Appendix A

DEVELOPMENT AND MITIGATION GUIDELINES

DEVELOPMENT GUIDELINES

The following development guidelines are provided to assure minimal impacts to FSDRIP during the construction of projects adjacent to FSDRIP or maintenance of utilities (such as the sewer) or other facilities (such as the MVLRT) within FSDRIP itself. These guidelines also assure conformance with the community plan.

1. Temporary fencing along FSDRIP's outer edge between the proposed construction and FSDRIP shall be installed before construction. This fence shall remain in place until the end of construction, and shall be inspected on a regular basis. Damaged portions of the fence shall be repaired in a timely manner from the construction side of the fence.

2. Buffer areas should be located along the entire length of an adjacent project and/or development. The buffer is defined as the area between the top of the floodway and development. The width of the buffer is specified in the amended Specific Plan. Changes to a uniform buffer were necessary to accommodate a meandering sidewalk design and usage by service vehicles and bicycles. At no point should private development intrude into the river corridor. Buffer areas, including the FSDRIP buffer area where it exists, and adjacent landscaped ornamental areas of private developments, shall meet the following criteria:

   - The average buffer width should be at least 20 feet.
   - Maximum buffer widths should be 50 feet, with a minimum buffer of ten feet.
   - Buffer areas should be widest when adjacent to sensitive habitat.

- Buffer areas within FSDRIP should be planted with a combination of native trees and shrubs, particularly riparian woodland and coastal sage scrub species. (Note: the exception to this rule is the narrow portion of the FSDRIP buffer zone (approximately two feet) on the outside of the sidewalk edges may be planted with ornamental species similar to the adjacent development). The buffer should provide some woodland overstory, but should be more open then the riparian woodland.

3. To avoid impacts to breeding least Bell's vireo and other migrating birds, construction activities which will impact FSDRIP, directly or indirectly, shall include the following conditions as part of any project authorization, permit, construction specifications and shall show these conditions on the construction drawings.

No clearing, grubbing, grading, or other construction activities shall occur between March 15 and September 15, the least Bell's vireo breeding season, until the following requirements have been met to the satisfaction of the City Manager. Coordination with the USFWS and CDFG will be required if least Bell's vireo are present.

Surveys for least Bell's vireo should be conducted pursuant to the recommended protocol survey guidelines as established by the USFWS. If full protocol surveys cannot be conducted, then a qualified biologist (has a valid 10(a)(1)(A) recovery permit from the USFWS for least Bell's vireo) shall survey any adjacent wetland habitat considered potentially suitable for the least Bell's vireo weekly for a minimum of four weeks (within the breeding season) prior to the commencement of any construction.

I. If the least Bell's vireo is detected during the initial survey or may be present (see Section II below), then one of the following conditions must be met:

A. Between March 15 and September 15, no clearing, grubbing, grading, or

other construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB hourly average at the edge of occupied least Bell's vireo habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB hourly average at the edge of occupied habitat must be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the City Manager at least two weeks prior to commencement of construction activities.

B. At least two weeks prior to commencement of construction activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from clearing, grubbing, grading, or other construction activities will not exceed 60 dB hourly average at the edge of habitat occupied by least Bell's vireo. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60dB hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the above activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16).

*Construction noise monitoring shall continue to be monitored at least once weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60dB hourly average or to the ambient noise level if it already exceeds 60dB hourly average. If not, other measures shall be implemented in consultation with the biologist and the City

Manager, as necessary, to reduce noise levels to below 60dB hourly average or to the ambient noise level if it already exceeds 60 dB hourly average. Such measures include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

II If least Bell's vireo are not detected during the initial survey, the qualified biologist shall submit substantial evidence to the City Manger and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 15 and September 15 as follows.

A. If this evidence indicates the potential is high for least Bell's vireo to be present based on historical records or site conditions, then Condition I.B. shall be adhered to as specified above.

B. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

4. Dikes, embankments, etc. should be vegetated or otherwise protected against erosion. Riprap may be used in limited areas where scouring is likely to occur during high velocity water flow.

5. All pedestrian walks within FSDRIP should be a minimum width of 10 feet. In areas of high development intensity, widths of 15-20 feet or greater should be considered.

6. Item Deleted

7. Grading required to accommodate any new development should have minimal disturbance

to the natural terrain.

8. Contours should maintain the overall landform.

9. Plant and seed recontoured slopes with local native drought-resistant trees, shrubs, and grasses to restore a natural appearance and prevent erosion.

10. Use specialized plantings to serve as natural barriers to inappropriate human access, or in areas with little or no buffer between the wetland and development.

11. Do not plant invasive, exotic plant species, such as pampas grass (*Cortaderia* sp.), giant cane (*Arundo donax*), tamarisk (*Tamarix* sp.) and Brazilian pepper (*Schinus terebinthifolius*), in adjacent ornamental landscapes.

12. All development projects along FSDRIP edges will be required to inform residents and/or tenants within the development of the permitted and non-permitted uses within FSDRIP.

MITIGATION GUIDELINES

If impacts to FSDRIP vegetation are unavoidable, approval from the City of San Diego is required. In emergency situations, impacts to vegetation may occur without approval, if human health and safety or property damage may occur. All impacts to FSDRIP's vegetation require mitigation.

If unavoidable impacts to FSDRIP habitat occurs, the following guidelines provide an appropriate structure for mitigation. The mitigation options for habitat impacts are the creation of new habitat and/or the enhancement of degraded habitat.

1. No net loss of all habitats at FSDRIP will be permitted without replacement of the same habitat with equal or greater habitat value.

2. Revegetation of impacted area will be required. Additional mitigation at an offsite location may also be required.

3. Impacts to wetland vegetation may require a CDFG 1601 Streambed Alteration Agreement, except for dredging of the open water areas of the channel.

4. Revegetation should be scheduled in the fall to early spring to take advantage of the winter rains and avoid impacts to nesting sensitive birds.

5. Any disturbance to streambanks which would cause erosion or create a potential erosion risk will be mitigated by revegetating the disturbed area as soon as possible. Erosion control measures shall follow Best Management Practices.

6. A mitigation and monitoring program will be required for all wetland mitigation projects subject to approval by City and other appropriate agencies. The program will outline the installation, maintenance, monitoring, and the success standards for the mitigation project.

7. Only native plants that are known to occur in the area will be used for revegetation. Appendix D provides native plant palettes appropriate for revegetation at FSDRIP.

8. Human impacts should be considered in designing revegetation, such as the use of thorny shrubs to limit access to sensitive areas.

9. Temporary irrigation, if necessary, will be provided to help establish revegetation plants.

10. During revegetation, non-native, invasive and weedy species need to be removed on a regular basis between September 15 and March 1. During the rest of the year, noxious, invasive weeds may be removed by hand after the work area has been visually inspected for bird nests. If nests are found and inhabited, weed removal will be deferred until the nests

are abandoned.

11. Revegetation sites will be monitored on a regular basis. Appropriate recommendations will be made for enhancing revegetation efforts to ensure success criteria are met in a timely manner.

12. Prior to their implementation, all projects involving revegetation or mitigation within FSDRIP must be reviewed and approved by Park and Recreation and appropriate agencies.

13. Measures will be taken to limit human intrusion problems. This may include installation of fencing and/or new buffer plantings.

14. During revegetation, pest species, such as ground squirrels, cowbirds, gophers and weedy plants (such as pampas grass, arundo, tamarisk, etc.) will be controlled if they endanger the intended habitats and species composition. With the presence of least Bell's vireo, a cowbird trapping program is a priority.

15. Control agents for animal and plant pest will be carefully selected to avoid adverse effects on wildlife. These agents could be fertilizers, insecticides, algal control agents, and vertebrate poisons. There are a number of safe biological control methods for mosquitos. A licensed pest control advisor should be consulted regarding correct control agents devices, or methods to be used. Any control agents used shall be approved for use in a wetland by CDFG and USFWS.

16. Impacts to CORPS jurisdictional wetlands and waters of the United States may require a Section 404 permit pursuant to the Clean Water Act.

17. Impacts to least Bell's vireo or other rare, threatened, or endangered species may require a Section 7 consultation or Section 10 (a) permit pursuant to the Endangered Species Act.

18. The City-owned FSDRIP property is subject to deed restriction.

Appendix B

Rio Vista Platform Design – Phase II Project Summary Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Rio Vista Platform Design – Phase II Project
Construction Start Date	5/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.8
Location	32.77350444297876, -117.1420731549464
County	San Diego
City	San Diego
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6386
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.23

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
Road Construction	0.16	Mile	0.27	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.	3.84	3.24	27.4	30.8	0.06	1.21	3.44	4.65	1.11	0.40	1.52	—	6,805	6,805	0.28	0.07	1.13	6,833
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.55	0.47	3.95	4.41	0.01	0.18	0.50	0.68	0.16	0.06	0.22	—	968	968	0.04	0.01	0.07	972
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.09	0.72	0.81	< 0.005	0.03	0.09	0.12	0.03	0.01	0.04	—	160	160	0.01	< 0.005	0.01	161

6. Climate Risk Detailed Report

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	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	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	1	1	1	2
Wildfire	1	1	1	2
Flooding	1	1	1	2
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.

7. Health and Equity Details

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	49.0

Healthy Places Index Score for Project Location (b)	48.0
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.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

Appendix C

Biological Resources Technical Report

Rio Vista Platform Design – Phase II Project

San Diego County, California

Prepared for:
San Diego Metropolitan Transit System
1255 Imperial Ave., Suite 1000
San Diego, CA 92101

Prepared by:
Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, California 95630

August 2025

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List of Abbreviations

°F	Fahrenheit
BMPs	Best Management Practices
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game
CFR	Code of Federal Regulations
CIP	Cast-in-Place
City	City of San Diego
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
EFH	Essential Fish Habitat
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
FSDRIP	First San Diego River Improvement Project
IPaC	Information for Planning and Consultation
ITP	Incidental Take Permit
MBTA	Migratory Bird Treaty Act
MHPA	Multi-Habitat Planning Area
MSCP	Multiple Species Conservation Program
MSE	Mechanically Stabilized Embankment
MTS	Metropolitan Transit System
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRCS	Natural Resource Conservation Service
NRMP	Natural Resource Management Plan
Project	Rio Vista Platform Design – Phase II Project
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
U.S.	United States
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Summary

The San Diego Metropolitan Transit System (MTS) proposes to retrofit the existing walls and platform of the Rio Vista Station in San Diego County, California to prevent additional settling and/or movement of the station's infrastructure as part of the Rio Vista Platform Design – Phase II Project (Project).

This Biological Resources Technical Report provides a review and evaluation of the potential impacts to threatened, endangered, listed, or special status species and protected habitat resources as a result of the proposed Project. Field surveys were conducted within the Biological Study Area (BSA), which encompasses the Project area with an approximate 150-foot buffer along the Project's southern margin to evaluate adjacent sensitive habitat communities. Literature research, habitat assessments, and biological surveys were conducted to determine the potential for special status species to occur within the BSA. Special status species include any plant or animal species listed by a state or federal agency or by one or more special interest groups, such as the California Native Plant Society (CNPS). Based on literature review, biological surveys, and habitat assessments, eight special status species have the potential to occur within the BSA.

Coastal California gnatcatcher (*Polioptila californica californica*) is federally listed under the Federal Endangered Species Act (FESA) and Least Bell's vireo (*Vireo bellii pusillus*) and Southwestern willow flycatcher (*Empidonax traillii extimus*) are both federally listed under FESA and state listed the California Endangered Species Act (CESA). As such, incidental take of this species is not permitted without prior authorization under Section 7 or Section 10 Consultation with the (U.S.) Fish and Wildlife Service (USFWS). No further consultation with the California Department of Fish and Wildlife (CDFW) and United States (U.S.) Fish and Wildlife Service (USFWS) is required regarding impacts to coastal California gnatcatcher or least Bell's vireo.

There is a low potential for this species to occur within the BSA; however, the implementation of species-specific avoidance and minimization measures will ensure there are no impacts to coastal California gnatcatcher, least Bell's vireo and southwestern willow flycatcher. As such, consultation with CDFW and USFWS regarding this species is not required.

Under Section 404 and Section 401 of the Clean Water Act (CWA), certain surface waters are regulated by the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB). CDFW also claims jurisdiction over the bed, bank and channel of waters and associated riparian vegetation. Approximately 1.39 acres of upland riparian habitat and approximately 0.68 acres of willow riparian habitat falls within the BSA south of the Rio Vista Station platform. The Project would have approximately 0.27 acres of temporary impacts to upland riparian habitat to allow for construction access to the proposed work area. No permanent impacts to sensitive habitat communities will result from the construction of this Project.

The Project will obtain a Section 1602 Streambed Alteration Agreement from CDFW. The proposed Project is subject to compliance with CEQA, and the MTS is the CEQA lead agency. The Project is expected to be fully constructed by the Spring of 2025.

1. Introduction

The MTS proposes to retrofit the existing walls and platform of the Rio Vista Station in San Diego County, California to prevent additional settling and/or movement of the station's infrastructure. The Project is located on the MTS Green Line at the MTS Rio Vista Station, directly north of the San Diego River and west of Qualcomm Way in San Diego, California (Figure 1. Project Vicinity; Figure 2. Project Location). The Project is located within the La Jolla 7.5-Minute United States Geological Survey (USGS) Quadrangle (3211772).

1.1 Project Description

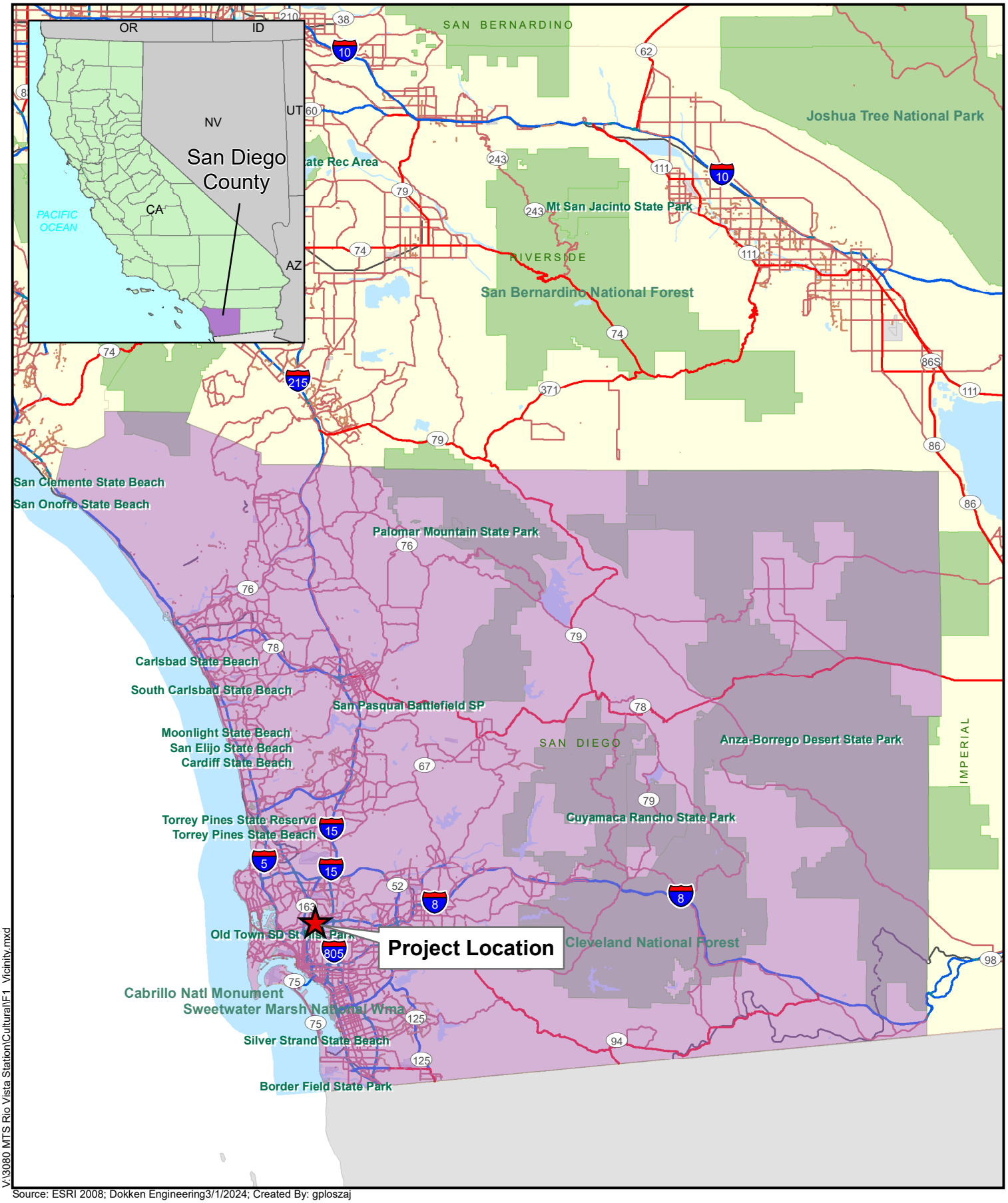
The Rio Vista Platform Design Project is a retrofit of infrastructure at the Rio Vista Station on the San Diego Metropolitan Transit System. The Rio Vista Station is on the MTS Green Line in the City of San Diego, located north of the I-8/Texas Street/Qualcomm way interchange in an urbanized area primarily dominated by residential users.

The MTS Rio Vista Station and apartment complex to the north were constructed in 1999 and 2003, respectively. There are various retaining wall configurations used to support the tracks between the grade separation structures at the Rio Vista Transit Station. A combination of precast concrete panel faced and welded wire (gabion basket) faced Mechanically Stabilized Embankment (MSE) with soil reinforcement are utilized as the main earth retaining system supporting the North County Transit District tracks. A supplemental cast-in-place (CIP) concrete curb wall is in place above the welded wire faced MSE wall along the left (north) side of the transit station platform.

MTS recently installed a series of monitor points to observe movement of the station's infrastructure. Several factors were determined to contribute to the movement of the walls and platform including:

- Presence of loose/soft materials in the upper five feet below the platform
- Unsuitable and potentially expansive materials used for the MSE walls
- Slackening of the MSE reinforcement behind the walls
- Settlement of the fill materials

The proposed Project is subject to compliance with CEQA, and the MTS is the CEQA lead agency. Construction of the Project is estimated to begin in Fall 2026 and take approximately 30 weeks to complete, for a projected opening year of 2027.

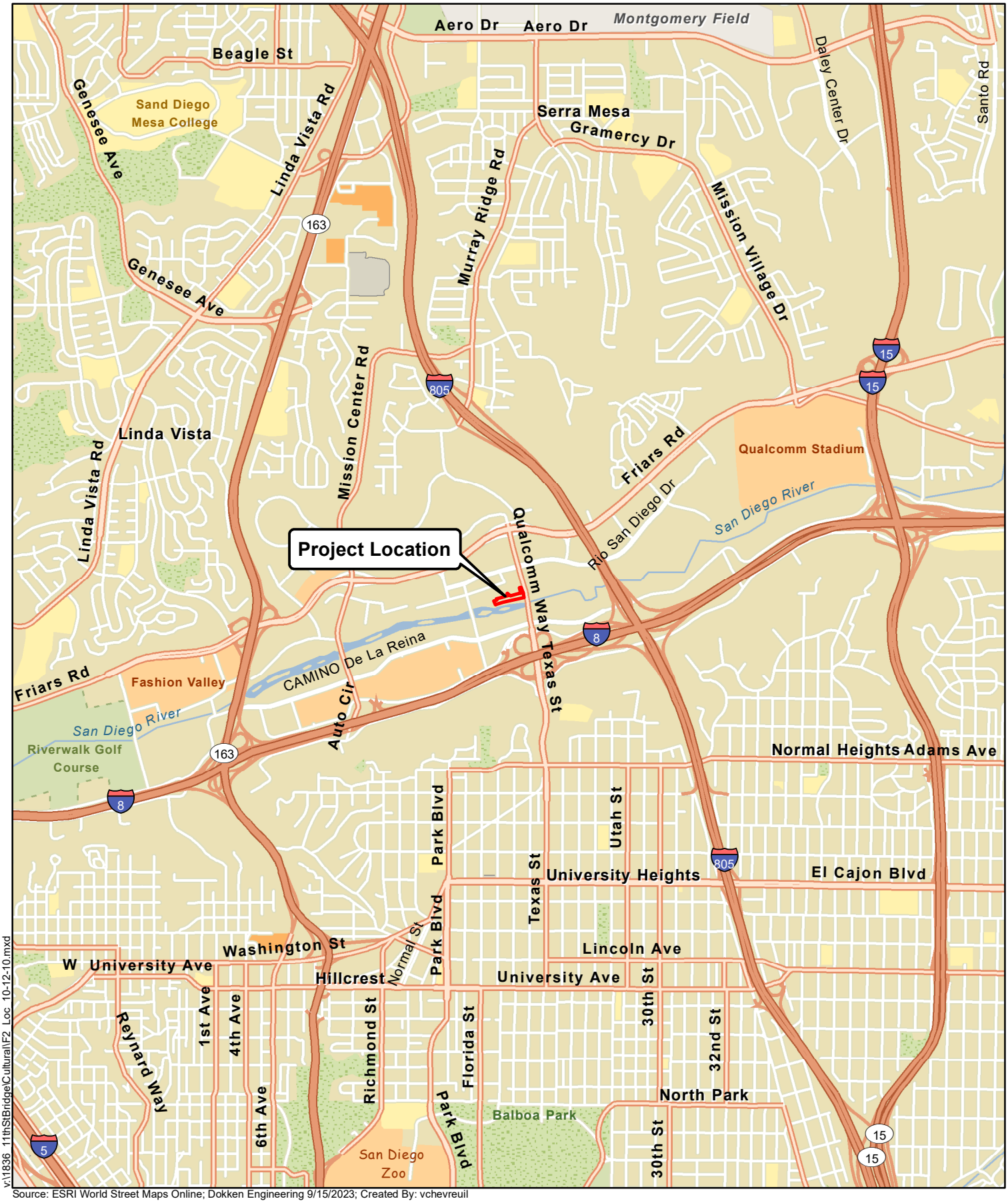


V:\3080 MTS Rio Vista Station\Cultural\F1_Vicinity.mxd

Source: ESRI 2008; Dokken Engineering3/1/2024; Created By: gploszaj

0 10 20 30 Miles

FIGURE 1
Project Vicinity
Rio Vista Platform Design - Phase II
San Diego County, California



v:\1836 11thStBridge\Cultural\F2 Loc 10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 9/15/2023; Created By: vchevreuil

0 0.5 1 1.5 2 Miles

FIGURE 2
Project Location

Rio Vista Platform Design - Phase II
San Diego County, California

2. Study Methods

2.1 Regulatory Requirements

This section describes the general federal, state, and local plans, policies, and laws that are relevant to biological resources within the BSA. Applicable approvals that could be required before construction of the Project are provided in Chapter 5.

2.1.1 Federal Regulations

Federal Endangered Species Act

The FESA of 1973 [16 United States Code (U.S.C.) section 1531 et seq.] provides for the conservation of endangered and threatened species listed pursuant to Section 4 of the Act (16 U.S.C. section 1533) and the ecosystems upon which they depend. These species and resources have been identified by the USFWS.

Executive Order 13112: Prevention and Control of Invasive Species

Executive Order (EO) 13112 (signed February 3, 1999) directs all federal agencies to prevent and control introductions of invasive species in a cost-effective and environmentally sound manner. The EO requires consideration of invasive species in the NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

Executive Order 13186: Migratory Bird Treaty Act

EO 13186 (signed January 10, 2001) directs each federal agency taking actions that could adversely affect migratory bird populations, to work with USFWS to develop a Memorandum of Understanding that will promote the conservation of migratory bird populations. Protocols developed under the Memorandum of Understanding will include the following agency responsibilities:

- Avoid and minimize, to the maximum extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- Restore and enhance habitat of migratory birds, as practicable; and
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA) [50 Code of Federal Regulations (CFR) 10 and 21] and does not constitute any legal authorization to take migratory birds. Take is defined under the MBTA as “the action of or attempt to pursue, hunt, shoot, capture, collect, or kill” (50 CFR 10.12) and includes intentional take (i.e., take that is the purpose of the activity in question) and unintentional take (i.e., take that results from, but is not the purpose of, the activity in question).

2.1.2 State Regulations

California Environmental Quality Act

The CEQA is a state law created to inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities and to work to reduce these negative environmental impacts. The MTS is the CEQA lead agency for this Project.

California Endangered Species Act

The CESA [California Fish and Game (CFG) Code Section 2050 et seq.] requires CDFW to establish a list of endangered and threatened species (Section 2070) and to prohibit the incidental taking of any such listed species except as allowed by the Act (Sections 2080-2089). In addition, CESA prohibits take of candidate species (under consideration for listing).

CESA also requires CDFW to comply with CEQA (Pub. Resources Code Section 21000 et seq.) when evaluating Incidental Take Permit (ITP) applications [CFG Code Section 2081(b) and California Code Regulations, Title 14, section 783.0 et seq.], and the potential impacts the project or activity, for which the application was submitted, may have on the environment. CDFW's CEQA obligations include consultation with other public agencies which have jurisdiction over the project or activity [California Code Regulations, Title 14, Section 783.5(d)(3)]. CDFW cannot issue an ITP if issuance would jeopardize the continued existence of the species [CFG Code Section 2081(c); California Code Regulations, Title 14, Section 783.4(b)].

Section 3503 and 3503.5: Bird and Raptors

CFG Code Section 3503 prohibits the destruction of bird nests and Section 3503.5 prohibits the killing of raptor species and destruction of raptor nests.

Section 3513: Migratory Birds

CFG Code Section 3513 prohibits the take or possession of any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

2.1.3 Local Regulations

City of San Diego Municipal Code

The City Municipal Code outlines specific regulations to ensure that development within properties containing sensitive biological resources occurs in a manner that protects the resource and minimizes cumulative impacts to the region. The Project is subject to the Development Regulations for Sensitive Biological Resources specified in Section 143.0141 of the City's Municipal Code.

First San Diego River Improvement Project Natural Resource Management Plan

The Project falls within the jurisdiction of the First San Diego River Improvement Project (FSDRIP), which is the segment of the San Diego River located between Qualcomm Way and Highway 163. Development within this region is subject to the FSDRIP Natural Resource Management Plan (NRMP), which outlines specific Development and Mitigation Guidelines to ensure the continuing protection of the natural resources created under the FSDRIP Revegetation Plan.

City of San Diego Tree Removal Permit

Any tree removal required by the Project will be subject to the City's Public Tree Protection policy (Council Policy 900-19) and the Project will acquire the appropriate tree removal permits prior to vegetation clearing.

2.2 Studies Required

2.2.1 Literature Search

Prior to field work, literature research was conducted through the USFWS Information for Planning and Consultation (IPaC) official species list generator (Appendix A. USFWS Species List), the CDFW California Natural Diversity Database (CNDDB) (Appendix B. CNDDB Species List), the CNPS Electronic Inventory of Rare and Endangered Plants (Appendix C. CNPS Species List), and the National Marine Fisheries Service (NMFS) West Coast Region Species List (Appendix D. NMFS Species List) to identify habitats and special status species having the potential to occur within the BSA. Section 3.2 of this report provides a comprehensive list of the species generated from the online database searches and presents specific characteristics, habitat requirements, and potential for occurrence for each species.

2.2.2 Survey Methods

Prior to field surveys, the BSA was defined as the Project impact area to facilitate construction access and capture potential biological resources adjacent to Project limits. Habitat assessment and analysis of historic occurrences were conducted to determine the potential for each of these species to occur within the BSA. Biological surveys and habitat assessment methods included walking meandering transects through the entire BSA, observing vegetation communities, compiling notes on observed flora and fauna, and assessing the potential for existing habitat to support sensitive plants and wildlife. All plant and wildlife observations were recorded and are discussed in Chapter 3.

2.2.3 Personnel and Survey Dates

A biological field survey was conducted on August 10, 2023, by Dokken Engineering biologist Scott Salembier. Habitat assessments were conducted within the BSA to assess the vegetative communities present, identify biological resources which may be impacted by the Project, and evaluate the potential for special status species to occur on-site.

2.3 Agency Coordination and Professional Contacts

2.3.1 United States Fish and Wildlife Service

On September 18, 2023, an official species list was obtained from USFWS of federally listed species that could occur in the vicinity of the Project (Appendix A).

2.3.2 California Department of Fish and Wildlife

On September 18, 2023, a two-quadrangle list of species with potential to occur in the Project vicinity was obtained from CDFW's CNDDB (Appendix B).

2.3.3 California Native Plant Society

On September 18, 2023, a two-quadrangle list of plant species with potential to occur in the Project vicinity was obtained from the CNPS Inventory of Rare and Endangered Plants of California (Appendix C).

2.3.4 National Marine Fisheries Service

On September 18, 2023, a one-quadrangle list of Federally listed fish species with the potential to occur in the Project vicinity was obtained from the NMFS West Coast Region Species List

2.4 Limitations That May Influence Results

Sensitive wildlife species with the potential to occur in the BSA may be cryptic (difficult to detect) or transient, migratory species. The population size and locations of sensitive species may fluctuate through time. Because of this, the data collected for this biological resource technical report represents a “snapshot” in time and may not reflect actual future conditions.

The collection of biological field data is normally subject to environmental factors that cannot be controlled or reliably predicted. Consequently, the interpretation of field data must be conservative and consider the uncertainties and limitations imposed by the environment. Biological surveys were conducted in August, which is past the typical season when plant species are blooming; however, rare plants with potential to occur within the BSA have an extended booming season and this limitation is not expected to severely influence the results or substantially alter the findings. No additional limitations were present that could influence the results of this document. All surveys were conducted during appropriate weather and temperature conditions.

3. Results: Environmental Setting

3.1 Description of the Existing Biological and Physical Conditions Study Area

3.1.1 Study Area

Prior to field surveys, the BSA was defined as the area required for the staging, access, and construction of the Project with an approximate 150-foot buffer along the Project's southern margin in order to evaluate potential visual, noise, vibratory and other indirect impacts to sensitive biological resources along the San Diego River. The BSA measures approximately 730 feet wide and measures approximately 390 feet from north to south at its widest point. The total acreage of the BSA is approximately 3.75 acres (Figure 3. Project Features).

3.1.2 Physical Conditions

Regionally, the BSA is located along the northern bank of the San Diego River, directly west of Qualcomm Way in San Diego, California. This Project is located within the South Coast Floristic Province (Jepson 2023). San Diego experiences Mediterranean conditions including warm, dry summers and cool, wet winters. The average annual high temperature is approximately 70 degrees Fahrenheit (°F), and the average annual lows reach approximately 58°F, with an average of 10.34 inches of precipitation annually (U.S. Climate Data 2023). The elevation of the BSA is approximately 70 feet above mean sea level. The soil types within the BSA include gravel pits (95% of BSA) and Riverwash (Natural Resource Conservation Service [NRCS] 2023; Appendix E. NRCS Soil Report).

3.1.3 Biological Conditions in the Study Area

Plant and wildlife species observed within the BSA during the August 2023 biological survey efforts were used to define land cover types based on composition, abundance, and cover (Table 1. Species Observed). Land cover communities within the BSA include coastal sage scrub, upland riparian, willow riparian, and developed land. In addition, the San Diego River provides aquatic habitat within the BSA (Figure 4. Vegetation Communities; Appendix F. Representative Photographs). Each land cover type is described below.

Upland Riparian

The BSA occurs along the northern bank of the San Diego River and encompasses a portion of the river's riparian corridor. In contrast to the willow riparian habitat found downslope of the San Diego River Parkway Trail, the riparian vegetation located directly downslope of the Rio Vista platform is much drier, which is reflected in its vegetative composition. Upland riparian vegetation consists of a riparian overstory of coast live oak (*Quercus agrifolia*) and Fremont cottonwood (*Populus fremontii*) trees and an understory of chaparral species such as lemonade berry (*Rhus integrifolia*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), and toyon (*Heteromeles arbutifolia*). Upland riparian habitat comprises approximately 1.39 acres (37%) of the BSA.

Willow Riparian

Downslope of the San Diego Parkway Trail, the riparian habitat community adjacent to the San Diego River becomes willow-dominated and is primarily comprised of Goodding's willow (*Salix goodingi*), coast live oak, and Fremont cottonwood trees. The understory within this vegetation

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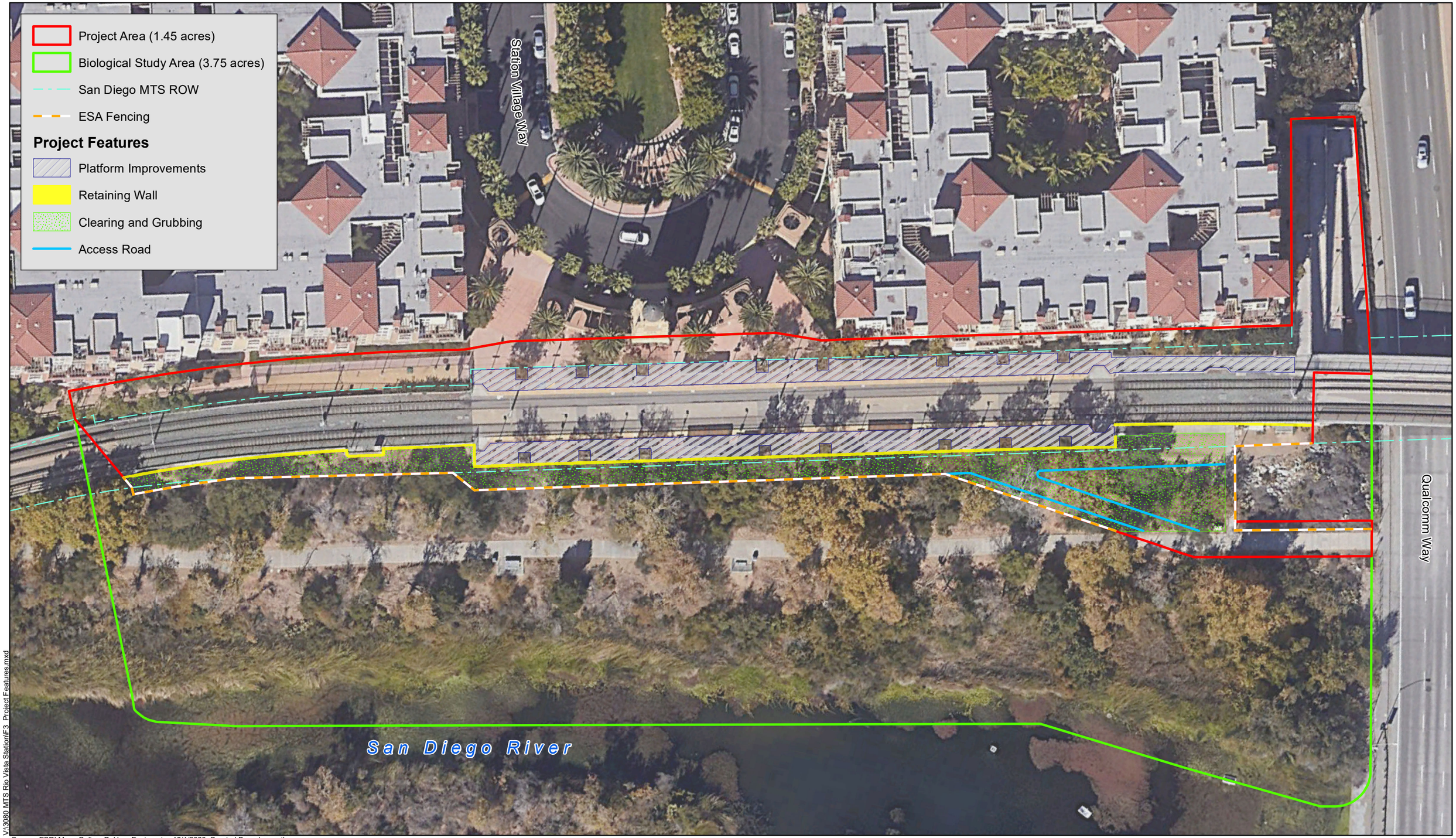

V:\3080 MTS Rio Vista Station\F3_Project Features.mxd

Source: ESRI Maps Online; Dokken Engineering 12/1/2023; Created By: vchevreuil

1 inch = 50 feet

0 50 100 150 200 250 Feet

FIGURE 3
Project Features

Rio Vista Platform Design - Phase II
San Diego County, California

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community consists of riparian species such as coyote brush (*Baccharus pilularis*), California grape (*Vitis californica*), California mugwort (*Artemisia douglasiana*), and ripgut brome (*Bromus diandris*). Willow riparian habitat comprises approximately 0.68 acres (18%) of the BSA.

Coastal Sage Scrub

A small patch of coastal sage scrub is present along the eastern extent of the BSA south of the Rio Vista station platform. This area is highly disturbed due to the placement of rock slope protection and invasion by non-native species; however, marginal habitat is present along the border of Qualcomm Way, southeast of the platform station. This habitat community is comprised of shrubs such as coyote brush, California sagebrush (*Artemisia californica*), and desert broom (*Baccharis sarothroides*). Coastal sage scrub habitat comprises approximately 0.09 acres (2%) of the BSA.

Table 1. Species Observed

Common Name	Scientific Name	Native (N)/ Non-Native (X)[1]
Plant Species		
Black mustard	*Brassica nigra*	X [Moderate]
California buckwheat	*Eriogonum fasciculatum*	N
California grape	*Vitis californica*	N
California mugwort	*Artemisia douglasiana*	N
California rose	*Rosa californica*	N
California sagebrush	*Artemisia californica*	N
California sycamore	*Platanus racemosa*	N
Canada horseweed	*Erigeron canadensis*	N
Castor bean	*Ricinus communis*	X [Limited]
Chinese elm	*Ulmus parviflora*	X
Coast live oak	*Quercus agrifolia*	N
Common verbena	*Verbena lasiostachys*	N
Coyote brush	*Baccharus pilularis*	N
Crimson fountain grass	*Pennisetum setaceum*	X [Moderate]
Crown daisy	*Glebionis coronaria*	X [Moderate]
Deerweed	*Acmispon glaber*	N
Desert broom	*Baccharis sarothroides*	N
Fremont cottonwood	*Populus fremontii*	N
Goodding's willow	*Salix gooddingii*	N
Herb sophia	*Descurainia sophia*	X [Limited]
Italian thistle	*Carduus pycnocephalus*	X [Moderate]
Jimsonweed	*Datura wrightii*	N
Laurel sumac	*Malosma laurina*	
Lemonade berry	*Rhus integrifolia*	N
Maltese star thistle	*Centaurea melitensis*	X [Moderate]
Mulefat	*Baccharis salicifolia*	N
Pacific panic grass	*Panicum acuminatum var. fasciculatum*	N
Ripgut brome	*Bromus diandris*	X [Moderate]
San Diego milk aster	*Stephanomeria diegensis*	N
Spotted spurge	*Euphorbia maculate*	X
Toyon	*Heteromeles arbutifolia*	N
Western ragweed	*Ambrosia psilostachya*	N
Wildlife Species		
Anna's hummingbird	*Calypte anna*	N

[1]California Invasive Plant Council (Cal-IPC) Rating

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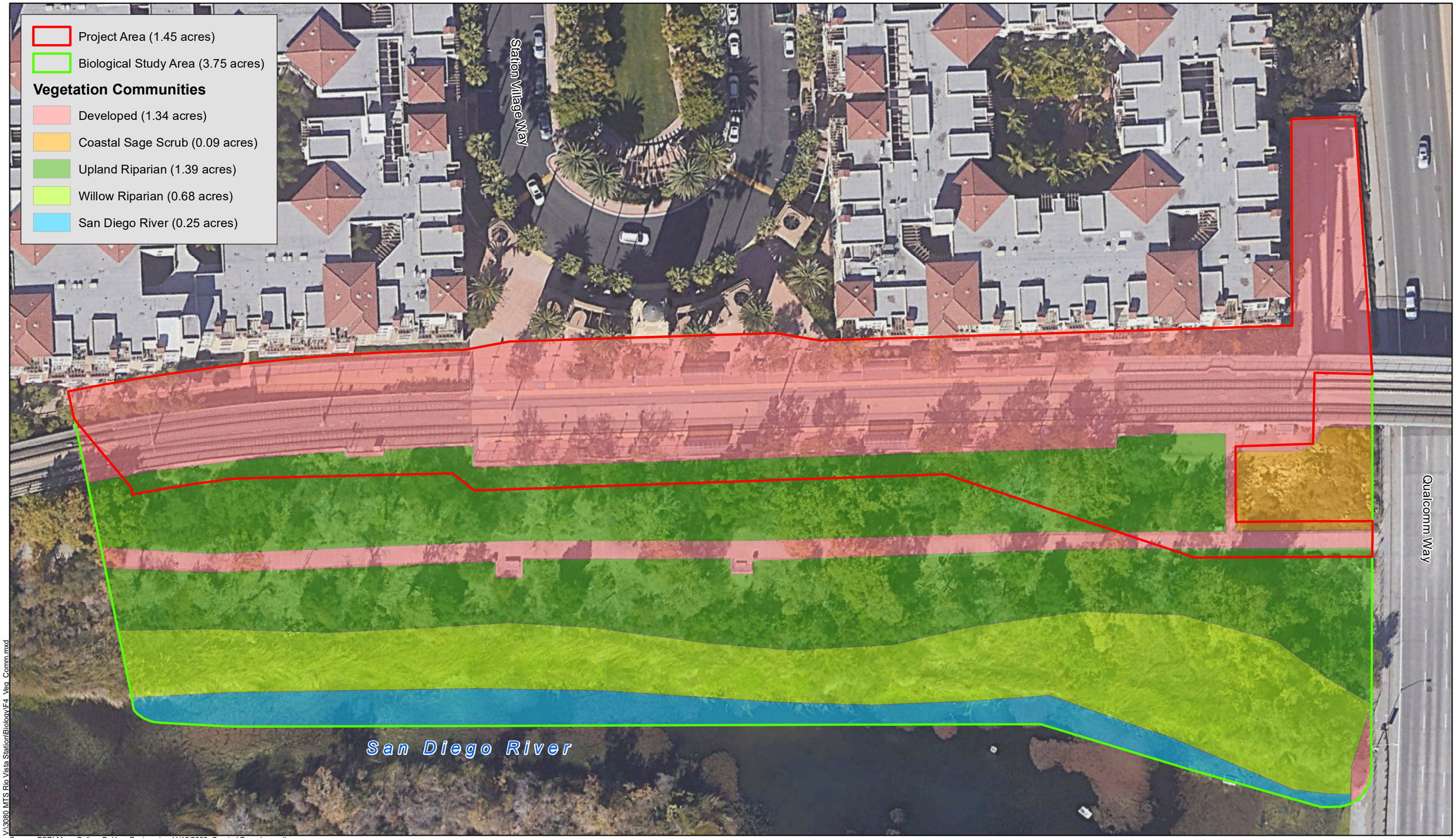

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Source: ESRI Maps Online; Dokken Engineering 11/15/2023; Created By: vchevreuil

1 inch = 50 feet

0 50 100 150 200 250 Feet

FIGURE 4
Vegetation Communities

Rio Vista Platform Design - Phase II
San Diego County, California

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San Diego River

The San Diego River originates in the Cuyamaca Mountains near the town of Julian, east of San Diego County. After passing through the El Capitan Reservoir, the river continues west through the cities of Santee and San Diego and eventually discharges into the Pacific Ocean near the entrance to Mission Bay, forming an estuary. Within the City limits, the San Diego River corridor provides contiguous aquatic and riparian habitat that may be suitable for a variety of special status plant and wildlife species. The BSA encompasses approximately 0.25 acres of the San Diego River (7% of the BSA).

Developed

Developed land within the BSA includes the existing MTS railway and station, as well as the Promenade Rio Vista Apartments located north of the proposed retrofit project. The San Diego River Parkway trail is a paved walkway that delineates the southern extent of the proposed Project area. No natural communities exist within this land cover type. Developed land comprises approximately 1.34 acres (36%) of the BSA.

Wildlife

Wildlife observed within the BSA consisted of locally common bird species such as the Anna's hummingbird (*Calypte anna*). No additional wildlife species were observed during the biological survey conducted on August 10, 2023.

Habitat Connectivity

The CDFW Biogeographic Information & Observation System (CDFW 2023a) was reviewed to determine if the BSA is located within an Essential Connectivity Area. The BSA is within an area of Terrestrial Connectivity Rank 4 – Conservation Planning Linkages. This ranking indicates that there are habitat connectivity linkages between core natural areas in the vicinity of the BSA. These linkages have more flexibility compared to irreplaceable and essential corridors. Although the Project is mapped within a conservation linkage area, the Project itself would not permanently impact natural habitats in a way that would impair terrestrial movement by wildlife; therefore, the Project would not impact habitat connectivity.

3.2 Regional Species and Habitats and Natural Communities of Concern

Plant and animal species have special status if they have been listed as such by federal or state agencies or by one or more special interest groups, such as CNPS. Prior to the field survey, literature searches were conducted using USFWS IPaC, CDFW CNDDB, CNPS, and NMFS databases to identify regionally sensitive species with potential to occur within the BSA. Table 2. Special Status Species with Potential to Occur in the Project Vicinity provides an updated list of regional special status species returned by the database searches, describes the habitat requirements for each species, and states if the species has potential to occur within the BSA.

There are 59 plant species and 42 wildlife species with the potential to occur within the Project vicinity returned by the database searches. Eight special status species have the potential to occur within the BSA, and are listed below:

- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Coastal California gnatcatcher (*Polioptila californica californica*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- Least bittern (*Ixobrychus exilis*)
- Yellow warbler (*Setophaga petechia*)
- Western red bat (*Lasiurus frantzii*)
- Western yellow bat (Lasiurus xanthinus)
- Two-striped gartersnake (*Thamnophis hammondii*)

Table 2. Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Amphibian Species						
Western spadefoot	*Spea hammondii*	Fed: State: CDFW:	-- -- SSC	Inhabits open areas with sandy or gravelly soils within mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Burrows underground for most of the year and is active above ground during rainfall. Requires vernal, shallow, temporary pools formed by heavy winter rains for reproduction. These pools must be free of bullfrogs, fish, and crayfish. Breeds from late winter to March.	A	**Presumed Absent:** There is a recent (2004) CNDDB occurrence of this species located 1.15 miles northeast of the Project. However, the BSA does not include any shallow, temporary pools that would be suitable for this species. Furthermore, the BSA does not encompass suitable open, sandy habitat. The species is presumed absent due to a lack of locally suitable habitat.
Bird Species						
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	Fed: State: CDFW:	-- E --	A southern California endemic, the species inhabits southern California coastal salt marshes year-round. It is a tidal-dependent species. Strongly associated with dense pickleweed vegetation, especially Pacific swampfire (*Salicornia virginica*). Most nests occur within the preferred pickleweed communities.	A	**Presumed Absent:** The BSA does not encompass coastal salt marsh habitat or dense pickleweed vegetation that would be suitable for this species. The species is presumed absent due to a lack of locally suitable habitat.
Burrowing owl	*Athene cunicularia*	Fed: State: CDFW:	-- -- SSC	The species inhabits arid, open areas with sparse vegetation cover such as deserts, abandoned agricultural areas, grasslands, and disturbed open habitats. Can be associated with open shrub stages of pinyon-juniper and ponderosa pine habitats. Nests in old small mammal burrows but may dig own burrow in soft soil. Nests are lined with excrement, pellets, debris, grass, and feathers. The species may use	A	**Presumed Absent:** The BSA does not encompass disturbed, shrubby, or open habitat that would be suitable for this species. In addition, no nests were observed during the biological survey conducted on August 10, 2023. The species is presumed absent due to a lack of locally suitable habitat.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				pipes, culverts, and nest boxes, and even buildings where burrows are scarce. Breeding occurs March through August (below 5,300 feet).		
California black rail	*Laterallus jamaicensis coturniculus*	Fed: State: CDFW:	-- T FP	A rare, yearlong California resident of brackish and freshwater emergent wetlands in delta and coastal locations including the San Francisco Bay area, Sacramento-San Joaquin Delta, Morro Bay, the Salton Sea, and lower Colorado River. More than 90% of the species are found in the tidal salt marshes of the northern San Francisco Bay region, predominantly in San Pablo and Suisun Bays. Smaller populations occur in the San Francisco Bay, the Outer Coast of Marin County, and freshwater marshes in the foothills of the Sierra Nevada. The species is extirpated from San Diego County and the majority of coastal southern California. Occurs in tidal emergent wetlands dominated by pickleweed, in brackish marshes dominated by bulrushes with pickleweed, and in freshwater wetlands dominated by bulrushes, cattails, and salt grass. Species prefers high wetland areas, away from areas experiencing fluctuating water levels. Requires vegetation providing adequate overhead cover for nesting. Eggs are laid from March through June.	A	**Presumed Absent:** The species has been extirpated from San Diego County and a majority of coastal southern California. In addition, the BSA does not encompass suitable emergent wetland habitat. The species is presumed absent due to a lack of locally suitable habitat as well as its pattern of occurrence.
California least tern	*Sternula antillarum browni*	Fed: State: CDFW:	E E FP	A Californian nesting migrant from April through September. Forages in near-shore ocean water and shallow estuaries and lagoons. Species nests in colonies on sandy soils with sparse	A	**Presumed Absent:** The BSA does not encompass any margins of oceans, lagoons, or bays that would be suitable for nesting individuals of this species.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				vegetation along the ocean, lagoons, and bays. Breeds beginning in April.		The species is presumed absent due to a lack of locally suitable habitat.
Coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	Fed: State: CDFW:	-- -- SSC	The species is found from northwestern Baja California, north through the coastal lowlands of San Diego County into Orange County. Inhabits coastal sage scrub communities. Species requires thickets of tall *Opuntia sp.* cacti (specifically prickly pear and coastal cholla) for nesting and roosting. Found in arid parts of westward-draining slopes. Breeds from March through June; frequently produces two broods per season (below 1,500 feet elevation).	A	**Presumed Absent:** The BSA does not encompass coastal sage scrub with thickets of prickly pear or coastal cholla cacti that would be suitable for this species.
Coastal California gnatcatcher	*Polioptila californica californica*	Fed: State: CDFW:	T -- SSC	Inhabits arid washes, mesas, and slopes of coastal hills dominated by dense, low-growing, drought-deciduous shrubs and subshrubs of coastal sage scrub. May also use chaparral, grassland, and riparian communities when adjacent to or intermixed with sage scrub vegetation. Breeds February through August (sea level-2,500 feet).	HP	**Low Potential:** The BSA encompasses a marginal patch of arid coastal sage scrub habitat. In addition, the San Diego River riparian corridor may provide marginally suitable habitat for this species. There are numerous local CNDDB occurrences in the vicinity of the BSA, including a 2003 occurrence located 0.42 miles northeast of the BSA. Due to the presence of marginally suitable habitat as well as the recent local occurrences, the species may have a low potential to occur within the BSA.
Least Bell's vireo	*Vireo bellii pusillus*	Fed: State: CDFW:	E E --	Summer resident of southern California inhabiting low elevation riparian habitats in the vicinity of water and dry river bottoms. Prefers willows, baccharis, mesquite and other low, dense vegetation as nesting site. Forages in dense brush and occasionally treetops. The species is known to occur in all four southern California national forests, with the	HP	**High Potential:** The BSA includes low elevation riparian habitat adjacent to the San Diego River. In addition, there are numerous recent CNDDB occurrences of this species within the San Diego River corridor, including a recent (2011) occurrence located directly upstream of the Project. Due to the presence of locally suitable habitat as well as the recent local occurrences, the species

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				largest population in the Los Padres National Forest (below 2,000 feet).		may have a high potential to occur within the BSA.
Least bittern	*Ixobrychus exilis*	Fed: State: CDFW:	-- -- SSC	Inhabits freshwater and brackish marshes with tall stands of cattails or other vegetation. Prefers places interspersed with patches of open water and small stands of woody vegetation. Usually nests about 6-30 inches above water that is 3-38 inches deep. Nests are rarely more than 10 yards from the edge of the reed bed.	HP	**High Potential:** The BSA encompasses a portion of the San Diego River and its associated emergent wetland vegetation, which may provide suitable nesting habitat for this species. In addition, there are numerous recent eBird occurrences of this species within approximately 2.5 miles of the BSA, including a recent (2016) occurrence confirmed with photo identification. Due to the presence of locally suitable nesting habitat as well as the recent local occurrences, the species may have a high potential to occur within the BSA.
Light-footed Ridgway's rail	*Rallus obsoletus levipes*	Fed: State: CDFW:	E E FP	Inhabits southern California coastal salt marshes, lagoons, and their maritime environments. Nests in the lower littoral zone of coastal salt marshes where dense strands of cordgrass are present. Requires shallow water and mudflats for foraging, with adjacent higher vegetation for cover.	A	**Presumed Absent:** The BSA does not encompass coastal salt marsh, lagoon, or adjacent maritime habitat. In addition, there is no suitable nesting or foraging habitat in the vicinity of the Project. The species is presumed absent due to a lack of locally suitable habitat.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Fed: State: CDFW:	E E --	Breeds in riparian habitats characterized by dense vegetation in proximity to open water or saturated soil. Species is associated with dense willow-covered islands and riparian habitats at elevations up to 8,000 feet. Often in proximity to rivers, swamps, lakes, reservoirs, and other wetlands. Historically, the species nested in native vegetation, but will also use thickets of non-native tamarisk and Russian olive. Breeds in April through August.	HP	**High Potential:** Within 10 miles of the BSA, there are numerous recent eBird occurrences of this species confirmed with photo identification. The BSA includes suitable dense riparian habitat adjacent to the San Diego River. In addition, the Project occurs within the anticipated range of this species. Due to the presence of locally suitable habitat, the species may have a high potential to occur within the BSA.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Tricolored blackbird	*Agelaius tricolor*	Fed: State: CDFW:	-- T SSC	Inhabits freshwater marsh, swamp, and wetland communities, but may utilize agricultural or upland habitats that can support large colonies, often in the Central Valley area. Requires dense nesting habitat that is protected from predators, is within 3-5 miles from a suitable foraging area containing insect prey and is within 0.3 miles of open water. Suitable foraging includes wetland, pastureland, rangeland, at dairy farms, and some irrigated croplands (silage, alfalfa, etc.). Nests in dense cattails, tules, willow, blackberry, wild rose, or tall herbs. Nests mid-March to early August but may extend until October or November in the Sacramento Valley region.	A	**Presumed Absent:** The BSA encompasses dense riparian vegetation that may provide suitable nesting habitat for this species. However, the BSA is surrounded by urban development and there is no suitable foraging habitat within approximately 4 miles of the BSA. Furthermore, there are no recent CNDDB occurrences within 9 miles of the BSA, and local eBird occurrences are either historic or remain unverified. Due to the lack of proximal foraging habitat as well as the recent pattern of occurrence of this species, the species is presumed absent from the BSA.
Western snowy plover	*Charadrius nivosus nivosus*	Fed: State: CDFW:	T -- SSC	Inhabits sandy or gravelly beaches along the coast, on estuarine salt ponds, and the shores of large alkali lakes. Species requires sandy, gravelly, or friable soil substrate for nesting. Nests are often in proximity to driftwood, rocks, or defoliated bushes. Breeding occurs above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, and salt pans. Breeds April to August.	A	**Presumed Absent:** The BSA does not encompass suitable coast, estuarine salt pond, or alkali lake habitat and does not include suitable substrate for the species. The species is presumed absent due to a lack locally suitable habitat.
Yellow warbler	*Setophaga petechia*	Fed: State: CDFW:	-- -- SSC	Breeds in several southern California mountain ranges and throughout most of San Diego County. Species prefers to nest in areas with trees and shrubs typical of low, open-canopy riparian woodland. Species has been known to breed in riparian woodlands from coastal and desert lowlands and	HP	**High Potential:** There are numerous recent eBird occurrences within the San Diego River corridor, including 2023 occurrences of the species directly south of the Project. In addition, the BSA encompasses riparian habitat suitable for nesting. Due to the presence of potentially suitable habitat as well as the

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				montane shrubbery in open conifer forests. Occurs up to 8,000 feet in the Sierra Nevada. Breeds April-August.		recent local occurrences, the species has a high potential to occur within the BSA.
Fish Species						
Steelhead – Southern California Distinct Population Segment	*Oncorhynchus mykiss irideus pop. 10*	Fed: State: CDFW:	E CE --	Southern California steelhead utilize rivers and creeks the Santa Maria River south to the U.S./Mexico border. Spawning occurs in coastal watersheds while rearing occurs in freshwater or estuary habitats prior to emigrating to the ocean in the winter and spring. Preferred spawning sites contain gravel substrate with sufficient water flow and riverine cover. Rearing habitat contains sufficient feeding with associated riparian forest containing willow and cottonwoods. Migration upstream for reproduction occurs from October to May with spawning occurring January to April.	A	**Presumed Absent:** The BSA does not encompass any jurisdictional water features that would provide suitable habitat for this species. Project activities will occur north of the San Diego River Parkway Trail, approximately 100 feet away from the San Diego River. The species is presumed absent due to the lack of necessary habitat features.
Invertebrate Species						
Crotch bumble bee	*Bombus crotchii*	Fed: State: CDFW:	-- CE --	This species is known to occur in central California, Nevada south to Baja California and into Mexico. Inhabits coastal areas, deserts, and the Central Valley. The species nests underground in grassland, shrubland and chaparral habitats. The species has a short tongue and primarily feeds on the following plants: *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia* and *Salvia*.	A	**Presumed Absent:** There is a recent (2019) CNDDB occurrence of this species within the San Diego River corridor, approximately 3 miles west of the Project. However, the BSA does not include grassland, shrubland, or chaparral habitat suitable for underground nesting. In addition, none of the typical plants used by this species were observed within the BSA during the biological survey conducted on August 10, 2023. The species is presumed absent due to the lack of locally suitable habitat.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Hermes copper butterfly	*Lycaena hermes*	Fed: State: CDFW:	T -- --	The species is dependent on its spiny redberry (*Rhamnus crocea*) host plant, common in cismontane California coastal sage scrub and chaparral vegetation communities. Restricted to redberry stands growing in deeper, well-drained soils of canyon bottoms and north-facing hillsides, with host and nectar plants intermixed or in close proximity. Eggs are laid on stems of the host plant. Ranges over 150 miles, from the vicinity of Fallbrook in northern San Diego County south to near Santo Tomás in Baja California, Mexico. Only 15 populations are known to remain in existence in the United States following the large San Diego County fires of 2003. Three other populations in Baja California are presumed extant, but their actual status is unknown.	A	**Presumed Absent:** Spiny redberry, the host plant for this species, was not observed within the BSA during the biological survey conducted on August 10, 2023. In addition, the BSA does not occur within a canyon bottom and does not occur within one of the 15 remaining populations of the species. Due to the lack of locally suitable habitat as well as the species' pattern of occurrence, the species is presumed absent from the BSA.
Monarch – California overwintering population	*Danaus plexippus plexippus pop. 1*	Fed: State: CDFW:	C -- --	Winter roosts along the coast from northern Mendocino to Baja California. Utilizes wind protected tree groves in proximity to nectar and water sources. Host plants include milkweed species such as *Asclepias syriaca*, *A. incarnara*, and *A. speciosa*. Suitable habitat includes fields, meadows, weedy areas, marshes, and roadsides. Mass adult migrations occur from August to October.	A	**Presumed Absent:** The BSA does not include field, meadow, marsh, or roadside habitat suitable for this species. In addition, none of the host plants used by this species were observed within the BSA during the biological survey conducted on August 10, 2023. The species is presumed absent due to a lack of locally suitable habitat.
Quino checkerspot butterfly	*Euphydryas editha quino*	Fed: State: CDFW:	E -- --	Historically inhabited coastal sage scrub habitat in southern California and northern Baja California historically. Current distribution is limited to southwestern Riverside and San Diego Counties. Larvae associated with *Plantago erecta* or *Castilleja exserta*	A	**Presumed Absent:** The BSA does not include sufficient coastal sage scrub habitat to support this species. Furthermore, none of the typical plants used by this species were observed within the BSA during the biological survey conducted on August 10, 2023.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				plants. Adult emerge in early to mid-spring.		The species is presumed absent due to a lack of locally suitable habitat.
Riverside fairy shrimp	*Streptocephalus woottoni*	Fed: State: CDFW:	E -- --	A Ventura, Los Angeles, Orange, Riverside, and San Diego County vernal pool endemic species. Inhabits deep ephemeral vernal pools greater than 12 inches within chaparral, coastal sage scrub, and grassland communities. Species requires pools filled with sufficient rainfall; emerges late in the season within warm waters.	A	**Presumed Absent:** The BSA does not encompass any vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.
San Diego fairy shrimp	*Branchinecta sandiegonensis*	Fed: State: CDFW:	E -- --	Restricted to vernal pools and other ephemeral (lasting a short time) basins in coastal Orange and San Diego Counties in southern California and in northwestern Baja California. A habitat specialist found in shallower pools that range in depth from 2 to 12 inches. Prefers vernal pool complexes, which typically include between 5 and 50 vernal pools. Vernal pools within a complex are generally hydrologically connected.	A	**Presumed Absent:** The BSA does not encompass any vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.
Mammal Species						
American badger	*Taxidea taxis*	Fed: State: CDFW:	-- -- SSC	Prefers treeless, dry, open stages of most shrub and herbaceous habitats with friable soils and a supply of rodent prey. Species also inhabits forest glades, meadows, marshes, brushy areas, hot deserts, and mountain meadows. Species maintains burrows within home ranges estimated between 338-1,700 acres, dependent on seasonal activity. Burrows are frequently re-used, but new burrows may be created nightly. Young are born in March and April within burrows dug in relatively dry, often sandy, soil, usually	A	**Presumed Absent:** This species requires large swaths of open land with friable soils and is sensitive to human activity. The BSA includes dense riparian habitat that is geographically isolated within a developed urban center; as such, the BSA does not provide suitable conditions for the burrowing or foraging of this species and the species is presumed absent.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				in areas with sparse overstory cover. Species is somewhat tolerant of human activity, but is sensitive to automobile mortality, trapping, and persistent poisons (up to 12,000 feet).		
Big free-tailed bat	*Nyctinomops macrotis*	Fed: State: CDFW:	-- -- SSC	The species is rare in California, but has been found in San Diego County, Alameda County, and other scattered southern California locations. Associated with arid communities, such as arroyo, shrub desert, woodland, and moist Chisos woodland. Prefers rugged, rocky canyons and roosts in buildings, caves, crevices of high cliffs or rock outcrops, and occasionally within tree holes. Often forages over water sources. Young born June through July, and the species is not believed to breed within California (0-8,000 feet).	A	**Presumed Absent:** There is a recent (2003) CNDDB occurrence of this species located within Mission Gorge, approximately 4.8 miles northeast of the Project. The BSA does not include suitable arid habitat and lacks cliffs and crevices for nesting. Due to the lack of locally suitable habitat, the species is presumed absent from the BSA.
Mexican long-tongued bat	*Choeronycteris mexicana*	Fed: State: CDFW:	-- -- SSC	A summer resident of San Diego County. Inhabits desert and montane riparian, desert succulent scrub, desert scrub and pinyon juniper communities. Species is primarily a nectar feeder and migrates to acquire flowering food sources, with a strong preference to agave and yucca. Day roosts in caves, mines, and buildings, particularly dimly lit sites. Births in June and early July, with lactation extending to August.	A	**Presumed Absent:** There are historic (1946) CNDDB occurrences of this species located approximately 2 miles west of the Project. The BSA may provide marginally suitable riparian habitat but does not include the flowering food sources preferred by this species. In addition, the BSA lacks suitable day roosting sites. Due to the absence of locally suitable habitat and with no recent local occurrences, the species is presumed absent from the BSA.
Pacific pocket mouse	*Perognathus longimembris pacificus*	Fed: State: CDFW:	E -- SSC	Inhabits sandy soils of coastal strand, coastal dunes, river alluvium, and coastal sage scrub habitats on marine terraces. Occurs within close proximity (usually 2.5 miles) to the Pacific Ocean. Species hibernates from November to	A	**Presumed Absent:** There are no recent occurrences of the species within 10 miles of the BSA. In addition, the BSA does not encompass sandy soils with open vegetation that this species is known to occupy. Due to the lack of

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				February and birth April to June (0-600 feet).		locally suitable habitat features and with no recent local occurrences, the species is presumed absent from the BSA.
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	Fed: State: CDFW:	-- -- SSC	Inhabits pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis communities. Prefers rocky desert areas with high cliffs or rock outcrops and frequently selects roosts in cliff rock crevices. Species must have an adequate drop from the roost to gain flight. Maternity sites are located in rock crevices, caverns, and buildings. Young are born June-July.	A	**Presumed Absent:** There is a historic (1946) CNDDB occurrence of this species located approximately 0.7 miles northwest of the Project. The BSA may provide marginally suitable riparian habitat; however, the BSA lacks high, rocky outcrops or cliffs that are used by this species. In addition, there are no suitable maternity sites in the vicinity of the Project. The species is presumed absent due to a lack of locally suitable roosting or foraging habitat.
San Diego desert woodrat	*Neotoma lepida intermedia*	Fed: State: CDFW:	-- -- SSC	The species inhabits coastal scrub of southern California, from San Diego County to San Luis Obispo County. Prefers moderate to dense canopies, rocky outcrops, rocky cliffs, and slopes. Inhabits most desert habitats, particularly Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, and sagebrush communities. The species is active yearlong and usually nocturnal. Breeds from October to May.	A	**Presumed Absent:** Local CNDDB occurrences of this species are limited to open, contiguous chaparral and coastal sage scrub habitat in the Mission Trails Open Space, approximately 6.5 miles northeast of the Project. The BSA does not encompass suitable rocky outcrops or desert habitats that are preferred by this species. Evidence of the species (e.g. scat, middens, chewed branches) was not observed during biological field surveys. Due to the lack of locally suitable habitat and with no recent local occurrences, the species is presumed absent from the BSA.
Spotted bat	*Euderma maculatum*	Fed: State: CDFW:	-- -- SSC	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Foraging habitat includes marshes, meadows, riparian zones, shrub-steppe, and open ponderosa pine forest. Prefers rock crevices in cliffs or caves for roosting. Species is solitary but may roost with	A	**Presumed Absent:** There is a historic (1955) CNDDB occurrence of this species located approximately 8.6 miles northwest of the Project. The BSA lacks suitable cliffs or rocky crevices that would be used by roosting individuals of this species. The species is presumed

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				other species. Mates in autumn and births before June (sea level-10,000 feet).		absent due to a lack of local roosting habitat.
Western mastiff bat	*Eumops perotis californicus*	Fed: State: CDFW:	-- -- SSC	Inhabits many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Prefers open, rugged, rocky areas where suitable crevices are available for day roosts. Roots in cliff face crevices (usually granite or consolidated sandstone), high buildings, trees, and tunnels. Roosting sites must have a minimum 10-foot vertical drop. Births early April through August or September (sea level-8,475 feet).	A	**Presumed Absent:** There is a historic (1995) CNDDB occurrence of this species located approximately 0.9 miles upstream (east) of the Project. The BSA lacks suitable cliffs or rocky crevices that would be used by roosting individuals of this species. The species is presumed absent due to a lack of local roosting habitat.
Western red bat	*Lasiurus frantzii*	Fed: State: CDFW:	-- -- SSC	The species is found around North America, ranging from southern Canada, through the western United States, down to Central America and to the northern part of South America. The species often relies on riparian trees for roosting and foraging, and has been associated with mature stands of cottonwood, sycamore, and willows adjacent to streams. They can often be seen feeding in rural and suburban areas, around streetlights and other light sources. Mating occurs August-September and delayed fertilization to the following year and births are May-July.	HP	**Low Potential:** There is a recent (2003) CNDDB occurrence of this species within the San Diego River corridor, approximately 5.7 miles northeast of the Project. The BSA includes dense riparian habitat with stands of cottonwood and willow that may be suitable for nesting. Due to the presence of locally suitable habitat, the species may have a low potential to occur within the BSA.
Western yellow bat	Lasiurus xanthinus	Fed: State: CDFW:	-- -- SSC	Species known in California only in Los Angeles and San Bernardino Counties south to the Mexican border. Inhabits valley foothill riparian, desert riparian, desert wash, and palm oasis habitats in proximity to water. Species utilizes	HP	**Low Potential:** There is a historic (1985) CNDDB occurrence of this species located approximately 2 miles south of the Project. The BSA includes dense riparian habitat that may be suitable for nesting. Due to the presence of locally

