BIOLOGICAL TECHNICAL REPORT

FOR

ETHANAC ROAD CROSSING OF THE SAN JACINTO RIVER

LOCATED IN THE CITY OF PERRIS RIVERSIDE COUNTY, CALIFORNIA

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May 24, 2018
[Revised July 30, 2020]
[Revised July 9, 2021]

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1.0 INTRODUCTION

1.1 Background and Scope of Work

This document provides the results of general biological surveys and focused biological surveys for the approximately 9.02-acre Ethanac Road Crossing Project (the Project) located in the City of Perris, Riverside County, California. This report identifies and evaluates impacts to biological resources associated with the proposed Project in the context of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and State and Federal laws, such as the Federal and State Endangered Species Acts (ESA), the Federal Clean Water Act (CWA), and the State of California Fish and Game Code.

The scope of this report includes a discussion of existing conditions for the Project site, all methods employed regarding the general biological surveys and focused biological surveys, the documentation of botanical and wildlife resources identified (including special-status species), and an analysis of impacts to biological resources. Methods of the study include a review of relevant literature, field surveys, and a Geographical Information System (GIS)-based analysis of vegetation communities. As appropriate, this report is consistent with accepted scientific and technical standards and survey guideline requirements issued by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), the California Native Plant Society (CNPS), and other applicable agencies/organizations.

The field study focused on a number of primary objectives that would comply with federal, state, and MSHCP requirements, including (1) general reconnaissance survey and vegetation mapping; (2) general biological surveys; (3) habitat assessments for special-status plant species (including species with applicable MSHCP survey requirements); (4) habitat assessments for special-status wildlife species (including species with applicable MSHCP survey requirements); (5) assessments for MSHCP riparian/riverine areas and vernal pools; and (6) assessments for areas subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) jurisdiction pursuant to Section 404 of the CWA, Santa Ana Regional Water Quality Control Board (Regional Board) jurisdiction pursuant to Section 401 of the CWA and Section 13260 of the California Water Code (CWC), and CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600–1617 of the California Fish and Game Code. Observations of all plant and wildlife species were recorded during the general biological surveys and are included as Appendix A: Floral Compendium and Appendix B: Faunal Compendium.

1.2 Project Location

The Project site is located in the City of Perris, Riverside County, California [Exhibit 1 – Regional Map] and is located within Sections 7, 13, and 18 of Township 5 South, Range 3 West, of the U.S. Geological Survey (USGS) 7.5" Romoland quadrangle map (dated 1953 and photorevised in 1979) [Exhibit 2 – Vicinity Map]. The Project site is bordered by residential development to the east and south, and undeveloped land to the south, west, and north.

1.3 Project Description

The proposed Project includes the construction of an approximately 450-foot long bridge (between abutments) crossing the San Jacinto River (in an east-to-west direction) at Ethanac Road (the Bridge) along with approximately 625 linear feet of road improvements to connect the paved portion of Ethanac Road east of the River to the proposed Bridge, approximately 540 linear feet of road improvements to extend Ethanac Road from the westerly Bridge abutment, and four water quality basins, storm drains to connect the water quality basins that will discharge treated runoff into the River (Refer to Figure 2 and Figure 3 of Appendix D).

The Bridge is proposed to be approximately 80-feet wide and will accommodate two 14-foot wide interior travel lanes, two 12-foot wide outside travel lanes, a 4-foot wide shoulder with a 10-foot wide multi-purpose trail on the westbound side, a 5-foot wide Class II bike lane on the eastbound side, and a 4-foot wide painted median. The Bridge will be an approximately 7-foot thick Cast-in-Place Pre-Stressed (CIP/PS) concrete box supported on triple column piers and two seat cantilever abutments on its east and west ends. The columns will rest on 3-column piers approximately 35 feet by 35 feet in size, which will be located on top of the underlying bedrock. As shown in the Section View[1] on Figure 3 of Appendix C both the westerly and easterly abutments will be skewed at approximately 32 degrees to match the flow line of the River. Grading within the River has been limited to the greatest extent possible in order to minimize impacts to the river and includes only to work that ensure proper drainage around the bridges structural elements commencing approximately 163 feet from the northern edge of the Bridge to a point approximately 215 feet downstream from the southern edge of the Bridge as measured from the centerline of the River (Figure 3.1, Appendix D). Un-grouted rip-rap and cut-off walls will be constructed at the base of the bridge abutments foundations to protect them from scour. Figure 3.1, Figure 3.2 and Figure 3.3 shows the general grading anticipated and changes from existing grade.

The proposed Bridge project is designed to accommodate both the proposed interim and ultimate San Jacinto River Stage 3 Master Drainage Plan (SJR3 MDP) configurations and flow rates after completion of the SJR3 MDP project (Refer to Figure 3.1, Appendix D). The SJR3 MDP project is being undertaken by the Riverside County Flood Control and Water Conservation District and is not a part of the Project evaluated in this Initial Study. [2]

As previously stated, the Project includes improvements to Ethanac Road in order to connect the new Bridge to the existing pavement of Ethanac Road east of the River and the extension of Ethanac Road west of the River. Approximately 650 linear feet of Ethanac Road east of the Bridge will be improved along its centerline and Ethanac Road will be extended approximately

[1] The Section View is a cross-section of the proposed Bridge that shows, from top to bottom, the finished surface of the Bridge, the piers, the location of rip-rap around the piers and on the channel sides, the areas of cut and fill within the channel, the finished channel surface after the Bridge is completed, prior to completion of the San Jacinto River Stage 3 project and the channel surface after completion of the San Jacinto River Stage 3 project.

[2] The Riverside County Flood Control and Water Conservation District issued a Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) on October 21, 2019 for the San Jacinto River Stage 3 (SJR3) Master Drainage Plan (MDP) Project. The proposed Bridge is not a component of the SJR3 MDP Project and has independent function and utility.

640 linear feet west of the westerly Bridge abutment (Refer to Figure 3, Appendix D). The proposed grading and roadway improvements include:

- Utility relocation (existing sewer and water lines and others as needed);
- Fill and compact ground to the proposed road surface and grading under the bridge, approximately 790 of raw fill cubic yards (CY) of raw cut and 29,409 CY of raw fill;
- Removal of approximately 1,867 CY yards of soil, which will be replaced with approximately 350 CY of rip-rap and 933 cubic yards of soil for the Bridge piers;
- Preparation and compaction of sub-grade of Ethanac Road and road transitions east and west of the Bridge;
- Installation of new, and extension of existing, wet and dry utility improvements through the bridge to the Project limits;
- Asphalt Concrete Paving over Class II Aggregate Base, width transition from existing 106-foot 6-lane road to the 65-foot interim 4-lane bridge;
- Installation of 8-inch curb, gutter, and sidewalk on the north side of the road;
- Installation of edge of pavement at the south side of Ethanac Road for the interim bridge width;
- Installation of ramps to allow access for maintenance;
- Drainage and water quality improvements (as described in the following paragraph); and
- Installation of signage, striping, and landscape improvements.

Drainage and water quality improvements to serve the Bridge and road improvements, and comply with County NPDES requirements, consist of four (4) water quality basins located on the north and south side of Ethanac Road at the west and east ends of the Project Site and storm drains to convey treated runoff to the River (Refer to Figure 3, Appendix D). The water quality basins will be approximately 80-feet by 15-feet in size. Treated runoff from the basins on the east side of the Project Site will be conveyed via 24-inch diameter storm drains to a 30-inch diameter storm drain that will discharge into the River. Treated runoff from the basins on the west side of the Project Site will be conveyed via 18-inch diameter storm drains to a 36-inch diameter storm drain to an 84-inch diameter storm drain that will discharge into the River.

The proposed Project will include street lighting along the Bridge and the extension of Ethanac Road for safety. These lights will be consistent with the existing lighting on Ethanac Road. Additionally, the lights will be shielded and directed onto the extension of Ethanac Road and the roadway deck of the Bridge, and not into the River, onto adjacent properties, or into the night sky.

Project construction is expected to take approximately 12 months and will utilize staging areas alongside the existing road shoulder or lanes of Ethanac Road. As part of the detailed construction plans for the Project, a Construction Traffic Management Plan shall be prepared and submitted to the City for approval. The plan may include signage, flagmen, cones, or other acceptable measures to safely guide motorists, cyclists, and pedestrians if a lane closure is necessary. Such measures shall be designed to allow safe access of the Project Site and safe passage along Ethanac Road

1.4 Existing Conditions

The Project site includes a portion of the San Jacinto River as well as adjacent upland areas. The upland portion is developed or disturbed, with the vegetation dominated by invasive non-native species. Several trails/roads are used throughout the upland area by off-road vehicles (ORVs) and general access along the San Jacinto River. The portion of the San Jacinto River within the Project site includes a mosaic of vegetation alliances including areas of emergent wetland vegetation, alkali meadow, non-native grassland, and riparian areas (native and non-native plants), while the banks are vegetated predominately by non-native grasses and forbs. The riparian-associated vegetation provides generally moderate to high value for locally common and special-status wildlife species, especially birds. A complete description of vegetation alliances present within the Project site is included in Section 4.2 of this report.

1.5 Relationship of the Project to the MSHCP

1.5.1 MSHCP Background

The Western Riverside County MSHCP is a comprehensive habitat conservation/planning program for Western Riverside County. The intent of the MSHCP is to preserve native vegetation and meet the habitat needs of multiple species, rather than focusing preservation efforts on one species at a time. The MSHCP provides coverage (including take authorization for listed species) for special-status plant and animal species, as well as mitigation for impacts to special-status species and associated native habitats.

Through agreements with the USFWS and CDFW, the MSHCP designates 146 special-status animal and plant species as Covered Species, of which the majority have no project-specific survey/conservation requirements. The MSHCP provides mitigation for project-specific impacts to these species for Projects that are compliant/consistent with MSHCP requirements.

The Covered Species that are not yet adequately conserved have additional requirements in order for these species to ultimately be considered "adequately conserved". A number of these species have survey requirements based on a project's occurrence within a designated MSHCP survey area and/or based on the presence of suitable habitat. These include Narrow Endemic Plant Species (MSHCP *Volume I, Section 6.1.3*), as identified by the Narrow Endemic Plant Species Survey Areas (NEPSSA); Criteria Area Plant Species (MSHCP *Volume I, Section 6.3.2*), as identified by the Criteria Area Plant Species Survey Areas (CAPSSA); animals species (burrowing owl, mammals, amphibians), as identified by survey areas (MSHCP *Volume I, Section 6.3.2*); and species associated with riparian/riverine areas and vernal pool habitats, i.e., least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), western yellow-billed cuckoo (*Coccyzus americanus*), and three species of listed fairy shrimp (MSHCP *Volume I, Section 6.1.2*). An additional 28 species (MSHCP *Volume I*, *Table 9.3*) not yet adequately conserved have species-specific objectives for the species to become adequately conserved. However, these species do not have project-specific survey requirements.

The goal of the MSHCP is to have a total Conservation Area in excess of 500,000 acres, including approximately 347,000 acres on existing Public/Quasi-Public (PQP) Lands, and

approximately 153,000 acres of Additional Reserve Lands targeted within the MSHCP Criteria Area. The MSHCP is divided into 16 separate Area Plans, each with its own conservation goals and objectives. Within each Area Plan, the Criteria Area is divided into Subunits, and further divided into Criteria Cells and Cell Groups (a group of criteria cells). Each Cell Group and ungrouped, independent Cell has designated "criteria" for the purpose of targeting additional conservation lands for acquisition. Projects located within the Criteria Area are subject to the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process to determine if lands are targeted for inclusion in the MSHCP Reserve. In addition, all Projects located within the Criteria Area are subject to the Joint Project Review (JPR) process, where the Project is reviewed by the Regional Conservation Authority (RCA) to determine overall compliance/consistency with the biological requirements of the MSHCP.

1.5.2 Relationship of the Project to the MSHCP

The Project site is located within Subunit 4, San Jacinto River Lower of the Meade Valley Area Plan of the MSHCP, with the majority of the site occurring within the Criteria Area, specifically within Criteria Cells 3570, 3659, and 3665 [Exhibit 4 – MSHCP Overlay Map]. Criteria Cell 3659 is part of Cell Group L (cell groups are a collection of cells with similar conservation focus), whereas Criteria Cells 3665 and 3659 are independent Cells. Lands within these Cells are described for conservation to contribute to the assembly of Proposed Constrained Linkage 19 and Proposed Linkage 7. Of the overall 9.02-acre Project footprint, approximately 6.70 acres are located within the Covered right-of-way (ROW) for Ethanac Road, with 2.32 acres located outside of the ROW, of which 1.01 acres is located within existing Additional Reserved Lands (ARL).

The Study Area is located within the MSHCP NEPSSA 3 and CAPSSA 3. Portions of the Study Area are located within the MSHCP Burrowing Owl Survey Area, but it is not located within the MSHCP Mammal or Amphibian Survey Areas.

Within the designated Survey Areas, the MSHCP requires habitat assessments, and focused surveys within areas of suitable habitat. For locations with positive survey results, the MSHCP requires that 90 percent of those portions of the property that provide for long-term conservation value for the identified species shall be avoided until it is demonstrated that conservation goals for the particular species have been met throughout the MSHCP. Findings of equivalency shall be made demonstrating that the 90-percent standard has been met, if applicable. If equivalency findings cannot be demonstrated, then "biologically equivalent or superior preservation" must be provided.

Ethanac Road is a Planned Road under MSHCP *Volume 1, Section 7.3.5*; therefore, the Project is a covered activity under the MSHCP. Specific design considerations for Ethanac Road require that the construction of a bridge over the San Jacinto River spans the river (per MSHCP *Table 7-4 Planned Facilities*).

2.0 METHODOLOGY

In order to adequately identify biological resources in accordance with the requirements of the MSHCP and federal and state ESAs, Glenn Lukos Associates (GLA) assembled biological data consisting of four main components:

- Delineation of aquatic resources (including wetlands and riparian habitat) subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), CDFW, and MSHCP riparian/riverine resources;
- Performance of vegetation mapping for the Study Area;
- Performance of habitat assessments and site-specific biological surveys, to evaluate the presence/absence of special-status species in accordance with the federal and state ESA's MSHCP habitat assessment/survey requirements; and
- Performance of focused surveys for special-status plants and focused protocol surveys for burrowing owl, least Bell's vireo and southwestern willow flycatcher.

The focus of the biological surveys was determined through initial site reconnaissance, a review of the CNDDB [CDFW 2017 CNPS 8th edition online inventory (CNPS 2017), the MSHCP, Natural Resource Conservation Service (NRCS) soil data, other pertinent literature, and knowledge of the region. Site-specific general surveys within the Study Area were conducted on foot in the proposed development areas for each target plant or animal species identified below.

Vegetation was mapped directly onto a 200-scale (1"=200') aerial photograph following the currently accepted List of Vegetation Alliances and Associations (or Natural Communities List). The list is based on A Manual of California Vegetation, Second Edition (MCVII), which is the California expression of the National Vegetation Classification. All flora and fauna identified in the Study Area during vegetation mapping was included in a floral and faunal compendium prepared for the Project. Vegetation communities not listed under the above-mentioned vegetation classification systems were named based on the dominant plant species present.

2.1 <u>Summary of Surveys</u>

GLA conducted biological studies to identify and analyze actual or potential impacts to biological resources associated with development of the Project Site. Observations of all plant and wildlife species were recorded during each of the above-mentioned survey efforts [Appendix A: Floral Compendium and Appendix B: Faunal Compendium]. The studies conducted include the following:

- Performance of vegetation mapping;
- Performance of site-specific habitat assessments and biological surveys to evaluate the potential presence/absence of special-status species (or potentially suitable habitat) to the satisfaction of federal and state regulations, and MSHCP requirements; and
- Delineation of aquatic resources (including wetlands and riparian habitat) potentially subject to the jurisdiction of the Corps, Regional Board, CDFW, and MSHCP riparian/riverine resources.

Table 2-1 provides a summary list of survey dates, survey types and personnel.

Table 2-1. Summary of Biological Surveys for the Project.

Survey Type	2017 Survey Dates	Biologists
General Biological Surveys and Vegetation Mapping	6/8, 6/20	TB, AN, MT
Focused Rare Plant Surveys	5/9, 6/8	TB
Focused Burrowing Owl Surveys	5/19, 5/26, 6/8, 6/20	TB
Focused Least Bell's Vireo Surveys	5/9, 5/19, 5/26, 6/8, 6/20, 6/30, 7/11, 7/25	TB, MT
Focused Southwestern Willow Flycatcher Surveys	5/22, 6/12, 6/22, 6/27, 7/6	JA

TB = Tony Bomkamp; MT = Michelle Tollett; JA = Jeff Ahrens; AN = April Nakagawa

Individual plants and wildlife species are evaluated in this report based on their "special-status." For the purpose of this report, plants were considered "special-status" based on one or more of the following criteria:

- Listing through the Federal and/or State Endangered Species Act (ESA);
- Occurrence in the CNPS Rare Plant Inventory (Rank 1A/1B, 2A/2B, 3, or 4); and/or
- Occurrence in the CNDDB inventory.

Wildlife species were considered "special-status" based on one or more of the following criteria:

- Listing through the Federal and/or State ESA; and
- Designation by the State as a Species of Special Concern (SSC) or California Fully Protected (CFP) species.

Vegetation communities and habitats were considered "special-status" based on the following criteria:

- Vegetation communities and habitats were considered of "special status" based on their occurrence in the CNDDB inventory.

2.2 Botanical Resources

A site-specific survey program was designed to accurately document the botanical resources within the Study Area, and consisted of five components: (1) a literature search; (2) preparation of a list of target special-status plant species and sensitive vegetation communities that could occur within the Study Area; (3) general field reconnaissance surveys; (4) vegetation mapping according to the List of Vegetation Alliances and Associations; and (5) habitat assessments and focused surveys for special-status plants (including those with MSHCP requirements in NEPSSA 3 and CAPSSA 3).

2.2.1 Literature Search

Prior to conducting fieldwork, pertinent literature on the flora of the region was examined. A thorough archival review was conducted using available literature and other historical records. These resources included the following:

- CNPS *Inventory of Rare and Endangered Plants* (online edition, v8-02) (CNPS 2020); and
- CNDDB for the USGS 7.5' quadrangles: Romoland, Steele Peak, Perris, Lakeview, Winchester, Bachelor Mountain, Murrieta, Wildomar, and Lake Elsinore (CNDDB 2020).

2.2.2 Vegetation Mapping

Vegetation communities within the Study Area were mapped according to the List of Vegetation Alliances and Associations (or Natural Communities List). The list is based on MCVII, which is the California expression of the National Vegetation Classification. Where necessary, deviations were made when areas did not fit into exact habitat descriptions. These vegetation communities were named based on the dominant plant species present. Plant communities were mapped in the field directly onto a 200-scale (1"=200') aerial photograph. A vegetation map is included as Exhibit 5 – Vegetation Map. Representative site photographs are included as Exhibit 10 – Site Photographs.

2.2.3 Special-Status Plant Species and Habitats Evaluated for the Project

A literature search was conducted to obtain a list of special status plants with the potential to occur within the Study Area. The CNDDB was initially consulted to determine well-known occurrences of plants and habitats of special concern in the region. Other sources used to develop a list of target species for the survey program included the CNPS online inventory (2015) and the MSHCP.

Based on this information, vegetation profiles and a list of target sensitive plant species and habitats that could occur within the Study Area were developed and incorporated into a mapping and survey program to achieve the following goals: (1) characterize the vegetation associations and land use; (2) prepare a detailed floristic compendium; (3) identify the potential for any special status plants that may occur within the Study Area; and (4) prepare a map showing the distribution of any sensitive botanical resources associated with the Study Area, if applicable.

The Study Area is located within NEPSSA 3 and CAPSSA 3. Pursuant to the MSHCP, the following target species must be evaluated through habitat assessments and focused surveys (if suitable habitat is present):

- San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*);
- Parish's brittlescale (*Atriplex parishii*);
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*);
- Thread-leaved brodiaea (*Brodiaea filifolia*);

- Smooth tarplant (*Centromadia pungens* ssp. *laevis*);
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*);
- Little mousetail (*Myosurus minimus*);
- Mud nama (*Nama stenocarpa*);
- Spreading navarretia (*Navarretia fossalis*);
- California Orcutt grass (*Orcuttia californica*); and
- Wright's trichocoronis (*Trichocoronis wrightii*).

2.2.4 Botanical Surveys

GLA biologist Tony Bomkamp visited the Study Area on May 9 and June 8, 2017 to conduct general botanical surveys and focused surveys for special-status plants. Surveys were conducted in accordance with accepted botanical survey guidelines (CDFW 2009, CNPS 2001, USFWS 2000). As applicable, surveys were conducted at appropriate times based on precipitation and flowering periods. An aerial photograph, a soil map, and/or a topographic map were used to determine the community types and other physical features that may support sensitive and uncommon taxa or communities within the Study Area. GLA also conducted monitoring of rare plant populations within the San Jacinto River floodplain to track phenology and ensure that target species were detectable at the time of the focused surveys. Focused surveys were conducted by following meandering transects within target areas of potential habitat. All plant species encountered during the field surveys were identified and recorded following the above-referenced guidelines adopted by CNPS (2010) and CDFW by Nelson (1984). A complete list of the plant species observed is provided in Appendix A. Scientific nomenclature follows Jepson Manual (2012) and common names used in this report follow Baldwin et al (2012), and Munz (1974).

2.3 Wildlife Resources

Wildlife species were evaluated and detected during field surveys by sight, call, tracks, and scat. Site reconnaissance was conducted in such a manner as to allow inspection of the entire Study Area by direct observation, including the use of binoculars. Observations of physical evidence and direct sightings of wildlife were recorded in field notes during the visit. A complete list of wildlife species observed within the Study Area is provided in Appendix B. Scientific nomenclature and common names for vertebrate species referred to in this report follow the Complete List of Amphibian, Reptile, Bird, and Mammal Species in California (CDFW 2008), Standard Common and Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians 6th Edition, Collins and Taggert (2009) for amphibians and reptiles, and the American Ornithologists' Union Checklist 7th Edition (2009) for birds. The methodology (including any applicable survey protocols) utilized to conduct general surveys, habitat assessments, and/or focused surveys for special-status animals are included below.

2.3.1 General Surveys

Birds

During the general biological and reconnaissance survey within the Study Area, birds were detected incidentally by direct observation and/or by vocalizations, with identifications recorded in field notes.

Mammals

During general biological and reconnaissance survey within the Study Area, mammals were identified and detected incidentally by direct observations and/or by the presence of diagnostic sign (i.e., tracks, burrows, scat, etc.).

Reptiles and Amphibians

During general biological and reconnaissance surveys within the Study Area, reptiles and amphibians were identified incidentally during surveys. Habitats were examined for diagnostic reptile sign, which include shed skins, scat, tracks, snake prints, and lizard tail drag marks. All reptiles and amphibian species observed, as well as diagnostic sign, were recorded in field notes.

2.3.2 Special-Status Animal Species Reviewed

A literature search was conducted to obtain a list of special-status wildlife species with the potential to occur within the Study Area. Species were evaluated based on two factors: 1) species identified by the CNDDB as occurring (either currently or historically) on or in proximity to the Study Area, and 2) any other special-status animals that are known to occur within the vicinity of the Study Area, or for which potentially suitable habitat occurs on the Study Area.

2.3.3 Habitat Assessment for Special Status Animal Species

GLA previously conducted habitat assessments for special-status avifauna and conducted focused surveys for southwestern willow flycatcher and least Bell's between April 14 and July 31, 2014 and, as such, it was known that the site supports or has previously supported least Bell's vireo.

2.3.4 Focused Surveys for Special-Status Animals Species

<u>Burrowing Owl</u>

Portions of the Study Area are located within the MSHCP survey area for the burrowing owl (*Athene cunicularia*). GLA biologist Tony Bomkamp conducted a focused burrow survey and focused surveys for the burrowing owl for all suitable habitat areas within the Study Area. Surveys were conducted in accordance with survey guidelines described in the 2006 MSHCP Burrowing Owl Survey Instructions. The guidelines stipulate that four focused survey visits

should be conducted between March 1 and August 31. Within areas of suitable habitat, the MSHCP first requires a focused burrow survey to map all suitable burrows. The focused burrow survey was conducted on May 9, 2017. Focused burrowing owl surveys were conducted on May 19 and 26, and June 8 and 20, 2017. As recommended by the survey guidelines, the survey visits were conducted from one hour prior to sunrise to two hours after sunrise. Weather conditions during the surveys were conducive to a high level of bird activity.

Surveys were conducted by walking meandering transects throughout areas of suitable habitat, which include the disturbed buckwheat, disturbed/developed, non-native grassland, rancher's fireweed, and ruderal habitats, totaling 9.76 acres [Exhibit 5]. Transects were spaced between 7 m and 20 m apart, adjusting for vegetation height and density, in order to provide adequate visual coverage of the survey areas. At the start of each transect, and at least every 100 m along transects, the survey area was scanned for burrowing owls using binoculars. All suitable burrows were inspected for diagnostic owl sign (e.g., pellets, prey remains, whitewash, feathers, bones, and/or decoration) in order to identify potentially occupied burrows. Table 2-2 summarizes the focused burrowing owl survey visits. The results of the burrowing owl surveys are documented in Section 4.0 of this report.

Table 2-2. Summary of Burrowing Owl Surveys

Survey Date	Biologist	Start/End Time	Start/End Temperature (^{O}F)	Start/End Wind Speed (mph)	Cloud Cover
5/19/17	TB	5:20/6:00 a.m.	47/48	0/0	Clear
5/26/17	TB	5:25/6:00 a.m.	55/57	0-3/0-3	Few high clouds
6/8/17	TB	6:15/7:00 a.m.	62/62	2-3/2-3	Marine layer
6/20/17	TB	5:15/6:00 a.m.	63/64	0/0	Clear

TB = Tony Bomkamp

Least Bell's Vireo

GLA biologists Tony Bomkamp and Michelle Tollett conducted focused surveys for the least Bell's vireo for all suitable habitat areas within the Study Area. Surveys were conducted in accordance with the 2001 USFWS survey guidelines, which stipulate that eight surveys should be conducted between April 10 and July 31, with a minimum of ten days separating each survey visit.

Focused surveys were conducted on May 9, May 19, May 26, June 8, June 20, June 30, July 11, and July 25, 2017. Pursuant to the survey guidelines, the surveys were conducted between sunrise and 11:00 a.m. Weather conditions during the surveys were conducive to a high level of bird activity. Table 2-3 summarizes the vireo survey visits. The results of the vireo surveys are documented in Section 4.0 of this report.

Table 2-3. Summary of Least Bell's Vireo Surveys

Survey Date	Biologist	Start/End Time	Start/End Temperature (^{O}F)	Start/End Wind Speed (mph)	Cloud Cover
5/9/17	TB	6:00/8:00 a.m.	54/60	3-5/3-5	Partly cloudy
5/19/17	TB	6:00/8:00 a.m.	48/61	0/0	Clear
5/26/17	TB	6:00/8:00 a.m.	57/63	1-3/0	Few high clouds
6/8/17	TB	7:00/9:00 a.m.	62/62	2-3/2-3	Marine layer
6/20/17	TB	6:00/7:00 a.m.	64/69	0/0	Clear
6/30/17	MT	9:00/11:00 a.m.	80/95	0/0	Clear
7/11/17	MT	7:30/11:00 a.m.	78/87	0-1/0-1	Clear
7/25/17	MT	8:00/11:00 a.m.	78/85	0/0	Partly cloudy

TB=Tony Bomkamp; MT=Michelle Tollett

Southwestern Willow Flycatcher

GLA biologist Jeff Ahrens (TE052159-5) conducted focused surveys for the southwestern willow flycatcher for all suitable habitat areas within the Study Area. Surveys were conducted in accordance with the 2010 USFWS survey guidelines, which stipulate that five surveys should be conducted between three survey periods (May 15 to May 31, June 1 to June 24, and June 25 to July 17). The southwestern willow flycatcher is one of four subspecies of willow flycatcher that occur within southern California, but is the only subspecies that breeds in southern California. The other subspecies may occur in southern California during the first and second surveys periods as they migrate through the area onwards to breeding areas, but will not breed in southern California. Therefore, the presence of the southwestern willow flycatcher is determined by willow flycatchers that remain in southern California during the third survey period.

Focused surveys were conducted on May 22, June 12, 22, and 27, and July 6, 2017. Pursuant to the survey guidelines, the surveys were conducted between sunrise and 10:00 a.m. Weather conditions during the surveys were conducive to a high level of bird activity. Table 2-4 summarizes the flycatcher survey visits. The results of the flycatcher surveys are documented in Section 4.0 of this report.

Table 2-4. Summary of Southwestern Willow Flycatcher Surveys

Survey Date	Biologist	Start/End Time	Start/End Temperature (^{O}F)	Start/End Wind Speed (mph)	Cloud Cover
5/22/17	JA	6:20/8:30 a.m.	59/72	0-2/0-3	0
6/12/17	JA	6:10/8:20 a.m.	52/57	1-3/2-4	50
6/22/17	JA	6:10/8:55 a.m.	60/69	1-2/1-3	100/50
6/27/17	JA	6:00/8:30 a.m.	64/79	2-3/1-2	0
7/6/17	JA	6:00/8:30 a.m.	65/76	1-3/1-2	10/20

JA=Jeff Ahrens

Listed Fairy Shrimp

The Project footprint that was evaluated by GLA in 2017 did not contain habitat suitable to support fairy shrimp, including listed species. However, the current footprint has expanded further west and east from the San Jacinto River and includes two depression features that were surveyed for fairy shrimp by GLA in 2013/2014 as part of the adjacent Riverwoods Development Project. Those surveys included a wet season survey performed for the 2013/2014 wet season (report dated August 28, 2014) and a dry season survey in 2014 (report dated November 26, 2014).

Wet Season Surveys

Wet season surveys for vernal pool branchiopods were performed by GLA biologist Kevin Livergood (TE-172638-2) and complied with the USFWS' *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods.*[1] Sampling for the presence of fairy shrimp was performed using a dip net within representative portions of the depression bottom, edges, and vertical water column when there was adequate ponding. In the field, specimens were collected in receptacles containing distilled water and immediately transferred to a vial containing a 95% ethanol solution. Each sample was labeled according to the depression from which the sample was collected. For species identification, each specimen was inspected in the lab using a dissecting microscope and the "Key to California Fairy Shrimps" found in Eriksen and Belk (1999).[2] Information pertaining to each pool was recorded on vernal pool data sheets.

