(dBA)	(dBA)	(feet)	(dBA)
Grader	No	40	85		350	0
Crane	No	16		80.6	350	0
Crawler Tractors	No	75		80	350	0
Crushing/Processing Equipmen	No	75		90.3	350	0
Dumpers/Tenders	No	75		76.5	350	0
Excavator	No	40		80.7	350	0
Generator	No	50		80.6	350	0
Grader	No	40	85		350	0
Off-highway Tractors	No	75		76.5	350	0
Off-highway Trucks	No	75		76.5	350	0
Rubber Tired Dozers	No	10		74.7	350	0
Scraper	No	40		83.6	350	0
Signal Boards	No	75		72.8	350	0
Sweepers/Scrubbers	No	75		81.6	350	0
Tractors/Loaders/Backhoes	No	50		80	350	0

			Results					
	Calculated (dBA)			Noise Limits (dBA)				
			Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	68.1	64.1	N/A	N/A	N/A	N/A	N/A	N/A
Crane	63.6	55.7	N/A	N/A	N/A	N/A	N/A	N/A
Crawler Tractors	63.1	61.8	N/A	N/A	N/A	N/A	N/A	N/A
Crushing/Processing Equipmen	73.4	72.1	N/A	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	59.6	58.3	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	63.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A
Generator	63.7	60.7	N/A	N/A	N/A	N/A	N/A	N/A
Grader	68.1	64.1	N/A	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	59.6	58.3	N/A	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	59.6	58.3	N/A	N/A	N/A	N/A	N/A	N/A
Rubber Tired Dozers	57.8	47.8	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	66.7	62.7	N/A	N/A	N/A	N/A	N/A	N/A
Signal Boards	55.9	54.6	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/20/2022
Case Description: Grading/Excavation

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R1	Commercial	66	66	66

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Aerial Lifts	No	75		75	300	0
Crane	No	16		80.6	300	0
Concrete/Industrial Saws	No	20		89.6	300	0
Crushing/Processing Equipment	No	75		90.3	300	0
Dumpers/Tenders	No	75		76.5	300	0
Excavator	No	40		80.7	300	0
Generator	No	50		80.6	300	0
Grader	No	40	85		300	0
Off-highway Tractors	No	75		76.5	300	0
Off-highway Trucks	No	75		76.5	300	0
Rubber Tired Dozers	No	10		74.7	300	0
Scraper	No	40		83.6	300	0
Signal Boards	No	75		72.8	300	0
Sweepers/Scrubbers	No	75		81.6	300	0
Tractors/Loaders/Backhoes	No	50		80	300	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Aerial Lifts	59.4	58.2	N/A	N/A	N/A	N/A	N/A
Crane	65	57	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	74	67	N/A	N/A	N/A	N/A	N/A
Crushing/Processing Equipment	74.7	73.5	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Excavator	65.1	61.2	N/A	N/A	N/A	N/A	N/A
Generator	65.1	62.1	N/A	N/A	N/A	N/A	N/A
Grader	69.4	65.5	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Rubber Tired Dozers	59.1	49.1	N/A	N/A	N/A	N/A	N/A
Scraper	68	64	N/A	N/A	N/A	N/A	N/A
Signal Boards	57.2	56	N/A	N/A	N/A	N/A	N/A

Sweepers/Scrubbers		66	64.8	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes		64.4	61.4	N/A	N/A	N/A	N/A	N/A
	Total	74.7	76.6	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R2	Commercial	63.4	63.4	63.4

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Aerial Lifts	No	75		75	150	0
Crane	No	16		80.6	150	0
Concrete/Industrial Saws	No	20		89.6	150	0
Crushing/Processing Equipment	No	75		90.3	150	0
Dumpers/Tenders	No	75		76.5	150	0
Excavator	No	40		80.7	150	0
Generator	No	50		80.6	150	0
Grader	No	40	85		150	0
Off-highway Tractors	No	75		76.5	150	0
Off-highway Trucks	No	75		76.5	150	0
Rubber Tired Dozers	No	10		74.7	150	0
Scraper	No	40		83.6	150	0
Signal Boards	No	75		72.8	150	0
Sweepers/Scrubbers	No	75		81.6	150	0
Tractors/Loaders/Backhoes	No	50		80	150	0