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				trees and palms for roosting and maternity colonies. Births in June and July (below 2,000 feet).		suitable habitat as well as the local historic occurrence, the species may have a low potential to occur within the BSA.
Reptile Species						
California glossy snake	*Arizona elegans occidentalis*	Fed: State: CDFW:	-- -- SSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers microhabitats of open areas and loose soils. A nocturnal species that hides underground in rocks and burrows during the day. The species can dig its own burrows or use existing ones. Lays from 3 to 23 eggs (more often 5 to 12) in June and July. Eggs hatch late summer and early fall. The species is found from below sea level to around 7,200 feet.	HP	**Low Potential:** There are historic occurrences of this species within the San Diego River corridor, including a historic (1942) CNDDB occurrence located approximately 0.9 miles downstream (west) of the Project. The BSA includes microhabitats of rocks and scrub that may be marginally suitable for this species. Due to the presence of marginally suitable habitat and with local historic occurrences, the species may have a low potential to occur within the BSA.
Coast horned lizard	*Phrynosoma blainvillii*	Fed: State: CDFW:	-- -- SSC	Inhabits valley-foothill hardwood, conifer forest, and riparian habitats, as well as pine-cypress, juniper woodland, and annual grasslands with sandy areas, washes, or flood plains. Frequently found near ant hills. Egg laying occurs from May to June, and some females may lay two clutches per year (sea level-8,000 feet).	HP	**Low Potential:** There is a historic (1980) CNDDB occurrence of this species located approximately 2.4 miles northeast of the Project. The BSA includes riparian habitat that may be suitable for this species. Due to the presence of potentially suitable habitat and with local historic occurrences, the species may have a low potential to occur within the BSA.
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	Fed: State: CDFW:	-- -- SSC	Inhabits semi-arid brushy or shrubby areas and chaparral in canyons, rocky hillsides, and plains. Species is an active forager and is susceptible to high levels of vehicle mortality. Requires small mammal burrows for refuge and overwintering sites. Egg laying probably occurs between May and August (below sea level-7,000 feet).	A	**Presumed Absent:** There is a recent (2004) CNDDB occurrence of this species located near Cowles Mountain, approximately 6.6 miles northeast of the Project. The BSA does not occur within a canyon, rocky hillside, or open plain. Due to the lack of locally suitable habitat and with no local occurrences, the species is presumed absent from the BSA.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Red-diamond rattlesnake	*Crotalus ruber*	Fed: State: CDFW:	-- -- SSC	Inhabits coastal chaparral, oak, and pine woodland, cultivated areas, and arid desert scrub communities. Requires rocky areas or areas of dense vegetation. Utilizes rodent burrows, cracks in rocks and surface cover objects for cover. Species is seasonally active, with the greatest activity occurring from March to June. Young are live-born from mid-August to October in quiet, safe locations (0-3,000 feet).	A	**Presumed Absent:** The BSA encompasses a narrow riparian corridor as well as developed land that would not be suitable for this species. In addition, local CNDDB occurrences of this species are limited to open, contiguous chaparral and coastal sage scrub habitat in the Mission Trails Open Space, approximately 6.5 miles northeast of the Project. Due to a lack of locally suitable habitat and with no local occurrences, the species is presumed absent from the BSA.
Southern California legless lizard	*Anniella stebbinsi*	Fed: State: CDFW:	-- -- SSC	Occurs in moist, warm, loose soil with plant cover. Moisture is essential. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. Often can be found under surface objects such as rocks, boards, driftwood, and logs. Can also be found by gently raking leaf litter under bushes and trees. Sometimes found in suburban gardens in Southern California.	HP	**Low Potential:** There are numerous historic CNDDB occurrences in the vicinity of the Project, as well as a recent (2016) occurrence located 2.8 miles southwest of the BSA. The BSA encompasses suitable stream terrace habitat that consists of a riparian corridor adjacent to the San Diego River; however, this area is densely vegetated and fairly dry. Due to the presence of marginally suitable habitat features as well as recent and historic local occurrences, the species may have a low potential to occur within the BSA.
Two-striped gartersnake	*Thamnophis hammondii*	Fed: State: CDFW:	-- -- SSC	Species is diurnal, highly aquatic, and inhabits locations in proximity to permanent or semi-permanent bodies of water bordered by dense vegetation. Can be found around pools, creeks, cattle tanks, and other water sources. Associated with oak woodland, chaparral, brushland, and coniferous	HP	**Low Potential:** There is a recent (2001) CNDDB occurrence of this species located approximately 4.1 miles southeast of the Project Area. The BSA encompasses a dense riparian corridor adjacent to the San Diego River and may provide suitable upland habitat for the

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				forest. Seasonally alters habitats: in summer, occupies streamside sites, and in winter, occupies nearby uplands. Thought to utilize holes, mammal burrows, crevices, and surface objects as night cover. Life young are born in late July and August, usually in secluded sites, such as under the loose bark of rotting logs or in dense vegetation near pond or stream margins (0-7,000 feet).		species. As such, there is a low potential for the species to occur within the BSA.
Plant Species						
Aphanisma	*Aphanisma blitoides*	Fed: State: CNPS:	-- -- 1B.2	An annual herb native to California and Baja California, inhabiting saline sandy or gravelly soils in coastal sage scrub, coastal dunes, and coastal bluff scrub communities. Blooms February-June (0-1,000 feet).	A	**Presumed Absent:** The BSA encompasses marginal patches of suitable coastal sage scrub habitat; however, the BSA does not include saline soils that is preferred by this species. Furthermore, recent Calflora occurrences of this species are strictly limited to along the coastline. The species is presumed absent due to a lack of locally suitable habitat features as well as its pattern of occurrence.
Beach goldenaster	*Heterotheca sessiliflora ssp. sessiliflora*	Fed: State: CNPS:	-- -- 1B.1	A perennial herb native to California, inhabiting coastal chaparral, dunes, and scrub. Flowers March-December (0-4,020 feet).	HP	**Presumed Absent:** The BSA encompasses marginal patches of coastal sage scrub habitat. However, there are no recent CNDDB occurrences within 10 miles of the BSA. In addition, no individuals of this species were observed during the biological survey conducted on August 10, 2023. As such, the species is presumed absent from the BSA.
Blochman's dudleya	*Dudleya blochmaniae ssp. blochmaniae*	Fed: State: CNPS:	-- -- 1B.1	A perennial herb inhabiting rocky, clay, or serpentine soils of coastal bluff scrub, valley and foothill grassland, chaparral, and coastal scrub	HP	**Presumed Absent:** The BSA does not include rocky, clay, or serpentinite soils. There are no recent CNDDB occurrences within 10 miles of the BSA. In addition, no individuals of this species

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				communities. Flowers April-June (15-1,475 feet).		were observed during the biological survey conducted on August 10, 2023. Due to the lack of locally suitable habitat and with no recent local occurrences, the species is presumed absent from the BSA.
Bottle liverwort	*Sphaerocarpos drewiae*	Fed: State: CNPS:	-- -- 1B.1	An ephemeral liverwort native to California, inhabiting openings in chaparral and coastal scrub habitats (300-2,000 feet).	A	**Presumed Absent:** There is a recent (2001) Calflora occurrence of this species located approximately 0.6 miles south of the BSA. The BSA encompasses marginal patches of coastal scrub habitat; however, these regions fall on a slope and do not retain the moisture required to support this species. The species is presumed absent due to a lack of locally suitable habitat.
Brand's star phacelia	*Phacelia stellaris*	Fed: State: CNPS:	-- -- 1B.1	An annual herb inhabiting open areas of coastal sage scrub, coastal dunes, and coastal scrub communities. Flowers March-June (0-1,300 feet).	A	**Presumed Absent:** There is a historic (1882) CNDDB occurrence of this species located approximately 2.5 miles downstream (west) of the BSA. The BSA encompasses marginal patches of coastal scrub habitat; however, these patches are marginal, highly disturbed, and are not likely to support this species. Furthermore, Calflora occurrences of this species are strictly limited to along the coastline. The species is presumed absent due to a lack of locally suitable habitat features as well as its pattern of occurrence.
California adolphia	*Adolphia californica*	Fed: State: CNPS:	-- -- 2B.1	A perennial shrub inhabiting clay soils in chaparral, valley grassland, foothill grassland, and coastal scrub communities. Flowers December-May (30-2,500 feet).	A	**Presumed Absent:** The BSA does not encompass suitable clay soils that would support this species. Furthermore, this species was not observed within the BSA during the biological survey conducted on August 10, 2023. The

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						species is presumed absent due to a lack of locally suitable habitat features.
California Orcutt grass	*Orcuttia californica*	Fed: State: CNPS:	E E 1B.1	An annual herb inhabiting vernal pool communities. Flowers April-August (50-2,200 feet).	A	**Presumed Absent:** The BSA does not encompass any vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.
Campbell's liverwort	*Geothallus tuberosus*	Fed: State: CNPS:	-- -- 1B.1	An ephemeral liverwort native to California, inhabiting mesic soils in coastal scrub and vernal pool habitats (30-2,000 feet).	A	**Presumed Absent:** This species requires mesic soils within coastal scrub and vernal pool habitats. The BSA has a marginal patch of coastal scrub habitat on a steep rocky slope that does not retain the moisture required to support this species. The species is presumed absent due to a lack of locally suitable habitat.
Chaparral ragwort	*Senecio aphanactis*	Fed: State: CNPS:	-- -- 2B.2	An annual herb native to California and Baja California, inhabiting alkaline soils in cismontane woodland, coastal scrub, and chaparral communities. Blooms January-May (50-2,600 feet).	A	**Presumed Absent:** The BSA does not consist of alkaline soils that would support this species. Furthermore, there are no recent occurrences of this species within 10 miles of the BSA. Due to the lack of locally suitable habitat and with no recent local occurrences, the species is presumed absent from the BSA.
Cliff spurge	*Euphorbia misera*	Fed: State: CNPS:	-- -- 2B.2	A perennial shrub inhabiting rocky soils of coastal bluffs, coastal bluff scrub, coastal scrub, and Mojavean desert scrub communities. Flowers January-August (30-1,640 feet).	A	**Presumed Absent:** The BSA does not occur along the coast or near cliffs, which is where this species is known to occur. The species is presumed absent due to its pattern of occurrence.
Coast woolly-heads	*Nemacaulis denudata var. denudata*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting coastal dunes and coastal beach communities. Flowers April-September (0-330 feet).	A	**Presumed Absent:** The BSA does not encompass suitable coastal dune or coastal beach habitat. The species is presumed absent due to a lack of necessary habitat features.
Coulter's goldfields	*Lasthenia glabrata ssp. coulteri*	Fed: State: CNPS:	-- -- 1B.1	An annual herb that inhabits playas, coastal salt marshes, swamps, and vernal pool communities. Flowers from February-June (0-4,000 feet).	A	**Presumed Absent:** The BSA does not encompass any playa, marsh, swamp, or vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Coulter's saltbush	*Atriplex coulteri*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb native to California and Baja California, inhabiting coastal dunes, coastal strand, valley grassland, coastal sage scrub, and occasionally wetland communities. Blooms March-October (0-1,640 feet).	HP	**Presumed Absent:** There is a recent (2012) CNDDB occurrence of this species located approximately 1.3 miles north of the BSA. The BSA encompasses marginal patches of coastal scrub habitat that may support this species; however, no individuals of this species were observed during the biological survey conducted on August 10, 2023. As such, the species is presumed absent from the BSA.
Decumbent goldenbush	*Isocoma menziesii var. decumbens*	Fed: State: CNPS:	-- -- 1B.2	A shrub native to California and Baja California, inhabiting disturbed habitats, coastal sage scrub, and wetland-riparian communities. Blooms April-November (0-650 feet).	HP	**Presumed Absent:** There is a recent (2011) Calflora occurrence of this species located approximately 0.2 miles upstream (east) of the BSA. In addition, the BSA encompasses disturbed riparian and coastal sage scrub habitats that may be suitable for this species; however, the species was not observed within the BSA during biological surveys which were conducted during the blooming period for the species. The species is presumed absent from the BSA.
Del Mar manzanita	*Arctostaphylos glandulosa ssp. crassifolia*	Fed: State: CNPS:	E -- 1B.1	A perennial evergreen shrub inhabiting maritime sandy chaparral communities. Flowers December-June (0-1,200 feet).	A	**Presumed Absent:** There are no recent CNDDB occurrences within 10 miles of the BSA. In addition, the BSA does not encompass sandy chaparral habitat. The species is presumed absent due to a lack of locally suitable habitat features.
Delicate clarkia	*Clarkia delicata*	Fed: State: CNPS:	-- -- 1B.2	An annual herb native to California and Baja California, inhabiting gabbroic soils in chaparral, cismontane woodland, and foothill woodland communities. Blooms April-June (770-3,330 feet).	A	**Presumed Absent:** The BSA does not encompass gabbroic soils suitable for this species. Furthermore, the Project falls below the elevation range of the species. Due to the lack of locally suitable habitat as well as the species' pattern of occurrence, the species is presumed absent from the BSA.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Estuary seablite	*Suaeda esteroa*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb native to California and Baja California, inhabiting coastal salt marsh and wetland-riparian communities. Blooms May-October (0-20 feet).	A	**Presumed Absent:** The BSA does not encompass suitable coastal salt marsh habitat that would serve to support this species. Furthermore, the Project falls outside of the elevation range of this species. The species is presumed absent due to a lack of locally suitable habitat.
Golden-spined cereus	*Bergerocactus emoryi*	Fed: State: CNPS:	-- -- 2B.2	A perennial stem succulent native to California and Baja California, inhabiting sandy soils in chaparral, coastal sage scrub, and closed-cone pine forest. Blooms May-June (10-1,300 feet).	A	**Presumed Absent:** The BSA does not encompass sandy soils suitable for this species. The species is presumed absent due to a lack of locally suitable habitat features.
Heart-leaved pitcher sage	*Lepechinia cardiophylla*	Fed: State: CNPS:	-- -- 1B.2	A shrub inhabiting chaparral, foothill woodlands and close-cone pine forest. Flowers April-July (2,000-3,940 feet).	A	**Presumed Absent:** The BSA does not encompass chaparral, foothill woodland, or close-cone pine forest habitat. Furthermore, the Project falls below the elevation range of the species. Due to the lack of locally suitable habitat as well as the species' pattern of occurrence, the species is presumed absent from the BSA.
Lewis' evening-primrose	*Camissoniopsis lewisii*	Fed: State: CNPS:	-- -- 3	An annual herb inhabiting sandy or clay soils of coastal grassland, coastal bluff scrub, cismontane woodland, coastal dunes, valley and foothill grassland, and coastal scrub communities. Flowers March- June (0-990 feet).	A	**Presumed Absent:** The BSA does not encompass sandy or clay soils that would support this species. The species is presumed absent due to a lack of locally suitable habitat features.
Light gray lichen	*Mobergia calculiformis*	Fed: State: CNPS:	-- -- 3	A crustose lichen native to California, inhabiting rocks in coastal scrub habitat.	A	**Presumed Absent:** There are no recent CNDDB occurrences within 10 miles of the BSA. Furthermore, the BSA does not encompass suitable rocky coastal scrub habitat. The species is presumed absent due to a lack of locally suitable habitat features.
Little mousetail	*Myosurus minimus ssp. apus*	Fed: State:	-- --	An annual herb inhabiting alkaline soils in valley and foothill grassland vernal	A	**Presumed Absent:** The BSA does not encompass any vernal pool habitat. The

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
		CNPS:	3.1	pool communities. Flowers March-June (65-2,100 feet).		species is presumed absent due to a lack of necessary habitat features.
Long-spined spineflower	*Chorizanthe polygonoides var. longispina*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting meadows within chaparral, valley grasslands, and coastal sage scrub habitats. Flowers April-July (100-4,920 feet).	A	**Presumed Absent:** The BSA does not encompass any meadow habitat. The species is presumed absent due to a lack of locally suitable habitat features.
Mission Canyon bluecup	*Githopsis diffusa ssp. filicaulis*	Fed: State: CNPS:	-- -- 3.1	An annual herb native to California and Baja California, inhabiting disturbed areas in chaparral and wetlands. Blooms April-June (1,500-2,300 feet).	A	**Presumed Absent:** The Project falls below the elevation range of the species. Due to the species' pattern of occurrence, the species is presumed absent from the BSA.
Munz's sage	*Salvia munzii*	Fed: State: CNPS:	-- -- 2B.2	A shrub native to California and Baja California, inhabiting chaparral, and coastal sage scrub communities. Flowers February-April (380-3,500 feet).	A	**Presumed Absent:** There is a recent (2012) Calflora occurrence of this species located approximately 2 miles northeast of the Project. The BSA encompasses marginal patches of suitable coastal sage scrub habitat and is comprised of gravelly soils. However, no individuals of this species were observed during the biological survey conducted on August 10, 2023. As such, the species is presumed absent from the BSA.
Nuttall's acmispon	*Acmispon prostratus*	Fed: State: CNPS:	-- -- 1B.1	An annual herb native to California and Baja California, inhabiting dunes in coastal strand and coastal sage scrub communities. Blooms March-June (0-30 feet).	A	**Presumed Absent:** The BSA does not encompass dune habitat that this species is known to occupy. Furthermore, Calflora occurrences of this species are strictly limited to along the coastline. The species is presumed absent due to a lack of locally suitable habitat features as well as its pattern of occurrence.
Nuttall's scrub oak	*Quercus dumosa*	Fed: State: CNPS:	-- -- 1B.1	A perennial tree inhabiting sandy or clay loam soils within closed cone coniferous forest, chaparral, and coastal sage scrub communities. Flowers February- August (50-1,300 feet).	A	**Presumed Absent:** The BSA does not encompass any clay or sandy soils or the vegetation communities suitable for this species. The species is presumed absent due to a lack of necessary habitat features.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Oil neststraw	*Stylocline citroleum*	Fed: State: CNPS:	-- -- 1B.1	An annual herb inhabiting clay or open, stable, often crusted sand soils of chenopod scrub, coastal scrub, and valley and foothill grassland communities. Flowers March-April (160-1,300 feet).	A	**Presumed Absent:** The BSA does not encompass any clay or sandy soils suitable for this species. The species is presumed absent due to a lack of necessary habitat features.
Orcutt's brodiaea	*Brodiaea orcuttii*	Fed: State: CNPS:	-- -- 1B.1	A perennial herb native to California and Baja California, inhabiting meadows and vernal pools and associated with creosote bush scrub and wetland-riparian communities. Blooms May-July (0-5,300 feet).	A	**Presumed Absent:** The BSA does not encompass any meadow or vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.
Orcutt's pincushion	*Chaenactis glabriuscula var. orcuttiana*	Fed: State: CNPS:	-- -- 1B.1	An annual herb inhabiting coastal dunes and sandy coastal bluff scrub communities. Flowers January-August (0-330 feet).	A	**Presumed Absent:** The BSA does not encompass coastal dunes or sandy coastal bluff scrub habitat. The species is presumed absent due to a lack of locally suitable habitat features.
Orcutt's spineflower	*Chorizanthe orcuttiana*	Fed: State: CNPS:	E E 1B.1	An annual herb endemic to California, inhabiting openings in chaparral, coastal sage scrub, and closed-cone pine forest communities. Flowers March-May (200-650 feet).	A	**Presumed Absent:** There are no known occurrences of this species throughout the San Diego River corridor. In addition, the Project falls below the elevation range for this species. Marginal patches of coastal sage scrub are interspersed within the riparian corridor encompassed by the BSA; however, these patches are marginal, highly disturbed, and are not likely to support this species. The species is presumed absent due to a lack of locally suitable habitat features.
Otay Mesa mint	*Pogogyne nudiuscula*	Fed: State: CNPS:	E E 1B.1	An annual herb native to California and Baja California, inhabiting vernal pools in chaparral, coastal sage scrub, freshwater wetlands, and wetland-riparian habitats. Flowers May-July (300-820 feet).	A	**Presumed Absent:** The BSA does not encompass any vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.
Otay Mountain ceanothus	*Ceanothus otayensis*	Fed: State: CNPS:	-- -- 1B.2	A perennial evergreen shrub native to California, inhabiting metavolcanic or gabbroic soils in chaparral	A	**Presumed Absent:** The BSA does not encompass metavolcanic or gabbroic soils. In addition, the Project falls below

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				communities. Blooms January-April (2,000-3,600 feet).		the elevation range of the species. Due to the lack of locally suitable habitat as well as the species' pattern of occurrence, the species is presumed absent from the BSA.
Palmer's goldenbush	*Ericameria palmeri var. palmeri*	Fed: State: CNPS:	-- -- 1B.1	A shrub native to California and Baja California, inhabiting mesic soils in chaparral and coastal sage scrub communities. Flowers September-November (0-2,000 feet).	A	**Presumed Absent:** There is a historic (1883) Calflora occurrence of this species located 0.6 miles upstream (east) of the Project. The BSA encompasses marginal patches of sage scrub habitat that may be suitable for this species; however, no individuals of this species were observed during the biological survey conducted on August 10, 2023. As such, the species is presumed absent from the BSA.
Prostrate vernal pool navarretia	*Navarretia prostrata*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting vernal pool, coastal scrub, meadows and seeps, and alkaline valley and foothill grassland communities. Flowers April-July (50-2,300 feet).	A	**Presumed Absent:** The BSA does not encompass any vernal pool, meadow, seep, or alkaline valley/foothill grassland habitat. The species is presumed absent due to a lack of necessary habitat features.
Purple stemodia	*Stemodia durantifolia*	Fed: State: CNPS:	-- -- 2B.1	A small perennial herb found on wet sand or rocks within riparian habitats in the foothills surrounding Palm Springs and San Diego. Blooms year round (0-1,300 feet).	A	**Presumed Absent:** The BSA does not encompass wet sand that this species typically occupies. In addition, no individuals of this species were observed during the biological survey conducted on August 10, 2023. As such, the species is presumed absent from the BSA.
Salt marsh bird's-beak	*Chloropyron maritimum ssp. maritimum*	Fed: State: CNPS:	E E 1B.2	An annual herb inhabiting coastal dunes, marshes, and swamp communities. Flowers March-May (0-100 feet).	A	**Presumed Absent:** The BSA does not encompass any coastal dune, marsh, or swamp habitat. The species is presumed absent due to a lack of necessary habitat features.
Salt spring checkerbloom	*Sidalcea neomexicana*	Fed: State: CNPS:	-- -- 2B.2	A perennial herb inhabiting alkaline, mesic soils within alkaline springs, marshes, chaparral, coastal scrub,	A	**Presumed Absent:** The BSA does not encompass suitable alkaline soils that this species is known to occupy. The

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				lower montane coniferous forest, Mojavean desert scrub, and playas. Blooms March-June (50-5,020 feet).		species is presumed absent due to a lack of necessary habitat features.
San Diego ambrosia	*Ambrosia pumila*	Fed: State: CNPS:	E -- 1B.1	A perennial rhizomatous herb inhabiting sandy loams, clay, and occasionally alkaline soils within chaparral, coastal scrub, valley and foothill grassland, and vernal pool communities. Flowers April-October (65-1,360 feet).	A	**Presumed Absent:** There is a historic (1897) Calflora occurrence of this species located approximately 0.6 miles upstream (east) of the BSA. The BSA does not encompass sandy loam, clay, or alkaline soils that may support this species. Furthermore, no individuals of this species were observed during the biological survey conducted on August 10, 2023. As such, the species is presumed absent from the BSA. Due to the lack of locally suitable habitat and with no recent local occurrences, the species is presumed absent from the BSA.
San Diego barrel cactus	*Ferocactus viridescens*	Fed: State: CNPS:	-- -- 2B.1	A shrub (stem succulent) native to California and Baja California, inhabiting sandy to rocky areas and vernal pools in chaparral, valley grassland, coastal sage scrub, and freshwater wetland communities. Flowers May-June (30-500 feet).	A	**Presumed Absent:** The BSA does not encompass any vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.
San Diego button-celery	*Eryngium aristulatum var. parishii*	Fed: State: CNPS:	E E 1B.1	An annual or perennial herb inhabiting vernal pools and marshes, or mesically in coastal scrub, and valley and foothill grassland communities. Flowers April-June (65-2,030 feet).	A	**Presumed Absent:** The BSA does not encompass any vernal pool or marsh habitat. The species is presumed absent due to a lack of necessary habitat features.
San Diego goldenstar	*Bloomeria clevelandii*	Fed: State: CNPS:	-- -- 1B.1	A perennial herb native to California, inhabiting vernal pools in coastal sage scrub, chaparral, valley grassland, and freshwater wetlands. Flowers April-May (0-330 feet).	A	**Presumed Absent:** The BSA does not encompass any vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.
San Diego gumplant	*Grindelia hallii*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb endemic to California, inhabiting meadows in chaparral, valley grassland, foothill grassland, and	A	**Presumed Absent:** The Project falls below the elevation range of the species and occurrences of this species are

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				yellow pine forest communities. Flowers July-October (600-5,700 feet).		concentrated in the foothills of the Cuyamaca Rancho State Park, 30 miles east of the BSA. Due to the species' pattern of occurrence, the species is presumed absent from the BSA.
San Diego marsh-elder	*Iva hayesiana*	Fed: State: CNPS:	-- -- 2B.2	A perennial herb native to California and Baja California, inhabiting depressions and streambanks in alkali sink and wetland-riparian communities. Flowers April-October (0-3,000 feet).	A	**Presumed Absent:** The BSA does not encompass any alkali streambanks or local depressions that could host this species. In addition, no individuals of this species were observed during the biological survey conducted on August 10, 2023. The species is presumed absent due to a lack of locally suitable habitat features.
San Diego mesa-mint	*Pogogyne abramsii*	Fed: State: CNPS:	E E 1B.1	An annual herb endemic to California, inhabiting vernal pools in chaparral, coastal sage scrub, freshwater wetland, and wetland-riparian communities. Flowers March-July (300-660 feet).	A	**Presumed Absent:** The BSA does not encompass any vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.
San Diego sand aster	*Corethrogyne filaginifolia var. incana*	Fed: State: CNPS:	-- -- 1B.1	A perennial herb native to California and Baja California, inhabiting coastal sage scrub, coastal bluff scrub, and chaparral communities. Flowers June-September (10-380 feet).	A	**Presumed Absent:** The BSA encompasses marginal patches of coastal sage scrub habitat. However, documented occurrences of this species are limited to directly along the coastline. In addition, no individuals of this species were observed during the biological survey conducted on August 10, 2023. As such, the species is presumed absent from the BSA.
San Diego thornmint	*Acanthomintha ilicifolia*	Fed: State: CNPS:	T E 1B.1	An annual herb inhabiting vernal pools, and clay soils and openings within chaparral, valley and foothill grassland, and coastal-sage scrub communities. Flowers April-June (30-3,150 feet).	A	**Presumed Absent:** The BSA does not encompass any vernal pool habitat. The species is presumed absent due to a lack of necessary habitat features.
Sand-loving wallflower	*Erysimum ammophilum*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb inhabiting sandy openings of maritime chaparral, coastal dunes, and coastal scrub communities. Flowers February-June (0-200 feet).	A	**Presumed Absent:** The BSA does not include sandy soils that would support this species. The species is presumed

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						absent due to a lack of necessary habitat features.
Sea dahlia	*Leptosyne maritima*	Fed: State: CNPS:	-- -- 2B.2	A perennial herb inhabiting coastal bluff scrub and coastal scrub communities. Flowers March-May (15-500 feet).	A	**Presumed Absent:** The BSA encompasses marginal patches of coastal sage scrub habitat. However, no individuals of this species were observed during the biological survey conducted on August 10, 2023. As such, the species is presumed absent from the BSA.
Short-leaved dudleya	*Dudleya brevifolia*	Fed: State: CNPS:	-- E 1B.1	A perennial herb endemic to California, inhabiting bare sandstone terraces and openings in chaparral and coastal sage scrub communities. Flowers April-May (0-820 feet).	A	**Presumed Absent:** The BSA does not encompass bare sandstone terraces that would support this species. The species is presumed absent due to a lack of locally suitable habitat.
Singlewhorl burrobrush	*Ambrosia monogyra*	Fed: State: CNPS:	-- -- 2B.2	A perennial shrub inhabiting sandy soils within chaparral and Sonoran desert scrub communities. Blooms August-November (30-1,640 feet).	A	**Presumed Absent:** The BSA does not occur within the Sonoran Desert and does not encompass sandy soils or chaparral habitat. The species is presumed absent due to a lack of locally suitable habitat.
South coast saltscale	*Atriplex pacifica*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting coastal bluff scrub, coastal dunes, coastal scrub, and playa communities. Flowers March-October (0-460 feet).	A	**Presumed Absent:** Marginal patches of coastal sage scrub are interspersed within the riparian corridor encompassed by the BSA; however, these patches are marginal, highly disturbed, and are not likely to support this species. Furthermore, this species is known to occur in playas and along the coast, which does not include the BSA. The species is presumed absent due to a lack of locally suitable habitat.
Spreading navarretia	*Navarretia fossalis*	Fed: State: CNPS:	T -- 1B.1	An annual herb inhabiting vernal pools, chenopod scrub, playas, and shallow freshwater marsh and swamp communities. Flowers April-June (100-4,300 feet).	A	**Presumed Absent:** The nearest recent (2011) CNDDB occurrence of this species is located approximately 4.7 miles north of the BSA. The BSA does not encompass vernal pool, chenopod scrub, playa, marsh, or swamp habitat;

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						as such, the species is presumed absent due to a lack of locally suitable habitat.
Sticky dudleya	*Dudleya viscida*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb inhabiting rocky soils on bluffs and cliffs within coastal bluff scrub, chaparral, cismontane woodland, and coastal scrub communities. Flowers May-June (30-1,800 feet).	A	**Presumed Absent:** There are no recent CNDDB occurrences of this species within 10 miles of the BSA. Furthermore, the BSA does not encompass rocky soils, cliffs, or bluffs that this species is known to occupy. Due to the lack of locally suitable habitat and with no local occurrences, the species is presumed absent from the BSA.
Summer holly	*Comarostaphylis diversifolia ssp. diversifolia*	Fed: State: CNPS:	-- -- 1B.2	A perennial evergreen shrub inhabiting coastal chaparral communities. Flowers April-June (100-2,600 feet).	A	**Presumed Absent:** There is a recent (2006) CNDDB occurrence located approximately 2.25 miles east of the BSA. The BSA does not encompass coastal chaparral habitat that this species is known to occupy. Furthermore, this species was not observed within the BSA during the biological survey conducted on August 10, 2023. The species is presumed absent from the BSA.
Variegated dudleya	*Dudleya variegata*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb native to California and Baja California, inhabiting clay soils and vernal pools in freshwater wetland, chaparral, valley grassland, foothill woodland, and coastal sage scrub habitats. Flowers April-June (10-1,900 feet).	A	**Presumed Absent:** The BSA does not encompass clay soils or vernal pool habitat. The species is presumed absent due to a lack of locally suitable habitat.
Wart-stemmed ceanothus	*Ceanothus verrucosus*	Fed: State: CNPS:	-- -- 2B.2	A perennial evergreen shrub inhabiting rocky slopes in chaparral communities. Flowers December-May (0-1,200 feet).	A	**Presumed Absent:** There is a historic (1932) Calflora occurrence of this species located 0.5 miles upstream (east) of the BSA. The BSA does not encompass any rocky slopes within a chaparral habitat community, which this species is known to occupy. Furthermore, this species was not observed within the BSA during the

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						biological survey conducted on August 10, 2023. The species is presumed absent due to a lack of locally suitable habitat.
Willowy monardella	*Monardella viminea*	Fed: State: CNPS:	E E 1B.1	A perennial herb native to California, inhabiting alluvial ephemeral washes in chaparral, coastal scrub, riparian forest, riparian scrub, and riparian woodland habitats. Blooms June-August (160-740 feet).	A	**Presumed Absent:** There are numerous recent CNDDB occurrences of this species in the drainages approximately 5 miles north of the BSA. However, the BSA does not encompass alluvial ephemeral wash habitat that this species occupies. In addition, this species was not observed within the BSA during the biological survey conducted on August 10, 2023. Due to the lack of locally suitable habitat, the species is presumed absent from the BSA.
Woven-spored lichen	*Texosporium sancti-jacobi*	Fed: State: CNPS:	-- -- 3	A crustose lichen native to California, inhabiting basalt, granite, and mixed non-calcareous alluvium substrates in chaparral openings, arid to semi-arid grasslands, shrublands, and savannas. The species is associated with *Poa sandbergii*, *Agropyron spicatum*, *Sitanion hystrix*, and *Stipa sp*. in northern California, and *Adenostoma fasciculatum*, *Festuca octoflora*, *Bromus rubens*, *Eriogonum fasciculatum*, and *Pinus sabiniana* in southern California (200-2,200 feet).	A	**Presumed Absent:** The BSA does not include basalt, granite, or alluvium substrate that this species is known to occupy. In addition, none of the associated species were observed within the BSA during the biological survey conducted on August 10, 2023. The species is presumed absent due to a lack of locally suitable habitat features.

Federal Designations (Fed): (FESA, USFWS) **E:** Federally listed, endangered **T:** Federally listed, threatened **DL**: Federally listed, delisted	**State Designations (CA):** (CESA, CDFW) **E:** State-listed, endangered **T:** State-listed, threatened
Other Designations CDFW_SSC: CDFW Species of Special Concern CDFW_FP: CDFW Fully Protected **California Native Plant Society (CNPS) Designations*:*** ***Note: according to CNPS (Skinner and Pavlik 1994), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. This interpretation is inconsistent with other definitions.*** **1A:** Plants presumed extinct in California. **1B:** Plants rare and endangered in California and throughout their range. **2:** Plants rare, threatened, or endangered in California but more common elsewhere in their range. **3:** Plants about which need more information; a review list. **Plants 1B, 2, and 4 extension meanings:** **_.1 Seriously** endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat) **_.2 Fairly** endangered in California (20-80% occurrences threatened) **_.3** Not very endangered in California (<20% of occurrences threatened or no current threats known)	
Habitat Potential Absent [A] – No habitat present and no further work needed. Habitat Present [HP] – Habitat is or may be present. The species may be present. Critical Habitat [CH] – Project is within designated Critical Habitat.	
Potential for Occurrence Criteria: **Present**: Species was observed on site during a site visit or focused survey. **High**: Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within 5 miles of the site. **Low**: Low quality habitat (may include soils and elevation factors) for the species occurs on site and a known occurrence exists within 5 miles of the site **Moderate**: Suitable habitat strongly associated with the species occurs on site, but no records were found within the database search. **Presumed Absent**: Focused surveys were conducted, and the species was not found, or species was found within the database search but habitat (including soils and elevation factors) do not exist on site, or the known geographic range of the species does not include the survey area.	
Source: (CDFW 2023b), (CNPS 2023), (Calflora 2023), (Jepson 2023), (USFWS 2023).	

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4. Results: Biological Resources, Discussion of Impacts, and Mitigation

4.1 Habitats and Natural Communities of Special Concern

Habitats are considered to be of special concern based on federal, state, or local laws regulating their development; limited distributions; and/or the habitat requirements of special status plants or animals occurring on site. Within the BSA, the willow riparian habitat and upland riparian habitat associated with the San Diego River have been identified as natural communities of special concern by CDFW. In addition, the coastal sage scrub habitat located directly east of the Project limits may provide suitable habitat for a variety of special status wildlife species. Table 3. Impacts to Sensitive Natural Habitats and Figure 5. Project Impacts outline the impacts to sensitive habitat communities within the BSA. Project impacts and the associated avoidance, minimization, and mitigation measures for the riparian corridor and coastal sage scrub habitat are discussed in their respective sections below.

Table 3. Impacts to Sensitive Natural Habitats

Impact Type (acres)	Sensitive Natural Habitat		
	Upland Riparian	Willow Riparian	Coastal Sage Scrub
Temporary	0.27 acres	0 acres	0 acres
Permanent	0 acres	0 acres	0 acres
Total	**0.27 acres**	**0 acres**	**0 acres**

4.1.1 Discussion of Upland Riparian

Riparian habitat is considered a natural community of special concern through CDFW. Riparian communities are associated with floodplains and occur as a transitional habitat between wetted areas and upland habitat types. Upland riparian habitat communities include mature woodland canopies of cottonwoods, sycamores, and oaks with an understory dominated by chaparral species such as buckwheat, sumac, and ceanothus species. Upland riparian habitat is of ecological importance as it provides food, water, and shelter for wildlife, including a variety of sensitive species (CDFW 1988).

Survey Results for Upland Riparian

Within the BSA, upland riparian habitat occurs as a linear feature directly south of the MTS Rio Vista station and along the margins of the San Diego River Parkway Trail. This habitat community is largely comprised of coast live oak and Fremont cottonwood trees with an understory of chaparral species such as lemonade berry, California buckwheat, laurel sumac, and toyon. Upland riparian habitat comprises approximately 1.39 acres of the BSA.

Project Impacts to Upland Riparian

Approximately 0.27 acres of upland riparian habitat will be temporarily impacted during construction to allow for construction access to the proposed work area. Riparian vegetation directly south of the Rio Vista Station platform will be removed and a temporary access road will be graded from the San Diego River Parkway to allow construction access to the platform. Following the conclusion of the Project, temporary impacts to upland riparian habitat will be restored to pre-construction conditions in accordance with the FSDRIP. No permanent impacts to upland riparian habitat will result from the proposed platform improvements.

Avoidance and Minimization Efforts for Upland Riparian

The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). In addition, the implementation of avoidance and minimization measures BIO-1 through BIO-6 will reduce impacts to the riparian corridor.

BIO-1: Every individual working on the Project must attend a biological awareness training session delivered by a biologist. This training program shall include information regarding the sensitive habitats and special status species occurring or potentially occurring within the Project area, and the importance of avoiding impacts to these species and their habitat.

BIO-2: Prior to the start of construction activities, the Project limits within the San Diego River Parkway will be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking in accordance with the FSDRIP to ensure construction will not further encroach into sensitive resources.

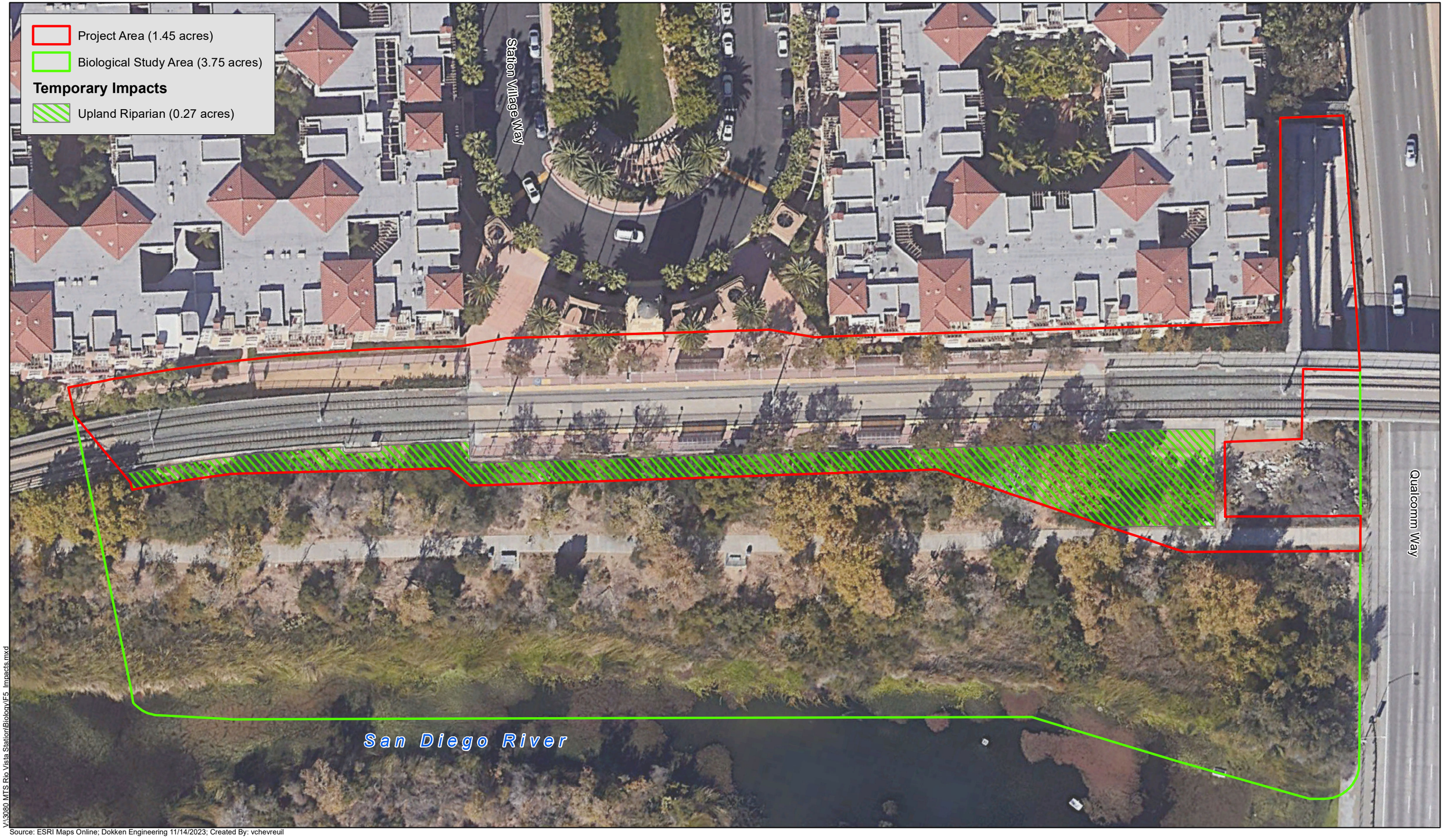
BIO-3: Best Management Practices (BMPs) will be incorporated into Project design and Project management to minimize impacts on the environment including erosion and the release of pollutants (e.g., oils, fuels):

- Exposed soils and material stockpiles would be stabilized, through watering or other measures, to prevent the movement of dust at the Project site caused by wind and construction activities such as traffic and grading activities;
- All vehicle and equipment fueling/maintenance would be conducted outside of any surface waters;
- Equipment used in and around jurisdictional waters must be in good working order and free of dripping or leaking contaminants;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering jurisdictional waters;
- All erosion control measures, and storm water control measures would be properly maintained until the site has returned to a pre-construction state;
- All construction materials would be hauled off-site after completion of construction.

BIO-4: Vegetation removal will be avoided to the greatest extent practicable. Where feasible, trees and shrubs will be trimmed rather than removed.

BIO-5: Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must remain outside of sensitive habitat marked with high-visibility fencing. Any necessary equipment washing must occur where the water cannot flow into sensitive habitat communities.

BIO-6: A chemical spill kit must be kept onsite and available for use in the event of a spill.



V:\3080 MTS Rio Vista Station\Biology\F5_Impacts.mxd

Source: ESRI Maps Online; Dokken Engineering 11/14/2023; Created By: vchevreuil

1 inch = 50 feet

0 50 100 150 200 250 Feet

FIGURE 5
Project Impacts

Rio Vista Platform Design - Phase II
San Diego County, California

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Compensatory Mitigation for Upland Riparian

No permanent impacts to upland riparian habitat are anticipated. Temporary impacts will be returned to pre-construction conditions following the completion of construction activities and revegetated in accordance with avoidance and minimization measure BIO-7:

BIO-7: MTS will develop a post-construction revegetation and monitoring plan to restore the Project's temporary impacts to riparian vegetation. Revegetation of the temporarily impacted Project areas will be conducted in accordance with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP. The revegetation plan, monitoring period, and associated success criteria will be determined in coordination with CDFW during the permitting phase of the Project.

4.1.2 Discussion of Willow Riparian

Similar to upland riparian habitat, willow riparian habitat is a transitional habitat feature that is considered a natural community of special concern through CDFW. This vegetation community is distinctly dominated by willows, but also includes other plant species typical to riparian corridors such as cottonwoods, sycamores, coyote brush, and oaks. Willow riparian habitat is of ecological importance as it provides food, water, and shelter for wildlife, including a variety of sensitive species (CDFW 1988).

Survey Results for Willow Riparian

Within the BSA, willow riparian habitat occurs as a linear feature between the San Diego River Parkway Trail and the river itself. This habitat community is dominated by Goodding's willow but is also composed of coast live oak and Fremont cottonwood trees with an understory of coyote brush, California grape, and a variety of other typical riparian species. Willow riparian habitat comprises approximately 0.68 acres of the BSA.

Project Impacts to Willow Riparian

With the implementation of avoidance and minimization measures BIO-1 through BIO-6, Project activities will be excluded from willow riparian habitat and no impacts to willow riparian habitat will result from this project.

Avoidance and Minimization Efforts for Willow Riparian

The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). With the implementation of avoidance and minimization measures BIO-1 through BIO-6, no impacts to willow riparian habitat will result from this project.

Compensatory Mitigation for Willow Riparian

No temporary or permanent impacts to willow riparian habitat are anticipated to result from the Project. No compensatory mitigation for willow riparian habitat is proposed.

4.1.3 Discussion of Coastal Sage Scrub

Coastal sage scrub is predominantly comprised of low to moderate-sized shrubs that provide a dense canopy of cover where it occurs. This habitat community is tolerant to drier conditions and is typical of areas with slopes, sandier soils, and a low average rainfall (between 12-24 inches

annually). Near San Diego, coastal sage scrub may grow to seven feet in height and is dominated by species such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and wooly sunflower (*Eriophyllum lanatum*) (CDFW 1988).

Survey Results for Coastal Sage Scrub

Within the BSA, coastal sage scrub habitat is limited to an isolated fragment south of the Green Line and directly adjacent to Qualcomm Way. Vegetation in this area is comprised largely of desert broom (*Genista monspessulana*), crown daisy (*Glebionis coronaria*), and California sagebrush. This habitat community is highly disturbed by rock slope protection that was incorporated in the slope during the construction of the Rio Vista Station in 1999 (Appendix F. Representative Photographs). Coastal sage scrub habitat comprises approximately 0.09 acres of the BSA.

Project Impacts to Coastal Sage Scrub

With the implementation of avoidance and minimization measures BIO-1 through BIO-6, Project activities will be excluded from coastal sage scrub habitat and no impacts to coastal sage scrub habitat will result from this project.

Avoidance and Minimization Efforts for Coastal Sage Scrub

The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). With the implementation of avoidance and minimization measures BIO-1 through BIO-6, no impacts to coastal sage scrub habitat will result from this project.

Compensatory Mitigation for Coastal Sage Scrub

No temporary or permanent impacts to coastal sage scrub habitat are anticipated to result from the Project. No compensatory mitigation for coastal sage scrub habitat is proposed.

4.2 Special Status Plant Species

Prior to field surveys, a list of regional special status plant species with potential to occur within the Project vicinity was compiled from database searches. The potential for each species to occur within the BSA was determined by analyzing the habitat requirements of each species and comparing the habitat requirements to available habitat within the BSA. After a careful comparison between habitat requirements and the habitat available within the BSA, no special status plants are anticipated to occur within the BSA. As such, no impacts to special status plants species will result from the construction of this Project.

4.3 Special Status Wildlife Species

Prior to field surveys, a list of regional special status wildlife species with potential to occur within the Project vicinity was compiled from database searches. The potential for each species to occur within the BSA was determined by analyzing the habitat requirements of each species and comparing the habitat requirements to available habitat within the BSA. After a careful comparison between habitat requirements and the habitat available within the BSA, eight special status wildlife species may occur within the BSA. Discussion regarding each species is included below.

4.3.1 Discussion of Southwestern Willow Flycatcher

The southwestern willow flycatcher is a state and federally endangered species This species is a migratory passerine that breeds in the southwestern United States and winters in Mexico, Central America, and potentially in northern areas of South America (Sogge et al. 1997). The southwestern willow flycatcher is one of four subspecies found in North America and is difficult to distinguish from the other subspecies except for its distinct song. This subspecies of willow flycatcher is light gray in color with white wing bars and is generally paler in overall color than its counterparts. Subtle differences between the southwestern subspecies and other subspecies exist in bill length, wing to tail ratio, and other morphological features.

Southwestern willow flycatchers breed in riparian habitats characterized by dense vegetation within close proximity to open water or saturated soil. Vegetation structure and size of the riparian stand, rather than vegetation species, is more indicative of flycatcher breeding habitat. Flycatchers have not been known to breed in linear habitats less than 33 ft wide, however, this size and shape of habitat appears to be suitable for migratory use (Sogge et al 1997).

Southwestern willow flycatchers are threatened by breeding habitat loss, fragmentation, and modification due to recreational, urban, and agricultural development. Surface water diversion, grazing livestock, and invasion of exotic plant species within breeding habitats also contribute to habitat loss. Brood parasitism by brown headed cowbirds contributes to the widespread and significant loss of southwestern willow flycatchers throughout the breeding habitats.

Survey Results for Southwestern Willow Flycatcher

The Project occurs within the anticipated range of southwestern willow flycatcher. No designated critical habitat for this species is located within the proposed Project Area. Within 10 miles of the BSA, there are numerous recent eBird occurrences of this species confirmed with photo identification. Furthermore, the BSA includes suitable dense riparian habitat adjacent to the San Diego River. The species may have a low potential to occur within the BSA due to the presence of locally suitable habitat.

Project Impacts to Southwestern Willow Flycatcher

Incidental take of coastal southwestern willow flycatcher is not permitted without prior authorization under Section 7 or Section 10 Consultation with the USFWS, as well as consultation under Section 2081 ITP from CDFW. Riparian vegetation may serve as potentially suitable nesting and/or foraging habitat for this species. Approximately 0.27 acres of riparian habitat will be temporarily impacted during construction to allow for construction access to the proposed work area.

Riparian vegetation directly south of the Rio Vista Station platform will be removed and a temporary access road will be graded from the San Diego River Parkway to allow construction access to the platform. Following the conclusion of the Project, temporary impacts to the riparian corridor will be restored to pre-construction conditions in accordance with the FSDRIP. No permanent impacts to riparian habitat will result from the proposed platform improvements.

Avoidance and Minimization Efforts for Southwestern Willow Flycatcher

T The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). In addition to avoidance and minimization measures BIO-1 through BIO-4, the implementation of the following measures will ensure there are no Project-related impacts to southwestern willow flycatcher. No permanent impacts to the species are anticipated; therefore, consultation with the USFWS and CDFW is not required.

BIO-8: Prior to vegetation removal or initial ground disturbance during the nesting bird season (February 1 – September 30) a pre-construction nesting bird survey must be conducted by a Project biologist prior to the start of work. The nesting bird survey must include the Project area plus a 250-foot buffer. Within 2 weeks of the nesting bird survey, all areas surveyed by the biologist must be cleared by the contractor or a supplemental nesting bird survey is required.

A minimum 100 foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 300 foot no-disturbance buffer will be established around any nesting raptor species. The contractor must immediately stop work in the buffer area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in coordination with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the Project biologist and approved by CDFW.

BIO-9: To avoid impacts to special status migratory birds, clearing, grubbing, grading, and other Project-related construction activities shall occur between September 15 and February 15, outside the southwestern willow flycatcher breeding season (April 15–August 31), the coastal California gnatcatcher breeding season (February 15–August 15), and the least Bell's vireo breeding season (March 15–September 15). No incidental take of the above species is permitted by this Project.

Compensatory Mitigation for Southwestern Willow Flycatcher

No permanent impacts to southwestern willow flycatcher habitat are anticipated. Temporary impacts will be returned to pre-construction conditions following the completion of construction activities and revegetated in accordance with avoidance and minimization measure BIO-7. No compensatory mitigation for southwestern willow flycatcher is proposed.

4.3.2 Discussion of Coastal California Gnatcatcher

Coastal California gnatcatcher is a federally threatened species under the FESA and listed as a Species of Special Concern (SSC) under CDFW. Coastal California gnatcatcher is a small, non-migratory songbird that occurs along the Pacific coastal regions of southern California and northern Baja California, Mexico (Zink et al. 2000). The range and distribution of the gnatcatcher is closely aligned with coastal scrub vegetation, but the species is known to use adjacent habitats for foraging and dispersal. The breeding season of the coastal California gnatcatcher extends from about February 15 through August 30, with the peak of nesting activity occurring from mid-March through mid-May. Among the threats contributing to the coastal California gnatcatcher's decline are habitat destruction due to housing development, shopping malls, and farmlands. In addition, nesting attempts often fail, partly because of brown-headed cowbird (*Molothurs ater*) nest parasitism, wildfire, and grazing.

Survey Results for Coastal California Gnatcatcher

The BSA encompasses a marginal patch of arid coastal sage scrub habitat. In addition, the San Diego River riparian corridor may provide marginally suitable foraging and dispersal habitat for this species. No designated critical habitat for this species is located within the proposed Project Area (Figure 3). There are numerous local CNDDB occurrences in the vicinity of the BSA, including a 2003 occurrence located 0.42 miles northeast of the BSA. Due to the presence of marginally suitable habitat as well as the recent local occurrences, the species may have a low potential to occur within the BSA.

Project Impacts to Coastal California Gnatcatcher

Incidental take of coastal California gnatcatcher is not permitted without prior authorization under Section 7 or Section 10 Consultation with the USFWS. Riparian vegetation may serve as potentially suitable nesting and/or foraging habitat for this species. Riparian vegetation directly south of the Rio Vista Station platform will be removed and a temporary access road will be graded from the San Diego River Parkway to allow construction access to the platform. Approximately 0.27 acres of riparian habitat will be temporarily impacted during construction to allow for construction access to the proposed work area; however, all clearing, grubbing, grading, and other Project-related construction activities shall occur outside the coastal California gnatcatcher breeding season (February 15 – August 15).

Following the conclusion of the Project, temporary impacts to the riparian corridor will be restored to pre-construction conditions in accordance with the FSDRIP. No permanent impacts to riparian habitat will result from the proposed platform improvements and therefore, no permanent impacts to the species are anticipated. Consultation with USFWS is not required.

Avoidance and Minimization Efforts for Coastal California Gnatcatcher

The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). In addition to avoidance and minimization measures BIO-1 through BIO-4, the implementation of measures BIO-8 and BIO-9 will ensure that Project-related impacts to coastal California gnatcatcher are minimized to the greatest extent feasible. No permanent impacts to the species are anticipated; therefore, consultation with the USFWS is not required.

Compensatory Mitigation for Coastal California Gnatcatcher

No permanent impacts to coastal California gnatcatcher habitat are anticipated. Temporary impacts will be returned to pre-construction conditions following the completion of construction activities and revegetated in accordance with avoidance and minimization measure BIO-7. No compensatory mitigation for coastal California gnatcatcher is proposed.

4.3.3 Discussion of Least Bell's Vireo

The least Bell's vireo is a state and federally endangered species. . The least Bell's vireo can be found in Inyo, Santa Barbara, Ventura, Riverside, Orange, San Bernardino, and San Diego Counties. In San Diego County, the Santa Margarita River supports nearly half of the U.S. population. This species occurs in riparian habitats and typically breeds in willow riparian woodland habitat supporting a dense, shrubby understory of mulefat and other mesic species. The species breeds in a few scattered areas of riparian habitat in southern California, primarily along the coast and the western edge of the Mojave Desert. The species requires dense riparian shrubbery, such as willow and wild rose, for nest construction and prefers to nest where flowing water is present. The decline of the species is attributed to land development, water diversion, recreational activities, and excessive grazing continue to impact the remaining riparian systems that support least Bell's vireos. As a result, the birds are forced into marginal nesting areas, where they are more vulnerable to parasitism by the brown-headed cowbird, a brood parasite (Franzreb 1989).

Survey Results for Least Bell's Vireo

This species prefers a dense nesting substrate, such as willow and wild rose, near flowing water for nest construction. Within the BSA, the willow riparian habitat located adjacent to the San Diego River provides a dense nesting substrate that may be suitable for nesting least Bell's vireo. In addition, there are numerous recent CNDDB occurrences of this species within the San Diego River corridor, including a recent (2011) occurrence located directly upstream of the Project. Due to the presence of locally suitable habitat as well as the recent local occurrences, the species may have a high potential to nest within the willow riparian habitat located adjacent to the San Diego River. No designated critical habitat for this species is located within the proposed Project Area.

Project Impacts to Least Bell's Vireo

Due to the presence of locally suitable habitat as well as the recent local occurrence, the species may have a high potential to occur within the BSA. As such, incidental take of this species is not permitted without prior authorization under Section 7 or Section 10 Consultation with the USFWS. Approximately 0.27 acres of upland riparian habitat will be temporarily impacted during construction to allow for construction access to the proposed work area; however, all clearing, grubbing, grading, and other Project-related construction activities shall occur outside the least Bell's vireo breeding season (March 15–September 15). Following the conclusion of the Project, temporary impacts to upland riparian habitat will be restored to pre-construction conditions in accordance with the FSDRIP. No permanent impacts to the species are anticipated; therefore, consultation with the USFWS and an incidental take permit from CDFW is not required.

Avoidance and Minimization Efforts for Least Bell's Vireo

The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). With the implementation of avoidance and minimization measures BIO-1 through BIO-4, Project activities will be excluded from willow riparian habitat and be restricted to north of the San Diego River Parkway Trail. No impacts to willow riparian habitat will result from this Project. Furthermore, Project activities will be limited to outside the least Bell's vireo breeding season in accordance with avoidance and minimization measure BIO-9, minimizing indirect construction impacts to the species.In addition to avoidance and minimization measures BIO-1 through BIO-4, the implementation of measures BIO-8 and BIO-9 will ensure that Project-related impacts occur outside the least Bell's vireo breeding season, minimizing impacts to the greatest extent feasible.

Compensatory Mitigation for Least Bell's Vireo

As previously discussed, Project-related impacts would occur outside the least Bell's vireo breeding season; therefore, no temporary or permanent impacts to least Bell's vireo habitat are anticipated. No compensatory mitigation for least Bell's vireo is proposed.

4.3.4 Discussion of Least Bittern

The least bittern is not a state or federally listed species but is considered a SSC under CDFW. This species is a small, uncommon heron that nests in emergent wetlands south of Ventura County and sporadically throughout the Sacramento and San Joaquin Valleys. During the summer, larger populations of least bitterns are known to occur along the Colorado River and near the Salton Sea. Individuals nest in dense emergent vegetation, such as tules and cattails, above or directly adjacent to open water greater than one foot deep. Foraging activities similarly occur along the aquatic margin of emergent vegetation, where least bitterns feed on small fish, aquatic/terrestrial insects, crayfish, and amphibians. Most of the known populations of this species migrate south to Mexico for the winter, where they reside from October to March. In California, breeding occurs between late March and early July. Populations of least bitterns have historically declined due to habitat elimination, human disturbance, and the use of pesticides (Zeiner et al. 1988-1990).

Survey Results for Least Bittern

This species prefers to nest in emergent vegetation above or along the margin of open water habitat. Within the BSA, the willow riparian habitat located adjacent to the San Diego River provides a suitable nesting location for least bittern. In addition, there are numerous recent eBird occurrences of this species within approximately 2.5 miles of the BSA, including a recent (2016) occurrence confirmed with photo identification. Due to the presence of locally suitable habitat as well as the recent local occurrences, the species may have a high potential to nest within the willow riparian habitat located adjacent to the San Diego River.

Project Impacts for Least Bittern

With the implementation of avoidance and minimization measures BIO-1 through BIO-4, Project activities will be excluded from willow riparian habitat and be restricted to north of the San Diego River Parkway Trail. No impacts to willow riparian habitat will result from this project. Furthermore,

Project activities will be limited to outside the least bittern breeding season in accordance with avoidance and minimization measure BIO-9, minimizing indirect construction impacts to the species.

Avoidance and Minimization Efforts for Least Bittern

The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). In addition to avoidance and minimization measures BIO-1 through BIO-4, the implementation of measures BIO-8 and BIO-9 will ensure that Project-related impacts to least bittern are minimized to the greatest extent feasible.

Compensatory Mitigation for Least Bittern

No temporary or permanent impacts to least bittern habitat are anticipated. No compensatory mitigation for least bittern is proposed.

4.3.5 Discussion of Yellow Warbler

The yellow warbler is not a state or federally listed species but is considered a SSC under CDFW. Yellow warblers inhabit riparian vegetation with proximity to open water. Breeding grounds for this long-distance migrant occur throughout the U.S. and Canada, while wintering habitats are found in Central and South America. Breeding occurs in the spring with female laying and incubating 3 to 6 eggs per clutch. Both the male and female participate in raising the young. Fledging occurs 9 to 12 days after hatching (Heath 2008). Breeding locations were once widespread throughout California except in the Mojave Desert, where they are typically constrained to the Mojave River. Threats to the yellow warbler include habitat degradation due to urbanization and agricultural development, nest brood parasitism by brown-headed cowbirds, and nest predation by other natural predators.

Survey Results for Yellow Warbler

There are numerous recent eBird occurrences within the San Diego River corridor, including 2023 occurrences of the species directly south of the Project. In addition, the BSA encompasses riparian habitat suitable for nesting. Due to the presence of potentially suitable habitat as well as the recent local occurrences, yellow warbler has a high potential to occur within the BSA.

Project Impacts to Yellow Warbler

Approximately 0.27 acres of riparian habitat will be temporarily impacted during construction to allow for construction access to the proposed work area. Riparian vegetation may serve as potentially suitable nesting and/or foraging habitat for this species.

Riparian vegetation directly south of the Rio Vista Station platform will be removed and a temporary access road will be graded from the San Diego River Parkway to allow construction access to the platform. Following the conclusion of the Project, temporary impacts to the riparian corridor will be restored to pre-construction conditions in accordance with the FSDRIP. No permanent impacts to riparian habitat will result from the proposed platform improvements.

Avoidance and Minimization Efforts for Yellow Warbler

The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). In addition to avoidance and minimization measures

BIO-1 through BIO-4, the implementation of measures BIO-8 and BIO-9 will ensure that Project-related impacts to western yellow bat are minimized to the greatest extent feasible.

Compensatory Mitigation for Yellow Warbler

No permanent impacts to yellow warbler habitat are anticipated. Temporary impacts will be returned to pre-construction conditions following the completion of construction activities and revegetated in accordance with avoidance and minimization measure BIO-7. No compensatory mitigation for yellow warbler is proposed.

4.3.6 Discussion of Western Red Bat

The western red bat is not a state or federally listed species but is considered a SSC under CDFW. The western red bat roost in forests and woodlands in proximity to foraging habitats which include grasslands, shrub lands, open woodlands, and croplands (Zeiner et al. 1988-1990). The species is primarily an insectivore, consuming moths, crickets, beetles, and cicadas. The western red bat is known to migrate between summer and winter to lowlands and coastal regions for breeding which typically occurs in low elevation cottonwood/sycamore and oak dominated riparian habitats (Pierson, E.D., W.E. Rainey and C. Corben 2006) (Zeiner et al. 1988-1990).

Survey Results for Western Red Bat

There is a recent (2003) CNDDB occurrence of this species within the San Diego River corridor, approximately 5.7 miles northeast of the Project. The BSA includes dense riparian habitat with stands of cottonwood and willow that may be suitable for nesting. Due to the presence of locally suitable habitat, the species may have a low potential to occur within the BSA.

Project Impacts to Western Red Bat

Approximately 0.27 acres of riparian habitat will be temporarily impacted during construction to allow for construction access to the proposed work area. Riparian vegetation may serve as potentially suitable nesting and/or foraging habitat for this species.

Riparian vegetation directly south of the Rio Vista Station platform will be removed and a temporary access road will be graded from the San Diego River Parkway to allow construction access to the platform. Following the conclusion of the Project, temporary impacts to the riparian corridor will be restored to pre-construction conditions in accordance with the FSDRIP. No permanent impacts to riparian habitat will result from the proposed platform improvements.

Avoidance and Minimization Efforts for Western Red Bat

The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). In addition to avoidance and minimization measures BIO-1 through BIO-4, the implementation of measures BIO-8 through BIO-10 will ensure that Project-related impacts to western red bat are minimized to the greatest extent feasible.

BIO-10: To avoid impacts to roosting bats, trees that may contain roosting bats must be removed between September 1 and March 1, outside of the bat maternity season.

Compensatory Mitigation for Western Red Bat

No permanent impacts to western red bat habitat are anticipated. Temporary impacts will be returned to pre-construction conditions following the completion of construction activities and revegetated in accordance with avoidance and minimization measure BIO-7. No compensatory mitigation for western red bat is proposed.

4.3.7 Discussion of Western Yellow Bat

The western yellow bat is not a state or federally listed species but is considered a SSC under CDFW. Western yellow bats are a rare yearlong southern California resident from Los Angeles and San Bernardino Counties south to the Mexican border. This species occupies a range of habitats of extremely arid areas to dry areas. Western yellow bats inhabit savannas, secluded woodlands, regions dominated by pasture or croplands, and even tolerates residential areas. Typically, the species occurs close to water resource within riparian, desert riparian, desert wash and palm oasis habitats. Females usually give birth to two young in early June-July, and pregnant females have been found as early as late April. Breeding time is unknown; however, it is thought that females store sperm and both males and females probably can breed within their first year.

The species is insectivorous, feeding on a variety of insects; ants, wasps, bees, flies, mosquitoes, butterflies, moths, beetles, grasshoppers, crickets, and others. They are known to leave day roosts and begin foraging at dusk (Zeiner et al. 1988-1990). Populations of western yellow bats are threatened and eliminated from many areas in Riverside County due to cosmetic trimming of palm fronds. The use of pesticides in date palm and other orchards may also constitute a threat to both roosting bats and the insects upon which they forage. Domestic cats, whether pets or feral, may be a significant source of predation, as they are for many lizards, songbirds, and rodents (Cardoso 2020).

Survey Results for Western Yellow Bat

There is a historic (1985) CNDDB occurrence of this species located approximately 2 miles south of the Project. In addition, the BSA includes dense riparian habitat that may be suitable for maternal colonies of this species. Furthermore, the San Diego River provides a proximal open water source directly south of the BSA. Due to the presence of locally suitable habitat as well as the local historic occurrence, the species may have a low potential to occur within the BSA.

Project Impacts to Western Yellow Bat

Approximately 0.27 acres of riparian habitat will be temporarily impacted during construction to allow for construction access to the proposed work area. Riparian vegetation may serve as potentially suitable nesting and/or foraging habitat for this species.

Riparian vegetation directly south of the Rio Vista Station platform will be removed and a temporary access road will be graded from the San Diego River Parkway to allow construction access to the platform. Following the conclusion of the Project, temporary impacts to the riparian corridor will be restored to pre-construction conditions in accordance with the FSDRIP. No permanent impacts to riparian habitat will result from the proposed platform improvements.

Avoidance and Minimization Efforts for Western Yellow Bat

Tthe Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). In addition to avoidance and minimization measures BIO-1 through BIO-4, the implementation of measures BIO-8 through BIO-10 will ensure that Project-related impacts to western yellow bat are minimized to the greatest extent feasible.

Compensatory Mitigation for Western Yellow Bat

No permanent impacts to western yellow bat habitat are anticipated. Temporary impacts will be returned to pre-construction conditions following the completion of construction activities and revegetated in accordance with avoidance and minimization measure BIO-7. No compensatory mitigation for western yellow bat is proposed.

4.3.8 Discussion of Two-Striped Gartersnake

The two-striped gartersnake (*Thamnophis hammondii*) is not a state or federally listed species but is a SSC under CDFW. It is distributed from the southeastern slope of the Diablo Range and the Salinas Valley south along the South Coast and Transverse ranges to the Mexican border, and on Santa Catalina Island. The species is highly aquatic, foraging primarily in and along streams. The species is diurnal, using mammal burrows, crevices, and surface objects for nocturnal retreats. Mating typically occurs soon after spring emergence and young are live born in late summer in secluded sites. The species elevation range occurs from sea level to approximately 8,000 ft. (Zeiner et al. 1988-1990).

Survey Results for Two-Striped Gartersnake

There is a recent (2001) CNDDB occurrence of this species located approximately 4.1 miles southeast of the Project Area. The BSA encompasses a dense riparian corridor adjacent to the San Diego River and may provide suitable upland habitat for the species. As such, there is a low potential for the species to occur within the BSA.

Project Impacts to Two-Striped Gartersnake

Approximately 0.27 acres of riparian habitat will be temporarily impacted during construction to allow for construction access to the proposed work area. Riparian vegetation may serve as potentially suitable upland dispersal and estivation habitat for this species.