Per the protocol, the features were sampled once every two weeks, beginning no later than two weeks after initial inundation and continuing until the feature was no longer inundated, or until it had experienced 120 days of continuous inundation. In cases where features dried and refilled during the same wet season, sampling was reinitiated within eight days of refilling upon meeting the 3 centimeters (cm) standing water criteria and continued until the feature was no longer inundated. Eight features exhibited inundation greater than 3 centimeters during the 2013-2014 wet season. Inundation did not extend for a period of 120 consecutive days for any of the ponded features.

Dry Season Surveys

Soil sample collection and processing followed the USFWS *Interim Survey Guidelines to Permittees for Recovery Permits Under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (April, 1996). Soil sample collection was conducted by GLA biologist Kevin Livergood on September 16, September 19, and September 24, 2014. A total of ten (10) samples were collected from each of the twenty (20) features that exhibited at least some suitability for fairy shrimp. Starting with the edge of each depression, four (4) samples were taken from equidistant points along the longest transect of each depression. An

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[1] *USFWS. 1996. Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods.*

[2] *Eriksen, C. and D. Belk. 1999. Fairy Shrimps of California's Puddles, Pools, and Playas. Mad River Press, Inc. Eureka, California.*

additional four (4) samples were then taken at equidistant points along the widest transect of each depression. Two (2) additional samples were taken from the deepest part of each feature for a total of ten (10) samples collected from each suitable feature.

Soil samples of approximately 100 milliliters (ml) each were removed at each sub-sample location (for a total of 1 liter per feature) using a hand trowel and transferred to individually labeled bags for future processing. Per the protocol, if a feature measured less than 3 meters (m) then the total soil sample did not exceed ½ liter in volume for the feature. Each depression was photographed and hand-drawn sketches of sub-sample locations were recorded on dry season data sheets.

Soil samples were analyzed by HELIX. The samples were prepared for analysis by dissolving the clumps of soil in water and sequentially sieving the material through 710-, 355-, and 212 µm pore size screens. The small size of these screens ensures that cysts from the target fairy shrimp species are retained. The portion of each sample retained in the screens was dispersed in a brine solution to separate the organic from the inorganic material. The organic fraction was decanted, dried, and examined under a microscope. In the event that cysts are detected, they are identified to genus level based on surface characteristics. More than a single species of the genus *Branchinecta* can occur in Riverside and Orange Counties but cannot be identified past genus level based on cyst characteristics alone.

2.4 Jurisdictional Delineation

GLA conducted a jurisdictional delineation addressing areas subject to Corps jurisdiction pursuant to Section 404 of the CWA, Regional Board jurisdiction pursuant to Section 401 of the CWA and Section 13260 of the CWC, and CDFW jurisdiction pursuant to Section 1602 of the California Fish and Game Code. A delineation was originally conducted in 2016 on May 27, June 1, and June 15, 2016, but recently updated on April 30, 2021. Prior to beginning the field delineation, GLA reviewed a previous jurisdictional delineation conducted in 2005 as well as color aerial photographs and the previously cited USGS topographic map to determine the locations of potential areas of Corps/Regional Board/CDFW jurisdiction. Suspected jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils, and hydrology.

Potential wetland habitats within the Study Area were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual[3] (Wetland Manual) and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement)[4]. The presence of an Ordinary High Water Mark (OHWM) was determined using the 2008 Field Guide to Identification of the Ordinary High

[3] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.

[4] U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Version 2.0). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Water Mark (OHWM) in the Arid West Region of the Western United States[5] in conjunction with the Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.[6] While in the field the limits of the OHWM, wetlands, and CDFW jurisdiction were recorded using a handheld Global Positioning Satellite (GPS) unit, providing sub-meter accuracy, and/or copies of the aerial photography. Other data were recorded onto the appropriate datasheets. The results of the Jurisdictional Delineation are depicted on Exhibits 7A and 7B.

2.5 MSHCP Riparian/Riverine Areas and Vernal Pools

GLA surveyed the Study Area for riparian/riverine areas and vernal pool/seasonal pool habitat. *Volume I, Section 6.1.2* of the MSHCP describes the process through which protection of riparian/riverine areas and vernal pools would occur within the MSHCP Plan Area. The purpose is to ensure that the biological functions and values of these areas throughout the MSHCP Plan Area are maintained such that habitat values for species inside the MSHCP Conservation Area are maintained. The MSHCP requires that as projects are proposed within the overall Plan Area, the effect of those projects on riparian/riverine areas and vernal pools must be addressed.

The MSHCP defines riparian/riverine areas as *lands which contain Habitat dominated by trees, shrubs, persistent emergent mosses and lichens, which occur close to or which depend upon soils moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year.*

The MSHCP defines vernal pools as *seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetland indictors of hydrology and/or vegetation during the drier portion of the growing season.*

With the exception of wetlands created for the purpose of providing wetlands habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating characteristics as described above which are artificially created are not included in these definitions.

3.0 REGULATORY SETTING

The proposed Project is subject to state and federal regulations associated with a number of regulatory programs. These programs often overlap and were developed to protect natural resources, including: state- and federally listed plants and animals; aquatic resources including rivers and creeks, ephemeral streambeds, wetlands, and areas of riparian habitat; other special-

[5] Lichvar, R. W., and S. M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. ERDC/CRREL TR-08-12. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. (http://www.crrel.usace.army.mil/library/technicalreports/ERDC-CRREL-TR-08-12.pdf).

[6] Curtis, Katherine E. and Robert Lichevar. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. ERDC/CRREL TN-10-1. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory.

status species which are not listed as threatened or endangered by the state or federal governments; and other special-status vegetation communities.

3.1 State and/or Federally Listed Plants or Animals

3.1.1 State of California Endangered Species Act

California's Endangered Species Act (CESA) defines an endangered species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." The State defines a threatened species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species." Candidate species are defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list." Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the Federal Endangered Species Act (FESA), CESA does not list invertebrate species.

Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened, endangered, or candidate species by stating "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided." Under the CESA, "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Exceptions authorized by the state to allow "take" require permits or memoranda of understanding and can be authorized for endangered species, threatened species, or candidate species for scientific, educational, or management purposes and for take incidental to otherwise lawful activities. Sections 1901 and 1913 of the California Fish and Game Code provide that notification is required prior to disturbance.

3.1.2 Federal Endangered Species Act

The FESA of 1973 defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range." Under provisions of Section 9(a)(1)(B) of the FESA it is unlawful to "take" any listed species. "Take" is defined in Section 3(18) of FESA: "...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Further, the USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification that result in injury to, or death of

species as forms of "take." These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a Federal agency for an action that could affect a federally listed plant and animal species, the property owner and agency are required to consult with USFWS. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants.

3.1.3 State and Federal Take Authorizations for Listed Species

Federal or state authorizations of impacts to or incidental take of a listed species by a private individual or other private entity would be granted in one of the following ways:

- Section 7 of the FESA stipulates that any federal action that may affect a species listed as threatened or endangered requires a formal consultation with USFWS to ensure that the action is not likely to jeopardize the continued existence of the listed species or result in destruction or adverse modification of designated critical habitat. 16 U.S.C. 1536(a)(2).
- In 1982, the FESA was amended to give private landowners the ability to develop Habitat Conservation Plans (HCP) pursuant to Section 10(a) of the FESA. Upon development of an HCP, the USFWS can issue incidental take permits for listed species where the HCP specifies at minimum, the following: (1) the level of impact that will result from the taking, (2) steps that will minimize and mitigate the impacts, (3) funding necessary to implement the plan, (4) alternative actions to the taking considered by the applicant and the reasons why such alternatives were not chosen, and (5) such other measures that the Secretary of the Interior may require as being necessary or appropriate for the plan.
- Sections 2090-2097 of the CESA require that the state lead agency consult with CDFW on projects with potential impacts on state-listed species. These provisions also require CDFW to coordinate consultations with USFWS for actions involving federally listed as well as state-listed species. In certain circumstances, Section 2080.1 of the California Fish and Game Code allows CDFW to adopt the federal incidental take statement or the 10(a) permit as its own based on its findings that the federal permit adequately protects the species under state law.

3.1.4 Take Authorizations Pursuant to the MSHCP

The MSHCP was adopted on June 17, 2003, and an Implementing Agreement (IA) was executed between the USFWS and CDFW and participating entities. The MSHCP is a comprehensive habitat conservation-planning program for western Riverside County. The intent of the MSHCP is to preserve native vegetation and meet the habitat needs of multiple species, rather than focusing preservation efforts on one species at a time. As such, the MSHCP is intended to streamline review of individual projects with respect to the species and habitats addressed in the MSHCP, and to provide for an overall Conservation Area that would be of greater benefit to biological resources than would result from a piecemeal regulatory approach. The MSHCP provides coverage (including take authorization under CESA and under Section 10 of FESA for listed species) for special-status plant and animal species, as well as mitigation for impacts to sensitive species (listed and non-listed).

Through agreements with the USFWS and the CDFW, the MSHCP designates 146 special-status animal and plant species that receive some level of coverage under the plan. Of the 146 "Covered Species" designated under the MSHCP, the majority of these species have no additional survey/conservation requirements. In addition, through project participation with the MSHCP, the MSHCP provides mitigation for project-specific impacts to Covered Species. As noted above, project-specific survey requirements exist for species designated as "Covered Species not yet adequately conserved". These include Narrow Endemic Plant Species, as identified by the Narrow Endemic Plant Species Survey Areas (NEPSSA); Criteria Area Plant Species identified by the Criteria Area Species Survey Areas (CASSA); animal species as identified by survey area; and plant and animal species associated with riparian/riverine areas and vernal pool habitats (*Volume I, Section 6.1.2* of the MSHCP document).

3.2 Jurisdictional Waters

3.2.1 Army Corps of Engineers

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a), pursuant to the *Navigable Waters Protection Rule*[7] (NWPR), as:

(a) Jurisdictional waters. For purposes of the Clean Water Act, 33 U.S.C. 1251 *et seq.* and its implementing regulations, subject to the exclusions in paragraph (b) of this section, the term ''waters of the United States'' means:

(1) The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide;
(2) Tributaries;
(3) Lakes and ponds, and impoundments of jurisdictional waters; and
(4) Adjacent wetlands.

(b) Non-jurisdictional waters. The following are not ''waters of the United States'':

(1) Waters or water features that are
not identified in paragraph (a)(1), (2), (3), or (4) of this section;
(2) Groundwater, including groundwater drained through subsurface drainage systems;
(3) Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools;
(4) Diffuse stormwater run-off and directional sheet flow over upland;
(5) Ditches that are not waters identified in paragraph (a)(1) or (2) of this section, and those portions of ditches constructed in waters identified in paragraph (a)(4) of this section that do not satisfy the conditions of paragraph (c)(1) of this section;
(6) Prior converted cropland;
(7) Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease;

[7] U.S. Environmental Protection Agency & Department of Defense. 2020. Federal Register / Vol. 85, No. 77 / Tuesday, April 21, 2020 / Rules and Regulations.

(8) Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters, so long as those artificial lakes and ponds are not impoundments of jurisdictional waters that meet the conditions of paragraph (c)(6) of this section;
(9) Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;
(10) Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff;
(11) Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention, and infiltration basins and ponds, constructed or excavated in upland or in non-jurisdictional waters; and
(12) Waste treatment systems.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

1. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term "wetlands" (a subset of "waters of the United States") is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the Corps published the Wetland Manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the Wetland Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the Wetland Manual and Arid West Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the Arid West 2016 Regional Wetland Plant List[8],[9]);

[8] Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. Arid West 2016 Regional Wetland Plant List. Phytoneuron 2016-30: 1-17. Published 28 April 2016.
[9] Note the Corps also publishes a National List of Plant Species that Occur in Wetlands (Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016.); however, the Regional Wetland Plant List should be used for wetland delineations within the Arid West Region.

- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

- Whereas the Wetland Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

3.2.2 Regional Water Quality Control Board

The State Water Resource Control Board and each of its nine Regional Boards regulate the discharge of waste (dredged or fill material) into waters of the United States[10] and waters of the State. Waters of the United States are defined above in Section II.A and waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050[e]).

Section 401 of the CWA requires certification for any federal permit or license authorizing impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as Section 404 of the CWA and Section 10 of the Safe Rivers and Harbors Act, to ensure that the impacts do not violate state water quality standards. When a project could impact waters outside of federal jurisdiction, the Regional Board has the authority under the Porter-Cologne Water Quality Control Act to issue Waste Discharge Requirements (WDRs) to ensure that impacts do not violate state water quality standards. Clean Water Act Section 401 Water Quality Certifications, WDRs, and waivers of WDRs are also referred to as orders or permits.

1. State Wetland Definition

The State Board Wetland Definition and Procedures define an area as wetland as follows: *An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.*

The following wetlands are waters of the State:

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[10] Therefore, wetlands that meet the current definition, or any historic definition, of waters of the U.S. are waters of the state. In 2000, the State Water Resources Control Board determined that all waters of the U.S. are also waters of the state by regulation, prior to any regulatory or judicial limitations on the federal definition of waters of the U.S. (California Code or Regulations title 23, section 3831(w)). This regulation has remained in effect despite subsequent changes to the federal definition. Therefore, waters of the state includes features that have been determined by the U.S. Environmental Protection Agency (U.S. EPA) or the U.S. Army Corps of Engineers (Corps) to be "waters of the U.S." in an approved jurisdictional determination; "waters of the U.S." identified in an aquatic resource report verified by the Corps upon which a permitting decision was based; and features that are consistent with any current or historic final judicial interpretation of "waters of the U.S." or any current or historic federal regulation defining "waters of the U.S." under the federal Clean Water Act.

1. *Natural wetlands;*
2. *Wetlands created by modification of a surface water of the state;*[11] *and*
3. *Artificial wetlands*[12] *that meet any of the following criteria:*

    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other water of the state;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):
        i. Industrial or municipal wastewater treatment or disposal,
        ii. Settling of sediment,
        iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
        iv. Treatment of surface waters,
        v. Agricultural crop irrigation or stock watering,
        vi. Fire suppression,
        vii. Industrial processing or cooling,
        viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
        ix. Log storage,
        x. Treatment, storage, or distribution of recycled water, or
        xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
        xii. Fields flooded for rice growing.[13]

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[11] "Created by modification of a surface water of the state" means that the wetland that is being evaluated was created by modifying an area that was a surface water of the state at the time of such modification. It does not include a wetland that is created in a location where a water of the state had existed historically, but had already been completely eliminated at some time prior to the creation of the wetland. The wetland being evaluated does not become a water of the state due solely to a diversion of water from a different water of the state.

[12] Artificial wetlands are wetlands that result from human activity.

[13] Fields used for the cultivation of rice (including wild rice) that have not been abandoned due to five consecutive years of non-use for the cultivation of rice (including wild rice) that are determined to be a water of the state in accordance with these Procedures shall not have beneficial use designations applied to them through the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, except as otherwise required by federal law for fields that are considered to be waters of the United States. Further, agricultural inputs legally applied to fields used for the cultivation of rice (including wild rice) shall not constitute a discharge of waste to a water of the state. Agricultural inputs that migrate to a surface water or groundwater may be considered a discharge of waste and are subject to waste discharge requirements or waivers of such requirements pursuant to the Water Board's authority to issue or waive waste discharge requirements or take other actions as applicable.

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not waters of the state. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state.

3.2.3 California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW also defines a stream as “a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators.”

It is important to note that the Fish and Game Code defines fish and wildlife to include: all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities including the habitat upon which they depend for continued viability (FGC Division 5, Chapter 1, section 45 and Division 2, Chapter 1 section 711.2(a) respectively). Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

4.0 RESULTS

This section provides the results of general biological surveys, vegetation mapping, habitat assessments and focused surveys for special-status plants and animals, an assessment for MSHCP riparian/riverine areas and vernal pools, and a jurisdictional delineation for Waters of the United States (including wetlands) subject to the jurisdiction of the Corps and Regional Board, and streams (including riparian vegetation) and lakes subject to the jurisdiction of CDFW.

4.1 Existing Conditions

The upland portion of the Study Area is heavily disturbed and is dominated by invasive non-native species. Several trails are maintained throughout the upland area, and the upland area west of the San Jacinto River is heavily disturbed due to ATV and other motorized vehicle use. The Study Area portion of the San Jacinto River includes a mosaic of vegetation alliances including areas of emergent wetland vegetation, alkali meadow areas, non-native grassland, riparian areas dominated by willows (*Salix* spp.) and mule fat (*Baccharis salicifolia*), while

banks vegetated predominately by non-native plants such as Russian thistle (*Salsola tragus*) and other non-native species.

The Soil Conservation Service (SCS)[14] has mapped the following soil types as occurring in the general vicinity of the project site (Exhibit 6 – Soils Map):

4.1.1 Soils

Arbuckle loam, 2 to 8 percent slopes

Soils of the Arbuckle series are well drained and have slopes of 2 to 25 percent. They occur on alluvial fans and developed in alluvium from metasedimentary rocks. Vegetation is chiefly annual grasses, forbs, and chamise. In a typical profile, the surface layer is brown gravelly loam and pale-brown gravelly very fine sandy loam about 12 inches thick. The subsoil is brown gravelly loam and gravelly clay loam, and it extends to a depth of about 45 inches. The substratum is yellowish-brown very gravelly sandy loam. The Arbuckle soils are used for dryland grain and for irrigated citrus, alfalfa, lemons, and grain.

Escondido fine sandy loam, 2 to 8 percent slopes, eroded

The Escondido series consists of well drained soils on uplands in the Santa Ana Mountains. These soils formed in material weathered from metamorphosed sandstone. Slopes are 9 to 30 percent. The vegetation is mostly an oak-grass type. In a typical profile, the surface layer is brown, slightly acid and medium acid very fine sandy loam 16 inches thick. The subsoil is light yellowish brown, medium acid very fine sandy loam 13 inches thick. Slightly weathered metamorphic sandstone is at a depth of 29 inches. Escondido soils are used for pasture, range, watershed, and wildlife.

Friant fine sandy loam, 5 to 25 percent slopes, eroded

The Friant series consists of somewhat excessively drained soils in the mountains. These soils formed in material weathered from fine grained metasedimentary rock. Slopes are 30 to 70 percent. The vegetation is mostly California sagebrush, black sage, flattop, buckwheat, and other common brush plants. In a typical profile, the soil is brown gravelly fine sandy loam 17 inches thick. Very dark gray, fractures, extremely hard metasedimentary rock extends to a depth of 34 inches or more. The soil is slightly acid. About 2 percent of the soil surface is large, low rock outcrops. These soils are used for watershed, wildlife, and, to a limited extent, for range.

Lodo rocky loam, 8 to 25 percent slopes, eroded

The Lodo series consists of somewhat excessively drained upland soils on slopes of 8 to 50 percent. These soils developed on metamorphosed fine-grained sandstone. Vegetation is chiefly annual grasses, forbs, and chaparral. In a typical profile, the surface layer is brown gravelly loam about 8 inches thick. Underlying this is brown shattered and weathered fine-grained

[14] SCS is now known as the National Resource Conservation Service or NRCS.

metamorphosed sandstone. Depth to sandstone varies from 8 to 15 inches. The Lodo soils are used for range and dryland pasture.

Willows silty clay, saline-alkali

The Willows series consists of poorly drained, saline-alkali soils in basins and on edges of alluvial fans. Slopes range from 0 to 2 percent. These soils developed in alluvium from predominantly fine-textured mixed materials. Vegetation is chiefly annual grasses, saltgrass, alkali-lettuce, and forbs. In a typical profile, the surface layer is alive-gray and gray silty clay about 10 inches thick. The next layer is gray clay about 14 inches thick. Below this, to a depth of several feet, is light-gray and olive-gray silty clay. Willows soils are used for dryland grain and pasture and, if irrigated, for grain, alfalfa, and permanent pasture. They are also used for nonfarm purposes, especially duckponds.

None of these soil units is identified as hydric in the SCS's publication, Hydric Soils of the United States[15].

4.2 Vegetation

During vegetation mapping of the Study Area, twelve different vegetation alliances/land cover types were identified. Table 4-1 provides a summary of vegetation alliances/land cover types and the corresponding acreage. Detailed descriptions of each vegetation alliance/land cover type follow the table. A Vegetation Map is attached as Exhibit 5. Photographs depicting the various vegetation alliances/ land cover types are attached as Exhibit 10 – Site Photographs.

Table 4-1. Summary of Vegetation/Land Use Types for the Project Site

Vegetation Alliances/Land Use Type	Acreage
Alkali Weed-Saltgrass Meadow	0.16
Black Willow Thickets	0.31
Cattail Marshes/American Bulrush Marsh	0.23
Disturbed/Developed	2.76
English Plantain	0.03
Fiddleneck Fields	0.22
Non-Native Grassland	0.47
Ruderal	4.14
Sandbar Willow Thickets	0.04
Tamarisk Thickets	0.65
Total	**9.02**

[15] United States Department of Agriculture, Soil Conservation Service. 1991. Hydric Soils of the United States, 3rd Edition, Miscellaneous Publication Number 1491. (In cooperation with the National Technical Committee for Hydric Soils.)

4.2.1 Alkali weed—Salt Grass Meadow Herbaceous Alliance

Approximately 0.16 acre of the Project site located along the eastern bank of the San Jacinto River is vegetated with the alkali weed (*Cressa truxillensis*) – salt grass herbaceous alliance. The membership rule for alkali weed—salt grass meadows includes the following: (1) alkali weed, swamp prickle grass (*Crypsis schoenoides*), or salt grass usually abundant in the herbaceous layer. Other component species include alkali mallow, Bermuda grass (*Cynodon dactylon*), willow weed (*Persicaria lapathifolia*), common spikerush (*Eleocharis macrostachya*), English plantain, curly dock (*Rumex crispus*), and cocklebur (*Xanthium strumarium*).

4.2.2 Black Willow Thickets Woodland Alliance

Approximately 0.31 acre of the Project site located along the western bank of the San Jacinto River is vegetated with the [Goodding's] black willow (*Salix gooddingii*) woodland alliance. The membership rules for the black willow thickets woodland alliance include the following: (1) Goodding's black willow > 50% relative cover in the canopy; if other willows are present, willows may co-dominate and Goodding's black willow > 30% relative cover in the canopy; and (2) Goodding's black willow > 50% relative cover in the canopy; if Fremont cottonwood (*Populus fremontii*) is present, trees may co-dominate and Goodding's black willow >30% relative cover, as a rule for the Central Valley. Other component species include arroyo willow (*Salix lasiolepis*), Fremont cottonwood, mule fat, and saltcedar (*Tamarix ramosissima*).

4.2.3 Cattail Marsh Herbaceous Alliance/American Bulrush Marsh Herbaceous Alliance

Approximately 0.23 acre of the Project site located along the western bank of the San Jacinto River south of the proposed bridge location is vegetated with the southern cattail (*Typha domingensis*) herbaceous alliance and the Olney's three-square [American] bulrush (*Schoenoplectus americanus*) herbaceous alliance. The membership rules for the cattail marsh alliance include the following: (1) Olney's three-square bulrush ≥ 10% absolute cover in the herbaceous layer; relatively dominant in submerged or sparse lands; (2) Olney's three-square bulrush > 50% relative cover in the herbaceous layer. The membership rules for the cattail marsh alliance includes the following: (1) narrow-leaved cattail (*Typha angustifolia*), southern cattail, and/or broad-leaved cattail (*T. latifolia*) > 50% relative cover in the herbaceous layer; one or more cattail species may be present; (2) broad-leaved cattail > 50% relative cover in the herbaceous layer; (3) narrow-leaved cattail > 50% relative cover at > 0.5 m tall in the herbaceous layer; and (4) broad-leaved cattail > 50% relative cover in the herbaceous layer; common reed (*Phragmites australis*) is not present. Component species in the Study Area include alkali bulrush (*Bolboschoenus maritimus*), willow weed, common spikerush, five-hook bassia (*Bassia hyssopifolia*), rye grass, Mexican rush (*Juncus mexicanus*), and cocklebur.

4.2.4 Disturbed/Developed

Approximately 2.76 acres of the Project site consists of disturbed/developed areas associated with the existing developed terminus of Ethanac Road as well as dirt access roads located on either side of the San Jacinto River and access roads west of the river.

4.2.5 English Plantain

Approximately 0.03 acres of the Project site located along the eastern bank of the San Jacinto River is vegetated predominantly with English plantain. Other component species include alkali heath (*Frankenia salina*), alkali mallow, willow weed, curly dock, and cocklebur.

4.2.6 Fiddleneck Fields Herbaceous Alliance

Approximately 0.22 acre of the Project site is vegetated with the fiddleneck fields herbaceous alliance, which is dominated by common fiddleneck (*Amsinckia menziesii*). The membership rules for the fiddleneck fields herbaceous alliance include the following: (1) common fiddleneck ≥ 10% relative cover in herbaceous layer; and (2) Brome fescue (*Festuca* [*Vulpia*] *bromoides)* co-dominates with fiddleneck fields and popcorn flower (*Plagiobothrys canescens)* in the herbaceous layer. Other component species include alkali-mallow (*Malvella leprosa*), red brome (*Bromus madritensis* ssp. *rubens*), little-seed canary grass (*Phalaris minor*), London rocket (*Sisymbrium irio*), prickly lettuce (*Lactuca serriola*), Russian thistle, thickleaf orach (*Atriplex dioica*), and summer mustard (*Hirschfeldia incana*).

4.2.7 Non-Native Grassland

Approximately 0.47 acre of the Project site is vegetated with non-native grassland. Dominant plant species observed include red brome, rye grass (*Festuca perennis*), Mediterranean barley (*Hordeum marinum*), and soft chess (*Bromus hordaceus*). Other component species include redstem filaree, prickly sow thistle (*Sonchus asper*), stinknet, summer mustard, tocalote (*Centaurea melitensis*), and white sweetclover (*Melilotus albus*).

4.2.8 Ruderal Vegetation

Approximately 4.23 acres of the Project site located along the banks of the San Jacinto River are vegetated with ruderal vegetation, which consists of mostly non-native plants with some weedy native vegetation. Designation of an area as "ruderal" is only considered where the vegetation cover does not fit with any of the herbaceous alliances in the MCVII and there are no clear dominant species such as was recognized for the English plantain. Dominant plant species observed include red brome, London rocket, prickly lettuce, Russian thistle, Mediterranean barley, and soft chess (*Bromus hordaceus*), which occur throughout the Study Area in locally dense patches. Other component species include bull thistle (*Cirsium vulgare*), California burclover (*Medicago polymorpha*), little-seed canary grass, mayweed (*Anthemis cotula*), redstem filaree, prickly sow thistle, stinknet, summer mustard, tocalote, tree tobacco (*Nicotiana glauca*), and white sweetclover.

4.2.9 Sandbar Willow Thickets Shrubland Alliance

Approximately 0.04 acre of the Project site located along the eastern bank of the San Jacinto River south of the proposed bridge location is vegetated with the sandbar willow (*Salix exigua*) shrubland alliance. The membership rules for the sandbar willow thickets shrubland alliance include the following: (1) sandbar willow ≥ 5% absolute cover and dominant in the shrub canopy; (2) sandbar willow > 20% absolute cover in the shrub canopy; and (3) sandbar willow > 50% relative cover in shrub canopy. Other component species include bull thistle, vetch (*Vicia* spp.), mule fat, alkali heliotrope, summer mustard, and tocalote.

4.2.10 Tamarisk Thickets Semi-natural Shrubland Stands

Approximately 0.65 acre of the Project site located along the banks of the San Jacinto River and is vegetated with saltcedar (*Tamarix ramosissima*) semi-natural shrubland stands. The membership rules for tamarisk thickets include the following: (1) saltcedar > 3% absolute cover and > 60% relative cover compared to other microphyllous trees or shrubs (2) saltcedar > 60% relative cover in the shrub or low tree canopy; and (3) saltcedar > 60% relative cover in the shrub canopy with minor presence of native species. Other component species include common fiddleneck and stinknet.

4.3 <u>Wildlife</u>

The following bird species were observed onsite: Anna's hummingbird (*Calypte anna*), Bewick's wren (*Thryomanes bewickii*), black-crowned night heron (*Nycticorax nycticorax*), black phoebe (*Sayornis nigricans*), blue grosbeak (*Passerina caerulea*), brown-headed cowbird (*Molothrus ater*), Bullock's oriole (*Icterus bullockii*), bushtit (*Psaltriparus minimus*), California towhee (*Melozone crissalis*), Cassin's kingbird (*Tyrannus vociferans*), common yellowthroat (*Geothlypis trichas*), Cooper's hawk (*Accipiter cooperii*), Costa's hummingbird (*Calypte costae*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), hooded oriole (*Icterus cuculattus*), house finch (*Carpodacus mexicanus*), house wren (*Troglodytes aedon*), killdeer (*Charadrius vociferus*), least bell's vireo (*Vireo bellii pusillus*), lesser goldfinch (*Carduelis psaltria*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), northern rough-winged swallow (*Steglidopteryx serripennis*), Nuttall's woodpecker (*Picoides nuttallii*), phainopepla (*Phainopepla nitens*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), Say's phoebe (*Sayornis saya*), snowy egret (*Egretta thula*), song sparrow (*Melospiza melodia*), Townsend's warbler (*Setophaga townsendi*), turkey vulture (*Athartes aura*), western meadowlark (*Sturnella neglecta*), white-tailed kite (*Elanus leucurus*), Wilson's warbler (*Cardellina pusilla*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*).

The following mammal species were observed on site: Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Otospermophilus beecheyi*), and coyote (*Canis latrans*).

4.4 Special-Status Vegetation Communities (Habitats)

The CNDDB identifies the following six special-status vegetation communities for the Romoland, Steele Peak, Perris, Lakeview, Winchester, Bachelor Mountain, Murrieta, Wildomar, and Lake Elsinore quadrangle maps: southern coast live oak riparian forest, southern cottonwood willow riparian forest, southern interior basalt flow vernal pool, southern riparian scrub, southern sycamore alder riparian woodland, and valley needlegrass grassland. The Study Area does not support any of these special-status vegetation communities. However, the Study Area does support riparian vegetation and sage scrub, both of which qualified as special-status communities. In the Study Area these are mapped as mulefat thickets, alkali weed-saltgrass meadow, sandbar willow thickets, black willow thickets, tamarisk thickets, cattail marches/American bulrush marsh and disturbed California buckwheat/California buckwheat.

4.5 Special-Status Plants

No special-status plants were detected within the Study Area. Table 4-2 provides a list of special-status plants evaluated for the Project site through general biological surveys and habitat assessments. Species were evaluated based on the following factors: 1) species identified by the CNDDB and CNPS as occurring (either currently or historically) on or in the vicinity of the Project site, and 2) applicable MSHCP survey areas, and 3) any other special-status plants that are known to occur within the vicinity of the Project site, or for which potentially suitable habitat occurs within the site.