			Results				
	Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Aerial Lifts	65.5	64.2	N/A	N/A	N/A	N/A	N/A
Crane	71	63	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	80.1	73.1	N/A	N/A	N/A	N/A	N/A
Crushing/Processing Equipment	80.8	79.5	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	67	65.7	N/A	N/A	N/A	N/A	N/A
Excavator	71.2	67.2	N/A	N/A	N/A	N/A	N/A
Generator	71.1	68.1	N/A	N/A	N/A	N/A	N/A
Grader	75.5	71.5	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	67	65.7	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	67	65.7	N/A	N/A	N/A	N/A	N/A
Rubber Tired Dozers	65.2	55.2	N/A	N/A	N/A	N/A	N/A
Scraper	74	70.1	N/A	N/A	N/A	N/A	N/A
Signal Boards	63.3	62	N/A	N/A	N/A	N/A	N/A

Sweepers/Scrubbers	72.1	70.8	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes	70.5	67.4	N/A	N/A	N/A	N/A	N/A
Total	80.8	82.6	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R3	Commercial	64.2	64.2	64.2

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Aerial Lifts	No	75		75	350	0
Crane	No	16		80.6	350	0
Concrete/Industrial Saws	No	20		89.6	350	0
Crushing/Processing Equipment	No	75		90.3	350	0
Dumpers/Tenders	No	75		76.5	350	0
Excavator	No	40		80.7	350	0
Generator	No	50		80.6	350	0
Grader	No	40	85		350	0
Off-highway Tractors	No	75		76.5	350	0
Off-highway Trucks	No	75		76.5	350	0
Rubber Tired Dozers	No	10		74.7	350	0
Scraper	No	40		83.6	350	0
Signal Boards	No	75		72.8	350	0
Sweepers/Scrubbers	No	75		81.6	350	0
Tractors/Loaders/Backhoes	No	50		80	350	0

			Results				
	Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Aerial Lifts	58.1	56.8	N/A	N/A	N/A	N/A	N/A
Crane	63.6	55.7	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	72.7	65.7	N/A	N/A	N/A	N/A	N/A
Crushing/Processing Equipment	73.4	72.1	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Excavator	63.8	59.8	N/A	N/A	N/A	N/A	N/A
Generator	63.7	60.7	N/A	N/A	N/A	N/A	N/A
Grader	68.1	64.1	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Rubber Tired Dozers	57.8	47.8	N/A	N/A	N/A	N/A	N/A
Scraper	66.7	62.7	N/A	N/A	N/A	N/A	N/A
Signal Boards	55.9	54.6	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/20/2022
Case Description: Paving

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R1	Commercial	66	66	66

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%	(dBA)	(dBA)	(feet)	(dBA)
Cement and Mortar Mixers	No	50		85	300	0
Air Compressors	No	75		88.9	300	0
Concrete/Industrial Saws	No	20		89.6	300	0
Dumpers/Tenders	No	75		76.5	300	0
Generator	No	50		80.6	300	0
Off-highway Tractors	No	75		76.5	300	0
Off-highway Trucks	No	75		76.5	300	0
Paver	No	50		77.2	300	0
Paving Equipment	No	75		78	300	0
Roller	No	20		80	300	0
Signal Boards	No	75		72.8	300	0
Sweepers/Scrubbers	No	75		81.6	300	0
Skid Steer Loaders	No	75		79.1	300	0
Surfacing Equipment	No	75		80	300	0
Trenchers	No	75		81.7	300	0
Tractors/Loaders/Backhoes	No	50		80	300	0

			Results				
	Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Cement and Mortar Mixers	69.4	66.4	N/A	N/A	N/A	N/A	N/A
Air Compressors	73.3	72.1	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	74	67	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Generator	65.1	62.1	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Paver	61.7	58.6	N/A	N/A	N/A	N/A	N/A
Paving Equipment	62.4	61.2	N/A	N/A	N/A	N/A	N/A
Roller	64.4	57.4	N/A	N/A	N/A	N/A	N/A
Signal Boards	57.2	56	N/A	N/A	N/A	N/A	N/A
Sweepers/Scrubbers	66	64.8	N/A	N/A	N/A	N/A	N/A

Skid Steer Loaders		63.5	62.3	N/A	N/A	N/A	N/A	N/A
Surfacing Equipment		64.4	63.2	N/A	N/A	N/A	N/A	N/A
Trenchers		66.1	64.9	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes		64.4	61.4	N/A	N/A	N/A	N/A	N/A
	Total	74	76.5	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R2	Commercial	63.4	63.4	63.4