Riparian vegetation directly south of the Rio Vista Station platform will be removed and a temporary access road will be graded from the San Diego River Parkway to allow construction access to the platform. Following the conclusion of the Project, temporary impacts to the riparian corridor will be restored to pre-construction conditions in accordance with the FSDRIP. No permanent impacts to riparian habitat will result from the proposed platform improvements.

Avoidance and Minimization Efforts for Two-Striped Gartersnake

The Project will be consistent with the Development and Mitigation Guidelines outlined in the NRMP of the FSDRIP (see Appendix G). In addition to avoidance and minimization measures BIO-1 through BIO-4, the implementation of measures BIO-9 and BIO-11 through BIO-14 will ensure that Project-related impacts to two-striped gartersnake are minimized to the greatest extent feasible.

BIO-11: Prior to vegetation removal or initial ground disturbance, a pre-construction clearance survey must be conducted by a Project biologist within two-striped gartersnake habitat (riparian corridor). Within 2 weeks of the pre-construction survey, all areas surveyed by the biologist must be cleared by the contractor or a supplemental clearance survey is required.

BIO-12: All excavated steep-walled holes and trenches within two-striped gartersnake habitat that are more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps at an angle of no more than 30 degrees constructed of earth fill or wooden planks at the end of each workday or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within two-striped gartersnake habitat will be inspected for two-striped gartersnake prior to being moved.

BIO-13: If erosion control is implemented within two-striped gartersnake habitat (riparian corridor), nonentangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure snakes are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

BIO-14: If a two-striped gartersnake is encountered during construction activities, the Project biologist will be notified and construction activities will be suspended in a 50-foot radius of the animal until it leaves the project site on its own volition. A qualified biologist may relocate a two-striped gartersnake to outside the project area.

Compensatory Mitigation for Two-Striped Gartersnake

No permanent impacts to two-striped gartersnake habitat are anticipated. Temporary impacts will be returned to pre-construction conditions following the completion of construction activities and revegetated in accordance with avoidance and minimization measure BIO-7. No compensatory mitigation for two-striped gartersnake is proposed.

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5. Conclusions and Regulatory Determinations

5.1 Federal Endangered Species Act Consultation Summary

Prior to field survey, a list of 19 federally threatened or endangered species were returned via database searches. The potential for each species to occur within the BSA was determined by analyzing the habitat requirements of each species and comparing the habitat requirements to available habitat within the BSA.

Table 4. Federally Listed Species Determinations

Species Name	Federal Status	Potential	Determination
California least tern *Sterna antillarum browni*	Endangered	Absent	No Effect
California Orcutt grass *Orcuttia californica*	Endangered	Absent	No Effect
Coastal California gnatcatcher *Polioptila californica californica*	Threatened	Low Potential	No Effect
Least Bell's vireo *Vireo bellii pusillus*	Endangered	Low Potential	No Effect
Light-footed clapper rail *Rallus longirostris levipes*	Endangered	Absent	No Effect
Monarch butterfly *Danaus plexippus*	Candidate	Absent	No Effect
Orcutt's spineflower *Chorizanthe orcuttiana*	Endangered	Absent	No Effect
Pacific pocket mouse *Perognathus longimembris pacificus*	Endangered	Absent	No Effect
Riverside fairy shrimp *Streptocephalus woottoni*	Endangered	Absent	No Effect
Salt marsh bird's-beak *Cordylanthus maritimus ssp. maritimus*	Endangered	Absent	No Effect
San Diego ambrosia *Ambrosia pumila*	Endangered	Absent	No Effect
San Diego button-celery *Eryngium aristulatum var. parishii*	Endangered	Absent	No Effect
San Diego fairy shrimp *Branchinecta sandiegonensis*	Endangered	Absent	No Effect
San Diego Mesa-mint *Pogogyne abramsii*	Endangered	Absent	No Effect
San Diego thornmint *Acanthomintha ilicifolia*	Threatened	Absent	No Effect
Southwestern willow flycatcher *Empidonax traillii extimus*	Endangered	Low Potential	No Effect
Spreading navarretia *Navarretia fossalis*	Endangered	Absent	No Effect
Western snowy plover *Charadrius nivosus nivosus*	Threatened	Absent	No Effect
Willowy monardella *Monardella viminea*	Endangered	Absent	No Effect

Three federally listed species have the potential to occur within the BSA due to the presence of locally suitable habitat as well as recent, local occurrences. Two federally listed species, coastal California gnatcatcher and least Bell's vireo, are considered protected species under the FSDRIP NRMP. No permanent impacts to riparian habitat will result from the proposed platform improvements and therefore, no permanent impacts to the species are anticipated. No further consultation with USFWS is required regarding impacts to coastal California gnatcatcher or least Bell's vireo.

Southwestern willow flycatcher is a federally listed species. There is a low potential for this species to occur within the BSA; however, the implementation of species-specific avoidance and minimization measures will ensure there are no impacts to southwestern willow flycatcher. As such, consultation with USFWS regarding this species is not required.

5.2 Essential Fish Habitat Consultation Summary

According to the NOAA habitat conservation Essential Fish Habitat View Tool, the BSA does not fall within Essential Fish Habitat (EFH) for any of the identified species (NOAA 2023). Furthermore, the BSA does not include any aquatic habitat features. No impacts to EFH are anticipated and consultation for EFH is not required.

5.3 California Endangered Species Act Consultation Summary

Prior to field surveys, a list of regional special status wildlife species with potential to occur within the Project vicinity was compiled from database searches. The potential for each species to occur within the BSA was determined by analyzing the habitat requirements of each species and comparing the habitat requirements to available habitat within the BSA. After a careful comparison between habitat requirements and the habitat available within the BSA, two state listed species have the potential to occur within the BSA: Least Bell's vireo and southwestern willow flycatcher.

The FSDRIP NRMP contains explicit provisions to protect wildlife which includes Least Bell's vireo. No permanent impacts to riparian habitat will result from the proposed platform improvements and therefore, no permanent impacts to the species are anticipated. No further consultation with CDFW is required regarding impacts to least Bell's vireo.

The FSDRIP NRMP contains explicit provisions to protect wildlife, which would include southwestern willow flycatcher. There is a low potential for this species to occur within the BSA; however, the implementation of appropriate avoidance and minimization measures will ensure there are no impacts to southwestern willow flycatcher. As such, consultation with CDFW regarding this species is not required.

5.4 Wetlands and Other Waters Coordination Summary

The Project is anticipated to have approximately 0.27 acres of temporary impacts to the riparian corridor identified within the BSA (Figure 5. Project Impacts). Temporary impacts will be returned to pre-construction conditions following the completion of construction activities and revegetated in accordance with measure BIO-7. No permanent impacts to riparian habitat are anticipated and compensatory mitigation is not proposed for this Project. The MTS would obtain a Streambed Alteration Agreement under Section 1602 from CDFW.

5.5 Invasive Species

In February 1999, EO 13112 was signed, requiring federal agencies to work on preventing and controlling the introduction and spread of invasive species. Measure BIO-15 will be incorporated into the Project plans to ensure that invasive species are not introduced or spread.

BIO-15: Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds will be cleaned to reduce the spreading of noxious weeds.

5.6 Other

5.6.1 General Wildlife

To minimize and avoid potential effects to local wildlife, the following measures BIO-16 through BIO-18 have been incorporated into the Project design.

BIO-16: All food-related trash must be disposed into closed containers and must be removed from the Project area daily. Construction personnel must not feed or otherwise attract wildlife to the Project area.

BIO-17: The contractor must not apply rodenticide or herbicide within the Project area during construction.

BIO-18: If any wildlife is encountered during the course of construction, said wildlife shall be allowed to leave the construction area unharmed.

5.6.2 Migratory Birds

Native birds are protected by the MBTA and CFG Code Section 3513. The implementation of measures BIO-8 and BIO-9 would avoid all potential impacts to migratory birds.

6. References

(Franzreb 1989 Franzreb, K.E., 1989, Ecology and conservation of the endangered Least Bell's Vireo: U.S. Fish and Wildlife Service, Biological Report, v. 89, no. 1.

Calflora 2023 Calflora. 2023. Plants of California. Available at: <http://www.calflora.org/> (accessed: October 16, 2023).

Cardoso 2020 Cardoso, E. 2020. "Lasiurus xanthinus" (On-line), Animal Diversity Web. Accessed November 2, 2023 at https://animaldiversity.org/accounts/Lasiurus_xanthinus/

CDFW 1988 Mayer, K. E. and W. F. Laudenslayer, Jr., eds. 1988. A Guide to Wildlife Habitats of California. California Department of Fish and Game.

CDFW 2023a California Department of Fish and Wildlife. 2023. Biogeographic Information and Observation System. Available at: <https://wildlife.ca.gov/Data/BIOS> (accessed: October 16, 2023).

CDFW 2023b California Department of Fish and Wildlife. 2023. California Natural Diversity Database. Available at: <http://www.dfg.ca.gov/biogeodata/cnddb/> (accessed: October 26, 2023).

CNPS 2023 California Native Plant Society. 2023. Inventory of Rare and Endangered Plants. Available at: <http://cnps.site.aplus.net/cgibin/inv/inventory.cgi/Brow seAZ?name=quad> (accessed: October 16, 2023).

Heath 2008 Heath, S. K. 2008. Yellow Warbler (Dendroica petechia) Account in Shuford, W. D., and Gardali, T., editors. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=10425&inline

Jepson 2023 Jepson eFlora. 2023. Geographic Subdivisions of California. Available at: <http://ucjeps.berkeley.edu/eflora/geography.html> (accessed: October 26, 2023).

NOAA 2023 National Oceanic and Atmospheric Administration. Habitat Conservation Essential Fish Habitat View Tool. Available at: <https://www.habitat.noaa.gov/apps/efhmapper/> (accessed September 18, 2023).

NRCS 2023 Natural Resource Conservation Service. 2023. Custom Soil Resources Report for San Diego County, California. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> (accessed September 18, 2023).

Sogge et al. 1997 Sogge, Mark K., et al. A Southwestern Willow Flycatcher Natural History Summary and Survey Protocol. U.S. Department of the Interior, U.S. Geological Survey, 1997.

U.S. Climate Data 2023 U.S. Climate Data. 2023. San Diego Weather Averages. Available at: <https://www.usclimatedata.com/climate/san-diego/california/united-states/usca0982> (accessed: October 26, 2023).

USFWS 2023 United States Fish and Wildlife Service. 2023. Official Species List: U.S. Department of the Interior – Fish and Wildlife Service: Carlsbad Fish and Wildlife Office. Project Code 2023-0130185 (requested: September 18, 2023).

Zeiner et al. 1988-1990 Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.

Zink et al. 2000 Zink, Robert M., et al. "Genetics, Taxonomy, and Conservation of the Threatened California Gnatcatcher." *Conservation Biology*, vol. 14, no. 5, 2000, pp. 1394–405. *JSTOR*, http://www.jstor.org/stable/2641792.

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Appendix A: USFWS Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To:
Project Code: 2023-0130185
Project Name: Rio Vista Platform Design Project - Phase II

September 18, 2023

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

To Whom It May Concern:

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

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

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

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

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

https://www.fws.gov/service/esa-section-7-consultation

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

PROJECT SUMMARY

Project Code: 2023-0130185
Project Name: Rio Vista Platform Design Project - Phase II
Project Type: Railroad - Maintenance/Modification
Project Description: Retrofit of the Rio Vista Platform for the San Diego Metropolitan Transit System in San Diego County, California.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.7735366,-117.14199560067456,14z

Counties: San Diego County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 19 threatened, endangered, or candidate species on this species list.

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

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

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

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

MAMMALS

NAME	STATUS
Pacific Pocket Mouse *Perognathus longimembris pacificus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8080

BIRDS

NAME	STATUS
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Coastal California Gnatcatcher *Polioptila californica californica* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Light-footed Clapper Rail *Rallus longirostris levipes* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6035	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRUSTACEANS

NAME	STATUS
Riverside Fairy Shrimp *Streptocephalus woottoni* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8148	Endangered
San Diego Fairy Shrimp *Branchinecta sandiegonensis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6945	Endangered

FLOWERING PLANTS

NAME	STATUS
California Orcutt Grass *Orcuttia californica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4923	Endangered
Orcutt's Spineflower *Chorizanthe orcuttiana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7573	Endangered
Salt Marsh Bird's-beak *Cordylanthus maritimus ssp. maritimus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6447	Endangered
San Diego Ambrosia *Ambrosia pumila* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8287	Endangered
San Diego Button-celery *Eryngium aristulatum var. parishii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5937	Endangered
San Diego Mesa-mint *Pogogyne abramsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5971	Endangered
San Diego Thornmint *Acanthomintha ilicifolia* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/351	Threatened
Spreading Navarretia *Navarretia fossalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1334	Threatened
Willowy Monardella *Monardella viminea* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/250	Endangered

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Dokken Engineering
Name: Vincent Chevreuil
Address: 110 Blue Ravine Road #200
City: Folsom
State: CA
Zip: 95630
Email vchevreuil@dokkenengineering.com
Phone: 9168580642

Appendix B: CNDDB Species List

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (La Jolla (3211772) OR La Mesa (3211771))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
aphanisma *Aphanisma blitoides*	PDCHE02010	None	None	G3G4	S2	1B.2
beach goldenaster *Heterotheca sessiliflora ssp. sessiliflora*	PDAST4V0K2	None	None	G4T2T3	S1	1B.1
Belding's savannah sparrow *Passerculus sandwichensis beldingi*	ABPBX99015	None	Endangered	G5T3	S3	
big free-tailed bat *Nyctinomops macrotis*	AMACD04020	None	None	G5	S3	SSC
Blochman's dudleya *Dudleya blochmaniae ssp. blochmaniae*	PDCRA04051	None	None	G3T2	S2	1B.1
bottle liverwort *Sphaerocarpos drewiae*	NBHEP35030	None	None	G1	S1	1B.1
Brand's star phacelia *Phacelia stellaris*	PDHYD0C510	None	None	G1	S1	1B.1
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S2	SSC
Busck's gallmoth *Eugnosta busckana*	IILEM2X090	None	None	G1G3	S2S3	
California adolphia *Adolphia californica*	PDRHA01010	None	None	G3	S2	2B.1
California black rail *Laterallus jamaicensis coturniculus*	ABNME03041	None	Threatened	G3T1	S2	FP
California glossy snake *Arizona elegans occidentalis*	ARADB01017	None	None	G5T2	S2	SSC
California least tern *Sternula antillarum browni*	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
California Orcutt grass *Orcuttia californica*	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
Campbell's liverwort *Geothallus tuberosus*	NBHEP1C010	None	None	G2	S2	1B.1
chaparral ragwort *Senecio aphanactis*	PDAST8H060	None	None	G3	S2	2B.2
cliff spurge *Euphorbia misera*	PDEUP0Q1B0	None	None	G5	S2	2B.2
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G4	S4	SSC
coast patch-nosed snake *Salvadora hexalepis virgultea*	ARADB30033	None	None	G5T4	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
coast woolly-heads *Nemacaulis denudata var. denudata*	PDPGN0G011	None	None	G3G4T2	S2	1B.2
coastal cactus wren *Campylorhynchus brunneicapillus sandiegensis*	ABPBG02095	None	None	G5T3Q	S2	SSC
coastal California gnatcatcher *Polioptila californica californica*	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Cooper's hawk *Accipiter cooperii*	ABNKC12040	None	None	G5	S4	WL
Coronado skink *Plestiodon skiltonianus interparietalis*	ARACH01114	None	None	G5T5	S2S3	WL
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	1B.1
Coulter's saltbush *Atriplex coulteri*	PDCHE040E0	None	None	G3	S1S2	1B.2
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
decumbent goldenbush *Isocoma menziesii var. decumbens*	PDAST57091	None	None	G3G5T2T3	S2	1B.2
Del Mar manzanita *Arctostaphylos glandulosa ssp. crassifolia*	PDERI040E8	Endangered	None	G5T2	S2	1B.1
delicate clarkia *Clarkia delicata*	PDONA050D0	None	None	G3	S3	1B.2
Dulzura pocket mouse *Chaetodipus californicus femoralis*	AMAFD05021	None	None	G5T3	S3	
estuary seablite *Suaeda esteroa*	PDCHE0P0D0	None	None	G3	S2	1B.2
golden-spined cereus *Bergerocactus emoryi*	PDCAC11010	None	None	G2G3	S2	2B.2
heart-leaved pitcher sage *Lepechinia cardiophylla*	PDLAM0V020	None	None	G3	S2S3	1B.2
Hermes copper butterfly *Lycaena hermes*	IILEPC1160	Threatened	None	G1	S1	
hoary bat *Lasiurus cinereus*	AMACC05032	None	None	G3G4	S4	
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S3	
least bittern *Ixobrychus exilis*	ABNGA02010	None	None	G4G5	S2	SSC
light gray lichen *Mobergia calculiformis*	NLT0018660	None	None	G3	S1	3
light-footed Ridgway's rail *Rallus obsoletus levipes*	ABNME05014	Endangered	Endangered	G3T1T2	S1	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
little mousetail *Myosurus minimus ssp. apus*	PDRAN0H031	None	None	G5T2Q	S2	3.1
long-spined spineflower *Chorizanthe polygonoides var. longispina*	PDPGN040K1	None	None	G5T3	S3	1B.2
mesa shoulderband *Helminthoglypta coelata*	IMGASC2530	None	None	G1	S1	
Mexican long-tongued bat *Choeronycteris mexicana*	AMACB02010	None	None	G3G4	S1	SSC
mimic tryonia (=California brackishwater snail) *Tryonia imitator*	IMGASJ7040	None	None	G2	S2	
monarch - California overwintering population *Danaus plexippus plexippus pop. 1*	IILEPP2012	Candidate	None	G4T1T2Q	S2	
Munz's sage *Salvia munzii*	PDLAM1S140	None	None	G2	S2	2B.2
northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	AMAFD05031	None	None	G5T3T4	S3S4	
Nuttall's acmispon *Acmispon prostratus*	PDFAB2A0V0	None	None	G1G2	S1	1B.1
Nuttall's scrub oak *Quercus dumosa*	PDFAG050D0	None	None	G3	S3	1B.1
obscure bumble bee *Bombus caliginosus*	IIHYM24380	None	None	G2G3	S1S2	
oil neststraw *Stylocline citroleum*	PDAST8Y070	None	None	G3	S3	1B.1
orange-throated whiptail *Aspidoscelis hyperythra*	ARACJ02060	None	None	G5	S2S3	WL
Orcutt's brodiaea *Brodiaea orcuttii*	PMLIL0C0B0	None	None	G2	S2	1B.1
Orcutt's pincushion *Chaenactis glabriuscula var. orcuttiana*	PDAST20095	None	None	G5T1	S1	1B.1
Orcutt's spineflower *Chorizanthe orcuttiana*	PDPGN040G0	Endangered	Endangered	G1	S1	1B.1
Otay Mesa mint *Pogogyne nudiuscula*	PDLAM1K040	Endangered	Endangered	G1	S1	1B.1
Otay Mountain ceanothus *Ceanothus otayensis*	PDRHA04430	None	None	G1G2	S1	1B.2
Palmer's goldenbush *Ericameria palmeri var. palmeri*	PDAST3L0C1	None	None	G4T2?	S2	1B.1
Palmer's grapplinghook *Harpagonella palmeri*	PDBOR0H010	None	None	G4	S3	4.2
pocketed free-tailed bat *Nyctinomops femorosaccus*	AMACD04010	None	None	G5	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
prairie falcon *Falco mexicanus*	ABNKD06090	None	None	G5	S4	WL
prostrate vernal pool navarretia *Navarretia prostrata*	PDPLM0C0Q0	None	None	G2	S2	1B.2
purple stemodia *Stemodia durantifolia*	PDSCR1U010	None	None	G5	S2	2B.1
quino checkerspot butterfly *Euphydryas editha quino*	IILEPK405L	Endangered	None	G5T1T2	S1S2	
red-diamond rattlesnake *Crotalus ruber*	ARADE02090	None	None	G4	S3	SSC
Robinson's pepper-grass *Lepidium virginicum var. robinsonii*	PDBRA1M114	None	None	G5T3	S3	4.3
salt marsh bird's-beak *Chloropyron maritimum ssp. maritimum*	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
salt spring checkerbloom *Sidalcea neomexicana*	PDMAL110J0	None	None	G4	S2	2B.2
San Diego ambrosia *Ambrosia pumila*	PDAST0C0M0	Endangered	None	G1	S1	1B.1
San Diego barrel cactus *Ferocactus viridescens*	PDCAC08060	None	None	G3?	S2S3	2B.1
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	AMAEB03051	None	None	G5T3T4	S3S4	
San Diego button-celery *Eryngium aristulatum var. parishii*	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1
San Diego desert woodrat *Neotoma lepida intermedia*	AMAFF08041	None	None	G5T3T4	S3S4	SSC
San Diego fairy shrimp *Branchinecta sandiegonensis*	ICBRA03060	Endangered	None	G2	S1	
San Diego goldenstar *Bloomeria clevelandii*	PMLIL1H010	None	None	G2G3	S3	1B.1
San Diego gumplant *Grindelia hallii*	PDAST470D4	None	None	G2	S2	1B.2
San Diego marsh-elder *Iva hayesiana*	PDAST580A0	None	None	G3	S2	2B.2
San Diego Mesa Hardpan Vernal Pool *San Diego Mesa Hardpan Vernal Pool*	CTT44321CA	None	None	G2	S2.1	
San Diego mesa mint *Pogogyne abramsii*	PDLAM1K010	Endangered	Endangered	G1	S1	1B.1
San Diego sagewort *Artemisia palmeri*	PDAST0S160	None	None	G3?	S3?	4.2
San Diego sand aster *Corethrogyne filaginifolia var. incana*	PDAST2M025	None	None	G4T1Q	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
San Diego thorn-mint *Acanthomintha ilicifolia*	PDLAM01010	Threatened	Endangered	G1	S1	1B.1
sand-loving wallflower *Erysimum ammophilum*	PDBRA16010	None	None	G2	S2	1B.2
sandy beach tiger beetle *Cicindela hirticollis gravida*	IICOL02101	None	None	G5T2	S2	
sea dahlia *Leptosyne maritima*	PDAST2L0L0	None	None	G2	S1S2	2B.2
short-leaved dudleya *Dudleya brevifolia*	PDCRA04053	None	Endangered	G1	S1	1B.1
silver-haired bat *Lasionycteris noctivagans*	AMACC02010	None	None	G3G4	S3S4	
singlewhorl burrobrush *Ambrosia monogyra*	PDAST50010	None	None	G5	S2	2B.2
south coast saltscale *Atriplex pacifica*	PDCHE041C0	None	None	G4	S2	1B.2
Southern California legless lizard *Anniella stebbinsi*	ARACC01060	None	None	G3	S3	SSC
southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	ABPBX91091	None	None	G5T3	S4	WL
Southern Coastal Salt Marsh *Southern Coastal Salt Marsh*	CTT52120CA	None	None	G2	S2.1	
Southern Cottonwood Willow Riparian Forest *Southern Cottonwood Willow Riparian Forest*	CTT61330CA	None	None	G3	S3.2	
Southern Maritime Chaparral *Southern Maritime Chaparral*	CTT37C30CA	None	None	G1	S1.1	
Southern Riparian Forest *Southern Riparian Forest*	CTT61300CA	None	None	G4	S4	
Southern Riparian Scrub *Southern Riparian Scrub*	CTT63300CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland *Southern Sycamore Alder Riparian Woodland*	CTT62400CA	None	None	G4	S4	
spotted bat *Euderma maculatum*	AMACC07010	None	None	G4	S3	SSC
spreading navarretia *Navarretia fossalis*	PDPLM0C080	Threatened	None	G2	S2	1B.1
sticky dudleya *Dudleya viscida*	PDCRA040T0	None	None	G2	S2	1B.2
summer holly *Comarostaphylis diversifolia ssp. diversifolia*	PDERI0B011	None	None	G3T2	S2	1B.2
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
two-striped gartersnake *Thamnophis hammondii*	ARADB36160	None	None	G4	S3S4	SSC
Valley Needlegrass Grassland *Valley Needlegrass Grassland*	CTT42110CA	None	None	G3	S3.1	
variegated dudleya *Dudleya variegata*	PDCRA040R0	None	None	G2	S2	1B.2
wandering (=saltmarsh) skipper *Panoquina errans*	IILEP84030	None	None	G4G5	S2	
wart-stemmed ceanothus *Ceanothus verrucosus*	PDRHA041J0	None	None	G2	S2?	2B.2
western beach tiger beetle *Cicindela latesignata*	IICOL02110	None	None	G2G3	S1	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G4G5T4	S3S4	SSC
western red bat *Lasiurus frantzii*	AMACC05080	None	None	G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G2G3	S3S4	SSC
western yellow bat *Lasiurus xanthinus*	AMACC05070	None	None	G4G5	S3	SSC
willowy monardella *Monardella viminea*	PDLAM18140	Endangered	Endangered	G1	S1	1B.1
woven-spored lichen *Texosporium sancti-jacobi*	NLTEST7980	None	None	G3	S2	3
yellow warbler *Setophaga petechia*	ABPBX03010	None	None	G5	S3	SSC
Yuma myotis *Myotis yumanensis*	AMACC01020	None	None	G5	S4	

Record Count: 118

Appendix C: CNPS Species List

Search Results

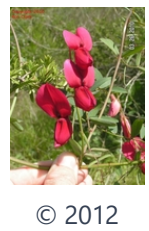
80 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3211772:3211771**]

▲ COMMON NAME	SCIENTIFIC NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
aphanisma	*Aphanisma blitoides*	Chenopodiaceae	annual herb	Feb-Jun	None	None	G3G4	S2	1B.2		1980-01-01	 © 2010 Larry Sward
ashy spike-moss	*Selaginella cinerascens*	Selaginellaceae	perennial rhizomatous herb		None	None	G3G4	S3	4.1		1974-01-01	No Photo Available
beach goldenaster	*Heterotheca sessiliflora* ssp. *sessiliflora*	Asteraceae	perennial herb	Mar-Dec	None	None	G4T2T3	S1	1B.1		2007-06-14	No Photo Available
Blochman's dudleya	*Dudleya blochmaniae* ssp. *blochmaniae*	Crassulaceae	perennial herb	Apr-Jun	None	None	G3T2	S2	1B.1		1974-01-01	 © 2011 Aaron E. Sims
bottle liverwort	*Sphaerocarpos drewiae*	Sphaerocarpaceae	ephemeral liverwort		None	None	G1	S1	1B.1	Yes	2001-01-01	No Photo Available
Brand's star phacelia	*Phacelia stellaris*	Hydrophyllaceae	annual herb	Mar-Jun	None	None	G1	S1	1B.1		1994-01-01	No Photo Available
California adder's-tongue	*Ophioglossum californicum*	Ophioglossaceae	perennial rhizomatous herb	Jan-Jun(Dec)	None	None	G4	S4	4.2		1974-01-01	No Photo Available
California adolphia	*Adolphia californica*	Rhamnaceae	perennial deciduous shrub	Dec-May	None	None	G3	S2	2B.1		1974-01-01	 © 2007 Andrew Borcher
California box-thorn	*Lycium californicum*	Solanaceae	perennial shrub	Mar-Aug(Dec)	None	None	G4	S4	4.2		2001-01-01	No Photo Available
California Orcutt grass	*Orcuttia californica*	Poaceae	annual herb	Apr-Aug	FE	CE	G1	S1	1B.1		1974-01-01	No Photo Available

Campbell's liverwort	*Geothallus tuberosus*	Sphaerocarpaceae	ephemeral liverwort		None	None	G2	S2	1B.1	Yes	2001-01-01	 © 2023 Nathan Taylor
chaparral ragwort	*Senecio aphanactis*	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2		1994-01-01	No Photo Available
cliff spurge	*Euphorbia misera*	Euphorbiaceae	perennial shrub	(Oct)Dec-Aug	None	None	G5	S2	2B.2		1974-01-01	No Photo Available
coast woolly-heads	*Nemacaulis denudata* var. *denudata*	Polygonaceae	annual herb	Apr-Sep	None	None	G3G4T2	S2	1B.2		1994-01-01	No Photo Available
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994-01-01	 © 2013 Keir Morse
Coulter's saltbush	*Atriplex coulteri*	Chenopodiaceae	perennial herb	Mar-Oct	None	None	G3	S1S2	1B.2		1994-01-01	No Photo Available
decumbent goldenbush	*Isocoma menziesii* var. *decumbens*	Asteraceae	perennial shrub	Apr-Nov	None	None	G3G5T2T3	S2	1B.2		1994-01-01	No Photo Available
Del Mar manzanita	*Arctostaphylos glandulosa* ssp. *crassifolia*	Ericaceae	perennial evergreen shrub	Jun-Apr	FE	None	G5T2	S2	1B.1		1974-01-01	 © 2012 Neal Kramer
delicate clarkia	*Clarkia delicata*	Onagraceae	annual herb	Apr-Jun	None	None	G3	S3	1B.2		1974-01-01	No Photo Available
estuary seablite	*Suaeda esteroa*	Chenopodiaceae	perennial herb	(Jan-May)Jul-Oct	None	None	G3	S2	1B.2		1984-01-01	No Photo Available
golden-rayed pentachaeta	*Pentachaeta aurea* ssp. *aurea*	Asteraceae	annual herb	Mar-Jul	None	None	G4T3	S3	4.2		2001-01-01	No Photo Available
golden-spined cereus	*Bergerocactus emoryi*	Cactaceae	perennial stem	May-Jun	None	None	G2G3	S2	2B.2		1974-01-01	No Photo Available
graceful tarplant	*Holocarpha virgata* ssp. *elongata*	Asteraceae	annual herb	May-Nov	None	None	G5T3	S3	4.2	Yes	1994-01-01	 © 2013 Anna Bennett

heart-leaved pitcher sage	*Lepechinia cardiophylla*	Lamiaceae	perennial shrub	Apr-Jul	None	None	G3	S2S3	1B.2		1974-01-01	 © 2003 Vince Scheidt
Lewis' evening-primrose	*Camissoniopsis lewisii*	Onagraceae	annual herb	Mar-May(Jun)	None	None	G4	S4	3		1994-01-01	No Photo Available
light gray lichen	*Mobergia calculiformis*	Physciaceae	crustose lichen (saxicolous)		None	None	G3	S1	3		2014-03-01	No Photo Available
little mousetail	*Myosurus minimus* ssp. *apus*	Ranunculaceae	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1		1980-01-01	No Photo Available
long-spined spineflower	*Chorizanthe polygonoides* var. *longispina*	Polygonaceae	annual herb	Apr-Jul	None	None	G5T3	S3	1B.2		1994-01-01	No Photo Available
low bush monkeyflower	*Diplacus aridus*	Phrymaceae	perennial evergreen shrub	Apr-Jul	None	None	G4	S3	4.3		1984-01-01	No Photo Available
Mission Canyon bluecup	*Githopsis diffusa* ssp. *filicaulis*	Campanulaceae	annual herb	Apr-Jun	None	None	G5T1Q	S1	3.1	Yes	1980-01-01	No Photo Available
Munz's sage	*Salvia munzii*	Lamiaceae	perennial evergreen shrub	Feb-Apr	None	None	G2	S2	2B.2		1974-01-01	No Photo Available
Nuttall's acmispon	*Acmispon prostratus*	Fabaceae	annual herb	Mar-Jun(Jul)	None	None	G1G2	S1	1B.1		1974-01-01	 © 2014 Andrew Borcher
Nuttall's scrub oak	*Quercus dumosa*	Fagaceae	perennial evergreen shrub	Feb-Apr(May-Aug)	None	None	G3	S3	1B.1		1994-01-01	No Photo Available
oil neststraw	*Stylocline citroleum*	Asteraceae	annual herb	Mar-Apr	None	None	G3	S3	1B.1	Yes	1994-01-01	No Photo Available
Orcutt's brodiaea	*Brodiaea orcuttii*	Themidaceae	perennial bulbiferous herb	May-Jul	None	None	G2	S2	1B.1	Yes	1974-01-01	 © 2001 Ellen Friedman & Ted Dunning
Orcutt's pincushion	*Chaenactis glabriuscula* var. *orcuttiana*	Asteraceae	annual herb	Jan-Aug	None	None	G5T1	S1	1B.1		2001-01-01	No Photo Available
Orcutt's spineflower	*Chorizanthe orcuttiana*	Polygonaceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available

Otay Mesa mint	*Pogogyne nudiuscula*	Lamiaceae	annual herb	May-Jul	FE	CE	G1	S1	1B.1		1974-01-01	No Photo Available
Otay Mountain ceanothus	*Ceanothus otayensis*	Rhamnaceae	perennial evergreen shrub	Jan-Apr	None	None	G1G2	S1	1B.2		2001-01-01	No Photo Available
Palmer's goldenbush	*Ericameria palmeri* var. *palmeri*	Asteraceae	perennial evergreen shrub	(Jul)Sep-Nov	None	None	G4T2?	S2	1B.1		1980-01-01	No Photo Available
Palmer's grapplinghook	*Harpagonella palmeri*	Boraginaceae	annual herb	Mar-May	None	None	G4	S3	4.2		1980-01-01	 © 2015 Keir Morse
pride-of-California	*Lathyrus splendens*	Fabaceae	perennial herb	Mar-Jun	None	None	G4	S4	4.3		1974-01-01	 © 2012 Ron Clark
prostrate vernal pool navarretia	*Navarretia prostrata*	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2	Yes	2001-01-01	No Photo Available
purple stemodia	*Stemodia durantifolia*	Plantaginaceae	perennial herb	(Jan)Apr-Dec	None	None	G5	S2	2B.1		2001-01-01	No Photo Available
red sand-verbena	*Abronia maritima*	Nyctaginaceae	perennial herb	Feb-Nov	None	None	G4	S3?	4.2		1994-01-01	 ©2003 Christopher L. Christie
Robinson's pepper-grass	*Lepidium virginicum* var. *robinsonii*	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3		1994-01-01	 © 2015 Keir Morse
salt marsh bird's-beak	*Chloropyron maritimum* ssp. *maritimum*	Orobanchaceae	annual herb (hemiparasitic)	May-Oct(Nov)	FE	CE	G4?T1	S1	1B.2		1974-01-01	No Photo Available
salt spring checkerbloom	*Sidalcea neomexicana*	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2		1994-01-01	No Photo Available
San Diego ambrosia	*Ambrosia pumila*	Asteraceae	perennial rhizomatous herb	Apr-Oct	FE	None	G1	S1	1B.1		1974-01-01	 © 2010 Benjamin Smith
San Diego barrel cactus	*Ferocactus viridescens*	Cactaceae	perennial stem	May-Jun	None	None	G3?	S2S3	2B.1		1974-01-01	No Photo Available

San Diego button-celery	*Eryngium aristulatum* var. *parishii*	Apiaceae	annual/perennial herb	Apr-Jun	FE	CE	G5T1	S1	1B.1		1974-01-01	No Photo Available
San Diego County needle grass	*Stipa diegoensis*	Poaceae	perennial herb	Feb-Jun	None	None	G4	S4	4.2		1974-01-01	No Photo Available
San Diego County viguiera	*Viguiera laciniata*	Asteraceae	perennial shrub	Feb-Jun(Aug)	None	None	G4	S4	4.3		1974-01-01	No Photo Available
San Diego goldenstar	*Bloomeria clevelandii*	Themidaceae	perennial bulbiferous herb	Apr-May	None	None	G2G3	S3	1B.1		1974-01-01	No Photo Available
San Diego gumplant	*Grindelia hallii*	Asteraceae	perennial herb	May-Oct	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2014 Keir Morse
San Diego marsh-elder	*Iva hayesiana*	Asteraceae	perennial herb	Apr-Oct	None	None	G3	S2	2B.2		1980-01-01	No Photo Available
San Diego mesa mint	*Pogogyne abramsii*	Lamiaceae	annual herb	Mar-Jul	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
San Diego sagewort	*Artemisia palmeri*	Asteraceae	perennial deciduous shrub	(Feb)May-Sep	None	None	G3?	S3?	4.2		1974-01-01	No Photo Available
San Diego sand aster	*Corethrogyne filaginifolia* var. *incana*	Asteraceae	perennial herb	Jun-Sep	None	None	G4T1Q	S1	1B.1		1980-01-01	No Photo Available
San Diego thorn-mint	*Acanthomintha ilicifolia*	Lamiaceae	annual herb	Apr-Jun	FT	CE	G1	S1	1B.1		1974-01-01	 © 2013 Keir Morse
sand-loving wallflower	*Erysimum ammophilum*	Brassicaceae	perennial herb	Feb-Jun(Jul-Aug)	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
sea dahlia	*Leptosyne maritima*	Asteraceae	perennial herb	Mar-May	None	None	G2	S1S2	2B.2		1974-01-01	No Photo Available
seaside cistanthe	*Cistanthe maritima*	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	None	None	G3G4	S3	4.2		1980-01-01	No Photo Available
short-leaved dudleya	*Dudleya brevifolia*	Crassulaceae	perennial herb	Apr-May	None	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
singlewhorl burrobrush	*Ambrosia monogyra*	Asteraceae	perennial shrub	Aug-Nov	None	None	G5	S2	2B.2		2007-02-21	 © 2014 Keir Morse

small-flowered microseris	*Microseris douglasii* ssp. *platycarpha*	Asteraceae	annual herb	Mar-May	None	None	G4T4	S4	4.2		2001-01-01	 © 2015 Richard Spellenberg
small-flowered morning-glory	*Convolvulus simulans*	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2		1994-01-01	No Photo Available
south coast saltscale	*Atriplex pacifica*	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4	S2	1B.2		1994-01-01	No Photo Available
southwestern spiny rush	*Juncus acutus* ssp. *leopoldii*	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	None	None	G5T5	S4	4.2		1988-01-01	 © 2019 Belinda Lo
spreading navarretia	*Navarretia fossalis*	Polemoniaceae	annual herb	Apr-Jun	FT	None	G2	S2	1B.1		1980-01-01	No Photo Available
sticky dudleya	*Dudleya viscida*	Crassulaceae	perennial herb	May-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
summer holly	*Comarostaphylis diversifolia* ssp. *diversifolia*	Ericaceae	perennial evergreen shrub	Apr-Jun	None	None	G3T2	S2	1B.2		1980-01-01	No Photo Available
variegated dudleya	*Dudleya variegata*	Crassulaceae	perennial herb	Apr-Jun	None	None	G2	S2	1B.2		1974-01-01	No Photo Available
vernal barley	*Hordeum intercedens*	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994-01-01	No Photo Available
wart-stemmed ceanothus	*Ceanothus verrucosus*	Rhamnaceae	perennial evergreen shrub	Dec-May	None	None	G2	S2?	2B.2		1974-01-01	No Photo Available
western dichondra	*Dichondra occidentalis*	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	None	None	G3G4	S3S4	4.2		1974-01-01	No Photo Available
western spleenwort	*Asplenium vespertinum*	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	None	None	G3?	S4	4.2		1974-01-01	No Photo Available
willowy monardella	*Monardella viminea*	Lamiaceae	perennial herb	Jun-Aug	FE	CE	G1	S1	1B.1	Yes	1980-01-01	 © 2015 Keir Morse
woolly seablite	*Suaeda taxifolia*	Chenopodiaceae	perennial evergreen shrub	Jan-Dec	None	None	G4	S4	4.2		1994-01-01	No Photo Available
woven-spored lichen	*Texosporium sancti-jacobi*	Caliciaceae	crustose lichen (terricolous)		None	None	G3	S2	3		2014-03-01	 ©2021 Scot Loring

Showing 1 to 80 of 80 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 18 September 2023].

Appendix D: NMFS Species List

From: Vincent Chevreuil
To: nmfswcrca.specieslist@noaa.gov
Subject: MTS Rio Vista Project - NMFS Species List
Date: Monday, September 18, 2023 12:43:00 PM
Attachments: image001.png

Quad Name **La Jolla**

Quad Number **32117-G2**

ESA Anadromous Fish

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

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) - **X**

Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH - **X**
Coastal Pelagics EFH - **X**
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds - **X**

Thank you,

Vincent Chevreuil
Biologist/Environmental Planner |
Dokken Engineering
Phone: 916.858.0642
Email: vchevreuil@dokkenengineering.com
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Appendix E: NRCS Soil Report List

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 San Diego County Area, California

September 18, 2023

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

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.

Map Scale: 1:1,260 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

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 1:24,000.

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

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

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

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

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

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

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 18, Sep 14, 2022

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

Date(s) aerial images were photographed: Mar 24, 2022—Apr 29, 2022

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
GP	Gravel pits	2.6	85.3%
Rm	Riverwash	0.4	14.7%
Totals for Area of Interest		**3.0**	**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.

San Diego County Area, California

GP—Gravel pits

Map Unit Composition

Gravel pits: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gravel Pits

Setting

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and gravelly alluvium

Rm—Riverwash

Map Unit Setting

National map unit symbol: 2zwsk
Elevation: 700 to 2,900 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 110 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Riverwash: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverwash

Setting

Landform: Drainageways
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy, gravelly, or cobbly alluvium derived from mixed sources

Typical profile

A - 0 to 6 inches: gravelly coarse sand
C - 6 to 60 inches: stratified very gravelly coarse sand to gravelly sand

Properties and qualities

Slope: 0 to 4 percent
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 60 to 72 inches
Frequency of flooding: OccasionalNone

Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Ecological site: R019XG905CA - Riparian

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix F: Representative Photographs

Photo 1. Representative photograph of the MTS Rio Vista station platform, facing east. The Project will retrofit the infrastructure to prevent further settlement of the platform (August 2023).

Photo 2. Representative photograph of the upland riparian habitat surrounding the San Diego River Parkway Trail south of the MTS station. Taken facing west (August 2023).

Photo 3. Riparian vegetation directly south of the platform will be removed to provide construction access and restored following the completion of construction (August 2023).

Photo 4. Photo representative of the willow riparian habitat that borders the San Diego River south of the parkway trail. No impacts to this habitat community are anticipated (August 2023).

Photo 5. Representative photograph of the marginal coastal sage scrub habitat located southeast of the platform. No impacts to this habitat community are anticipated (August 2023).

Appendix G: FSDRIP Development and Mitigation Guidelines

Appendix D

DOKKEN ENGINEERING
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MEMORANDUM

Company:	**San Diego Metropolitan Transit System**
From:	**Gabrielle Ploszaj, Archaeologist**
Subject:	**Rio Vista Platform Design, Phase II Project Cultural Resources Inventory**
Date:	**January 19, 2024**

The San Diego Metropolitan Transit System (MTS) proposes to retrofit the existing walls and platform of the Rio Vista Station in San Diego County, California to prevent additional settling and/or movement of the station's infrastructure as part of the Rio Vista Platform Design – Phase II Project (Project). The proposed Project is subject to compliance with CEQA, and the MTS is the CEQA lead agency.

The MTS Rio Vista Station (Station) platform and apartment complex to the north were constructed in 1999 and 2005, respectively. In 2018, MTS observed settlement/movement at this station and engaged Jacobs and Atlas (formerly SCST inc.) for retrofit recommendations. Proposed retrofit work may include tie rods, tie-back anchors, CIP wall replacement, and surface drainage improvements. The Project is expected to be fully constructed by the Spring of 2025.

Location
The Project is in the City of San Diego in San Diego County at the MTS Rio Vista Station located on the La Jolla, California U.S. Geological Survey 7.5-minute quadrangle within Township 16S Range 3W (**Appendix A Figures 1&2**). The Project Area Limits (PAL) are defined as the location of repair work including areas that will be used for construction activities like staging equipment, which totals 1.45 acres. The structural improvements require a maximum of 14 feet of excavation below the platform surface, and maximum of 3 feet below the existing grade in the remaining areas. The Project location and PAL is shown in **Appendix A: Figure 3**.

Background Research
To determine the necessary level of resource identification efforts for the proposed undertaking and to better understand the types of cultural resources likely to be encountered in the PAL during the subsequent survey, a variety of resources were consulted. Sources included a records search at the South Coastal Information Center (SCIC) as well as historical map, literature, and aerial imagery review.

Records Search
A record search for the PAL was conducted on December 4, 2023. Additional research included searches of the National Register of Historic Places, the California Register of Historical Resources (California Register), the Directory of Properties in the Historic Property Data File,

the *California Historic Landmarks* (1996), the *California Inventory of Historic Resources* (1976), and the *California Points of Historical Interest* listing (May 1992 and updates). Using this data, previously recorded sites, and previous surveys within a half-mile radius of the PAL were reviewed.

The SCIC identified five (5) previously recorded cultural resources within the half-mile search radius of the PAL and no cultural resources within the PAL (**Table 1**). Additionally, five (5) cultural resource investigations previously conducted within the half-mile search radius of the PAL, and four (4) previous investigations within the PAL were identified (**Table 2**). The results from the SCIC can be found in **Appendix B**.

Table 1. Previously recorded resources within the half-mile search radius

Primary Number	Trinomial	Resource Type	Description	Age
P-37-011055	CA-SDI-011055	Site	Extensive areas of burnt and broken rock (FCR?), hearths and associated stone cores and tools.	Prehistoric
P-37-011056	CA-SDI-011056	Site	Fagerheim Ranch; midden is noted with low shell content.	Prehistoric
P-37-037007	-	Building	A contemporary style department store at the Mission Valley Shopping Center.	Historic
P-37-039141	-	Building	The Bowlero/Scottish Rite Event Center	Historic
P-37-040377	CA-SDI-023382	Site	A single Indigenous flake and a steel cross with an associated historic trash scatter.	Multicomponent

Table 2. Previous reports/surveys within the half-mile search radius

Report ID	Citation Year	Author(s)	Report Title	Inside or Outside of PAL
SD-00368	1979	Carrico, Richard	Archaeological Survey of the Conrock Mission Valley Cup Extension and Reclamation Plant Area	Inside
SD-00546	1975	Cupples, Sue Ann	An Archaeological Survey of the San Diego River Valley	Inside
SD-12200	2009	-	Draft Environmental Impact Report For The Master Storm Water System Maintenance Program (MSWSMP)	Inside
SD-13918	2012	ICF International	San Diego River Park Master Plan Project Draft Program Environmental Impact Report	Inside
SD-00368	1979	Carrico, Richard	Archaeological Survey of the Conrock Mission Valley Cup Extension and Reclamation Plant Area	Outside
SD-00469	1977	Corum, Joyce M.	An Archaeological Survey Report for Portions of a Proposed Ramp	Outside

Report ID	Citation Year	Author(s)	Report Title	Inside or Outside of PAL
			Metering Project (11-SD-8, P.M. R 0.0- R 18.7) 11355-146531	
SD-00546	1975	Cupples, Sue Ann	An Archaeological Survey of the San Diego River Valley	Outside
SD-00789	1988	Cheever, Dayle and Dennis Gallegos	Archaeological Survey of the North Mission Valley Interceptor Sewer, Stadium Way to Fairmont Avenue	Outside
SD-00970	1988	Timothy Gross and Mary Robins-Wade	Texas Street Widening	Outside

Map Review
A review of historic aerial photography, historic USGS topographic maps, and an attempt to review GLO plat maps of Township 16 South Range 3 West was conducted. No GLO plat survey maps were available for Township 16 South Range 3 West. Historic topographic maps from 1903 to 1929 depict the project area as a largely undeveloped landscape, a single road is shown south of the PAL, which is most likely a historic alignment of Friars Road. Aerial imagery dating from 1953 to 1964 shows large parcels of undeveloped land north of the San Diego River whereas the southern edge of the river had already been largely developed. By 1966, the Mission Valley Freeway was completed, and interchanges were constructed along the northern edge of the San Diego River. By 1984 the PAL and the surrounding plots of land were developed and only slivers of native land remain. The MTS Rio Vista Platform was first opened in November 1997 and was rebuilt in 2005. The Station remains largely unchanged to the current day.

Archaeological Sensitivity
Based on a review of historic literature, geographic features, a lack of previously recorded archaeological resources within the PAL, negative past survey reports within the PAL, and negative pedestrian survey results, overall archaeological site sensitivity in the Project area is considered *low.*

Soils within the PAL are designated as gravel pits and river wash (Department of Agriculture 2024) and may indicate that native soils have been disturbed within the PAL. Geological formations within the PAL and the surrounding vicinity consists of Pleistocene-Holocene deposits (Department of Conservation 2015). The San Diego River and adjacent high ground north and south of the San Diego River would have been a targeted location of Indigenous peoples' activity. although no previous recordation of Indigenous resources is documented in the records search area. The degree of disturbance and development throughout the Project vicinity suggests that the probability to locate intact subsurface archaeological deposits is *low*.

Native American Consultation
On November 7, 2023, a letter and a map depicting the Project vicinity was sent to the NAHC, asking the NAHC commission to review the Sacred Lands File (SLF) for any Native American cultural resources that might be affected by the Project (**Appendix C**). The request to the NAHC seeks to identify any Native American cultural resources within the Project vicinity. A list of Native American individuals who might have information or concerns about the Project was also

requested. On November 30, 2023, Pracilla Torres-Fuentes, Cultural Resources Analyst, informed via email that a review of the sacred lands file returned positive results (**Appendix C**).

On May 10, 2024 initial consultation letters were mail to the Native American individuals on the list provided by the NAHC. The letters provided a summary of the Project and requested information regarding comments or concerns the Native American community might have about the Project (**Appendix C**).

Survey Results

On January 11, 2024, Dokken Engineering Archaeologist Michelle Campbell, M.A., conducted a ground surface inventory of the PAL. Linear pedestrian transects no more than 10 meters apart, where possible, were used to inspect the ground surface. All cut banks, burrow holes, and other exposed sub-surface areas were visually inspected for the presence of archaeological resources, soil color change, and/or staining that could indicate past human activity or buried deposits. The majority of the PAL is covered in concrete and the remaining portions of the PAL had a visibility ranging from 0 to 20 percent due to dense vegetation.

During this survey, no Indigenous-era or historic-era cultural resources were identified. The PAL consists of the Station, the upland riparian corridor south of the Station, and areas for construction or material staging. Photographs documenting the PAL were taken throughout the pedestrian inspection and are documented in this report (**Appendix D**).

Summary

In summary, no Indigenous-era or historic-era cultural resources were identified during the January 11, 2024, pedestrian inspection. Due to the construction of the Station, the active recreational trail to the south of the Station, and the surrounding apartment complexes, the PAL and surrounding area has been heavily disturbed. In consideration of these factors, the overall potential for encountering intact archaeological resources within the PAL is considered *low.*

While no Indigenous or historic-era resources are noted within the PAL, and the potential of encountering intact cultural resources is *low*, the following practices should be implemented in case cultural material is encountered:

CR-1: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

CR-2: Section 5097.94 of the PRC and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work should halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the NAHC within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.

Qualifications

Michelle Campbell (M.A. Archaeology, California State University, Sacramento) was the archaeological surveyor and acted as Principal Investigator on this report. Ms. Campbell has been practicing archaeology in California and the Great Basin region since 1999 and meets the Secretary of the Interior's Professional Qualification Standards in Archaeology.

Gabrielle Ploszaj (B.A. Anthropology, California State University, Long Beach) prepared this report. Ms. Ploszaj has been performing archaeology in California and since 2019 and meets the Secretary of the Interior's Professional Qualification Standards in Archaeology as a Lead Surveyor.

APPENDIX A: Maps

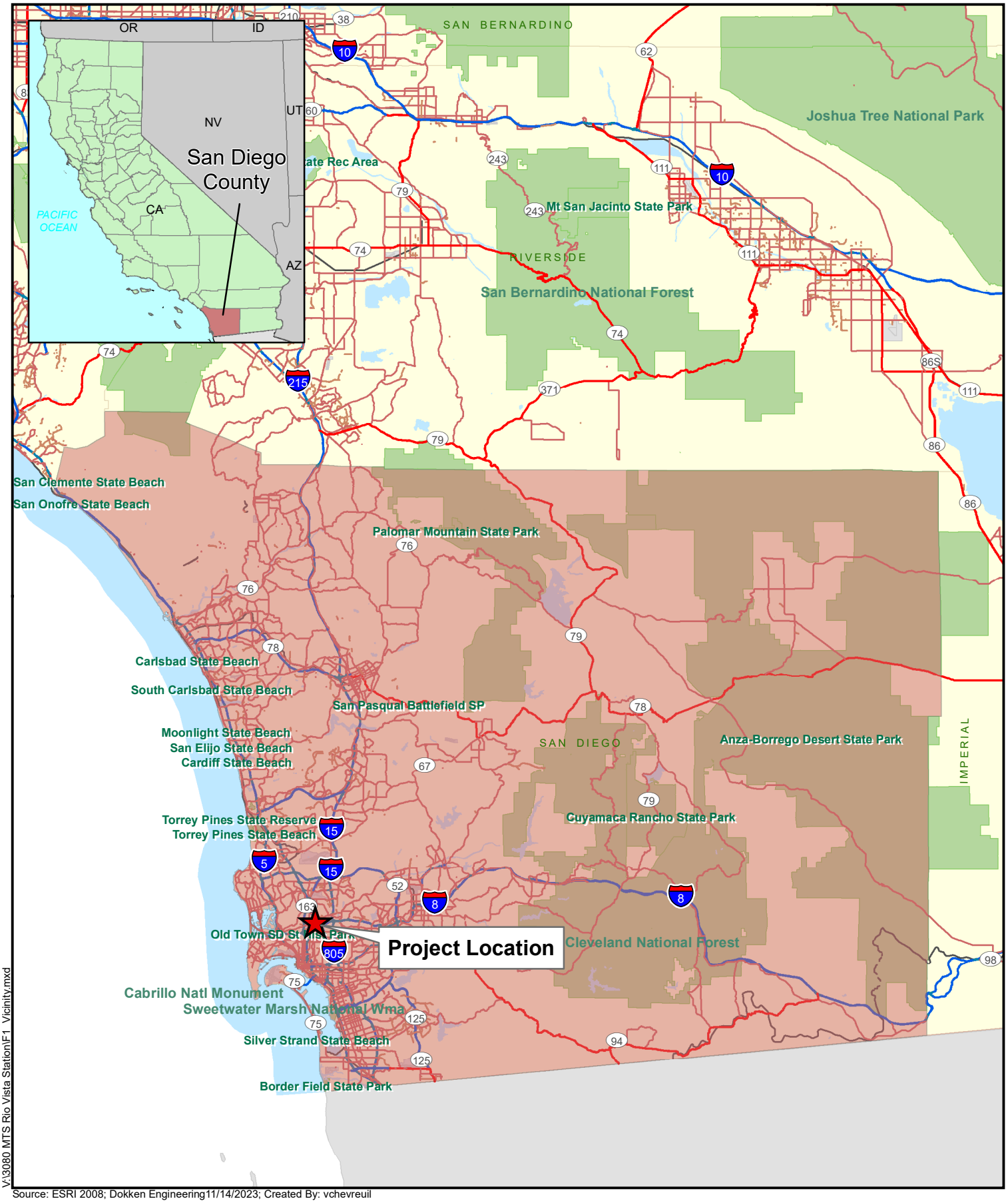
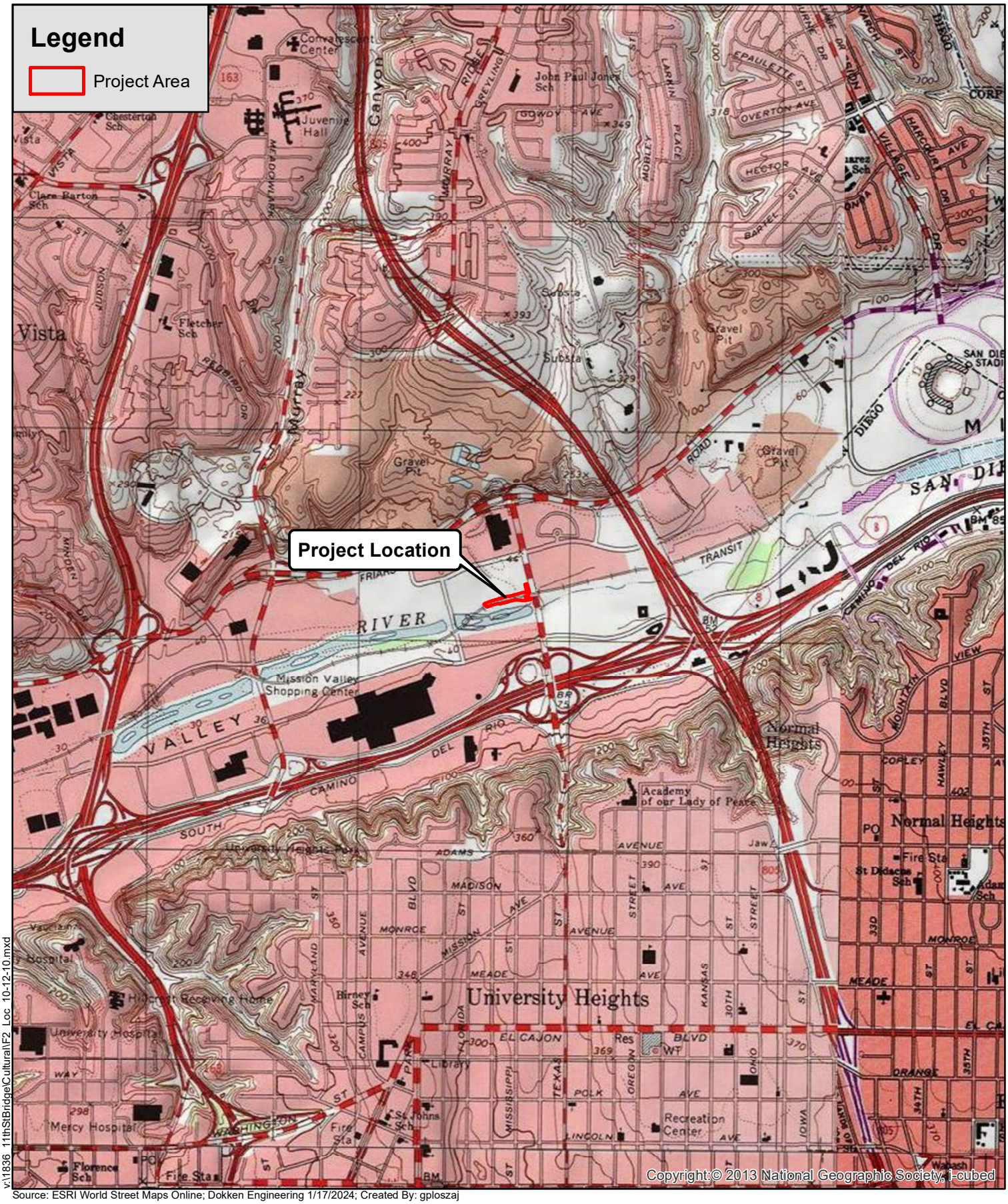


FIGURE 1
Project Vicinity

Rio Vista Platform Design - Phase II
San Diego County, California

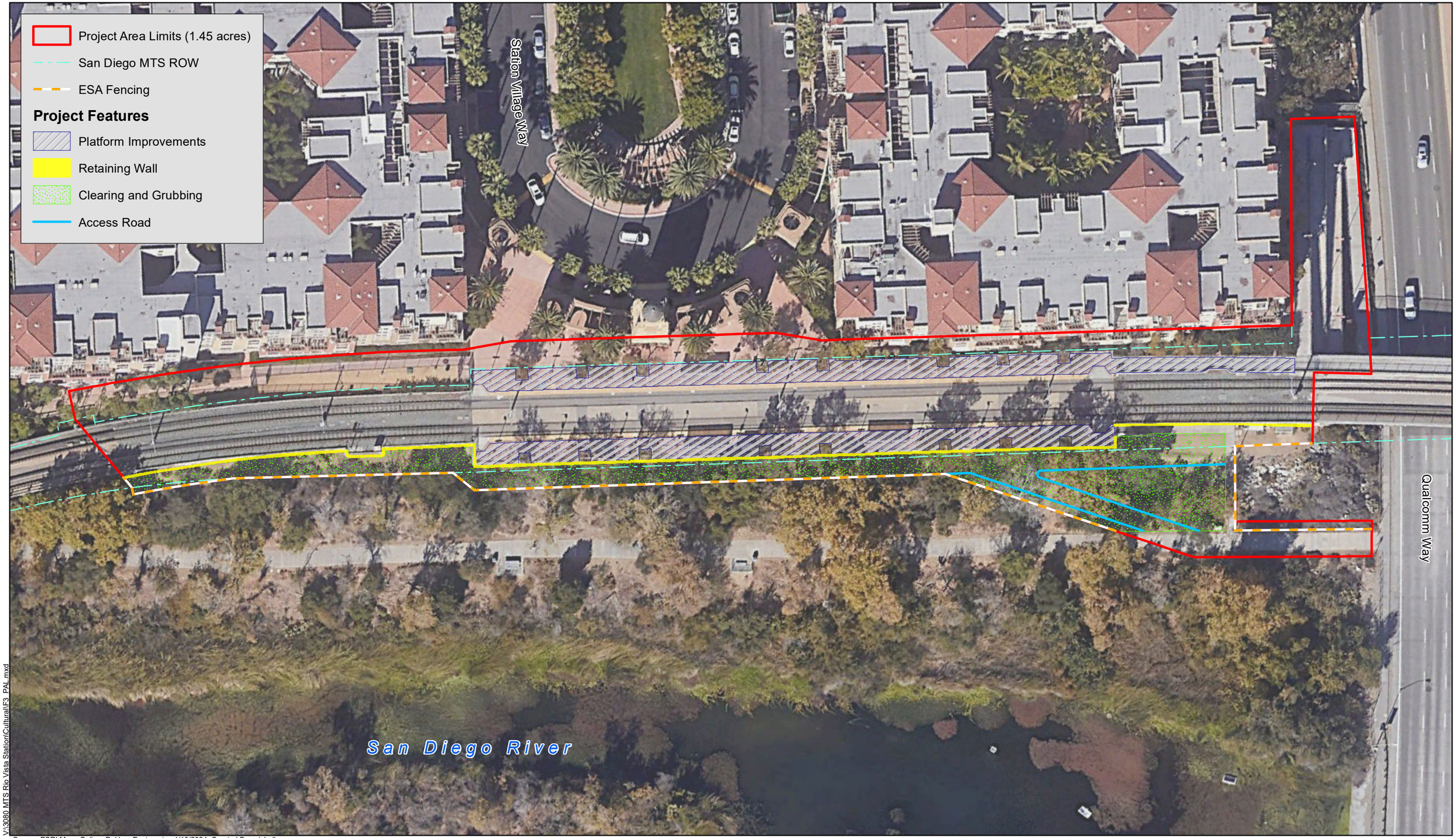


Source: ESRI World Street Maps Online; Dokken Engineering 1/17/2024; Created By: gploszaj

v:\1836_11thStBridge\Cultural\F2_Loc_10-12-10.mxd

0 0.5 1 1.5 2 Miles

FIGURE 2
Project Location
USGS 7.5-minute Quad: La Jolla, CA
Rio Vista Platform Design - Phase II
San Diego County, California



V:\3080 MTS Rio Vista Station\Cultural\F3_PAL.mxd

Source: ESRI Maps Online; Dokken Engineering 1/19/2024; Created By: michellec

1 inch = 50 feet

0 50 100 150 200 Feet

FIGURE 3
Project Area Limits
Rio Vista Platform Design - Phase II
San Diego County, California

Appendix B: Record Search Results

South Coastal Information Center
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-5320
Office: (619) 594-5682
www.scic.org
nick@scic.org

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM RECORDS SEARCH

Company: Dokken Engineering

Company Representative: Amy Bakker

Date Processed: 12/4/2023

Project Identification: MTS Rio Vista Platform Design - Phase II (Project #3080)

Search Radius: 1/2 mile

Historical Resources: JL

Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

Previous Survey Report Boundaries: JL

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been included.

Historic Addresses: JL

A map and database of historic properties (formerly Geofinder) has been included.