Table 4-2. Special-Status Plants Evaluated for the Project Site

Species Name	Status	Habitat Requirements	Potential for Occurrence
Bottle liverwort *Sphaerocarpos drewei*	Federal: None State: None CNPS: Rank 1B.1	Openings in chaparral and coastal scrub.	Absent
California ayenia *Ayenia compacta*	Federal: None State: None CNPS: Rank 2B.3	Rocky soils in Mojavean desert scrub and Sonoran desert scrub.	Absent
California Orcutt grass *Orcuttia californica*	Federal: FE State: SE CNPS: Rank 1B.1 MSHCP(b)	Vernal pools	Absent
California screw moss *Tortula californica*	Federal: None State: None CNPS: Rank 1B.2	Sandy soil in chenopod scrub, and valley and foothill grassland.	Absent
Campbell's liverwort *Geothallus tuberosus*	Federal: None State: None CNPS: Rank 1B.1	Occurs in coastal scrub (mesic) and vernal pools.	Absent
Chaparral sand-verbena *Abronia villosa* var. *aurita*	Federal: None State: None CNPS: Rank 1B.1	Sandy soils in chaparral, coastal sage scrub.	Absent

Annual herb March-June

Species Name	Status	Habitat Requirements	Potential for Occurrence
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Federal: None State: None CNPS: Rank 1B.1 MSHCP(d)	Playas, vernal pools, marshes and swamps (coastal salt).	Absent
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	Federal: None State: None CNPS: Rank 1B.2 MSHCP(d)	Alkaline soils in coastal sage scrub, coastal bluff scrub.	Absent
Hammitt's clay-cress *Sibaropsis hammittii*	Federal: None State: None CNPS: Rank 1B.2 MSHCP(b)	Clay soils in openings of chaparral, and in valley and foothill grasslands.	Absent
Intermediate mariposa-lily *Calochortus weedii* var. *intermedius*	Federal: None State: None CNPS: Rank 1B.2 MSHCP	Rocky soils in chaparral, coastal sage scrub, valley and foothill grassland.	Absent
Intermediate monardella *Monardella hypoleuca* ssp.*intermedia*	Federal: None State: None CNPS: Rank 1B.3	Usually in the understory of chaparral, cismontane woodland, and lower montane coniferous forest (sometimes)	Absent
Jaeger's (bush) milk-vetch *Astragalus pachypus* var. *jaegeri*	Federal: None State: None CNPS: Rank 1B.1 MSHCP	Sandy or rocky soils in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland.	Absent
Little mousetail *Myosurus minimus* ssp. *apus*	Federal: None State: None CNPS: Rank 3.1 MSHCP(d)	Valley and foothill grassland, vernal pools (alkaline soils).	Absent
Long-spined spineflower *Chorizanthe polygonoides* var. *longispina*	Federal: None State: None CNPS: Rank 1B.2 MSHCP	Clay soils in chaparral, coastal sage scrub, meadows and seeps, and valley and foothill grasslands	Absent
Many-stemmed dudleya *Dudleya multicaulis*	Federal: None State: None CNPS: Rank 1B.2 MSHCP(b)	Chaparral, coastal sage scrub, valley and foothill grassland. Often occurring in clay soils.	Absent
Mud nama *Nama stenocarpum*	Federal: None State: None CNPS: Rank 2B.2 MSHCP(d)	Marshes and swamps	Absent
Munz's onion *Allium munzii*	Federal: FE State: ST CNPS: Rank 1B.1 MSHCP(b)	Clay soils in chaparral, coastal sage scrub, and valley and foothill grasslands	Absent
Palmer's grapplinghook *Harpagonella palmeri*	Federal: None State: None CNPS: Rank 4.2 MSHCP	Chaparral, coastal sage scrub, valley and foothill grassland. Occurring in clay soils.	Absent
Parish's meadowfoam *Limnanthes alba* ssp. *parishii*	Federal: None State: SE CNPS: Rank 1B.2 MSHCP	Vernally mesic soils in lower montane coniferous forests, meadows and seeps, and vernal pools.	Absent

Species Name	Status	Habitat Requirements	Potential for Occurrence
Parry's spineflower *Chorizanthe parryi* var. *parryi*	Federal: None State: None CNPS: Rank 1B.1 MSHCP	Sandy or rocky soils in open habitats of chaparral and coastal sage scrub.	Absent
Payson's jewelflower *Caulanthus simulans*	Federal: None State: None CNPS: Rank 4.2 MSHCP	Sandy or granitic soils in chaparral and coastal scrub.	Absent
Plummer's mariposa lily *Calochortus plummerae*	Federal: None State: None CNPS: Rank 4.2 MSHCP	Granitic, rock soils within chaparral, cismontane woodland, coastal sage scrub, lower montane coniferous forest, valley and foothill grassland.	Absent
Prostrate vernal pool navarretia *Navarretia prostrata*	Federal: None State: None CNPS: Rank 1B.1 MSHCP(d)	Coastal sage scrub, valley and foothill grassland (alkaline), vernal pools. Occurring in mesic soils.	Absent
Rainbow manzanita *Arctostaphylos rainbowensis*	Federal: None State: None CNPS: Rank 1B.1 MSHCP	Chaparral	Absent
Robinson's pepper grass *Lepidium virginicum* var. *robinsonii*	Federal: None State: None CNPS: Rank 4.3	Chaparral, coastal sage scrub	Absent
Round-leaved filaree *California macrophylla*	Federal: None State: None CNPS: Rank 1B.1 MSHCP(d)	Clay soils in cismontane woodland, valley and foothill grassland	Absent
Salt Spring checkerbloom *Sidalcea neomexicana*	Federal: None State: None CNPS: Rank 2B.2	Mesic, alkaline soils in chaparral, coastal sage scrub, lower montane coniferous forest, Mojavean desert scrub, and playas.	Absent
San Bernardino aster *Symphyotrichum defoliatum*	Federal: None State: None CNPS: Rank 1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic).	Absent
San Diego ambrosia *Ambrosia pumila*	Federal: FE State: None CNPS: Rank 1B.1 MSHCP(b)	Chaparral, coastal sage scrub, valley and foothill grassland, vernal pools. Often in disturbed habitats.	Absent
San Diego button-celery *Eryngium aristulatum* var. *parishii*	Federal: FE State: SE CNPS: Rank 1B.1 MSHCP	Mesic soils in vernal pools, valley and foothill grasslands, coastal sage scrub.	Absent
San Jacinto Valley crownscale *Atriplex coronata* var. *notatior*	Federal: FE State: None CNPS: Rank 1B.1 MSHCP(d)	Alkaline soils in chenopod scrub, valley and foothill grassland, vernal pools.	Absent
San Miguel savory *Clinopodium chandleri*	Federal: None State: None CNPS: Rank 1B.2 MSHCP(b)	Rocky, gabbroic, or metavolcanic soils in chaparral, cismontane woodland, coastal sage scrub, riparian woodland, valley and foothill grassland.	Absent

Species Name	Status	Habitat Requirements	Potential for Occurrence
Santa Lucia dwarf rush *Juncus luciensis*	Federal: None State: None CNPS: Rank 1B.2	Chaparral, Great Basin scrub, lower montane coniferous forest, meadows and seeps, and vernal pools.	Absent
Santa Rosa Basalt brodiaea *Brodiaea santarosae*	Federal: None State: None CNPS: Rank 1B.2	Basaltic soils in valley and foothill grassland.	Absent
Slender-horned spineflower *Dodecahema leptoceras*	Federal: FE State: SE CNPS: Rank 1B.1 MSHCP(b)	Sandy soils in alluvial scrub, chaparral, cismontane woodland.	Absent
Smooth tarplant *Centromadia pungens* ssp. *laevis*	Federal: None State: None CNPS: Rank 1B.1 MSHCP(d)	Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grasslands, disturbed habitats.	Absent
Southern mountains skullcap *Scutellaria bolanderi* ssp. *austromontana*	Federal: None State: None CNPS: Rank 1B.2	Mesic soils in chaparral, cismontane woodland, lower montane coniferous forest.	Absent
Spreading navarretia *Navarretia fossalis*	Federal: FT State: None CNPS: Rank 1B.1 MSHCP(b)	Vernal pools, playas, chenopod scrub, marshes and swamps (assorted shallow freshwater).	Absent
Tecate cypress *Hesperocyparis forbesii*	Federal: None State: None CNPS: Rank 1B.1	Closed-cone coniferous forest, chaparral.	Absent
Thread-leaved brodiaea *Brodiaea filifolia*	Federal: FT State: SE CNPS: Rank 1B.1 MSHCP(d)	Clay soils in chaparral (openings), cismontane woodland, coastal sage scrub, playas, valley and foothill grassland, vernal pools.	Absent
White rabbit-tobacco *Pseudognaphalium leucocephalum*	Federal: None State: None CNPS: Rank 2B.2	Sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian woodland.	Absent
Wiggins' cryptantha *Cryptantha wigginsii*	Federal: None State: None CNPS: Rank 1B.2	Often on clay soils in coastal scrub.	Absent
Woven-spored lichen *Texosporium sancti-jacobi*	Federal: None State: None CNPS: Rank 3	On soil, small mammal pellets, dead twigs, and on *Selaginella* spp. Chaparral (openings).	Absent
Wright's trichocoronis *Trichocoronis wrightii* var. *wrightii*	Federal: None State: None CNPS: Rank 2B.1 MSHCP(b)	Alkaline soils in meadows and seeps, marshes and swamps, riparian scrub, vernal pools.	Absent

Status

Federal
FE – Federally Endangered
FT – Federally Threatened
FC – Federal Candidate

State
SE – State Endangered
ST – State Threatened

CNPS
Rank 1A – Plants presumed extirpated in California and either rare or extinct elsewhere.

Rank 1B – Plants rare, threatened, or endangered in California and elsewhere.
Rank 2A – Plants presumed extirpated in California, but common elsewhere.
Rank 2B – Plants rare, threatened, or endangered in California, but more common elsewhere.
Rank 3 – Plants about which more information is needed (a review list).
Rank 4 – Plants of limited distribution (a watch list).

CNPS Threat Code extension
.1 – Seriously endangered in California (over 80% occurrences threatened)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

Occurrence

- Absent – The species is absent from the site either due to a lack of suitable habitat or because the species was confirmed absent through focused surveys.
- Not expected to occur – The species is not expected to occur onsite due to low habitat quality, however absence cannot be ruled out.
- Potential to occur – The species has a potential to occur onsite based on suitable habitat, however its presence/absence could not be confirmed.
- Present – The species was detected onsite incidentally or through focused surveys.

4.6 Special-Status Animals

The following special-status animals were detected at the Project site: least Bell's vireo, white-tailed kite, yellow-breasted chat, and yellow warbler. Table 4-3 provides a list of special-status animals evaluated for the Project site through general biological surveys, habitat assessments, and focused surveys. Species were evaluated based on the following factors, including: 1) species identified by the CNDDB as occurring (either currently or historically) on or in vicinity of the Study Area, and 2) applicable MSHCP survey areas, and 3) any other special-status animals that are known to occur within the vicinity of the Study Area, for which potentially suitable habitat occurs on the site.

Table 4-3. Special Status Animals Evaluated for the Project Site

Species Name	Status	Habitat Requirements	Potential for Occurrence
Invertebrates			
Quino checkerspot butterfly *Euphydryas editha quino*	Federal: FE State: None MSHCP	Larval and adult phases each have distinct habitat requirements tied to host plant species and topography. Larval host plants include *Plantago erecta* and *Castilleja exserta*. Adults occur on sparsely vegetated rounded hilltops and ridgelines, and are known to disperse through disturbed habitats to reach suitable nectar plants.	Not expected to occur.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Riverside fairy shrimp *Streptocephalus woottoni*	Federal: FE State: None MSHCP(a)	Restricted to deep seasonal vernal pools, vernal pool-like ephemeral ponds, and stock ponds.	Absent
Vernal pool fairy shrimp *Branchinecta lynchi*	Federal: FT State: None MSHCP(a)	Seasonal vernal pools	Absent
Fish			
Arroyo chub *Gila orcutti*	Federal: None State: SSC MSHCP	Slow-moving or backwater sections of warm to cool streams with substrates of sand or mud.	Absent
Amphibians			
Arroyo toad *Anaxyrus californicus*	Federal: FE State: SSC MSHCP(c)	Breed, forage, and/or aestivate in aquatic habitats, riparian, coastal sage scrub, oak, and chaparral habitats. Breeding pools must be open and shallow with minimal current, and with a sand or pea gravel substrate overlain with sand or flocculent silt. Adjacent banks with sandy or gravely terraces and very little herbaceous cover for adult and juvenile foraging areas, within a moderate riparian canopy of cottonwood, willow, or oak.	Absent
Reptiles			
California glossy snake *Arizona elegans occidentalis*	Federal: None State: SSC	Inhabits arid scrub, rocky washes, grasslands, chaparral.	Low potential to occur.
California red-legged frog *Rana draytonii*	Federal: FT State: SSC MSHCP(c)	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation.	Absent
Coast horned lizard *Phrynosoma blainvillii*	Federal: None State: SSC MSHCP	Occurs in a variety of vegetation types including coastal sage scrub, chaparral, annual grassland, oak woodland, and riparian woodlands.	Low potential to occur.
Coast patch-nosed snake *Salvadora hexalepis virgultea*	Federal: None State: SSC	Occurs in coastal chaparral, desert scrub, washes, sandy flats, and rocky areas.	Low potential to occur.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Coast Range newt *Taricha torosa*	Federal: None State: SSC	Found in wet forests, oak forests, chaparral, and rolling grasslands. In southern California, drier chaparral, oak woodland, and grasslands are used.	Absent
Coastal whiptail *Aspidoscelis tigris stejnegeri (multiscutatus)*	Federal: SSC State: None MSHCP	Open, often rocky areas with little vegetation, or sunny microhabitats within shrub or grassland associations.	Low to moderate potential to occur.
Orange-throated whiptail *Aspidoscelis hyperythra*	Federal: None State: None MSHCP	Coastal sage scrub, chaparral, non-native grassland, oak woodland, and juniper woodland.	Low to moderate potential to occur.
Red-diamond rattlesnake *Crotalus ruber*	Federal: None State: SSC MSHCP	Habitats with heavy brush and rock outcrops, including coastal sage scrub and chaparral.	Low to moderate potential to occur.
San Diego banded gecko *Coleonyx variegatus abbotti*	Federal: None State: None MSHCP	Primarily a desert species, but also occurs in cismontane chaparral, desert scrub, and open sand dunes.	Not expected to occur.
Two-striped garter snake *Thamnophis hammondii*	Federal: None State: SSC	Aquatic snake typically associated with wetland habitats such as streams, creeks, and pools.	Absent
Western pond turtle *Emys marmorata*	Federal: None State: SSC MSHCP	Slow-moving permanent or intermittent streams, small ponds and lakes, reservoirs, abandoned gravel pits, permanent and ephemeral shallow wetlands, stock ponds, and treatment lagoons. Abundant basking sites and cover necessary, including logs, rocks, submerged vegetation, and undercut banks.	Absent
Western spadefoot *Spea hammondii*	Federal: None State: SSC MSHCP	Seasonal pools in coastal sage scrub, chaparral, and grassland habitats.	Low to moderate potential to occur.
Birds			
Bald eagle (nesting & wintering) *Haliaeetus leucocephalus*	Federal: Delisted State: SE, FP MSHCP	Primarily in or near seacoasts, rivers, swamps, and large lakes. Perching sites consist of large trees or snags with heavy limbs or broken tops.	Absent

Species Name	Status	Habitat Requirements	Potential for Occurrence
Burrowing owl (burrow sites & some wintering sites) *Athene cunicularia*	Federal: BCC State: SSC MSHCP(c)	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal dunes, desert floors, and some artificial, open areas as a year-long resident. Occupies abandoned ground squirrel burrows as well as artificial structures such as culverts and underpasses.	Absent
Coastal cactus wren (San Diego & Orange County only) *Campylorhynchus brunneicapillus sandiegensis*	Federal: BCC State: SSC MSHCP	Occurs almost exclusively in cactus (cholla and prickly pear) dominated coastal sage scrub.	Absent
Coastal California gnatcatcher *Polioptila californica*	Federal: FT State: SSC MSHCP	Low elevation coastal sage scrub and coastal bluff scrub.	Absent
Cooper's hawk (nesting) *Accipiter cooperi*	Federal: None State: WL MSHCP	Primarily occurs in riparian areas and oak woodlands, most commonly in montane canyons. Known to use urban areas, occupying trees among residential and commercial.	Observed foraging within study area, but not observed nesting.
Golden eagle (nesting & wintering) *Aquila chrysaetos*	Federal: BCC State: WL, FP MSHCP	In southern California, occupies grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests on rock outcrops and ledges.	Low to moderate potential to occur, foraging only.
Least Bell's vireo (nesting) *Vireo bellii pusillus*	Federal: FE State: SE MSHCP(a)	Dense riparian habitats with a stratified canopy, including southern willow scrub, mule fat scrub, and riparian forest.	Present. The species was confirmed nesting within the project site.
Loggerhead shrike (nesting) *Lanius ludovicianus*	Federal: BCC State: SSC MSHCP	Forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs.	Moderate potential to occur.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Long-eared owl (nesting) *Asio otus*	Federal: None State: SSC	Riparian habitats are required by the long-eared owl, but it also uses live-oak thickets and other dense stands of trees.	Not expected to occur on Project site.
Northern harrier (nesting) *Circus cyaneus*	Federal: None State: SSC MSHCP	A variety of habitats, including open wetlands, grasslands, wet pasture, old fields, dry uplands, and croplands.	Moderate potential to occur.
Southwestern willow flycatcher (nesting) *Empidonax traillii extimus*	Federal: FE State: SE MSHCP (a)	Riparian woodlands along streams and rivers with mature dense thickets of trees and shrubs.	Absent
Swainson's hawk (nesting) *Buteo swainsoni*	Federal: BCC State: ST MSHCP	Summer in wide open spaces of the American West. Nest in grasslands, but can use sage flats and agricultural lands. Nests are placed in lone trees.	Moderate potential to occur, foraging only.
Tricolored blackbird (nesting colony) *Agelaius tricolor*	Federal: BCC State: Candidate Endangered MSHCP	Breeding colonies require nearby water, a suitable nesting substrate, and open-range foraging habitat of natural grassland, woodland, or agricultural cropland.	Absent
Western snowy plover (nesting) *Charadrius alexandrinus nivosus*	Federal: FT, BCC State: SSC	Sandy or gravelly beaches along the coast, estuarine salt ponds, alkali lakes, and at the Salton Sea.	Absent
White-tailed kite (nesting) *Elanus leucurus*	Federal: None State: FP MSHCP	Low elevation open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Dense canopies used for nesting and cover.	Present on Project site, foraging only.
Yellow warbler (nesting) *Setophaga petechia*	Federal: BCC State: SSC MSHCP	Breed in lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland. During migration, forages in woodland, forest, and shrub habitats.	Present on Project site.

Species Name	Status	Habitat Requirements	Potential for Occurrence
Yellow-breasted chat (nesting) *Icteria virens*	Federal: None State: SSC MSHCP	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories.	Observed foraging within study area, but not observed nesting.
Yellow-headed blackbird (nesting) *Xanthocephalus*	Federal: None State: SSC	Breed and roost in freshwater wetlands with dense, emergent vegetation such as cattails. Often forage in fields, typically wintering in large, open agricultural areas.	Low potential to occur on site for foraging only.
Mammals			
American badger *Taxidea taxus*	Federal: None State: SSC	Most abundant in drier open stages of most scrub, forest, and herbaceous habitats, with friable soils.	Low to moderate potential to occur for foraging only.
Dulzura pocket mouse *Chaetodipus califronicus femoralis*	Federal: None State: SSC	Coastal scrub, grassland, and chaparral, especially at grass-chaparral edges	Low potential to occur.
Jacumba pocket mouse *Perognathus longimembris internationalis*	Federal: None State: SSC	Arid plains and desert-like country. Grassland, alluvial sage scrub, and coastal sage scrub.	Low potential to occur.
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	Federal: None State: SSC MSHCP(c)	Fine, sandy soils in coastal sage scrub and grasslands.	Low to moderate potential to occur.
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	Federal: None State: SSC MSHCP	Coastal sage scrub, sage scrub/grassland ecotones, and chaparral.	Low potential to occur.
Pocketed free-tailed bat *Nyctinomops femorosaccus*	Federal: None State: SSC WBWG: M	Rocky areas with high cliffs in pine-juniper woodlands, desert scrub, palm oasis, desert wash, and desert riparian.	Low to moderate potential to occur, foraging only.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	Federal: None State: SSC MSHCP	Occupies a variety of habitats, but is most common among shortgrass habitats. Also occurs in sage scrub, but needs open habitats.	Moderate potential to occur.
San Diego desert woodrat *Neotoma lepida intermedia*	Federal: None State: SSC MSHCP	Occurs in a variety of shrub and desert habitats, primarily associated with rock outcrops, boulders, cacti, or areas of dense undergrowth.	Absent

Species Name	Status	Habitat Requirements	Potential for Occurrence
Southern grasshopper mouse *Onychomys torridus ramona*	Federal: None State: SSC	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover.	Low potential to occur.
Stephens' kangaroo rat *Dipodomys stephensi*	Federal: FE State: ST MSHCP	Open grasslands or sparse shrublands with less than 50% vegetation cover during the summer.	Low potential to occur.
Western mastiff bat *Eumops perotis californicus*	Federal: None State: SSC WBWG: H	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Low to moderate potential to occur for foraging only.
Western yellow bat *Lasiurus xanthinus*	Federal: None State: SSC WBWG: H	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Low to moderate potential to occur for foraging only.

Status

Federal
FE – Federally Endangered
FT – Federally Threatened
FPT – Federally Proposed Threatened
FC – Federal Candidate
BGEPA– Bald and Golden Eagle Protection Act

State
SE – State Endangered
ST – State Threatened
SC– State Candidate
CFP – California Fully-Protected Species
SSC – Species of Special Concern

Western Bat Working Group (WBWG)
H – High Priority
LM – Low-Medium Priority
M – Medium Priority
MH – Medium-High Priority

Occurrence

- Absent – The species is absent from the site, either because the site lacks suitable habitat for the species, the site is located outside of the known range of the species, or focused surveys has confirmed the absence of the species.
- Not expected to occur – The species is not expected to occur onsite due to low habitat quality, however absence cannot be ruled out.
- Potential to occur – The species has a potential to occur onsite based on suitable habitat, however its presence/absence could not be confirmed.
- Present – The species was detected onsite incidentally or through focused surveys.

4.6.1 Special-Status Animals Present or with a Potential to Occur

Four special-status animal species were detected at the Project site during the biological surveys, including the least Bell's vireo, white-tailed kite, yellow-breasted chat, and yellow warbler, with additional species having some potential to occur as noted in the above table. With the exception of the least Bell's vireo (detected) and the burrowing owl (confirmed absent through surveys but has a potential to occur) all of the species detected or with a potential occur are covered under the MSHCP without a requirement for focused surveys, avoidance, or mitigation.

Least Bell's Vireo

The least Bell's vireo was detected within the Project site during the 2017 focused surveys and was assumed to be nesting within the onsite riparian habitat, while also utilizing offsite riparian habitat both upstream and downstream of the Project site. All of the riparian habitat (1.48 acres) within the Project site is considered habitat with long-term conservation value for the least Bell's vireo. The MSHCP requires that 90 percent of habitat with long-term conservation value for the vireo be avoided, or otherwise the impacts must be mitigated and approved through the DBESP process.

Burrowing Owl

The Project site contains habitat with the potential to support burrowing owls, which were confirmed absent during focused surveys in 2017. However, due to the presence of suitable habitat and considering that the burrowing owl is a highly mobile species, pre-construction surveys are required by the MSHCP (refer to Section 6.0).

Stephens' Kangaroo Rat

The Project site contains low quality habitat for Stephens' kangaroo rat (SKR). However, the Project site occurs within the boundaries of the SKR Habitat Conservation Plan (SKR HCP; Riverside County Habitat Conservation Agency [RCHCA] 1996) and therefore any take of SKR as a result of the Project would be covered pursuant to the SKR HCP, with the payment of the SKR Fee.

Listed Fairy Shrimp

The current Project footprint contains two depression features that inundate seasonally from rainfall, and that were surveyed by GLA in 2013/2014 as part of the Riverwoods Development Project, including a wet season survey performed for the 2013/2014 wet season and a dry season survey in 2014. The non-listed versatile fairy shrimp (*Branchinecta lindahli*) was detected in both features during the wet season survey (report dated August 28, 2014), but no listed species were detected, including the Riverside fairy shrimp (*Streptocephalus woottonii*), vernal pool fairy shrimp (*Branchinecta lynchi*) or San Diego fairy shrimp (*Branchinecta sandiegonensis*). Cysts of the Genus *Branchinecta* were confirmed in both features as part of the dry season survey (report dated November 26, 2014). The two features are identified as #16 and 20 in the fairy shrimp survey reports.

4.7 Critical Habitat

The Project site is not located within a USFWS designated critical habitat area, nor is it located within a proposed critical habitat area.

4.8 Raptor Use

The Project site provides suitable foraging and breeding habitat for a number of raptor species, including special-status raptors.

Southern California holds a diversity of birds of prey (raptors), and many of these species are in decline. For most of the declining species, foraging requirements include extensive open, undisturbed, or lightly disturbed areas, especially grasslands. This type of habitat has declined severely in the region, affecting many species, but especially raptors. A few species, such as red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*), are somewhat adaptable to low-level human disturbance and can be readily observed adjacent to neighborhoods and other types of development. These species still require appropriate foraging habitat and low levels of disturbance in vicinity of nesting sites.

Many of the raptors that would be expected to forage and nest within western Riverside are fully covered species under the MSHCP with the MSHCP providing the necessary conservation of both foraging and nesting habitats. Some common raptor species (e.g., American kestrel and red-tailed hawk) are not covered by the MSHCP but are expected to be conserved with implementation of the Plan due to the parallel habitat needs with those raptors covered under the Plan.

It is important to understand that the MSHCP does not provide Migratory Bird Treaty Act (MBTA) and Fish and Game Code take for raptors covered under the Plan.

Appendix B (faunal compendium) provides a list of the hawks and falcons detected over the course of the field studies. These species were Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*B. lineatus*), and white-tailed kite (*Elanus leucurus*). Great horned owl (*Bubo virginianus*) and barn owl (*Tyto alba*) may also be present. The ferruginous hawk migrates through the region in spring/fall and may over winter in the area.

4.9 Nesting Birds

The Project site contains trees, shrubs, and ground cover that provide suitable habitat for nesting migratory birds. Impacts to nesting birds are prohibited under the MBTA and California Fish and Game Code.[16]

[16] The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R.21). In addition, sections 3505, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

4.10 Jurisdictional Delineation

4.10.1 Corps Jurisdiction

The Project site contains approximately 1.55 acres of Corps jurisdiction, of which 1.28 acres consists of jurisdictional wetlands and 0.27 acre of which is non-wetland waters. A total of 521 linear feet of streambed is contained within the Project site. Table 4-4 summarizes Corps jurisdiction for the Project site.

Table 4-4. Summary of Corps Jurisdiction

Drainage Feature	Non-Wetland Waters (Acres)	Wetlands (Acres)	Total Corps Jurisdiction (Acres)	Length (Linear Feet)
San Jacinto River	0.27	1.28	1.55	521

Corps jurisdiction is limited to the San Jacinto River. The San Jacinto River would be regulated as a "Tributary" with adjacent wetlands under the definitions of waters of the U.S.

San Jacinto River

The San Jacinto River is a blue-line drainage that enters the Project site from the northeast and extends in a southwesterly direction for approximately 521 linear feet before exiting the site. The river conveys intermittent flow and is ultimately tributary to the Pacific Ocean. The low flow channel is approximately 20 feet in width and exhibited flowing water and ponding at the time of the field assessment. The San Jacinto River contains open water, freshwater marsh, and southern willow riparian scrub habitats. Areas in the abutting floodplain are dominated by facultative-or wetter alkali-adapted herbaceous species including alkali heath, saltgrass, and English plantain. Wetland indicators include a predominance of wetland vegetation, wetland hydrology, and the presence of hydrogen sulfide odor and/or saline-alkaline soils in the abutting floodplain. Since the San Jacinto River and its adjacent wetlands meet the definition of waters of the U.S., it is subject to Corps jurisdiction under Section 404 of the CWA. Wetland data sheets are provided as Appendix A of the Jurisdictional Delineation Report (Appendix D of this Biological Technical Report). The boundaries of Corps jurisdiction are depicted on Exhibit 7A.

Non-Jurisdictional Features

The Study Area also contains a non-jurisdictional feature, referenced herein as Tributary A. Tributary A is an ephemeral feature that flows only in direct response to precipitation (e.g., rain). Ephemeral features, including ephemeral streams, swales, gullies, rills, pools and/or tributaries that meet the (b)(1) and/or (b)(3) criteria described in 33 U.S.C. 1251 et seq are excluded from Corps jurisdiction by definition regardless of the presence or absence of an OHWM. As such, this feature is not subject to Corps jurisdiction pursuant to Section 404 of the CWA.

4.10.2 Regional Board Jurisdiction

The Project site contains approximately 1.58 acres of Regional Board jurisdiction, of which 1.28 acres consists of jurisdictional wetlands and 0.30 acre of which is non-wetland waters. Of these totals, 1.55 acres, including 1.28 acres of wetlands and 0.27 acre of non-wetlands, consist of waters of the U.S. and State, and 0.03 acre consist only of non-wetland waters of the State. A total of 906 linear feet of Regional Board streambed is contained within the Project site, including 521 linear feet of water of the U.S. and State, and 385 linear feet of waters of the State only. The boundaries of Regional Board jurisdiction are depicted on Exhibit 7B. Table 4-5 summarizes Regional Board jurisdiction for the Project site.

Table 4-5. Summary of Regional Board Jurisdiction

Drainage Name	Non-Wetland Waters (Acres)	Wetlands (Acres)	Total Regional Board Jurisdiction (Acres)	Length (Linear Feet)
Waters of the U.S./State				
San Jacinto River	0.27	1.28	1.55	521
Waters of the State Only				
Tributary A	0.03	0	0.03	385
Total	**0.30**	**1.28**	**1.58**	**906**

<u>San Jacinto River</u>

Regional Board jurisdiction associated with the San Jacinto River totals 1.55 acres, of which 1.28 acres consist of wetland waters of the U.S./State and 0.27 acre consists of non-wetland waters of the U.S./State. A total of 521 linear feet of intermittent stream is present.