Description	Impact Device	Usage(%	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Cement and Mortar Mixers	No	50		85	150	0
Air Compressors	No	75		88.9	150	0
Concrete/Industrial Saws	No	20		89.6	150	0
Dumpers/Tenders	No	75		76.5	150	0
Generator	No	50		80.6	150	0
Off-highway Tractors	No	75		76.5	150	0
Off-highway Trucks	No	75		76.5	150	0
Paver	No	50		77.2	150	0
Paving Equipment	No	75		78	150	0
Roller	No	20		80	150	0
Signal Boards	No	75		72.8	150	0
Sweepers/Scrubbers	No	75		81.6	150	0
Skid Steer Loaders	No	75		79.1	150	0
Surfacing Equipment	No	75		80	150	0
Trenchers	No	75		81.7	150	0
Tractors/Loaders/Backhoes	No	50		80	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Cement and Mortar Mixers	75.5	72.4	N/A	N/A	N/A	N/A	N/A
Air Compressors	79.4	78.1	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	80.1	73.1	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	67	65.7	N/A	N/A	N/A	N/A	N/A
Generator	71.1	68.1	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	67	65.7	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	67	65.7	N/A	N/A	N/A	N/A	N/A
Paver	67.7	64.7	N/A	N/A	N/A	N/A	N/A
Paving Equipment	68.5	67.2	N/A	N/A	N/A	N/A	N/A
Roller	70.5	63.5	N/A	N/A	N/A	N/A	N/A

Signal Boards		63.3	62	N/A	N/A	N/A	N/A	N/A
Sweepers/Scrubbers		72.1	70.8	N/A	N/A	N/A	N/A	N/A
Skid Steer Loaders		69.6	68.3	N/A	N/A	N/A	N/A	N/A
Surfacing Equipment		70.5	69.2	N/A	N/A	N/A	N/A	N/A
Trenchers		72.2	70.9	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes		70.5	67.4	N/A	N/A	N/A	N/A	N/A
	Total	80.1	82.5	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R3	Commercial	64.2	64.2	64.2

Description	Impact Device	Usage(%	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Cement and Mortar Mixers	No	50		85	350	0
Air Compressors	No	75		88.9	350	0
Concrete/Industrial Saws	No	20		89.6	350	0
Dumpers/Tenders	No	75		76.5	350	0
Generator	No	50		80.6	350	0
Off-highway Tractors	No	75		76.5	350	0
Off-highway Trucks	No	75		76.5	350	0
Paver	No	50		77.2	350	0
Paving Equipment	No	75		78	350	0
Roller	No	20		80	350	0
Signal Boards	No	75		72.8	350	0
Sweepers/Scrubbers	No	75		81.6	350	0
Skid Steer Loaders	No	75		79.1	350	0
Surfacing Equipment	No	75		80	350	0
Trenchers	No	75		81.7	350	0
Tractors/Loaders/Backhoes	No	50		80	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Cement and Mortar Mixers	68.1	65.1	N/A	N/A	N/A	N/A	N/A
Air Compressors	72	70.7	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	72.7	65.7	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Generator	63.7	60.7	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Paver	60.3	57.3	N/A	N/A	N/A	N/A	N/A

Paving Equipment	61.1	59.8	N/A	N/A	N/A	N/A	N/A
Roller	63.1	56.1	N/A	N/A	N/A	N/A	N/A
Signal Boards	55.9	54.6	N/A	N/A	N/A	N/A	N/A
Sweepers/Scrubbers	64.7	63.4	N/A	N/A	N/A	N/A	N/A
Skid Steer Loaders	62.2	60.9	N/A	N/A	N/A	N/A	N/A
Surfacing Equipment	63.1	61.8	N/A	N/A	N/A	N/A	N/A
Trenchers	64.8	63.5	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes	63.1	60.1	N/A	N/A	N/A	N/A	N/A
Total	72.7	75.1	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/20/2022
Case Description: Site Restoration