Historic Maps: N/A

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Summary of SHRC Approved CHRIS IC Records Search Elements	
RSID:	3523
RUSH:	no
Hours:	1
Spatial Features:	38
Address-Mapped Shapes:	no
Digital Database Records:	41
Quads:	1
Aerial Photos:	0
PDFs:	Yes
PDF Pages:	100

This is not an invoice. Please pay from the monthly billing statement

PrimaryString	TrinomialString	OtherIDs	ResType	Age	Attribs	RecordingEvents	Reports	Address
P-37-011055	CA-SDI-011055						SD-02916, SD-08175, SD-09625	
P-37-011056	CA-SDI-011056						SD-07830, SD-09748, SD-10419, SD-11977, SD-13465	
P-37-037007		Other - 1702 Camino Del Rio North, San Diego, CA 92108; Other - Macy's; Other - May Company; Other - AT&T Mobility LLc SD0357/Texas Street	Building	Historic	HP07 (3+ story commercial building)	2015 (K.A. Crawford, Crawford Historic Services); 2015 (K.A. Crawford, Office of Marie Burke Lia)	SD-16526, SD-17917	1702 Camino Del Rio North San Diego 92108 (APN 438-030-06)
P-37-039141		Resource Name - Bowlero/Scottish Rite Event Center, 1895 Camino del Rio South					SD-18505	
P-37-040377	CA-SDI-023382	IC Informal - RNID-5291						

ReportNum	IDs	Authors	CitYear	CitTitle	CitPublisher	ReportType	InventoryNotes	Resources
SD-00368	NADB-R - 1120368; Voided - CARRICO111	Carrico, Richard	1979	Archaeological Survey of the Conrock Mission Valley Cup Extension and Reclaimation Plant Area	WESTEC Services, Inc.	Archaeological, Field study	[NADB Keywords: COASTAL AREAS, CONROCK MISSION VALLEY PROJECT, DIGITAL REPORT, NO RESOURCES, SOUTHERN PENINSULAR RANGES]	
SD-00546	NADB-R - 1120546; Voided - CUPPLES 43	Cupples, Sue Ann	1975	An Archaeological Survey of the San Diego River Valley	San Diego State University Foundation	Archaeological, Field study	[NADB Keywords: CULTURAL RESOURCE ASSESMENT, DIGITAL COPY, SAN DIEGO RIVER]	37-000004, 37-000035, 37-000038, 37-000041, 37-000120, 37-000125, 37-000202, 37-000203, 37-000239
SD-12200	NADB-R - 1132200; Other - Project No. 42891 SCH No. 200101032; Voided - CITYSD1081		2009	DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM (MSWSMP)	CITY OF SAN DIEGO DEVELOPMENT SERVICES DEPARTMENT	Archaeological, Evaluation, Other research	[NADB Keywords: DIGITAL REPORT, UNKNOWN FINDINGS]	
SD-13918	NADB-R - 1133918; Other - PROJECT NO. 121886 SCH NO. 2009041036; Voided - CITYSD1110	ICF INTERNATIONAL	2012	SAN DIEGO RIVER PARK MASTER PLAN PROJECT DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT	ICF INTERNATIONAL	Archaeological, Evaluation, Other research	[NADB Keywords: DIGITAL REPORT, MISSION FLUME, MISSION TRAILS REGIONAL PARK, MISSION VALLEY, PADRE DAM, SAN DIEGO MISSION, SAN DIEGO RIVER, UNKNOWN FINDINGS]	

ReportNum	IDs	Authors	CitYear	CitTitle	CitPublisher	ReportType	InventoryNotes	Resources
SD-00368	NADB-R - 1120368; Voided - CARRICO111	Carrico, Richard	1979	Archaeological Survey of the Conrock Mission Valley Cup Extension and Reclaimation Plant Area	WESTEC Services, Inc.	Archaeological, Field study	[NADB Keywords: COASTAL AREAS, CONROCK MISSION VALLEY PROJECT, DIGITAL REPORT, NO RESOURCES, SOUTHERN PENINSULAR RANGES]	
SD-00469	NADB-R - 1120469; Other - 11355-146531; Voided - CORUM 06	Corum, Joyce M.	1977	An Archaeological Survey Report for Portions of a Proposed Ramp Metering Project (11-SD-8, P.M. R 0.0- R 18.7) 11355-146531	Caltrans	Archaeological, Field study	[NADB Keywords: COASTAL AREAS, NO RESOURCES, SAN DIEGO RIVER VALLEY, SOUTHERN PENINSULAR RANGES]	
SD-00546	NADB-R - 1120546; Voided - CUPPLES 43	Cupples, Sue Ann	1975	An Archaeological Survey of the San Diego River Valley	San Diego State University Foundation	Archaeological, Field study	[NADB Keywords: CULTURAL RESOURCE ASSESMENT, DIGITAL COPY, SAN DIEGO RIVER]	37-000004, 37-000035, 37-000038, 37-000041, 37-000120, 37-000125, 37-000202, 37-000203, 37-000239
SD-00789	NADB-R - 1120789; Voided - CHEEVER21	Cheever, Dayle and Dennis Gallegos	1988	Archaeological Survey of the North Mission Valley Interceptor Sewer, Stadium Way to Fairmont Avenue	WESTEC Services, Inc.	Archaeological, Field study	[NADB Keywords: COASTAL AREAS, NO RESOURCES, SOUTHERN PENINSULAR RANGES]	
SD-00970	NADB-R - 1120970; Other - 764; Voided - GROSS 19	GROSS, TIMOTHY and MARY ROBBINS-WADE	1988	Texas Street Widening	Affinis	Archaeological, Field study	[NADB Keywords: COASTAL AREAS, NO RESOURCES, SOUTHERN PENINSULAR RANGES]	

SD-02916	NADB-R - 1122916; Other - 89-90; Voided - PEAK 01	PEAK & ASSOCIATES, INC	1990	CULTURAL RESOURCES ASSESSMENT OF AT&T'S PROPOSED SAN BERNARDINO TO SAN DIEGO FIBER OPTIC CABLE, SAN BERNARDINO, RIVERSIDE AND SAN DIEGO COUNTIES, CALIFORNIA	PEAK & ASSOCIATES, INC	Archaeological, Evaluation	[NADB Keywords: BEDROCK MILLING SITES, CA-RIV-2013,CA-RIV-1057, CA-RIV-2711,CA-RIV-2696,CA-RIV-2725, CA-SDI-5383A,CA-SDI-5383B,CA-SDI-5383C,CA-SDI-5383D,CA-SDI-5383F, CA-SDI-5382, COASTAL AREAS, FOOD PROCESSING/PROCURMENT SITE, GROUNDSTONE, SDM-W-2059,SDM-W-3705,SDM-W-1322, SDM-W-259,SDM-W-271,SDM-W-2016,SDM-W-218, SOUTHERN PENINSULAR RANGES]	37-000239, 37-000564, 37-000565, 37-000572, 37-000573, 37-000584, 37-000648, 37-000649, 37-000650, 37-000651, 37-000652, 37-000653, 37-000655, 37-000656, 37-000657, 37-000673, 37-000674, 37-000676, 37-000679, 37-000680, 37-000749, 37-000782, 37-001090, 37-001250, 37-001251, 37-001281, 37-004960, 37-004961, 37-004962, 37-005380, 37-005381, 37-005382, 37-005383, 37-005387, 37-005426, 37-005427, 37-005428, 37-005429, 37-005490, 37-005583, 37-005584, 37-005632, 37-005633, 37-005641, 37-005642, 37-005647, 37-006001, 37-006002, 37-006003, 37-006079, 37-006080, 37-006081, 37-006722, 37-007121, 37-007245, 37-007310, 37-007311, 37-007312, 37-007313, 37-007314, 37-007315, 37-007316, 37-008084, 37-008085, 37-008099, 37-008100, 37-008663, 37-009129, 37-009593, 37-010116, 37-010549, 37-010674, 37-010675, 37-010676, 37-010677, 37-010678, 37-010679, 37-010680, 37-010681, 37-010682, 37-010745, 37-010785, 37-010879, 37-011033, 37-011055, 37-011236

SD-02960	NADB-R - 1122960; Other - 11290-050021/11290-050031; Voided - CALTRANS09	CALTRANS	1994	NEGATIVE ARCHAEOLOGICAL SURVEY REPORT, 11-SD-8, P.M. 3.9/4.9,11290-050021, 11-SD-805, P.M. 17.2/18/2, 11290-050031	CALTRANS	Archaeological, Field study	[NADB Keywords: CISMONTANE REGION, COASTAL AREAS, INTERSTATE 8, INTERSTATE 805, NO RESOURCES]	
SD-03683	NADB-R - 1123683; Other - AFFINIS JOB NO. 1417; Voided - ALTER40	ALTER, RUTH	1999	RESULTS OF THE HISTORIC BUILDING ASSESSMENT FOR 1128 OLIVER AVENUE, SAN DIEGO, CALIFORNIA	RANDALL DORRIS	Architectural/Historical	[NADB Keywords: COASTAL, HISTORIC BUILDING ASSESSMENT, NOT ELIGIBLE FOR NOMINATION TO THE CA REGISTR, OLIVER AVENUE, P-37-0177262, R4W, T16S, UNSECTIONED]	
SD-04598	NADB-R - 1124598; Voided - CITYSD52	CITY OF SAN DIEGO	1994	PUBLIC NOTICE OF PROPOSED MITIGATED NEGATIVE DECLARATION ACADEMY OF OUR LADY OF PEACE	CITY OF SAN DIEGO	Management/planning, Other research	[NADB Keywords: NEGATIVE DECLARATION]	
SD-04658	NADB-R - 1124658; Voided - CITYSD886	CITY OF SAN DIEGO	2002	PROPOSED MITIGATED NEGATIVE DECLARATION: FORMATION OF UNDERGROUND UTILITY DISTRICTS	CITY OF SAN DIEGO	Management/planning, Other research	[NADB Keywords: NEGATIVE]	
SD-05439	NADB-R - 1125439; Voided - OWENMA1	OWENS, M.A.	1978	Historic Property Survey Parcel 11-FLA-8052C(SD) (Airspace Lease)	M.A. Owen, Caltrans	Other research	[NADB Keywords: No Resources]	
SD-06644	NADB-R - 1126644; Voided - ROSEN 87	ROSEN, MARTIN	1994	NEGATIVE ARCHAEOLOGICAL SURVEY-INTERSTATE 8 & 805 MISSION VALLEY	MARTIN ROSEN	Management/planning	[NADB Keywords: RETROFITTING]	
SD-09145	NADB-R - 1129145; Voided - GALLEGOS97	GALLEGOS, DENNIS and CAROLYN KYLE	1991	CULTURAL RESOURCE SURVEY REPORT SAN DIEGO BIKEWAYS PROJECT SAN DIEGO, CALIFORNIA	GALLEGOS AND ASSOCIATES	Other research		

SD-09751	NADB-R - 1129751; Voided - MOSLAK 03	Moslak, Ken	2004	Cultural Resources Study for the Quarry Falls Project	ASM Affiliates	Archaeological, Evaluation, Other research	[NADB Keywords: DIGITAL COPY, Negative Survey]	
SD-10444	NADB-R - 1130444; Voided - MAYV17	May, Vonn Marie	2006	UPTOWN HISTORIC ARCHITECTURAL AND CULTURAL LANDSCAPE RECONNAISSANCE SURVEY	IS Architecture	Archaeological, Evaluation, Other research	[NADB Keywords: DIGITAL COPY, Unknown Findings, Uptown]	
SD-11360	NADB-R - 1131360; Voided - MOSLAK05	MOSLAK, KEN	2006	QUARRY FALLS PROGRAM EIR - CULTURAL RESOURCES STUDY	ASM AFFILIATES	Archaeological, Evaluation, Other research	[NADB Keywords: DIGITAL COPY, UNKNOWN FINDINGS]	
SD-11826	NADB-R - 1131826; Other - AFFINIS JOB NO. 2215; Voided - ROBBINS255	ROBBINS-WADE, MARY	2008	ARCHAEOLOGICAL RESOURCES ANALYSIS FOR THE MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM, SAN DIEGO, CALIFORNIA PROJECT. NO. 42891	AFFINIS	Archaeological, Evaluation, Other research	[NADB Keywords: DIGITAL COPY, DIGITAL REPORT, MASTER STORMWATER MAINENANCE PROGRAM, COASTAL, ARCHAEOLOGICAL BACKGROUND STUDY, UNKNOWN FINDINGS]	
SD-12200	NADB-R - 1132200; Other - Project No. 42891 SCH No. 200101032; Voided - CITYSD1081		2009	DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM (MSWSMP)	CITY OF SAN DIEGO DEVELOPMENT SERVICES DEPARTMENT	Archaeological, Evaluation, Other research	[NADB Keywords: DIGITAL REPORT, UNKNOWN FINDINGS]	
SD-13006	NADB-R - 1133006; Other - SCH. NO. 2004101032 PROJECT NO. 42891; Voided - ROBBINS316		2011	MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM - DRAFT RECIRCULATED PROGRAM ENVIRONMENTAL IMPACT REPORT	CITY OF SAN DIEGO	Archaeological, Evaluation, Other research	[NADB Keywords: DIGITAL REPORT, STORM WATER, UNKNOWN FINDINGS]	

SD-13202	NADB-R - 1133202; Voided - ROSENM150	ROSEN, MARTIN D.	2011	CULTURAL RESOURCES TECHNICAL ASSESSMENT FOR THE PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE SAN DIEGO RIVER PARK MASTER PLAN, CITY OF SAN DIEGO, CALIFORNIA	ICF INTERNATIONAL	Archaeological, Architectural/Historical, Evaluation, Other research	[NADB Keywords: DIGITAL REPORT, SAN DIEGO RIVER, UNKNOWN FINDINGS]	
SD-13465	NADB-R - 1133465; Voided - GROSS110	GROSS, G. TIMOTHY	2002	ARCHAEOLOGICAL RESOURCES SURVEY, SEMPRA MISSION CONTROL ACCESS ROAD, MISSION VALLEY, SAN DIEGO, CALIFORNIA	AFFINIS	Archaeological, Evaluation, Other research	[NADB Keywords: CAMP, DIGITAL REPORT, LITHIC SCATTER, MISSION VALLEY, NEGATIVE FINDINGS, SHELL SCATTER, SURVEY]	37-011056, 37-017136, 37-018407
SD-13918	NADB-R - 1133918; Other - PROJECT NO. 121886 SCH NO. 2009041036; Voided - CITYSD1110	ICF INTERNATIONAL	2012	SAN DIEGO RIVER PARK MASTER PLAN PROJECT DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT	ICF INTERNATIONAL	Archaeological, Evaluation, Other research	[NADB Keywords: DIGITAL REPORT, MISSION FLUME, MISSION TRAILS REGIONAL PARK, MISSION VALLEY, PADRE DAM, SAN DIEGO MISSION, SAN DIEGO RIVER, UNKNOWN FINDINGS]	
SD-15120	NADB-R - 1135120	SANDRA PENTNEY and MICHAEL M. DEGIOVINE	2014	HISTORICAL RESOURCE RESEARCH REPORT STADIUM WETLAND MITIGATION PROJECT (SAN DIEGO RIVER)	ATKINS	Archaeological, Architectural/Historical, Field study	KEYWORDS: 65 ACRES, NEGATIVE FINDINGS, PEDESTRIAN SURVEY, QUALCOMM STADIUM, WETLANDS	

SD-16526	NADB-R - 1136526	CRAWFORD, KATHLEEN A.	2015	MACY'S, 1702 CAMINO DEL RIO NORTH, SAN DIEGO, CA 92108	Office of Marie Burke Lia	Architectural/Historical		37-037007
SD-16802	NADB-R - 1136802		2016	UPTOWN COMMUNITY PLAN AREA DRAFT HISTORIC RESOURCES SURVEY REPORT	CITY OF SAN DIEGO PLANNING DEPARTMENT	Architectural/Historical		37-016203, 37-016204
SD-17232	NADB-R - 1137232; Submitter - BCR Project No. SYN1628	BRUNZELL, DAVID	2017	SAN DIEGO 55 FIBER PROJECT, SAN DIEGO COUNTY, CALIFORNIA (BCR CONSULTING PROJECT NO. SYN1628)	BCR Consulting LLC	Archaeological, Field study, Literature search		
SD-17234	NADB-R - 1137234; Submitter - BCR Project No. SYN1514	BRUNZELL, DAVID	2017	CULTURAL RESOURCES ASSESSMENT OF THE MISSION CONTROL, BLUE CYPRESS, LAKE MURRAY AND CASO SERRA PROJECT, SAN DIEGO COUNTY, CALIFORNIA (BCR CONSULTING PROJECT NO. SYN1514)	BCR Consulting LLC	Archaeological, Field study, Literature search		

SD-17916	NADB-R - 1137916	WILLS, CARRIE D., SARAH A. WILLIAMS, and KATHLEEN A. CRAWFORD	2015	CULTURAL RESOURCE RECORDS SEARCH AND SITE VISIT RESULTS FOR AT&T MOBILITY, LLC CANDIDATE SD0357 (TEXAS STREET), 1702 CAMINO DEL RIO NORTH, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA, USID: 103943, FA LOCATION: 10085139	HELIX ENVIRONMENTAL PLANNING, INC.	Archaeological, Field study, Literature search		
SD-18505	NADB-R - 1138505	HERITAGE ARCHITECTURE & PLANNING	2019	HISTORICAL RESOURCES TECHNICAL REPORT BOWLERO / SCOTTISH RITE EVENT CENTER, 1895 CAMINO DEL ROI SOUTH SAN DIEGO, CA 92108	HERITAGE ARCHITECTURE & PLANNING	Architectural/Historical, Evaluation, Other research		37-039141
SD-19824	NADB-R - 1139824	FOGLIA, ALBERTO B.	2021	ETS 50213: CULTURAL RESOURCES SURVEY REPORT FOR THE MISSION SUBSTATION DRIVEWAY EROSION CONTROL PROJECT	PANGIS	Archaeological, Field study		
SD-19934	NADB-R - 1139934	WILSON, STACIE and THEODORE G. COOLEY	2021	ARCHAEOLOGICAL SENSITIVITY ASSESSMENT FOR THE ALVARADO 2ND PIPELINE EXTENSION PROJECT, CITY OF SAN DIEGO, CALIFORNIA	HELIX ENVIRONMENTAL PLANNING, INC.	Archaeological, Field study	KEYWORDS: CITY OF SAN DIEGO; MISSION VALLEY; FRIARS ROAD; PREHISTORIC HABITATION	37-011722, 37-011766, 37-011767, 37-012862, 37-014963
SD-19935	NADB-R - 1139935	WILSON, STACIE and THEODORE G. COOLEY	2021	CULTURAL RESOURCES TECHNICAL REPORT FOR THE ALVARADO 2ND PIPELINE EXTENSION PROJECT, CITY OF SAN DIEGO, CALIFORNIA	HELIX ENVIRONMENTAL PLANNING, INC.	Archaeological, Field study	KEYWORDS: CITY OF SAN DIEGO; MISSION VALLEY; PREHISTORIC HABITATION	37-011722, 37-011766, 37-011767, 37-012862, 37-014963, 37-023996, 37-036520, 37-036521

Appendix C: Native American Consultation

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710

November 30, 2023

Gabrielle Ploszaj
Dokken Engineering

Via Email to: gploszaj@dokkenengineering.com

Re: Rio Vista Platform Design - Phase II Project, San Diego County

Dear Ms. Ploszaj:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the tribes on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@nahc.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Diego County
11/30/2023

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
San Diego	Barona Group of the Capitan Grande	F	Art Bunce, Attorney		(760) 489-0329		buncelaw@aol.com	Diegueno	Imperial,San Diego	7/25/2023
	Campo Band of Diegueno Mission Indians	F	Ralph Goff, Chairperson	36190 Church Road, Suite 1 Campo, CA, 91906	(619) 478-9046	(619) 478-5818	rgoff@campo-nsn.gov	Diegueno	Imperial,Orange,Riverside,San Diego	
	Ewiiaapaayp Band of Kumeyaay Indians	F	Michael Garcia, Vice Chairperson	4054 Willows Road Alpine, CA, 91901	(619) 933-2200	(619) 445-9126	michaelg@leaningrock.net	Diegueno	Imperial,Orange,Riverside,San Diego	
	Ewiiaapaayp Band of Kumeyaay Indians	F	Robert Pinto, Chairperson	4054 Willows Road Alpine, CA, 91901	(619) 368-4382	(619) 445-9126	ceo@ebki-nsn.gov	Diegueno	Imperial,Orange,Riverside,San Diego	
	Iipay Nation of Santa Ysabel	F	Clint Linton, Director of Cultural Resources	P.O. Box 507 Santa Ysabel, CA, 92070	(760) 803-5694		clinton@redtailenvironmental.com	Diegueno	Imperial,San Diego	11/30/2023
	Inaja-Cosmit Band of Indians	F	Rebecca Osuna, Chairperson	2005 S. Escondido Blvd. Escondido, CA, 92025	(760) 737-7628	(760) 747-8568		Diegueno	Imperial,San Diego	
	Jamul Indian Village	F	Erica Pinto, Chairperson	P.O. Box 612 Jamul, CA, 91935	(619) 669-4785	(619) 669-4817	epinto@jiv-nsn.gov	Diegueno	Imperial,San Diego	
	Jamul Indian Village	F	Lisa Cumper, Tribal Historic Preservation Officer	P.O. Box 612 Jamul, CA, 91935	(619) 669-4855		lcumper@jiv-nsn.gov	Diegueno	Imperial,San Diego	9/5/2018
	Kwaaymii Laguna Band of Mission Indians	N	Carmen Lucas,	P.O. Box 775 Pine Valley, CA, 91962	(619) 709-4207			Kwaaymii Diegueno	Imperial,San Diego	6/20/2023
	La Posta Band of Diegueno Mission Indians	F	Gwendolyn Parada, Chairperson	8 Crestwood Road Boulevard, CA, 91905	(619) 478-2113	(619) 478-2125	LP13boots@aol.com	Diegueno	Imperial,Orange,Riverside,San Diego	
	Manzanita Band of Kumeyaay Nation	F	Angela Elliott Santos, Chairperson	P.O. Box 1302 Boulevard, CA, 91905	(619) 766-4930	(619) 766-4957		Diegueno	Imperial,Orange,Riverside,San Diego	
	Mesa Grande Band of Diegueno Mission Indians	F	Michael Linton, Chairperson	P.O Box 270 Santa Ysabel, CA, 92070	(760) 782-3818	(760) 782-9092	mesagrandeband@msn.com	Diegueno	Imperial,Orange,Riverside,San Diego	
	San Pasqual Band of Diegueno Mission Indians	F	Allen Lawson, Chairperson	P.O. Box 365 Valley Center, CA, 92082	(760) 749-3200	(760) 749-3876	allenl@sanpasqualtribe.org	Diegueno	Imperial,San Diego	
	San Pasqual Band of Diegueno Mission Indians	F	John Flores, Environmental Coordinator	P. O. Box 365 Valley Center, CA, 92082	(760) 749-3200	(760) 749-3876	johnf@sanpasqualtribe.org	Diegueno	Imperial,San Diego	8/16/2016
	Sycuan Band of the Kumeyaay Nation	F	Cody Martinez, Chairman	Sycuan Tribal Office: 1 Kwaaypaay Court El Cajon, CA, 92019	(619) 445-2613		cmartinez@sycuan-nsn.gov	Kumeyaay	Imperial,San Diego	8/7/2023
	Sycuan Band of the Kumeyaay Nation	F	Bernice Paipa, Cultural Resource Specialist	Sycuan Cultural Center: 910 Willow Glen Drive El Cajon, CA, 92019	(619) 445-6917		bpaipa2@sycuan-nsn.gov	Kumeyaay	Imperial,San Diego	8/7/2023
	Viejas Band of Kumeyaay Indians	F	Ray Teran, Resource Management Director	1 Viejas Grade Road Alpine, CA, 91901	(619) 659-2312		rteran@viejas-nsn.gov	Kumeyaay	Imperial,San Diego	6/29/2023
	Viejas Band of Kumeyaay Indians	F	Ernest Pingleton, THPO	1 Viejas Grade Road Alpine, CA, 91901	(619) 445-3810		epingleton@viejas-nsn.gov	Kumeyaay	Imperial,San Diego	6/29/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Rio Vista Platform Design - Phase II Project, San Diego County.

Record: PROJ-2023-005770
Report Type: List of Tribes
Counties: San Diego
NAHC Group: All

Appendix D: Representative Field Photographs

Photo 1: Overview of the MTS Rio Vista Platform and the northern edge of the PAL, photo facing west.

Photo 2: Overview of the Platform and the northern edge of the PAL, photo facing east.

Photo 3: View of pathway south of the Platform and the southeastern section of the PAL, photo facing east.

Photo 4: Example of dense vegetation along the southern edge of the Platform and PAL (seen in the upper right corner of image), photo facing west.

Photo 6: Example of dense vegetation along the pedestrian path, south of the Platform, photo facing west/northwest.

Photo 7. Overview of the southern edge of the PAL, photo facing west.

Appendix E

6280 Riverdale Street
San Diego, CA 92120
(877) 215-4321 | oneatlas.com

October 19, 2023

Atlas No. 10421
Report No. 1R

MS. KIMBERLY WENDER, PE
SENIOR PROJECT MANAGER
DOKKEN ENGINEERING
1450 FRAZEE ROAD, SUITE 100
SAN DIEGO, CALIFORNIA 92108

Subject: **Preliminary Geotechnical Memorandum**
SDMTS Green Line Trolley
Rio Vista Station Repair
San Diego, California

References:
1) SCST Inc., (2018), Geotechnical Investigation, SDMTS Green Line Trolley, Rio Vista Station Wall Investigation, San Diego, California, dated October 8, SCST Job No. 170383P4.1-01, prepared for Jacobs Engineering.
2) Leighton Consulting Inc., (2017), Draft Geotechnical Memorandum, Morena/ Linda Vista and Rio Vista Wall Evaluation, MTS Green Line, San Diego, California, Project No. 10147.013, dated March 31st.
3) San Diego Association of Governments, SANDAG, (2006), Rio Vista LRT Station MSE Wall Investigation, dated August 23.
4) MTDB, (1999), As Built Drawings, Mission Valley West LRT Extension, Stadium Segment, MTDB Contract No. LRT-416.2, dated February.

Dear Ms. Wender:

Atlas Technical Consultants (Atlas) is pleased to provide this preliminary geotechnical memorandum for the subject project. We understand that the project will consist of repairing the existing distressed Cast-in-Place (CIP) and Mechanically Stabilized Earth (MSE) walls on the north and south sides of the Rio Vista Station platform. Atlas was retained to join the project team and perform geotechnical assessment of the wall and site conditions and provide geotechnical recommendations for repair alternatives. This memorandum provides our opinion about the existing condition of the project site and walls based on our recent site visit and review of the project documents including available previous geotechnical reports and memorandums (References 1, 2, and 3) and as-built drawings (Reference 4). It should be noted that Atlas (formerly known as SCST) was retained in 2018 by others to perform a geotechnical investigation and provide a report for this project (see Reference 1).

REVIEW OF AS-BUILT DRAWINGS

Per project as-built drawings, we understand that the construction of Rio Vista Station was completed in 1999. The north and south walls of the platform are labeled as RW6LT and RW4RT, respectively. The North West Wall (RW6LT between Stations 221+14.89 and 223+29) consists of a 17 to 19-foot-high mechanically stabilized earth (MSE) wall with non-metallic reinforcement. A 13 to 16-foot-high MSE wall with welded wire reinforcement exists at North East Wall (RW6LT between Stations 223+29 and 228+00.93). The construction of the Promenade at Rio Vista (early 2000) raised the grades on the order of 8 to 12 feet resulting in the wall from Station 223+29 to 225+00 to be completely below grade. The North East Wall from approximately Station 225+00 to 228+00 consists of a 4-foot-high cast-in-place (CIP) concrete curb wall resting on top of the welded wire mesh reinforced wall. The South Wall (RW4RT) consists of a 17 to 19-foot-high MSE wall with non-metallic reinforcement.

PREVIOUS FIELD INVESTIGATIONS

In 1993 and as a part of Promenade at Rio Vista project, Leighton Consulting drilled three borings in the vicinity of the project area to depths ranging from 32 to 46.5 feet below the existing ground surface. In 1993, Group Delta Consultants drilled two borings to the depths of 61 and 80 feet and advanced one cone penetrometer test (CPT) to the depth of 54 feet below the existing ground surface. In 2018, SCST (now Atlas) drilled five borings to approximate depths of 16.5 to 36.5 feet below the existing ground surface. The location and log of the borings are available in Reference 1.

SUBSURFACE CONDITIONS

Per boring logs of previous investigations, the project site is underlain by fill and alluvium. Fill is expected to extend for about 25 to 30 feet below the bottom of the MSE walls and be mostly associated with the sand mining operations and infilling of settling ponds in 1970s and 1980s (Reference 2). Fill generally consists of loose to very dense, clayey sand and soft to hard, sandy, or silty clay with varying amounts of gravel. Alluvium was encountered to the bottom of the previous borings and consists of medium dense to very dense poorly graded sand with varying amounts of silt. Cobbles and boulders are noted on the boring logs of previous investigations.

Groundwater at elevations of about 27 feet above mean sea level (MSL) was encountered in the past. However, groundwater may be encountered at higher or lower elevations depending on frequency, duration, and timing of rainfall events.

RECENT SITE OBSERVATION AND MONITORING

On August 17, 2023, an Atlas geotechnical engineer visited the project site along with the other project team members to observe the condition of the project site and walls. The observed distresses of the walls were generally consistent with those reported by Leighton Consulting (see

Reference 2). The observed wall distresses and ground condition are listed below. The corresponding photos are provided in Figures 1 through 5.

- A gap between pavers and back of the North East Wall
- Displaced wall panels of North West Wall
- Exposed welded wire reinforcement of North East Wall beneath the CIP concrete wall
- Spalled concrete of CIP wall of North East Wall
- Spalling and cracking of the South Wall coping
- A gap between the pavers and back of the South Wall
- Outward rotation of South Wall at western end
- Misaligned panels of South Wall at some locations
- Tension cracks at top of the south embankment slope

We understand that surveying monuments have been installed on the platform at select locations in November 2021 and that these monuments have been surveyed on a quarterly basis since then. The exact location of these monuments and whether these were installed on wall copings, or platform pavers or slabs are not clear to us at this time. Atlas was provided with the monitoring results through August 23, 2023, as presented in Appendix I. The obtained monitoring results through February 2023 suggest displacement of monuments of up to about ½ inch. However, the results of the May and August 2023 surveys do not show recording of consistent displacements. At some locations, a displacement in the opposite direction has been recorded.

PRELIMINARY CONCLUSIONS

Based on our recent observations of the site and wall conditions, we generally agree with the findings and conclusions of the previous studies (see References 1, 2, and 3). In our opinion, various factors are contributing to the observed distresses of the walls. These factors consist of the presence of loose/soft materials in the upper 5 feet below the platform, settlement of the fill materials, unsuitable and potentially expansive materials used for the MSE walls, potential creep of the south slope embankment, and possible slipping and creep of non-metallic reinforcement behind the walls. It seems that some of the issues have occurred either during or right after completion of the construction of the walls as evidenced by the compromised installation of the pavers. The presence of asphalt patch at the platform suggests differential movement of the pavers after completion of the wall which required maintenance.

The presence of tension cracks at the top of the slope of the south embankment for soils that were previously tested to be expansive (see Reference 1) suggests the potential for displacement of the embankment, particularly when the moisture content of the soil varies seasonally.

The available recordings of surveying of the monuments suggest that the recordings should be considered to be within the range of surveying error as consecutive observations have not yielded consistent results. Therefore, we do not interpret the recorded displacements as indicative of wall movement at this time.

Based on the review of findings of previous studies, visual observation of the walls and project site conditions during our recent site visit, and review of the available surveying results, it does not appear that the RW6LT and RW4RT walls are experiencing concerning levels of continuous displacement. Since the walls appear to be generally in acceptable condition with observed distresses within the anticipated tolerances of MSE walls, the project team may plan for localized repairs with the consideration to limit the potential for compromising the structural integrity of the existing walls.

PRELIMINARY RECOMMENDATIONS

We recommend to continue monitoring of the installed surveying monuments on a quarterly basis to provide additional information for future assessments. We also recommend installing new monuments on the face of the walls at two levels to monitor the potential movement of the top and bottom panels separately. At a minimum, we recommend installing five equally spaced surveying monuments on top of the south embankment slope where tension cracks have been observed, i.e., between Stations 221+37.64 and 226+89. The monuments should be installed close to the South Wall (RW4RT), between the face of the wall and the existing tension cracks. The monuments should be properly protected in place. If the results of surveying of these monuments suggest displacement of the embankment, we may recommend installing inclinometers to assess the depth of the potential displacement.

The project team is evaluating the options of tie-back anchors or tie-rods with vertical walers, and Deadman anchors for localized repair of the walls. However, the CIP concrete wall of the North East Wall (RW6LT) is expected to be replaced. These repair options are not intended to address the observed settlement of the platform or potential creep of the south embankment slope. The recommendations provided in the 2018 SCST report (Reference 1) can be used for preliminary design purposes, unless as revised/supplemented in the following. Atlas should be contacted if additional information or recommendations are needed.

The standard of practice in accordance with the existing tie-back anchors design guidelines is to install these anchors with a minimum of 15 feet of overburden soil and at sub horizontal inclinations of 10 degrees or more. To reduce the potential for damaging the existing MSE wall reinforcements, the project team is evaluating horizontal or near horizontal tie-back anchors. Due to the presence of loose/soft soils at shallow depths of platform subgrade, we do not recommend the bond zone of tie-back anchors to be less than 8 feet below the platform surface. Potential conflicts with the existing underground utilities should be evaluated. A reduced ultimate unit bond stress of 400 pounds per square foot (psf) can be used for preliminary design when the depth of bond zone is between 8 to 15 feet below the platform surface. For depths of 15 feet or more, the unit ultimate bond stress can be assumed to be 700 psf. The tie-back anchors design bond stress should be verified in the field by load testing. Potential for caving of the drilled hole exists. The bond zone of adjacent anchors should be at a distance of at least 4 feet from each other. The grouting of anchors installed at angles less than 10 degrees generally requires special grouting

techniques. When the bond zone of the tie-back anchors (horizontal or subhorizontal) cannot have at least 15 feet of soil cover in all directions, the anchors should only be permitted to be gravity grouted (i.e., with low pressure). Pressure grouting should not be allowed due to the potential for grout leakage and ground movement.

We appreciate the opportunity to provide our services. Should you have any questions or if we may be of further service, please contact our office at 877.215.4321 at your convenience.

Respectfully submitted,
Atlas Technical Consultants LLC

Reza Saeedzadeh, PhD, PE, GE 3204
Principal Engineer

RS:ds

Attachments: Figures 1-5 – Site Photographss
Appendix I – Wall Monuments Monitoring Recordings

Distribution: KWender@DokkenEngineering.com

PHOTO 1

Displaced RW4RT Wall Panel and Coping

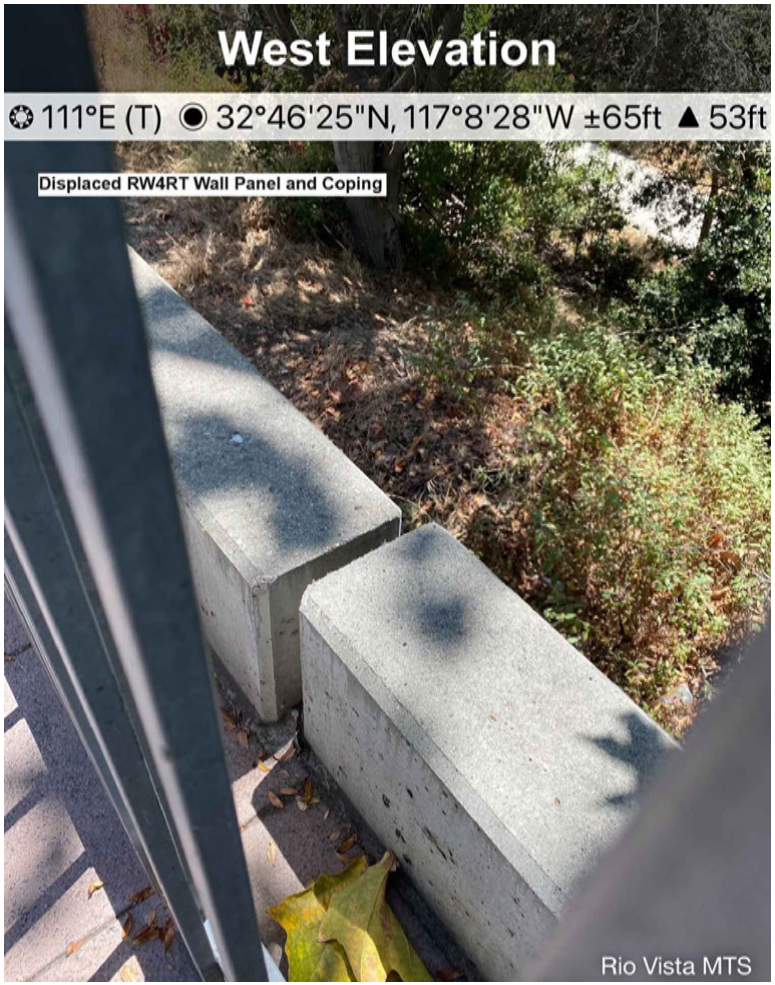


PHOTO 2

Cracking and Spalling of Wall Coping RW4RT

ATLAS	**SITE PHOTOGRAPHS** MTS Rio Vista Station Repairs San Diego, California	Date: October, 2023 By: CGI Job No.: 10421.000	Figure: 1

PHOTO 3

Displaced of RW4RT Wall Lower Panels

PHOTO 4

Outward Rotation of RW4RT Wall Panels at West End

ATLAS	**SITE PHOTOGRAPHS** MTS Rio Vista Station Repairs San Diego, California	Date: October, 2023 By: CGI Job No.: 10421.000	Figure: 2

PHOTO 5

Displaced RW4RT Wall Top Panels

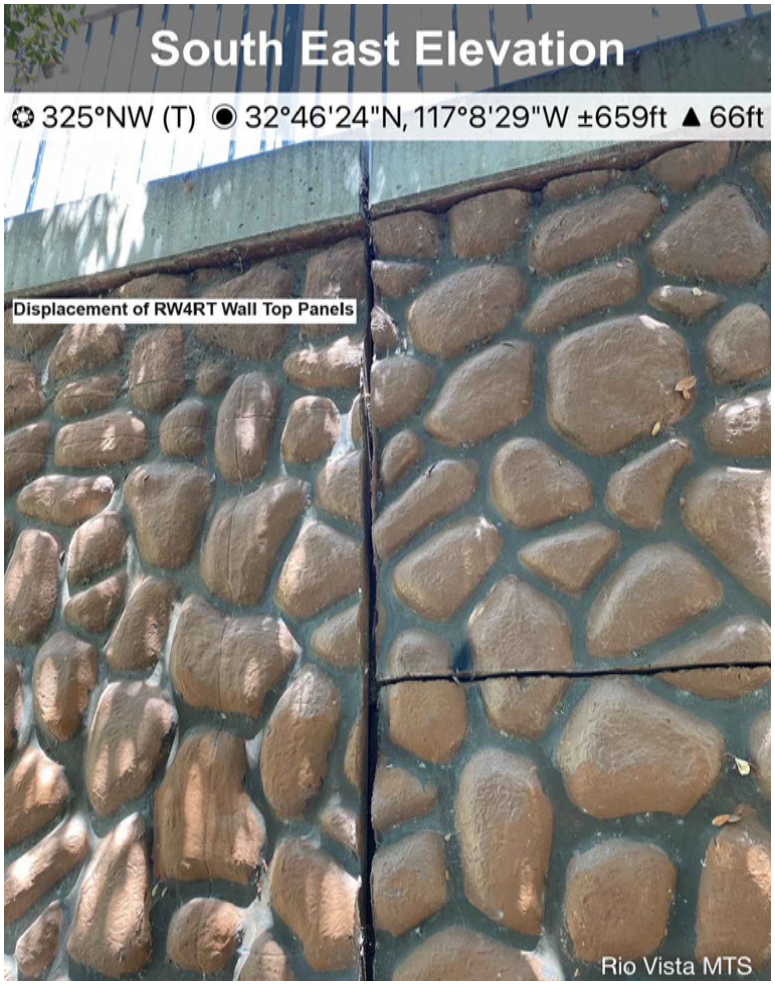
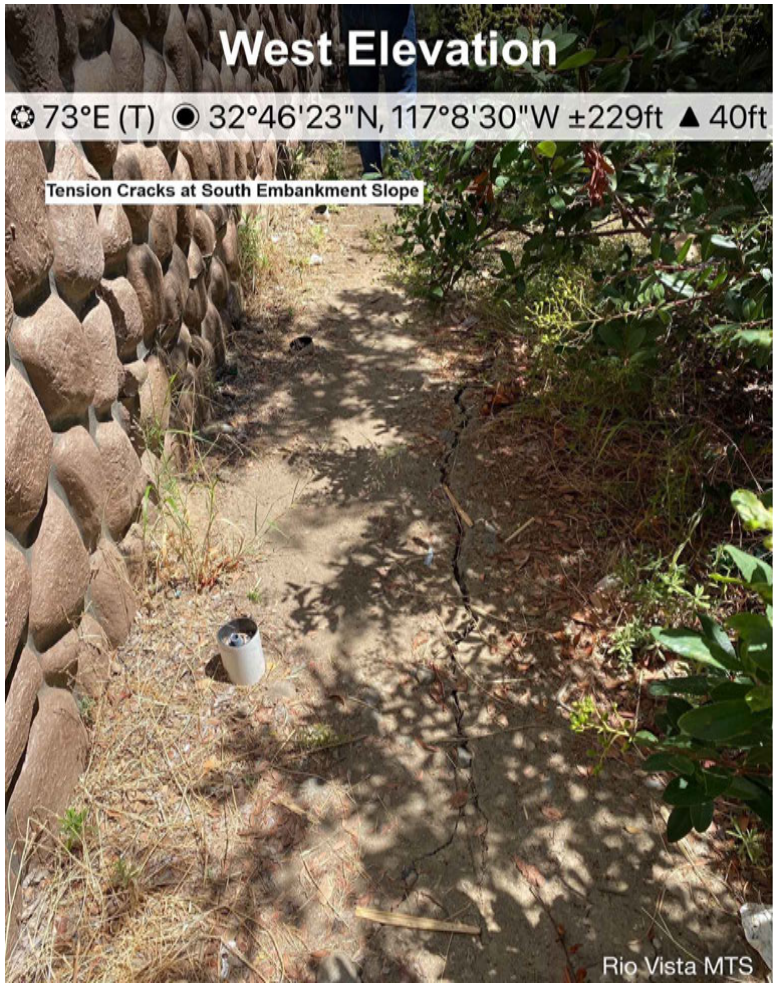


PHOTO 6

Tension Cracks at South Embankment Slope



ATLAS	**SITE PHOTOGRAPHS** MTS Rio Vista Station Repairs San Diego, California	Date: October, 2023 By: CGI Job No.: 10421.000	Figure: 3

PHOTO 7

Displacement of Lower Panels of RW4RT Wall
Tension Cracks at South Slope Embankments

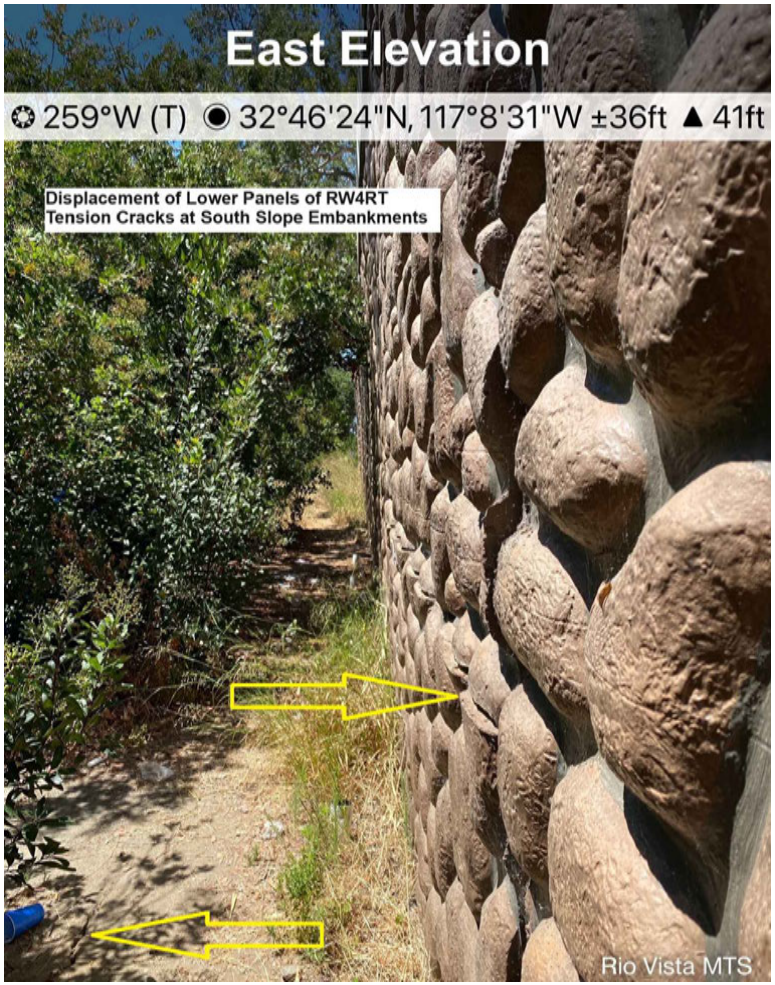
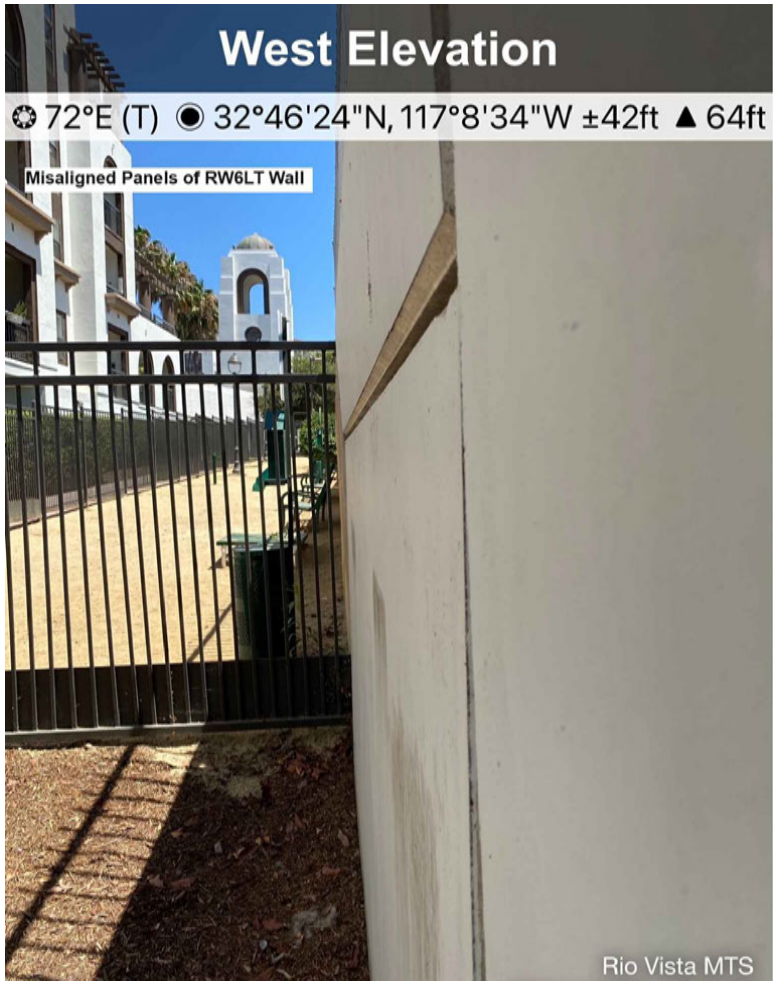


PHOTO 8

Misaligned Panels of RW6LT Wall



ATLAS	**SITE PHOTOGRAPHS** MTS Rio Vista Station Repairs San Diego, California	Date: October, 2023 By: CGI Job No.: 10421.000	Figure: 4

PHOTO 9

Observed Gap Between the Pavers and the RW6LT Wall

PHOTO 10

Exposed Welded Wire Reinforcement of RW6LT beneath the CIP Wall

ATLAS	**SITE PHOTOGRAPHS** MTS Rio Vista Station Repairs San Diego, California	Date: October, 2023 By: CGI Job No.: 10421.000	Figure: 5

APPENDIX I
WALL MONUMENTS MONITORING RECORDINGS

MTS Rio Vista Wall Monitoring

Initial observation 11-23-21

Pt #	Northing	Easting	Elevation	Description
304	1862517.24	6287502.39	65.75	cp scribed x (offsite)
305	1862948.82	6287376.57	58.10	cp scribed x (back sight point) (Elevation is per check shot #509)
308	1862453.98	6287520.67	68.59	cp scribed x (instrument occupation point)
310	1862538.79	6287377.44	64.70	cp scribed x (offsite)
311	1862462.48	6287558.14	69.47	set lead&tack 1.1
312	1862501.84	6287707.61	68.21	set lead&tack 2.1
313	1862449.42	6287719.84	68.19	found screw 3.1
314	1862405.19	6287548.44	69.51	found screw 4.1
315	1862358.74	6287374.96	70.87	found screw 5.1

Note: on 8-23-23 CP 308 was found to have been destroyed by construction. CP 362 was established in the same general area from CPs 304 & 310. All obeservation from 8-23-23 and later are form CP 362.

2nd observation 2-23-22

Pt #	Northing	Easting	Elevation	Notes
316	1862517.24	6287502.39	65.76	ck 304
317	1862462.48	6287558.15	69.48	lead&tack 1.2
318	1862501.84	6287707.62	68.21	lead&tack 2.2
319	1862449.42	6287719.84	68.20	screw 3.2
320	1862405.18	6287548.43	69.52	screw 4.2
321	1862358.73	6287374.96	70.87	screw 5.2

Difference from initial observation

Northing	Easting	Elevation
-0.01	0.00	0.01
0.00	0.01	0.00
-0.01	0.01	0.00
0.00	0.01	0.00
-0.01	-0.01	0.01
0.00	0.00	0.00

3rd observation 5-23-22

Pt #	Northing	Easting	Elevation	Notes
322	1862517.25	6287502.39	65.75	ck 304
323	1862538.78	6287377.43	64.71	ck 310
324	1862462.48	6287558.15	69.47	lead&tack 1.3
325	1862501.85	6287707.61	68.21	lead&tack 2.3
326	1862449.42	6287719.85	68.18	screw 3.3
327	1862405.19	6287548.44	69.52	screw 4.3
328	1862358.72	6287374.97	70.87	screw 5.3

Difference from initial observation

Northing	Easting	Elevation
0.01	0.00	0.01
0.00	-0.01	0.00
0.00	0.01	0.00
0.00	0.01	0.00
0.00	0.01	-0.01
0.00	0.00	0.01
-0.02	0.01	0.00

4th observation 8-23-22

Pt #	Northing	Easting	Elevation	Notes
329	1862538.79	6287377.43	64.70	ck 310
330	1862517.24	6287502.39	65.75	ck 304
331	1862462.48	6287558.14	69.46	lead&tack 1.4
332	1862501.84	6287707.60	68.20	lead&tack 2.4
333	1862449.42	6287719.85	68.17	screw 3.4
334	1862405.18	6287548.44	69.50	screw 4.4
335	1862358.72	6287374.96	70.85	screw 5.4

Difference from initial observation

Northing	Easting	Elevation
0.00	-0.01	-0.01
0.00	0.00	0.00
0.00	0.01	-0.01
0.00	0.00	0.00
0.00	0.01	-0.03
-0.01	0.00	-0.01
-0.02	0.00	-0.02

5th observation 11-22-22

Pt #	Northing	Easting	Elevation	Notes
336	1862948.82	6287376.56	58.11	ck 305
337	1862538.79	6287377.43	64.69	ck 310
338	1862517.24	6287502.39	65.75	ck 304
339	1862462.48	6287558.14	69.45	lead&tack 1.5
340	1862501.84	6287707.61	68.18	lead&tack 2.5
341	1862449.42	6287719.85	68.14	screw 3.5
342	1862405.19	6287548.43	69.48	screw 4.5
343	1862358.72	6287374.98	70.83	screw 5.5

Difference from initial observation

Northing	Easting	Elevation
0.00	-0.01	0.01
0.00	0.00	-0.02
0.00	0.00	0.00
0.00	0.00	-0.02
0.00	0.01	-0.03
0.00	0.01	-0.05
-0.01	-0.01	-0.03
-0.02	0.02	-0.04

6th observation 2-23-23

Pt #	Northing	Easting	Elevation	Notes
344	1862948.82	6287376.57	58.10	ck 305
345	1862538.79	6287377.43	64.70	ck 310
346	1862517.25	6287502.39	65.75	ck 304
347	1862462.48	6287558.14	69.45	lead&tack 1.6
348	1862501.83	6287707.61	68.18	lead&tack 2.6
349	1862449.41	6287719.84	68.15	screw 3.6
350	1862405.18	6287548.42	69.49	screw 4.6
351	1862358.72	6287374.98	70.83	screw 5.6

Difference from initial observation

Northing	Easting	Elevation
0.00	0.00	0.00
0.00	0.00	-0.01
0.01	0.00	0.00
0.00	0.00	-0.02
-0.02	0.00	-0.02
-0.01	0.01	-0.04
-0.02	-0.02	-0.02
-0.02	0.02	-0.04

7th observation 5-23-23

Pt #	Northing	Easting	Elevation	Notes
352	1862948.82	6287376.57	58.10	ck 305
353	1862538.79	6287377.42	64.68	ck 310
354	1862517.25	6287502.39	65.74	ck 304
355	1862462.48	6287558.14	69.44	lead&tack 1.7
356	1862501.83	6287707.61	68.18	lead&tack 2.7
357	1862449.42	6287719.84	68.19	screw 3.7
358	1862405.17	6287548.42	69.52	screw 4.7
359	1862358.74	6287374.96	70.88	screw 5.7

Difference from initial observation

Northing	Easting	Elevation
0.00	0.00	0.00
0.01	-0.01	-0.02
0.01	0.00	-0.01
0.01	0.00	-0.03
-0.02	0.01	-0.02
0.00	0.00	0.00
-0.02	-0.02	0.02
0.00	0.00	0.01

8th observation 8-23-23

Pt #	Northing	Easting	Elevation	Notes
363	1862948.81	6287376.57	58.10	ck 305
364	1862538.78	6287377.43	64.69	ck 310
365	1862517.25	6287502.39	65.75	ck 304
366	1862462.48	6287558.14	69.45	lead&tack 1.8
367	1862501.83	6287707.62	68.19	lead&tack 2.8
368	1862449.40	6287719.86	68.18	screw 3.8
369	1862405.18	6287548.42	69.54	screw 4.8
370	1862358.74	6287374.96	70.88	screw 5.8

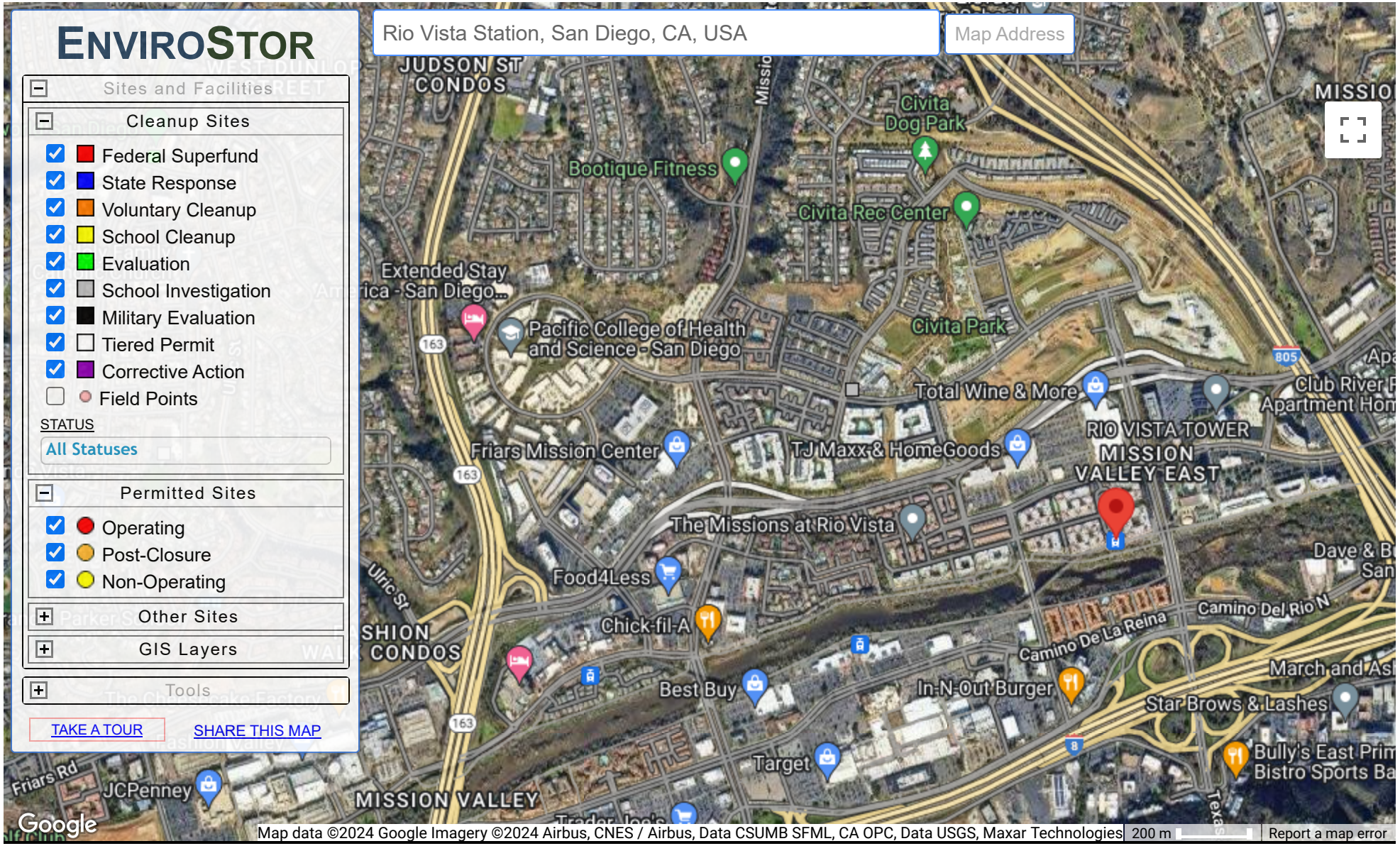
Difference from initial observation

Northing	Easting	Elevation
-0.01	0.00	-0.01
0.00	-0.01	-0.02
0.00	0.00	0.00
0.01	0.00	-0.02
-0.02	0.01	-0.02
-0.02	0.02	-0.02
-0.01	-0.02	0.03
0.00	0.01	0.02

*See Control and Monitoring Point Locations exhibit on the following page for locations of observation points.

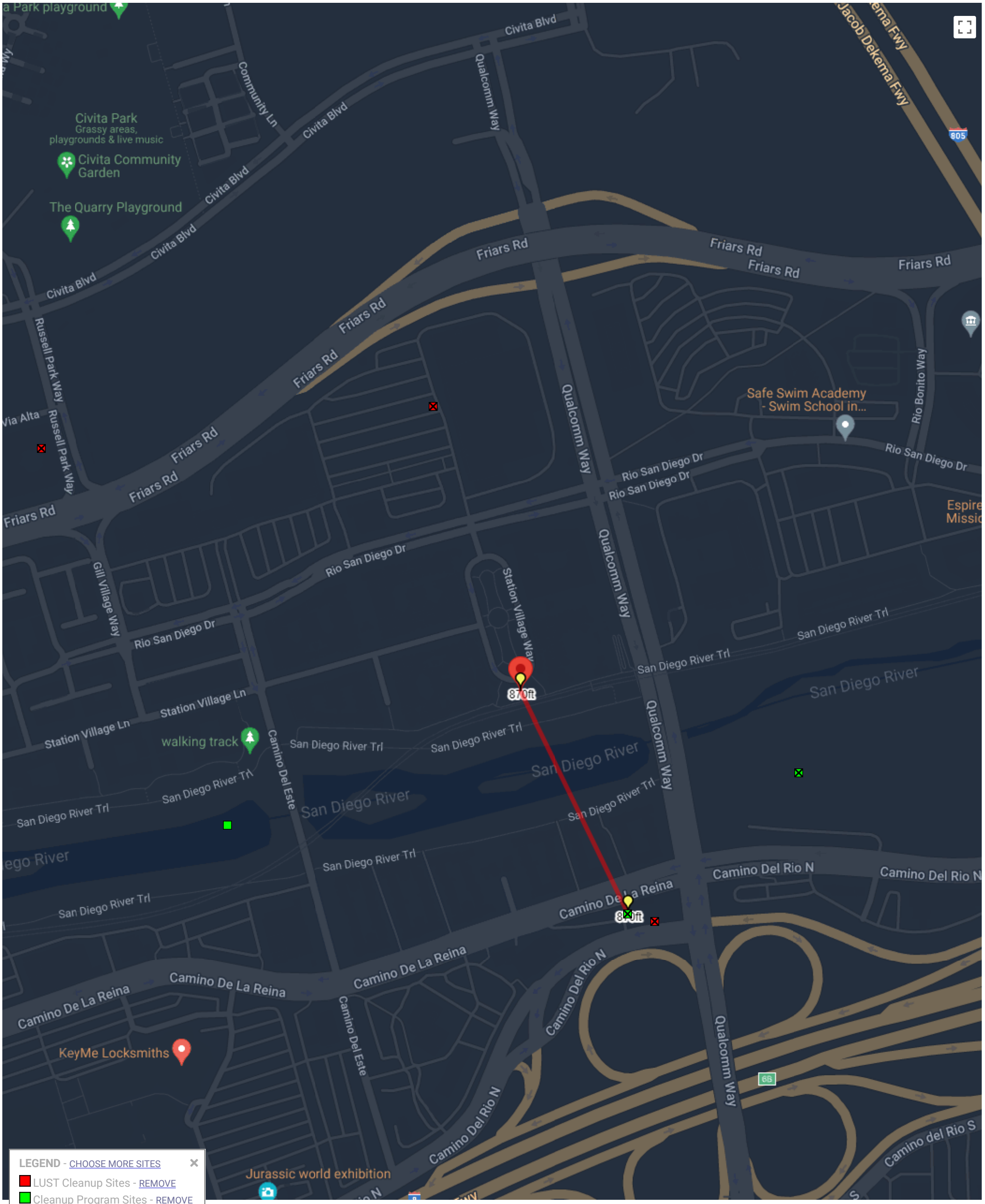

MTS Rio Vista Wall
Control & Monitoring point locations.
Legend
Field Obeservation Point No.
305
Station Village Way
Station Village Ln
Qualcomm Way
310
Station Village Way
304/362
312
311
308
313
314
San Diego River Pkwy
315
N
300 ft
Google Earth

Appendix F



SITES CURRENTLY VISIBLE ON MAP — 5 SITES LISTED — EXPORT THIS LIST TO EXCEL

PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY
CAMP KEARNY MESA BURN ASH SITE	REFER: 1248 LOCAL AGENCY	EVALUATION	6501 LINDA VISTA ROAD	SAN DIEGO
CARSON ELEMENTARY SCHOOL	INACTIVE - NEEDS EVALUATION	SCHOOL INVESTIGATION	6905 KRAMER STREET	SAN DIEGO
DYTRON/FORMER GOLDEN STATE	REFER: 1248 LOCAL AGENCY	EVALUATION	6901 LINDA VISTA ROAD	SAN DIEGO
PROPOSED CIVITA ELEMENTARY SCHOOL	NO FURTHER ACTION	SCHOOL INVESTIGATION	NORTHEAST CORNER OF VIA ALTA AND CIVITA BOULEVARD	SAN DIEGO
SFPP/LP MISSION VALLEY TERMINAL	INACTIVE - NEEDS EVALUATION	TIERED PERMIT	9950 SAN DIEGO MISSION ROAD	SAN DIEGO



Sites Shown on Map: 10 Total Sites 1 Open Sites 9 Closed Sites 3 Sites w/Water Quality Data

Appendix G

National Flood Hazard Layer FIRMette

FEMA

117°8'54"W 32°46'42"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

117°8'17"W 32°46'12"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/5/2024 at 2:00 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix H

Eilar Associates, Inc.
Acoustical and Environmental Consulting Services

Construction Noise Control Plan for Rio Vista Platform Design – Phase II

Prepared for:
Dokken Engineering, Inc.
Attention: Amy Bakker
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San Diego, California 92108
Phone: 916-858-0642

Prepared by:
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Job # S250209

April 18, 2025

Table of Contents

Figures

Appendices

1.0 Executive Summary

The proposed project, Rio Vista Platform Design – Phase II, consists of the retrofitting of infrastructure at the Rio Vista Station on the Metropolitan Transit System (MTS) Green Line. The project site is located in the City of San Diego, California.

Mitigation Measure NOI-1 from the project Initial Study/Mitigated Negative Declaration (IS/MND) requires the preparation of a Construction Noise Control Plan to ensure compliance with the construction noise limits found within Section 59.5.0404 of the City of San Diego Municipal Code. The San Diego Municipal Code states that construction activity is prohibited between the hours of 7 p.m. and 7 a.m. and on Sundays or legal holidays, and that during permissible hours of operation, noise levels from construction activity must be limited to a 12-hour average of no greater than 75 dBA at any residential use. While NOI-1 also addresses the requirement for noise control at the Multi-Habitat Planning Area (MHPA) to ensure the protection of noise-sensitive species, it is the understanding of the undersigned that construction will not take place during the breeding season. As such, construction noise impacts have only been evaluated at residential receivers.

Calculations demonstrate that during the Preconstruction Phase, Phase 2, and Phase 5, noise impacts at residential receivers are not expected to exceed a 12-hour average noise level of 75 dBA during construction activity. During Phase 1, Phase 3, and Phase 4, temporary sound barriers will be required. During Phase 1, a sound barrier with a minimum height of 12 feet is required when the power-driven saw and/or jackhammer will be used within 50 feet of residential buildings. For Phases 3 and 4, a sound barrier with a minimum height of 8 feet is required when activities will take place within 30 feet of residential buildings. With these noise control measures in place, as well as the implementation of general good practice noise control measures listed herein, the project is expected to comply with the noise regulations of the City of San Diego and mitigation measure NOI-1.

2.0 Introduction

This Construction Noise Control Plan is submitted to satisfy the acoustical requirements of the City of San Diego as well as project-specific mitigation measure NOI-1. Its purpose is to assess noise impacts from temporary construction activities to identify project features or requirements necessary to remain in compliance with City of San Diego noise regulations for temporary construction noise.

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting, abbreviated "dBA," to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol "L_{EQ}." Unless a different time period is specified, "L_{EQ}" is implied to mean a period of one hour. Some of the data may also be presented as octave-band-filtered and/or 1/3-octave-band-filtered data, which are a series of sound spectra centered about each stated frequency, with half of the bandwidth above and half of the bandwidth below each stated frequency. This data is typically used for machinery noise analysis and barrier calculations.

2.1 Project Description

The proposed project, Rio Vista Platform Design – Phase II, consists of the retrofitting of infrastructure at the Rio Vista Station on the Metropolitan Transit System (MTS) Green Line. To address observed settlement and movement at the station, the following retrofit activities will be performed: tie rods, tie-back anchors, cast-in-place wall replacement, and surface drainage improvements. According to project plans, work will be limited to normal business working hours of 7 a.m. to 3 p.m., Monday through Friday. According to the project plans and information provided by the project proponent, construction activities will consist of the tasks and equipment listed in Table 1. Please refer to Appendix A for project plans.

Table 1. Construction Task Details		
Phase	**Task**	**Anticipated Noise-Generating Equipment**
Preconstruction	Clearing and Grubbing, Access Road Grading	Mini-Excavator, Bulldozer
1	Demolition	Mini-Excavator, Power-Driven Saw, Jackhammer, Dump Truck, Air Compressor, Generator
2	Tie-Rod Installation	Drill Rig, Concrete Mixer, Concrete Pump, Hydraulic Jack
3	Anchor Block Installation	Excavator, Concrete Mixer, Concrete Pump, Dump Truck
4	Backfill	Excavator, Dump Truck, Compactor
5	Resurfacing Station, Installing Station Amenities	Concrete Mixer, Concrete Pump, Compact Crane

2.2 Project Location

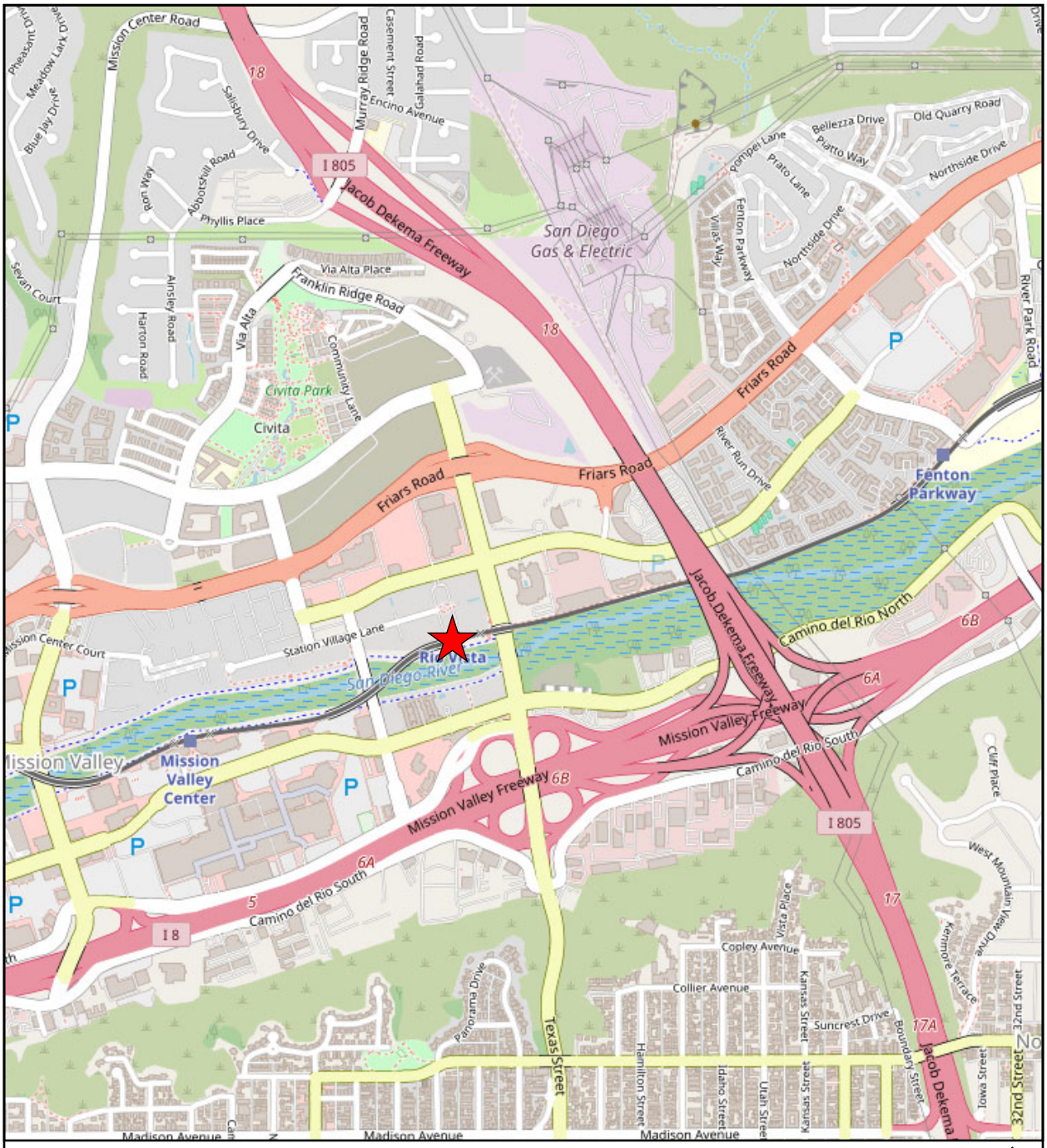
The project site is located at the existing Rio Vista Station on the MTS Green Line. The project is located in the City of San Diego, California. The site is surrounded by residential and commercial retail uses to the north, Qualcomm Way to the east, open space to the west, and the San Diego River to the south. For a graphical representation of the site, please refer to the Vicinity Map and Satellite Aerial Photograph, provided as Figures 1 and 2, respectively.