The San Jacinto River is a blue-line drainage that enters the Project site from the northeast and extends in a southwesterly direction for approximately 521 linear feet before exiting the site. The river conveys intermittent flows and is ultimately tributary to the Pacific Ocean. The low flow channel is approximately 20 feet in width and exhibited flowing water and ponding at the time of the field assessment. The San Jacinto River contains open water, freshwater marsh, and southern willow riparian scrub habitats. Areas in the abutting floodplain are dominated by facultative-or wetter alkali-adapted herbaceous species including alkali heath, salt grass, and English plantain. Wetland indicators include a predominance of wetland vegetation, wetland hydrology, and the presence of hydrogen sulfide odor and/or saline-alkaline soils in the abutting floodplain. Since the San Jacinto River and its adjacent wetlands meet the definition of waters of the U.S., it is subject to Regional Board jurisdiction under Section 401 of the CWA.

Tributary A (Ephemeral)

Regional Board jurisdiction associated with Tributary A totals 0.03 acre, none of which consists of State wetlands. A total of 384 linear feet of ephemeral stream is present.

Tributary A originates as road run-off from Ethanac Road and is conveyed in a westerly direction from west of Ethanac Road to the flat terrace associated with the eastern edge of the San Jacinto River. Tributary A ranges from one to six feet in width as evidenced by changes in soil characteristics and incised channel banks. This feature flows only in direct response to precipitation and was completely dry during the field investigation. As described above, vegetation associated with the drainage is limited to non-native upland grasses and weeds with tamarisk inclusions in the lower reach.

4.10.3 CDFW Jurisdiction

CDFW jurisdiction associated with the Project site totals 1.81 acres, of which 1.48 acres consist of riparian vegetation and 0.33 acre consists of non-riparian stream. A total of 906 linear feet of streambed is present. The boundaries of CDFW jurisdiction are depicted on Exhibit 7C. Table 4-6 summarizes CDFW jurisdiction for the Project site.

Table 4-6. Summary of CDFW Jurisdiction

Drainage Name	Non-Riparian Stream (Acres)	Riparian Stream (Acres)	Total CDFW Jurisdiction (Acres)	Length (Linear Feet)
San Jacinto River	0.30	1.34	1.64	521
Tributary A	0.03	0.14	0.17	385
Total	**0.33**	**1.48**	**1.81**	**906**

San Jacinto River

CDFW jurisdiction associated with the San Jacinto River totals 1.64 acres, of which 1.34 acres consist of riparian stream and 0.30 acre consists of non-riparian stream. A total of 521 linear feet of intermittent stream is present.

The San Jacinto River is a blue-line drainage that enters the Project site from the northeast and extends in a southwesterly direction for approximately 521 linear feet before exiting the site. The river conveys intermittent flows and is ultimately tributary to the Pacific Ocean. The low flow channel is approximately 20 feet in width and exhibited flowing water and ponding at the time of the field assessment. The San Jacinto River contains open water, freshwater marsh, and southern willow riparian scrub. Areas in the abutting floodplain are dominated by alkali-adapted herbaceous species including alkali heath, salt grass, and English plantain. Since the floodplain and its associated riparian habitat that is both adjacent and hydrologically connected to the San Jacinto River, it is subject to CDFW jurisdiction under Section 1602 of the Fish and Game Code.

Tributary A (Ephemeral)

CDFW jurisdiction associated with Tributary A totals 0.17 acre, of which 0.14 acre consists of riparian stream and 0.03 acre consists of non-riparian stream. A total of 384 linear feet of ephemeral stream is present.

Tributary A originates as road run-off from Ethanac Road and is conveyed in a westerly direction from west of Ethanac Road to the flat terrace associated with the eastern edge of the San Jacinto River. Tributary A ranges from one to six feet in width as evidenced by changes soil characteristics and incised channel banks. This feature flows only in direct response to precipitation and was completely dry during the field investigation. As described above, vegetation associated with the drainage is limited to non-native upland grasses and weeds with tamarisk inclusions in the lower reach.

4.11 MSHCP Riparian/Riverine Areas and Vernal Pools

Vegetation communities associated with riparian systems are depleted natural vegetation communities because, similar to coastal sage scrub, they have declined throughout southern California during past decades. In addition, they can support a large variety of special-status wildlife species. Most species associated with riparian/riverine are covered species under the MSHCP (under Section 6.1.2 of the Plan). The MSHCP has specific policies and procedures regarding the evaluation and conservation of riparian/riverine resources (including riparian vegetation) because it supports MSHCP covered species. Specifically, the MSHCP states that "riparian/riverine areas are natural lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year." Thus, the MSHCP classification of riparian/riverine includes both riparian (depleted natural vegetation communities) as well as ephemeral drainages that are natural in origin but may lack riparian vegetation. For this analysis, all non-man-made features that qualify as state streambeds are considered MSHCP riparian/riverine resources.

The MSHCP riparian/riverine areas in the Project site is identical to that of CDFW jurisdiction. MSHCP riparian/riverine areas total 1.81 acres, of which, 1.48 acres consist of riparian habitat and 0.33 acre consists of unvegetated riverine habitat [Exhibit 7D – MSHCP Riparian/Riverine Areas].

The Project site does not contain any vernal pools. The majority of the Project site consists of the San Jacinto River channel and terraces that are subject to flows and do not exhibit topography that would support vernal pools. Similarly, the adjacent uplands also do not exhibit topography that would support vernal pools. As noted above, the Project site contains two depression features that were surveyed for fairy shrimp in 2013/2014 as part of studies for the Riverwoods Development Project. The non-listed versatile fairy shrimp was detected in each feature, but listed species of fairy shrimp were confirmed to be absent.

5.0 IMPACT ANALYSIS

The following discussion examines the potential impacts to plant and wildlife resources that would occur as a result of the proposed project. Impacts (or effects) can occur in two forms, direct and indirect. Direct impacts are considered to be those that involve the loss, modification or disturbance of plant communities, which in turn, directly affect the flora and fauna of those habitats. Direct impacts also include the destruction of individual plants or animals, which may also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and population stability.

Indirect impacts pertain to those impacts that result in a change to the physical environment, but which is not immediately related to a project. Indirect (or secondary) impacts are those that are reasonably foreseeable and caused by a project but occur at a different time or place. Indirect impacts can occur at the urban/wildland interface of projects, to biological resources located downstream from projects, and other offsite areas where the effects of the project may be experienced by plants and wildlife. Examples of indirect impacts include the effects of increases in ambient levels of noise or light; predation by domestic pets; competition with exotic plants and animals; introduction of toxics, including pesticides; and other human disturbances such as hiking, off-road vehicle use, unauthorized dumping, etc. Indirect impacts are often attributed to the subsequent day-to-day activities associated with project build-out, such as increased noise, the use of artificial light sources, and invasive ornamental plantings that may encroach into native areas. Indirect effects may be both short-term and long-term in their duration. These impacts are commonly referred to as "edge effects" and may result in a slow replacement of native plants by non-native invasives, as well as changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to project sites.

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. A cumulative impact can occur from multiple individual effects from the same project, or from several projects. The cumulative impact from several projects is the change in the environment resulting from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

5.1 Direct Impacts to Native Vegetation

Table 5-1 provides a summary of proposed impacts to vegetation within the Project site. The proposed Project would permanently impact approximately 0.74 acre of native habitats and 8.28 acres of non-native habitats. Native habitats consist of riparian/riverine vegetation types, including alkali weed/saltgrass, cattail/bulrush marsh, black willow thickets, and sandbar willow thickets. Non-native habitat areas include disturbed/developed, English plantain, fiddleneck fields, ruderal areas, and tamarisk thickets.

Table 5-1. Summary of Vegetation/Land Use Impacts

Vegetation Alliances/Land Use Type	Acreage
Alkali Weed-Saltgrass Meadow	0.16
Black Willow Thickets	0.31
Cattail Marshes/American Bulrush Marsh	0.23
Disturbed/Developed	2.76
English Plantain	0.03
Fiddleneck Fields	0.22
Non-Native Grassland	0.47
Ruderal	4.14
Sandbar Willow Thickets	0.04
Tamarisk Thickets	0.65
Total	**9.02**

5.2 Direct Impacts to Special-Status Plants

The proposed Project will not impact special-status plants, including the NEPSSA and CAPSSA target species.

5.3 Direct Impacts to Special-Status Animals

The proposed Project will remove habitat that supports, or potentially supports special-status species. Special-status species detected at the site include the least Bell's vireo, white-tailed kite, yellow-breasted chat, and yellow warbler.

5.3.1 Least Bell's Vireo

The Project will permanently impact 1.48 acres of habitat with long-term conservation value for the least Bell's vireo, used for nesting and foraging. The loss of habitat would be potentially significant under CEQA. However, the Project would be consistent with the MSHCP requirements for the vireo with mitigation and the approval of a DBESP as described in Section 6.0 and Section 7.0 below. As such, with the coverage afforded by the MSHCP the impacts to the least Bell's vireo would be reduced to below a level of significance.

5.3.2 White-Tailed Kite

The Project will permanently impact 3.24 acres of foraging habitat for the white-tailed kite; however, the Project would not impact nesting habitat. The loss of the minimal amount of foraging habitat would be less than significant under CEQA. Furthermore, impacts to the white-tailed kite are covered under the MSHCP without project-specific requirements.

5.3.3 Yellow-Breasted Chat

The Project will permanently impact 1.48 acres of habitat for the yellow-breasted chat. The loss of the minimal amount of habitat would be less than significant under CEQA. Furthermore, impacts to the yellow-breasted chat are covered under the MSHCP without project-specific requirements.

5.3.4 Yellow Warbler

The Project will permanently impact 1.48 acres of habitat for the yellow warbler. The loss of the minimal amount of habitat would be less than significant under CEQA. Furthermore, impacts to the yellow warbler are covered under the MSHCP without project-specific requirements.

5.3.5 Burrowing Owl

The Project will not impact burrowing owls based on the results of the focused surveys. However, because of the presence of potentially suitable habitat on the banks of the river and in adjacent uplands, there is a potential for burrowing owls to utilize the site in the future. As such, a pre-construction burrowing owl survey is required by Section 6.3.2 of the MSHCP. Refer to Section 6.0 for details.

5.3.6 Impacts to Other Special-Status Animals

The Project site contains potential habitat for Stephens' kangaroo rat (SKR) and several non-listed special-status animals including California glossy snake, coast horned lizard, coast patch-nosed snake, coastal whiptail, orange-throated whiptail, northern red-diamond rattlesnake, loggerhead shrike, Dulzura pocket mouse, Jacumba pocket mouse, Los Angeles pocket mouse, northwestern San Diego pocket mouse, San Diego black-tailed jackrabbit, and southern grasshopper mouse. Potential impacts to SKR would be covered through participation in the SKR HCP. Potential impacts to the additional species would be covered through the MSHCP.

5.4 Direct Impacts to Critical Habitat

The proposed Project will not impact lands designated as critical habitat by the USFWS.

5.5 Impacts to Nesting Birds

The project has the potential to impact active bird nests if vegetation is removed during the nesting season (February 1 to August 31). Impacts to nesting birds are prohibited by the MBTA and California Fish and Game Code. Implementation of a measure identified in Section 6.0 of this report would provide compliance with MBTA and California Fish and Game Code.

5.6 Impacts to Jurisdictional Waters

5.6.1 Impacts to Corps Jurisdiction

The Project will permanently impact approximately 1.55 acres of Corps jurisdiction, of which 1.28 acres consists of jurisdictional wetlands and 0.27 acre of which is non-wetland waters. The Project would impact 521 linear feet of Corps streambed.

5.6.2 Regional Board Jurisdiction

The Project will permanently impact 1.58 acres of Regional Board jurisdiction, of which 1.28 acres consists of jurisdictional wetlands and 0.30 acre of which is non-wetland waters. Of these totals, 1.55 acres (including 1.28 acres of wetlands and 0.27 acre of non-wetlands) consist of waters of the U.S. and State, and 0.03 acre consist only of non-wetland waters of the State. A total of 906 linear feet of Regional Board streambed is contained within the Project site, including 521 linear feet of water of the U.S. and State, and 385 linear feet of waters of the State only.

5.6.3 Impacts to CDFW Jurisdiction

The Project will permanently impact approximately 1.81 acres of CDFW jurisdiction, of which 1.48 acres consist of riparian stream and 0.33 acre consists of non-riparian stream. The Project will impact 521 linear feet of CDFW stream.

5.6.4 Impacts to MSHCP Riparian/Riverine Areas

The Project will permanently impact approximately 1.81 acres of MSHCP riparian/riverine areas, of which 1.48 acres consist of riparian habitat. Pursuant to Volume I, Section 6.1.2 of the MSHCP, projects must consider alternatives providing for 100% percent avoidance of riparian/riverine areas. If avoidance is infeasible, then the unavoidable impacts must be mitigated and a DBESP is required. Refer to Section 6.0, Mitigation/Avoidance Measures for details.

5.7 Impacts to MSHCP Criteria Cells, Cell Groups, and Linkages

The Project site is located within the Meade Valley Area Plan of the MSHCP and is within the Criteria Area (Subunit 4 – San Jacinto River Lower). The majority of the Project site is within independent Cells 3570 and 3665, with a small portion within the northeastern corner of Cell Group L (Cell 3659) [Exhibit 4 – MSHCP Overlay Map]. Cell 3570 includes the Ethanac Road right-of-way (ROW) and areas upstream of the ROW, which includes a portion of the San Jacinto River described for Proposed Constrained Linkage 19 (Lower San Jacinto River). The majority of the river within Cell 3570 is already conserved as ARL, with the exception of two linear parcels (APNs 330-130-009 and 330-130-010) that are not yet conserved. Cell 3665 is located south of Ethanac Road and includes a small portion of the San Jacinto River in the northwestern corner of the Cell that is not yet conserved. This portion of the river is described for conservation for Proposed Linkage 7. A much smaller portion of the Project footprint is

located within the northeastern corner of Cell 3659 (Cell Group L) in the Ethanac Road ROW and outside of the San Jacinto River.

Ethanac Road is a Planned Road described in MSHCP *Volume 1, Section 7.3.5*, with a covered ROW of approximately 180 feet wide. Of the overall 9.02-acre Project footprint, approximately 2.32 acres are located outside of covered ROW, including 1.01 acres within the existing conserved ARL upstream of the ROW and 0.70 acre of the river downstream of the ROW described for conservation. Table 7-4 (Planned Facilities) in the MSHCP states that Ethanac Road would span the San Jacinto River with a bridge. As stated above in the Project description, the bridge will not consist of a free span but will be supported on triple column piers approximately 35 feet by 35 feet in size that will be located on top of the underlying bedrock.

All impacts to vegetation communities targeted for conservation by the MSHCP would be offset through a one-time in-lieu fee payment to an approved mitigation bank and/or in-lieu fee program within the MSHCP Plan Area in the San Jacinto River watershed or Santa Ana River watershed at a 2:1 mitigation-to-impact ratio.

5.8 Indirect Impacts to Biological Resources

In the context of biological resources, indirect effects are those effects associated with developing areas adjacent to adjacent native open space. Potential indirect effects associated with development include water quality impacts associated with drainage into adjacent open space/downstream aquatic resources; lighting effects; noise effects; invasive plant species from landscaping; and effects from human access into adjacent open space, such as recreational activities (including off-road vehicles and hiking), pets, dumping, etc. Temporary, indirect effects may also occur as a result of construction-related activities.

The Project would implement measures pursuant to the MSHCP Urban/Wildlands Interface Guidelines (*Volume I, Section 6.1.4* of the MSHCP). These guidelines are intended to address indirect effects associated with locating projects (particularly development) in proximity to the MSHCP Conservation Area. To minimize potential edge effects, the guidelines are to be implemented in conjunction with review of individual public and private development projects in proximity to the MSHCP Conservation Area. The Project will implement measures consistent with the MSHCP guidelines to address the following:

- Drainage;
- Toxics;
- Lighting;
- Noise;
- Invasives;
- Barriers; and
- Grading/Land Development.

5.8.1 Drainage

Proposed Projects in proximity to the MSHCP Conservation Area shall incorporate measures, including measures required through the National Pollutant Discharge Elimination System (NPDES) requirements, to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. In particular, measures shall be put in place to avoid discharge of untreated surface runoff from developed and paved areas into the MSHCP Conservation Area. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the MSHCP Conservation Area. This can be accomplished using a variety of methods including natural detention basins, grass swales or mechanical trapping devices. Regular maintenance shall occur to ensure effective operations of runoff control systems.

The Project's contractor will develop a Stormwater Pollution Prevention Plan (SWPPP) to prevent impacts to water quality during construction. A Water Quality Management Plan (WQMP) will be developed to prevent pollutants from entering the MSHCP Conservation Area and the San Jacinto River during operation and maintenance of the facility following the completion of construction activities.

5.8.2 Toxics

Land uses proposed in proximity to the MSHCP Conservation Area that use chemicals or generate bioproducts that are potentially toxic or may adversely affect wildlife species, habitat or water quality shall incorporate measures to ensure that application of such chemicals does not result in discharge to the MSHCP Conservation Area. Measures such as those employed to address drainage issues shall be implemented. The proposed Project will implement a SWPPP that will address runoff during construction and a WQMP to address runoff during operation and maintenance of the facility following construction activities.

5.8.3 Lighting

Night lighting shall be directed away from the MSHCP Conservation Area to protect species within the MSHCP Conservation Area from direct night lighting. If night lighting is required during construction, shielding shall be incorporated to ensure ambient lighting in the MSHCP Conservation Area is not increased.

5.8.4 Noise

Proposed noise generating land uses affecting the MSHCP Conservation Area shall incorporate setbacks, berms or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed the City of Perris residential noise standards of 65 decibels (dBA). Project-specific measures will be developed to prevent impacts to wildlife from increased noise during construction, operation, and maintenance of the facility.

5.8.5 Invasives

Projects adjacent to the MSHCP Conservation Area shall avoid the use of invasive plant species in landscaping, including invasive, non-native plant species listed in *Volume I,* Table 6-2 of the MSHCP.

5.8.6 Barriers

Proposed land uses adjacent to the MSHCP Conservation Area shall incorporate barriers, where appropriate in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass or dumping in the MSHCP Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls, signage and/or other appropriate mechanisms.

5.8.7 Grading/Land Development

The MSHCP states that manufactured slopes associated with development shall not extend into the MSHCP Conservation Area.

6.0 MITIGATION/AVIODANCE MEASURES

The following discussion provides recommendations for project-specific mitigation/avoidance measures for actual or potential impacts to special-status resources.

6.1 Least Bell's Vireo

To offset 1.48 acres of permanent impacts least Bell's vireo habitat with long-term conservation value, the Project will purchase wetland/riparian habitat establishment and/or rehabilitation credits from an approved mitigation bank/in-lieu fee program at a minimum 2:1 ratio. Approved mitigation banks and/or in-lieu fee programs include, but are not limited to, the Riverpark Mitigation Bank, the Inland Empire Resource Conservation District In-Lieu Fee Program, and the Riverside-Corona Resource Conservation District In-Lieu Fee Program. Final compensation will be determined through the approval of a DBESP with the Wildlife Agencies.

6.2 Burrowing Owl

Burrowing owls were not detected within the study area during 2017 breeding season protocol surveys. MSHCP Objective 6 for burrowing owls requires that pre-construction surveys prior to site grading. As such, the following measure is recommended to avoid direct impacts to burrowing owls and to ensure consistency with the MSHCP:

A qualified biologist will conduct a pre-construction survey for burrowing owls within 30 days of initial ground-disturbing activities (e.g. vegetation clearing, clearing and grubbing, tree removal, site watering) to ensure that no owls have colonized the site in the days or weeks

preceding the ground-disturbing activities. If burrowing owls have colonized the project site prior to the initiation of ground-disturbing activities, the Project proponent will immediately inform the Wildlife Agencies and the RCA, and will need to coordinate further with RCA and the Wildlife Agencies, including the possibility of preparing a Burrowing Owl Protection and Relocation Plan, prior to initiating ground disturbance. If ground-disturbing activities occur but the site is left undisturbed for more than 30 days, a pre-construction survey will again be necessary to ensure burrowing owl has not colonized the site since it was last disturbed. If burrow owl is found, the same coordination described above will be necessary.

6.3 Nesting Birds

Vegetation clearing should be conducted outside of the nesting season (February 1 through September 15). If avoidance of the nesting season is not feasible, then a qualified biologist would conduct a nesting bird survey within three days prior any disturbance of the site, including disking, demolition activities, and grading. If active nests are identified, the biologist shall establish suitable buffers around the nests, and the buffer areas shall be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests.

6.4 Jurisdictional Waters

To offset permanent impacts to 1.55 acres of Corps jurisdiction (1.28 acres of wetlands), 1.58 acres of Regional Board jurisdiction (1.28 acres consists of wetlands), and 1.81 acres of CDFW jurisdiction (1.48 acres of riparian vegetation), the Project will purchase wetland/riparian habitat establishment and/or rehabilitation credits from an approved mitigation bank/in-lieu fee program at a minimum 2:1 ratio . Approved mitigation banks and/or in-lieu fee programs include, but are not limited to, the Riverpark Mitigation Bank, the Inland Empire Resource Conservation District In-Lieu Fee Program, and the Riverside-Corona Resource Conservation District In-Lieu Fee Program.

7.0 MSHCP CONSISTENCY ANALYSIS

The purpose of this section is to provide an analysis of the proposed Project with respect to compliance with biological aspects of the Western Riverside County MSHCP. Specifically, this analysis evaluates the proposed Project with respect to the Project's consistency with MSHCP Reserve assembly requirements, *Section 6.1.2* (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools), *Section 6.1.3* (Protection of Narrow Endemic Plant Species), *Section 6.1.4* (Guidelines Pertaining to the Urban/Wildlands Interface), and *Section 6.3.2* (Additional Survey Needs and Procedures).

7.1 Project Relationship to Reserve Assembly

Ethanac Road is described as a Planned Road in *Section 7.3.5* of the MSHCP with an approximately 180-foot-wide covered ROW and a specific consideration (MSHCP Table 7-4) that the road spans the San Jacinto River with a bridge. As discussed above, approximately 6.70 acres of the overall 9.02-acre Project footprint is within the covered ROW. However,

approximately 2.32 acres are located outside of covered ROW, including 1.01 acres within the existing conserved ARL upstream of the ROW and 0.70 acre of the river downstream of the ROW described for conservation. Furthermore, the bridge will not consist of a free span but will be supported on triple column piers approximately 35 feet by 35 feet in size that will be located on top of the underlying bedrock. As the impacts to lands outside of the ROW correspond to riparian/riverine habitat, the will be offset through a one-time in-lieu fee payment to an approved mitigation bank and/or in-lieu fee program within the MSHCP Plan Area in the San Jacinto River watershed or Santa Ana River watershed at a 2:1 mitigation-to-impact ratio.

The Project will be complete the JPR process through the RCA in order for the Project to be deemed consistent with the MSHCP.

7.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

As noted above, the Project will impact 1.81 acres of MSHCP riparian/riverine areas, including 1.48 acres of riparian habitat. Since the least Bell's vireo was detected within the Project footprint, the 1.48 acres of riparian habitat is recognized as habitat with long-term conservation value for the vireo. To offset the permanent impacts to MSHCP riparian/riverine areas, the Project will purchase wetland/riparian habitat establishment and/or rehabilitation credits from an approved mitigation bank/in-lieu fee program at a minimum 2:1 ratio. Approved mitigation banks and/or in-lieu fee programs include, but are not limited to, the Riverpark Mitigation Bank, the Inland Empire Resource Conservation District In-Lieu Fee Program, and the Riverside-Corona Resource Conservation District In-Lieu Fee Program. In addition, the Project will submit a DBESP analysis to the Wildlife Agencies for review and approval prior to the initiation of impact. Final compensation for the loss of MSHCP riparian/riverine areas will be determined through the DBESP process.

7.3 Protection of Narrow Endemic Plants

Volume I, Section 6.1.3 of the MSHCP requires that within identified NEPSSAs, site-specific focused surveys for Narrow Endemic Plants Species will be required for all public and private projects where appropriate soils and habitat are present.

The proposed Project will not impact Narrow Endemic Plants. Therefore, a DBESP would not be required specific to Narrow Endemic Plant species.

7.4 Guidelines Pertaining to the Urban/Wildland Interface

The MSHCP Urban/Wildland Interface Guidelines are intended to address indirect effects associated with locating development in proximity to the MSHCP Conservation Area. As the MSHCP Conservation Area is assembled, development is expected to occur adjacent to the Conservation Area. Future development in proximity to the MSHCP Conservation Area may result in edge effects with the potential to adversely affect biological resources within the Conservation Area. To minimize such edge effects, the guidelines shall be implemented in conjunction with review of individual public and private development projects in proximity to the MSHCP Conservation Area and address the following:

- Drainage;
- Toxics;
- Lighting;
- Noise;
- Invasive species;
- Barriers;
- Grading/Land Development.

As discussed in Section 5.0 of this report, the Project will implement applicable measures as it relates to temporary construction impacts to minimize adverse indirect impacts on special-status resources within Conserved Lands. The proposed Project will be consistent with *Section 6.1.4* of the MSHCP.

7.5 Additional Survey Needs and Procedures

Pursuant to Volume I, Section 6.3.2 of the MSHCP, focused surveys were completed for Criteria Area Plants and for burrowing owls, neither of which were detected within the Project site. As noted above, MSHCP Objective 6 for burrowing owls requires that pre-construction surveys prior to site grading. As such, the following measure is recommended to avoid direct impacts to burrowing owls and to ensure consistency with the MSHCP:

A qualified biologist will conduct a pre-construction survey for burrowing owls within 30 days of initial ground-disturbing activities (e.g. vegetation clearing, clearing and grubbing, tree removal, site watering) to ensure that no owls have colonized the site in the days or weeks preceding the ground-disturbing activities. If burrowing owls have colonized the project site prior to the initiation of ground-disturbing activities, the Project proponent will immediately inform the Wildlife Agencies and the RCA, and will need to coordinate further with RCA and the Wildlife Agencies, including the possibility of preparing a Burrowing Owl Protection and Relocation Plan, prior to initiating ground disturbance. If ground-disturbing activities occur but the site is left undisturbed for more than 30 days, a pre-construction survey will again be necessary to ensure burrowing owl has not colonized the site since it was last disturbed. If burrow owl is found, the same coordination described above will be necessary.

7.6 Conclusion of MSHCP Consistency

As outlined above, the proposed Project will be consistent with the biological requirements of the MSHCP; specifically, pertaining to the Project's relationship to reserve assembly, *Section 6.1.2* (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools), *Section 6.1.3* (Protection of Narrow Endemic Plant Species), *Section 6.1.4* (Guidelines Pertaining to the Urban/Wildlands Interface), and *Section 6.3.2* (Additional Survey Needs and Procedures).