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R1	Commercial	66	66	66

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Recepto Distance (feet)	Estimated Shielding (dBA)
Aerial Lifts	No	75		75	300	0
Air Compressors	No	75		88.9	300	0
Cement and Mortar Mixers	No	50		85	300	0
Concrete/Industrial Saws	No	20		89.6	300	0
Crane	No	16		80.6	300	0
Crawler Tractors	No	75		80	300	0
Crushing/Processing Equipment	No	75		90.3	300	0
Dumpers/Tenders	No	75		76.5	300	0
Forklifts	No	75		75	300	0
Generator	No	50		80.6	300	0
Grader	No	40	85		300	0
Off-highway Tractors	No	75		76.5	300	0
Off-highway Trucks	No	75		76.5	300	0
Roller	No	20		80	300	0
Rough Terrain Forklifts	No	75		80	300	0
Signal Boards	No	75		72.8	300	0
Sweepers/Scrubbers	No	75		81.6	300	0
Skid Steer Loaders	No	75		79.1	300	0
Surfacing Equipment	No	75		80	300	0
Tractors/Loaders/Backhoes	No	50		80	300	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Aerial Lifts	59.4	58.2	N/A	N/A	N/A	N/A	N/A
Air Compressors	73.3	72.1	N/A	N/A	N/A	N/A	N/A
Cement and Mortar Mixers	69.4	66.4	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	74	67	N/A	N/A	N/A	N/A	N/A
Crane	65	57	N/A	N/A	N/A	N/A	N/A
Crawler Tractors	64.4	63.2	N/A	N/A	N/A	N/A	N/A
Crushing/Processing Equipment	74.7	73.5	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	60.9	59.7	N/A	N/A	N/A	N/A	N/A

Forklifts	59.4	58.2	N/A	N/A	N/A	N/A	N/A
Generator	65.1	62.1	N/A	N/A	N/A	N/A	N/A
Grader	69.4	65.5	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	60.9	59.7	N/A	N/A	N/A	N/A	N/A
Roller	64.4	57.4	N/A	N/A	N/A	N/A	N/A
Rough Terrain Forklifts	64.4	63.2	N/A	N/A	N/A	N/A	N/A
Signal Boards	57.2	56	N/A	N/A	N/A	N/A	N/A
Sweepers/Scrubbers	66	64.8	N/A	N/A	N/A	N/A	N/A
Skid Steer Loaders	63.5	62.3	N/A	N/A	N/A	N/A	N/A
Surfacing Equipment	64.4	63.2	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes	64.4	61.4	N/A	N/A	N/A	N/A	N/A
Total	74.7	78.5	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R2	Commercial	63.4	63.4	63.4

Equipment

Description	Impact Device	Usage(%	Spec Lmax (dBA)	Actual Lmax (dBA)	Recepto Distance (feet)	Estimated Shielding (dBA)
Aerial Lifts	No	75		75	150	0
Air Compressors	No	75		88.9	150	0
Cement and Mortar Mixers	No	50		85	150	0
Concrete/Industrial Saws	No	20		89.6	150	0
Crane	No	16		80.6	150	0
Crawler Tractors	No	75		80	150	0
Crushing/Processing Equipment	No	75		90.3	150	0
Dumpers/Tenders	No	75		76.5	150	0
Forklifts	No	75		75	150	0
Generator	No	50		80.6	150	0
Grader	No	40	85		150	0
Off-highway Tractors	No	75		76.5	150	0
Off-highway Trucks	No	75		76.5	150	0
Roller	No	20		80	150	0
Rough Terrain Forklifts	No	75		80	150	0
Signal Boards	No	75		72.8	150	0
Sweepers/Scrubbers	No	75		81.6	150	0
Skid Steer Loaders	No	75		79.1	150	0
Surfacing Equipment	No	75		80	150	0
Tractors/Loaders/Backhoes	No	50		80	150	0

Results

Calculated (dBA)	Noise Limits (dBA)