2.3 Applicable Noise Regulations

The project must follow Mitigation Measure NOI-1 from the project Initial Study/Mitigated Negative Declaration (IS/MND), which is as follows:

> ***NOI-1 Construction Noise Control Plan.*** *A project construction noise control plan shall be prepared when project construction details are available to provide plans for compliance with the MHPA maximum noise limit of 60 dBA L_{EQ} and the City of San Diego Noise Abatement and Control Ordinance. The construction noise control plan shall be approved by MTS and the City and implemented by the construction contractor.*
>
> *Temporary sound attenuation barriers consisting of a single, solid sound wall, with a height of 12 feet at the southern edge of the project site that borders the MHPA area and temporary access road would likely reduce noise levels to allowable limits at the MHPA boundary during construction activity. The sound attenuation barriers would need to be constructed of commercial noise control materials with a manufacturer's laboratory test rating to achieve the noise ordinance thresholds of 75 dBA such as noise control blankets or solid materials such as masonry, wood, plastic, fiberglass, steel, hay bales or a combination of those materials meeting Sound Transmission Class 22 specifications. To meet industry noise control standards, the noise control barrier would not contain cracks or gaps through or below the installation. Any seams or cracks must be filled, caulked or overlapped.*

Section 59.5.0404 of the City of San Diego Municipal Code is the basis for the residential noise limit shown in NOI-1. This section of the Municipal Code states that construction activity is prohibited between the hours of 7 p.m. and 7 a.m. and on Sundays or legal holidays. During permissible hours of operation, noise levels from construction activity must be limited to a 12-hour average of no greater than 75 dBA at any residential use. Please refer to Appendix B for pertinent sections of the City of San Diego Municipal Code.

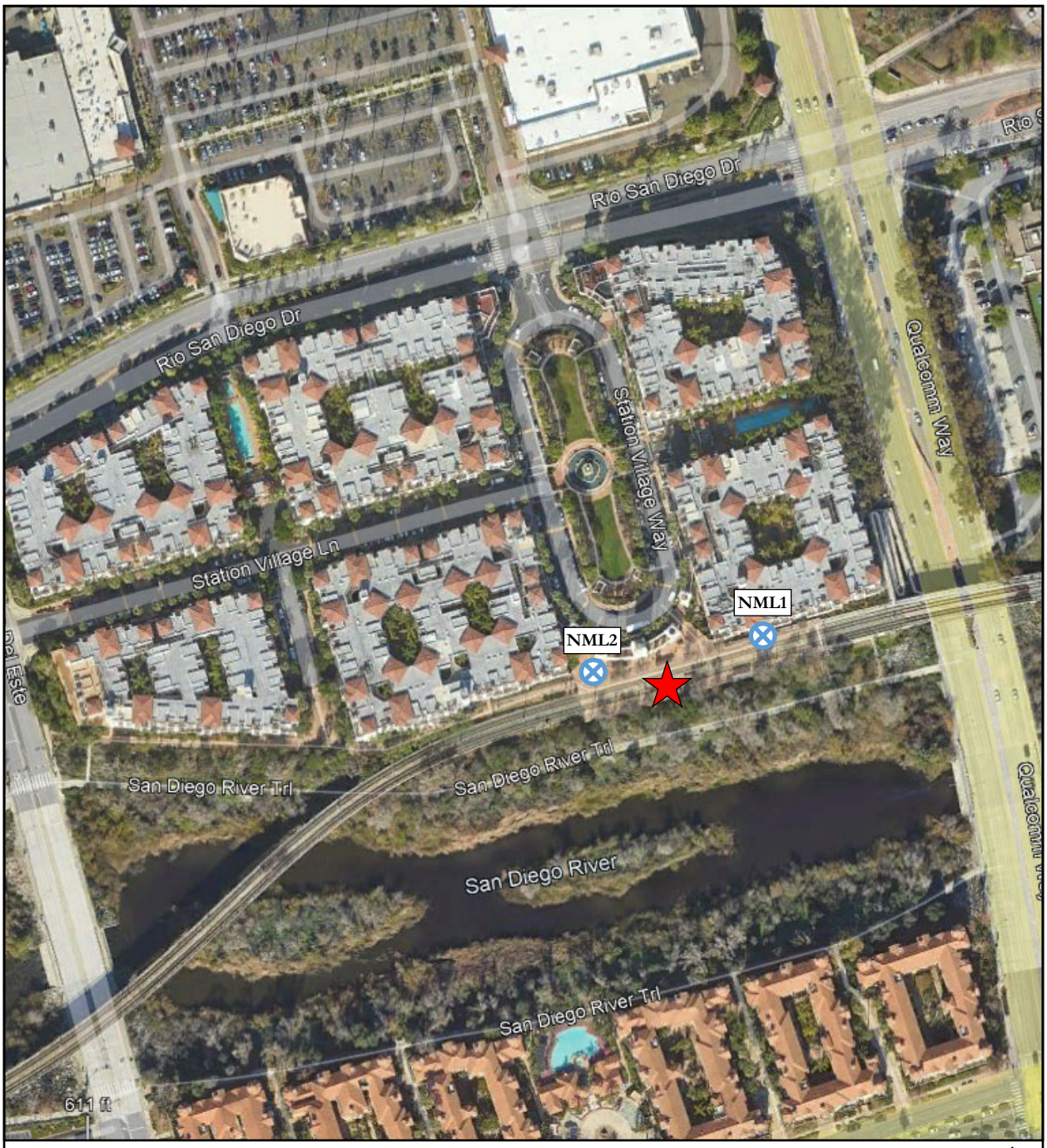


Source: Open Street Map, 2025

Project Location

Figure 1.

Vicinity Map



Source: Google Earth Pro, 2025

N

⊗ Noise Measurement Locations (NML)

★ Project Location

Figure 2.

Satellite Aerial Photograph

While NOI-1 also addresses the requirement for noise control at the Multi-Habitat Planning Area (MHPA) to ensure the protection of noise-sensitive species, it is the understanding of the undersigned that construction will not take place during the breeding season. As such, construction noise impacts have only been evaluated at residential receivers.

3.0 Environmental Setting

3.1 Existing Noise Environment

An on-site inspection and ambient noise measurements were performed on Wednesday, March 5, 2025. The purpose of these measurements was to obtain information regarding existing ambient noise levels on site. Noise measurements were performed at two Noise Measurement Locations (NML), designated as NML 1 and NML 2. Both NML were located on the north side of the track system, with NML 1 located adjacent to the east residential building and NML 2 located adjacent to the west residential building. For all noise measurements, the microphone was placed at a height of five feet above ground level. Noise data obtained on site is shown in Table 2, and the measurement locations are shown graphically in Figure 3.

Table 2. Ambient Noise Level Measurements

Location	Time	Noise Sources	Noise Level (dBA L_{EQ})
NML 1	12:10 p.m. – 12:13 p.m.	Traffic noise with passing trolley	68.2
NML 1	12:14 p.m. – 12:25 p.m.	Measurement paused for trolley to capture ambient traffic noise only	58.5
NML 2	12:27 p.m. – 12:28 p.m.	Westbound trolley approaching and departing	71.1
NML 2	12:30 p.m. – 12:35 p.m.	Measurement paused for trolley to capture ambient traffic noise only	58.2
NML 2	12:35 p.m. – 12:36 p.m.	Eastbound trolley approaching and departing	63.3

3.2 Construction Noise Sources

The equipment listed in Table 1 is typical of what is expected to be used on site based on the information provided by the project proponent and professional experience. Construction equipment noise levels were obtained from the Department for Environment, Food & Rural Affairs (DEFRA), which compare well with noise measurement results of construction equipment performed by Eilar Associates for other similar projects. Information on the anticipated equipment duty cycles was obtained from the Federal Highway Administration (see references). Noise levels of construction equipment anticipated to be used on site are shown in Table 3.

Table 3. Anticipated Construction Activity and Equipment Noise Levels			
Equipment	**Duty Cycle (%)[1]**	**Noise Level at 50 feet (dBA)[2]**	**Activity Stage(s)**
Excavator	40	74	3, 4
Mini-Excavator	40	64	Preconstruction, 1
Bulldozer	40	79	Preconstruction
Dump Truck	40	72	1, 3, 4
Concrete Mixer	40	71	2, 3, 5
Concrete Pump	20	71	2, 3, 5
Generator	50	61	1
Air Compressor	40	61	1
Jackhammer	20	82	1
Power-Driven Saw	20	87	1
Hydraulic Jack	20	73	2
Drill Rig	20	79	2
Compactor	20	74	4
Compact Crane	16	66	5

[1]Duty cycle information was provided by the Federal Highway Administration.
[2]Noise level information was provided by UK Department for Environment, Food and Rural Affairs. The noise level at 50 feet was calculated using simple distance attenuation based on the reference levels obtained from DEFRA which are given at a distance of 10 meters (approximately 32.8 feet).

4.0 Methodology and Equipment

4.1 Methodology

Modeling of the outdoor noise environment is accomplished using CadnaA Version 2024 MR 1, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. CadnaA (Computer Aided Noise Abatement) assists in the calculation, presentation, assessment, and alleviation of noise exposure. It allows for the input of project information such as noise source data, barriers, structures, and topography to create a detailed model and uses the most up-to-date calculation standards to predict outdoor noise impacts. Noise standards used by CadnaA that are particularly relevant to this analysis include ISO 9613-2 (Attenuation of sound during propagation outdoors). CadnaA provides results that are in line with basic acoustical calculations for distance attenuation and barrier insertion loss.

CadnaA software is considered to be appropriate for use in calculations for this project and is preferred over the use of standard equations for calculations, as CadnaA also considers shielding provided by surrounding topography and barriers.

4.2 Measurement Equipment

The following equipment was used at the site to measure existing noise levels:

- Larson Davis Model LxT Type 1 Sound Level Meter, Serial # 4084
- Larson Davis Model CAL200 Type 1 Calibrator, Serial # 16454

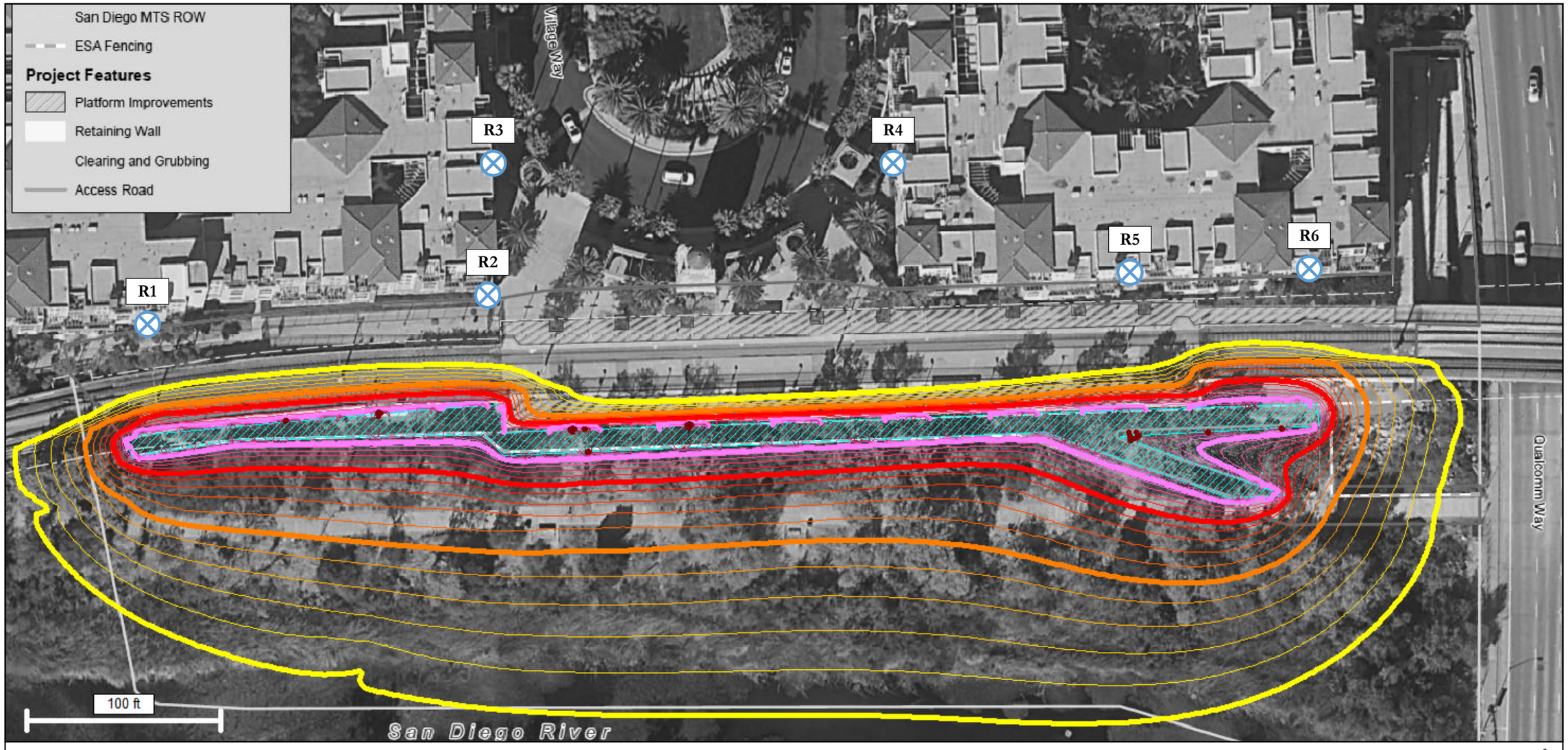
The sound level meter was field-calibrated immediately prior to the noise measurement and checked afterward to ensure accuracy. All sound level measurements presented in this report, in accordance with the regulations, were conducted using a sound level meter that conforms to the American National Standards Institute specifications for sound level meters (ANSI S1.4). All instruments are maintained with National Institute of Standards and Technology (NIST) traceable calibration, per the manufacturers' standards.

5.0 Noise Impacts

Construction noise levels were calculated using the information presented in Section 3.2 at the nearest residential receivers to the north, designated herein as the east building and west building. As the noise-sensitive receptors would be within the building, noise levels have been calculated at the building facades at each story of the four-story buildings. Any other potentially noise-sensitive receivers are located at a greater distance from construction activity, and therefore, would be exposed to lesser noise impacts due to distance attenuation and shielding provided by intervening structures.

Noise calculations consider typical duty cycles of equipment, to account for periods of activity and inactivity on the site, and also consider that, according to project plans, work will be limited to the eight-hour period of 7 a.m. to 3 p.m. on Monday through Friday. As the City of San Diego enforces noise limits as a 12-hour average, calculations consider that each day will include eight hours of construction activity and four hours of inactivity at the project site. With the exception of Phase 1 (demolition), all calculations conducted herein are considered conservative in that they consider the operation of all pieces of equipment at multiple locations along the project site to demonstrate worst-case conditions at multiple receivers, while in actuality, the work will be broken into segments to allow for continuous services and operation during construction. Noise levels of demolition activity have been conducted for two scenarios—one worst-case location adjacent to the west building for Receivers R1, R2, and R3, and one worst-case location adjacent to the east building for Receivers R4, R5, and R6. Noise calculations consider the topography of the site and surrounding area.

Noise levels for each phase of construction are shown in Table 4. Detailed calculations are provided in Appendix C. Graphical representations of construction noise contours and receiver locations are provided as Figures 3 through 9.



Source: Dokken Engineering, 2023

≥ 60 dB
≥ 65 dB
≥ 70 dB
≥ 75 dB
≥ 80 dB
≥ 85 dB

Receiver Location
Construction Work Area

Figure 3.

Construction Noise Contours—Preconstruction

Source: Dokken Engineering, 2023

≥ 60 dB
≥ 65 dB
≥ 70 dB
≥ 75 dB
≥ 80 dB
≥ 85 dB

Receiver Location
Construction Work Area
Construction Equipment

Figure 4.

Construction Noise Contours—Phase 1 (Near West Building)

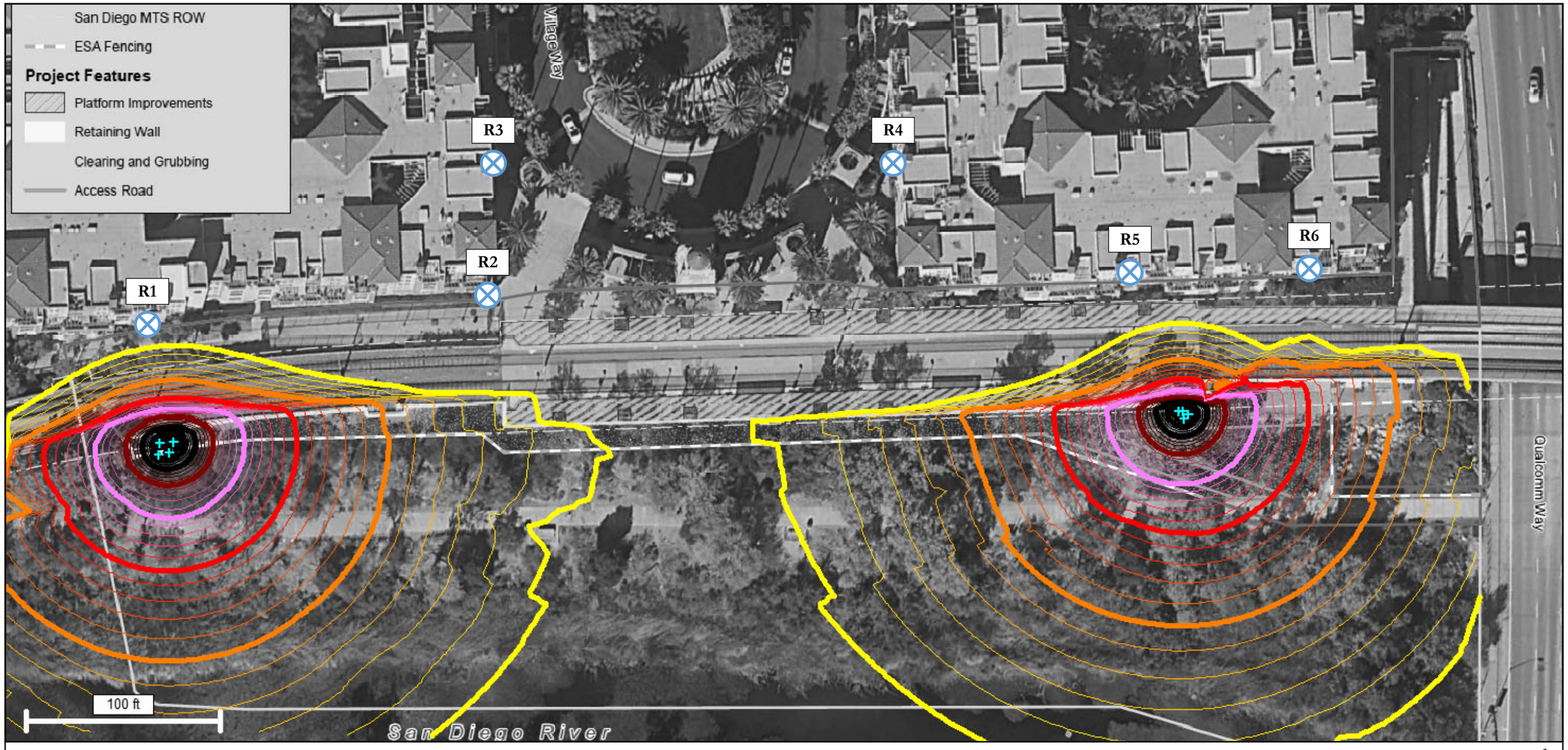
Source: Dokken Engineering, 2023

≥ 60 dB
≥ 65 dB
≥ 70 dB
≥ 75 dB
≥ 80 dB
≥ 85 dB

Receiver Location
Construction Work Area
Construction Equipment

Figure 5.

Construction Noise Contours—Phase 1 (Near East Building)



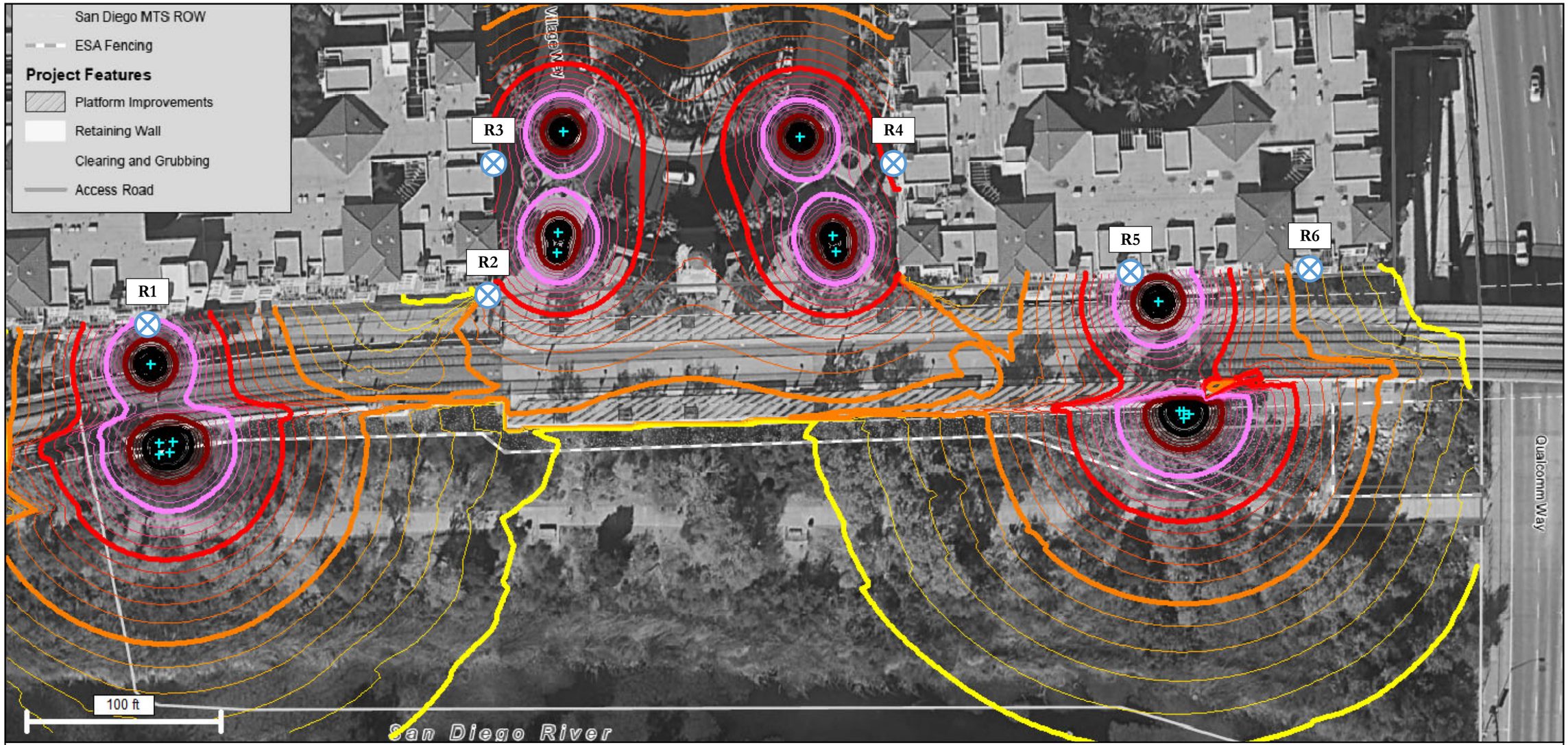
Source: Dokken Engineering, 2023

≥ 60 dB
≥ 65 dB
≥ 70 dB
≥ 75 dB
≥ 80 dB
≥ 85 dB

Receiver Location
Construction Equipment

Figure 6.

Construction Noise Contours—Phase 2



Source: Dokken Engineering, 2023

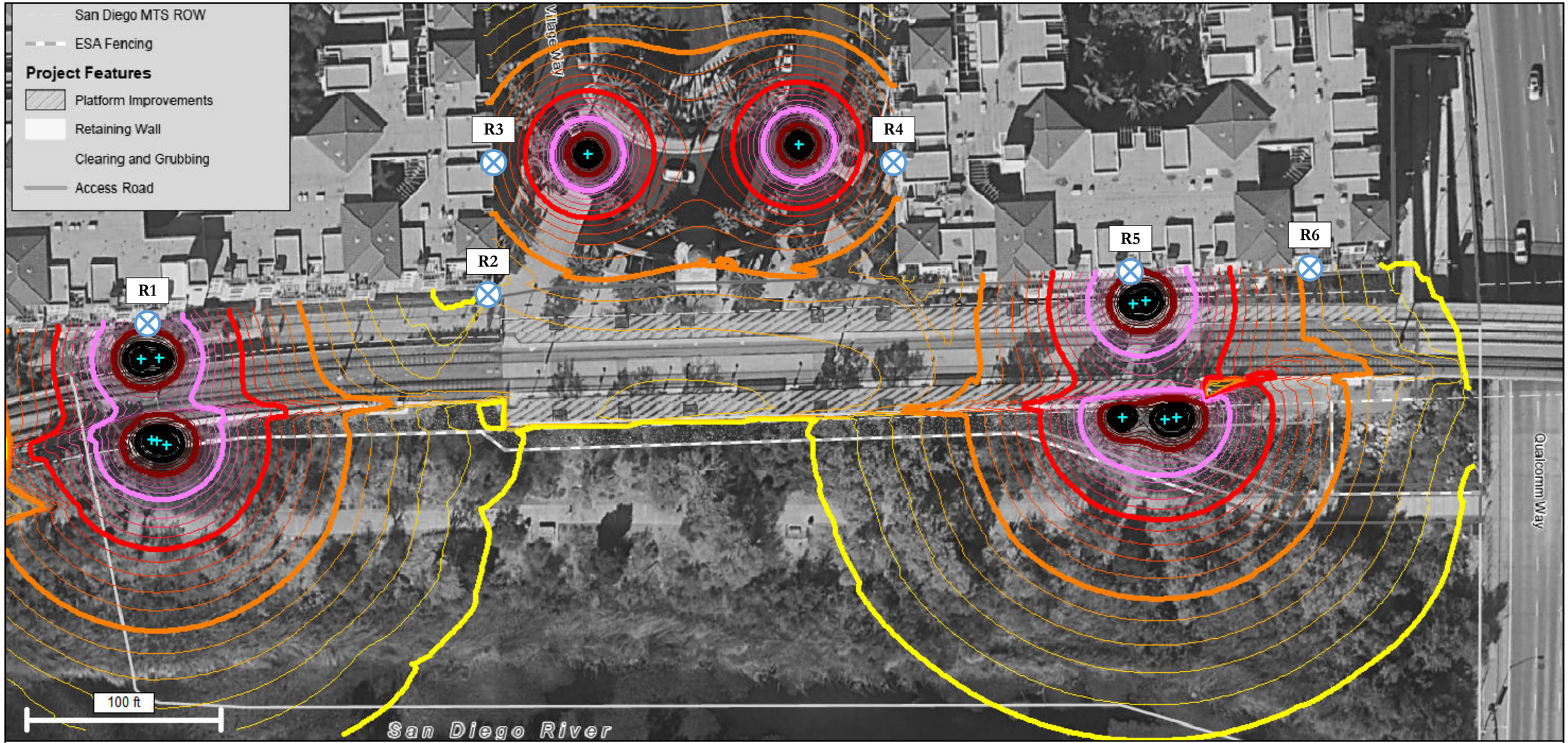
- ≥ 60 dB
- ≥ 65 dB
- ≥ 70 dB
- ≥ 75 dB
- ≥ 80 dB
- ≥ 85 dB

⊗ Receiver Location

\+ Construction Equipment

Figure 7.

Construction Noise Contours—Phase 3



Source: Dokken Engineering, 2023

≥ 60 dB
≥ 65 dB
≥ 70 dB
≥ 75 dB
≥ 80 dB
≥ 85 dB

⊗ Receiver Location
\+ Construction Equipment

Figure 8.

Construction Noise Contours—Phase 4

Source: Dokken Engineering, 2023

≥ 60 dB
≥ 65 dB
≥ 70 dB
≥ 75 dB
≥ 80 dB
≥ 85 dB

Receiver Location
Construction Equipment

Figure 9.

Construction Noise Contours—Phase 5

Table 4. Temporary Construction Noise Levels at Surrounding Receivers						
Phase	**Receiver**	**Location**	**Construction Noise Level (dBA $L_{EQ-12hr}$)**			
			1st Floor	**2nd Floor**	**3rd Floor**	**4th Floor**
Preconstruction	R1	South Facade (West), West Building	54	57	58	60
	R2	South Facade (East), West Building	54	56	58	60
	R3	East Facade, West Building	45	46	47	48
	R4	West Facade, East Building	46	47	48	48
	R5	South Facade (West), East Building	53	56	58	60
	R6	South Facade (East), East Building	54	57	59	60
1*	R1	South Facade (West), West Building	64	64	64	64
	R2	South Facade (East), West Building	**81**	**80**	**79**	**78**
	R3	East Facade, West Building	74	73	73	73
	R4	West Facade, East Building	66	66	65	64
	R5	South Facade (West), East Building	**84**	**82**	**80**	**79**
	R6	South Facade (East), East Building	**78**	**77**	**76**	75
2	R1	South Facade (West), West Building	59	61	64	65
	R2	South Facade (East), West Building	53	55	56	57
	R3	East Facade, West Building	45	45	45	46
	R4	West Facade, East Building	46	47	48	48
	R5	South Facade (West), East Building	56	57	58	59
	R6	South Facade (East), East Building	55	55	56	57
3	R1	South Facade (West), West Building	**76**	74	72	71
	R2	South Facade (East), West Building	67	66	66	65
	R3	East Facade, West Building	71	70	70	69
	R4	West Facade, East Building	70	69	69	68
	R5	South Facade (West), East Building	**76**	74	72	70
	R6	South Facade (East), East Building	64	64	64	64

Table 4. Temporary Construction Noise Levels at Surrounding Receivers						
Phase	**Receiver**	**Location**	**Construction Noise Level (dBA $L_{EQ-12hr}$)**			
			1st Floor	**2nd Floor**	**3rd Floor**	**4th Floor**
4	R1	South Facade (West), West Building	**78**	**76**	74	72
	R2	South Facade (East), West Building	61	61	62	62
	R3	East Facade, West Building	67	67	66	65
	R4	West Facade, East Building	66	66	66	65
	R5	South Facade (West), East Building	**79**	**77**	74	72
	R6	South Facade (East), East Building	65	65	65	65
5	R1	South Facade (West), West Building	49	49	49	49
	R2	South Facade (East), West Building	70	69	68	67
	R3	East Facade, West Building	66	66	65	65
	R4	West Facade, East Building	66	66	66	65
	R5	South Facade (West), East Building	46	46	46	47
	R6	South Facade (East), East Building	42	42	42	42

*Calculations at R1, R2, and R3 consider demolition activities located at a worst-case location adjacent to the west building, while calculations at R4, R5, and R6 consider demolition at a worst-case location adjacent to the east building.

Calculations demonstrate that during the Preconstruction Phase, Phase 2, and Phase 5, noise impacts at residential receivers are not expected to exceed a 12-hour average noise level of 75 dBA during construction activity. Any other surrounding otherwise noise-sensitive receivers are located at a greater distance from proposed construction activity and therefore will be exposed to lesser noise impacts due to additional distance attenuation and shielding provided by intervening structures.

During Phase 1, Phase 3, and Phase 4, temporary sound barriers will be required. During Phase 1, a sound barrier with a minimum height of 12 feet is required when the power-driven saw and/or jackhammer will be used within 50 feet of residential buildings. For Phases 3 and 4, a sound barrier with a minimum height of 8 feet is required when activity will take place within 30 feet of residential buildings. Mitigated noise levels considering the presence of such barriers are shown in Table 5.

Table 5. Temporary Construction Noise Levels at Surrounding Receivers – With Barrier Walls						
Phase	**Receiver**	**Location**	**Construction Noise Level (dBA $L_{EQ-12hr}$)**			
			1st Floor	**2nd Floor**	**3rd Floor**	**4th Floor**
1*	R1	South Facade (West), West Building	59	59	59	59
	R2	South Facade (East), West Building	65	67	72	75
	R3	East Facade, West Building	66	66	65	65
	R4	West Facade, East Building	66	66	65	64
	R5	South Facade (West), East Building	66	68	71	74
	R6	South Facade (East), East Building	60	63	68	71
3	R1	South Facade (West), West Building	70	74	72	71
	R2	South Facade (East), West Building	66	66	66	65
	R3	East Facade, West Building	71	70	70	69
	R4	West Facade, East Building	70	69	69	68
	R5	South Facade (West), East Building	74	74	72	70
	R6	South Facade (East), East Building	64	64	64	64
4	R1	South Facade (West), West Building	70	74	74	72
	R2	South Facade (East), West Building	59	59	60	60
	R3	East Facade, West Building	67	67	66	65
	R4	West Facade, East Building	66	66	66	65
	R5	South Facade (West), East Building	70	75	73	72
	R6	South Facade (East), East Building	58	60	61	62

*Calculations at R1, R2, and R3 consider demolition activities located at a worst-case location adjacent to the west building, while calculations at R4, R5, and R6 consider demolition at a worst-case location adjacent to the east building.

As shown above, with the required sound barriers in place, noise levels are expected to be reduced to a 12-hour average noise level of 75 dBA at sensitive receivers. Sound barriers should be constructed in a U-configuration with the opening facing south to effectively block sound at residential receivers. In order to be effective, the wall should be solid and free of cracks or gaps through or below the wall. Wood may be used if it is at least 3/4-inch thick or has a surface density of at least 3.5 pounds per square foot. Sound attenuation blankets may be used if they have an STC rating of at least 22.

During all phases, the following "good practice" measures should still be practiced as a courtesy to off-site receivers.

1. Turn off equipment when not in use.

2. Limit the use of enunciators or public address systems, except for emergency notifications.

3. Equipment used in construction should be maintained in proper operating condition, and all loads should be properly secured to prevent rattling and banging.

4. Schedule work to avoid simultaneous construction activities where both are generating high noise levels.

5. Use equipment with effective mufflers.

6. Minimize the use of backup alarms.

With the above general good practice construction noise control techniques in place and appropriate sound barriers in place during specified phases, temporary construction noise impacts are expected to meet applicable noise limits of the City of San Diego at surrounding residential receivers.

6.0 Conclusion

Mitigation Measure NOI-1 from the project Initial Study/Mitigated Negative Declaration (IS/MND) requires the preparation of a Construction Noise Control Plan to ensure compliance with the construction noise limits found within Section 59.5.0404 of the City of San Diego Municipal Code. The San Diego Municipal Code states that construction activity is prohibited between the hours of 7 p.m. and 7 a.m. and on Sundays or legal holidays, and that during permissible hours of operation, noise levels from construction activity must be limited to a 12-hour average of no greater than 75 dBA at any residential use. While NOI-1 also addresses the requirement for noise control at the Multi-Habitat Planning Area (MHPA) to ensure the protection of noise-sensitive species, it is the understanding of the undersigned that construction will not take place during the breeding season. As such, construction noise impacts have only been evaluated at residential receivers.

Calculations demonstrate that during the Preconstruction Phase, Phase 2, and Phase 5, noise impacts at residential receivers are not expected to exceed a 12-hour average noise level of 75 dBA during construction activity. During Phase 1, Phase 3, and Phase 4, temporary sound barriers will be required. During Phase 1, a sound barrier with a minimum height of 12 feet is required when the power-driven saw and/or jackhammer will be used within 50 feet of residential buildings. For Phases 3 and 4, a sound barrier with a minimum height of 8 feet is required when activities will take place within 30 feet of residential buildings. With these noise control measures in place, as well as the implementation of general good practice noise control measures listed herein, the project is expected to comply with the noise regulations of the City of San Diego and mitigation measure NOI-1.

7.0 Certification

All recommendations for noise control are based on the best information available at the time our consulting services are provided. However, as there are many factors involved in sound transmission, and Eilar Associates has no control over the construction, workmanship, or materials, Eilar Associates is specifically not liable for final results of any recommendations or implementation of the recommendations.

This report is based on the related project information received and measured noise levels and represents a true and factual analysis of the acoustical impact issues associated with the Rio Vista Platform Design – Phase II project, located in the City of San Diego, California. This report was prepared by Amy Hool and Jonathan Brothers.

Amy Hool, INCE
President/CEO

Jonathan Brothers, INCE
Principal Acoustical Consultant

8.0 References

Department for Environment Food and Rural Affairs (DEFRA), Update of Noise Database for Prediction of Noise on Construction and Open Sites, 2005.

U.S. Department of Transportation Federal Highway Administration, Construction Noise Handbook, Construction Equipment Noise Levels and Ranges.

Dokken Engineering, Draft Initial Study/Mitigated Negative Declaration for the Rio Vista Platform Design – Phase II Project, June 2024.

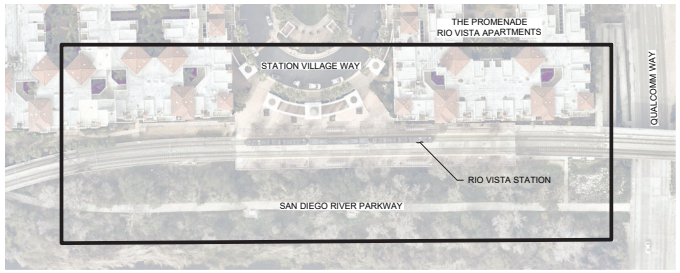
City of San Diego Municipal Code, Section 59.5.0404, 2019.

DataKustik, CadnaA (Computer Aided Noise Abatement), Version 2024 MR 1.

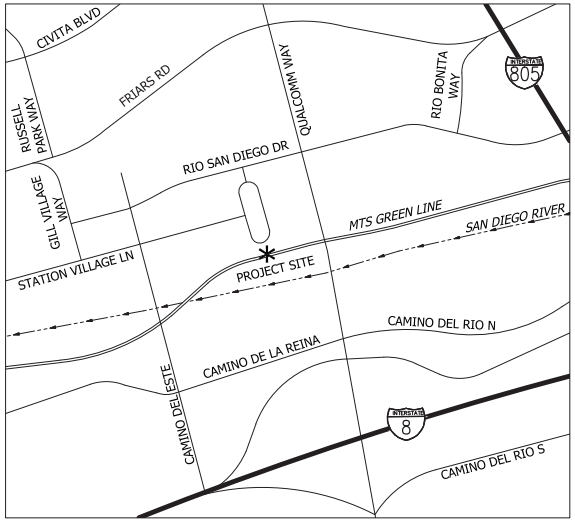
Eilar Associates, Inc.
Acoustical and Environmental Consulting Services

Appendix A
Project Plans

MTS RIO VISTA STATION
PLATFORM DESIGN - PHASE II
2020 QUALCOMM WAY
SAN DIEGO, CALIFORNIA



LOCATION MAP
NTS



VICINITY MAP
NTS

SHEET INDEX

DOKKEN ENGINEERING
1450 FRAZEE ROAD
SUITE 100
SAN DIEGO, CA 92108
TEL: (858) 514-8377

90% SUBMITTAL (NOT FOR CONSTRUCTION) - JUNE 7, 2024

REVISION LIST

NO.	DATE	REVISIONS

STAMPED:

PROJECT TITLE

MTS RIO VISTA PLATFORM DESIGN PHASE II

PROJECT NO.	PWL 353.0-22
DRAWN BY	AS
DATE	14 June, 2024
SCALE	

DRAWING TITLE

TITLE SHEET

G.1

WORK TO BE DONE:

WORK TO BE DONE INCLUDES RETROFIT OF THE RIO VISTA STATION PLATFORM WALLS, PAVEMENT REMOVAL AND REPLACEMENT, NEW INSTALLATION AND REINSTALLATION OF VARIOUS STATION AMENITIES, REMOVAL AND REPLACEMENT OF STATION LIGHTING WITH ASSOCIATED EQUIPMENT, VARIOUS UTILITY RELOCATIONS WITH ASSOCIATED EQUIPMENT, AND ALL WORK AS SHOWN ON THESE PLANS, PROJECT SPECIFICATIONS, AND THE FOLLOWING PRINTED DOCUMENTS:

1. STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS 2022 EDITION
2. SAN DIEGO COUNTY REGIONAL STANDARD DRAWINGS 2022
3. 2021 STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK)

WORK HOURS:

LIMIT WORK ON THE EXISTING SITE TO NORMAL BUSINESS WORKING HOURS OF 7:00 A.M. TO 3:00 P.M., MONDAY THROUGH FRIDAY, UNLESS OTHERWISE INDICATED.

GENERAL NOTES:

1. THE CONTRACTOR SHALL REVIEW EXISTING CONDITIONS ON THE SITE DURING THE BIDDING AND SHALL VERIFY ALL SITE CONDITIONS AND DIMENSIONS PRIOR TO STARTING WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPENCIES OR INCONSISTENCIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR'S WORK SHALL CONFORM TO ALL REQUIREMENTS SPECIFIED AS SHOWN HEREIN.
3. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS, AND DETAILS.
4. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
5. THE CONTRACT DOCUMENTS AND SPECIFICATIONS PRESENT THE FINISHED CONDITION. UNLESS OTHERWISE INDICATED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION.
6. THE CONTRACTOR SHALL, AT THEIR OWN EXPENSE, DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, AND SHALL SOLELY BE RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
7. THE CONTRACTOR MUST OBTAIN AN EXCAVATION PERMIT FROM THE DIVISION OF OCCUPATION SAFETY AND HEALTH (D.O.S.H.) FOR CONSTRUCTION OF TRENCHES OR EXCAVATION WHICH ARE FIVE FEET OR DEEPER INTO WHICH A PERSON IS REQUIRED TO DESCEND.
8. DUST GENERATED BY CONSTRUCTION ACTIVITIES SHALL COMPLY WITH LOCAL DUST CONTROL. ALL REQUIREMENTS OF ALL MITIGATION MONITORING PROGRAMS AND UNIFORM BUILDING CODE (UBC) REQUIREMENTS WHICH INCLUDE DUST CONTROL MEASURES FOR CONSTRUCTION SITES. DUST REDUCING MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, REGULAR WATERING OF GRADED SURFACES AND RESTRICTION OF ALL CONSTRUCTION VEHICLES AND EQUIPMENT TO TRAVEL ALONG ESTABLISHED AND REGULARLY WATER ROADWAYS AT SPECIFIED SPEEDS.
9. WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF THE WORK, THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

UTILITY NOTES:

1. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THE PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS AND ARE NOT NECESSARILY IN THE LOCATION SHOWN ON THE PLANS PRIOR TO CONSTRUCTION.
2. PRIOR TO ANY DEMOLITION OR EXCAVATION FOR THIS CONTRACT, CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS HAS BEEN OBTAINED FROM AVAILABLE RECORDS ONLY AND MAY NOT REFLECT ALL EXISTING UTILITIES.
3. LOCATION OF ALL EXISTING UTILITIES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OF WORK. ACCURATE VERIFICATION AS TO SIZE, LOCATION AND DEPTH OF EXISTING UNDERGROUND SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
4. CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
5. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITY AGENCIES PRIOR TO STARTING HIS WORK WITH UTILITY REPRESENTATIVES. FOR LOCATION OF UNDERGROUND UTILITIES AND APPURTENANCES, CONTACT "UNDERGROUND SERVICE ALERT": AT 1-800-422-4133.

FIRE NOTES:

1. PROJECT SHALL COMPLY WITH CALIFORNIA FIRE CODE CHAPTER 33, "FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION".
2. IMPAIRMENTS TO FIRE PROTECTION SYSTEMS WILL BE COORDINATED IN ACCORDANCE WITH CITY OF SAN DIEGO FIRE DEPARTMENT FIRE PREVENTION DIVISION FIRE WATCH POLICY.

CIVIL IMPROVEMENT NOTES:

1. CONTRACTOR SHALL USE SURVEY CONTROL POINTS, INCLUDING BENCH MARKS, WHERE AVAILABLE.
2. CONTRACTOR SHALL DEMOLISH AND DISPOSE OF EXISTING ASPHALT PAVEMENT, CONCRETE AND ANY OTHER MATERIAL NOT USED.
3. IN AREAS WHERE THE CONTRACTOR APPLIES AC CAP OR CONSTRUCTS A NEW STRUCTURAL SECTION, THE CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING VALVE BOXES, MANHOLES, AND ANY OTHER SIMILAR UTILITY SYSTEMS APPURTENANCES.

EROSION AND SEDIMENT CONTROL NOTES:

1. STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.
2. CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING PAVEMENT DEMOLITION WASTE, PAINTS, CONCRETE, CHEMICALS, WASH WATER, OR SEDIMENTS, AND OTHER DISCHARGES TO STORM DRAINS AND WATERCOURSES.
3. LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.
4. TREE PROTECTION SHALL BE IN PLACE PRIOR TO ANY DEMOLITION, GRADING, OR EXCAVATING OCCURRING.
5. FILTER FABRIC SHALL BE INSTALLED AT THE DRAINS AND CLEANED OUT AFTER EACH RAIN EVENT OR AS NEEDED TO PROPERLY FUNCTION.

IMPORTANT NOTICE

SECTION 4215/4217 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIG ALERT I.D. NUMBER, CALL UNDERGROUND SERVICE ALERT TOLL FREE 1-800-422-4133 AT LEAST TWO WORKING DAYS BEFORE YOU DIG.

811 Know what's Below. Call before you dig.

MTS GENERAL NOTES:

1. A RIGHT OF ENTRY (ROE) PERMIT IS NECESSARY WHEN ENTERING MTS /SAN DIEGO AND ARIZONA EASTERN (SD&AE) RIGHT-OF-WAY (MTS RW), INCLUDING AIRSPACE, FOR ANY PURPOSE. A ROE PERMIT IS ALSO REQUIRED WHEN WORKING IN PUBLIC RIGHT-OF-WAY OCCUPIED BY MTS /SD&AE FACILITIES. INFORMATION TO APPLY FOR ROE CAN BE OBTAINED FROM THE MTS WEBSITE AT: HTTP-/WWW.SDMTS.COM/BUSINESS PERMITS.ASP OR CONTACT MTS RIGHT OF WAY SERVICES AT TEL. (619) 557-4501. APPLICANT/CONTRACTOR IS REFERRED TO AS THE PERMITTEE.
2. CERTIFICATE OF INSURANCE FROM YOUR INSURANCE COMPANY FOR GENERAL LIABILITY. AUTOMOBILE LIABILITY, POLLUTION LIABILITY (IF APPLICABLE), PROFESSIONAL LIABILITY (IF APPLICABLE), AND WORKMAN'S COMPENSATION MUST BE SUBMITTED AND APPROVED BY MTS BEFORE THE PERMIT WILL BE PROCESSED. FULL INSURANCE REQUIREMENT GUIDELINES CAN BE ACCESSED FROM THE MTS WEBSITE NOTED ABOVE.
3. MOST GENERAL LIABILITY INSURANCE POLICIES DO NOT COVER RAILROADS. ANY EXCLUSIONS RELATING TO PERFORMANCE OF OPERATIONS WITHIN THE VICINITY OF ANY RAILROAD, BRIDGE, TRESTLE, TRACK, ROADBED, TUNNEL, UNDERPASS, OR CROSSING MUST BE DELETED FROM ALL POLICIES BY ENDORSEMENT. ADDITIONALLY, A SEPARATE RAILROAD PROTECTIVE LIABILITY POLICY WILL MOST LIKELY BE REQUIRED AFTER PROJECT REVIEW AS DEEMED NECESSARY BY MTS.
4. ALL PERSONNEL PERFORMING WORK ON MTS R/W, OR ENTERING MTS R/W SHALL REQUIRE PROPER MTS RAIL SAFETY TRAINING CERTIFICATION PRIOR TO ENTERING MTS R/W. ANY CONTRACTORS OR SUBCONTRACTORS PERFORMING WORK ON BEHALF OF PERMITTEE, SHALL BE DEEMED AS AGENTS OF PERMITTEE AND SHALL REQUIRE SAID TRAINING AS WELL. FOR TRAINING INFORMATION, EMAIL RWST@SDMTS.COM. TRAINING CERTIFICATION IS VALID FOR ONE YEAR AND IS CONFINED TO MTS/SD&AE FACILITIES ONLY.
5. PERMITTEE SHALL PROVIDE MTS WITH AN APPROVED SET OF TRAFFIC CONTROL PLANS THAT CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND COMPLY IN PARTICULAR WITH PART 8 TRAFFIC CONTROL FOR RAILROAD AND LIGHT RAIL TRANSIT GRADE CROSSINGS.
6. IF PROJECT INVOLVES CASING SLEEVES UNDER RAILROAD TRACKS AND ACROSS MTS R/W, PERMITTEE SHALL ADHERE TO MTS JACK AND BORE DESIGN CRITERIA AND CONSTRUCTION NOTES
7. A PRE-CONSTRUCTION MEETING WILL BE REQUIRED WITH MTS/SDTI PRIOR TO WORK COMMENCING WITHIN MTS R/W. A WRITTEN NOTICE OF PLANNED START OF WORK MUST BE SUBMITTED TO MTS A MINIMUM OF FIVE (5) BUSINESS DAYS PRIOR TO WORK STARTING IN MTS R/W. ALL WORK WILL BE STOPPED AND PERMITTEE WILL NOT BE ALLOWED IN MTS R/W WITHOUT PROPER NOTIFICATION,
8. PERMITTEE'S ON-SITE SUPERVISION SHALL RETAIN/MAINTAIN A FULLY EXECUTED COPY OF THE RIGHT OF ENTRY PERMIT AT ALL TIMES WHILE ON MTS R/W.
9. SDTI RAIL FLAGGING WILL BE REQUIRED ANYTIME WORK IS WITHIN FIFTEEN (15) FEET OF ANY OPERABLE TRACK INCLUDING AIRSPACE OR AS DEEMED NECESSARY BY MTS. A SDTI FLAGPERSON /RIGHT-OF-WAY WORK REQUEST FORM MUST BE SUBMITTED TO SDTI A MINIMUM OF THREE (3) BUSINESS DAYS PRIOR TO ANTICIPATED WORK. FORMS ARE ATTACHED TO THE ROE PERMIT OR CAN BE REQUESTED THROUGH MTS RIGHT OF WAY SERVICES.
10. A SDTI TRACTION POWER SHUTDOWN MAY BE NECESSARY FOR THE WORK ZONE TO PROTECT AND MAINTAIN THE REQUIRED TEN (10) FOOT CLEARANCE FROM TROLLEY OVERHEAD HIGH VOLTAGE CATENARY SYSTEM (OCS). PERMITTEE SHALL SUBMIT A SDTI RED TAG/TRACTION POWER REMOVAL REQUEST FORM TO SDTI AT LEAST THREE (3) BUSINESS DAYS PRIOR TO THE START OF WORK. POWER SHUTDOWNS SHALL ONLY BE ALLOWED DURING NON-OPERATING TROLLEY HOURS. FORMS ARE ATTACHED TO THE ROE PERMIT OR CAN BE REQUESTED THROUGH MTS RIGHT OF WAY SERVICES.
11. PERMITTEE SHALL CONTACT AND SCHEDULE DIG-ALERT AND CABLE PIPE AND LEAK (CPL) PRIOR TO ANY EXCAVATION IN MTS R/W. PERMITTEE SHALL NOTIFY MTS A MINIMUM OF THREE (3) BUSINESS DAYS PRIOR TO THE SCHEDULED UTILITY MARKOUT REQUEST AND SHALL SUBMIT A SDTI FLAGPERSON /RIGHT-OF-WAY WORK REQUEST FORM. SDTI PERSONNEL SHALL ACCOMPANY CPL FOR ANY MARKOUT OF TROLLEY FACILITIES.
12. PERMITTEE SHALL ADHERE TO CONSTRUCTION AND SAFETY STANDARDS REQUIRED BY MTS OF THEIR CONTRACTORS WHEN WORKING WITHIN MTS R/W.
13. PERMITTEE SHALL PERFORM ALL WORK IN ACCORDANCE WITH APPLICABLE CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC) AND CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (CAL-OSHA) REGULATIONS, MTS LRT DESIGN CRITERIA, AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION (AREMA) STANDARD SPECIFICATIONS, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) GUIDELINES AND MTS, SDTI AND SD&IV OPERATIONS AND SAFETY POLICIES.
14. PERMITTEE AGREES THAT NO WORK BY HIMSELF OR HIS AUTHORIZED AGENT WILL INTERFERE WITH RAILROAD/TROLLEY OPERATIONS.
15. PERMITTEE AGREES TO COORDINATE ON A DAILY BASIS A REASONABLE ACCESS TO ALL MTS/SD&AE FACILITIES WITH CONTRACT OPERATORS. SDTI, AND SD&IV. SDTI TROLLEY OPERATIONS ARE GENERALLY FROM THE HOURS OF 4:00 A.M. TO 2:00 A.M. THE FOLLOWING DAY. SD&IV FREIGHT TRAINS NORMAL OPERATIONS ARE DURING NON-TROLLEY HOURS.
16. PERMITTEE SHALL MAINTAIN SAFE PEDESTRIAN ACCESS TO ALL TROLLEY PLATFORMS AND BUS STOPS AT ALL TIMES. A MINIMUM FIVE (5) FOOT WIDE ACCESSIBLE PEDESTRIAN PATH THROUGH THE CONSTRUCTION SITE SHALL BE MAINTAINED AT ALL TIMES. THE CONSTRUCTION BOUNDARY SHALL CONSIST OF A TOP AND BOTTOM RAIL CONSTRUCTED OF PLASTIC PIPE, OSHA PLASTIC MESH, OR APPROVED EQUAL. YELLOW CAUTION TAPE IS NOT ACCEPTABLE.
17. PERMITTEE SHALL NOT STORE EQUIPMENT, TOOLS, AND MATERIALS WITHIN FIFTEEN (15) FEET FROM TROLLEY OPERABLE TRACK AND WITHIN TWENTY-FIVE (25) FEET FROM FREIGHT TRACK OPERATIONS.
18. PERMITTEE SHALL NOT USE OR STORE HAZARDOUS SUBSTANCES, AS DEFINED BY THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT, AS AMENDED (**CERCLA**) OR PETROLEUM OR OIL AS DEFINED BY APPLICABLE ENVIRONMENTAL LAWS ON MTS R/W.
19. NO VEHICULAR CROSSING OVER TRACKS SHALL BE INSTALLED OR USED BY PERMITTEE WITHOUT PRIOR WRITTEN PERMISSION OF RAILROAD.
20. A WRITTEN NOTICE SHALL BE SUBMITTED TO MTS ONE (1) BUSINESS DAY AFTER WORK IS COMPLETED WITHIN MTS R/W. ANY ADDITIONAL WORK REQUIRED TO REPLACE OR REPAIR THE RAILROAD FACILITIES IN GOOD WORKING ORDER WILL BE THE PERMITTEE'S RESPONSIBILITY PRIOR TO RELIEF FROM MAINTENANCE WITHIN THE PERMIT AREA.
21. PERMITTEE SHALL REMOVE ALL OF PERMITTEE'S TOOLS, EQUIPMENT, AND MATERIALS FROM RAILROAD PREMISES PROMPTLY UPON COMPLETION OF WORK AND SHALL RESTORE ALL FACILITIES, IMPROVEMENTS, LANDSCAPING, ETC., TO THEIR ORIGINAL CONDITION OR AS SHOWN ON PROJECT WORK SITE PLANS.
22. PERMITTEE SHALL PERFORM ALL WORK IN ACCORDANCE WITH APPLICABLE CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (CAL-OSHA) REGULATIONS, MTS DESIGN CRITERIA, AND MTS OPERATIONS AND SAFETY POLICIES.
23. PERMITTEE TO OBTAIN APPROVAL OF PROJECT PHASING AND IMPACTS TO TROLLEY SERVICE OPERATIONS WITH MTS STAFF PRIOR TO COMMENCEMENT OF CONSTRUCTION.
24. PERMITTEE SHALL NOT USE OR STORE HAZARDOUS SUBSTANCES, AS DEFINED BY THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT, AS AMENDED ("CERCLA") OR PETROLEUM OR OIL AS DEFINED BY APPLICABLE ENVIRONMENTAL LAWS ON MTS PROPERTY.
25. PERMITTEE SHALL COORDINATE TO MITIGATE ANY IMPACTS THE PROJECT MAY HAVE UPON EXISTING IRRIGATION NETWORKS AND SPRINKLER SYSTEMS.

LANDSCAPE AND IRRIGATION:

1. CONTRACTOR SHALL CONFIRM OWNERSHIP OF IRRIGATION LINE ON NORTH AND SOUTH SIDE OF THE PROJECT. CONTRACTOR SHALL COORDINATE IRRIGATION LINE SHUT-OFF WITH 72-HOURS' NOTICE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REINSTALL IRRIGATION LINES AND SPRAY HEADS BACK TO EXISTING CONDITIONS.
2. CONTRACTOR SHALL RETAIN A BIOLOGIST FOR DEMOLITION OF SENSITIVE HABITAT. CONTRACTOR IS RESPONSIBLE FOR RESTORING SENSITIVE HABITAT TO MATCH EXISTING CONDITIONS IN CONFORMANCE WITH THE ENVIRONMENTAL DOCUMENTS AND TO THE SATISFACTION OF THE BIOLOGIST, PROPERTY OWNER, AND MTS.

LEGEND:

	EXISTING:	NEW / RELOCATED:
FLOW LINE		
RIGHT OF WAY PROPERTY BOUNDARY		
EXISTING EASEMENT		
STAMPED COLORED CONCRETE		
CONCRETE SIDEWALK		
CONCRETE PAVEMENT REMOVAL		
CONCRETE PAVER REMOVAL		
ENVIROMENTALLY SENSITIVE AREA (ESA)		
DETECTABLE WARNING SURFACE		
SAWCUT		
COMMUNICATION LINE	COMM COMM	COMM COMM
WALL		
STORM DRAIN CATCH BASIN		
STORM DRAIN CLEANOUT	SD	SD
SPRINKLER		
TRASH CAN		
CHAIN LINK FENCE		
PICKET FENCE		
WATER MAIN	W	W
FIRE HYDRANT		
SEWER MAIN	S	S
SEWER MANHOLE	S	S
ELECTRICAL LINE	E	E
TREE REMOVAL		
TREE		
BENCH	B	B
BRAILLE WAYFINDING	B	B
PAYPHONE	P	P
TRASH BIN	T	T
TICKET VENDING MACHINE	TVM	TVM
WATER RISER	W	W
OCS POLE		
WATER VALVE		
LIGHT POLE		
SURVEY BENCHMARK		
LED SIGN		
VENDING MACHINE	VEND	VEND
PULLBOX	PB	PB
STREET LIGHT PULLBOX	L T	L T
TREE WLL		
ELECTRIC PULLBOX	E	E
GROUND ROD		
COMMUNICATION VAULT	CV	CV
ELECTRICAL VAULT	EV	EV
ELECTRICAL HANDHOLE	E	E
STORM DRAIN	SD	
IRRIGATION LINE	FIR	FIR

ABBREVIATIONS:

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	ESA	ENVIRONMENTALLY SENSITIVE AREA	PB	PULL BOX
ABUT	ABUTMENT	EV	ELECTRICAL VAULT	PIP	PROTECT IN PLACE
AC	ASPHALT CONCRETE	EXIST	EXISTING	PL	PLATE
ADMIN	ADMINISTRATION	EXP	EXPANSION	R/W	RIGHT OF WAY
APPROX	APPPROXIMATE	FG	FINISH GROUND	REINF	REINFORCEMENT
BEG	BEGIN	FL	FLOWLINE	RT	RIGHT
BLDG	BUILDING	FT	FEET	S	SOUTH, SPACING
C-C	CENTER TO CENTER	GB	GRADE BREAK	S/C	SAWCUT
CL	CENTER LINE	H	HEIGHT	SDG&E	SAN DIEGO GAS AND ELECTRIC
CLR	CLEAR	ID	IDENTIFICATION	SD&IV	SAN DIEGO AND IMPERIAL VALLEY RAILROAD
CONC	CONCRETE	JT	JOINT	SDRSD	SAN DIEGO REGIONAL STANDARD DRAWINGS
CONT	CONTINUOUS	LF	LINEAR FEET	SDTI	SAN DIEGO TROLLEY, INC
CPB	COMMUNICATION PULL BOX	LRFD	LOAD AND RESISTANCE FACTOR DESIGN	SF	SQUARE FEET
CV	COMMUNICATION VAULT	LT	LEFT	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
DWS	DETECTABLE WARNING SURFACE	MAX	MAXIMUM	TC	TOP OF CURB
E	EASTING	MIN	MINIMUM	TCE	TEMPORARY CONSTRUCTION EASEMENT
EA	EACH	MSE	MECHANICALLY STABILIZED EMBANKMENT	TOT	TOTAL
EB	EASTBOUND	MTS	METROPOLITAN TRANSIT SYSTEM	TYP	TYPICAL
EF	EACH FACE	N	NORTH, NORTHING	U.O.N	UNLESS OTHERWISE NOTED
ELEC	ELECTROLIER	NTS	NOT TO SCALE	VAR	VARIES
ELEV	ELEVATION	O.C.	ON CENTER	WB	WESTBOUND
EMBED	EMBEDMENT	OCS	OVERHEAD CONTACT SYSTEM	WPCP	WATER POLLUTION CONTROL PLAN
EPB	ELECTRICAL PULL BOX	OG	ORIGINAL GROUND		

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REVISION LIST

NO.	DATE	REVISIONS

STAMPED:

PROJECT TITLE

MTS RIO VISTA PLATFORM DESIGN PHASE II

PROJECT NO.	PWL 353.0-22
DRAWN BY	AS
DATE	14 June, 2024
SCALE	N/A

DRAWING TITLE

GENERAL NOTES

BASIS OF BEARINGS:

THE BASIS OF COORDINATES FOR THIS SURVEY IS THE NORTH AMERICAN DATUM OF 1983 (NAD 83) CALIFORNIA STATE PLANE COORDINATE SYSTEM OF 1983 (CCS83) ZONE 6 (EPOCH 1991.35) BASED LOCALLY UPON THE FOLLOWING CONTROL POINTS PER RECORD OF SURVEY 14492:

STATION	NORTHING	EASTING	SOURCE
159	1866922.04	6295949.17	ROS 14492
160	1862334.35	6287898.79	ROS 14492

GRID BEARING BETWEEN STA. NO. 159 AND STA. NO. 160 = N 60°19'21" E.

COMBINED SCALE FACTOR AT STATION NO. 159 = 1.0000053

MAPPING ANGLE AT STA. NO. 159 = -00°29'21.92"

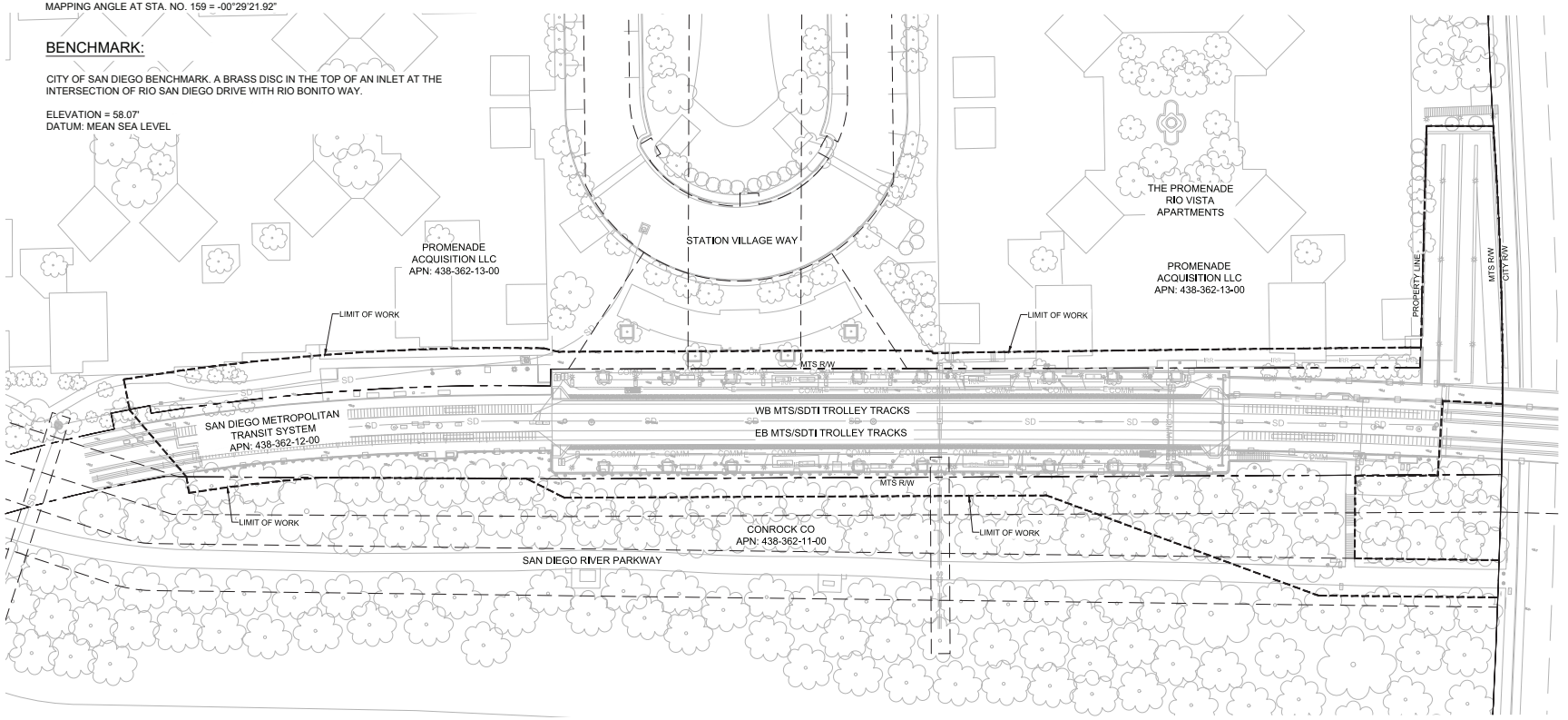
BENCHMARK:

CITY OF SAN DIEGO BENCHMARK. A BRASS DISC IN THE TOP OF AN INLET AT THE INTERSECTION OF RIO SAN DIEGO DRIVE WITH RIO BONITO WAY.