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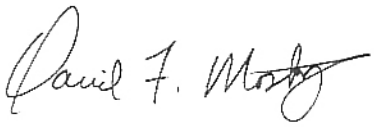
9.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



Signed: _____ Date: July 9, 2021

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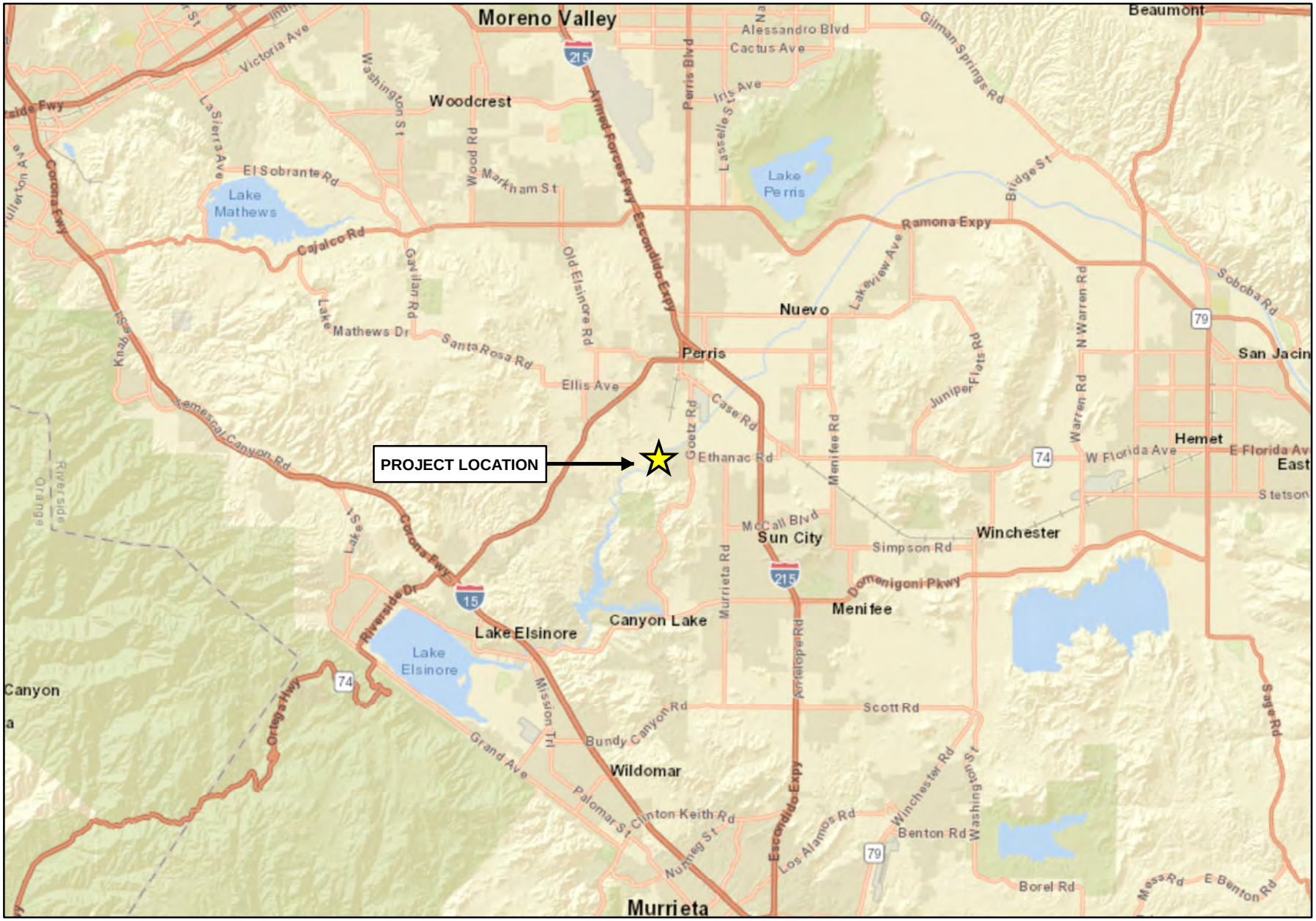


N

0 2 4 8 Miles

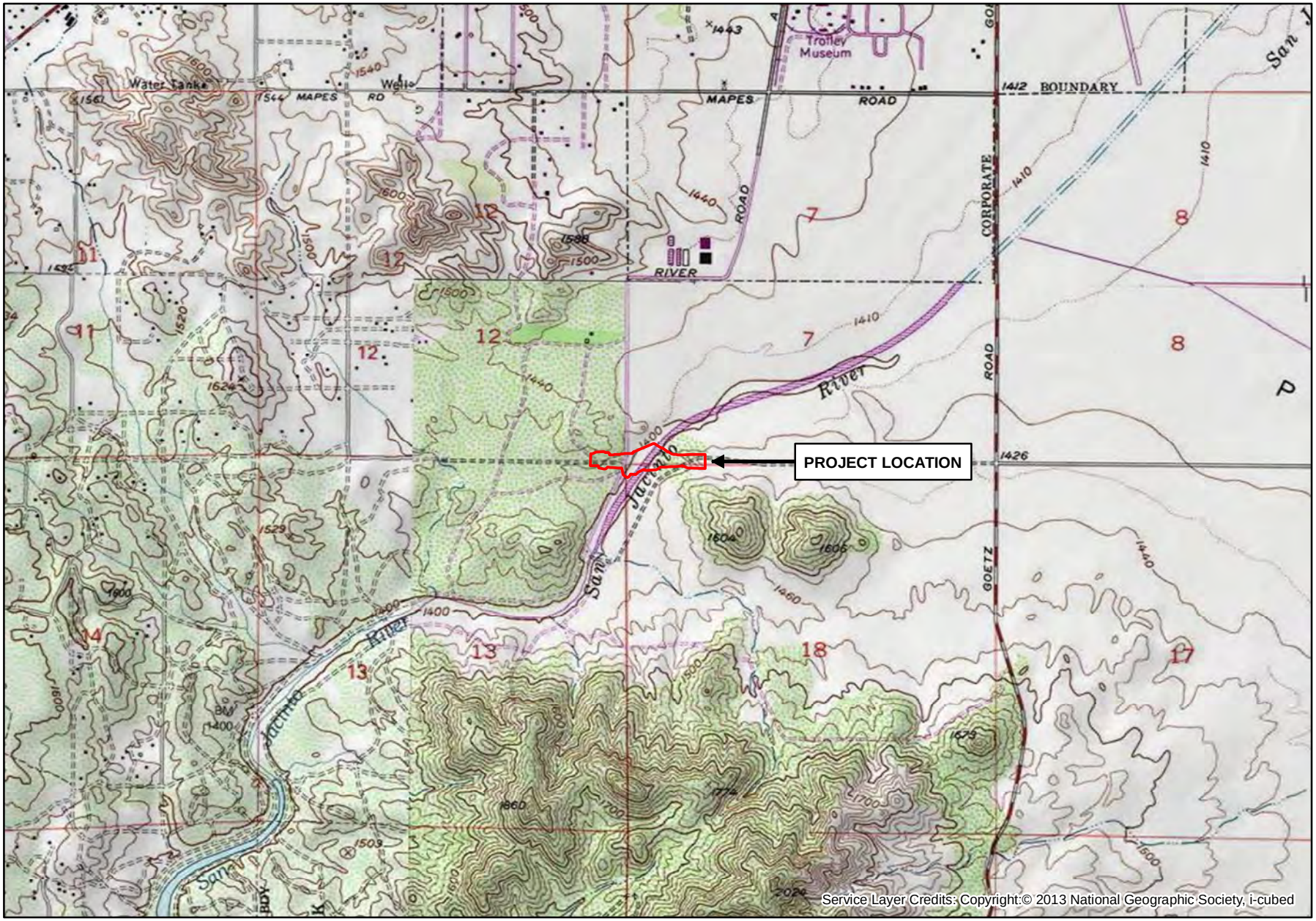
ETHANAC ROAD CROSSING

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1

Adapted from USGS Romoland, CA quadrangle



N

0 1,000 2,000 4,000 Feet

ETHANAC ROAD CROSSING

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2

Development Footprint

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

ETHANAC ROAD CROSSING

Aerial Map

GLENN LUKOS ASSOCIATES

Exhibit 3

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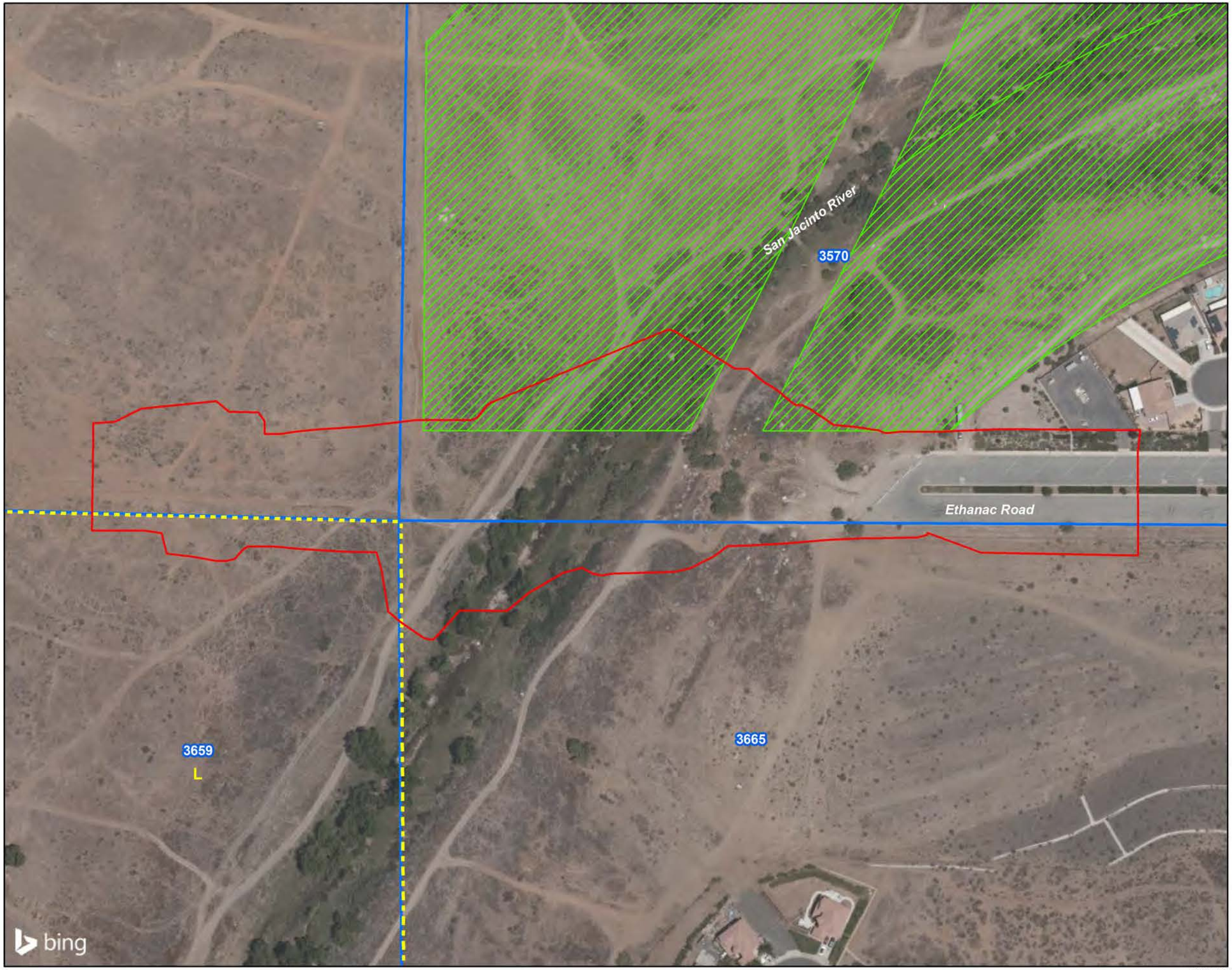

Development Footprint
Criteria Cell
Cell Group
Additional Reserve Land (ARL)

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0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

ETHANAC ROAD CROSSING

MSHCP Overlay Map

GLENN LUKOS ASSOCIATES

Exhibit 4A

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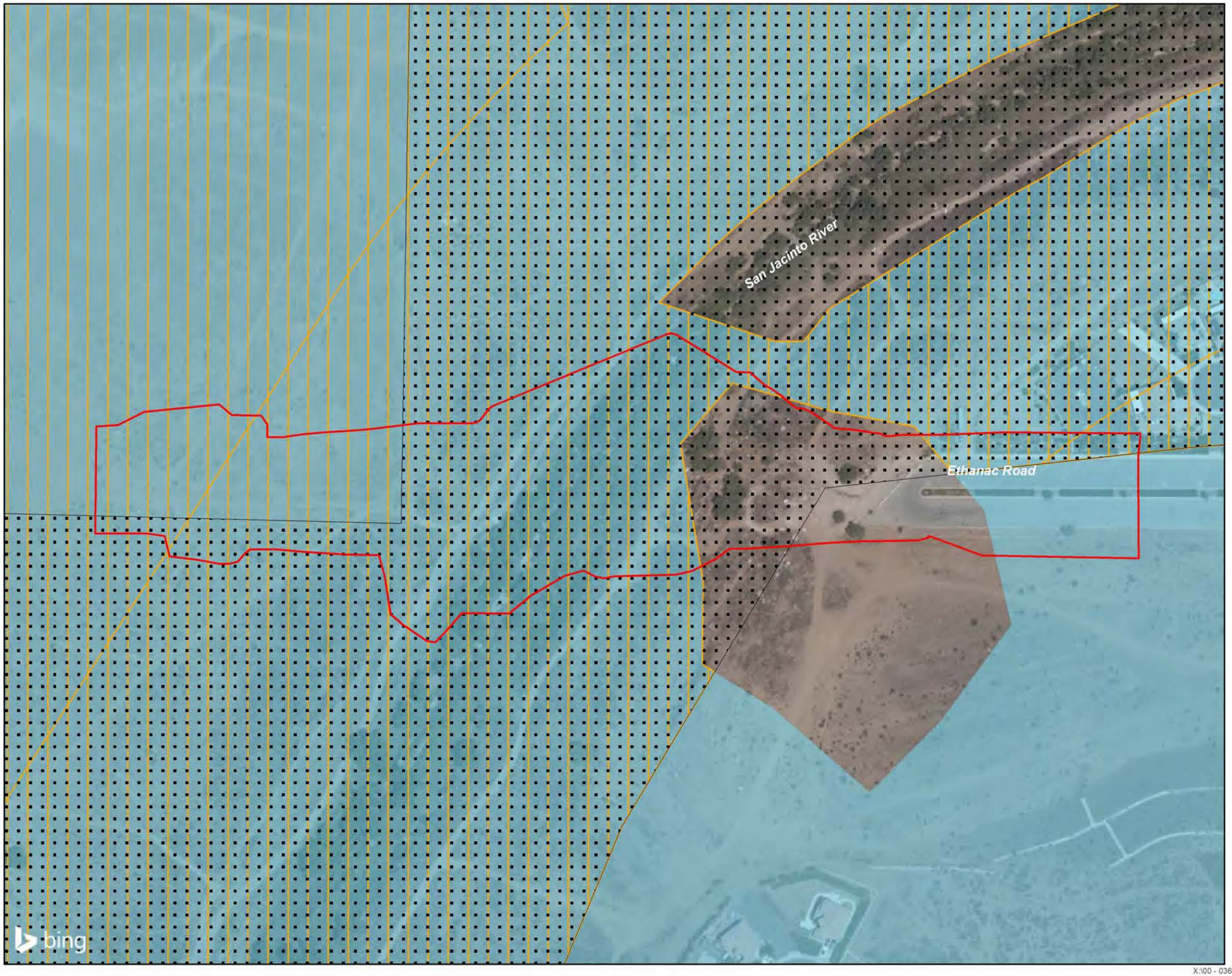

Development Footprint
Burrowing Owl Survey Area
Criteria Area Species Survey Area
Narrow Endemic Plant Species Survey Area

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

ETHANAC ROAD CROSSING

MSHCP Survey Areas Map

GLENN LUKOS ASSOCIATES

Exhibit 4B

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Development Footprint
Alkali Weed-Saltgrass Meadow
Black Willow Thickets
Cattail Marshes/American Bulrush Marsh
Disturbed California Buckwheat
Disturbed/Developed
English Plantain
Fiddleneck Fields
Mulefat Thickets
Non-Native Grassland
Ruderal
Sandbar Willow Thickets
Tamarisk Thickets

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: July 1, 2021

ETHANAC ROAD CROSSING

Vegetation Map

GLENN LUKOS ASSOCIATES

Exhibit 5

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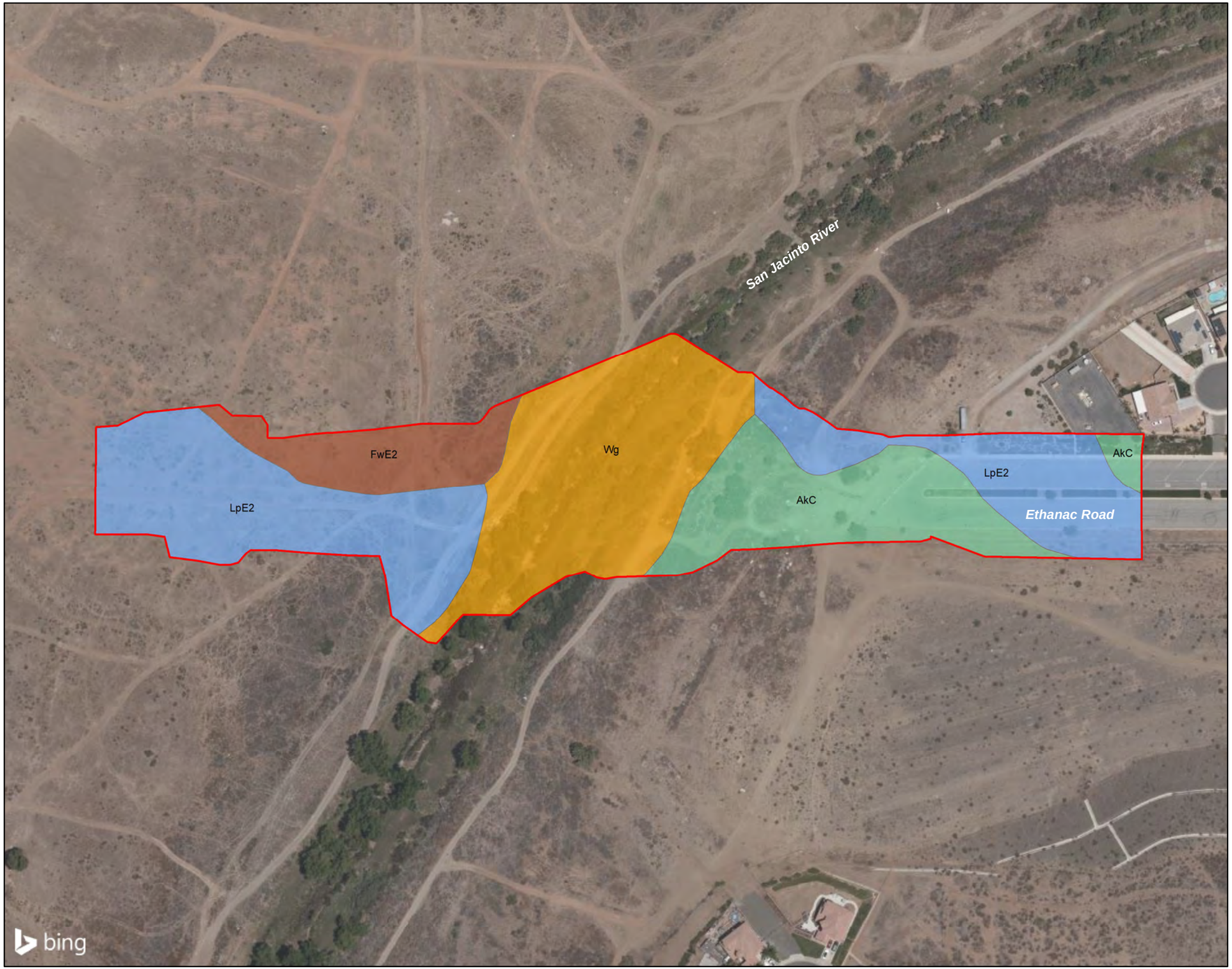


Development Footprint

AkC - Arbuckle loam, 2 to 8 percent slopes

FwE2 - Friant fine sandy loam, 5 to 25 percent slopes, eroded

LpE2 - Lodo rocky loam, 8 to 25 percent slopes, eroded

Wg - Willows silty clay, saline-alkali

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

ETHANAC ROAD CROSSING

Soils Map

GLENN LUKOS ASSOCIATES

Exhibit 6

X:\00 - 0362 ONLY\0188-19ROAD\188-19_GIS\SoilsGIS\188-19Soils07-01-21.mxd

Development Footprint
Non-Wetland Waters of the U.S.
Wetland Waters of the U.S.
Non-Jurisdictional Feature
No Stream Course
Data Pit Location

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

ETHANAC ROAD CROSSING

Corps Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 7A

X:\00 - 0362 ONLY\0188-19ROAD\188-19_GIS\ImpactsGIS\REV6\188-19 Corps ImpactsREV6.mxd

Development Footprint
Wetland Waters of the U.S./State
Non-Wetland Waters of the U.S./State
Non-Wetland Waters of the State
No Stream Course
Width of Jurisdiction in Feet

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

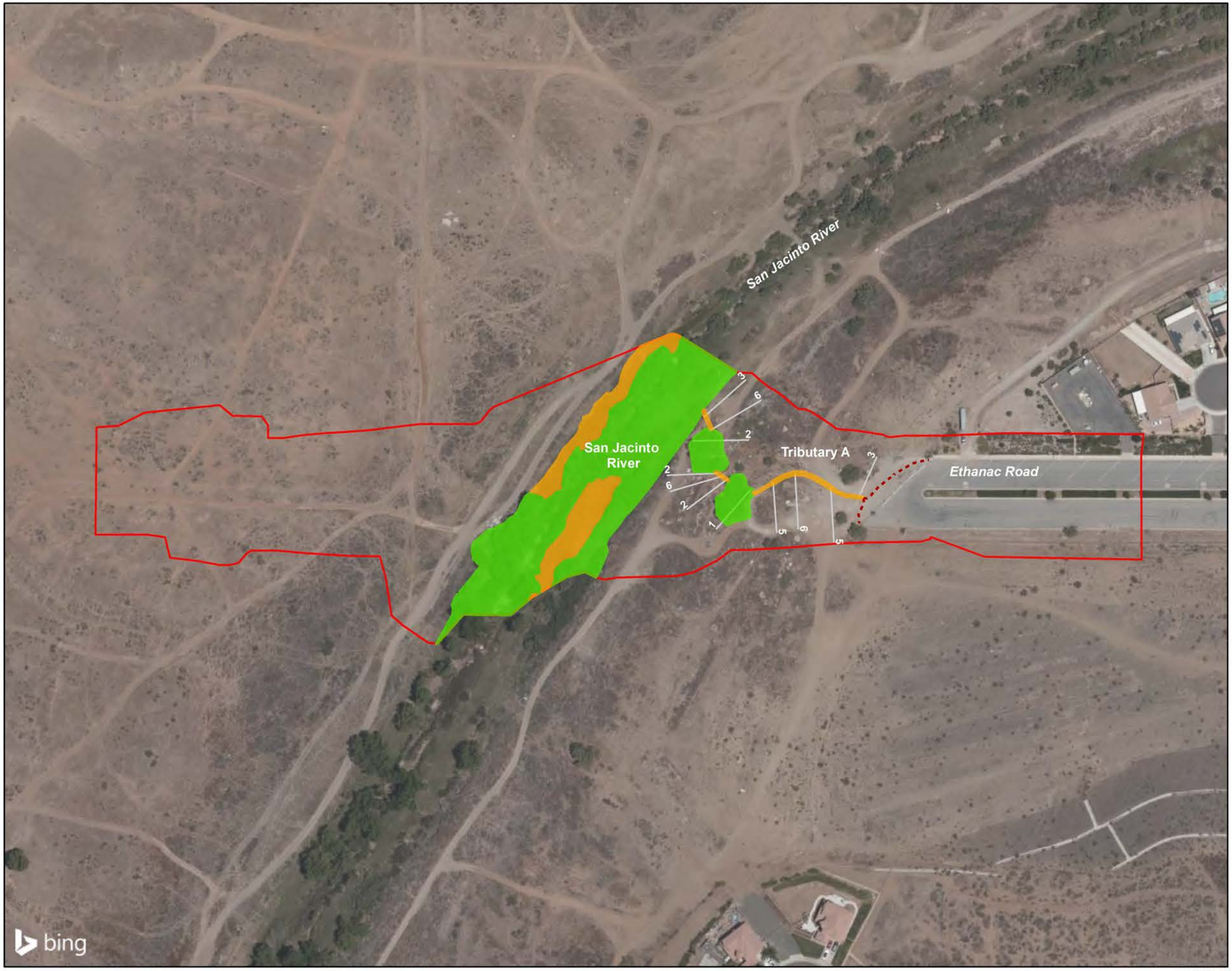
ETHANAC ROAD CROSSING

RWQCB Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 7B

X:\00 - 0362 ONLY\0188-19ROAD\188-19_GIS\ImpactsGIS\REV6\188-19 RWQCB ImpactsREV6.mxd



Development Footprint
CDFW Non-Riparian Stream
CDFW Riparian
No Stream Course
3 Width of Jurisdiction in Feet

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

ETHANAC ROAD CROSSING

CDFW Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 7C

X:\00 - 0362 ONLY\0188-19ROAD\188-19_GIS\ImpactsGIS\REV6\188-19 CDFW ImpactsREV6.mxd

Development Footprint
MSHCP Riverine
MSHCP Riparian

3

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

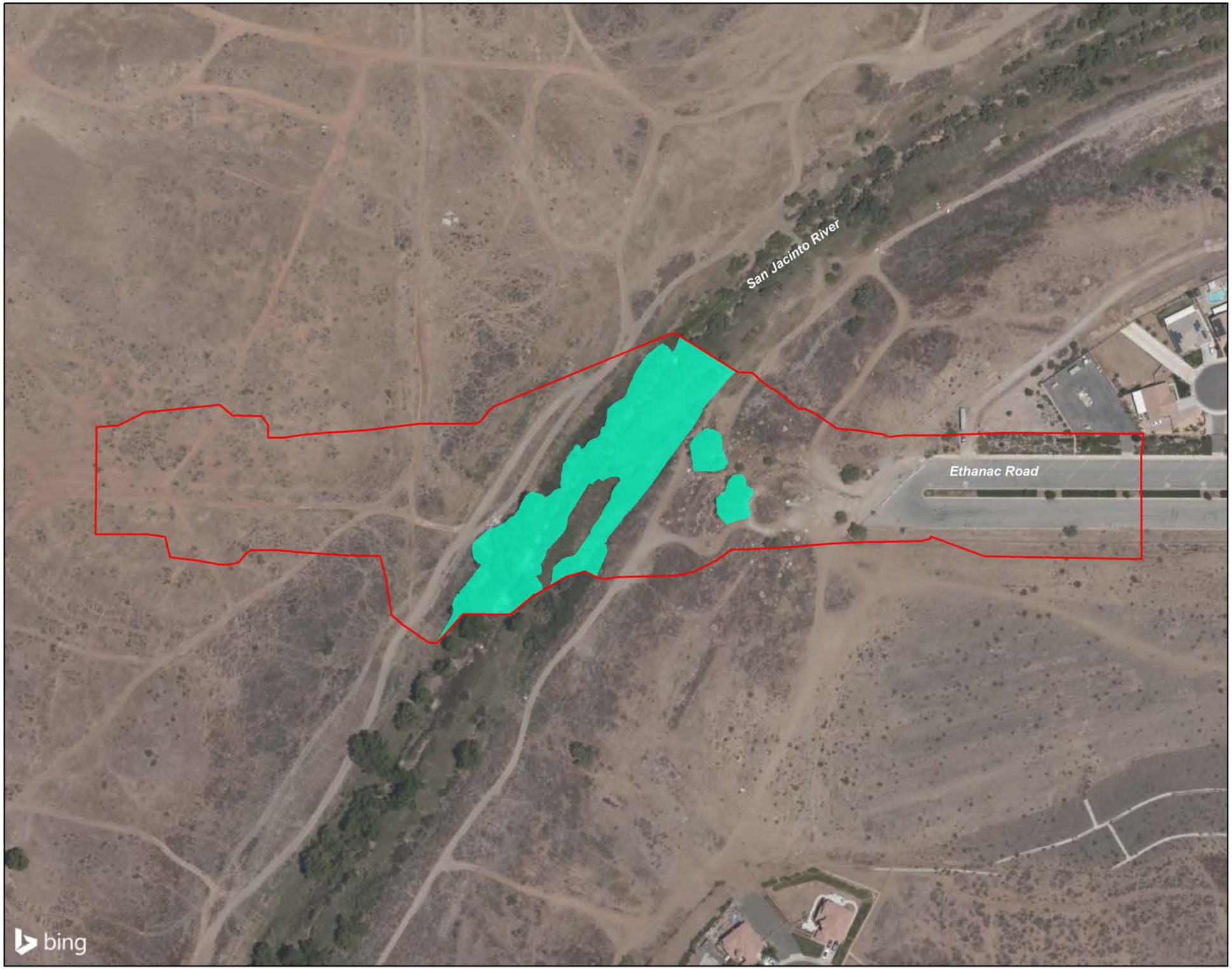
ETHANAC ROAD CROSSING

MSHCP Riparian/Riverine Map

GLENN LUKOS ASSOCIATES

Exhibit 7D

X:\00 - 0362 ONLY\0188-19ROAD\188-19_GIS\ImpactsGIS\REV6\188-19 MSHCPRipRiv ImpactsREV6.mxd



Development Footprint

LBV Habitat with
Long-Term Conservation Value

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

ETHANAC ROAD CROSSING

LBV Habitat with Long-Term Conservation Value Map

GLENN LUKOS ASSOCIATES

Exhibit 8

X:\00 - 0362 ONLY\0188-19ROAD\188-19_GIS\LBV\0188-19 LBVOccupiedHabitat06-08-21.mxd

Development Footprint

Versatile Fairy Shrimp*
(Branchinecta lindahli)

**Data from 2013/2014*
Riverwoods Development Project Surveys

N

0 75 150 300
Feet

1 inch = 150 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: June 8, 2021

ETHANAC ROAD CROSSING

Results of 2014 Fairy Shrimp Surveys Map

GLENN LUKOS ASSOCIATES

Exhibit 9

X:\00 - 0362 ONLY\0188-19ROAD\188-19_GIS\FairyShrimpGIS\188-19 FairyShrimp.mxd

Photograph 1: June 30, 2017. View depicting ruderal vegetation within the central portion of the site looking southeast. Photo taken at approximate latitude 33°44'33.37"N, longitude 117°14'20.78"W.

Photograph 2: June 30, 2017. View depicting rancher's fireweed field in the foreground and the onsite portion of the San Jacinto River in the background facing west. Photo taken at approximate latitude 33°44'35.37"N, longitude 117°14'20.91"W.

GLENN LUKOS ASSOCIATES

Exhibit 10 – Page 1

ETHANAC ROAD CROSSING

Site Photographs

Photograph 3: June 30, 2017. View depicting the central onsite portion of the San Jacinto River looking west. Photo taken at approximate latitude 33°44'34.31"N, longitude 117°14'24.12"W facing towards the western bank.

Photograph 4: June 30, 2017. View depicting the southern onsite portion of the San Jacinto River looking south. Photo taken at approximate latitude 33°44'31.62"N, longitude 117°14'25.88"W facing downstream.

GLEGLENN LUKOS ASSOCIATES

Exhibit 10 – Page 2

ETHANAC ROAD CROSSING

Site Photographs

APPENDIX A

FLORAL COMPENDIUM

The floral compendium lists all species identified during floristic level/focused plant surveys conducted for the Project site. Taxonomy typically follows The Jepson Manual, 2nd Edition (2012). Common plant names are taken from Baldwin (2012), Munz (1974), and Roberts et al (2004) and Roberts (2008). An asterisk (*) denotes a non-native species.