			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Aerial Lifts	65.5	64.2	N/A	N/A	N/A	N/A	N/A
Air Compressors	79.4	78.1	N/A	N/A	N/A	N/A	N/A
Cement and Mortar Mixers	75.5	72.4	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	80.1	73.1	N/A	N/A	N/A	N/A	N/A
Crane	71	63	N/A	N/A	N/A	N/A	N/A
Crawler Tractors	70.5	69.2	N/A	N/A	N/A	N/A	N/A
Crushing/Processing Equipment	80.8	79.5	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	67	65.7	N/A	N/A	N/A	N/A	N/A
Forklifts	65.5	64.2	N/A	N/A	N/A	N/A	N/A
Generator	71.1	68.1	N/A	N/A	N/A	N/A	N/A
Grader	75.5	71.5	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	67	65.7	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	67	65.7	N/A	N/A	N/A	N/A	N/A
Roller	70.5	63.5	N/A	N/A	N/A	N/A	N/A
Rough Terrain Forklifts	70.5	69.2	N/A	N/A	N/A	N/A	N/A
Signal Boards	63.3	62	N/A	N/A	N/A	N/A	N/A
Sweepers/Scrubbers	72.1	70.8	N/A	N/A	N/A	N/A	N/A
Skid Steer Loaders	69.6	68.3	N/A	N/A	N/A	N/A	N/A
Surfacing Equipment	70.5	69.2	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes	70.5	67.4	N/A	N/A	N/A	N/A	N/A
Total	80.8	84.5	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R3	Commercial	64.2	64.2	64.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Recepto Distance (feet)	Estimated Shielding (dBA)
Aerial Lifts	No	75		75	350	0
Air Compressors	No	75		88.9	350	0
Cement and Mortar Mixers	No	50		85	350	0
Concrete/Industrial Saws	No	20		89.6	350	0
Crane	No	16		80.6	350	0
Crawler Tractors	No	75		80	350	0
Crushing/Processing Equipment	No	75		90.3	350	0
Dumpers/Tenders	No	75		76.5	350	0
Forklifts	No	75		75	350	0
Generator	No	50		80.6	350	0
Grader	No	40	85		350	0
Off-highway Tractors	No	75		76.5	350	0
Off-highway Trucks	No	75		76.5	350	0

Roller	No	20	80	350	0
Rough Terrain Forklifts	No	75	80	350	0
Signal Boards	No	75	72.8	350	0
Sweepers/Scrubbers	No	75	81.6	350	0
Skid Steer Loaders	No	75	79.1	350	0
Surfacing Equipment	No	75	80	350	0
Tractors/Loaders/Backhoes	No	50	80	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)				
			Day		Evening		Night
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
Aerial Lifts	58.1	56.8	N/A	N/A	N/A	N/A	N/A
Air Compressors	72	70.7	N/A	N/A	N/A	N/A	N/A
Cement and Mortar Mixers	68.1	65.1	N/A	N/A	N/A	N/A	N/A
Concrete/Industrial Saws	72.7	65.7	N/A	N/A	N/A	N/A	N/A
Crane	63.6	55.7	N/A	N/A	N/A	N/A	N/A
Crawler Tractors	63.1	61.8	N/A	N/A	N/A	N/A	N/A
Crushing/Processing Equipment	73.4	72.1	N/A	N/A	N/A	N/A	N/A
Dumpers/Tenders	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Forklifts	58.1	56.8	N/A	N/A	N/A	N/A	N/A
Generator	63.7	60.7	N/A	N/A	N/A	N/A	N/A
Grader	68.1	64.1	N/A	N/A	N/A	N/A	N/A
Off-highway Tractors	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Off-highway Trucks	59.6	58.3	N/A	N/A	N/A	N/A	N/A
Roller	63.1	56.1	N/A	N/A	N/A	N/A	N/A
Rough Terrain Forklifts	63.1	61.8	N/A	N/A	N/A	N/A	N/A
Signal Boards	55.9	54.6	N/A	N/A	N/A	N/A	N/A
Sweepers/Scrubbers	64.7	63.4	N/A	N/A	N/A	N/A	N/A
Skid Steer Loaders	62.2	60.9	N/A	N/A	N/A	N/A	N/A
Surfacing Equipment	63.1	61.8	N/A	N/A	N/A	N/A	N/A
Tractors/Loaders/Backhoes	63.1	60.1	N/A	N/A	N/A	N/A	N/A
Total	73.4	77.2	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/20/2022
Case Description: Site Restoration 2

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R1	Commercial	66	66	66

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptc Distance (feet)	Estimated Shielding (dBA)
Tractors/Loaders/Backhoes	No	50		80	300	0
Trenchers	No	75		81.7	300	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax
Tractors/Loaders/Backhoes		64.4	61.4	N/A	N/A	N/A	N/A	N/A
Trenchers		66.1	64.9	N/A	N/A	N/A	N/A	N/A
	Total	66.1	66.5	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R2	Commercial	63.4	63.4	63.4