ELEVATION = 58.07'
DATUM: MEAN SEA LEVEL

LEGEND:

- LIMIT OF WORK
- EXISTING PROPERTY LINE / R/W
- EXISTING EASEMENT
- ENVIRONMENTALLY SENSITIVE HABITAT (ON SLOPE SOUTH OF STATION PLATFORM)



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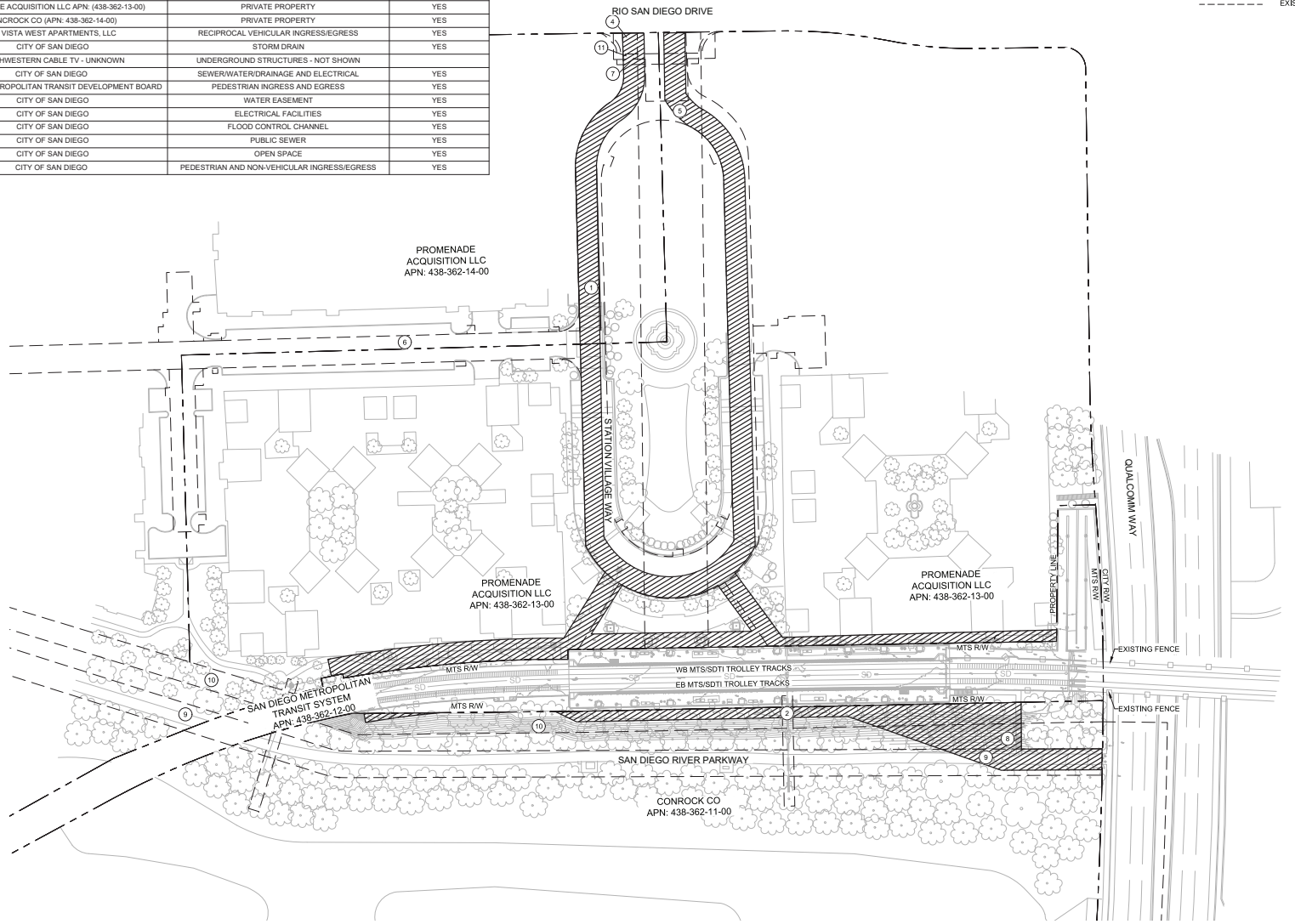
EXISTING CONDITIONS MAP

C.1

No.	OWNER	TYPE	TCE REQUIRED
	PROMENADE ACQUISITION LLC APN: (438-362-14-00)	PRIVATE PROPERTY	YES
	PROMENADE ACQUISITION LLC APN: (438-362-13-00)	PRIVATE PROPERTY	YES
	CONCROCK CO (APN: 438-362-14-00)	PRIVATE PROPERTY	YES
1	RIO VISTA WEST APARTMENTS, LLC	RECIPROCAL VEHICULAR INGRESS/EGRESS	YES
2	CITY OF SAN DIEGO	STORM DRAIN	YES
3	SOUTHWESTERN CABLE TV - UNKNOWN	UNDERGROUND STRUCTURES - NOT SHOWN	
4	CITY OF SAN DIEGO	SEWER/WATER/DRAINAGE AND ELECTRICAL	YES
5	SAN DIEGO METROPOLITAN TRANSIT DEVELOPMENT BOARD	PEDESTRIAN INGRESS AND EGRESS	YES
6	CITY OF SAN DIEGO	WATER EASEMENT	YES
7	CITY OF SAN DIEGO	ELECTRICAL FACILITIES	YES
8	CITY OF SAN DIEGO	FLOOD CONTROL CHANNEL	YES
9	CITY OF SAN DIEGO	PUBLIC SEWER	YES
10	CITY OF SAN DIEGO	OPEN SPACE	YES
11	CITY OF SAN DIEGO	PEDESTRIAN AND NON-VEHICULAR INGRESS/EGRESS	YES



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CONSTRUCTION ACCESS PLAN

C.2

DEMOLITION PLANS:

A C.4 | B C.5 | C C.6 | D C.7

CIVIL IMPROVEMENT PLANS:

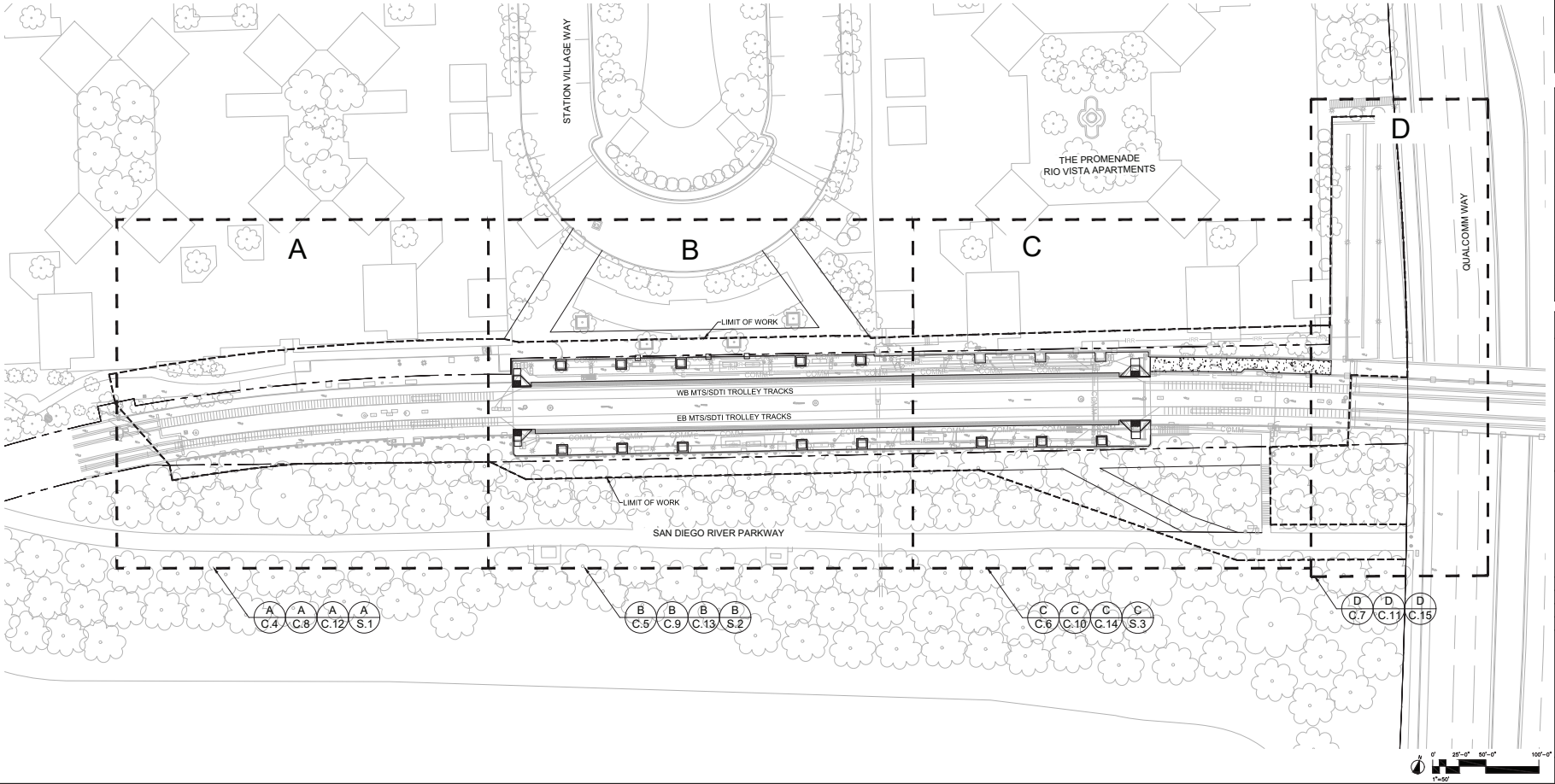
A C.8 | B C.9 | C C.10 | D C.11

GRADING AND DRAINAGE PLANS:

A C.12 | B C.13 | C C.14 | D C.15

STRUCTURAL PLANS:

A S.1 | B S.2 | C S.3



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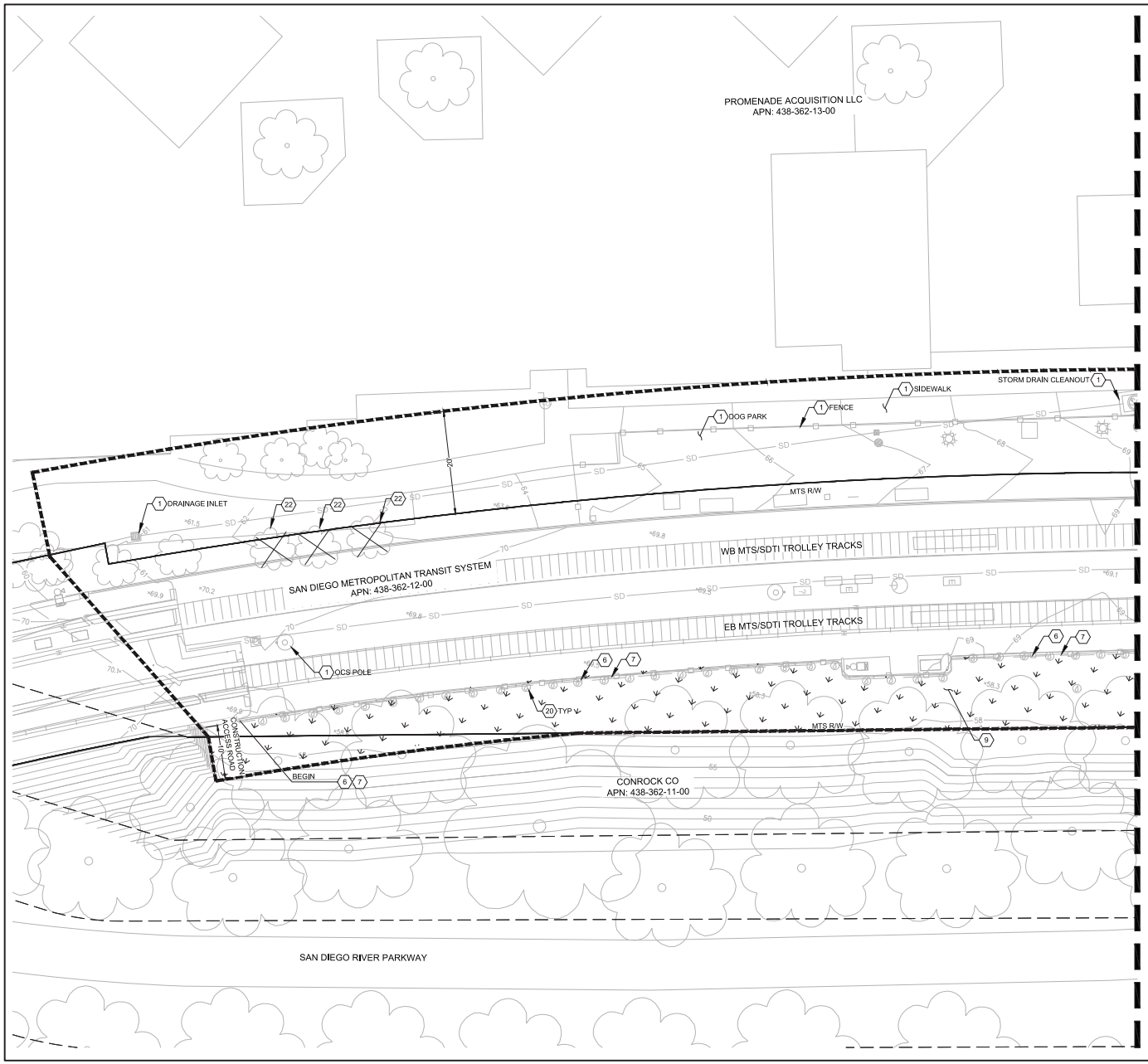
KEY MAP

C.3



LEGEND:

- CLEAR AND GRUB
- LIMIT OF WORK
- TREE REMOVAL

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING VEGETATED AREAS TO ORIGINAL CONDITION. CONTRACTOR SHALL TAKE PHOTOS OF EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. SEE GRADING AND DRAINAGE SHEETS FOR CONSTRUCTION ACCESS ROAD GRADING. SEE IMPROVEMENT PLANS FOR UTILITY AND SURFACE EQUIPMENT RELOCATIONS.

DEMOLITION NOTES:

- (1) PROTECT IN PLACE, AS NOTED ON PLAN.
- (6) REMOVE AND SALVAGE EXISTING STEEL CABLE RAILING
- (7) REMOVE EXISTING COPING
- (9) CLEAR AND GRUB
- (20) REMOVE EXISTING LANDSCAPE AND IRRIGATION, AS NEEDED.
- (22) REMOVE EXISTING TREE

NOTICE TO CONTRACTOR

EXISTING HIGH VOLTAGE CATENARY LINES. CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING IN VICINITY OF OVERHEAD CONTACT SYSTEM.

0' 5'-0" 10'-0" 20'-0"
1"=10'

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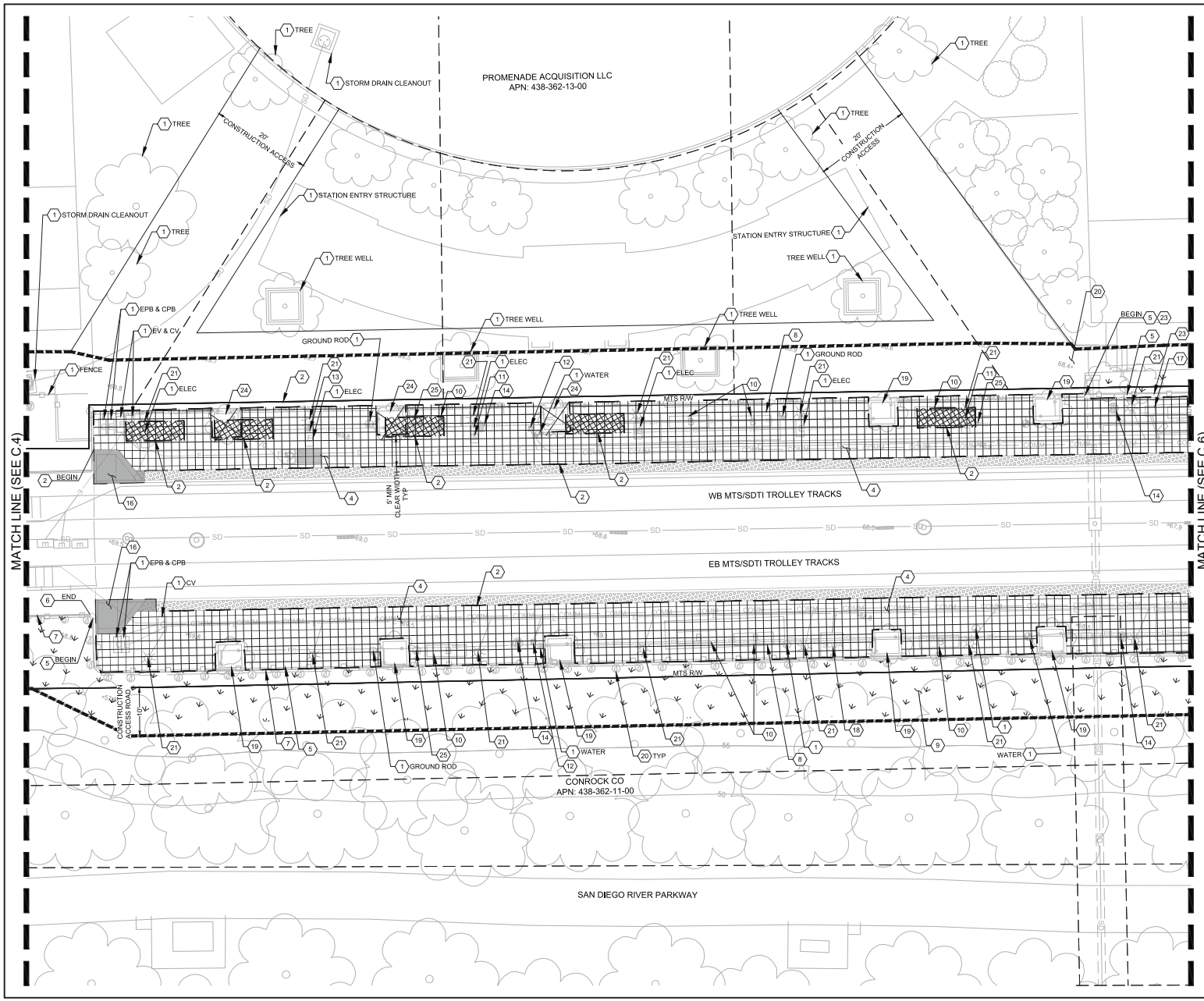
DEMOLITION PLAN - AREA A

C.4



LEGEND:

- REMOVE EXISTING CONCRETE
- REMOVE EXISTING CONCRETE PAVER AND BASE
- TRENCH EXCAVATION (12' x 4') SEE STRUCTURAL DETAILS
- CLEAR AND GRUB
- SAWCUT
- LIMIT OF WORK
- TREE REMOVAL

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING VEGETATED AREAS TO ORIGINAL CONDITION. CONTRACTOR SHALL TAKE PHOTOS OF EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. SEE GRADING AND DRAINAGE SHEETS FOR CONSTRUCTION ACCESS ROAD GRADING. SEE IMPROVEMENT PLANS FOR UTILITY AND SURFACE EQUIPMENT RELOCATIONS.

DEMOLITION NOTES:

1. PROTECT IN PLACE, AS NOTED ON PLAN.
2. SAWCUT
4. REMOVE EXISTING CONCRETE PAVER AND BASE
5. REMOVE AND SALVAGE EXISTING STEEL PICKET FENCE
6. REMOVE AND SALVAGE EXISTING STEEL CABLE RAILING
7. REMOVE EXISTING COPING
8. REMOVE EXISTING SHELTER AND RETURN TO MTS
9. CLEAR AND GRUB
10. REMOVE AND SALVAGE BENCH
11. OWNER TO REMOVE AND SALVAGE EXISTING TICKET MACHINE. CONTRACTOR SHALL COORDINATE WITH OWNER.
12. REMOVE AND SALVAGE EXISTING LED SIGN
13. REMOVE AND SALVAGE EXISTING BRAILLE SIGN
14. REMOVE AND SALVAGE EXISTING TRASH CAN
16. REMOVE EXISTING CURB RAMP
17. REMOVE AND SALVAGE EXISTING PAYPHONE
18. REMOVE AND SALVAGE EXISTING VENDING MACHINE
19. REMOVE EXISTING TREE-WELL AND PROTECT IN PLACE EXISTING TREE
20. REMOVE EXISTING LANDSCAPE AND IRRIGATION, AS NEEDED.
21. REMOVE EXISTING LIGHT POLE AND SALVAGE ALL ATTACHED FIXTURES
23. REMOVE EXISTING WALL
24. REMOVE EXISTING TREE-WELL AND EXISTING TREE
25. REMOVE AND SALVAGE EXISTING GROUND ROD

NOTICE TO CONTRACTOR

EXISTING HIGH VOLTAGE CATENARY LINES. CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING IN VICINITY OF OVERHEAD CONTACT SYSTEM.

0' 5'-0" 10'-0" 20'-0"
1"=10'

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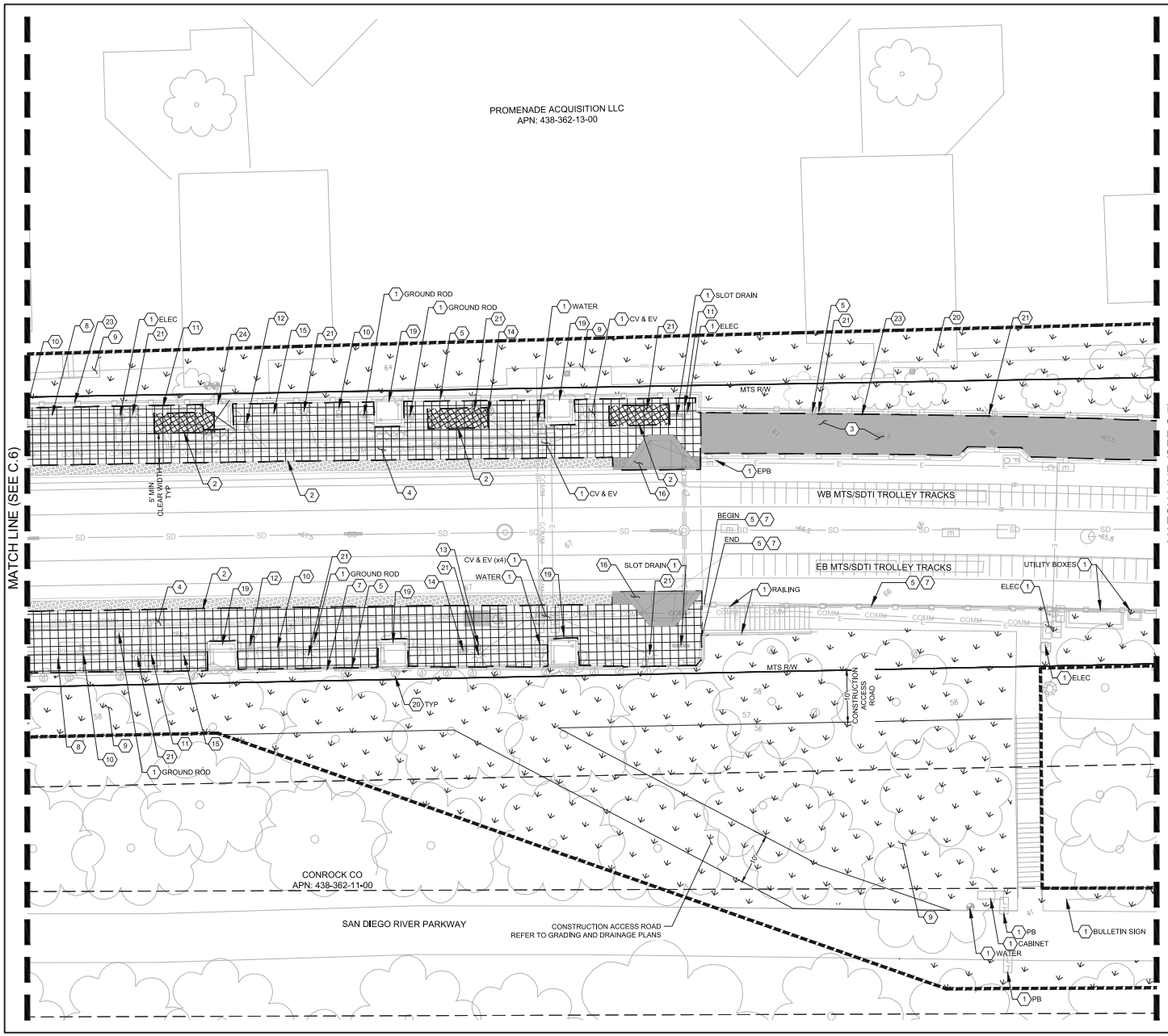
DEMOLITION PLAN - AREA B



LEGEND:

- REMOVE EXISTING CONCRETE
- REMOVE EXISTING CONCRETE PAVER AND BASE
- TRENCH EXCAVATION (12' x 4') SEE STRUCTURAL DETAILS
- CLEAR AND GRUB
- SAWCUT
- LIMIT OF WORK
- TREE REMOVAL

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING VEGETATED AREAS TO ORIGINAL CONDITION. CONTRACTOR SHALL TAKE PHOTOS OF EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. SEE GRADING AND DRAINAGE SHEETS FOR CONSTRUCTION ACCESS ROAD GRADING. SEE IMPROVEMENT PLANS FOR UTILITY AND SURFACE EQUIPMENT RELOCATIONS.

DEMOLITION NOTES:

1. PROTECT IN PLACE, AS NOTED ON PLAN.
2. SAWCUT
3. REMOVE EXISTING CONCRETE SECTION AND BASE
4. REMOVE EXISTING CONCRETE PAVER AND BASE
5. REMOVE EXISTING STEEL PICKET FENCE
6. REMOVE AND SALVAGE EXISTING STEEL CABLE RAILING
7. REMOVE EXISTING COPING
8. REMOVE EXISTING SHELTER AND RETURN TO MTS
9. CLEAR AND GRUB
10. REMOVE AND SALVAGE BENCH
11. OWNER TO REMOVE AND SALVAGE EXISTING TICKET MACHINE. CONTRACTOR SHALL COORDINATE WITH OWNER.
12. REMOVE AND SALVAGE EXISTING LED SIGN
13. REMOVE AND SALVAGE EXISTING BRAILLE SIGN
14. REMOVE AND SALVAGE EXISTING TRASH CAN
15. REMOVE AND SALVAGE EXISTING BULLETIN SIGN
16. REMOVE EXISTING CURB RAMP
18. REMOVE AND SALVAGE EXISTING TICKET VENDING MACHINE
19. REMOVE EXISTING TREE-WELL AND PROTECT IN PLACE EXISTING TREE
20. REMOVE EXISTING LANDSCAPE AND IRRIGATION, AS NEEDED.
21. REMOVE EXISTING LIGHT POLE AND SALVAGE ALL ATTACHED FIXTURES
23. REMOVE EXISTING WALL
24. REMOVE EXISTING TREE-WELL AND EXISTING TREE

NOTICE TO CONTRACTOR

EXISTING HIGH VOLTAGE CATENARY LINES. CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING IN VICINITY OF OVERHEAD CONTACT SYSTEM.

1"=10'

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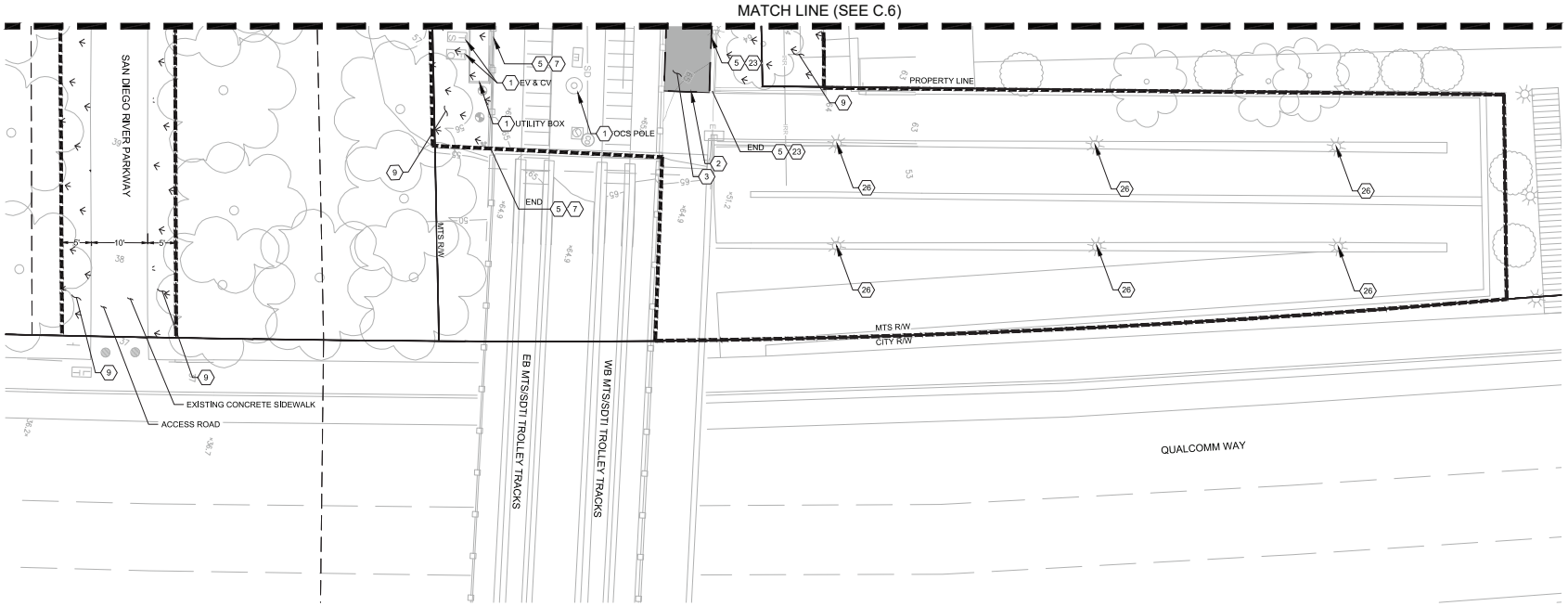
MTS RIO VISTA PLATFORM DESIGN PHASE II

PROJECT NO.	PWL 353.0-22
DRAWN BY	AS
DATE	14 June, 2024
SCALE	AS NOTED

DRAWING TITLE

DEMOLITION PLAN - AREA C



LEGEND:

- REMOVE EXISTING CONCRETE
- CLEAR AND GRUB
- SAWCUT
- LIMIT OF WORK

DEMOLITION NOTES:

1. PROTECT IN PLACE, AS NOTED ON PLAN.
2. SAWCUT
3. REMOVE EXISTING CONCRETE SECTION AND BASE
5. REMOVE AND SALVAGE EXISTING STEEL PICKET FENCE
7. REMOVE EXISTING COPING
9. CLEAR AND GRUB
21. REMOVE EXISTING WALL
26. REMOVE EXISTING LIGHT POLE AND SALVAGE ALL ATTACHED FIXTURES. EXISTING FOUNDATION AND ANCHORAGE SHALL BE PROTECTED IN PLACE.

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING VEGETATED AREAS TO ORIGINAL CONDITION. CONTRACTOR SHALL TAKE PHOTOS OF EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
2. SEE GRADING AND DRAINAGE SHEETS FOR CONSTRUCTION ACCESS ROAD GRADING. SEE IMPROVEMENT PLANS FOR UTILITY AND SURFACE EQUIPMENT RELOCATIONS.

NOTICE TO CONTRACTOR

EXISTING HIGH VOLTAGE CATENARY LINES. CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING IN VICINITY OF OVERHEAD CONTACT SYSTEM.

0' 5'-0" 10'-0" 20'-0"
1"=10'

DOKKEN ENGINEERING
DOKKEN ENGINEERING
1450 FRAZEE ROAD
SUITE 100
SAN DIEGO, CA 92108
TEL: (858) 514-8377

MTS

90% SUBMITTAL (NOT FOR CONSTRUCTION) - JUNE 7, 2024

REVISION LIST

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MTS RIO VISTA PLATFORM DESIGN PHASE II

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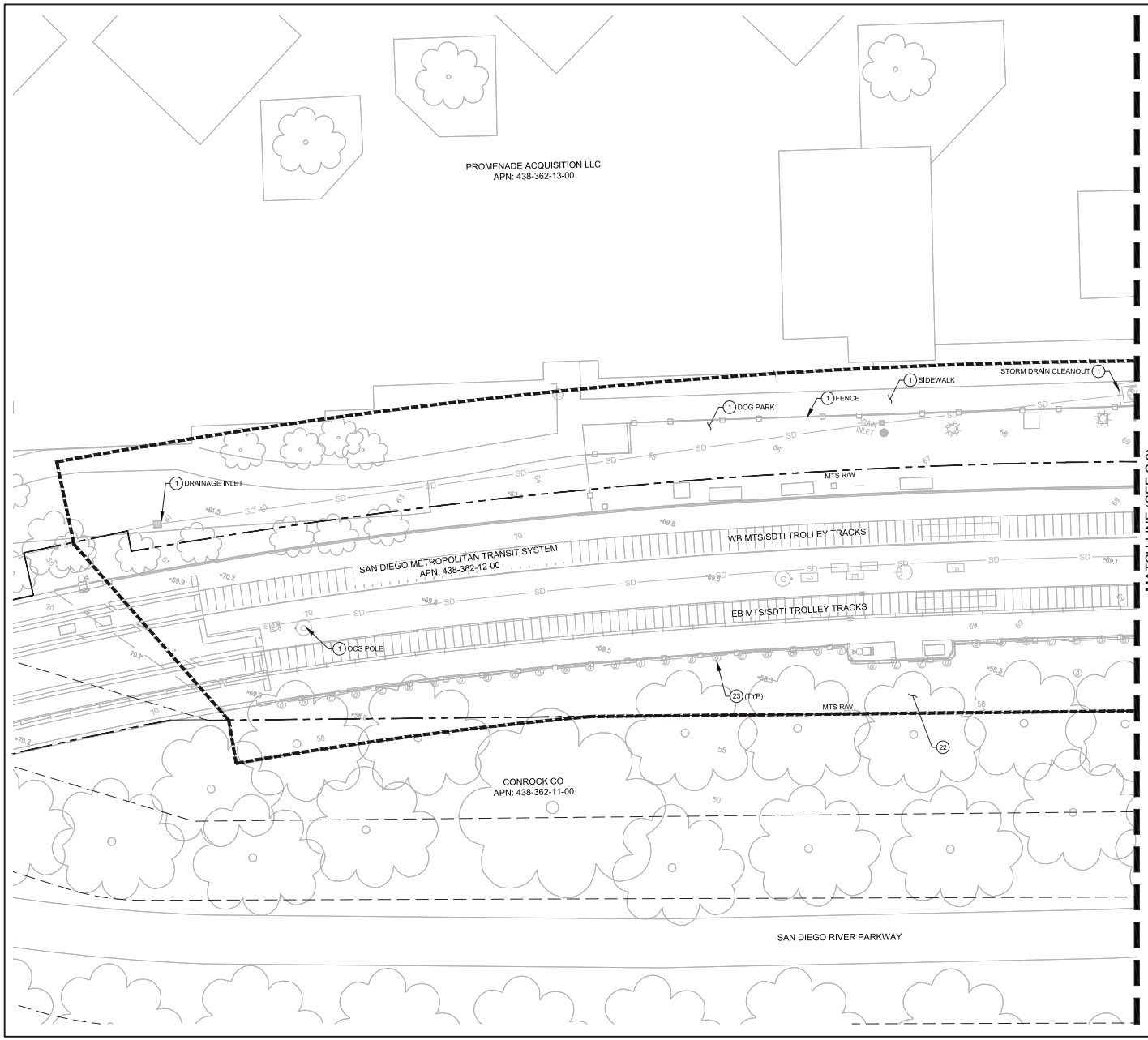
DRAWING TITLE

DEMOLITION PLAN - AREA D



LEGEND:

LIMIT OF WORK

GENERAL NOTES:

1. SEE STRUCTURAL PLANS FOR WALL RETROFIT.
2. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK.
3. SEE GRADING AND DRAINAGE SHEETS SHOWN ON SHEETS C.12 - C.15.
4. CONTRACTOR WILL MEET WITH MTS REPRESENTATIVE AND ENGINEER ON-SITE FOR PLACEMENT OF AMENITIES PRIOR TO FINAL INSTALLATION

CONSTRUCTION NOTES:

(1) PROTECT IN PLACE, AS NOTED ON PLAN.

(22) CONTRACTOR SHALL RESTORE AREA AND REGRADE SLOPE TO EXISTING CONDITIONS. NEW PLANTINGS SUCH AS TREES, BRUSH, ETC. SHALL BE PLANTED IN COMPLIANCE WITH THE REVEGETATION MEMO INCLUDED IN THE CONTRACT DOCUMENTS.

(23) REINSTALL IRRIGATION SPRINKLER SYSTEM TO MATCH EXISTING CONDITIONS. CONTRACTOR SHALL INSTALL TEMPORARY IRRIGATION SYSTEM DURING CONSTRUCTION.

NOTICE TO CONTRACTOR

EXISTING HIGH VOLTAGE CATENARY LINES. CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING IN VICINITY OF OVERHEAD CONTACT SYSTEM.

0' 5'-0" 10'-0" 20'-0"
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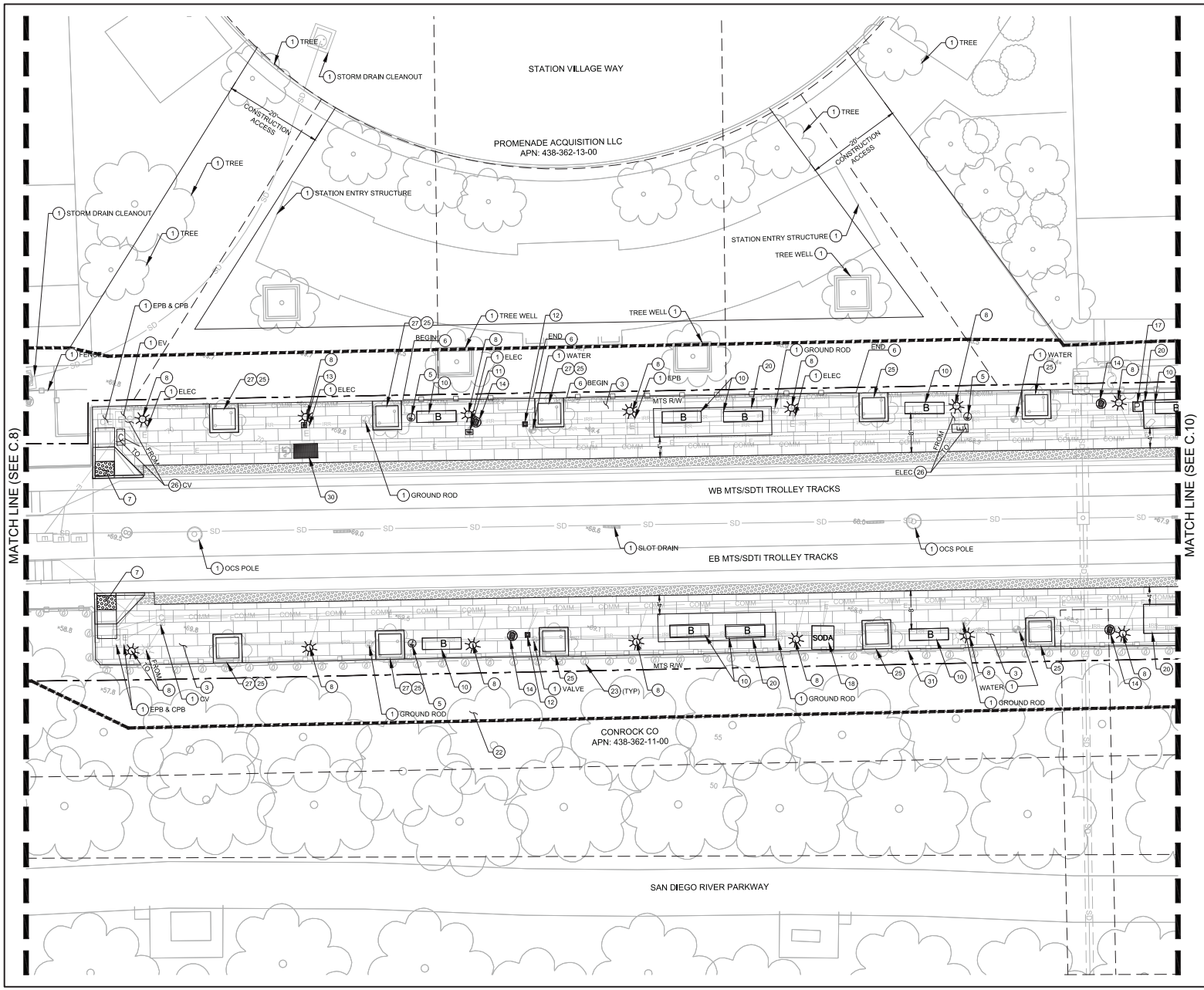
DRAWING TITLE

CIVIL IMPROVEMENT PLAN - AREA A

C.8



LEGEND:

STAMPED COLORED CONCRETE

LIMIT OF WORK

GENERAL NOTES:

1. SEE STRUCTURAL PLANS FOR WALL RETROFIT.
2. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN IN THESE PLANS.
3. SEE GRADING AND DRAINAGE SHEETS SHOWN ON SHEETS C.12 - C.15.
4. CONTRACTOR WILL MEET WITH MTS REPRESENTATIVE AND ENGINEER ON-SITE FOR PLACEMENT OF AMENITIES PRIOR TO FINAL INSTALLATION.

CONSTRUCTION NOTES:

1. PROTECT IN PLACE, AS NOTED ON PLAN.
3. INSTALL STAMPED COLORED CONCRETE. SEE DETAILS ON SHEET C.16.
5. REINSTALL SALVAGED GROUND ROD
6. INSTALL 6' STEEL PICKET FENCE. SEE DETAIL ON SHEET C.16.
7. INSTALL CURB RAMP. SEE CURB RAMP DETAILS ON SHEET C.16.
8. INSTALL NEW LIGHT POLE, FOUNDATION, AND SALVAGED FIXTURES. SEE DETAIL ON SHEET C.17.
10. POWDER-COAT AND REINSTALL BENCH
11. OWNER TO REINSTALL TICKET MACHINE. CONTRACTOR SHALL COORDINATE WITH OWNER.
12. REINSTALL LED SIGN
13. REINSTALL BRAILLE SIGN
14. REINSTALL TRASH CAN
17. REINSTALL PAYPHONE
18. REINSTALL VENDING MACHINE
20. INSTALL OWNER FURNISHED SHELTER (TYPE B). CONTRACTOR TO INSTALL.
22. CONTRACTOR SHALL RESTORE AREA AND REGRADE SLOPE TO EXISTING CONDITIONS. NEW PLANTINGS SUCH AS TREES, BRUSH, ETC. SHALL BE PLANTED IN COMPLIANCE WITH THE REVEGETATION MEMO INCLUDED IN THE CONTRACT DOCUMENTS.
23. REINSTALL IRRIGATION SPRINKLER SYSTEM TO MATCH EXISTING CONDITIONS. CONTRACTOR SHALL INSTALL TEMPORARY IRRIGATION SYSTEM DURING CONSTRUCTION.
25. INSTALL TREE-WELL AND RESTORE IRRIGATION AS NEEDED. SEE STRUCTURAL DETAILS
26. RELOCATE, AS NOTED ON PLAN.
27. INSTALL NEW ULMUS PARVIFOLIA 'TRUE GREEN' (CHINESE EVERGREEN ELM).
30. INSTALL DETECTABLE DIRECTIONAL TEXTURE. SEE DETAIL ON SHEET C.17.
31. WEEP HOLES WITHIN COPING FOR DRAINAGE

NOTICE TO CONTRACTOR

EXISTING HIGH VOLTAGE CATENARY LINES. CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING IN VICINITY OF OVERHEAD CONTACT SYSTEM.

1"=10'

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TEL: (858) 514-8377

MTS

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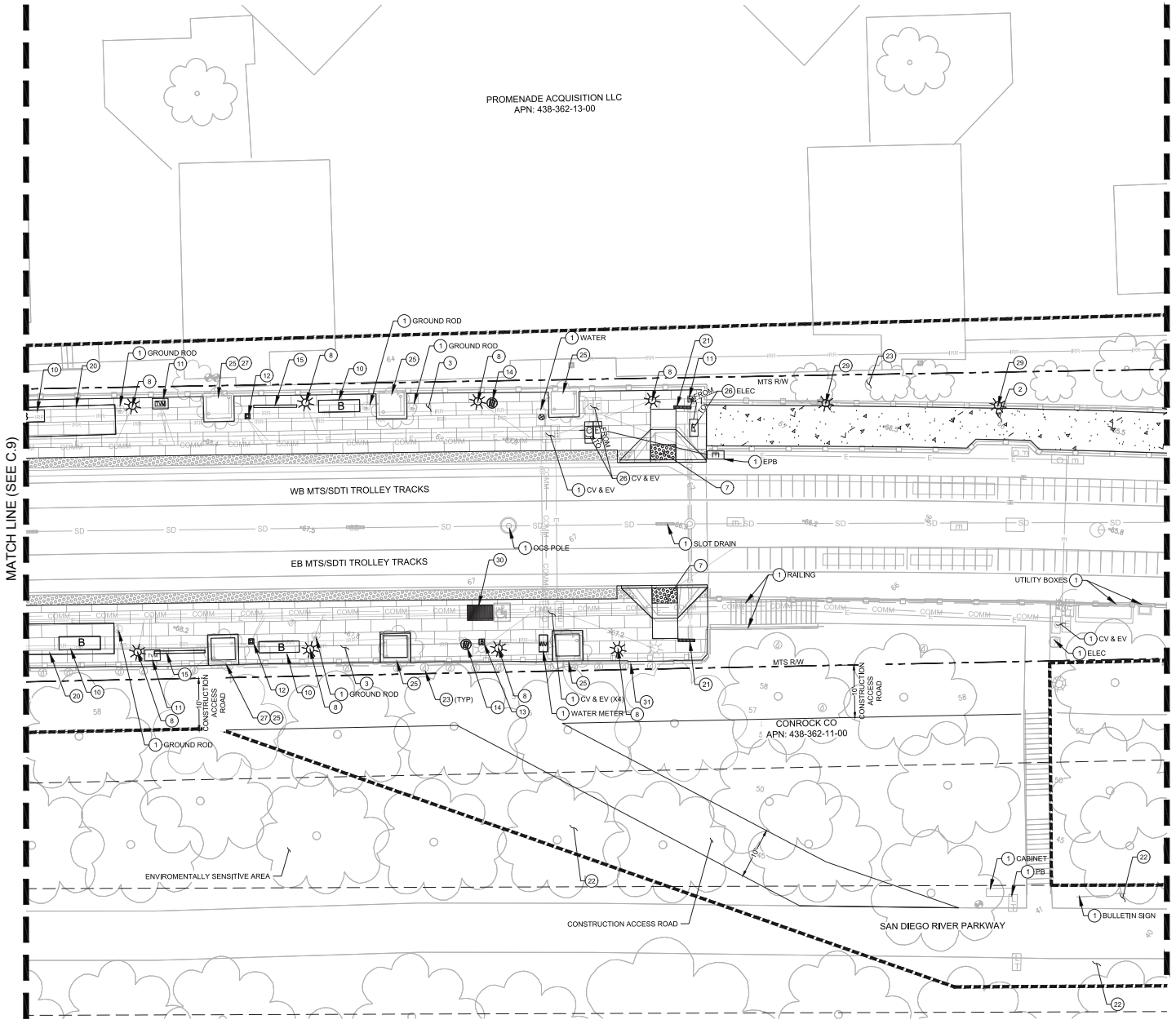
DRAWING TITLE

CIVIL IMPROVEMENT PLAN - AREA B

C.9



LEGEND:

- CONCRETE SIDEWALK
- STAMPED COLORED CONCRETE
- LIMIT OF WORK
- ENVIRONMENTALLY SENSITIVE HABITAT (ON SLOPE SOUTH OF STATION PLATFORM)

GENERAL NOTES:

1. SEE STRUCTURAL PLANS FOR WALL RETROFIT.
2. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN IN THESE PLANS.
3. SEE GRADING AND DRAINAGE SHEETS SHOWN ON SHEETS C.12 - C.15.
4. CONTRACTOR WILL MEET WITH MTS REPRESENTATIVE AND ENGINEER ON-SITE FOR PLACEMENT OF AMENITIES PRIOR TO FINAL INSTALLATION

CONSTRUCTION NOTES:

1. PROTECT IN PLACE, AS NOTED ON PLAN.
2. INSTALL CONCRETE SIDEWALK. SEE DETAILS ON SHEET C.16.
3. INSTALL STAMPED COLORED CONCRETE. SEE DETAILS ON SHEET C.16.
7. INSTALL CURB RAMP. SEE CURB RAMP DETAILS ON SHEET C.16.
8. INSTALL NEW LIGHT POLE, FOUNDATION, AND SALVAGED FIXTURES. SEE DETAIL ON SHEET C.17.
10. POWDER-COAT AND REINSTALL BENCH
11. OWNER TO REINSTALL TICKET MACHINE. CONTRACTOR SHALL COORDINATE WITH OWNER.
12. REINSTALL LED SIGN
13. REINSTALL BRAILLE SIGN
14. REINSTALL TRASH CAN
15. REINSTALL BULLETIN SIGN
20. INSTALL OWNER FURNISHED SHELTER (TYPE B). CONTRACTOR TO INSTALL.
21. RESET SLOT DRAIN LID
22. CONTRACTOR SHALL RESTORE AREA AND REGRADE SLOPE TO EXISTING CONDITIONS. NEW PLANTINGS SUCH AS TREES, BRUSH, ETC. SHALL BE PLANTED IN COMPLIANCE WITH THE REVEGETATION MEMO INCLUDED IN THE CONTRACT DOCUMENTS.
23. REINSTALL IRRIGATION SPRINKLER SYSTEM TO MATCH EXISTING CONDITIONS. CONTRACTOR SHALL INSTALL TEMPORARY IRRIGATION SYSTEM DURING CONSTRUCTION.
25. INSTALL TREE-WELL AND RESTORE IRRIGATION AS NEEDED. SEE STRUCTURAL DETAILS
26. RELOCATE, AS NOTED ON PLAN.
27. INSTALL NEW ULMUS PARVIFOLIA 'TRUE GREEN' (CHINESE EVERGREEN ELM).
29. INSTALL NEW LIGHT POLE, FOUNDATION, AND SALVAGED FIXTURES. SEE STRUCTURAL DETAILS.
30. INSTALL DETECTABLE DIRECTIONAL TEXTURE. SEE DETAIL ON SHEET C.17.
31. WEEP HOLES WITHIN COPING FOR DRAINAGE

NOTICE TO CONTRACTOR

EXISTING HIGH VOLTAGE CATENARY LINES. CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING IN VICINITY OF OVERHEAD CONTACT SYSTEM.

1"=10'

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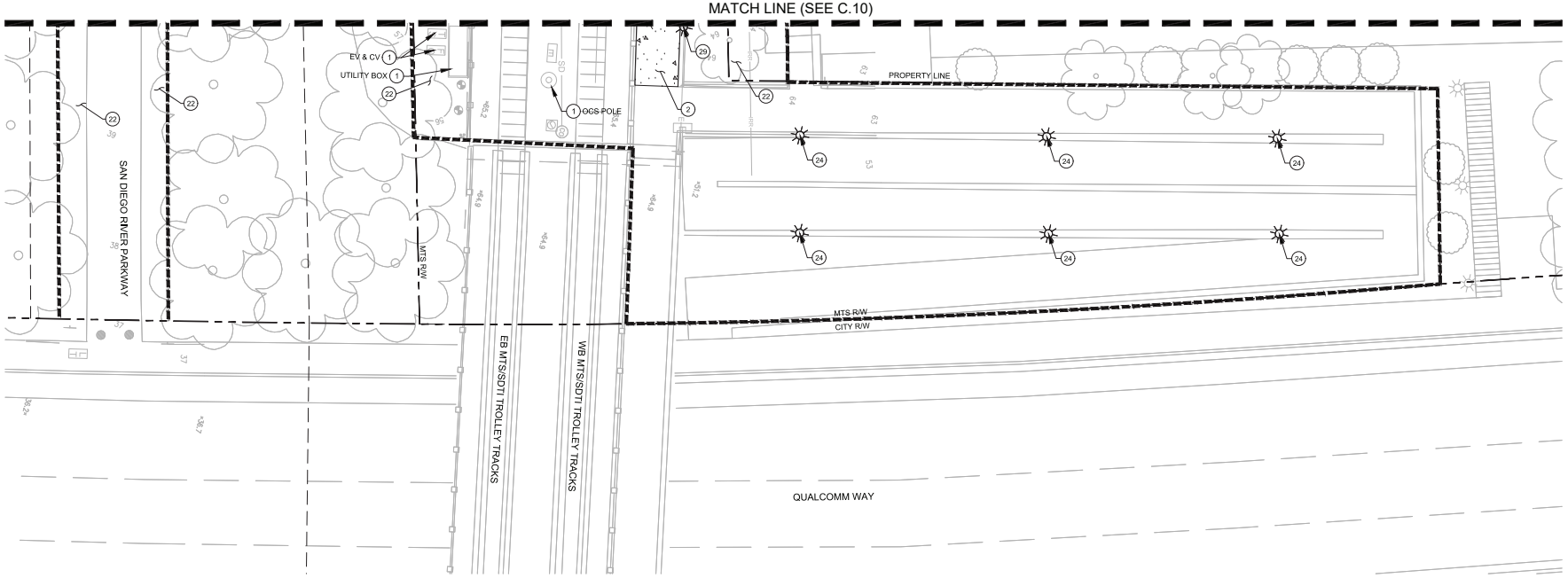
DRAWING TITLE

CIVIL IMPROVEMENT PLAN - AREA C

C.10



CONSTRUCTION NOTES:

1. PROTECT IN PLACE, AS NOTED ON PLAN.
2. INSTALL CONCRETE SIDEWALK
22. CONTRACTOR SHALL RESTORE AREA AND REGRADE SLOPE TO EXISTING CONDITIONS. NEW PLANTINGS SUCH AS TREES, BRUSH, ETC. SHALL BE PLANTED IN COMPLIANCE WITH THE REVEGETATION MEMO INCLUDED IN THE CONTRACT DOCUMENTS.
24. INSTALL NEW LIGHT POLE INTO EXISTING FOUNDATION AND ANCHORAGE. SEE DETAIL ON SHEET C.17
29. INSTALL NEW LIGHT POLE, FOUNDATION, AND SALVAGED FIXTURES. SEE STRUCTURAL DETAILS.

GENERAL NOTES:

1. SEE STRUCTURAL PLANS FOR WALL RETROFIT.
2. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN IN THESE PLANS.
3. SEE GRADING AND DRAINAGE SHEETS SHOWN ON SHEETS C.12 - C.15.

LEGEND:

CONCRETE SIDEWALK

LIMIT OF WORK

NOTICE TO CONTRACTOR

EXISTING HIGH VOLTAGE CATENARY LINES. CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING IN VICINITY OF OVERHEAD CONTACT SYSTEM.

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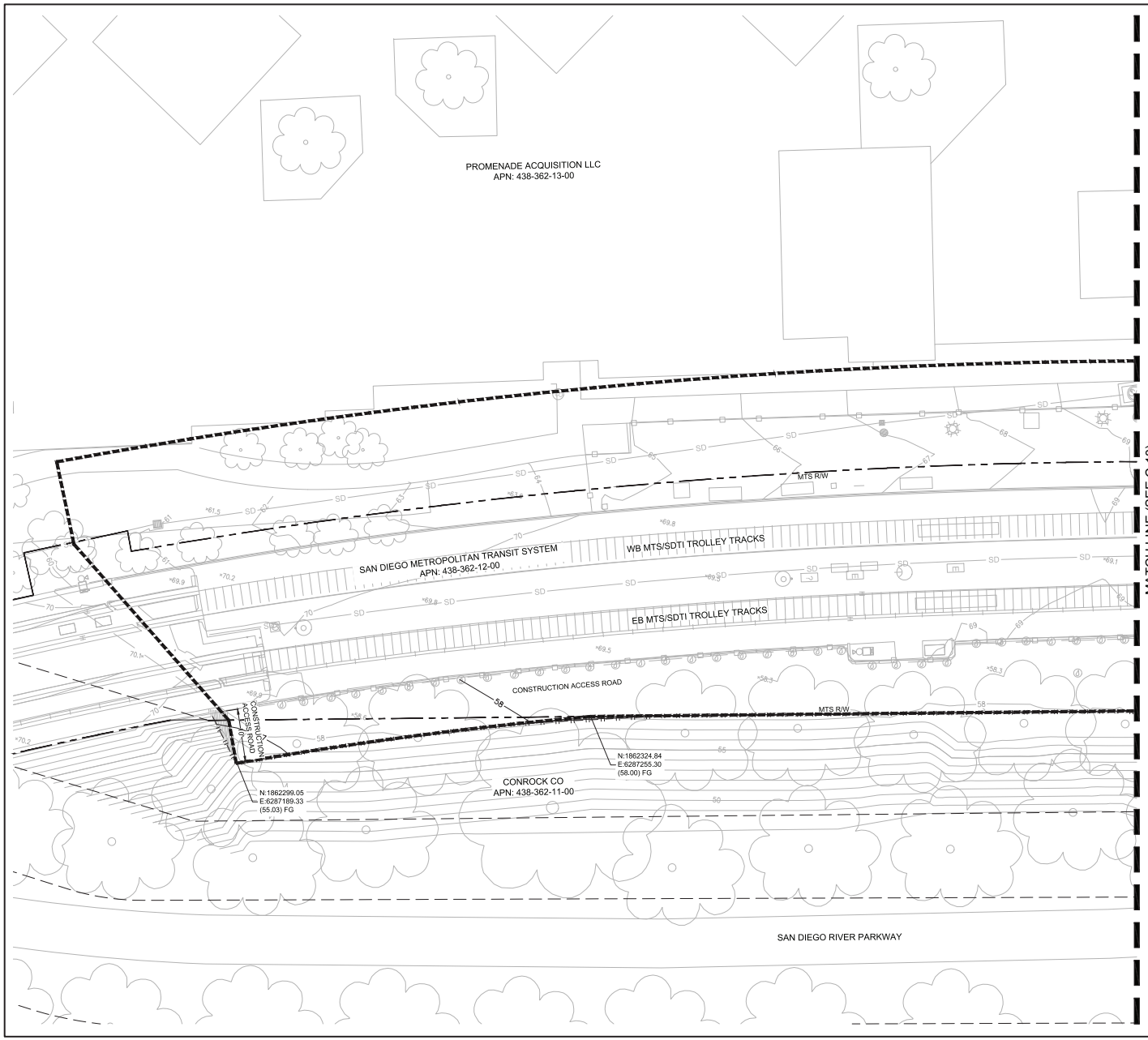
CIVIL IMPROVEMENT PLAN - AREA D



LEGEND:

- - - - - - - -	LIMIT OF WORK
(XX.XX)	MATCH EXISTING ELEVATION
FG	FINISHED GRADE ELEVATION

GENERAL NOTES:

1. SEE STRUCTURAL PLANS FOR WALL RETROFIT.
2. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN IN THESE PLANS.

NOTICE TO CONTRACTOR

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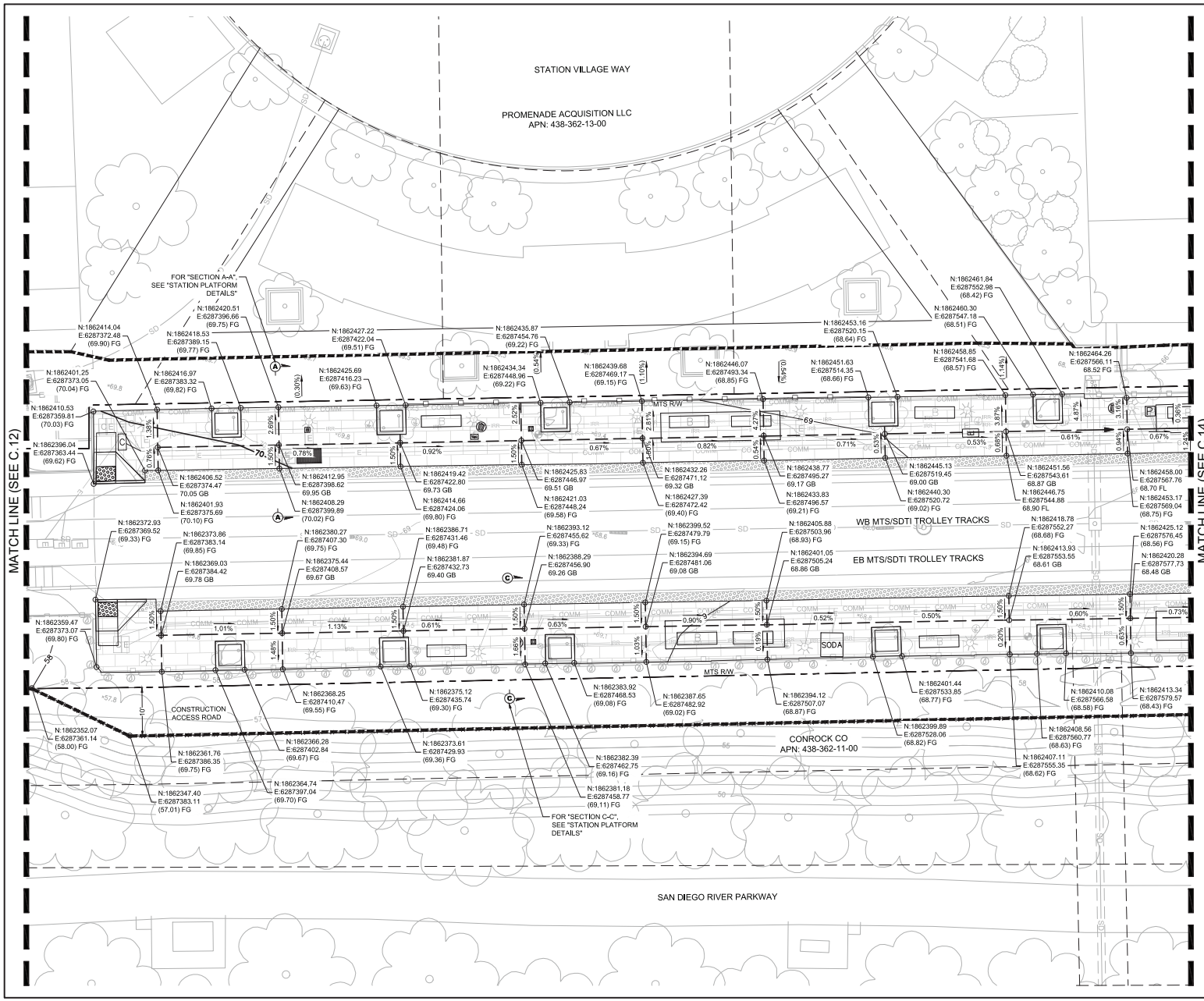
DRAWING TITLE

GRADING AND DRAINAGE - AREA A

C.12



LEGEND:

- FLOW LINE
- GRADE BREAK
- LIMIT OF WORK
- DAYLIGHT
- (XX.XX) MATCH EXISTING ELEVATION
- FG FINISHED GRADE ELEVATION
- GB GRADE BREAK ELEVATION
- FL FLOWLINE ELEVATION

GENERAL NOTES:

1. SEE STRUCTURAL PLANS FOR WALL RETROFIT.
2. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN IN THESE PLANS.

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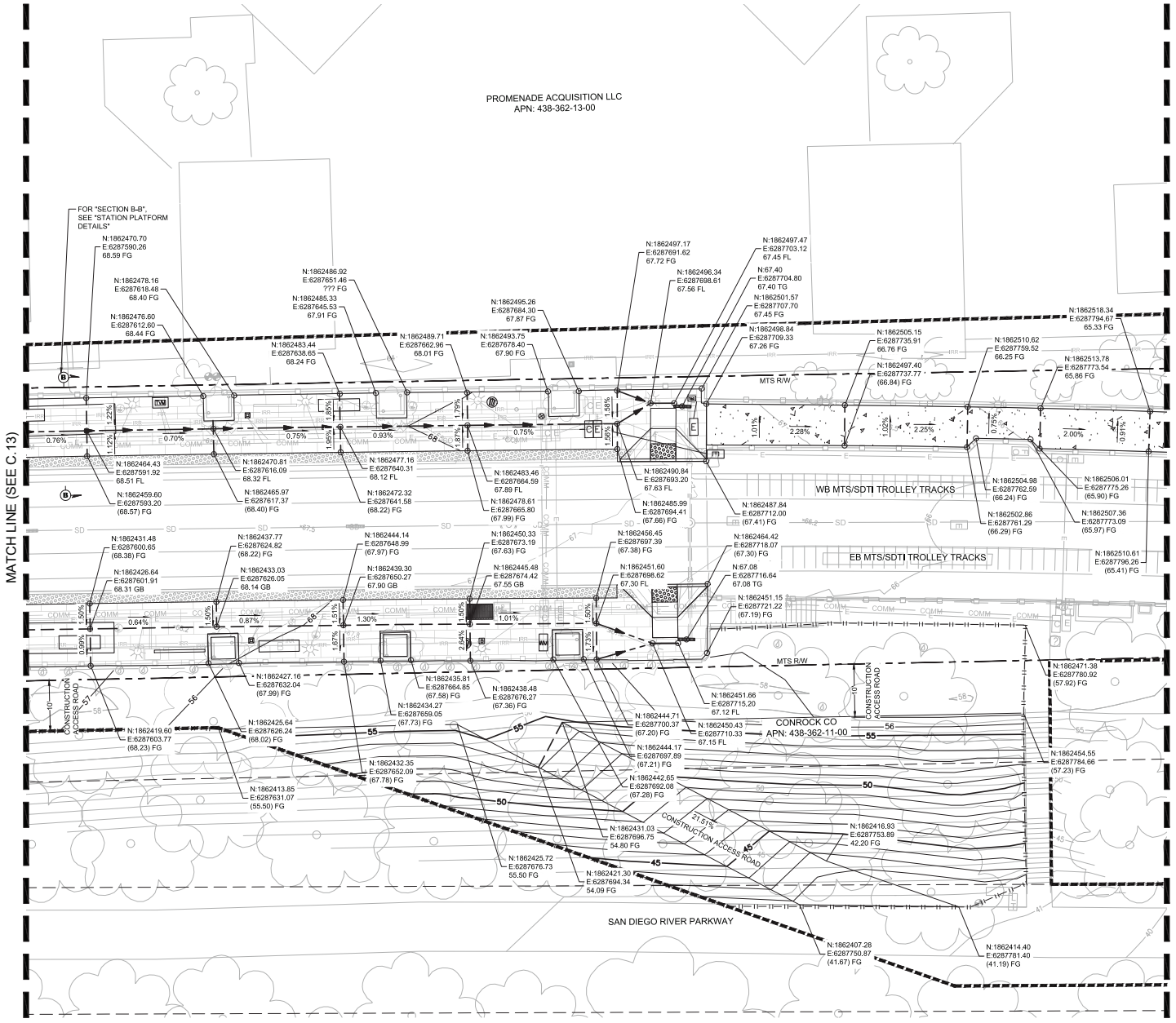
DRAWING TITLE

GRADING AND DRAINAGE - AREA B

C.13



LEGEND:

- FLOW LINE
- GRADE BREAK
- LIMIT OF WORK
- DAYLIGHT
- (XX.XX) MATCH EXISTING ELEVATION
- FG FINISHED GRADE ELEVATION
- GB GRADE BREAK ELEVATION
- FL FLOWLINE ELEVATION

GENERAL NOTES:

1. SEE STRUCTURAL PLANS FOR WALL RETROFIT.
2. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN IN THESE PLANS.

NOTICE TO CONTRACTOR

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1"=10'

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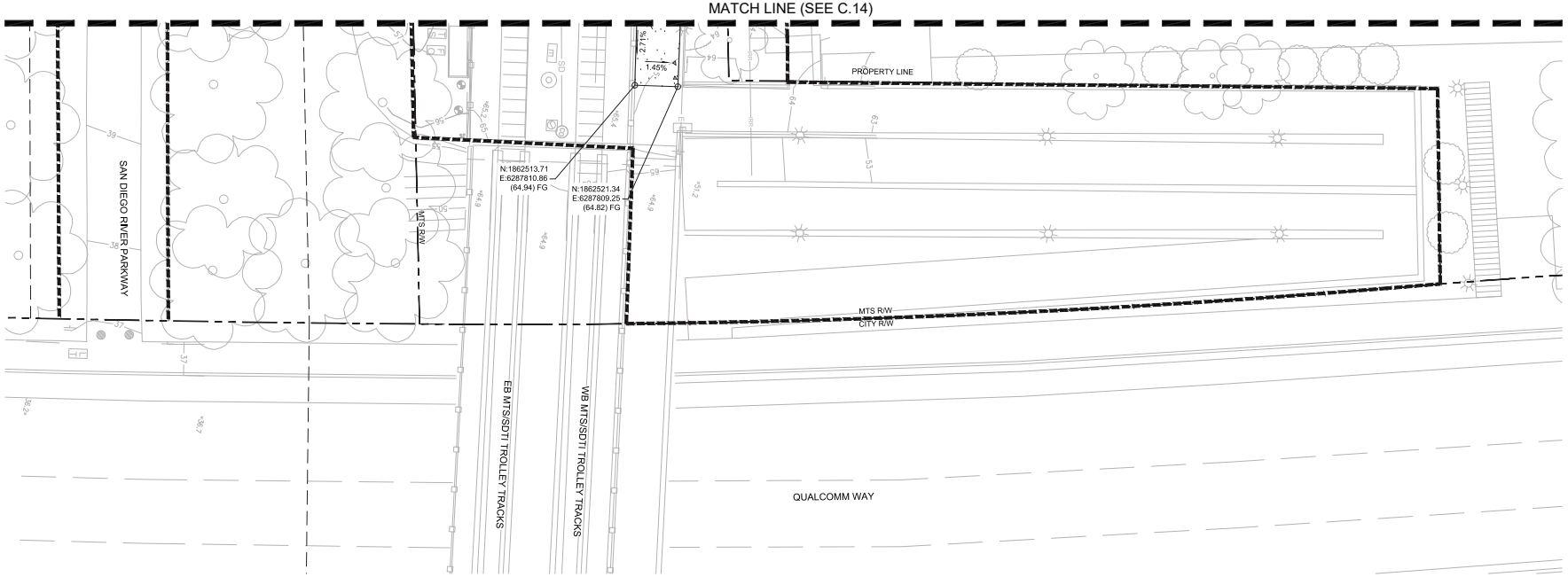
GRADING AND DRAINAGE - AREA C

C.14



GENERAL NOTES:

1. SEE STRUCTURAL PLANS FOR WALL RETROFIT.
2. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN IN THESE PLANS.

LEGEND:

- - - - - - - -	LIMIT OF WORK
(XX.XX)	MATCH EXISTING ELEVATION
FG	FINISHED GRADE ELEVATION

NOTICE TO CONTRACTOR

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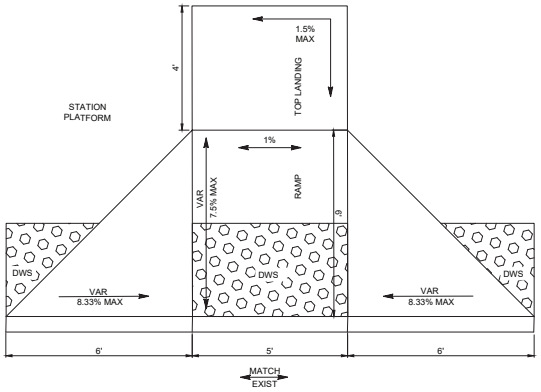
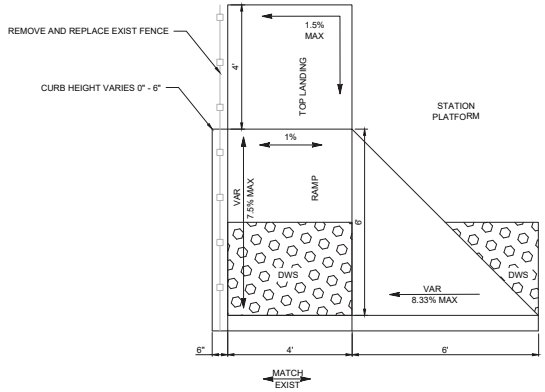
GRADING AND DRAINAGE - AREA D



STATION PLATFORM EAST CURB RAMP

SCALE: 1" = 2'-0"

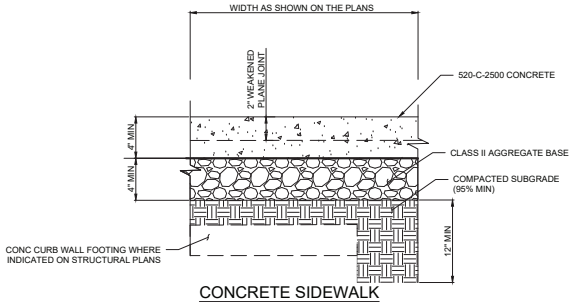


STATION PLATFORM WEST CURB RAMP

SCALE: 1" = 2'-0"

NOTES:

1. FINISH GRADE PER GRADING AND DRAINAGE PLANS.
2. ATOOL JOINTS MUST BE STRAIGHT AND MATCH THE DIMENSIONS OF THE EXISTING PAVERS. NO DIAGONAL JOINTS TO BE INSTALLED.
3. CONCRETE JOINTS SHALL BE PLACED AT EVERY 6', BETWEEN FACE OF WALLS, PLANTERS, AND CURBS PER SDRSD G-10.