SCIENTIFIC NAME	COMMON NAME
MAGNOLIOPHYTA	**FLOWERING PLANTS**
MONOCOTYLEDONES	**MONOCOTS**
CYPERACEAE	**Sedge Family**
Bolboschoenus maritimus	alkali bulrush
Eleocharis macrostachya	common spikerush
Schoenoplectus americanus	Chairmaker's bulrush
Schoenoplectus californicus	California bulrush
POACEAE	**Grass Family**
* *Bromus hordeaceus*	soft chess
* *Bromus madritensis* ssp. *rubens*	foxtail chess
* *Cynodon dactylon*	Bermuda grass
Distichlis spicata	salt grass
* *Festuca perennis*	Italian rye grass
* *Hordeum marinum*	seaside barley
* *Pennisetum setaceum*	fountaingrass
* *Phalaris minor*	little-seed canary grass
JUNCACEAE	**Rush Family**
Juncus mexicanus	Mexican rush
TYPHACEAE	**Cattail Family**
Typha dominegensis	southern cattail
EUDICOTYLEDONES	**EUDICOTS**
AMARANTHACEAE	**Amaranth Family**
Amaranthus blitoides	prostrate amaranth

ASTERACEAE		**Sunflower Family**
	Ambrosia psilostachya	ragweed
*	*Anthemis cotula*	mayweed
	Aster subulatus var. *ligulatus*	slim aster
*	*Centaurea melitensis*	tocalote
*	*Cirsium vulgare*	bull thistle
	Corethrogyne filaginifolia	common sandaster
	Encelia farinosa	brittlebush
	Ericameria sp.	goldenbush
	Holocarpha virgata ssp. *virgate*	narrow tarplant
	Isocoma menziesii	Menzies' goldenbush
*	*Lactuca serriola*	common groundsel
*	*Oncosiphon piluliferum*	stinknet
*	*Sonchus asper*	spiny sowthistle
	Xanthium strumarium	rough cocklebur
BORAGINACEAE		**Borage Family**
	Amsinckia menziesii	Menzies' fiddleneck
	Cryptantha sp.	cryptantha
	Heliotropium curassavicum	salt heliotrope
BRASSICACEAE		**Mustard Family**
*	*Hirschfeldia incana*	short-pod mustard
*	*Sisymbrium irio*	London rocket
CARYOPHYLLACEAE		**Carnation Family**
	Spergularia marina	salt marsh sand spurry
CHENOPIDIACEAE		**Goosefoot Family**
	Atriplex dioica	spike saltbush
*	*Bassia hyssopifolia*	fivehook bassia
*	*Salsola tragus*	Russian thistle
CONVOLVULACEAE		**Morning Glory Family**
	Calystegia macrostegia	island morning glory
	Cressa truxillensis	spreading alkaliweed
EUPHORBIACEAE		**Spurge Family**
	Euphorbia albomarginata	rattlesnake sandmat
FABACEAE		**Legume Family**
	*Astragalus trichopodu*s	Santa Barbara milk vetch
*	*Medicago polymorpha*	bur clover
*	*Melilotus albus*	white sweet clover
*	*Vicia villosa*	hairy vetch

FRANNKENIACEAE	**Sea-Heath Family**
Frankenia salina	alkali heath
GERANIACEAE	**Geranium Family**
* *Erodium cicutarium*	red stemmed filaree
LAMIACEAE	**Mint Family**
Trichostema austromontanum	San Jacinto bluecurls
Trichostema lanceolatum	vinegarweed
LYTHRACEAE	**Loosestrife Family**
Lythrum californicum	California loosestrife
MALVACEAE	**Mallow Family**
Malvella leprosa	alkali mallow
PLANTAGINACEAE	**Plantain Family**
* *Plantago lanceolata*	English plantain
POLYGONACEA	**Knotweed family**
Eriogonum fasciculatum	California buckwheat
Eriogonum gracile	slender buckwheat
Persicaria lapathifolia	common knotweed
Rumex fueginus	Golden dock
SALICAEAE	**Willow Family**
Populus fremontii	Fremont cottonwood
Salix exigua	sandbar willow
Salix gooddingii	black willow
Salix lasiolepis	arroyo willow
SOLANCEAE	**Nightshade Family**
* *Nicotiana glauca*	tree tobacco
TAMARICACEAE	**Tamarisk Family**
* *Tamarix ramosissima*	salt cedar

APPENDIX B

FAUNAL COMPENDIUM

The faunal compendium lists species identified on the Study Area. Scientific nomenclature and common names for vertebrate species referred to in this report follow Collins (2009) for amphibians and reptiles, Bradley, et al. (2014) for mammals, and AOU Checklist (1998) for birds. An (*) denotes non-native species.

BUTTERFLIES

Nymphalidae - Brush-Footed Butterflies
Junonia coenia, common buckeye

Papilionide – Swallowtail Butterflies
Papilio rutulus, western tiger swallowtail

Pieridae - Whites and Sulphurs
* *Pieris rapae*, cabbage white

REPTILES

Phrynosomatidae – Spiny Lizard Family
Sceloporus occidentalis, Western Fence Lizard
Uta stansburiana, Common Side-blotched Lizard

BIRDS

Accipitridae - Kites, Hawks, Eagles, and Allies
Accipiter cooperii, cooper's hawk
Buteo jamaicensis, red-tailed hawk
Buteo lineatus, red-shouldered hawk
Elanus leucurus, white-tailed kite

Aegithalidae - Bushtits
Psaltriparus minimus, bushtit

Ardeidae – Herons
Ardea alba, great egret
Ardea herodias, great blue heron
Egretta thula, snowy egret
Nycticorax nycticorax, black-crowned night heron

Bombicillidae – Waxwing Family
Phainopepla nitens, phainopepla

Cardinalidae – Cardinals, Grosbeaks, and Allies
*Passerina caerulea***,** blue grosbeak

Cathartidae – New World Vultures
Cathartes aurau, turkey vulture

Charadriidae - Plovers and Lapwings
Charadrius vociferous, killdeer

Columbidae - Pigeons and Doves
Zenaida macroura, mourning dove

Corvidae - Jays, Magpies and Crows
Corvus brachyrhynchos, American crow
Corvus corax, common raven

Emberizidae - New World Sparrows
Melospiza melodia, song sparrow
Melozone crissalis, California towhee

Fringillidae - Finches
Haemorhous mexicanus, house finch
Spinus psaltria, lesser goldfinch

Hirundinidae - Swallow and Martin Family
Hirundo rustica, barn swallow
Stelgidopteryx serripennis, northern rough-winged swallow

Icteridae - Blackbirds and Allies
Icterus cucullatus, hooded oriole
Sturnella neglecta, western meadowloark

Mimidae - Mockingbirds, Thrashers, and Allies
Mimus polyglottos, northern mockingbird

Parulidae - Wood Warblers
Cardellina pusilla, Wilson's warbler
Geothlypis trichas, common yellowthroat
Setophaga petechia, yellow warbler
Setophaga townsendii, Townsend's warbler

Picidae - Woodpeckers and Allies
Picoides nuttallii, Nuttall's woodpecker

Trochilidae - Hummingbirds
Calypte anna, Anna's hummingbird
Calypte costae, Costa's hummingbird

Troglodytidae - Wrens
Thryomanes bewickii, Bewick's wren

Tyrannidae - Tyrant Flycatchers
Empidonax traillii, willow flycatcher
Sayornis nigricans, black phoebe
Sayornis saya, Say's phoebe
Tyrannus vociferans, Cassin's kingbird

Vireonidae - Vireos
Vireo bellii pusillus, least Bell's vireo

MAMMALS

Canidae – Canid Fmaily
Canis latrans, coyote

Geomyidae – Pocket Gopher Family
Thomomys bottae, Botta's pocket gopher

Leporidae – Hare and Rabbit Family
Sylvilagus audubonii, Desert Cottontail

Sciuridae – Squirrel Family
Spermophilus beecheyi, California ground squirrel

GLENN LUKOS ASSOCIATES
Regulatory Services

May 14, 2021

Derek Barbour
Richland Communities
3161 Michelson Drive, Suite 425
Irvine, California 92612

SUBJECT: Jurisdictional Delineation of the Ethanac Road Crossing of the San Jacinto River, Located in the City of Perris, Riverside County, California.

Dear Mr. Barbour:

This letter report summarizes our preliminary findings of U.S. Army Corps of Engineers (Corps), Santa Ana Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW) jurisdiction for the above-referenced property.[1]

The Ethanac Road Crossing of the San Jacinto River Project (Project) is located in the City of Perris, Riverside County, California [Exhibit 1]. The Project study area (the "Study Area") comprises approximately 13.68 acres and contains one blue-line drainage (as depicted on the U.S. Geological Survey (USGS) topographic map Romoland, California [dated 1953 and photorevised in 1979]) [Exhibit 2].

On April 30, 2021 regulatory specialists from Glenn Lukos Associates, Inc. (GLA) examined the Study Area to determine the presence and updated limits of (1) Corps jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), (2) Regional Board jurisdiction pursuant to Section 401 of the CWA and Section 13260 of the California Water Code (CWC), and (3) CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600-1617 of the Fish and Game Code. The following aerial maps depicting the areas of Corps (Exhibit 3A], Regional Board [Exhibit 3B] and CDFW jurisdiction [Exhibit 3C] are enclosed. A Soils Map is enclosed as Exhibit 4. Photographs to document the topography, vegetative communities, and general characteristics of

[1] This report presents our best effort at estimating the subject jurisdictional boundaries using the most up-to-date regulations and written policy and guidance from the regulatory agencies. Only the regulatory agencies can make a final determination of jurisdictional boundaries.

the San Jacinto River at the proposed road crossing are provided as Exhibit 5. Wetland data sheets are attached as Appendix A.

Corps jurisdiction within the Study Area totals 4.05 acres, of which 3.19 acres consist of wetland waters of the U.S and 0.86 acre consists of non-wetland waters of the U.S. A total of 1,309 linear feet of intermittent stream is present.

Regional Board jurisdiction within the Study Area totals 4.08 acres, of which 3.19 acres consist of wetland waters of the State and 0.89 acre consists of non-wetland waters of the State. A total of 1,693 linear feet of stream is present. Of the total 4.08 acres, 4.05 acre and 1,309 linear feet comprise wetland and non-wetland waters of the U.S. that are subject to Corps jurisdiction and the remaining 0.03 acre and 384 linear feet comprise waters of the State that are subject to Regional Board jurisdiction only. This includes 0.03 acre and 384 linear feet of non-wetland ephemeral water of the State known as Tributary A.

CDFW jurisdiction within the Study Area totals 4.44 acres, of which 3.42 acres consist of riparian stream and 1.02 acres consist of non-riparian stream. A total of 1,693 linear feet of stream is present.

I. METHODOLOGY

Prior to beginning the field delineation, color aerial photographs, a topographic base map of the Study Area, and the previously cited USGS topographic map were examined to determine the locations of potential areas of Corps/Regional Board/CDFW jurisdiction. Suspected jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Suspected wetland habitats on the site were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual[2] (Wetland Manual) and the 2008 V.2.0 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement). Reference was also made to the 2019 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Board Wetland Definition and Procedures)[3] to identify suspected State wetland habitats.

[2] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.
[3] State Water Resources Control Board. 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State.

While in the field, the limits of Corps/Regional Board/CDFW jurisdiction were recorded using sub-meter GPS technology and/or recorded on a color aerial photograph using visible landmarks. Other data were recorded into field notebooks or on wetland data sheets, and each location of the point where data was collected was recorded using GPS technology with sub-meter accuracy.

The National Cooperative Soil Survey (NCSS)[4] has mapped the following soil types as occurring in the general vicinity of the project site [Exhibit 4]:

Arbuckle loam, 2 to 8 percent slopes

Soils of the Arbuckle series are well drained and have slopes of 2 to 25 percent. They occur on alluvial fans and developed in alluvium from metasedimentary rocks. Vegetation is chiefly annual grasses, forbs, and chamise. In a typical profile, the surface layer is brown gravelly loam and pale-brown gravelly very fine sandy loam about 12 inches thick. The subsoil is brown gravelly loam and gravelly clay loam, and it extends to a depth of about 45 inches. The substratum is yellowish-brown very gravelly sandy loam. The Arbuckle soils are used for dryland grain and for irrigated citrus, alfalfa, lemons, and grain.

Escondido fine sandy loam, 2 to 8 percent slopes, eroded

The Escondido series consists of well drained soils on uplands in the Santa Ana Mountains. These soils formed in material weathered from metamorphosed sandstone. Slopes are 9 to 30 percent. The vegetation is mostly an oak-grass type. In a typical profile, the surface layer is brown, slightly acid and medium acid very fine sandy loam 16 inches thick. The subsoil is light yellowish brown, medium acid very fine sandy loam 13 inches thick. Slightly weathered metamorphic sandstone is at a depth of 29 inches. Escondido soils are used for pasture, range, watershed, and wildlife.

Friant fine sandy loam, 5 to 25 percent slopes, eroded

The Friant series consists of somewhat excessively drained soils in the mountains. These soils formed in material weathered from fine grained metasedimentary rock. Slopes are 30 to 70 percent. The vegetation is mostly California sagebrush, black sage, flattop, buckwheat, and other common brush plants. In a typical profile, the soil is brown gravelly fine sandy loam 17 inches thick. Very dark gray, fractures, extremely hard metasedimentary rock extends to a depth of 34 inches or more. The soil is slightly acid. About 2 percent of the soil surface is large, low rock outcrops. These soils are used for watershed, wildlife, and, to a limited extent, for range.

[4] SCS is now known as the National Resource Conservation Service or NRCS.

Lodo rocky loam, 8 to 25 percent slopes, eroded

The Lodo series consists of somewhat excessively drained upland soils on slopes of 8 to 50 percent. These soils developed on metamorphosed fine-grained sandstone. Vegetation is chiefly annual grasses, forbs, and chaparral. In a typical profile, the surface layer is brown gravelly loam about 8 inches thick. Underlying this is brown shattered and weathered fine-grained metamorphosed sandstone. Depth to sandstone varies from 8 to 15 inches. The Lodo soils are used for range and dryland pasture.

Willows silty clay, saline-alkali

The Willows series consists of poorly drained, saline-alkali soils in basins and on edges of alluvial fans. Slopes range from 0 to 2 percent. These soils developed in alluvium from predominantly fine-textured mixed materials. Vegetation is chiefly annual grasses, salt grass, alkali-lettuce, and forbs. In a typical profile, the surface layer is alive-gray and gray silty clay about 10 inches thick. The next layer is gray clay about 14 inches thick. Below this, to a depth of several feet, is light-gray and olive-gray silty clay. Willows soils are used for dryland grain and pasture and, if irrigated, for grain, alfalfa, and permanent pasture. They are also used for nonfarm purposes, especially duckponds.

II. JURISDICTION

A. <u>Army Corps of Engineers</u>

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a), pursuant to the *Navigable Waters Protection Rule*[5] (NWPR), as:

(a) Jurisdictional waters. For purposes of the Clean Water Act, 33 U.S.C. 1251 *et seq.* and its implementing regulations, subject to the exclusions in paragraph (b) of this section, the term ‘‘waters of the United States’’ means:

> *(1) The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide;*
> *(2) Tributaries;*

[5] U.S. Environmental Protection Agency & Department of Defense. 2020. Federal Register / Vol. 85, No. 77 / Tuesday, April 21, 2020 / Rules and Regulations.

(3) Lakes and ponds, and impoundments of jurisdictional waters; and
(4) Adjacent wetlands.

(b) Non-jurisdictional waters. The following are not ‘‘waters of the United States’’:

(1) Waters or water features that are
not identified in paragraph (a)(1), (2), (3), or (4) of this section;
(2) Groundwater, including groundwater drained through subsurface drainage systems;
(3) Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools;
(4) Diffuse stormwater run-off and directional sheet flow over upland;
(5) Ditches that are not waters identified in paragraph (a)(1) or (2) of this section, and those portions of ditches constructed in waters identified in paragraph (a)(4) of this section that do not satisfy the conditions of paragraph (c)(1) of this section;
(6) Prior converted cropland;
(7) Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease;
(8) Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters, so long as those artificial lakes and ponds are not impoundments of jurisdictional waters that meet the conditions of paragraph (c)(6) of this section;
(9) Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;
(10) Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff;
(11) Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention, and infiltration basins and ponds, constructed or excavated in upland or in non-jurisdictional waters; and
(12) Waste treatment systems.

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

1. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term "wetlands" (a subset of "waters of the United States") is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the Corps published the Wetland Manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the Wetland Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the Wetland Manual and Arid West Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the Arid West 2016 Regional Wetland Plant List[6],[7]);

- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

- Whereas the Wetland Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

B. <u>Regional Water Quality Control Board</u>

The State Water Resource Control Board and each of its nine Regional Boards regulate the discharge of waste (dredged or fill material) into waters of the United States[8] and waters of the

[6] Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. Arid West 2016 Regional Wetland Plant List. Phytoneuron 2016-30: 1-17. Published 28 April 2016.

[7] Note the Corps also publishes a National List of Plant Species that Occur in Wetlands (Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016.); however, the Regional Wetland Plant List should be used for wetland delineations within the Arid West Region.

[8] Therefore, wetlands that meet the current definition, or any historic definition, of waters of the U.S. are waters of the state. In 2000, the State Water Resources Control Board determined that all waters of the U.S. are also waters of

State. Waters of the United States are defined above in Section II.A and waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050[e]).

Section 401 of the CWA requires certification for any federal permit or license authorizing impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as Section 404 of the CWA and Section 10 of the Safe Rivers and Harbors Act, to ensure that the impacts do not violate state water quality standards. When a project could impact waters outside of federal jurisdiction, the Regional Board has the authority under the Porter-Cologne Water Quality Control Act to issue Waste Discharge Requirements (WDRs) to ensure that impacts do not violate state water quality standards. Clean Water Act Section 401 Water Quality Certifications, WDRs, and waivers of WDRs are also referred to as orders or permits.

1. State Wetland Definition

The State Board Wetland Definition and Procedures define an area as wetland as follows: *An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.*

The following wetlands are waters of the State:

1. *Natural wetlands;*
2. *Wetlands created by modification of a surface water of the state;*[9] *and*
3. *Artificial wetlands*[10] *that meet any of the following criteria:*

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the state by regulation, prior to any regulatory or judicial limitations on the federal definition of waters of the U.S. (California Code or Regulations title 23, section 3831(w)). This regulation has remained in effect despite subsequent changes to the federal definition. Therefore, waters of the state includes features that have been determined by the U.S. Environmental Protection Agency (U.S. EPA) or the U.S. Army Corps of Engineers (Corps) to be "waters of the U.S." in an approved jurisdictional determination; "waters of the U.S." identified in an aquatic resource report verified by the Corps upon which a permitting decision was based; and features that are consistent with any current or historic final judicial interpretation of "waters of the U.S." or any current or historic federal regulation defining "waters of the U.S." under the federal Clean Water Act.

[9] "Created by modification of a surface water of the state" means that the wetland that is being evaluated was created by modifying an area that was a surface water of the state at the time of such modification. It does not include a wetland that is created in a location where a water of the state had existed historically, but had already been completely eliminated at some time prior to the creation of the wetland. The wetland being evaluated does not become a water of the state due solely to a diversion of water from a different water of the state.

[10] Artificial wetlands are wetlands that result from human activity.

a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
b. Specifically identified in a water quality control plan as a wetland or other water of the state;
c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):

i. Industrial or municipal wastewater treatment or disposal,
ii. Settling of sediment,
iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
iv. Treatment of surface waters,
v. Agricultural crop irrigation or stock watering,
vi. Fire suppression,
vii. Industrial processing or cooling,
viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
ix. Log storage,
x. Treatment, storage, or distribution of recycled water, or
xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
xii. Fields flooded for rice growing.[11]

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not waters of the state. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state.

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[11] Fields used for the cultivation of rice (including wild rice) that have not been abandoned due to five consecutive years of non-use for the cultivation of rice (including wild rice) that are determined to be a water of the state in accordance with these Procedures shall not have beneficial use designations applied to them through the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, except as otherwise required by federal law for fields that are considered to be waters of the United States. Further, agricultural inputs legally applied to fields used for the cultivation of rice (including wild rice) shall not constitute a discharge of waste to a water of the state. Agricultural inputs that migrate to a surface water or groundwater may be considered a discharge of waste and are subject to waste discharge requirements or waivers of such requirements pursuant to the Water Board's authority to issue or waive waste discharge requirements or take other actions as applicable.

C. California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW also defines a stream as “a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators.”

It is important to note that the Fish and Game Code defines fish and wildlife to include: all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities including the habitat upon which they depend for continued viability (FGC Division 5, Chapter 1, section 45 and Division 2, Chapter 1 section 711.2(a) respectively). Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

III. RESULTS

Potential jurisdictional features analyzed as part of the field investigation include two drainages, the San Jacinto River and Tributary A. The San Jacinto River is an intermittent feature that is tributary to Canyon Lake, Lake Elsinore, Temescal Wash, the Santa Ana River, and ultimately the Pacific Ocean. Tributary A is an ephemeral drainage that flows only in direct response to precipitation. Both features are further described below, followed by a summary of Corps, Regional Board, and CDFW jurisdiction. Site photographs are provided as Exhibit 5.

San Jacinto River

The segment of the San Jacinto River in the Study Area is classified as an intermittent stream that includes open water, freshwater marsh, southern riparian scrub, and alkali components in the adjacent terraces. The low-flow channel contains areas of open water that are unvegetated and areas that support emergent marsh species including southern cattail (*Typha domingensis*), California bulrush (*Schoenoplectus californicus*), and Olney’s bulrush (*Schoenoplectus americanus*). Adjacent to the low-flow channel is a flat terrace that generally ranges from one to

three feet above the channel. The terrace exhibits a mosaic of herbaceous alkali-adapted species dominated by saltgrass (*Distichlis spicata*), alkali weed (*Cressa truxillensis*), English plantain (*Plantago lanceolate*), and fiddleneck (*Amsinckia menziesii*). Dominant shrubs and trees associated with the River include mulefat (*Baccharis salicifolia*), tamarisk (*Tamarix ramosissima*),)Gooding's black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), and red willow (*Salix laevigata*).

Tributary A

In addition to the segment of the San Jacinto River mentioned above, a single ephemeral tributary (Tributary A) with well-defined channel banks also falls within the Study Area. Tributary A originates as road run-off from Ethanac Road and is conveyed in a westerly direction from west of the road edge to the flat terrace associated with the eastern edge of the San Jacinto River. This feature was completely dry during the field investigation and flows only in direct response to precipitation (e.g., rain).

Vegetation associated with the upstream portion of Tributary A includes stinknet (*Oncosiphon piluliferum*), mustard (*Brassica spp.*), tocalote (*Centaurea melitensis*), , tamarisk (*Tamarix ramosissima*), ripgut brome (*Bromus Diandrus*), and red brome (*Bromus madritensis* ssp. rubens). Vegetation associated with the downstream portion of Tributary A includes California dock (*Rumex californicus*), tamarisk (*Tamarix ramosissima*), cocklebur (*Xanthium strumarium*), English plantain (*Plantago lanceolate*), heliotrope (*Heliotropium curassavicum*), mustard (*Brassica spp.*), ripgut brome (*Bromus Diandrus*), red brome (*Bromus madritensis* ssp. rubens), and alkali mallow (*Malvella leprosa*).

A. <u>Corps Jurisdiction</u>

Corps jurisdiction associated with the Study Area totals 4.05 acres, of which 3.19 acres consist of wetland waters of the U.S and 0.86 acre consists of non-wetland waters of the U.S. A total of 1,309 linear feet of stream is present. Corps jurisdiction is limited to the San Jacinto River. The San Jacinto River would be regulated as a "Tributary" with adjacent wetlands under the definitions of waters of the U.S.

San Jacinto River

The San Jacinto River is a blue-line drainage that enters the Study Area from the northeast and extends in a southwesterly direction for approximately 1,309 linear feet before exiting the site. The river conveys intermittent flow and is ultimately tributary to the Pacific Ocean. The low flow channel is approximately 20 feet in width and exhibited flowing water and ponding at the

time of the field assessment. The San Jacinto River contains open water, freshwater marsh, and southern willow riparian scrub habitats. Areas in the abutting floodplain are dominated by facultative-or wetter alkali-adapted herbaceous species including alkali heath, saltgrass, and English plantain. Wetland indicators include a predominance of wetland vegetation, wetland hydrology, and the presence of hydrogen sulfide odor and/or saline-alkaline soils in the abutting floodplain. Since the San Jacinto River and its adjacent wetlands meet the definition of waters of the U.S., it is subject to Corps jurisdiction under Section 404 of the CWA. Wetland data sheets are provided as Appendix A. The boundaries of the waters of the United States are depicted on Exhibit 3A.

Non-Jurisdictional Features

The Study Area also contains a non-jurisdictional feature, referenced herein as Tributary A. Tributary A is an ephemeral feature that flows only in direct response to precipitation (e.g., rain). Ephemeral features, including ephemeral streams, swales, gullies, rills, pools and/or tributaries that meet the (b)(1) and/or (b)(3) criteria described in 33 U.S.C. 1251 et seq are excluded from Corps jurisdiction by definition regardless of the presence or absence of an OHWM. As such, this feature is not subject to Corps jurisdiction pursuant to Section 404 of the CWA.

B. Regional Water Quality Control Board Jurisdiction

Regional Board jurisdiction within the Study Area totals 4.08 acres, of which 3.19 acres consist of wetland waters of the State and 0.89 acre consists of non-wetland waters of the State. A total of 1,693 linear feet of stream is present. Of the total 4.08 acres, 4.05 acre and 1,309 linear feet comprise wetland and non-wetland waters of the U.S. that are subject to Corps jurisdiction and the remaining 0.03 acre and 384 linear feet comprise waters of the State that are subject to Regional Board jurisdiction only. This includes 0.03 acre and 384 linear feet of non-wetland ephemeral waters of the State.

Regional Board jurisdiction at the Study Area includes the San Jacinto River (and its adjacent wetlands) and Tributary A. As discussed above, the San Jacinto River is considered an intermittent feature that includes adjacent wetlands. Since this feature is subject to Corps jurisdiction under Section 404 of the CWA, it is also subject to Regional Board jurisdiction under Section 401 of the CWA.

Tributary A is an earthen drainage that conveys surface water only in direct response to precipitation (i.e., rain). Since ephemeral features are not subject to Corps jurisdiction pursuant to Section 404 of the CWA, this feature is also not subject to Regional Board jurisdiction pursuant to Section 401 of the CWA. However, since this feature conveys surface flow with the

potential to support beneficial uses, it is considered waters of the State that would be regulated by the Regional Board pursuant to Section 13260 of the CWC/the Porter-Cologne Water Quality Control Act.

There are also areas immediately upstream of Tributary A that do not convey adequate flow sign or support any beneficial uses identified in the Regional Board Basin Plan. These areas are swales that lack a defined stream course and do not convey adequate flow sign or a discernable bed, bank, and channel. As these areas lack a discernable stream course, they are not considered waters of the State and would not be regulated under Section 13260 of the CWC.

Table 1 below summarizes Regional Board jurisdictional waters at Study Area. A description of the Regional Board jurisdictional drainage features at the Study Area is outlined below. The boundaries of the waters of the State are depicted on Exhibit 3B.

Table 1: Summary of Regional Board Jurisdiction

Drainage Name	Regional Board Non-Wetland Waters (acres)	Regional Board Jurisdictional Wetlands	Total Regional Board Jurisdiction	Length (linear feet)
Waters of the U.S./State				
San Jacinto River	0.86	3.19	4.05	1,309
Waters of the State Only				
Tributary A	0.03	0	0.03	384
Total	**0.89**	**3.19**	**4.08**	**1,693**

San Jacinto River

Regional Board jurisdiction associated with the San Jacinto River totals 4.05 acres, of which 3.19 acres consist of wetland waters of the U.S./State and 0.86 acre consists of non-wetland waters of the U.S./State. A total of 1,309 linear feet of intermittent stream is present.

The San Jacinto River is a blue-line drainage that enters the Study Area from the northeast and extends in a southwesterly direction for approximately 1,309 linear feet before exiting the site. The river conveys intermittent flows and is ultimately tributary to the Pacific Ocean. The low flow channel is approximately 20 feet in width and exhibited flowing water and ponding at the time of the field assessment. The San Jacinto River contains open water, freshwater marsh, and southern willow riparian scrub habitats. Areas in the abutting floodplain are dominated by facultative-or wetter alkali-adapted herbaceous species including alkali heath, salt grass, and English plantain. Wetland indicators include a predominance of wetland vegetation, wetland hydrology, and the presence of hydrogen sulfide odor and/or saline-alkaline soils in the abutting

floodplain. Since the San Jacinto River and its adjacent wetlands meet the definition of waters of the U.S., it is subject to Regional Board jurisdiction under Section 401 of the CWA.

Wetland data sheets are provided as Appendix A.

Tributary A (Ephemeral)

Regional Board jurisdiction associated with Tributary A totals 0.03 acre, none of which consists of State wetlands. A total of 384 linear feet of ephemeral stream is present.

Tributary A originates as road run-off from Ethanac Road and is conveyed in a westerly direction from west of Ethanac Road to the flat terrace associated with the eastern edge of the San Jacinto River. Tributary A ranges from one to six feet in width as evidenced by changes in soil characteristics and incised channel banks. This feature flows only in direct response to precipitation and was completely dry during the field investigation. As described above, vegetation associated with the drainage is limited to non-native upland grasses and weeds with tamarisk inclusions in the lower reach.

C. <u>CDFW Jurisdiction</u>

CDFW jurisdiction associated with the Study Area totals 4.45 acres, 3.42 acres of which are riparian stream and 1.02 acres of which are non-riparian stream and includes all areas within Regional Board jurisdiction. A total of 1,693 linear feet of stream is present. The boundaries of CDFW jurisdiction are depicted on the enclosed map [Exhibit 3C].

CDFW jurisdiction at the Study Area includes the San Jacinto River and Tributary A. There are also areas immediately upstream of Tributary A where the width of its course cannot reasonably be identified by physical or biological indicators and/or are not considered rivers, streams, or lakes. These areas are swales and/or erosional areas that lack a defined stream course and do not convey adequate flow sign or a discernable bed, bank, and channel. As these areas lack a discernable stream course, they are not subject to regulation by the CDFW under Section 1602 of the Fish and Game Code.

Table 2 below summarizes CDFW jurisdictional waters at the Study Area. A description of the CDFW jurisdictional drainage features at the Study Area is outlined below. The boundaries of CDFW jurisdiction are depicted on Exhibit 3C.

Table 2: Summary of CDFW Jurisdiction

Drainage Name	CDFW Non-Riparian Stream (acres)	CDFW Riparian Stream (acres)	Total CDFW Jurisdiction (acres)	Length (linear feet)
San Jacinto River	1.00	3.28	4.28	1,309
Tributary A	0.03	0.14	0.17	384
Total*	**1.03**	**3.42**	**4.45**	**1,693**

*Sum of individual parts may not equal sum total due to rounding error

San Jacinto River

CDFW jurisdiction associated with the San Jacinto River totals 4.28 acres, of which 3.28 acres consist of riparian stream and 1.00 acre consists of non-riparian stream. A total of 1,309 linear feet of intermittent-perennial stream is present.

The San Jacinto River is a blue-line drainage that enters the Study Area from the northeast and extends in a southwesterly direction for approximately 1,309 linear feet before exiting the site. The river conveys intermittent flows and is ultimately tributary to the Pacific Ocean. The low flow channel is approximately 20 feet in width and exhibited flowing water and ponding at the time of the field assessment. The San Jacinto River contains open water, freshwater marsh, and southern willow riparian scrub. Areas in the abutting floodplain are dominated by alkali-adapted herbaceous species including alkali heath, salt grass, and English plantain. Since the floodplain and its associated riparian habitat that is both adjacent and hydrologically connected to the San Jacinto River, it is subject to CDFW jurisdiction under Section 1602 of the Fish and Game Code.

Tributary A (Ephemeral)

CDFW jurisdiction associated with Tributary A totals 0.17 acre, of which 0.14 acre consists of riparian stream and 0.03 acre consists of non-riparian stream. A total of 384 linear feet of ephemeral stream is present.

Tributary A originates as road run-off from Ethanac Road and is conveyed in a westerly direction from west of Ethanac Road to the flat terrace associated with the eastern edge of the San Jacinto River. Tributary A ranges from one to six feet in width as evidenced by changes soil characteristics and incised channel banks. This feature flows only in direct response to precipitation and was completely dry during the field investigation. As described above, vegetation associated with the drainage is limited to non-native upland grasses and weeds with tamarisk inclusions in the lower reach.

If you have any questions about this letter report, please contact me at (949) 340-3851 at the office or (714) 323-6221 on my cellular telephone. Thanks.