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptc Distance (feet)	Estimated Shielding (dBA)
Tractors/Loaders/Backhoes	No	50		80	150	0
Trenchers	No	75		81.7	150	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax
Tractors/Loaders/Backhoes		70.5	67.4	N/A	N/A	N/A	N/A	N/A
Trenchers		72.2	70.9	N/A	N/A	N/A	N/A	N/A
	Total	72.2	72.5	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R3	Commercial	64.2	64.2	64.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptc Distance (feet)	Estimated Shielding (dBA)
Tractors/Loaders/Backhoes	No	50		80	350	0
Trenchers	No	75		81.7	350	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax
Tractors/Loaders/Backhoes	63.1	60.1	N/A	N/A	N/A	N/A	N/A
Trenchers	64.8	63.5	N/A	N/A	N/A	N/A	N/A
Total	64.8	65.2	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Appendix H

VMT Analysis Memo

VMT Analysis

Project: Overland Drive Widening Project (Jefferson Avenue and Commerce Center Drive)

Date: June 13, 2022

To: Nick Minicilli, P.E., City of Temecula.

CC: Lori Askew, ERSC, inc.

From: David DiPierro T.E., STC Traffic, Inc. and Philip Wragg, AICP, STC Traffic, Inc.

STC Traffic Inc. (STC) is pleased to provide this Vehicle Miles Traveled (VMT) Analysis to the City of Temecula (City) for the widening of Overland Drive between Jefferson Avenue and Commerce Center Drive. The project proposes to add an additional lane in each direction from Jefferson Avenue to Commerce Center Drive and provide new sidewalks and bike lanes on both sides of the street. These improvements are consistent with the City of Temecula General Plan Circulation Element.

The project site location is shown in **Attachment A** and a concept plan is provided in **Attachment B**. The remainder of this memo is split into the following sections:

- Project Description.
- Background Information.
- VMT Screening Analysis.

This memo follows the City's Traffic Impact Analysis Guidelines (September, 2020) and is in line with the agreed upon methodology per our discussion with City staff.

Project Description

The City of Temecula has identified widening Overland Drive from Jefferson Avenue to Commerce Center Drive to provide a 4-lane undivided secondary arterial roadway facility consistent with the Circulation Element of the City of Temecula's General Plan. The project will also construct new sidewalks and Class II bike lanes on both side of the street. The project is located west of Interstate 15 (I-15) and south of Winchester Road. The project location is shown in Attachment A.

The current roadway between Jefferson Avenue and Commerce Center Drive drops from two lanes to one in each direction creating a bottleneck that can increase travel times and greenhouse gas emissions due to traffic congestion. There are also impediments to pedestrian mobility with gaps in sidewalk on both sides of Overland Drive.

The project improvements include widening the existing roadway to remove the bottleneck and implement new pedestrian and bicycle facilities. The conceptual project improvements are shown on Attachment B and detailed below.

- Overland Drive between Jefferson Avenue and Commerce Center Drive will be widened from two travel lanes to four with a center two-way-left-turn-lane.
- A six-foot class II bike lane will be provided in both directions.
- A new contiguous sidewalk will be constructed between Jefferson Avenue and Commerce Center Drive on both sides of the street.

Background Information

Senate Bill 743 (SB 743) was implemented throughout California on July 1, 2020. The legislation states that generally VMT is the most appropriate measure of transportation impacts and that a project's effect on automobile delay shall not constitute a significant environmental impact except for roadway capacity projects, for which agencies have the discretion to determine the appropriate measure of transportation impact consistent with CEQA.

In response to SB 743, the City of Temecula prepared Traffic Impact Analysis Guidelines (City of Temecula, September 2020) which contains methodology for conducting VMT Analyses. The thresholds of significance and screening criteria are included in the guidelines. The City's guidelines were used in consideration of VMT for this project.

VMT Screening Analysis

A Screening Analysis was carried out to determine whether the project would be screened out of requiring a full VMT analysis. Exhibit D of the City's TIA Guidelines includes a list of transportation projects that do not require an induced travel/VMT analysis since they typically do not cause substantial or measurable increases in VMT. The proposed project is consistent with two of the project types listed in Exhibit D as follows:

- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit.
- Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way.

The Screening Analysis indicates that the project will have a less than significant impact on VMT and no further VMT Analysis will be required.