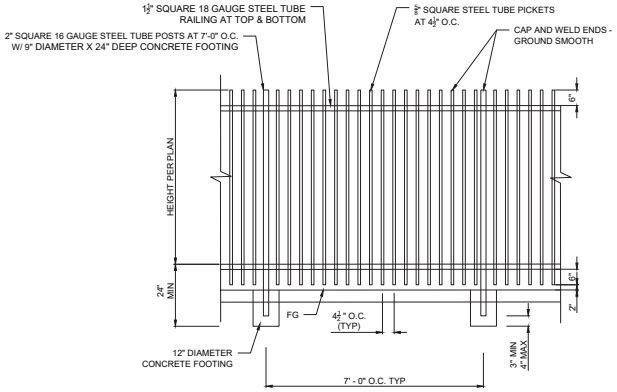


CONCRETE SIDEWALK

NO SCALE

NOTES:

1. FINISH TO MATCH EXISTING FENCES.
2. ALL METAL TO BE HOT DIPPED AFTER FABRICATION. TOUCH-UP GALVANIZING IN FIELD.

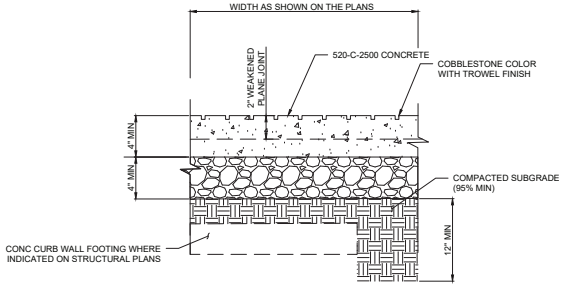


STEEL PICKET FENCE

SCALE: 1" = 2'-0"

NOTES:

1. FINISH GRADE PER GRADING AND DRAINAGE PLANS.
2. APPLY THE TOPICAL RELEASE AGENT TO THE CONCRETE FINISH, DAYTON SUPERIOR "TOP CAST 03", OR AN APPROVED EQUIVALENT.
3. TOOL JOINTS MUST BE STRAIGHT AND MATCH THE DIMENSIONS OF THE EXISTING PAVEMENT. NO DIAGONAL JOINTS TO BE INSTALLED.
4. CONCRETE JOINTS SHALL BE PLACED AT EVERY 6', BETWEEN FACE OF WALLS, PLANTERS, AND CURBS PER SDRSD G-10.



STAMPED CONCRETE

NO SCALE

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MTS RIO VISTA PLATFORM DESIGN PHASE II

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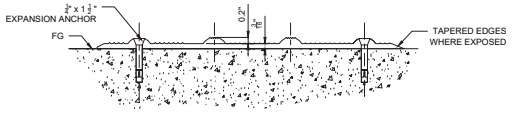
SCALE	AS NOTED

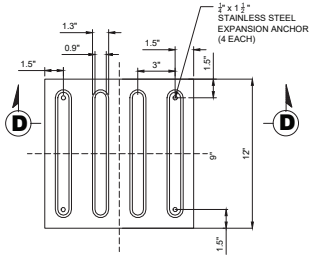
DRAWING TITLE

STATION PLATFORM DETAILS - SHEET 1 OF 2



SECTION D-D: DETECTABLE DIRECTIONAL TEXTURE DETAIL

NTS

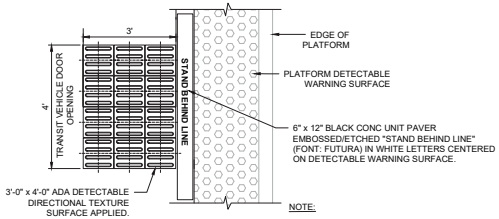


NOTE:

THIS SURFACE SHALL DIFFER FROM ADJOINING WALKING SURFACE IN RESILIENCY OR SOUND-ON-CANE CONTACT. THE COLOR SHALL BE YELLOW CONFORMING TO FEDERAL COLOR NO. 33538

DETECTABLE DIRECTIONAL TEXTURE DETAIL

SCALE: 1" = 5'-0"

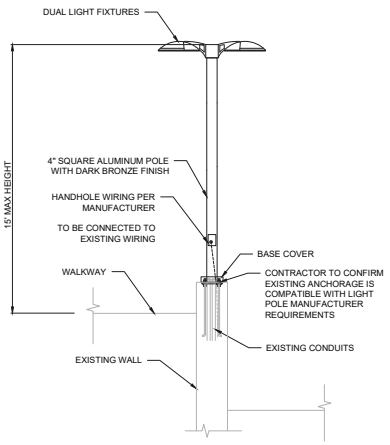


NOTE:

WIDTH OF DIRECTIONAL DETECTABLE TEXTURE SHALL BE EQUAL TO THE WIDTH OF THE TRANSIT VEHICLE'S DOOR OPENING

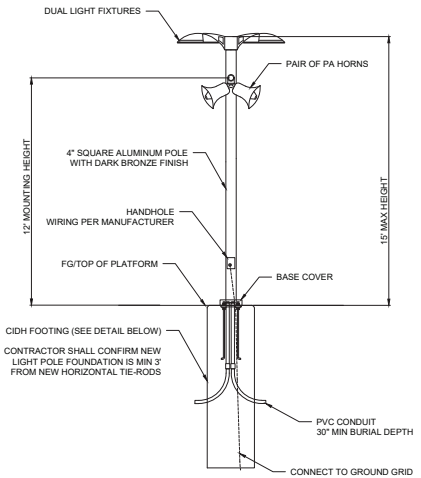
DETECTABLE DIRECTIONAL TEXTURE

SCALE: 1" = 2'-0"



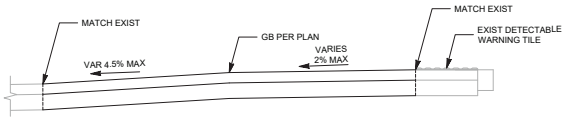
LIGHTPOLE ON EXISTING FOUNDATION

SCALE: 1" = 2'-0"

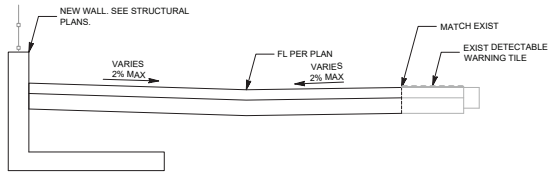


TYPICAL PLATFORM LIGHTPOLE

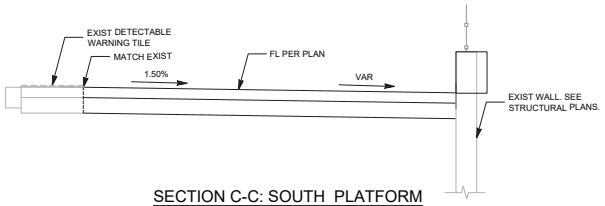
SCALE: 1" = 2'-0"



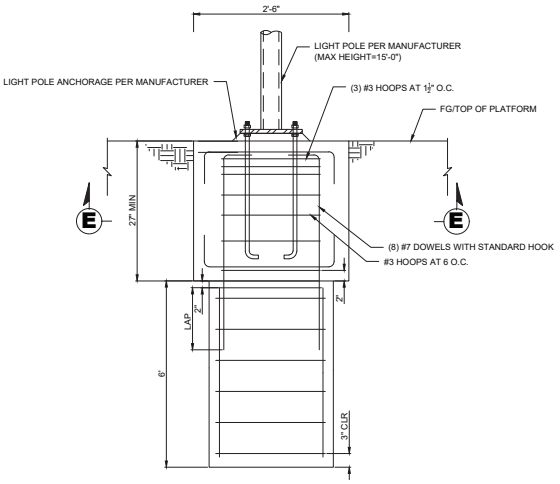
SECTION A-A: NORTH PLATFORM



SECTION B-B: NORTH PLATFORM

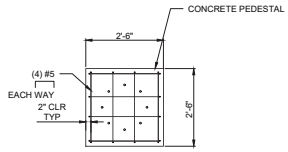


SECTION C-C: SOUTH PLATFORM



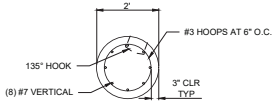
TYPICAL PLATFORM LIGHTPOLE POST CIDH FOOTING

SCALE: 1" = 1'-0"



SECTION E-E

SCALE: 1" = 2'-0"



CIDH FOOTING SECTION

SCALE: 1" = 2'-0"

DOKKEN ENGINEERING
1450 FRAZEE ROAD
SUITE 100
SAN DIEGO, CA 92108
TEL: (858) 514-8377

90% SUBMITTAL (NOT FOR CONSTRUCTION) - JUNE 7, 2024

REVISION LIST

NO.	DATE	REVISIONS

STAMPED:

PROJECT TITLE

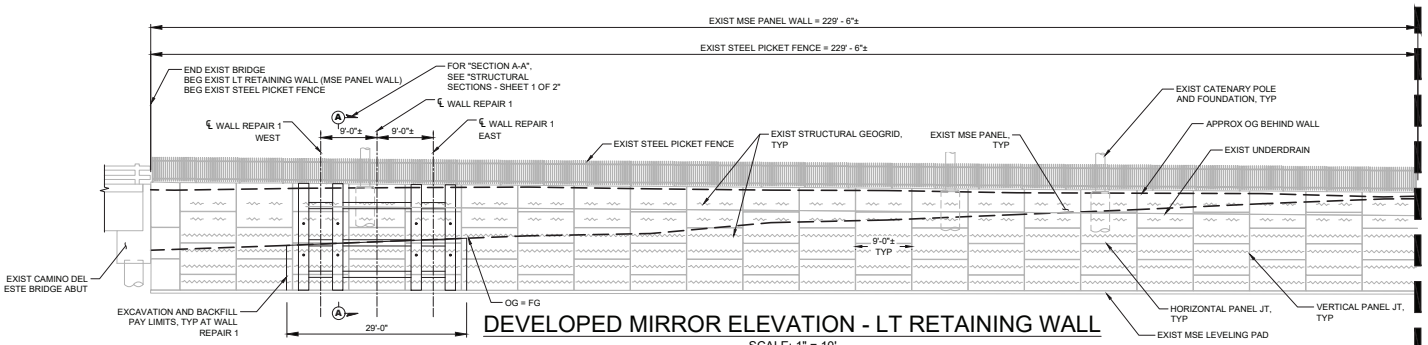
MTS RIO VISTA PLATFORM DESIGN PHASE II

PROJECT NO.	PWL 353.0-22
DRAWN BY	AS
DATE	07 June, 2024
SCALE	AS NOTED

DRAWING TITLE

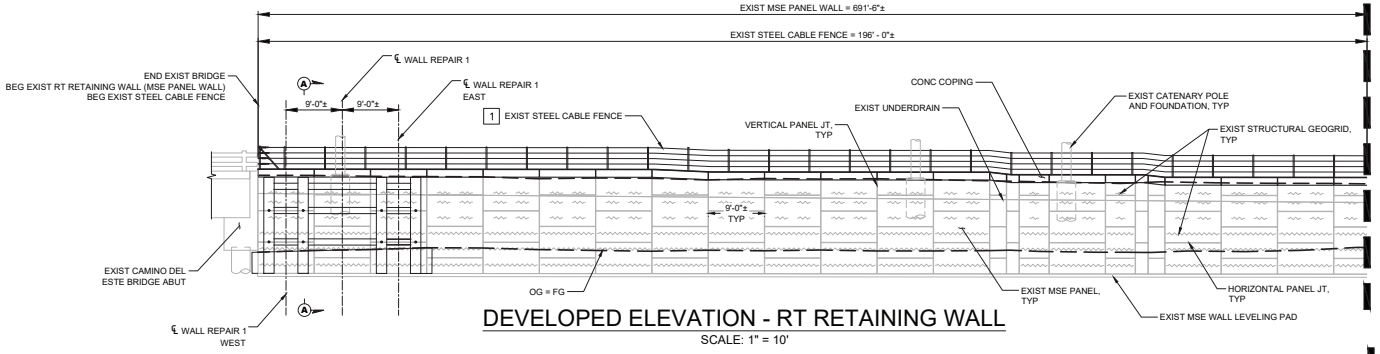
STATION PLATFORM DETAILS - SHEET 2 OF 2

C.17



DEVELOPED MIRROR ELEVATION - LT RETAINING WALL

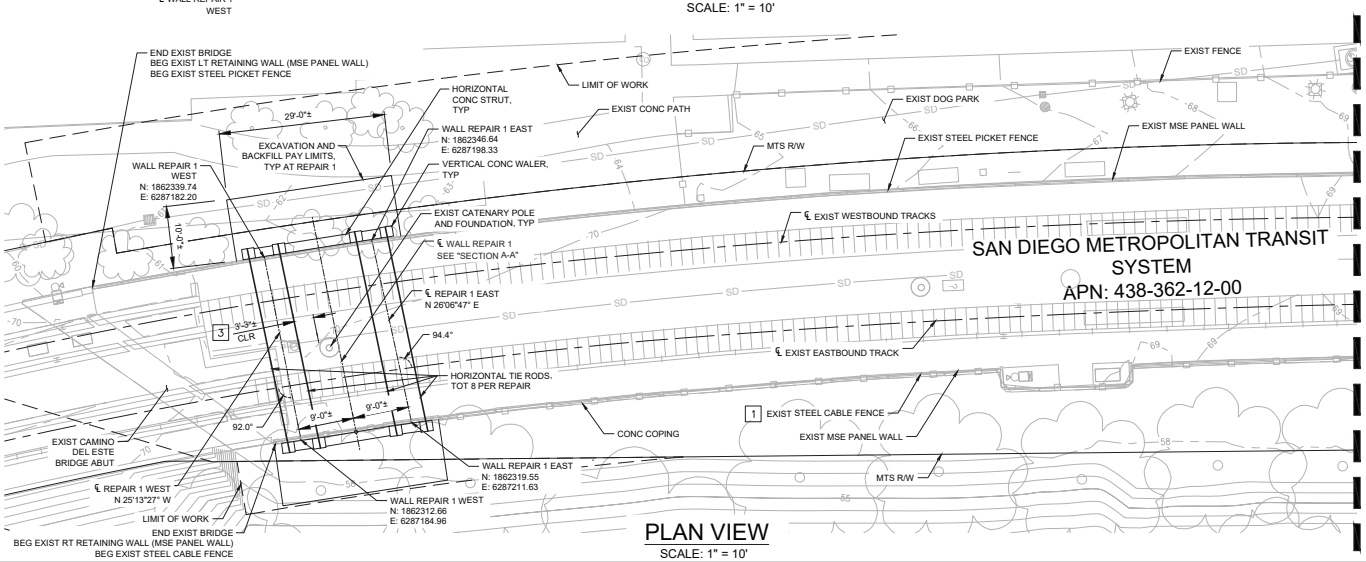
SCALE: 1" = 10'



DEVELOPED ELEVATION - RT RETAINING WALL

SCALE: 1" = 10'

MATCH LINE (SEE S.2)



PLAN VIEW

SCALE: 1" = 10'

MATCH LINE (SEE S.2)

SAN DIEGO METROPOLITAN TRANSIT SYSTEM
APN: 438-362-12-00

DESIGN NOTES:

DESIGN: AASHTO LRFD Bridge Design Specifications, 8th Edition with California Amendments, Preface dated April 2019

SEISMIC: kh = 0.24, kv = 0.00

SOIL BACKFILL: Ø = 34°, γ = 120pcf

SOIL FOR BASE FRICTION: Ø = 32°, γ = 120pcf

REINFORCED CONCRETE: f'_c = 3,600psi, f_y = 60,000psi

1 RECONSTRUCT ON CONCRETE COPING.

3 APPROXIMATE CLEARANCE. CONTRACTOR TO FIELD VERIFY.

NOTES:

1. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN ON THESE PLANS
2. DEMOLITION AND CIVIL IMPROVEMENTS NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE CIVIL PLANS.
3. NORTHINGS AND EASTINGS OF EXISTING MSE PANELS REPRESENT CENTERS OF PANELS AND ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PANEL LOCATIONS.

N

0' 5'-0" 10'-0" 20'-0"
1"=10'

DOKKEN ENGINEERING
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SUITE 100
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MTS RIO VISTA PLATFORM DESIGN PHASE II

PROJECT NO.	PWL 353.0-22
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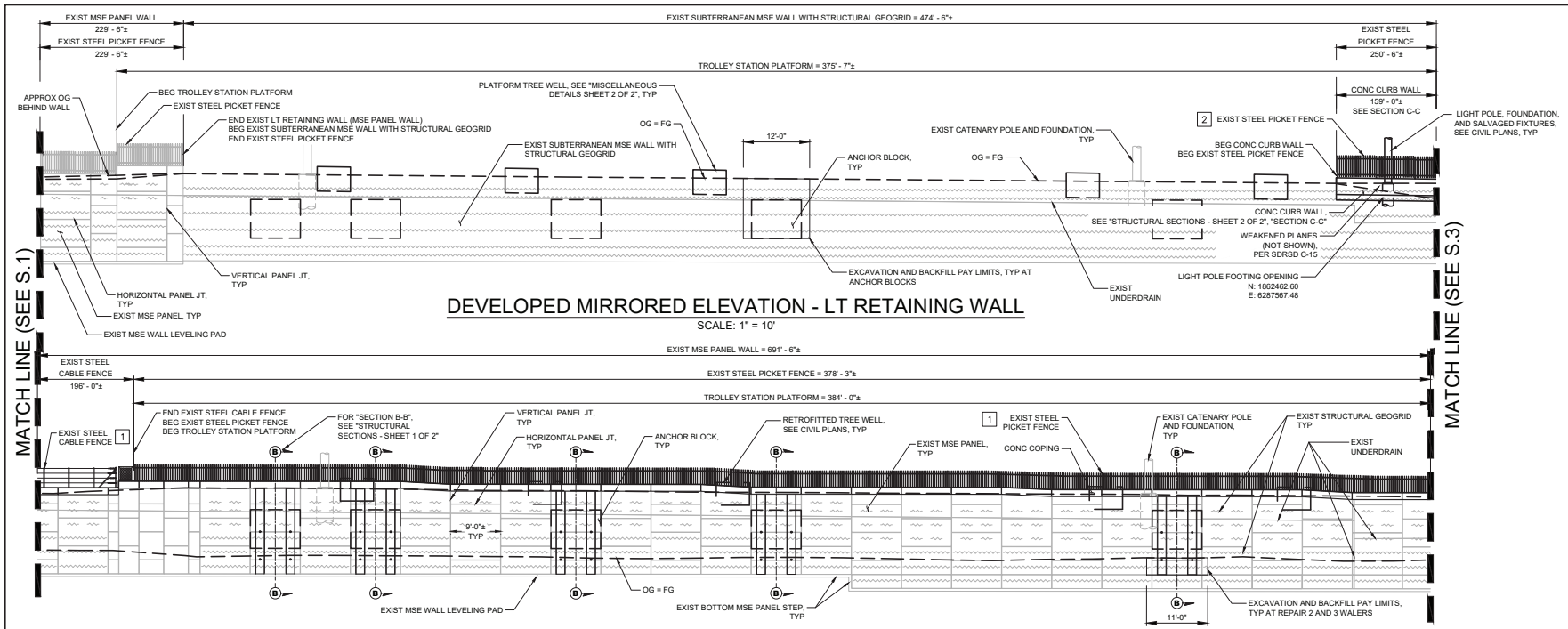
SCALE	
DRAWING TITLE	1" = 10'

STRUCTURAL PLAN - AREA A

S.1

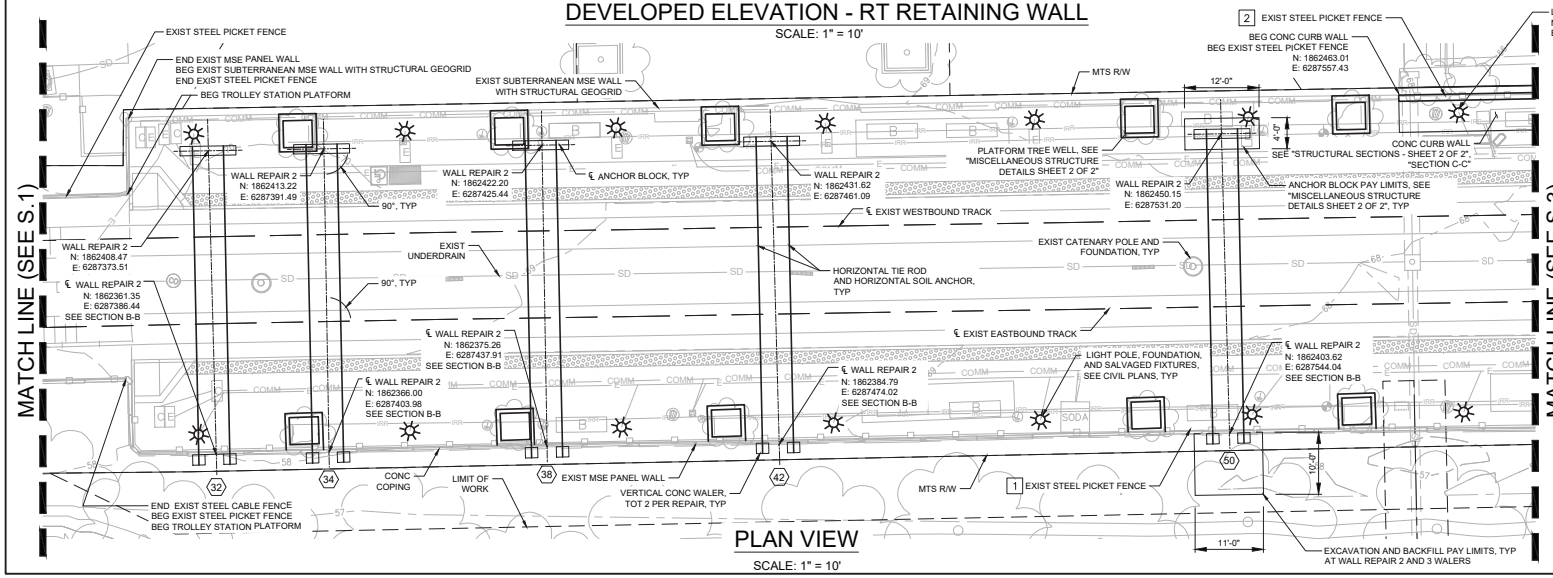


DEVELOPED MIRRORED ELEVATION - LT RETAINING WALL

SCALE: 1" = 10'

DEVELOPED ELEVATION - RT RETAINING WALL

SCALE: 1" = 10'



PLAN VIEW

SCALE: 1" = 10'

LEGEND:

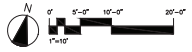
(XX) PANEL ID NUMBER

1 RECONSTRUCT ON CONCRETE COPING

2 RECONSTRUCT ON CONCRETE CURB WALL

NOTES:

1. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN ON THESE PLANS.
2. DEMOLITION AND CIVIL IMPROVEMENTS NOT SHOWN FOR CLARITY. SEE CIVIL PLANS FOR ADDITIONAL INFORMATION.
3. NORTHINGS AND EASTINGS OF EXISTING MSE PANELS REPRESENT CENTERS OF PANELS AND ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PANEL LOCATIONS.



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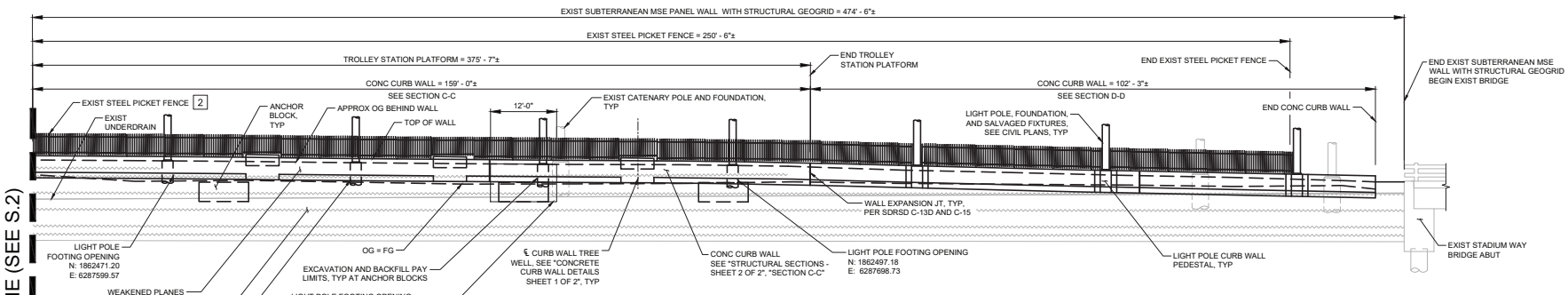
DRAWN BY	AS
DATE	07 June, 2024
SCALE	
DRAWING TITLE	1" = 10'

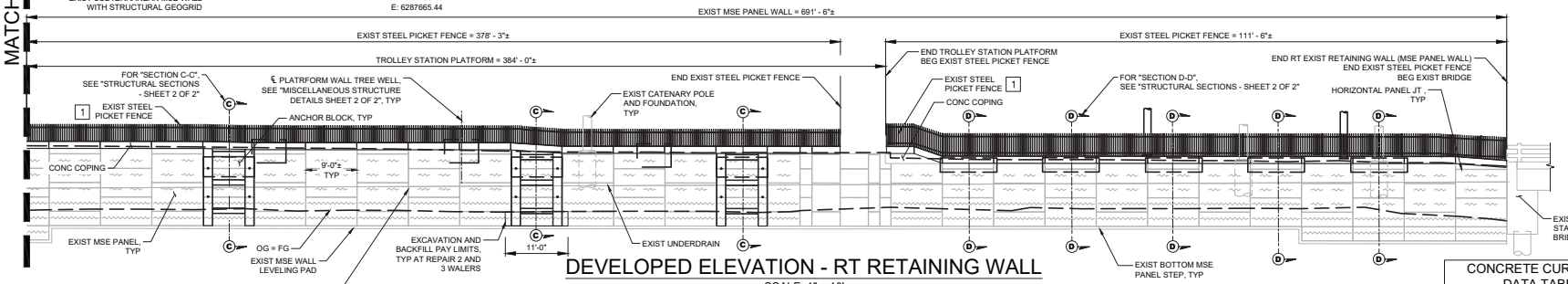
STRUCTURAL PLAN - AREA B



MATCH LINE (SEE S.2)

DEVELOPED MIRRORED ELEVATION - LT RETAINING WALL

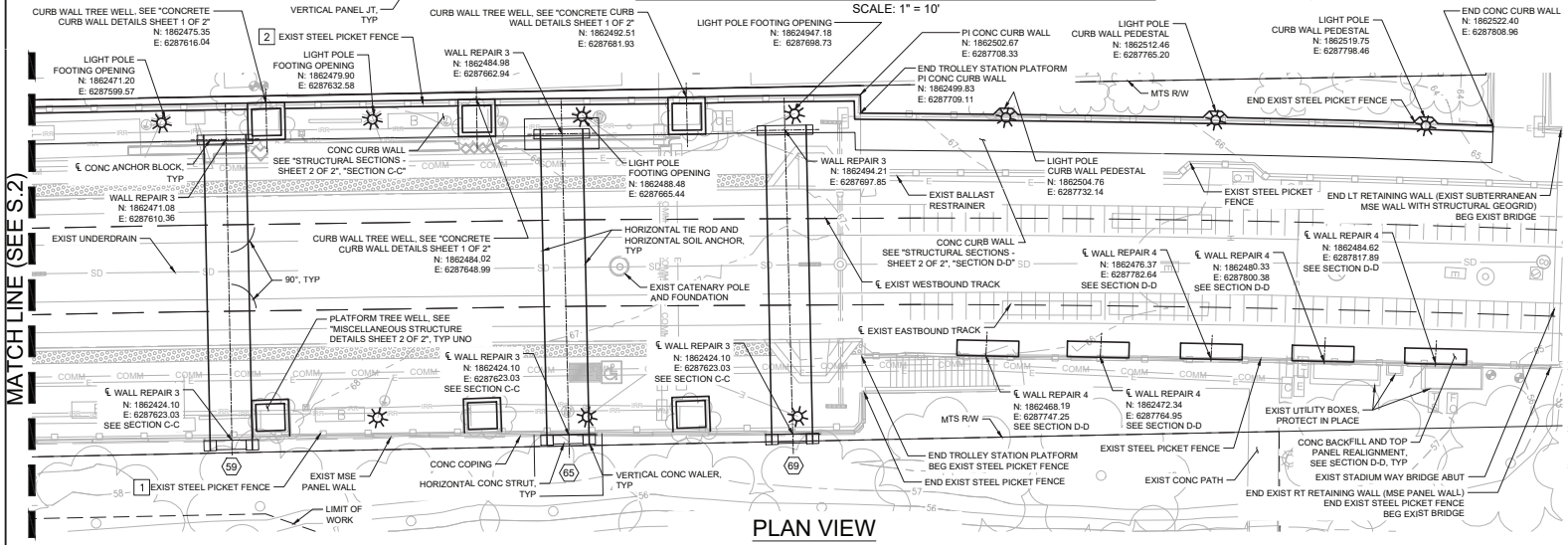
SCALE: 1" = 10'



DEVELOPED ELEVATION - RT RETAINING WALL

SCALE: 1" = 10'

MATCH LINE (SEE S.2)



PLAN VIEW

SCALE: 1" = 10'

CONCRETE CURB WALL DATA TABLE

NORTHING	EASTING	TOP OF WALL ELEV
1862463.01	6287557.43	69.47'
1862467.20	6287573.07	69.27'
1862472.53	6287593.10	69.15'
1862477.53	6287611.94	69.01'
1862482.56	6287631.00	68.79'
1862487.93	6287651.37	68.63'
1862492.63	6287669.76	68.49'
1862497.69	6287688.96	68.34'
1862502.67	6287708.33	68.12'
1862499.83	6287709.11	68.02'
1862504.41	6287728.46	67.52'
1862508.88	6287747.71	67.06'
1862513.41	6287767.30	66.64'
1862517.70	6287786.68	66.24'
1862522.40	6287808.96	65.85'

LEGEND:

- XX PANEL ID NUMBER
- 1 RECONSTRUCT ON CONCRETE COPING
- 2 RECONSTRUCT ON CONCRETE CURB WALL

NOTES:

1. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN ON THESE PLANS
2. DEMOLITION AND CIVIL IMPROVEMENTS NOT SHOWN FOR CLARITY. FOR ADDITIONAL INFORMATION, SEE CIVIL PLANS.
3. NORTHINGS AND EASTINGS OF EXISTING MSE PANELS REPRESENT CENTERS OF PANELS AND ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PANEL LOCATIONS.

N

0' 5'-0" 10'-0" 20'-0"
1"=10'

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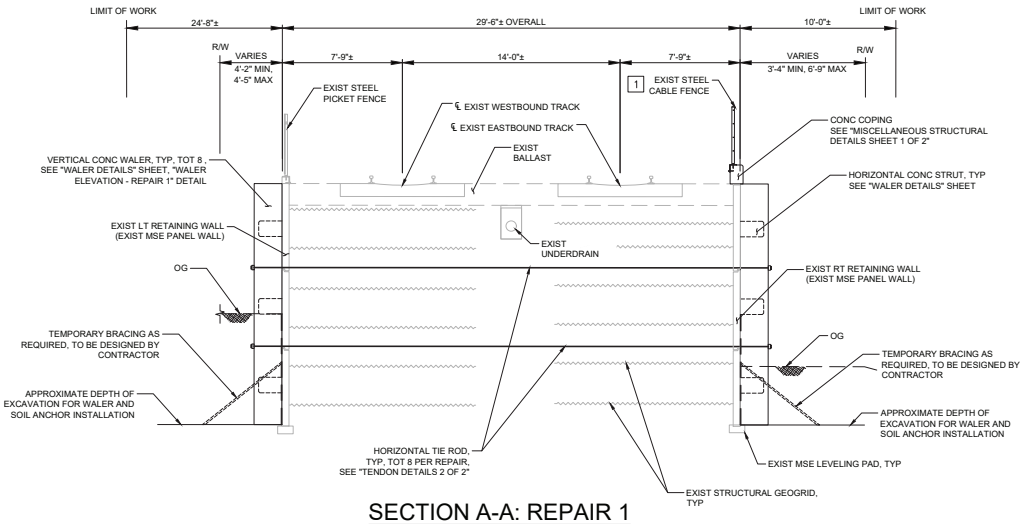
MTS RIO VISTA PLATFORM DESIGN PHASE II

PROJECT NO.	PWL 353.0-22
DRAWN BY	AS
DATE	07 June, 2024
SCALE	
DRAWING TITLE	1" = 10'

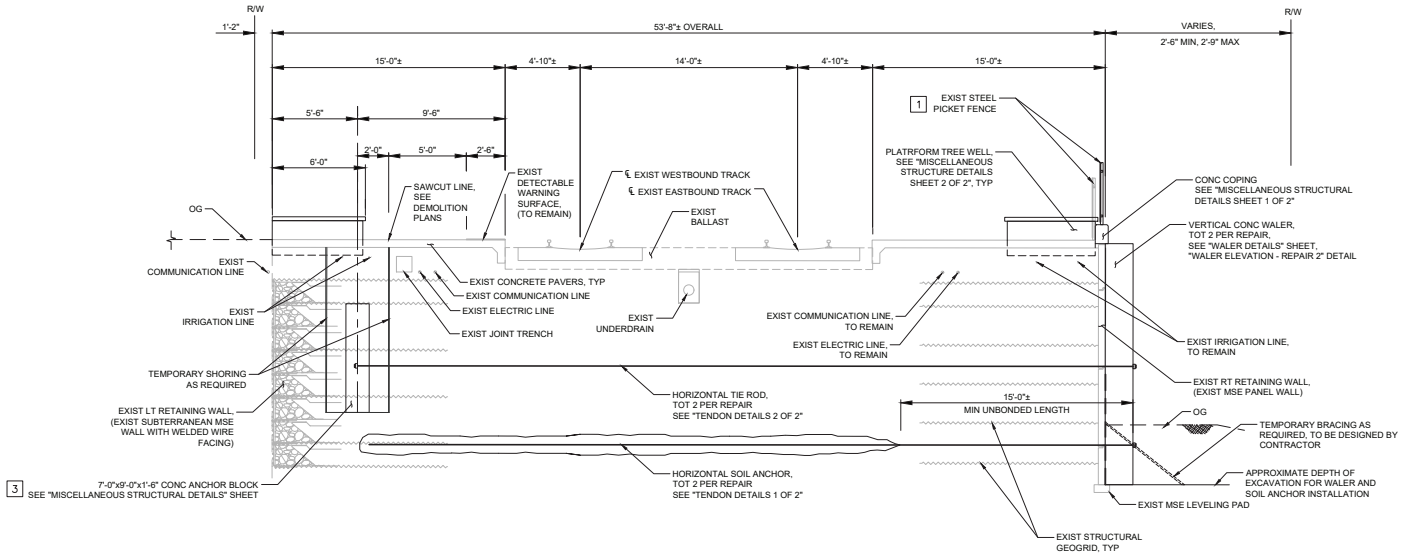
STRUCTURAL PLAN - AREA C

S.3



SECTION A-A: REPAIR 1

SCALE: ¼" = 1'-0"



SECTION B-B: REPAIR 2

SCALE: ¼" = 1'-0"

LEGEND:

1 RECONSTRUCT ON CONCRETE COPING

3 CUT EXIST EARTH REINFORCEMENT AS NEEDED TO INSTALL CONCRETE ANCHOR BLOCK

NOTES:

1. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN ON THESE PLANS
2. DEMOLITION AND CIVIL IMPROVEMENT NOT SHOWN FOR CLARITY. SEE CIVIL PLANS.

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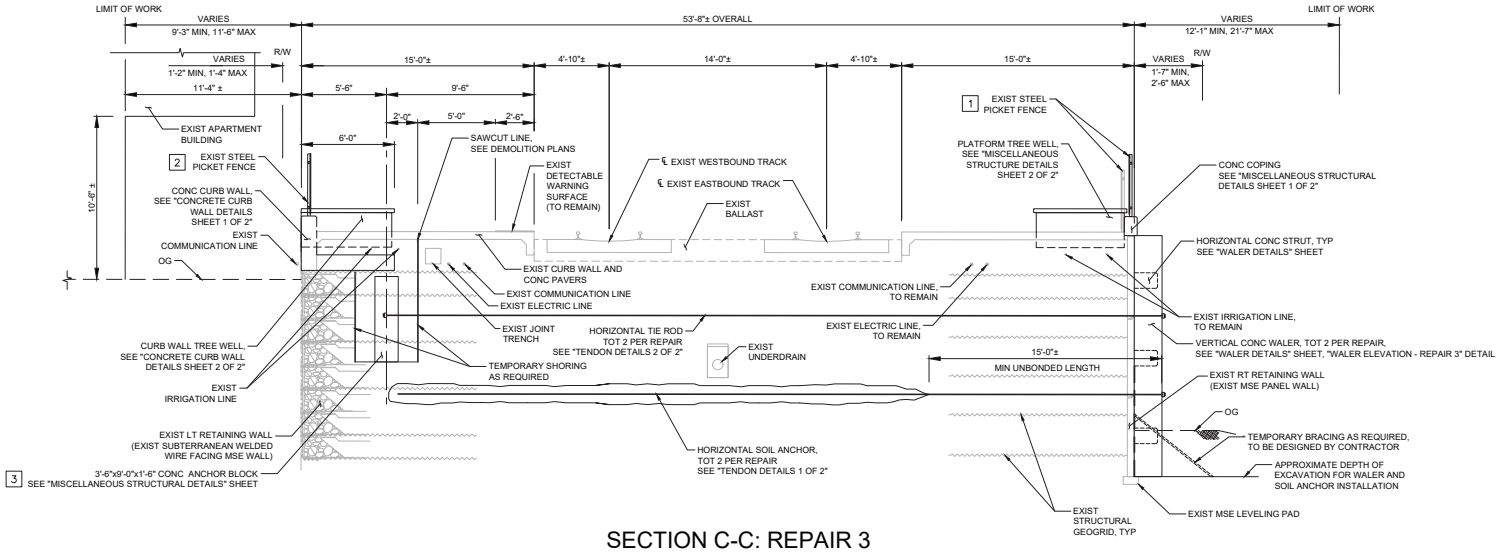
DATE	07 June, 2024
SCALE	
DRAWING TITLE	1" = 10'

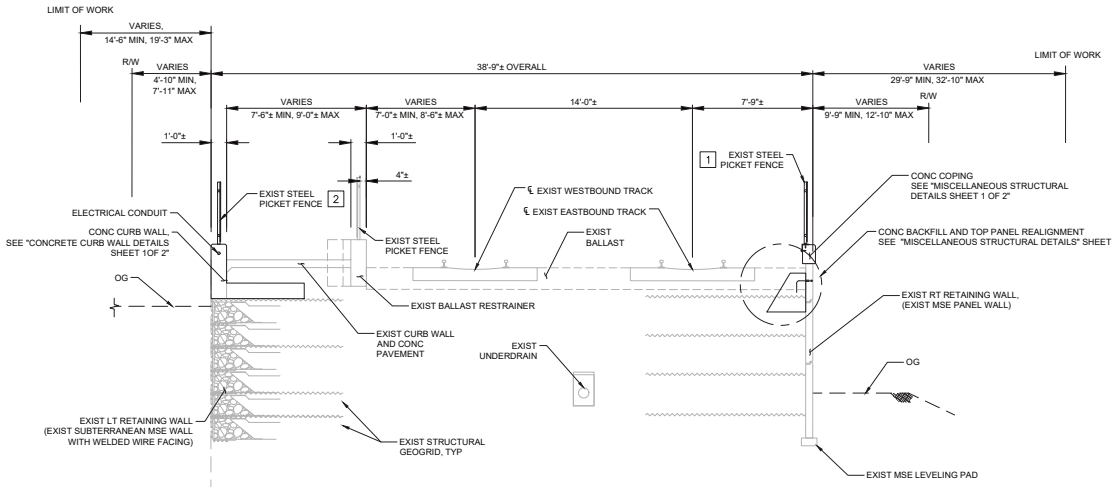
STRUCTURAL SECTIONS - REPAIRS SHEET 1 OF 2

S.4



SECTION C-C: REPAIR 3

SCALE: ¼" = 1'-0"



SECTION D-D: REPAIR 4

SCALE: ¼" = 1'-0"

LEGEND:

1. RECONSTRUCT ON CONCRETE COPING
2. RECONSTRUCT ON CONCRETE CURB WALL
3. CUT EXIST EARTH REINFORCEMENT AS NEEDED TO INSTALL CONCRETE ANCHOR BLOCK

NOTES:

1. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN ON THESE PLANS
2. DEMOLITION AND CIVIL IMPROVEMENT NOT SHOWN FOR CLARITY. SEE CIVIL PLANS.

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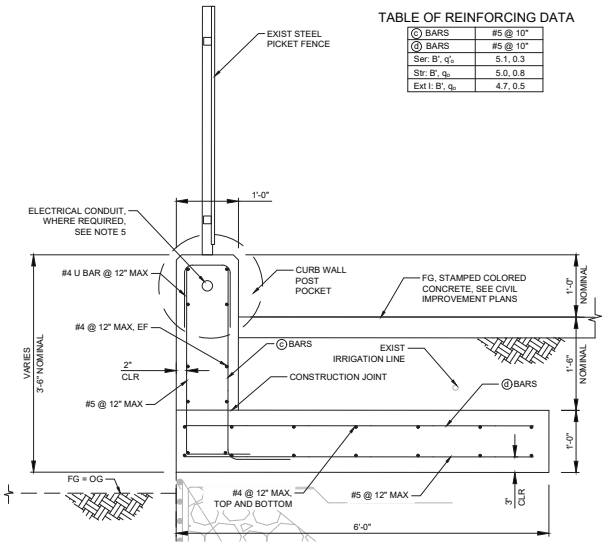
DATE	07 June, 2024
SCALE	
DRAWING TITLE	1" = 10'

STRUCTURAL SECTIONS - REPAIRS SHEET 2 OF 2

S.5

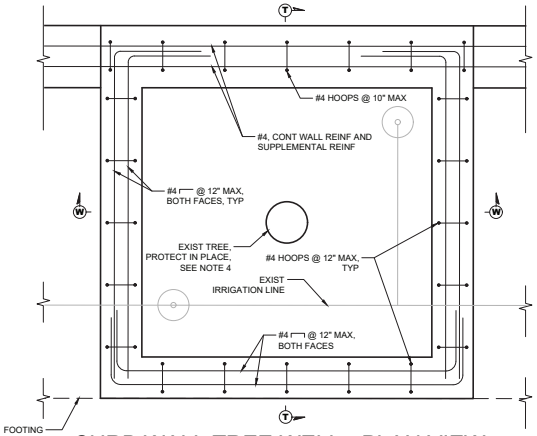
TABLE OF REINFORCING DATA

ⓒ BARS	#5 @ 10"
ⓓ BARS	#5 @ 10"
Ser: B', q'_a	5.1, 0.3
Str: B', q_p	5.0, 0.8
Ext I: B', q_p	4.7, 0.5



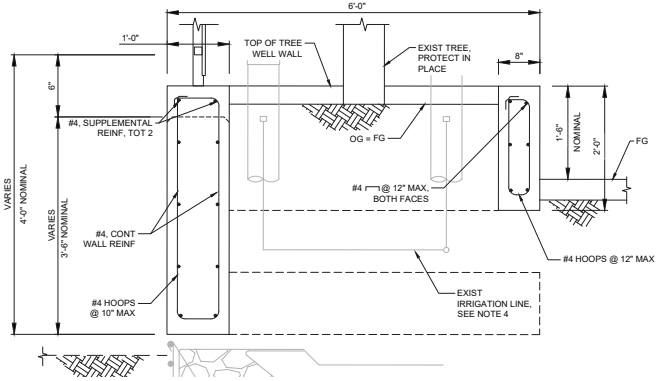
TYPICAL SECTION

SCALE: 1" = 1'-0"



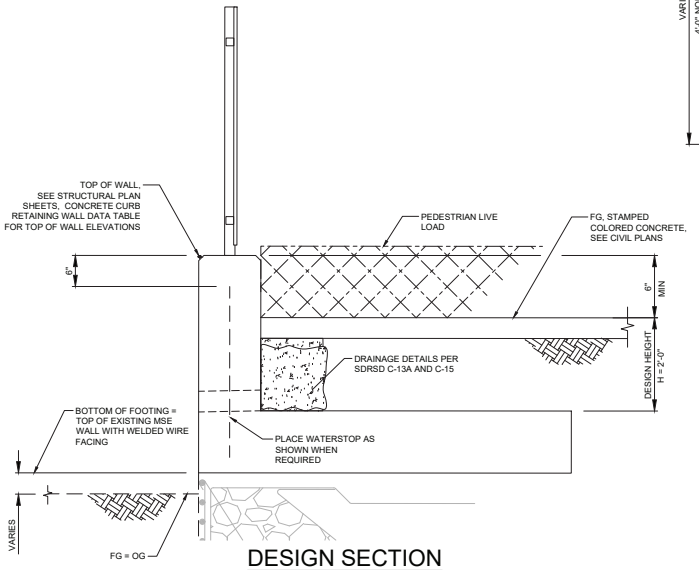
CURB WALL TREE WELL - PLAN VIEW

SCALE: 1" = 1'-0"



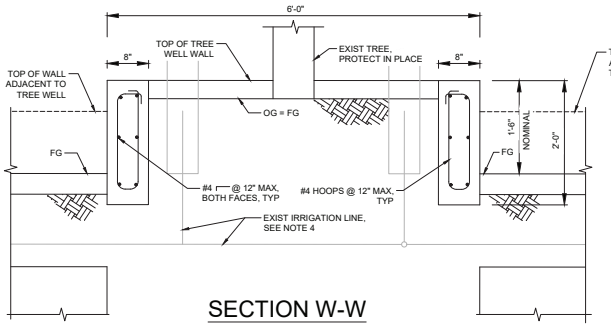
SECTION T-T

SCALE: 1" = 1'-0"



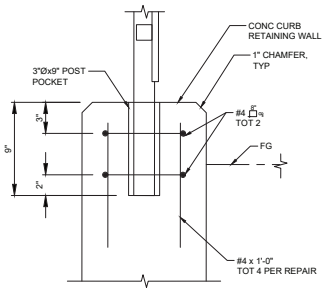
DESIGN SECTION

SCALE: 1" = 1'-0"



SECTION W-W

SCALE: 1" = 1'-0"



CURB WALL POST POCKET

SCALE: 1" = 6"

SYMBOLS:

Ser - Service Limit State I
Str - Strength Limit State I
Ext I - Extreme Limit State I
Ext II - Extreme Limit State II
B' - Effective Footing Width (ft)
q'_a - Net Bearing Stress (ksf), OG assumed to be FG at toe
q_p - Gross Uniform Bearing Stress (ksf)

DESIGN NOTES:

DESIGN: AASHTO LRFD Bridge Design Specifications, 8th Edition with California Amendments, Preface dated April 2019

PL: Pedestrian Live Load on level ground surface & pedestrian railing loading

SEISMIC: kh = 0.24, kv = 0.00

SOIL BACKFILL: Ø = 34°, γ = 120pcf
SOIL FOR BASE FRICTION: Ø = 32°, γ = 120pcf

REINFORCED CONCRETE:
f'_c = 3,600psi
f_y = 60,000psi

LOAD COMBINATIONS AND LIMIT STATES:
Service I Q = 1.00DC + 1.00EV + 1.00EH + 1.00PL
Strength I Q = αDC + βEV + 1.50EH + 1.75PL
Extreme I Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE

Where:
Q: Force Effects
α: 1.25 or 0.90, Whichever controls design
β: 1.35 or 0.90, Whichever controls design
DC: Dead Load of Structural Components
EH: Horizontal Earth Fill Pressure
EV: Vertical Earth Pressure from Earth Fill Weight
PL: Pedestrian Load
EQE: Seismic Earth Pressure
EQD: Soil and Structural and Nonstructural Components Inertia

NOTES:

1. CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY UTILITIES IN CONFLICT WITH THE WORK AS SHOWN ON THESE PLANS
2. FOR DETAILS NOT SHOWN, SEE SDRSD C-13A
3. FOR WALL STEM JOINT DETAILS, SEE SDRSD C-13D AND C-15
4. CONTRACTOR SHALL VERIFY LOCATION OF ALL IRRIGATION LINES PRIOR TO DEMOLITION. ANY IRRIGATION LINES IMPACTED DURING CONSTRUCTION SHALL BE RESTORED TO MATCH EXISTING CONDITIONS. CONTRACTOR SHALL MANUALLY WATER EXISTING TREES UNTIL IRRIGATION IS REESTABLISHED.
5. CONTRACTOR SHALL VERIFY ALL ELECTRICAL CONDUITS PRIOR TO DEMOLITION. ANY ELECTRICAL CONDUITS IMPACTED DURING CONSTRUCTION SHALL BE RESTORED TO MATCH EXISTING CONDITIONS.

DOKKEN ENGINEERING
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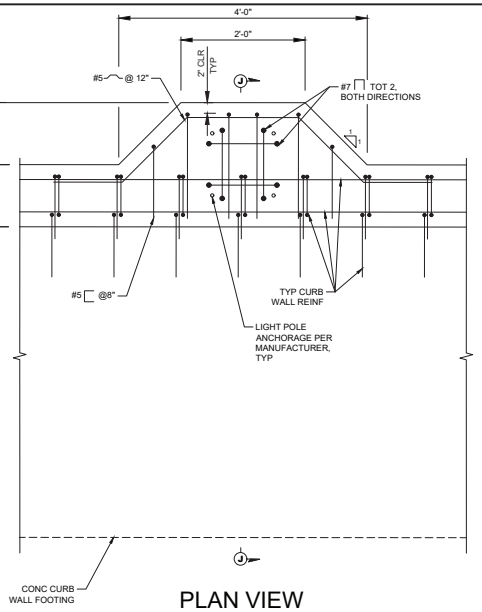
SCALE	
DRAWING TITLE	1" = 10'

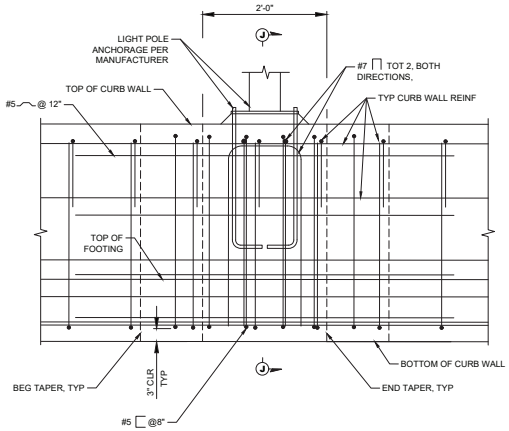
CONCRETE CURB WALL DETAILS SHEET 1 OF 2

S.6

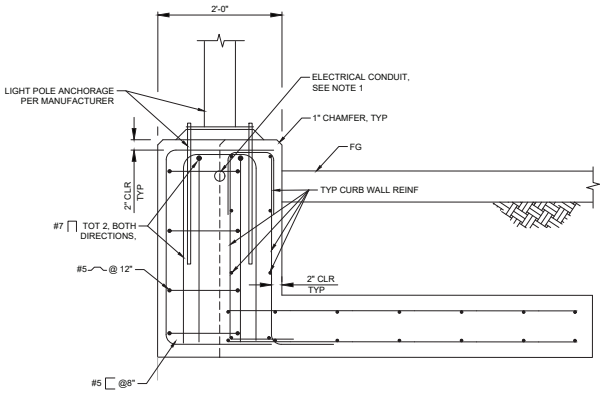
90% SUBMITTAL (NOT FOR CONSTRUCTION) - JUNE 7, 2024



PLAN VIEW



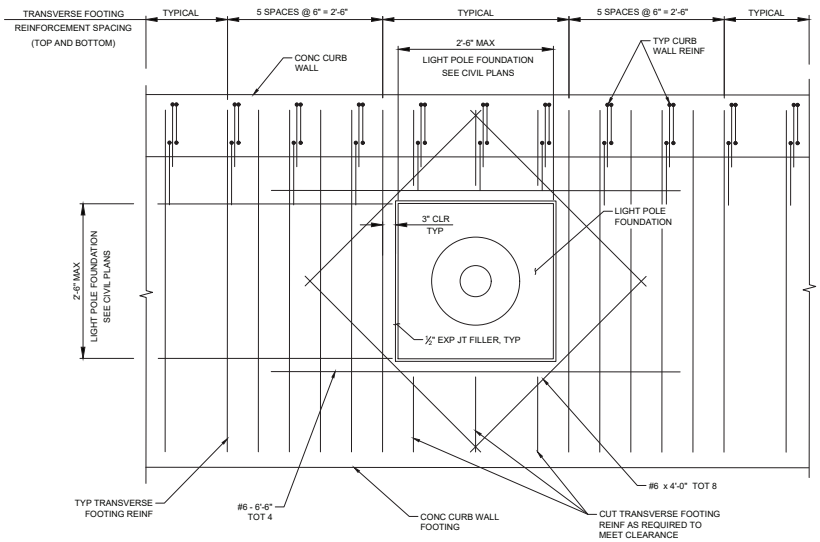
ELEVATION VIEW



SECTION J-J

LIGHT POLE CURB WALL PEDESTAL

SCALE: 1" = 1'-0"



LIGHT POLE FOOTING OPENING

SCALE: 1" = 1'-0"

TYPICAL FOOTING LONGITUDINAL REINFORCEMENT NOT SHOWN FOR CLARITY, CUT AS REQUIRED TO MEET CLEARANCE

NOTES:

1. CONTRACTOR SHALL VERIFY ALL ELECTRICAL CONDUITS PRIOR TO DEMOLITION. ANY ELECTRICAL CONDUITS IMPACTED DURING CONSTRUCTION SHALL BE RESTORED TO MATCH EXISTING CONDITIONS.

DOKKEN ENGINEERING
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REVISION LIST

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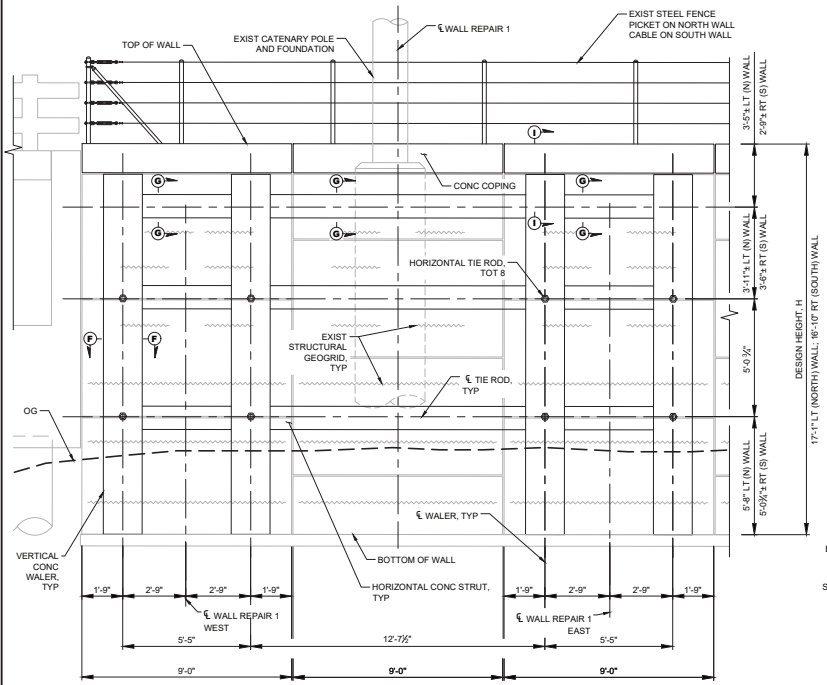
MTS RIO VISTA PLATFORM DESIGN PHASE II

PROJECT NO.	PWL 353.0-22
DRAWN BY	AS
DATE	07 June, 2024
SCALE	
DRAWING TITLE	1" = 10'

CONCRETE CURB WALL DETAILS SHEET 2 OF 2

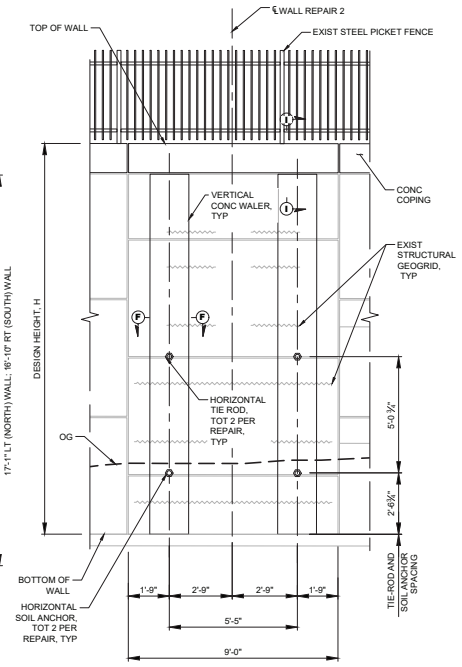
S.7



WALER ELEVATION - REPAIR 1

SCALE: ⅜" = 1'-0"

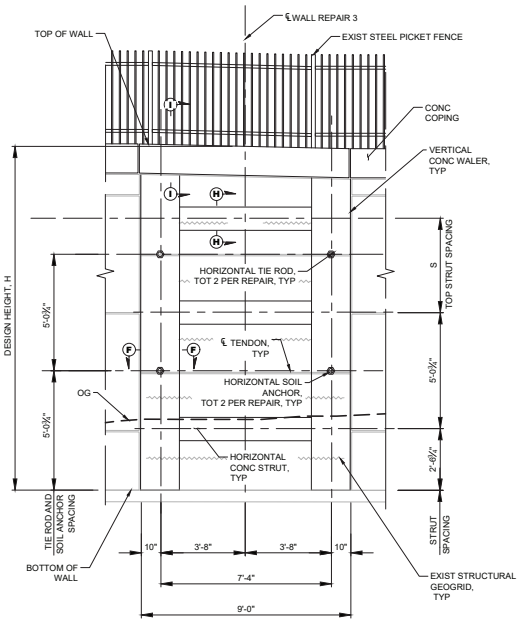
SOUTH SIDE SHOWN, NORTH SIDE SIMILAR



WALER ELEVATION - REPAIR 2

SCALE: ⅜" = 1'-0"

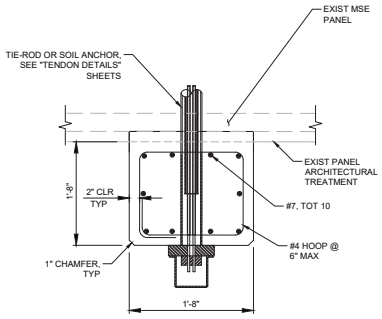
REPAIR 2	
PANEL ID	DESIGN HEIGHT, H
32	16.77 FT
34	16.77 FT
38	16.27 FT
42	15.77 FT
50	15.37 FT



WALER ELEVATION - REPAIR 3

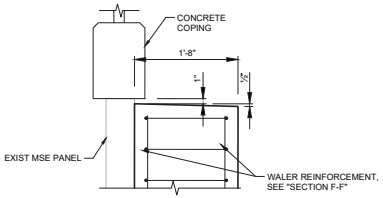
SCALE: ⅜" = 1'-0"

REPAIR 3		
PANEL ID	DESIGN HEIGHT, H	TOP STRUT SPACING, S
59	14.87 FT	5.00 FT
65	14.67 FT	4.50 FT
69	14.17 FT	4.50 FT



SECTION F-F

SCALE: 1" = 1'-0"



SECTION I-I

SCALE: 1" = 1'-0"

NOTES:

1. DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION WITH CALIFORNIA AMENDMENTS. PREFACE DATED APRIL 2019
2. FOR CONCRETE COPING AND FENCE ANCHORAGE DETAILS, SEE MISCELLANEOUS STRUCTURAL DETAILS SHEET
3. FOR PANEL ID LOCATIONS, SEE STRUCTURAL PLAN SHEETS
4. STRUT AND TENDON SPACINGS ARE APPROXIMATE. EXACT LOCATIONS SHALL BE RELATIVE TO THE EXISTING PANELS AND ALIGN WITH EITHER ℄ OF PANEL OR PANEL JOINT.

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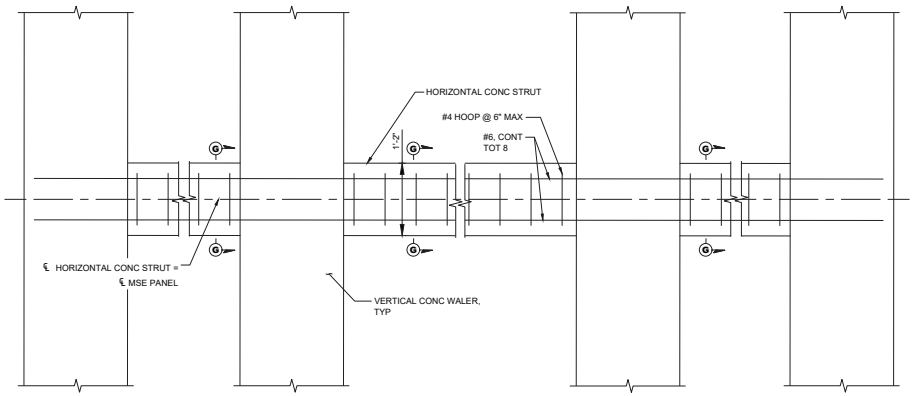
DRAWING TITLE	1" = 10'

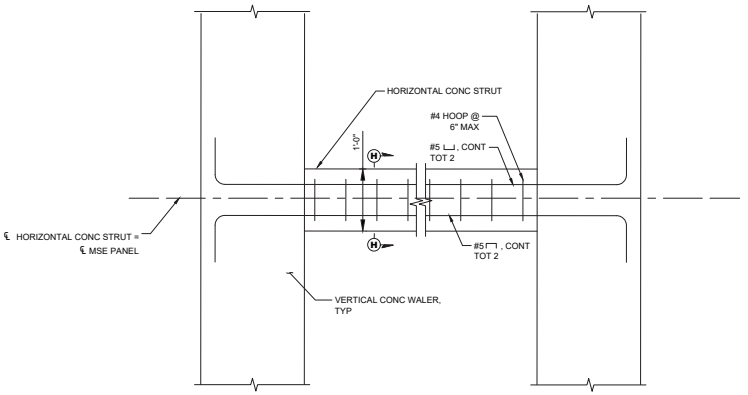
WALER DETAILS SHEET 1 OF 2

S.8



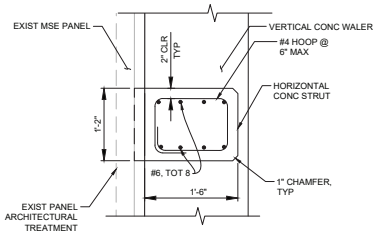
HORIZONTAL CONCRETE STRUT - REPAIR 1

SCALE: 1" = 1'-0"



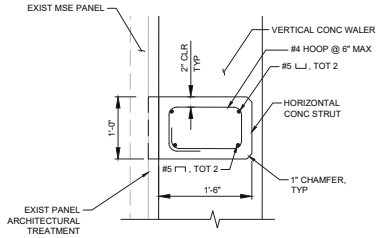
HORIZONTAL CONCRETE STRUT - REPAIR 2

SCALE: 1" = 1'-0"



SECTION G-G

SCALE: 1" = 1'-0"



SECTION H-H

SCALE: 1" = 1'-0"

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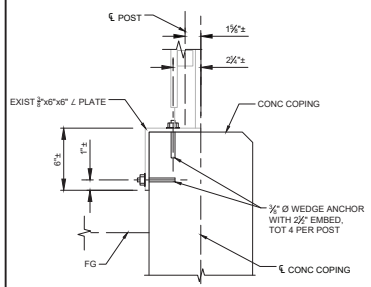
SCALE	

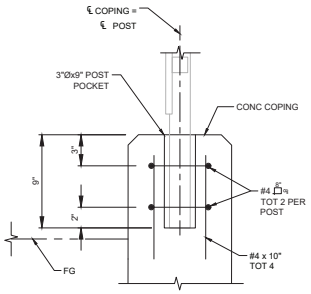
DRAWING TITLE 1" = 10'

WALER DETAILS SHEET 2 OF 2

S.9



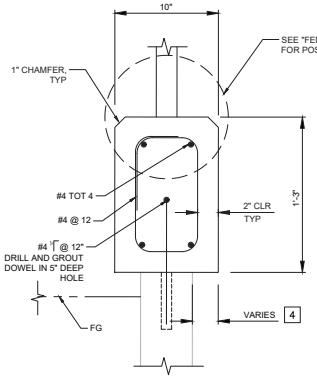
ALTERNATIVE 1
SCALE: 1" = 6"



ALTERNATIVE 2
SCALE: 1" = 6"

FENCE ANCHORAGE [3]

[3] USE ALTERNATIVE TO MATCH EXISTING FENCE CONDITIONS

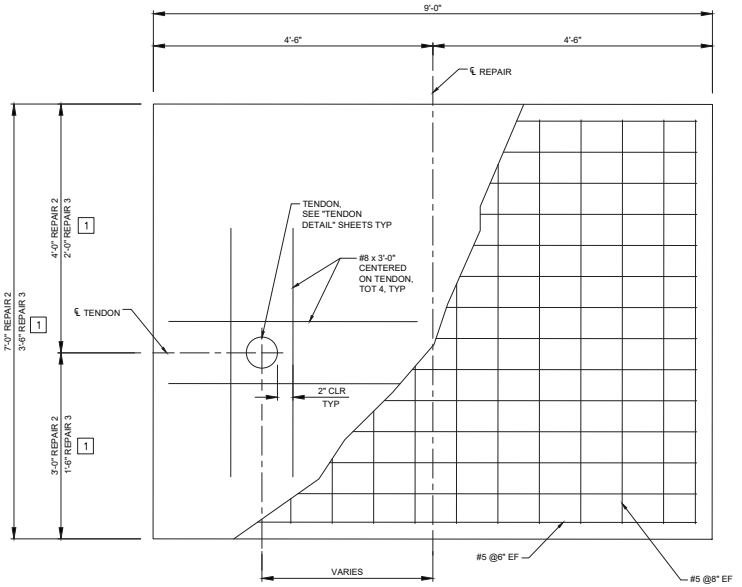


CONCRETE COPING
SCALE: 1" = 6"

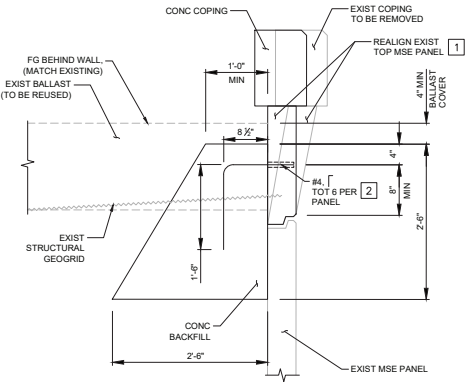
[4] 1" MIN, 4" MAX OFFSET WITH PANEL. MAY VARY TO KEEP COPING STRAIGHT ALONG THE WALL

NOTES:

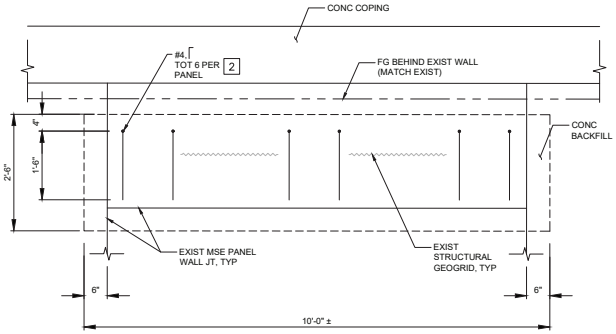
1. FOR DETAILS ON SOIL ANCHORS AND TIE RODS, SEE "TENDON DETAILS" SHEETS.
2. CONCRETE BACKFILL SHALL MEET SPECIFICATIONS FOR CAST-IN-PLACE CONCRETE.
3. CONTRACTOR MAY SUBMIT AN ALTERNATIVE DESIGN FOR ANCHOR BLOCKS TO THE ENGINEER FOR APPROVAL. ALTERNATIVE DESIGNS SHALL BE DESIGNED BY A LICENSED ENGINEER OF THE STATE TO RESIST TENDON FACTORED TEST LOADS (FTL), AND ACCOMMODATE THE TENDON ANCHORAGE ASSEMBLY AND TEMPORARY SHORING.