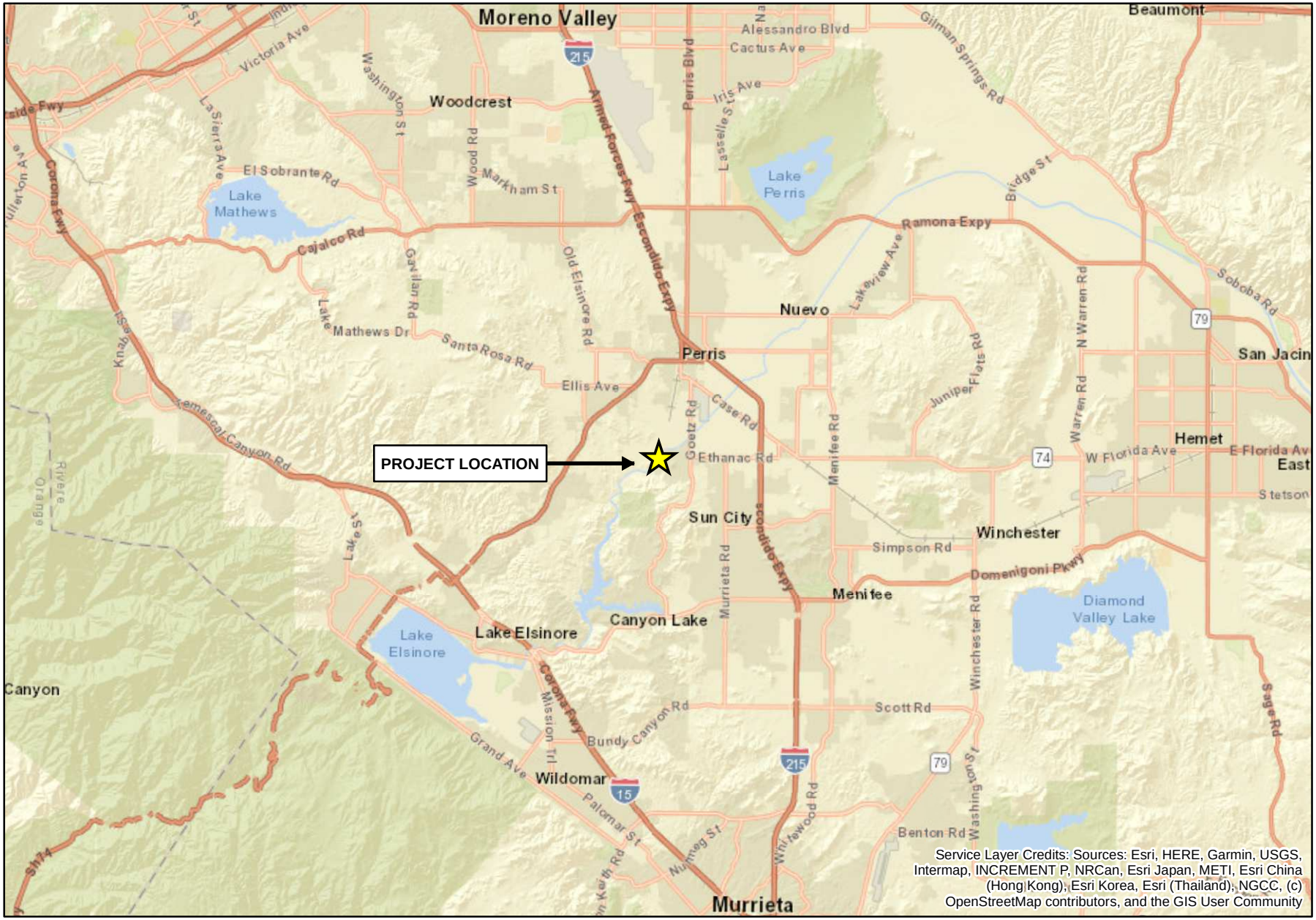
Sincerely,

GLENN LUKOS ASSOCIATES, INC.

Martin A. Rasnick
Principal/Sr. Regulatory Specialist

p: 0188-19f.jd

Source: ESRI World Street Map



N

0 2 4 8 Miles

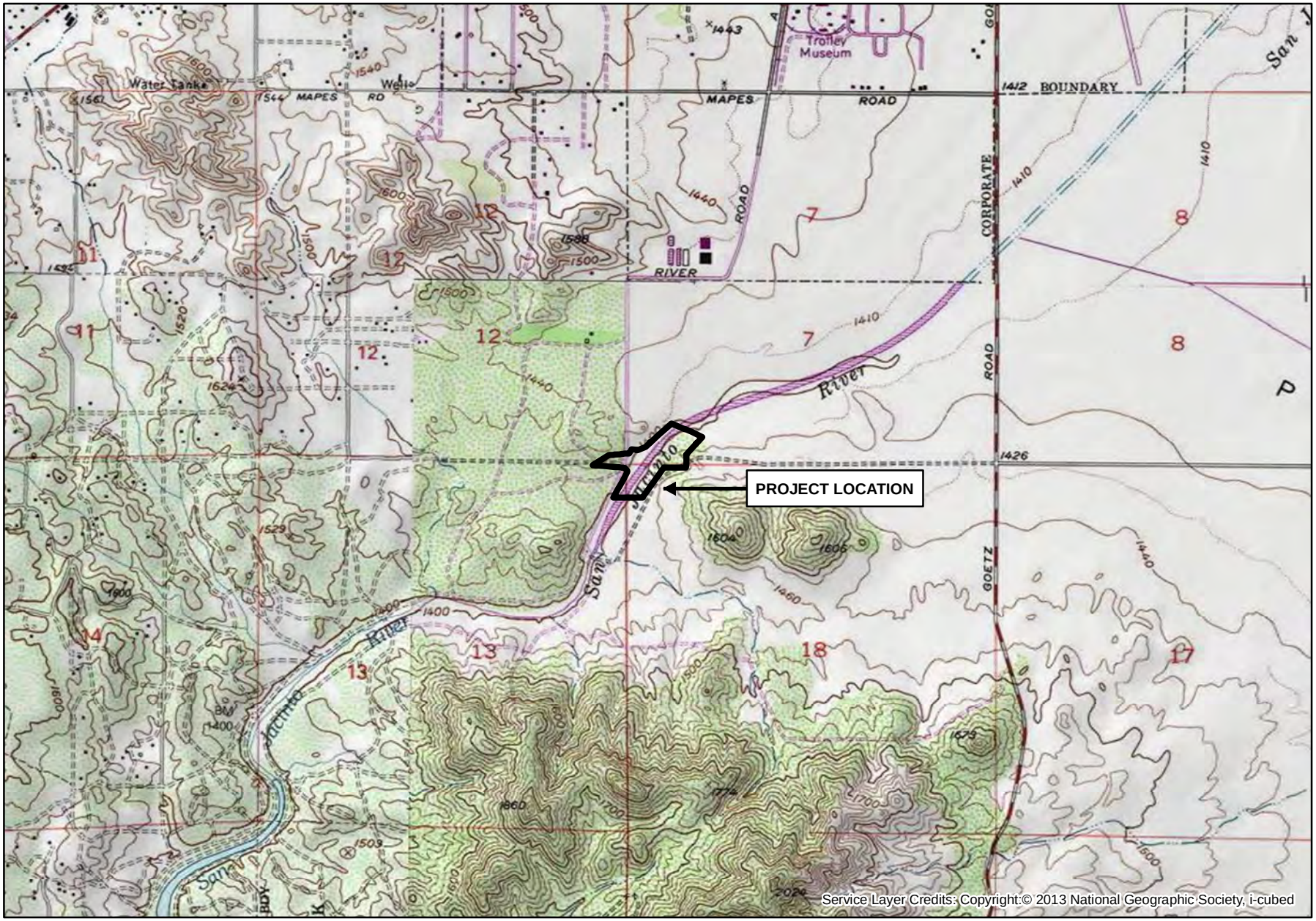
ETHANAC ROAD CROSSING

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1

Adapted from USGS Romoland, CA quadrangle



N

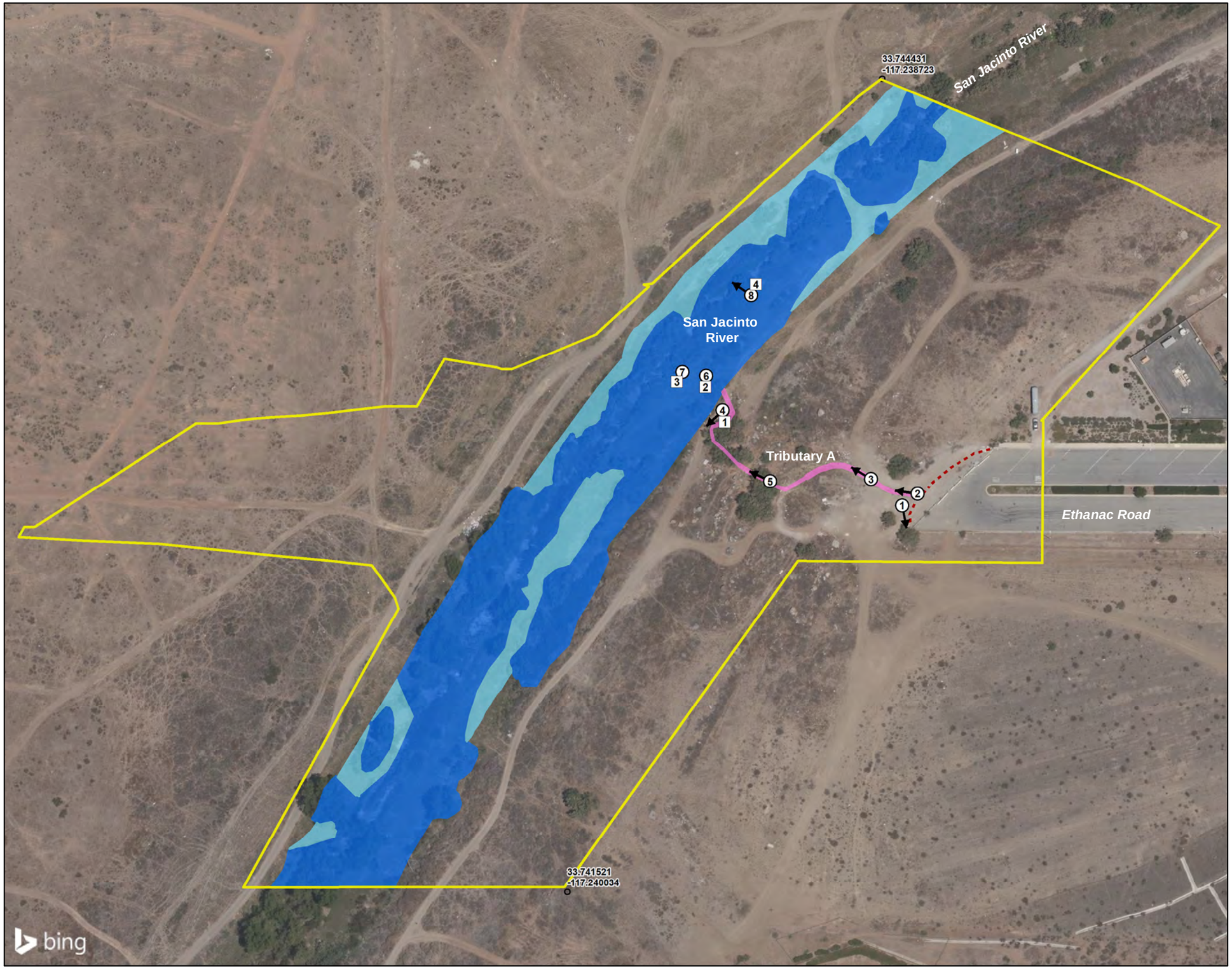
0 1,000 2,000 4,000 Feet

ETHANAC ROAD CROSSING

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2



Study Area
Non-Wetland Waters of the U.S.
Wetland Waters of the U.S.
Non-Jurisdictional Feature
No Stream Course
Data Pit Location
Photo Location

N

0 62.5 125 250
Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: B. Gale, GLA
Date Prepared: May 6, 2021

ETHANAC ROAD CROSSING

Corps Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3A

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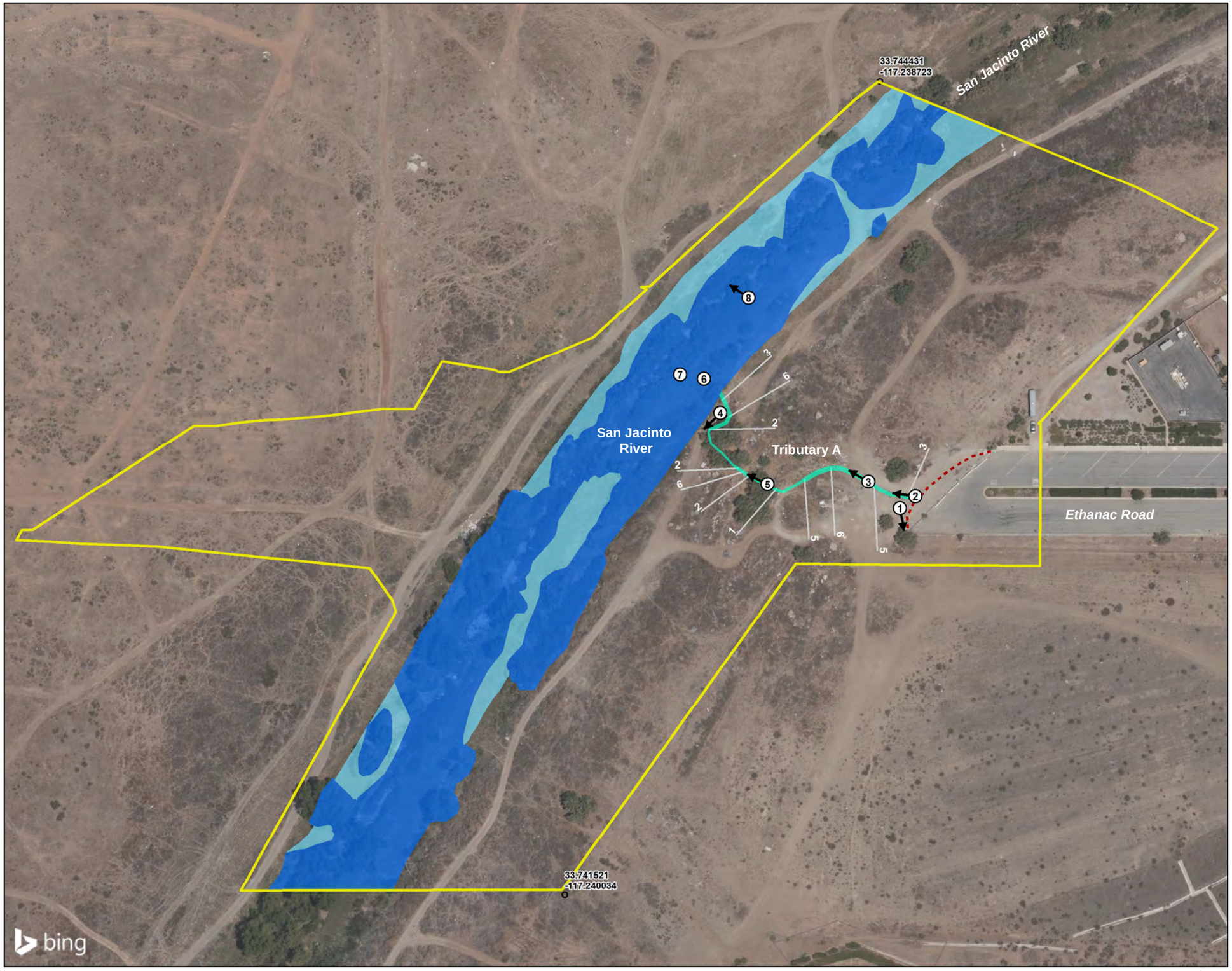


Study Area
Wetland Waters of the U.S./State
Non-Wetland Waters of the U.S./State
Non-Wetland Waters of the State
No Stream Course
Width of Jurisdiction in Feet
Photo Location

N

0 62.5 125 250
Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: B. Gale, GLA
Date Prepared: May 6, 2021

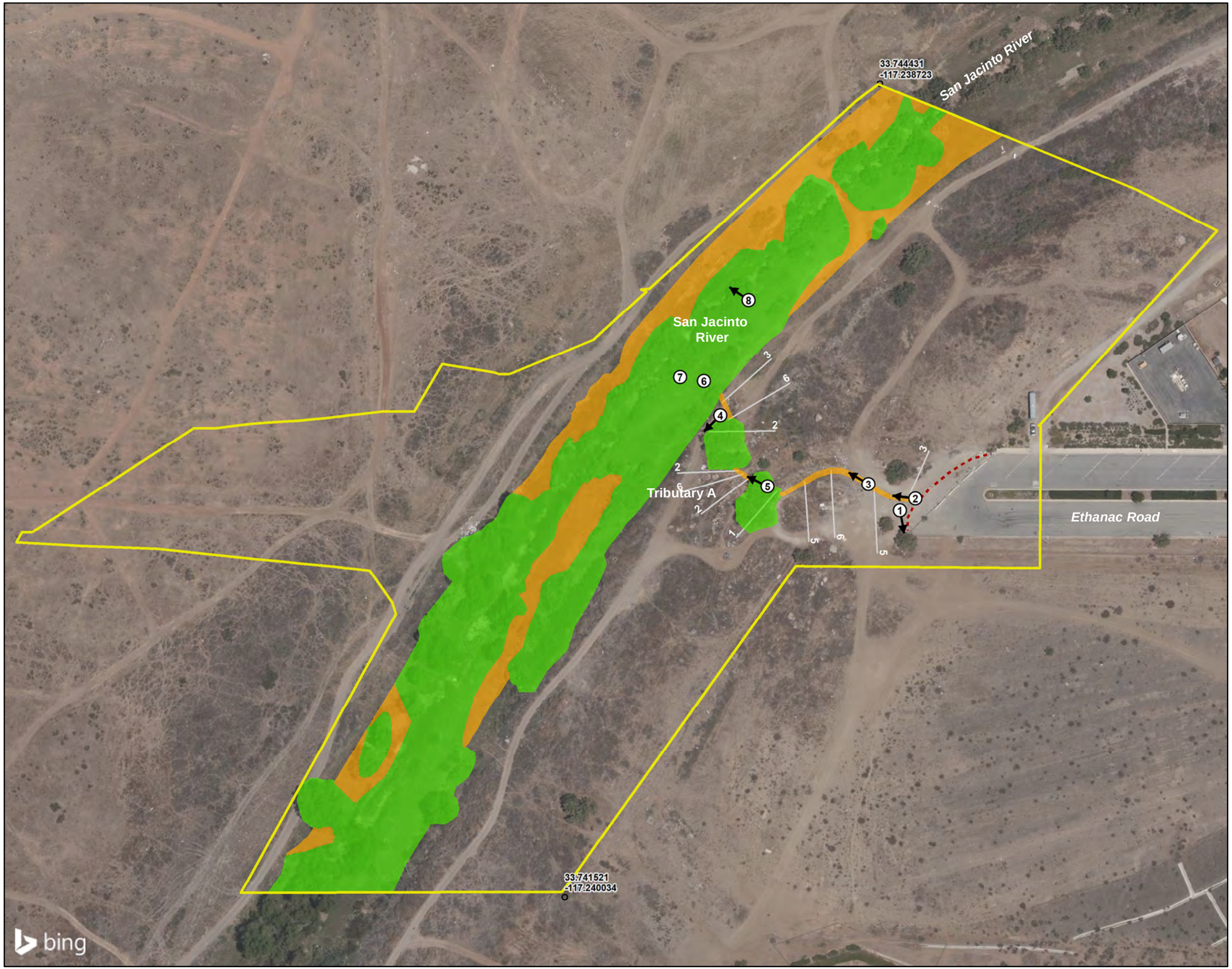
ETHANAC ROAD CROSSING

RWQCB Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3B

X:\00 - 0362 ONLY\0188-19ROAD\188-19_GIS\Delineation\REV3\188-19 RWQCB LayoutREV3.mxd



Study Area
CDFW Non-Riparian Stream
CDFW Riparian
No Stream Course
Width of Jurisdiction in Feet
Photo Location

N

0 62.5 125 250
Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: B. Gale, GLA
Date Prepared: May 6, 2021

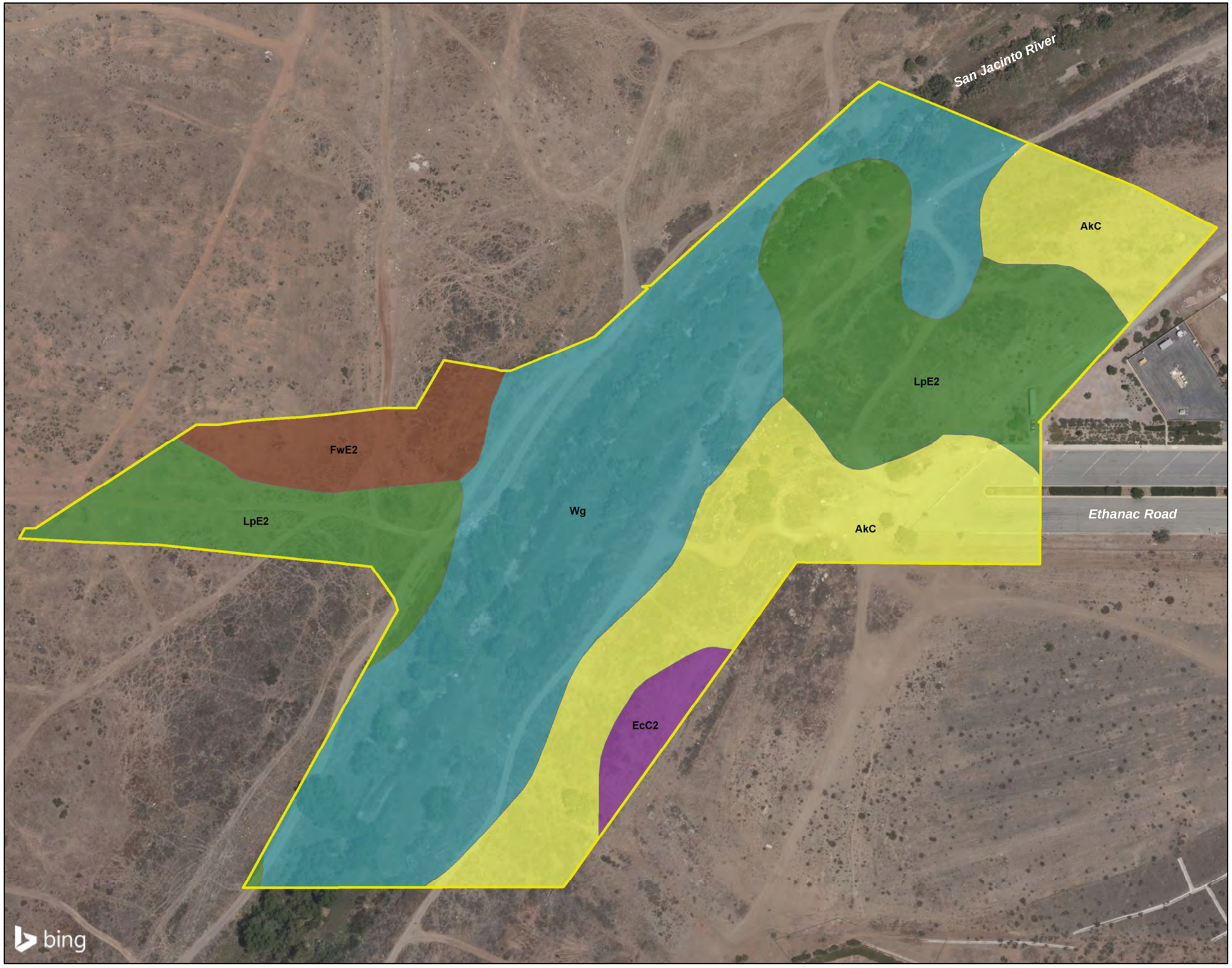
ETHANAC ROAD CROSSING

CDFW Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3C

X:\00 - 0362 ONLY\0188-19ROAD\188-19_GIS\Delineation\REV3\188-19 CDFW LayoutREV3.mxd



Study Area
AkC - Arbuckle loam, 2 to 8 percent slopes
EcC2 - Escondido fine sandy loam, 2 to 8 percent slopes, eroded
FwE2 - Friant fine sandy loam, 5 to 25 percent slopes, eroded
LpE2 - Lodo rocky loam, 8 to 25 percent slopes, eroded
Wg - Willows silty clay, saline-alkali

N

0 62.5 125 250
Feet

1 inch = 125 feet

Coordinate System: State Plane 6 NAD 83
Projection: Lambert Conformal Conic
Datum: NAD83
Map Prepared by: K. Kartunen, GLA
Date Prepared: May 17, 2021

ETHANAC ROAD CROSSING

Soils Map

GLENN LUKOS ASSOCIATES

Exhibit 4

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Photograph 1: 4/30/2021 Photograph taken looking southeast and depicts non-jurisdictional site where road run-off enters Tributary A from end of Ethanac Road.

Photograph 2: 4/30/2021 Photograph taken facing west towards the San Jacinto River and depicts origin of Tributary A. Plant species observed include tamarisk, stinknet, tocalote, and ripgut bromes.

Photograph 3: 4/30/2021 Photograph taken facing west towards San Jacinto River from Tributary A.

Photograph 4: 4/30/21 Photograph taken looking southwest at wetland pit 1 in Tributary A. Photograph is depicting well defined bed and bank as well as soil cracks.

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Exhibit 5 – Page 1

ETHANAC ROAD CROSSING

Site Photographs

Photograph 5: 4/30/2021 Photograph taken looking southeast and depicts 1' channel in downstream portion of Tributary A. Dominant vegetation includes tamarisk, rip-gut and red brome, alkali mallow, heliotrope, California dock, as well as English plantain.

Photograph 6: 4/30/2021 Photograph facing wetland pit 2 located on the floodplain adjacent to the San Jacinto River. Vegetation community consists of alkali-adapted herbaceous plants including alkali heath, salt grass, and English plantain.

Photograph 7: 4/30/2021 Photograph depicting wetland pit 3 located on the floodplain adjacent to the San Jacinto River. Vegetation community consists of alkali-adapted herbaceous plants including alkali heath, salt grass, alkali mallow, and English plantain.

Photograph 8: 4/30/2021 Photograph depicting wetland pit 4 located adjacent to the San Jacinto River. Vegetation includes salt grass and alkali mallow. Soils were saturated within 6 inches of surface.