We are happy to discuss our findings and recommendations further to support your review. Please feel free to contact either myself, or Phil Wragg (philip.wragg@stctraffic.com) with any questions or comments.

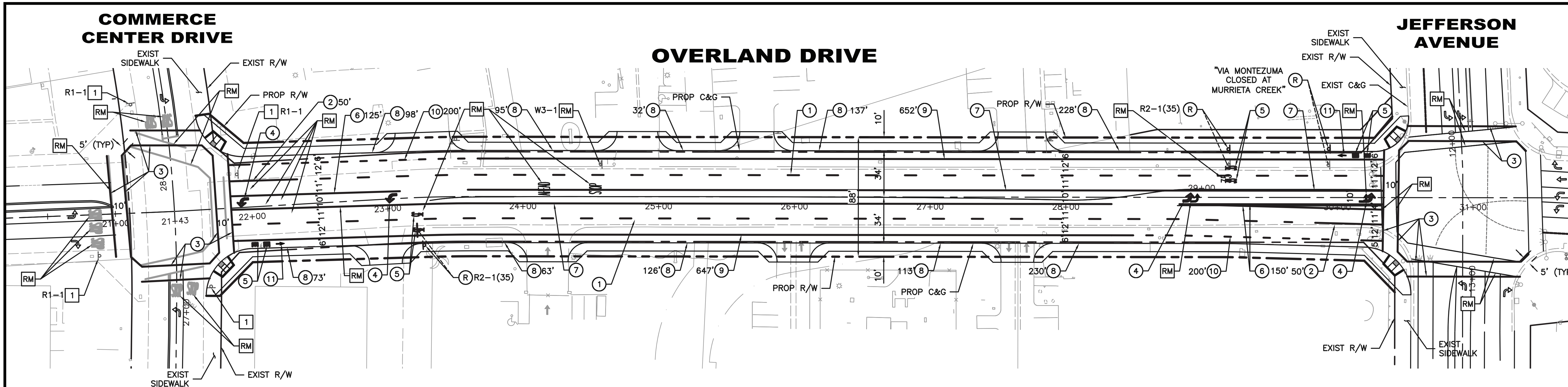
Sincerely,
STC Traffic

David DiPierro, TE
Senior Principal Manager

Attachment A: Project Site Location
Attachment B: Concept Plan

Attachment A
Project Location

Overland Drive (Jefferson Avenue to Commerce Center Drive)



SIGNING AND STRIPING GENERAL NOTES:

1. STRIPING, SIGNING, OR PAVEMENT LEGENDS SHALL NOT BE INSTALLED PRIOR TO FIELD INSPECTION AND APPROVAL BY THE INSPECTOR.
2. ALL PAVEMENT MARKINGS AND SIGN LOCATIONS MUST BE INSPECTED AND APPROVED BEFORE STRIPING BEGINS. THE INSPECTOR SHALL DETERMINE THE EXACT LIMITS OF THE MATCH STRIPING.
3. ALL R1 SIGNS AND WARNING SIGNS SHALL USE HI-INTENSITY GRADE REFLECTIVE SHEETING AND BE A MINIMUM OF 30"X30". OTHER REGULATORY OR GUIDE SIGNS MAY BE ENGINEERING GRADE REFLECTIVE SHEETING.
4. UNLESS OTHERWISE STATED, ALL STRIPING SHALL BEGIN AND TERMINATE AT QUARTER DELTA OF THE CURB RETURN, OR BACK OF THE CROSSWALK OR STOP BAR.
5. ALL R1 SIGNS WILL BE LOCATED 2 FEET BEHIND CURB AT THE B.C.R. OR AS SPECIFIED ON THE PLAN.
6. ALL STOP BARS WILL BE LOCATED AT THE PROLONGATION OF THE CENTER DELTA OF THE CURB RETURN OR BEHIND THE WHEELCHAIR ACCESS RAMPS UNLESS OTHERWISE SPECIFIED ON THE PLAN.
7. THE STOP LEGEND SHALL BE 8 FEET BEHIND THE STOP BAR. IF REQUIRED, DIRECTIONAL ARROWS SHALL ALSO BE 8 FEET BEHIND THE STOP BAR OR 8 FEET BEHIND THE STOP LEGENDS.
8. ALL PAVEMENT MARKERS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST VERSION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND CALTRANS STANDARD PLANS: A20-A THROUGH A24-E.
9. STREET NAME SIGNS SHALL BE INSTALLED AT ALL INTERSECTIONS AND MAY BE INSTALLED ABOVE THE R1 SIGN OR AS SPECIFIED ON THE PLAN.
10. THE POST MATERIAL SHALL BE "TELESPAR QWIK-PUNCH" OR APPROVED EQUAL WITH RECEPTIVE 30-INCH OR 36-INCH ANCHOR ASSEMBLY.
11. ALL PAVEMENT STRIPING AND LEGENDS SHALL BE INSTALLED PER SECTION 84 OF THE CALTRANS STANDARD SPECIFICATIONS.
12. ALL CONFLICTING PAVEMENT LEGENDS, STRIPING, AND PAVEMENT MARKINGS SHALL BE REMOVED BY WET SANDBLASTING PER SECTION 84 OF THE CALTRANS STANDARD SPECIFICATIONS.
13. ALL PAINTED STRIPING SHALL BE DOUBLE COATED IN NOT LESS THAN 7 DAYS, BUT NO MORE THAN 14 DAYS FROM DATE OF INITIAL INSTALLATION.
14. ALL PAVEMENT MARKINGS, PAVEMENT LEGENDS, AND LINES 8" OR WIDER SHALL BE THERMOPLASTIC UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
15. ALL PAVEMENT STRIPING SHALL HAVE RAISED PAVEMENT MARKINGS (RPM) PER SECTION 81 OF THE CALTRANS STANDARD SPECIFICATIONS.