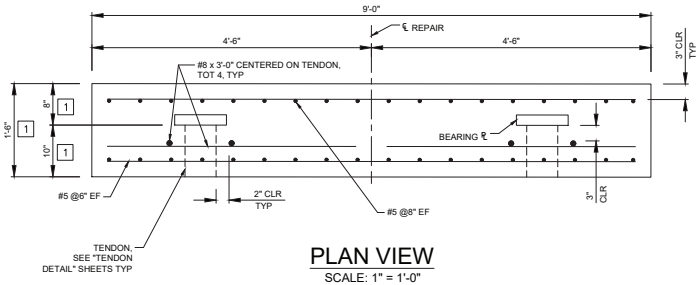
ELEVATION VIEW
SCALE: 1" = 1'-0"



TYPICAL SECTION
SCALE: 1" = 1'-0"



ELEVATION VIEW
SCALE: 3/4" = 1'-0"



PLAN VIEW
SCALE: 1" = 1'-0"

CONCRETE BACKFILL AND TOP PANEL REALIGNMENT

[1] EXCAVATE BEHIND TOP MSE PANEL TO RELIEVE SOIL PRESSURE, SHIFT PANEL TO BE PLUMB AND ALIGNED WITH ADJACENT PANELS. SUPPORT TEMPORARILY AS NEEDED UNTIL CONCRETE BACKFILL HAS CURED

[2] DRILL AND EPOXY DOWEL WITH ⅜" EMBEDMENT, PLACE DOWEL BARS AS NEEDED TO AVOID STRUCTURAL GEOGRID WITH 6" MINIMUM SPACING, AND 3'-0" MAXIMUM SPACING

ANCHOR BLOCK DETAILS

[1] TEMPORARY SHORING TO BE REMOVED PRIOR TO SETTING OF CONCRETE. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE MET AFTER REMOVAL OF SHORING.

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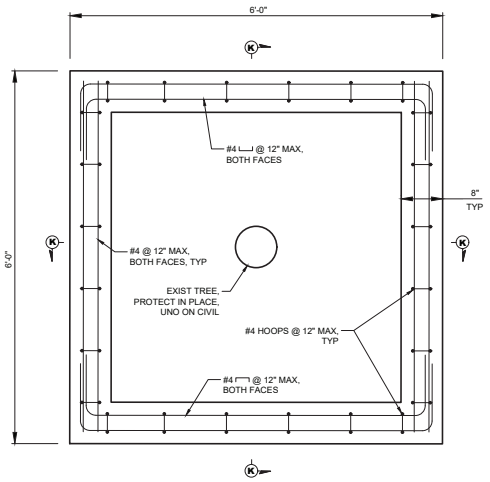
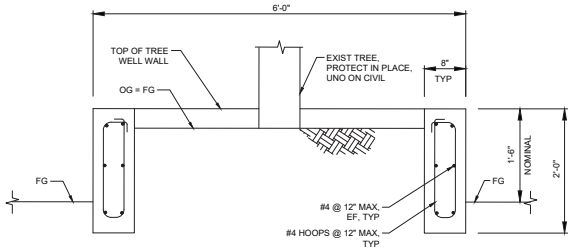
MISCELLANEOUS STRUCTURE DETAILS
SHEET 1 OF 2

S.10



PLAN VIEW



SECTION K-K

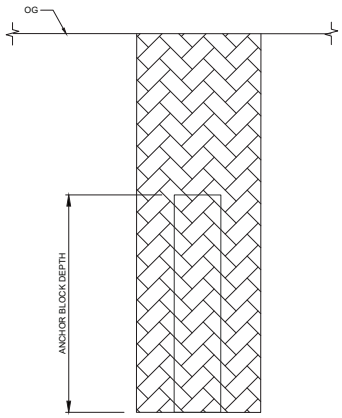
PLATFORM TREE WELL

SCALE: 1" = 6"

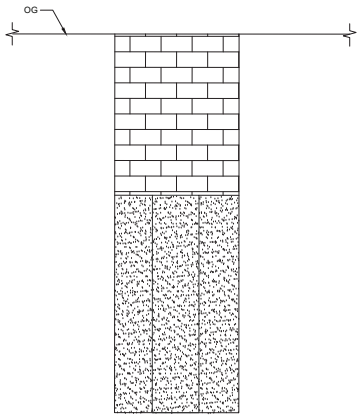
NOTE: FOR ADDITIONAL INFORMATION, SEE CIVIL PLANS.

NOTES:

1. CONTRACTOR SHALL VERIFY LOCATION OF ALL IRRIGATION LINES PRIOR TO DEMOLITION. ANY IRRIGATION LINES IMPACTED DURING CONSTRUCTION SHALL BE RESTORED TO MATCH EXISTING CONDITIONS. CONTRACTOR SHALL MANUALLY WATER EXISTING TREES UNTIL IRRIGATION IS REESTABLISHED.



EXCAVATION



BACKFILL

LEGEND:

- STRUCTURAL BACKFILL
- CAST-IN-PLACE CONCRETE
- STRUCTURAL EXCAVATION

ANCHOR BLOCK EXCAVATION AND BACKFILL PAY LIMITS

NOT TO SCALE

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SCALE	

DRAWING TITLE 1" = 10'

MISCELLANEOUS STRUCTURE DETAILS SHEET 2 OF 2

S.11

GENERAL NOTES:

PRESTRESSING STEEL:

Bars:	ASTM Designation: A722 Type II (150ksi)
Strand Tendons:	ASTM Designation: A416 (270ksi Low Relaxation Steel)
FTL:	Factored Test Load per Anchor (Kips)
FDL:	Factored Design Load per Anchor (Kips)
LL:	Lock Off Load per Anchor (Kips)
fpu:	Minimum Tensile Strength per Prestressing Steel
As:	Minimum Cross Sectional Area of Prestressing Steel in Ground Anchor (in^2)

$$As\ (Min) = \frac{1.0\ FTL}{0.75fpu}\ (Strands)$$

$$As\ (Min) = \frac{1.0\ FTL}{0.80fpu}\ (Bars)$$

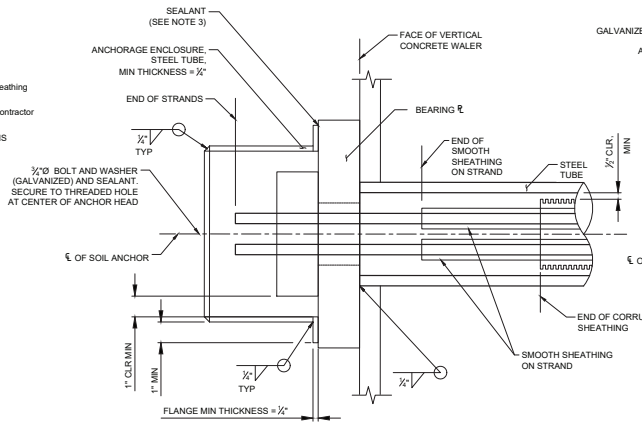
SOIL ANCHORS	FTL (KIPS)	FDL (KIPS)	LL (KIPS)
REPAIR 2	20	20	14
REPAIR 3	28	28	20

NOTES:

(A) Level of Initial Grouting
(C) Level of Initial Grouting inside corrugated sheathing
(D) Bonded Length shall be determined by the contractor
(E) For Unbonded Length, see PROJECT PLANS
(F) Face of Wall Existing MSE Panel
(G) Face of Vertical Waler

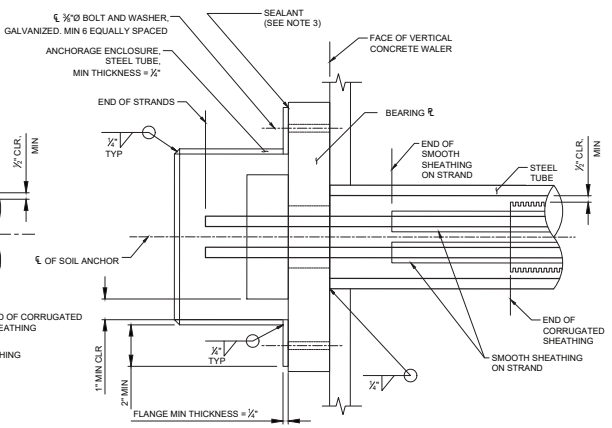
NOTES:

1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
3. Silicone sealant to cover full width of flange.
4. Steel tube (Min thickness = ¼") welded to bearing plate. Galvanize assembly after fabrication.
5. Steel tube welded to bearing plate. Inside diameter of steel tube (Min thickness = ¼") to be 1" greater than outside diameter of smooth sheathing.
6. Galvanize assembly after fabrication.
7. For other wall details, see PROJECT PLANS.
8. Contractor to Verify location of all utilities prior to drilling and installing soil anchors.
9. All anchors to be proof tested.
10. Grout shall be injected under low pressure capable to fully grout voids.
11. Grout levels to be secured by plugs to seal grout injection to the level indicated. The plugs shall have provisions to allow injection of grout and controlled venting through the plug.
12. Controlled venting of plugs shall have provisions to allow grout to achieve and maintain the required pressure until grout has hardened.
13. Permanent casing required through the unbonded length.
14. MSE Panel shall be cored prior to drilling hole. For locations at panel joints, cut filter fabric as needed between panel and soil.



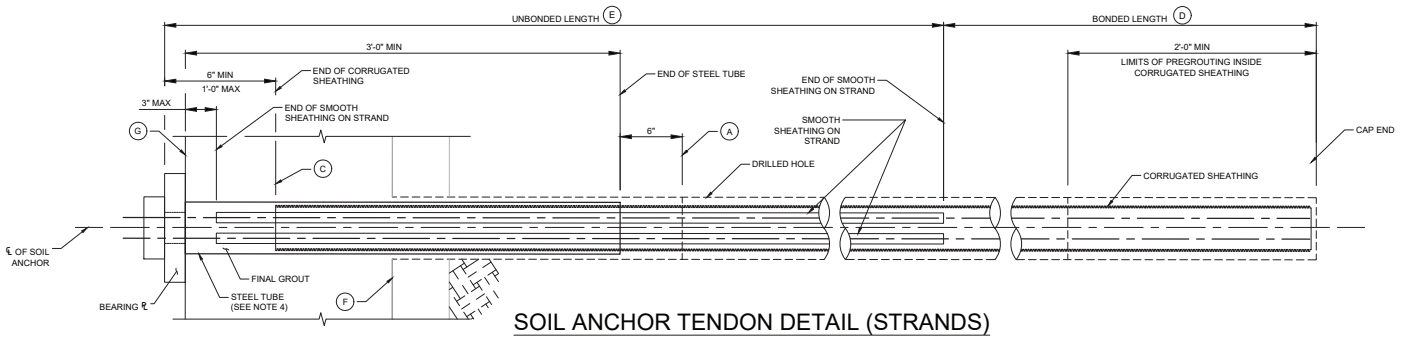
ANCHORAGE ENCLOSURE DETAIL - ALT X

SCALE: 1" = 3"



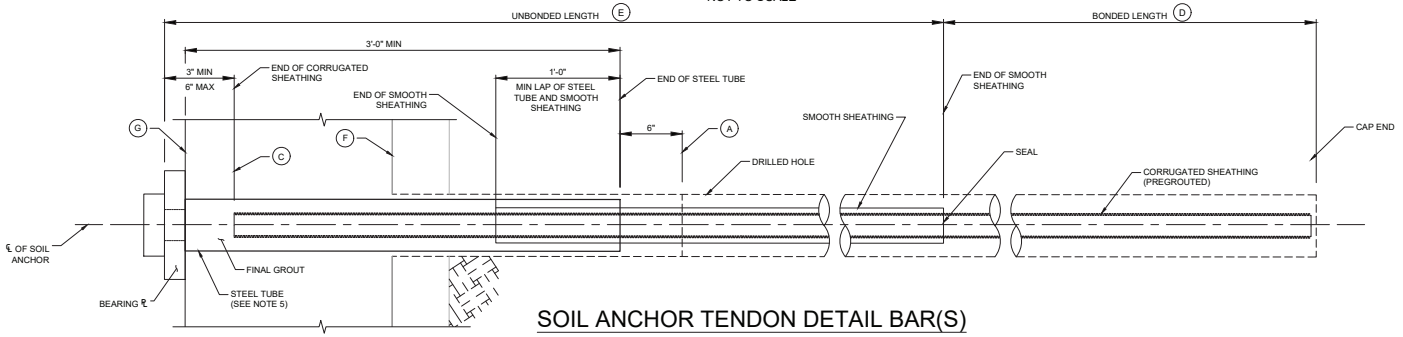
ANCHORAGE ENCLOSURE DETAIL - ALT Y

SCALE: 1" = 3"



SOIL ANCHOR TENDON DETAIL (STRANDS)

NOT TO SCALE



SOIL ANCHOR TENDON DETAIL BAR(S)

NOT TO SCALE

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DRAWING TITLE 1" = 10'

TENDON DETAILS 1 OF 2

GENERAL NOTES:

PRESTRESSING STEEL:

Bars:	ASTM Designation: A722 Type II (150ksi)
Strand Tendons:	ASTM Designation: A416 (270ksi Low Relaxation Steel)
FTL:	Factored Test Load per Anchor (Kips)
FDL:	Factored Design Load per Anchor (Kips)
LL:	Lock Off Load per Anchor (Kips)
fpu:	Minimum Tensile Strength per Prestressing Steel
As:	Minimum Cross Sectional Area of Prestressing Steel in Ground Anchor (in²)

As (Min) = $\frac{1.0\ FTL}{0.75fpu}$ (Strands)

As (Min) = $\frac{1.0\ FTL}{0.80fpu}$ (Bars)

NOTES:

(C) Level of Initial Grouting inside corrugated sheathing

(D) Bonded Length shall be determined by the contractor

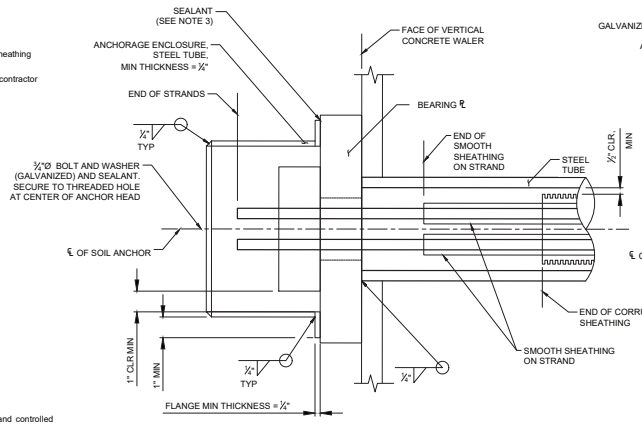
(F) Face of Wall Existing MSE Panel

(G) Face of Vertical Coping

SOIL ANCHORS	FTL (KIPS)	FDL (KIPS)	LL (KIPS)
REPAIR 1	88	88	62
REPAIR 2	76	76	54
REPAIR 3	26	26	19

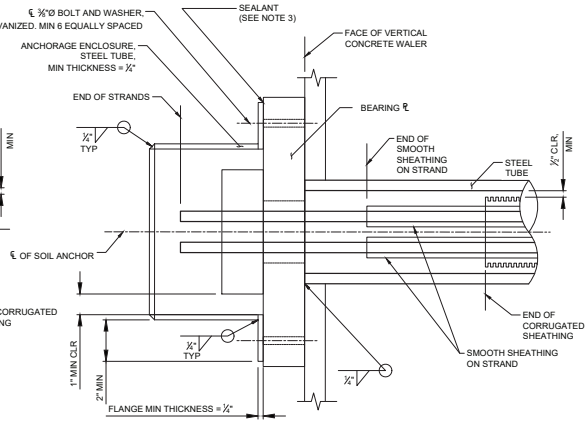
NOTES:

1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
3. Silicone sealant to cover full width of flange.
4. Steel tube (Min thickness = ¼") welded to bearing plate. Galvanize assembly after fabrication.
5. Steel tube welded to bearing plate. Inside diameter of steel tube (Min thickness = ¼") to be 1" greater than outside diameter of smooth sheathing.
6. Galvanize assembly after fabrication.
7. For other wall details, see PROJECT PLANS.
8. Contractor to Verify location of all utilities prior to drilling and installing soil anchors.
9. All anchors to be proof tested.
10. Grout shall be injected under low pressure capable to fully grout voids.
11. Grout levels to be secured by plugs to seal grout injection to the level indicated. The plugs shall have provisions to allow injection of grout and controlled venting through the plug.
12. Controlled venting of plugs shall have provisions to allow grout to achieve and maintain the required pressure until grout has hardened.
13. Permanent casing required through the unbonded length.
14. MSE Panel shall be cored at Stressing End prior to drilling hole. Holes shall be drilled from the Stressing End.
15. Where the Passive End is a waler (REPAIR 1), the MSE panel at the Passive End shall be cored. There shall be provisions to ensure the coring of the panel at the Passive End aligns with the drilled hole.
16. Where the Passive End is an Anchor Block (REPAIR 2 and REPAIR 3), there shall be provisions such that the anchor head is embedded in the concrete.
17. Where the coring of the MSE panels occurs at panel joints, cut filter fabric as needed between panel and soil.



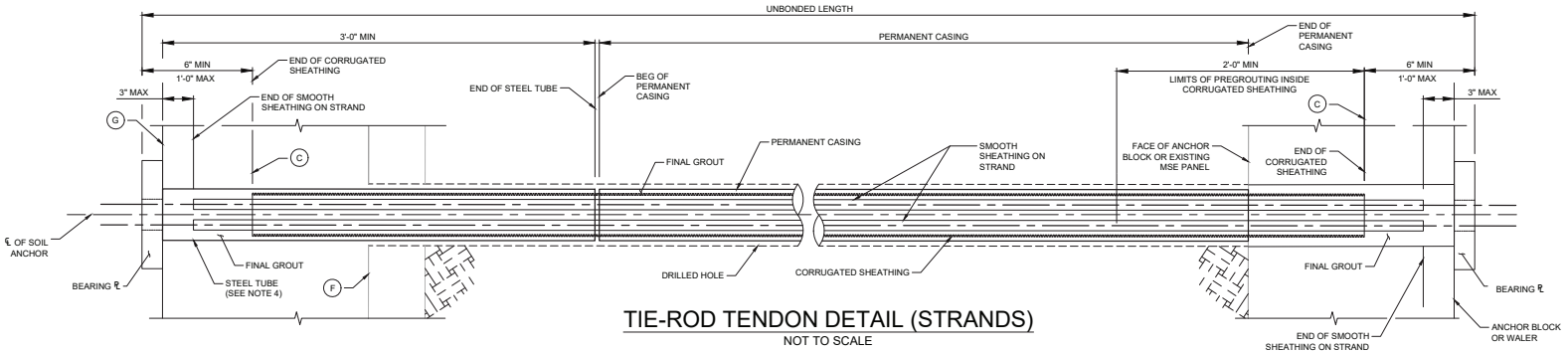
ANCHORAGE ENCLOSURE DETAIL - ALT X

SCALE: 1" = 3"



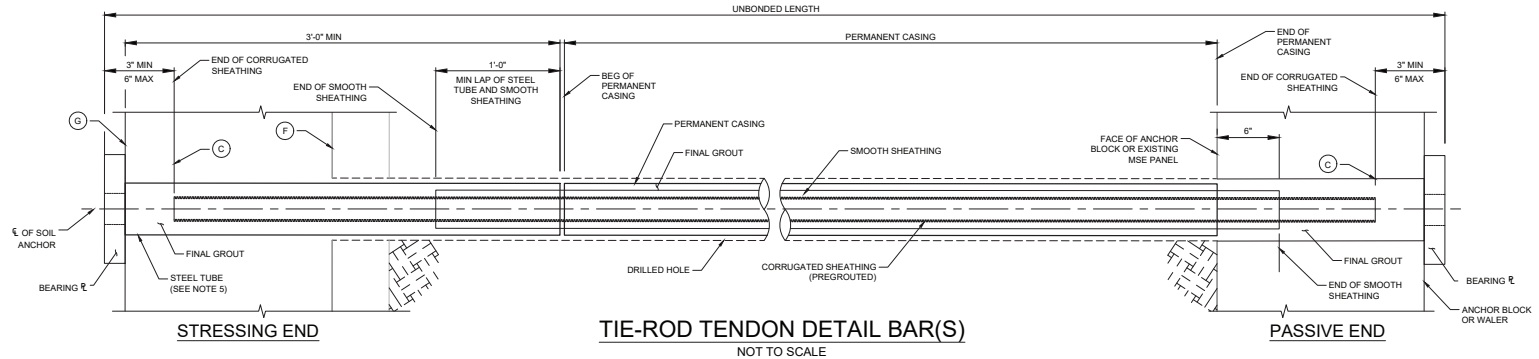
ANCHORAGE ENCLOSURE DETAIL - ALT Y

SCALE: 1" = 3"



TIE-ROD TENDON DETAIL (STRANDS)

NOT TO SCALE



STRESSING END

TIE-ROD TENDON DETAIL BAR(S)

NOT TO SCALE

PASSIVE END

DOKKEN ENGINEERING
1450 FRAZEE ROAD
SUITE 100
SAN DIEGO, CA 92108
TEL: (858) 514-8377

REVISION LIST

NO.	DATE	REVISIONS

STAMPED:

PROJECT TITLE

MTS RIO VISTA PLATFORM DESIGN PHASE II

PROJECT NO.	PWL 353.0-22
DRAWN BY	AS
DATE	07 June, 2024
SCALE	

DRAWING TITLE 1" = 10'

TENDON DETAILS 2 OF 2

S.13

90% SUBMITTAL (NOT FOR CONSTRUCTION) - JUNE 7, 2024

Eilar Associates, Inc.
Acoustical and Environmental Consulting Services

Appendix B

Applicable Noise Regulations

§59.5.0404 Construction Noise

(a) It shall be unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.0104 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; whether proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he deems to be required in the public interest.

(b) Except as provided in subsection C. hereof, it shall be unlawful for any person, including The City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12–hour period from 7:00 a.m. to 7:00 p.m.

(c) The provisions of subsection B. of this section shall not apply to construction equipment used in connection with emergency work, provided the Administrator is notified within 48 hours after commencement of work.

(Amended 1–3–1984 by O–16100 N.S.)
(Amended 8-9-2019 by O-21114 N.S.; effective 9-8-2019.)

Eilar Associates, Inc.
Acoustical and Environmental Consulting Services

Appendix C

CadnaA Analysis Data and Results

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1-1			1	54.4	-80.2	75.4	0.0				12.00	r	153.20	253.54	82.00
R1-2			2	56.7	-80.2	75.4	0.0				22.00	r	153.20	253.54	92.00
R1-3			3	58.2	-80.2	75.4	0.0				32.00	r	153.20	253.54	102.00
R1-4			4	60.2	-80.2	75.4	0.0				42.00	r	153.20	253.54	112.00
R2-1			5	53.9	-80.2	75.4	0.0				12.00	r	328.84	269.23	82.00
R2-2			6	56.3	-80.2	75.4	0.0				22.00	r	328.84	269.23	92.00
R2-3			7	57.7	-80.2	75.4	0.0				32.00	r	328.84	269.23	102.00
R2-4			8	59.6	-80.2	75.4	0.0				42.00	r	328.84	269.23	112.00
R3-1			9	45.3	-80.2	75.4	0.0				12.00	r	333.39	336.11	82.00
R3-2			10	46.0	-80.2	75.4	0.0				22.00	r	333.39	336.11	92.00
R3-3			11	46.7	-80.2	75.4	0.0				32.00	r	333.39	336.11	102.00
R3-4			12	47.5	-80.2	75.4	0.0				42.00	r	333.39	336.11	112.00
R4-1			13	45.9	-80.2	75.4	0.0				12.00	r	537.40	336.11	82.00
R4-2			14	46.7	-80.2	75.4	0.0				22.00	r	537.40	336.11	92.00
R4-3			15	47.5	-80.2	75.4	0.0				32.00	r	537.40	336.11	102.00
R4-4			16	48.3	-80.2	75.4	0.0				42.00	r	537.40	336.11	112.00
R5-1			17	53.1	-80.2	75.4	0.0				12.00	r	659.88	279.28	82.00
R5-2			18	55.5	-80.2	75.4	0.0				22.00	r	659.88	279.28	92.00
R5-3			19	58.0	-80.2	75.4	0.0				32.00	r	659.88	279.28	102.00
R5-4			20	59.7	-80.2	75.4	0.0				42.00	r	659.88	279.28	112.00
R6-1			21	53.7	-80.2	75.4	0.0				12.00	r	751.65	281.85	82.00
R6-2			22	56.6	-80.2	75.4	0.0				22.00	r	751.65	281.85	92.00
R6-3			23	59.4	-80.2	75.4	0.0				32.00	r	751.65	281.85	102.00
R6-4			24	59.8	-80.2	75.4	0.0				42.00	r	751.65	281.85	112.00

Area Sources

Name	Sel.	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving Pt. Src		
				Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Number		
				(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Evening	Nigh
Mini Excavator			S_1	98.6	-1.4	-1.4	69.4	-30.6	-30.6	PWL-Pt	C2		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	1.0	0.0	0.0
Bulldozer			S_2	114.2	14.2	14.2	85.0	-15.0	-15.0	PWL-Pt	C3		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	1.0	0.0	0.0

Geometry - Area Sources

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
Mini Excavator	S_1	5.00	r			335.28	212.57	63.48	58.48
						294.71	209.60	65.16	60.16
						141.41	196.29	67.32	62.32
						144.42	185.44	58.47	53.47
						198.99	194.65	60.69	55.69
						325.89	197.19	60.37	55.37
						336.33	186.31	57.39	52.39
						615.64	198.31	61.11	56.11
						710.38	164.20	49.92	44.92
						740.70	165.58	48.25	43.25
						654.57	196.24	60.70	55.70
						757.58	201.41	58.78	53.78
						755.86	213.12	62.61	57.61
						337.27	198.31	62.11	57.11
						335.77	198.27	62.07	57.07
Bulldozer	S_2	5.00	r			335.28	212.57	63.48	58.48
						294.71	209.60	65.16	60.16
						141.41	196.29	67.32	62.32
						144.42	185.44	58.47	53.47
						198.99	194.65	60.69	55.69
						325.89	197.19	60.37	55.37
						336.33	186.31	57.39	52.39
						615.64	198.31	61.11	56.11
						710.38	164.20	49.92	44.92
						740.70	165.58	48.25	43.25
						654.57	196.24	60.70	55.70
						757.58	201.41	58.78	53.78
						755.86	213.12	62.61	57.61
						337.27	198.31	62.11	57.11
						335.77	198.27	62.07	57.07

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1-1			1	64.4	-80.2	75.4	0.0				12.00	r	153.20	253.54	82.00
R1-2			2	64.4	-80.2	75.4	0.0				22.00	r	153.20	253.54	92.00
R1-3			3	64.3	-80.2	75.4	0.0				32.00	r	153.20	253.54	102.00
R1-4			4	64.3	-80.2	75.4	0.0				42.00	r	153.20	253.54	112.00
R2-1			5	80.9	-80.2	75.4	0.0				12.00	r	328.84	269.23	82.00
R2-2			6	79.9	-80.2	75.4	0.0				22.00	r	328.84	269.23	92.00
R2-3			7	78.7	-80.2	75.4	0.0				32.00	r	328.84	269.23	102.00
R2-4			8	77.5	-80.2	75.4	0.0				42.00	r	328.84	269.23	112.00
R3-1			9	73.5	-80.2	75.4	0.0				12.00	r	333.39	336.11	82.00
R3-2			10	73.3	-80.2	75.4	0.0				22.00	r	333.39	336.11	92.00
R3-3			11	73.0	-80.2	75.4	0.0				32.00	r	333.39	336.11	102.00
R3-4			12	72.6	-80.2	75.4	0.0				42.00	r	333.39	336.11	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
West-Compressor		+		96.5	96.5	96.5	Lw	C8		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	3.00	r	348.79	247.41	73.00
West-Generator		+		96.1	96.1	96.1	Lw	C7		0.0	0.0	0.0				240.00	0.00	0.00	0.0		(none)	5.00	r	348.79	250.80	75.00
West-Dump Truck		+		107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	384.60	332.80	75.00

Area Sources

Name	Sel.	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving	
				Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Num	
				(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Eve
West-Jackhammer		+	S_1	117.6	17.6	17.6	107.6	7.6	7.6	PWL-Pt	C9		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	1.0	0
West-Power Driven Saw		+	S_2	121.6	21.6	21.6	106.7	6.7	6.7	PWL-Pt	C10		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	1.0	0
West-Mini Excavator		+	S_3	98.6	-1.4	-1.4	80.6	-19.4	-19.4	PWL-Pt	C2		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	1.0	0

Geometry - Area Sources

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
West-Jackhammer	S_1	3.00	r			336.54	247.96	73.00	70.00
						336.35	238.62	73.00	70.00
						352.02	239.06	73.00	70.00
						352.14	243.59	73.00	70.00
						345.30	243.70	73.00	70.00
						342.82	248.08	73.00	70.00
West-Power Driven Saw	S_2	1.50	r			350.36	255.74	71.50	70.00
						350.65	250.29	71.50	70.00
						406.90	250.37	71.50	70.00
						406.90	256.49	71.50	70.00
West-Mini Excavator	S_3	5.00	r			351.18	255.54	75.00	70.00
						350.67	242.79	75.00	70.00
						407.34	244.00	75.00	70.00
						407.17	255.19	75.00	70.00

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R4-1			13	66.2	-80.2	75.4	0.0				12.00	r	537.40	336.11	82.00
R4-2			14	65.9	-80.2	75.4	0.0				22.00	r	537.40	336.11	92.00
R4-3			15	65.2	-80.2	75.4	0.0				32.00	r	537.40	336.11	102.00
R4-4			16	64.4	-80.2	75.4	0.0				42.00	r	537.40	336.11	112.00
R5-1			17	84.0	-80.2	75.4	0.0				12.00	r	659.88	279.28	82.00
R5-2			18	82.2	-80.2	75.4	0.0				22.00	r	659.88	279.28	92.00
R5-3			19	80.3	-80.2	75.4	0.0				32.00	r	659.88	279.28	102.00
R5-4			20	78.6	-80.2	75.4	0.0				42.00	r	659.88	279.28	112.00
R6-1			21	78.3	-80.2	75.4	0.0				12.00	r	751.65	281.85	82.00
R6-2			22	77.3	-80.2	75.4	0.0				22.00	r	751.65	281.85	92.00
R6-3			23	76.2	-80.2	75.4	0.0				32.00	r	751.65	281.85	102.00
R6-4			24	75.2	-80.2	75.4	0.0				42.00	r	751.65	281.85	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
East-Compressor		+		96.5	96.5	96.5	Lw	C8		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	3.00	r	692.59	261.19	73.00
East-Generator		+		96.1	96.1	96.1	Lw	C7		0.0	0.0	0.0				240.00	0.00	0.00	0.0		(none)	5.00	r	692.59	259.07	75.00
East-Dump Truck		+		107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	489.33	329.01	75.00

Area Sources

Name	Sel.	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving	
				Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Num	
				(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Ever
East-Jackhammer		+	S_1	117.6	17.6	17.6	99.1	-0.9	-0.9	PWL-Pt	C9		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	1.0	0.
East-Power Driven Saw		+	S_2	121.6	21.6	21.6	106.4	6.4	6.4	PWL-Pt	C10		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	1.0	0.
East-Mini Excavator		+	S_3	98.6	-1.4	-1.4	80.6	-19.4	-19.4	PWL-Pt	C2		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	1.0	0.

Geometry - Area Sources

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
East-Jackhammer	S_1	3.00	r			694.19	263.58	73.00	70.00
						694.53	255.66	73.00	70.00
						796.68	254.80	73.00	70.00
						796.17	261.86	73.00	70.00
East-Power Driven Saw	S_2	1.50	r			634.43	264.76	71.50	70.00
						634.17	258.21	71.50	70.00
						690.41	258.30	71.50	70.00
						690.41	264.41	71.50	70.00
East-Mini Excavator	S_3	5.00	r			634.43	264.76	75.00	70.00
						633.91	252.01	75.00	70.00
						690.58	253.22	75.00	70.00
						690.41	264.41	75.00	70.00

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

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Phone: (760) 738-5570

Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1-1			1	59.2	-80.2	75.4	0.0				12.00	r	153.20	253.54	82.00
R1-2			2	61.3	-80.2	75.4	0.0				22.00	r	153.20	253.54	92.00
R1-3			3	63.6	-80.2	75.4	0.0				32.00	r	153.20	253.54	102.00
R1-4			4	64.9	-80.2	75.4	0.0				42.00	r	153.20	253.54	112.00
R2-1			5	53.2	-80.2	75.4	0.0				12.00	r	328.84	269.23	82.00
R2-2			6	54.8	-80.2	75.4	0.0				22.00	r	328.84	269.23	92.00
R2-3			7	56.4	-80.2	75.4	0.0				32.00	r	328.84	269.23	102.00
R2-4			8	57.3	-80.2	75.4	0.0				42.00	r	328.84	269.23	112.00
R3-1			9	44.5	-80.2	75.4	0.0				12.00	r	333.39	336.11	82.00
R3-2			10	44.8	-80.2	75.4	0.0				22.00	r	333.39	336.11	92.00
R3-3			11	45.2	-80.2	75.4	0.0				32.00	r	333.39	336.11	102.00
R3-4			12	45.8	-80.2	75.4	0.0				42.00	r	333.39	336.11	112.00
R4-1			13	46.0	-80.2	75.4	0.0				12.00	r	537.40	336.11	82.00
R4-2			14	46.8	-80.2	75.4	0.0				22.00	r	537.40	336.11	92.00
R4-3			15	47.5	-80.2	75.4	0.0				32.00	r	537.40	336.11	102.00
R4-4			16	48.4	-80.2	75.4	0.0				42.00	r	537.40	336.11	112.00
R5-1			17	56.4	-80.2	75.4	0.0				12.00	r	659.88	279.28	82.00
R5-2			18	57.2	-80.2	75.4	0.0				22.00	r	659.88	279.28	92.00
R5-3			19	57.9	-80.2	75.4	0.0				32.00	r	659.88	279.28	102.00
R5-4			20	58.7	-80.2	75.4	0.0				42.00	r	659.88	279.28	112.00
R6-1			21	54.6	-80.2	75.4	0.0				12.00	r	751.65	281.85	82.00
R6-2			22	55.4	-80.2	75.4	0.0				22.00	r	751.65	281.85	92.00
R6-3			23	56.2	-80.2	75.4	0.0				32.00	r	751.65	281.85	102.00
R6-4			24	57.1	-80.2	75.4	0.0				42.00	r	751.65	281.85	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
Drill Rig				114.6	114.6	114.6	Lw	C12		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	166.17	193.04	60.85
Hydraulic Jack				108.7	108.7	108.7	Lw	C11		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	164.37	187.95	58.85
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	158.56	186.64	58.12
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	159.02	192.54	60.83
Drill Rig				114.6	114.6	114.6	Lw	C12		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	684.92	209.33	63.77
Hydraulic Jack				108.7	108.7	108.7	Lw	C11		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	686.91	209.24	63.76
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	687.22	205.07	62.79
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	689.79	207.69	63.40

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1-1			1	75.7	-80.2	75.4	0.0				12.00	r	153.20	253.54	82.00
R1-2			2	74.0	-80.2	75.4	0.0				22.00	r	153.20	253.54	92.00
R1-3			3	72.2	-80.2	75.4	0.0				32.00	r	153.20	253.54	102.00
R1-4			4	70.7	-80.2	75.4	0.0				42.00	r	153.20	253.54	112.00
R2-1			5	66.5	-80.2	75.4	0.0				12.00	r	328.84	269.23	82.00
R2-2			6	66.3	-80.2	75.4	0.0				22.00	r	328.84	269.23	92.00
R2-3			7	65.9	-80.2	75.4	0.0				32.00	r	328.84	269.23	102.00
R2-4			8	65.4	-80.2	75.4	0.0				42.00	r	328.84	269.23	112.00
R3-1			9	70.9	-80.2	75.4	0.0				12.00	r	333.39	336.11	82.00
R3-2			10	70.4	-80.2	75.4	0.0				22.00	r	333.39	336.11	92.00
R3-3			11	69.6	-80.2	75.4	0.0				32.00	r	333.39	336.11	102.00
R3-4			12	68.7	-80.2	75.4	0.0				42.00	r	333.39	336.11	112.00
R4-1			13	69.5	-80.2	75.4	0.0				12.00	r	537.40	336.11	82.00
R4-2			14	69.2	-80.2	75.4	0.0				22.00	r	537.40	336.11	92.00
R4-3			15	68.7	-80.2	75.4	0.0				32.00	r	537.40	336.11	102.00
R4-4			16	67.9	-80.2	75.4	0.0				42.00	r	537.40	336.11	112.00
R5-1			17	75.9	-80.2	75.4	0.0				12.00	r	659.88	279.28	82.00
R5-2			18	74.0	-80.2	75.4	0.0				22.00	r	659.88	279.28	92.00
R5-3			19	71.9	-80.2	75.4	0.0				32.00	r	659.88	279.28	102.00
R5-4			20	70.0	-80.2	75.4	0.0				42.00	r	659.88	279.28	112.00
R6-1			21	63.9	-80.2	75.4	0.0				12.00	r	751.65	281.85	82.00
R6-2			22	63.9	-80.2	75.4	0.0				22.00	r	751.65	281.85	92.00
R6-3			23	63.8	-80.2	75.4	0.0				32.00	r	751.65	281.85	102.00
R6-4			24	63.6	-80.2	75.4	0.0				42.00	r	751.65	281.85	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	166.17	193.04	60.85
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	164.37	187.95	58.85
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	158.56	186.64	58.12
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	159.02	192.54	60.83
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	684.92	209.33	63.77
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	686.91	209.24	63.76
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	687.22	205.07	62.79
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	689.79	207.69	63.40
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	364.63	300.90	75.00
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	506.05	299.53	75.00
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	363.85	290.62	75.00
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	507.72	290.89	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	367.02	353.06	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	489.29	350.33	75.00
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	154.26	233.41	75.00
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	673.71	265.52	75.00

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1-1			1	77.9	-80.2	75.4	0.0				12.00	r	153.20	253.54	82.00
R1-2			2	76.0	-80.2	75.4	0.0				22.00	r	153.20	253.54	92.00
R1-3			3	73.8	-80.2	75.4	0.0				32.00	r	153.20	253.54	102.00
R1-4			4	72.1	-80.2	75.4	0.0				42.00	r	153.20	253.54	112.00
R2-1			5	61.0	-80.2	75.4	0.0				12.00	r	328.84	269.23	82.00
R2-2			6	61.2	-80.2	75.4	0.0				22.00	r	328.84	269.23	92.00
R2-3			7	61.5	-80.2	75.4	0.0				32.00	r	328.84	269.23	102.00
R2-4			8	61.7	-80.2	75.4	0.0				42.00	r	328.84	269.23	112.00
R3-1			9	67.0	-80.2	75.4	0.0				12.00	r	333.39	336.11	82.00
R3-2			10	66.6	-80.2	75.4	0.0				22.00	r	333.39	336.11	92.00
R3-3			11	66.0	-80.2	75.4	0.0				32.00	r	333.39	336.11	102.00
R3-4			12	65.2	-80.2	75.4	0.0				42.00	r	333.39	336.11	112.00
R4-1			13	66.4	-80.2	75.4	0.0				12.00	r	537.40	336.11	82.00
R4-2			14	66.1	-80.2	75.4	0.0				22.00	r	537.40	336.11	92.00
R4-3			15	65.5	-80.2	75.4	0.0				32.00	r	537.40	336.11	102.00
R4-4			16	64.8	-80.2	75.4	0.0				42.00	r	537.40	336.11	112.00
R5-1			17	79.1	-80.2	75.4	0.0				12.00	r	659.88	279.28	82.00
R5-2			18	76.6	-80.2	75.4	0.0				22.00	r	659.88	279.28	92.00
R5-3			19	74.1	-80.2	75.4	0.0				32.00	r	659.88	279.28	102.00
R5-4			20	72.0	-80.2	75.4	0.0				42.00	r	659.88	279.28	112.00
R6-1			21	64.7	-80.2	75.4	0.0				12.00	r	751.65	281.85	82.00
R6-2			22	64.7	-80.2	75.4	0.0				22.00	r	751.65	281.85	92.00
R6-3			23	64.6	-80.2	75.4	0.0				32.00	r	751.65	281.85	102.00
R6-4			24	64.6	-80.2	75.4	0.0				42.00	r	751.65	281.85	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	157.73	193.12	61.08
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	683.40	205.01	62.77
Compactor				108.7	108.7	108.7	Lw	C13		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	155.06	193.29	61.09
Compactor				108.7	108.7	108.7	Lw	C13		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	677.54	203.97	62.52
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	149.15	235.16	75.00
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	667.54	264.90	75.00
Compactor				108.7	108.7	108.7	Lw	C13		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	158.68	235.46	75.00
Compactor				108.7	108.7	108.7	Lw	C13		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	660.63	263.58	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	379.60	340.64	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	488.54	345.41	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	162.77	190.98	60.15
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	655.21	205.22	62.77

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

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Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1-1			1	48.7	-80.2	75.4	0.0				12.00	r	153.20	253.54	82.00
R1-2			2	48.8	-80.2	75.4	0.0				22.00	r	153.20	253.54	92.00
R1-3			3	49.0	-80.2	75.4	0.0				32.00	r	153.20	253.54	102.00
R1-4			4	49.0	-80.2	75.4	0.0				42.00	r	153.20	253.54	112.00
R2-1			5	70.0	-80.2	75.4	0.0				12.00	r	328.84	269.23	82.00
R2-2			6	69.3	-80.2	75.4	0.0				22.00	r	328.84	269.23	92.00
R2-3			7	68.2	-80.2	75.4	0.0				32.00	r	328.84	269.23	102.00
R2-4			8	67.1	-80.2	75.4	0.0				42.00	r	328.84	269.23	112.00
R3-1			9	66.1	-80.2	75.4	0.0				12.00	r	333.39	336.11	82.00
R3-2			10	65.8	-80.2	75.4	0.0				22.00	r	333.39	336.11	92.00
R3-3			11	65.4	-80.2	75.4	0.0				32.00	r	333.39	336.11	102.00
R3-4			12	64.8	-80.2	75.4	0.0				42.00	r	333.39	336.11	112.00
R4-1			13	66.2	-80.2	75.4	0.0				12.00	r	537.40	336.11	82.00
R4-2			14	66.0	-80.2	75.4	0.0				22.00	r	537.40	336.11	92.00
R4-3			15	65.5	-80.2	75.4	0.0				32.00	r	537.40	336.11	102.00
R4-4			16	64.9	-80.2	75.4	0.0				42.00	r	537.40	336.11	112.00
R5-1			17	46.0	-80.2	75.4	0.0				12.00	r	659.88	279.28	82.00
R5-2			18	46.2	-80.2	75.4	0.0				22.00	r	659.88	279.28	92.00
R5-3			19	46.4	-80.2	75.4	0.0				32.00	r	659.88	279.28	102.00
R5-4			20	46.5	-80.2	75.4	0.0				42.00	r	659.88	279.28	112.00
R6-1			21	41.8	-80.2	75.4	0.0				12.00	r	751.65	281.85	82.00
R6-2			22	42.0	-80.2	75.4	0.0				22.00	r	751.65	281.85	92.00
R6-3			23	42.3	-80.2	75.4	0.0				32.00	r	751.65	281.85	102.00
R6-4			24	42.4	-80.2	75.4	0.0				42.00	r	751.65	281.85	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	518.81	282.55	75.00
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	510.77	286.48	75.00
Compact Crane				100.8	100.8	100.8	Lw	C14		0.0	0.0	0.0				76.80	0.00	0.00	0.0		(none)	5.00	r	514.43	294.50	75.00
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	356.62	285.19	75.00
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	363.30	288.63	75.00
Compact Crane				100.8	100.8	100.8	Lw	C14		0.0	0.0	0.0				76.80	0.00	0.00	0.0		(none)	5.00	r	357.30	276.71	75.00

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1-1			1	58.5	-80.2	75.4	0.0				12.00	r	153.20	253.54	82.00
R1-2			2	58.6	-80.2	75.4	0.0				22.00	r	153.20	253.54	92.00
R1-3			3	58.7	-80.2	75.4	0.0				32.00	r	153.20	253.54	102.00
R1-4			4	59.0	-80.2	75.4	0.0				42.00	r	153.20	253.54	112.00
R2-1			5	64.8	-80.2	75.4	0.0				12.00	r	328.84	269.23	82.00
R2-2			6	66.7	-80.2	75.4	0.0				22.00	r	328.84	269.23	92.00
R2-3			7	72.2	-80.2	75.4	0.0				32.00	r	328.84	269.23	102.00
R2-4			8	74.7	-80.2	75.4	0.0				42.00	r	328.84	269.23	112.00
R3-1			9	66.1	-80.2	75.4	0.0				12.00	r	333.39	336.11	82.00
R3-2			10	65.8	-80.2	75.4	0.0				22.00	r	333.39	336.11	92.00
R3-3			11	65.3	-80.2	75.4	0.0				32.00	r	333.39	336.11	102.00
R3-4			12	64.6	-80.2	75.4	0.0				42.00	r	333.39	336.11	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
West-Compressor		+		96.5	96.5	96.5	Lw	C8		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	3.00	r	348.79	247.41	73.00
West-Generator		+		96.1	96.1	96.1	Lw	C7		0.0	0.0	0.0				240.00	0.00	0.00	0.0		(none)	5.00	r	348.79	250.80	75.00
West-Dump Truck		+		107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	384.60	332.80	75.00

Area Sources

Name	Sel.	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving	
				Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Num	
				(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Eve
West-Jackhammer		+	S_1	117.6	17.6	17.6	107.6	7.6	7.6	PWL-Pt	C9		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	1.0	0
West-Power Driven Saw		+	S_2	121.6	21.6	21.6	106.7	6.7	6.7	PWL-Pt	C10		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	1.0	0
West-Mini Excavator		+	S_3	98.6	-1.4	-1.4	80.6	-19.4	-19.4	PWL-Pt	C2		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	1.0	0

Geometry - Area Sources

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
West-Jackhammer	S_1	3.00	r			336.54	247.96	73.00	70.00
						336.35	238.62	73.00	70.00
						352.02	239.06	73.00	70.00
						352.14	243.59	73.00	70.00
						345.30	243.70	73.00	70.00
						342.82	248.08	73.00	70.00
West-Power Driven Saw	S_2	1.50	r			350.36	255.74	71.50	70.00
						350.65	250.29	71.50	70.00
						406.90	250.37	71.50	70.00
						406.90	256.49	71.50	70.00
West-Mini Excavator	S_3	5.00	r			351.18	255.54	75.00	70.00
						350.67	242.79	75.00	70.00
						407.34	244.00	75.00	70.00
						407.17	255.19	75.00	70.00

Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height			
				left	right		horz.	vert.	Begin		End	
						(ft)	(ft)	(ft)	(ft)		(ft)	
West-Temp Barrier		+							12.00	r		

Geometry - Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height				Coordinates			
				left	right		horz.	vert.	Begin		End		x	y	z	Ground
						(ft)	(ft)	(ft)	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
West-Temp Barrier		+							12.00	r			335.52	243.13	82.00	70.00
													335.66	250.42	82.00	70.00
													347.46	250.57	82.00	70.00
													347.27	256.12	82.00	70.00
													407.57	257.34	82.00	70.00

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

Eilar Associates, Inc.
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Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R4-1			13	66.2	-80.2	75.4	0.0				12.00	r	537.40	336.11	82.00
R4-2			14	65.9	-80.2	75.4	0.0				22.00	r	537.40	336.11	92.00
R4-3			15	65.2	-80.2	75.4	0.0				32.00	r	537.40	336.11	102.00
R4-4			16	64.4	-80.2	75.4	0.0				42.00	r	537.40	336.11	112.00
R5-1			17	65.8	-80.2	75.4	0.0				12.00	r	659.88	279.28	82.00
R5-2			18	67.7	-80.2	75.4	0.0				22.00	r	659.88	279.28	92.00
R5-3			19	71.3	-80.2	75.4	0.0				32.00	r	659.88	279.28	102.00
R5-4			20	73.9	-80.2	75.4	0.0				42.00	r	659.88	279.28	112.00
R6-1			21	60.4	-80.2	75.4	0.0				12.00	r	751.65	281.85	82.00
R6-2			22	63.1	-80.2	75.4	0.0				22.00	r	751.65	281.85	92.00
R6-3			23	67.9	-80.2	75.4	0.0				32.00	r	751.65	281.85	102.00
R6-4			24	71.1	-80.2	75.4	0.0				42.00	r	751.65	281.85	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
East-Compressor		+		96.5	96.5	96.5	Lw	C8		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	3.00	r	692.59	261.19	73.00
East-Generator		+		96.1	96.1	96.1	Lw	C7		0.0	0.0	0.0				240.00	0.00	0.00	0.0		(none)	5.00	r	692.59	259.07	75.00
East-Dump Truck		+		107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	489.33	329.01	75.00

Area Sources

Name	Sel.	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving	
				Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Num	
				(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Ever
East-Jackhammer		+	S_1	117.6	17.6	17.6	99.1	-0.9	-0.9	PWL-Pt	C9		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	1.0	0.
East-Power Driven Saw		+	S_2	121.6	21.6	21.6	106.4	6.4	6.4	PWL-Pt	C10		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	1.0	0.
East-Mini Excavator		+	S_3	98.6	-1.4	-1.4	80.6	-19.4	-19.4	PWL-Pt	C2		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	1.0	0.

Geometry - Area Sources

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
East-Jackhammer	S_1	3.00	r			694.19	263.58	73.00	70.00
						694.53	255.66	73.00	70.00
						796.68	254.80	73.00	70.00
						796.17	261.86	73.00	70.00
East-Power Driven Saw	S_2	1.50	r			634.43	264.76	71.50	70.00
						634.17	258.21	71.50	70.00
						690.41	258.30	71.50	70.00
						690.41	264.41	71.50	70.00
East-Mini Excavator	S_3	5.00	r			634.43	264.76	75.00	70.00
						633.91	252.01	75.00	70.00
						690.58	253.22	75.00	70.00
						690.41	264.41	75.00	70.00

Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height			
				left	right		horz.	vert.	Begin		End	
						(ft)	(ft)	(ft)	(ft)		(ft)	
East-Temp Barrier		+							12.00	r		

Geometry - Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height				Coordinates			
				left	right		horz.	vert.	Begin		End		x	y	z	Ground
						(ft)	(ft)	(ft)	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
East-Temp Barrier		+							12.00	r			632.30	251.14	82.00	70.00
													632.28	264.82	82.00	70.00
													692.27	265.02	82.00	70.00
													797.69	262.57	82.00	70.00

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

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Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1-1			1	70.1	-80.2	75.4	0.0				12.00	r	153.20	253.54	82.00
R1-2			2	73.7	-80.2	75.4	0.0				22.00	r	153.20	253.54	92.00
R1-3			3	72.1	-80.2	75.4	0.0				32.00	r	153.20	253.54	102.00
R1-4			4	70.7	-80.2	75.4	0.0				42.00	r	153.20	253.54	112.00
R2-1			5	66.3	-80.2	75.4	0.0				12.00	r	328.84	269.23	82.00
R2-2			6	66.0	-80.2	75.4	0.0				22.00	r	328.84	269.23	92.00
R2-3			7	65.6	-80.2	75.4	0.0				32.00	r	328.84	269.23	102.00
R2-4			8	65.2	-80.2	75.4	0.0				42.00	r	328.84	269.23	112.00
R3-1			9	70.9	-80.2	75.4	0.0				12.00	r	333.39	336.11	82.00
R3-2			10	70.4	-80.2	75.4	0.0				22.00	r	333.39	336.11	92.00
R3-3			11	69.6	-80.2	75.4	0.0				32.00	r	333.39	336.11	102.00
R3-4			12	68.7	-80.2	75.4	0.0				42.00	r	333.39	336.11	112.00
R4-1			13	69.5	-80.2	75.4	0.0				12.00	r	537.40	336.11	82.00
R4-2			14	69.2	-80.2	75.4	0.0				22.00	r	537.40	336.11	92.00
R4-3			15	68.7	-80.2	75.4	0.0				32.00	r	537.40	336.11	102.00
R4-4			16	67.9	-80.2	75.4	0.0				42.00	r	537.40	336.11	112.00
R5-1			17	73.7	-80.2	75.4	0.0				12.00	r	659.88	279.28	82.00
R5-2			18	74.0	-80.2	75.4	0.0				22.00	r	659.88	279.28	92.00
R5-3			19	71.9	-80.2	75.4	0.0				32.00	r	659.88	279.28	102.00
R5-4			20	70.0	-80.2	75.4	0.0				42.00	r	659.88	279.28	112.00
R6-1			21	63.9	-80.2	75.4	0.0				12.00	r	751.65	281.85	82.00
R6-2			22	63.9	-80.2	75.4	0.0				22.00	r	751.65	281.85	92.00
R6-3			23	63.8	-80.2	75.4	0.0				32.00	r	751.65	281.85	102.00
R6-4			24	63.6	-80.2	75.4	0.0				42.00	r	751.65	281.85	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	166.17	193.04	60.85
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	164.37	187.95	58.85
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	158.56	186.64	58.12
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	159.02	192.54	60.83
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	684.92	209.33	63.77
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	686.91	209.24	63.76
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	687.22	205.07	62.79
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	689.79	207.69	63.40
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	364.63	300.90	75.00
Concrete Mixer				105.8	105.8	105.8	Lw	C5		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	506.05	299.53	75.00
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	363.85	290.62	75.00
Concrete Pump				105.8	105.8	105.8	Lw	C6		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	507.72	290.89	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	367.02	353.06	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	489.29	350.33	75.00
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	154.26	233.41	75.00
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	673.71	265.52	75.00

Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height			
				left	right		horz.	vert.	Begin		End	
						(ft)	(ft)	(ft)	(ft)		(ft)	
Sound Barrier									8.00	r		
Sound Barrier									8.00	r		

Geometry - Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height				Coordinates			
				left	right		horz.	vert.	Begin		End		x	y	z	Ground
						(ft)	(ft)	(ft)	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
Sound Barrier									8.00	r			667.73	266.40	78.00	70.00
													668.28	272.96	78.00	70.00
													679.49	271.60	78.00	70.00
													679.49	266.95	78.00	70.00
Sound Barrier									8.00	r			148.85	233.85	78.00	70.00
													149.40	240.41	78.00	70.00
													160.61	239.05	78.00	70.00
													160.61	234.40	78.00	70.00

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 18 Apr 2025

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (ft)	6561.68
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (ft)	3280.84
Min. Length of Section (ft)	3.28
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	328.08
Search Radius Rcvr	328.08
Max. Distance Source - Rcvr	3280.84 3280.84
Min. Distance Rvcr - Reflector	3.28 3.28
Min. Distance Source - Reflector	0.33
Industrial (ISO 9613 (1996))	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°F)	50
rel. Humidity (%)	70
Ground Absorption G	1.00
Wind Speed for Dir. (mph)	6.7
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1-1			1	69.7	-80.2	75.4	0.0				12.00	r	153.20	253.54	82.00
R1-2			2	73.6	-80.2	75.4	0.0				22.00	r	153.20	253.54	92.00
R1-3			3	73.6	-80.2	75.4	0.0				32.00	r	153.20	253.54	102.00
R1-4			4	72.0	-80.2	75.4	0.0				42.00	r	153.20	253.54	112.00
R2-1			5	58.5	-80.2	75.4	0.0				12.00	r	328.84	269.23	82.00
R2-2			6	59.1	-80.2	75.4	0.0				22.00	r	328.84	269.23	92.00
R2-3			7	59.7	-80.2	75.4	0.0				32.00	r	328.84	269.23	102.00
R2-4			8	60.1	-80.2	75.4	0.0				42.00	r	328.84	269.23	112.00
R3-1			9	66.9	-80.2	75.4	0.0				12.00	r	333.39	336.11	82.00
R3-2			10	66.6	-80.2	75.4	0.0				22.00	r	333.39	336.11	92.00
R3-3			11	65.9	-80.2	75.4	0.0				32.00	r	333.39	336.11	102.00
R3-4			12	65.2	-80.2	75.4	0.0				42.00	r	333.39	336.11	112.00
R4-1			13	66.4	-80.2	75.4	0.0				12.00	r	537.40	336.11	82.00
R4-2			14	66.1	-80.2	75.4	0.0				22.00	r	537.40	336.11	92.00
R4-3			15	65.5	-80.2	75.4	0.0				32.00	r	537.40	336.11	102.00
R4-4			16	64.8	-80.2	75.4	0.0				42.00	r	537.40	336.11	112.00
R5-1			17	70.1	-80.2	75.4	0.0				12.00	r	659.88	279.28	82.00
R5-2			18	74.5	-80.2	75.4	0.0				22.00	r	659.88	279.28	92.00
R5-3			19	72.9	-80.2	75.4	0.0				32.00	r	659.88	279.28	102.00
R5-4			20	71.6	-80.2	75.4	0.0				42.00	r	659.88	279.28	112.00
R6-1			21	58.1	-80.2	75.4	0.0				12.00	r	751.65	281.85	82.00
R6-2			22	59.6	-80.2	75.4	0.0				22.00	r	751.65	281.85	92.00
R6-3			23	60.8	-80.2	75.4	0.0				32.00	r	751.65	281.85	102.00
R6-4			24	62.4	-80.2	75.4	0.0				42.00	r	751.65	281.85	112.00

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)		(ft)	(ft)	(ft)
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	157.73	193.12	61.08
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	683.40	205.01	62.77
Compactor				108.7	108.7	108.7	Lw	C13		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	155.06	193.29	61.09
Compactor				108.7	108.7	108.7	Lw	C13		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	677.54	203.97	62.52
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	149.15	235.16	75.00
Excavator				108.9	108.9	108.9	Lw	C1		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	667.54	264.90	75.00
Compactor				108.7	108.7	108.7	Lw	C13		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	158.68	235.46	75.00
Compactor				108.7	108.7	108.7	Lw	C13		0.0	0.0	0.0				96.00	0.00	0.00	0.0		(none)	5.00	r	660.63	263.58	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	379.60	340.64	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	488.54	345.41	75.00
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	162.77	190.98	60.15
Dump Truck				107.1	107.1	107.1	Lw	C4		0.0	0.0	0.0				192.00	0.00	0.00	0.0		(none)	5.00	r	655.21	205.22	62.77

Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height				
				left	right		horz.	vert.	Begin		End		
						(ft)	(ft)	(ft)	(ft)		(ft)		
Sound Barrier									8.00	r			
Sound Barrier									8.00	r			

Geometry - Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height				Coordinates			
				left	right		horz.	vert.	Begin		End		x	y	z	Ground
						(ft)	(ft)	(ft)	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
Sound Barrier									8.00	r			654.77	263.11	78.00	70.00
													655.63	267.42	78.00	70.00
													673.37	266.90	78.00	70.00
													672.85	261.22	78.00	70.00
Sound Barrier									8.00	r			144.86	231.99	78.00	70.00
													144.21	239.37	78.00	70.00
													164.07	239.15	78.00	70.00
													163.96	233.08	78.00	70.00

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
West Bldg			BL_1	x	0		45.00	r
East Bldg			BL_2	x	0		45.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
West Bldg			BL_1	x	0		45.00	r	70.40	465.87	115.00	70.00
									72.81	248.82	115.00	70.00
									332.58	271.90	115.00	70.00
									325.69	464.49	115.00	70.00
East Bldg			BL_2	x	0		45.00	r	534.03	465.96	115.00	70.00
									539.67	276.27	115.00	70.00
									791.86	283.65	115.00	70.00
									781.01	469.00	115.00	70.00

Terrain Contours

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
c1							61.61	7.92	32.00
							186.29	17.76	28.00
							288.00	30.89	43.00
							405.03	27.06	32.00
							473.38	23.23	29.00
							690.48	0.27	26.00
							828.29	1.36	33.00
							875.86	0.27	35.00
c2							59.84	61.58	31.00
							146.24	70.88	38.00
							266.00	76.90	29.00
							352.95	80.18	35.00
							511.53	74.71	32.00
							662.46	75.80	32.00
							739.57	59.40	32.00
							818.31	41.35	45.00
							835.81	35.88	36.00
							867.53	35.34	36.00
c3							71.32	127.75	46.00
							111.76	149.36	46.00
							152.23	154.25	47.00
							276.39	143.61	44.00
							372.08	145.25	35.00
							484.74	144.71	39.00
							597.39	145.25	44.00
							684.33	145.80	41.00
							747.22	143.06	42.00
							829.25	143.61	40.00
							842.37	144.71	37.00
							872.45	144.16	37.00
c4							72.96	155.10	42.00
							141.86	163.30	42.00
							206.94	164.39	44.00
							287.32	167.13	44.00
							368.26	166.03	45.00
							472.16	167.13	47.00
							570.59	169.31	44.00
							664.10	167.13	49.00
							753.78	164.39	42.00
							838.55	167.13	38.00
							846.20	166.03	37.00
							866.43	166.03	37.00
c5					70.00		68.11	469.64	70.00
							67.01	244.89	70.00

Name	Sel.	M.	ID	OnlyPts	Height		Coordinates		
					Begin	End	x	y	z
					(ft)	(ft)	(ft)	(ft)	(ft)
							165.99	243.25	70.00
							311.45	248.17	70.00
							806.35	258.56	70.00
							799.24	476.75	70.00
							65.37	470.74	70.00
c6					40.00		900.24	483.66	40.00
							829.06	483.66	40.00
							847.29	181.57	40.00
							893.30	181.57	40.00
c7					70.00		79.25	217.55	70.00
							84.77	186.53	70.00
							154.38	203.07	70.00
							268.11	211.35	70.00
							339.10	216.17	70.00
							337.72	200.32	70.00
							696.81	213.41	70.00
							696.12	225.13	70.00
							827.77	229.95	70.00
							831.21	265.11	70.00
c8							763.10	225.47	61.33
							701.98	223.55	61.33
							702.26	218.77	61.33
							698.02	218.77	61.33
							697.61	211.66	59.33
							586.50	207.44	58.17
							335.52	198.74	57.25
							335.70	212.69	58.00
							334.58	212.63	59.33
							152.07	196.50	57.50

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)											Source
			Weight.	63	125	250	500	1000	2000	4000	8000	A	lin	
Excavator	C1	Lw (c)		111.0	114.0	107.0	104.0	103.0	101.0	100.0	97.0	108.9	117.0	Defra
Mini Excavator	C2	Lw (c)		107.0	104.0	93.0	97.0	93.0	90.0	85.0	80.0	98.6	109.3	Defra
Bulldozer	C3	Lw (c)		114.0	112.0	107.0	108.0	113.0	101.0	96.0	89.0	114.2	118.7	Defra
Dump Truck	C4	Lw (c)		108.0	108.0	107.0	103.0	102.0	100.0	95.0	85.0	107.1	113.5	Defra
Concrete Mixer	C5	Lw (c)		110.0	111.0	104.0	103.0	100.0	99.0	90.0	84.0	105.8	114.6	Defra
Concrete Pump	C6	Lw (c)		115.0	106.0	102.0	101.0	101.0	100.0	92.0	83.0	105.8	116.1	Defra
Generator	C7	Lw (c)		110.0	105.0	98.0	95.0	86.0	82.0	76.0	71.0	96.1	111.5	Defra
Compressor	C8	Lw (c)		115.0	104.0	95.0	90.0	88.0	86.0	89.0	78.0	96.5	115.4	Defra
Jackhammer	C9	Lw (c)		115.0	115.0	105.0	106.0	104.0	108.0	114.0	112.0	117.6	120.8	Defra
Power-Driven Saw	C10	Lw (c)		103.0	120.0	112.0	111.0	111.0	113.0	117.0	116.0	121.6	124.0	Defra
Hydraulic Jack	C11	Lw (c)		98.0	111.0	105.0	103.0	103.0	103.0	99.0	92.0	108.7	113.7	Defra
Drill Rig	C12	Lw (c)		115.0	123.0	112.0	111.0	109.0	107.0	99.0	92.0	114.6	124.4	Defra
Compactor	C13	Lw (c)		112.0	107.0	103.0	104.0	103.0	103.0	99.0	94.0	108.7	114.8	Defra
Compact Crane	C14	Lw (c)		111.0	107.0	102.0	94.0	95.0	94.0	87.0	81.0	100.8	113.0	Defra