LEGEND

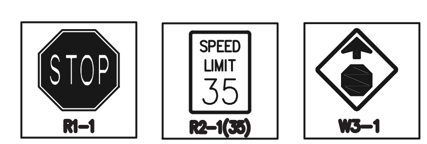
PROPOSED SIGN AND POST.

EXISTING SIGN AND POST.

PROPOSED STRIPING, MARKINGS AND/OR RAISED PAVEMENT MARKERS.

EXISTING STRIPING, MARKINGS AND/OR RAISED PAVEMENT MARKERS.

SIGN LEGEND



CONSTRUCTION NOTES:

- (R) RELOCATE EXISTING SIGN
- (P) PROTECT IN PLACE AS NOTED.
- (1) INSTALL 6" THERMOPLASTIC WHITE LANE PER DETAIL 12 CALTRANS STD. PLAN A20A.
- (2) INSTALL 6" THERMOPLASTIC SOLID WHITE LANE LINE PER CALTRNS STD. PLANS.
- (3) INSTALL 12" WIDE SOLID WHITE THERMOPLASTIC CROSSWALK LINES PER CALTRANS STANDARD PLAN A24F.
- (4) INSTALL THERMOPLASTIC TYPE IV LEFT ARROW PER CALTRANS STD. A24A.
- (5) INSTALL THERMOPLASTIC PAVEMENT MARKING PER CALTRANS STD. PLAN A24C & A24D. AS NOTED ON THE PLAN.
- (6) INSTALL THERMOPLASTIC 8" WHITE CHANNELIZING LANE LINE PER DETAIL 38 CALTRANS STANDARD PLAN A20D.
- (7) INSTALL YELLOW THERMOPLASTIC MEDIAN ISLAND LINES PER DETAIL 22 CALTRANS STD. PLAN A20B
- (8) PAINT CURB RED
- (9) INSTALL 6" THERMOPLASTIC SOLID WHITE BIKE LANE PER DETAIL 39 CALTRANS STANDARD PLAN A20D.
- (10) INSTALL 6" THERMOPLASTIC WHITE BIKE LANE PER DETAIL 39A CALTRANS STANDARD PLAN A20D.
- (11) INSTALL THERMOPLASTIC BIKE LINE ARROW PER CALTRANS STD. A24A.
- [RM] REMOVE ALL EXISTING CONFLICTING TRAFFIC STRIPING, MARKING OR PAVEMENT ARROWS AS NOTED, INCLUDING RAISED PAVEMENT MARKERS (EXCEPT WHERE INDICATED). AREAS THAT ARE TO BE SLURRY SEALED SHALL BE GROUNDED OUT.

REMOVAL NOTES:

- [1] REMOVE EXISTING SIGN

Attachment B
Concept Site Plan