ETHANAC ROAD CROSSING
Site Photographs

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ethanac Road Crossing City/County: Perris/Riverside Sampling Date: 4/30/21

Applicant/Owner: Richland Communities State: CA Sampling Point: 1

Investigator(s): Lesley Lokovic Gamber, Velvet Park Section, Township, Range: S7, T5S, R3W

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): Concave Slope (%): 2-5%

Subregion (LRR): C Lat: 33.7430219735644 Long: -117.23837991838106 Datum: NAD 83

Soil Map Unit Name: Willows silty clay, saline-alkali NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tamarisk ramosissima	75	Y	FAC
2.			
3.			
4.			
	75 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rumex crispus	2	N	FAC
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Bromus diandrus	15	Y	UPL
2. Bromus madritensis ssp. rubens	5	N	UPL
3. Malvella leprosa	3	N	FACU
4. Centaurea melitensis	3	N	UPL
5.			
6.			
7.			
8.			
	26 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 74 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	2	x 3 =	6
FACU species	1	x 4 =	4
UPL species	3	x 5 =	15
Column Totals:	6 (A)		25 (B)

Prevalence Index = B/A = 4.17

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✔

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 3/2	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ✔

Remarks:

Hydrophytic vegetation absent and alkali-adapted species absent; therefore, problematic hydric soils not present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✔ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ethanac Road Crossing City/County: Perris/Riverside Sampling Date: 4/30/21

Applicant/Owner: Richland Communities State: CA Sampling Point: 2

Investigator(s): Lesley Lokovic Gamber, Velvet Park Section, Township, Range: S7, T5S, R3W

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): None Slope (%): 2-5%

Subregion (LRR): C Lat: 33.7430219735644 Long: -117.23837991838106 Datum: NAD 83

Soil Map Unit Name: Willows silty clay, saline-alkali NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rumex crispus	25	Y	FAC
2.			
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Distichlis spicata	80	Y	FAC
2. Cressa truxillensis	40	Y	FACW
3. Plantago lanceolata	40	Y	FAC
4.			
5.			
6.			
7.			
8.			
	160 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** _____ **No** _____

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 3/1	100		2	redox		Clay loam	F6 - check

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✔ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Low percent redox concentration due to presence of alkaline soils; area dominated by hydrophytic alkali-adapted vegetation; signs of hydrology present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✔ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✔ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ethanac Road Crossing City/County: Perris/Riverside Sampling Date: 4/30/21

Applicant/Owner: Richland Communities State: CA Sampling Point: 3

Investigator(s): Lesley Lokovic Gamber, Velvet Park Section, Township, Range: S7, T5S, R3W

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): None Slope (%): 2-5%

Subregion (LRR): C Lat: 33.7430219735644 Long: -117.23837991838106 Datum: NAD 83

Soil Map Unit Name: Willows silty clay, saline-alkali NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tamarisk ramosissima	5	Y	FAC
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rumex crispus	8	Y	FAC
2.			
3.			
4.			
5.			
	8 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Distichlis spicata	100	Y	FAC
2. Plantago lanceolata	25	N	FAC
3. Malvella leprosa	20	N	FACU
4. Cressa truxillensis	15	N	FACW
5.			
6.			
7.			
8.			
	160 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No _____**

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 3/1	100		1-2%	redox		Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✔ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Presence of alkaline soils; area dominated by hydrophytic alkali-adapted vegetation; signs of hydrology present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✔ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✔ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ethanac Road Crossing City/County: Perris/Riverside Sampling Date: 4/30/21

Applicant/Owner: Richland Communities State: CA Sampling Point: 4

Investigator(s): Lesley Lokovic Gamber, Velvet Park Section, Township, Range: S7, T5S, R3W

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): None Slope (%): 2-5%

Subregion (LRR): C Lat: 33.7430219735644 Long: -117.23837991838106 Datum: NAD 83

Soil Map Unit Name: Willows silty clay, saline-alkali NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rumex crispus			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Distichlis spicata	15	Y	FAC
2. Cressa truxillensis	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No _____**

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	Gley 2.5y 4/2	20%		5%	RM		Clay loam	saturation upper 6"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ___ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 6

Wetland Hydrology Present? **Yes** ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

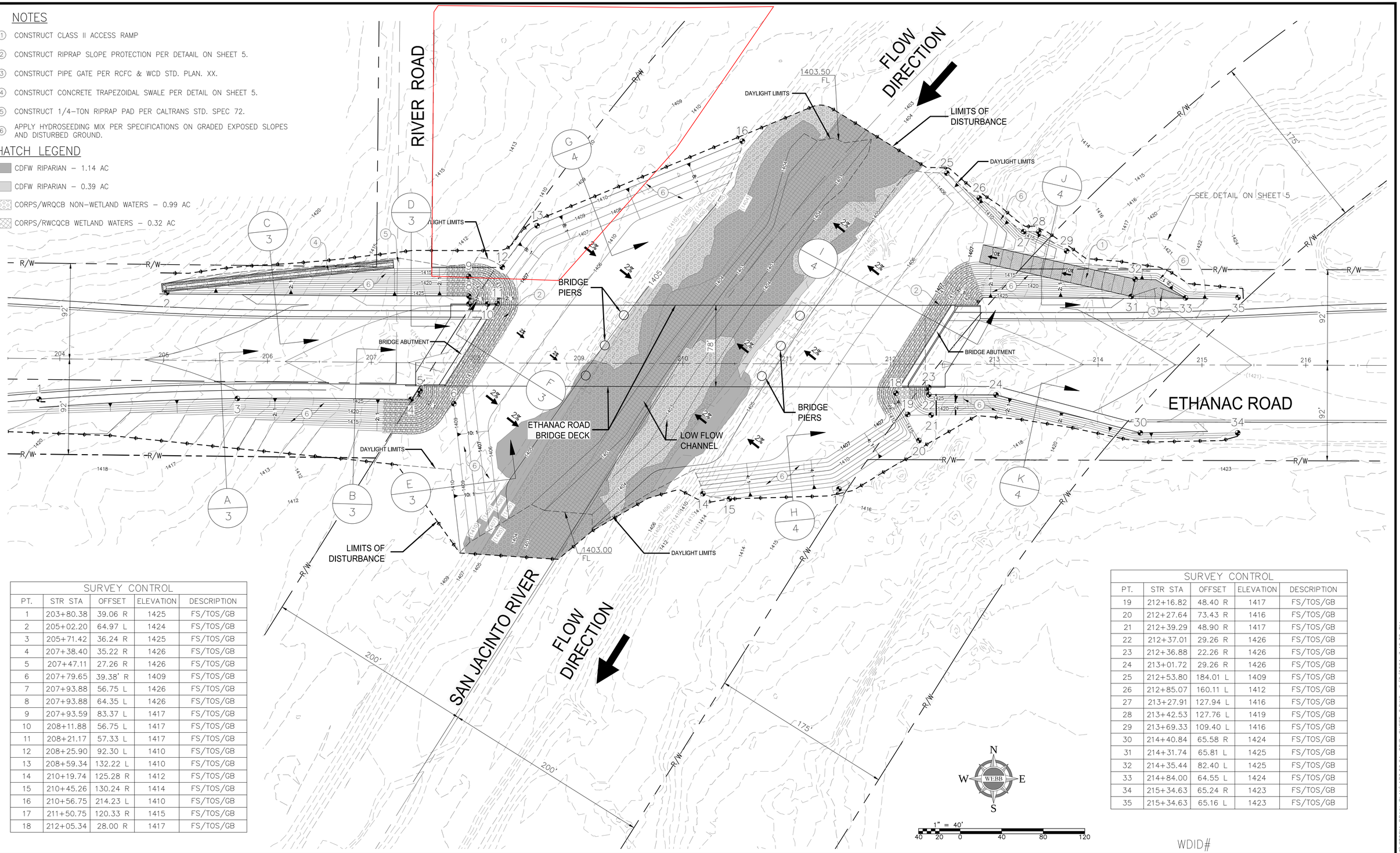
Remarks:

NOTES

1. CONSTRUCT CLASS II ACCESS RAMP
2. CONSTRUCT RIPRAP SLOPE PROTECTION PER DETAAIL ON SHEET 5.
3. CONSTRUCT PIPE GATE PER RCFC & WCD STD. PLAN. XX.
4. CONSTRUCT CONCRETE TRAPEZOIDAL SWALE PER DETAIL ON SHEET 5.
5. CONSTRUCT 1/4-TON RIPRAP PAD PER CALTRANS STD. SPEC 72.
6. APPLY HYDROSEEDING MIX PER SPECIFICATIONS ON GRADED EXPOSED SLOPES AND DISTURBED GROUND.

HATCH LEGEND

- CDFW RIPARIAN – 1.14 AC
- CDFW RIPARIAN – 0.39 AC
- CORPS/WRQCB NON-WETLAND WATERS – 0.99 AC
- CORPS/RWCQCB WETLAND WATERS – 0.32 AC



SURVEY CONTROL				
PT.	STR STA	OFFSET	ELEVATION	DESCRIPTION
1	203+80.38	39.06 R	1425	FS/TOS/GB
2	205+02.20	64.97 L	1424	FS/TOS/GB
3	205+71.42	36.24 R	1425	FS/TOS/GB
4	207+38.40	35.22 R	1426	FS/TOS/GB
5	207+47.11	27.26 R	1426	FS/TOS/GB
6	207+79.65	39.38' R	1409	FS/TOS/GB
7	207+93.88	56.75 L	1426	FS/TOS/GB
8	207+93.88	64.35 L	1426	FS/TOS/GB
9	207+93.59	83.37 L	1417	FS/TOS/GB
10	208+11.88	56.75 L	1417	FS/TOS/GB
11	208+21.17	57.33 L	1417	FS/TOS/GB
12	208+25.90	92.30 L	1410	FS/TOS/GB
13	208+59.34	132.22 L	1410	FS/TOS/GB
14	210+19.74	125.28 R	1412	FS/TOS/GB
15	210+45.26	130.24 R	1414	FS/TOS/GB
16	210+56.75	214.23 L	1410	FS/TOS/GB
17	211+50.75	120.33 R	1415	FS/TOS/GB
18	212+05.34	28.00 R	1417	FS/TOS/GB

SURVEY CONTROL				
PT.	STR STA	OFFSET	ELEVATION	DESCRIPTION
19	212+16.82	48.40 R	1417	FS/TOS/GB
20	212+27.64	73.43 R	1416	FS/TOS/GB
21	212+39.29	48.90 R	1417	FS/TOS/GB
22	212+37.01	29.26 R	1426	FS/TOS/GB
23	212+36.88	22.26 R	1426	FS/TOS/GB
24	213+01.72	29.26 R	1426	FS/TOS/GB
25	212+53.80	184.01 L	1409	FS/TOS/GB
26	212+85.07	160.11 L	1412	FS/TOS/GB
27	213+27.91	127.94 L	1416	FS/TOS/GB
28	213+42.53	127.76 L	1419	FS/TOS/GB
29	213+69.33	109.40 L	1416	FS/TOS/GB
30	214+40.84	65.58 R	1424	FS/TOS/GB
31	214+31.74	65.81 L	1425	FS/TOS/GB
32	214+35.44	82.40 L	1425	FS/TOS/GB
33	214+84.00	64.55 L	1424	FS/TOS/GB
34	215+34.63	65.24 R	1423	FS/TOS/GB
35	215+34.63	65.16 L	1423	FS/TOS/GB

WDID#

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MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				COUNTY	

CITY OF PERRIS
APPROVED BY:
CITY ENGINEER
DATE

SEAL – ENGINEER
REGISTERED PROFESSIONAL ENGINEER JASON L. CASTANON NO. 59835 EXP. 12/31/19 CIVIL STATE OF CALIFORNIA

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

PREPARED UNDER THE SUPERVISION OF:
ENGINEER
DESIGNED BY: ## CHECKED BY: ##
R.C.E. NO.: XX
DATE

BENCHMARK:
USC & GS BENCHMARKS AND FROM W.O.# 2013-0159 & 2016-0160, 40' (PID JB0210)3-3" BRASS DISK, SET IN BOULDER. STATION IS ABOUT 4-1/2 MILES N OF LAKEVIEW, ABOUT ONE MILE W OF PASS THROUGH THE BERNARDINO MOUNTAINS, ABOUT 200 FEET SW OF THE INTERSECTION OF BRADLEY ROAD AND WALNUT AVENUE, 70 FEET S OF CENTER LINE OF WALNUT AVENUE, IN A LARGE BOULDER, AND MARKED WITH A TEE. MARK IS A METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA STANDARD DISK STAMPED 40Y 19831.
ELEV.=1494.66' (NAVD88) ; NGVD29+2.58'=NAVD88

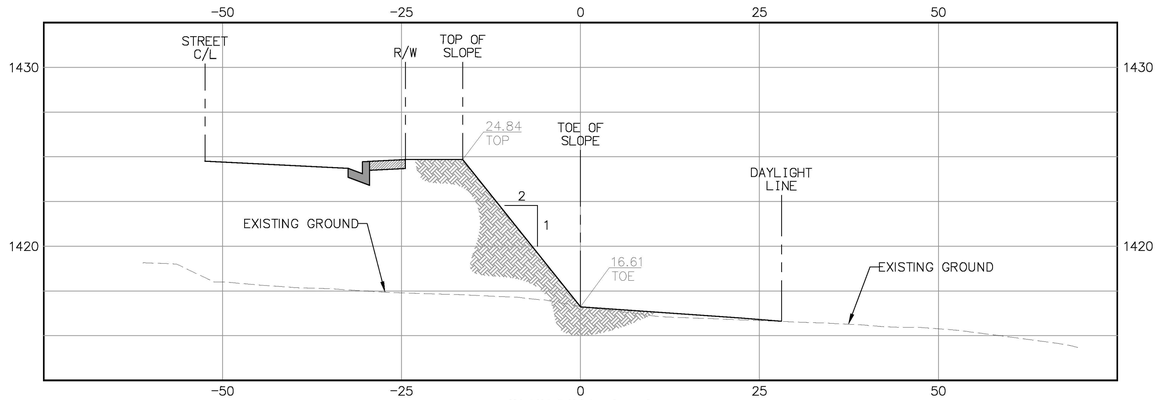
SCALE:
H: 1"=XX' V: 1" = X'

CITY OF PERRIS
STREET IMPROVEMENT PLAN
STORM DRAIN IMPROVEMENT PLANS
TITLE
TITLE

SHEET NO. 2 OF 5 SHEETS

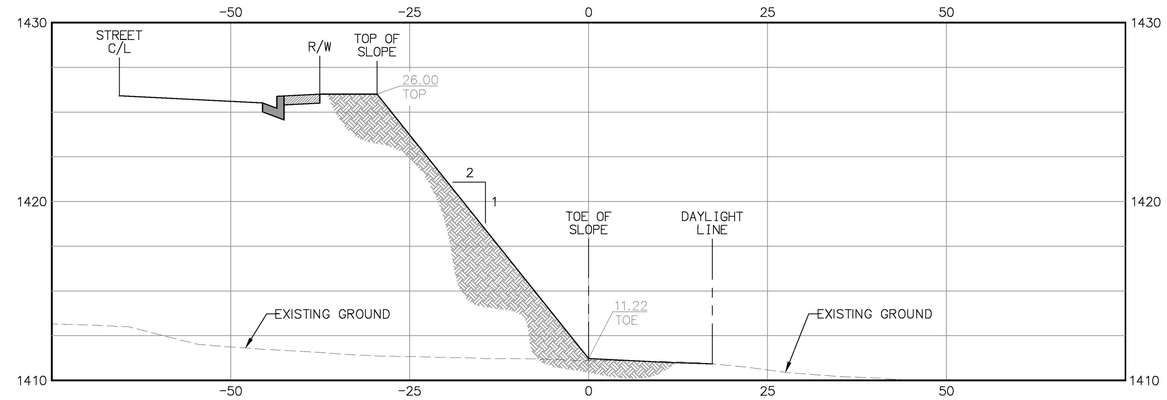
FOR: XXX
W.O. 20-0182
CITY FILE NO. PX_XXX

O:\173.09.21\ENGINEERING\STORM_DRAIN_PLAN\173.09.21-SDIP-SHEET_2.DWG 5/3/2021 3:40:38 PM



SECTION A–A

SCALE: H:1"=10'
V:1"=4'



SECTION B–B

SCALE: H:1"=10'
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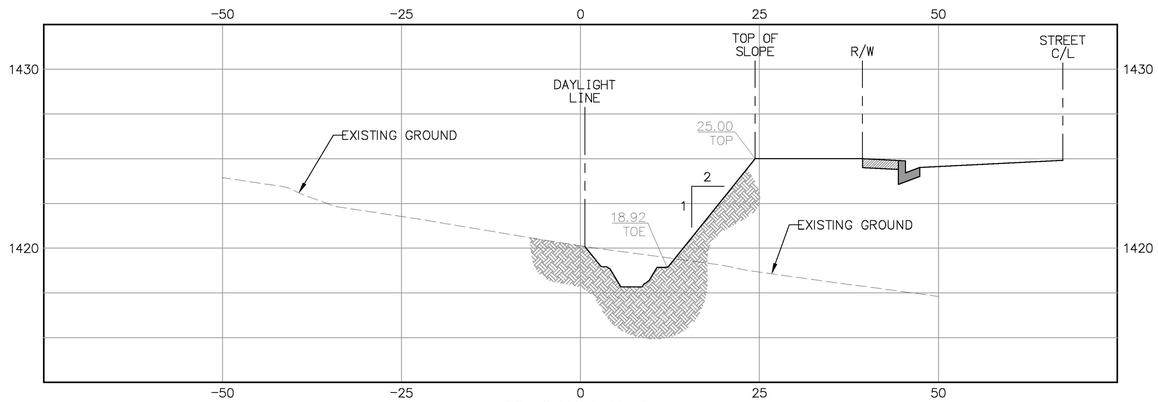
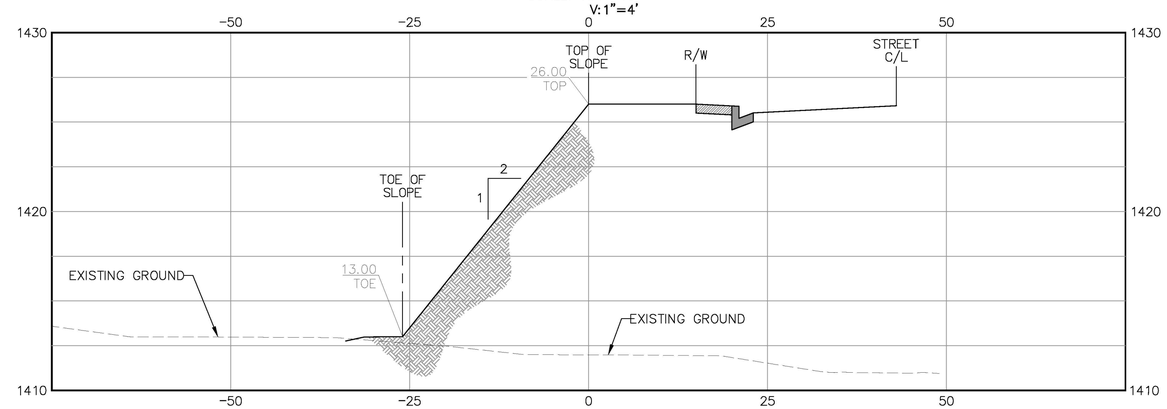


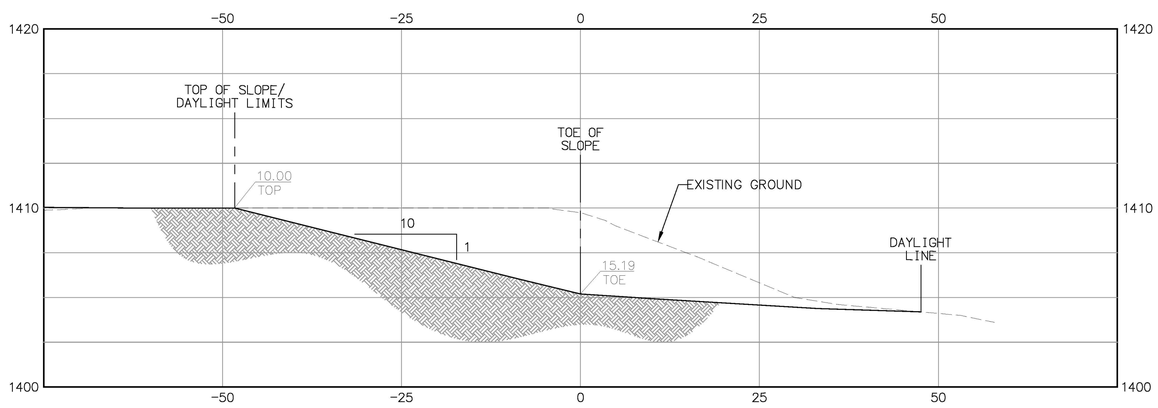
SECTION C–C

SCALE: H:1"=10'
V:1"=4'



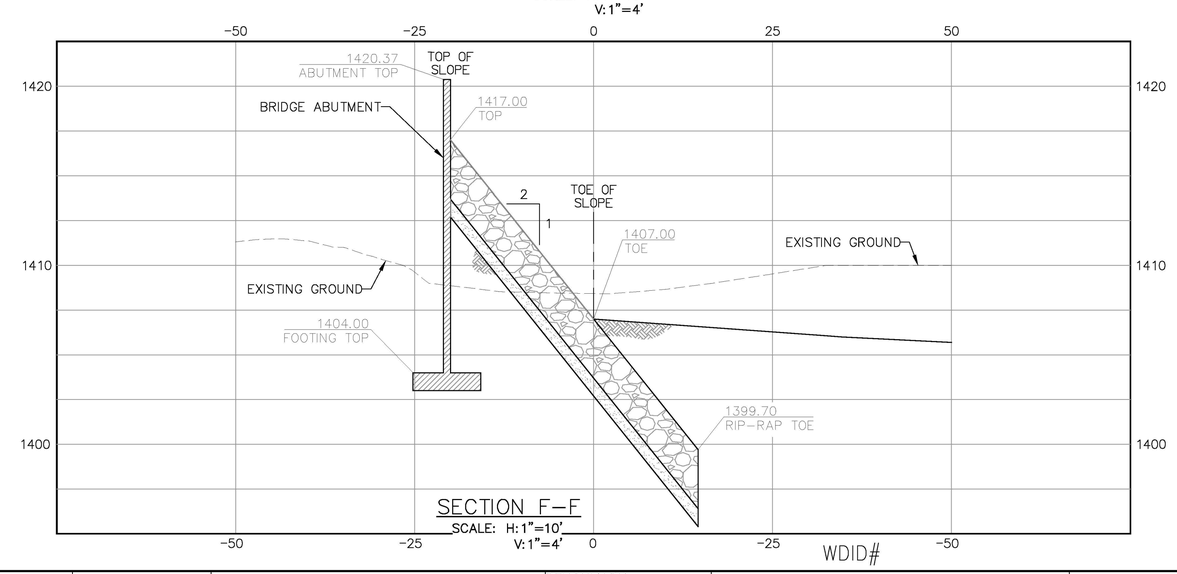
SECTION D–D

SCALE: H:1"=10'
V:1"=4'



SECTION E–E

SCALE: H:1"=10'
V:1"=4'



SECTION F–F

SCALE: H:1"=10'
V:1"=4'

WDID#

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MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				COUNTY	

CITY OF PERRIS
APPROVED BY:

CITY ENGINEER

DATE

SEAL – ENGINEER

REGISTERED PROFESSIONAL ENGINEER ALBERT L. CASTAÑON NO. 59835 EXP. 12/31/19 CIVIL STATE OF CALIFORNIA

ALBERT A. WEBB ASSOCIATES

ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

PREPARED UNDER THE SUPERVISION OF:

DESIGNED BY: ## CHECKED BY: ##

R.C.E. NO.: XX

ENGINEER

DATE

BENCHMARK:

USC & GS BENCHMARKS AND FROM WLA# 2013-0150 & 2016-0160. 40' (PVC) (BDC150)-3" BRASS DISK, SET IN BOULDER. STATION IS ABOUT 4+1/2 MILES W OF UNIVERSIN, ABOUT ONE MILE W OF PASS THROUGH THE BERNARDINO MOUNTAINS, ABOUT 200 FEET SW OF THE INTERSECTION OF BRADLEY ROAD AND WALNUT AVENUE, 70 FEET S OF CENTER LINE OF WALNUT AVENUE, IN A LARGE BOULDER, AND MARKED WITH A TEE. MARK IS A METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA STANDARD DISK STAMPED 407 19831. ELEV.=1494.66' (NAVD88) ; NGS2D+2.56'=NAVD88

SCALE:
H: 1"=XX' V: 1" = X'

CITY OF PERRIS

STREET IMPROVEMENT PLAN
STORM DRAIN IMPROVEMENT PLANS
CROSS SECTIONS

SHEET NO. 3 OF 5 SHEETS

FOR: XXX

W.O. 20-0182

CITY FILE NO. PX_XXX

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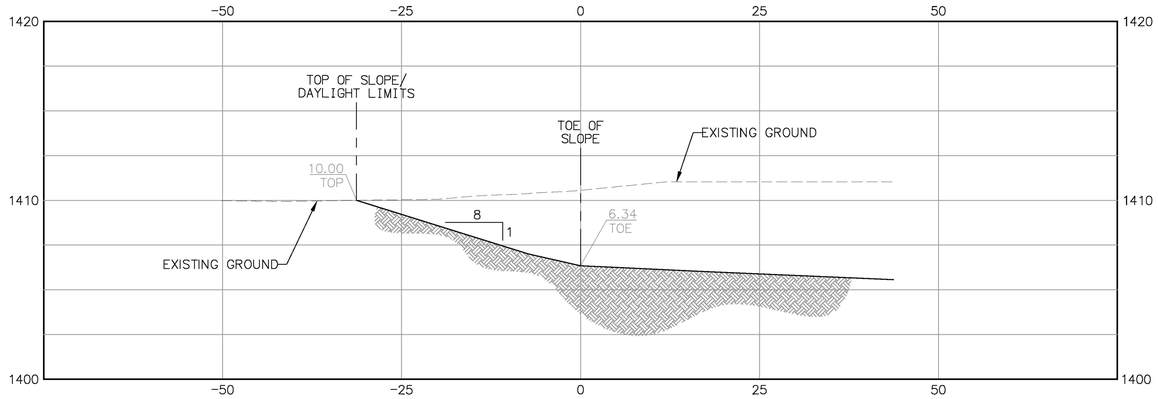
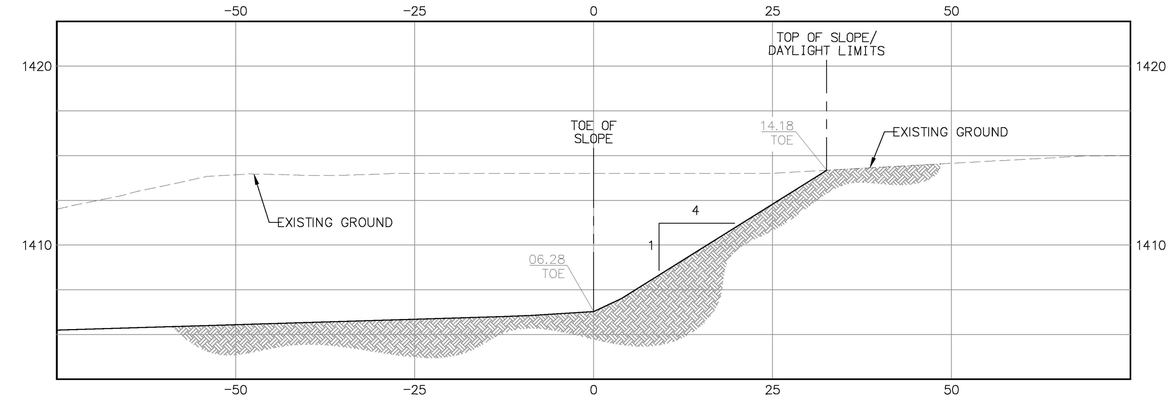


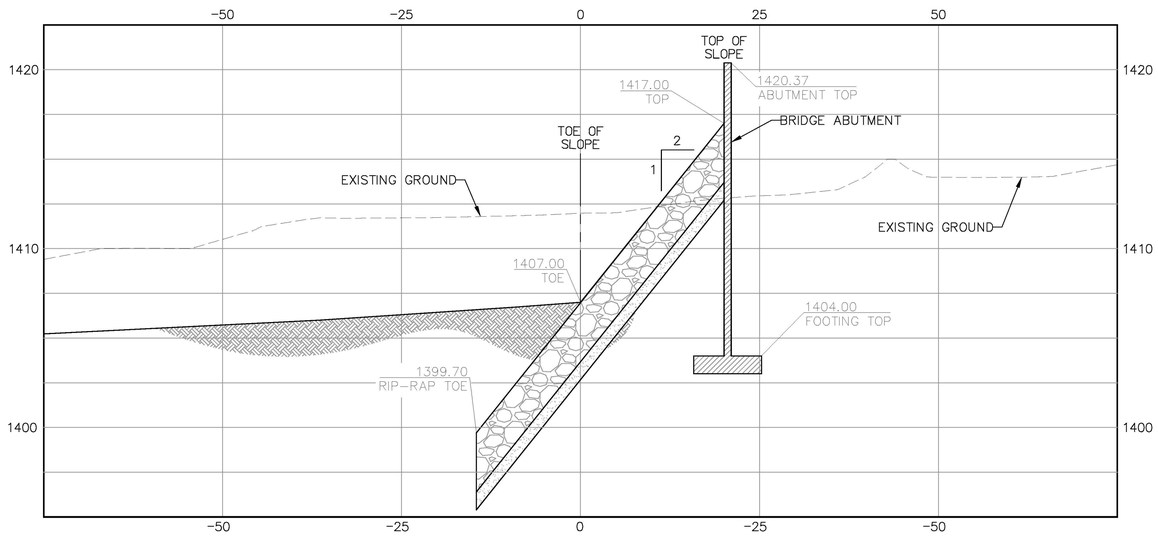
SECTION G–G

SCALE: H:1"=10'
V:1"=4'



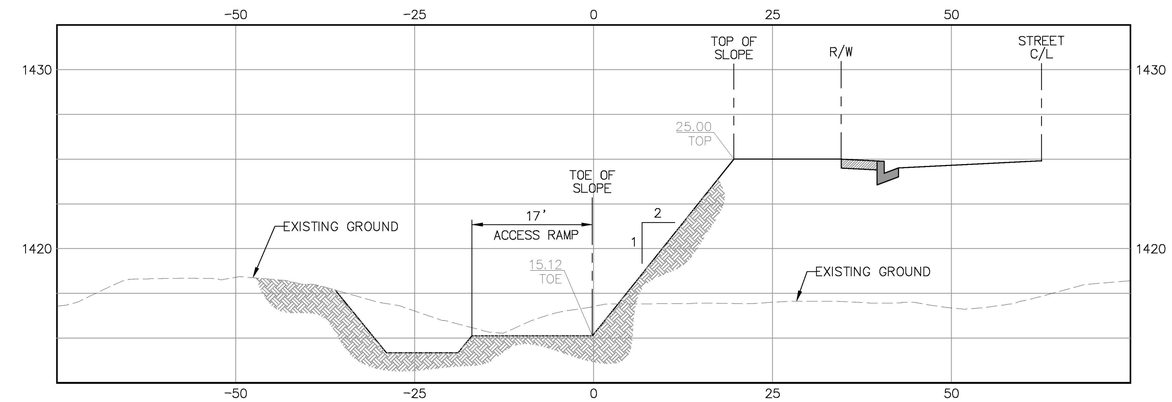
SECTION H–H

SCALE: H:1"=10'
V:1"=4'



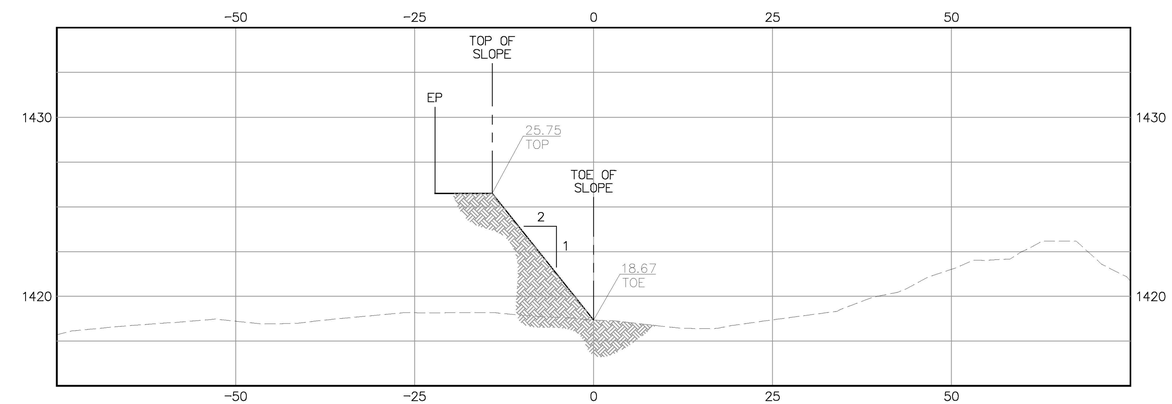
SECTION I–I

SCALE: H:1"=10'
V:1"=4'



SECTION J–J

SCALE: H:1"=10'
V:1"=4'



SECTION K–K

SCALE: H:1"=10'
V:1"=4'

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MARK	BY	DATE	REVISIONS	APPR.	DATE
ENGINEER				COUNTY	

CITY OF PERRIS
APPROVED BY:

CITY ENGINEER

DATE

SEAL – ENGINEER

REGISTERED PROFESSIONAL ENGINEER ALBERT L. CASTILLA NO. 59835 EXP. 12/31/19 CIVIL STATE OF CALIFORNIA

ALBERT A. WEBB ASSOCIATES

ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686–1070
FAX (951) 788–1256

PREPARED UNDER THE SUPERVISION OF:

ENGINEER

DESIGNED BY: ## CHECKED BY: ##

R.C.E. NO.: XX

DATE

BENCHMARK:
USC & GS BENCHMARKS AND FROM W.O.# 2013–0159 & 2016–0160.
40Y (PID JD6215)–3" BRASS DISK, SET IN BOULDER.
SOUTH IS ABOUT 4–1/2 MILES N OF LAKEVIEW, ABOUT ONE MILE W OF PASS THROUGH THE BERNASCONI MOUNTAINS, ABOUT 200 FEET SW OF THE INTERSECTION OF BRADLEY ROAD AND WALNUT AVENUE, 70 FEET S OF CENTER LINE OF WALNUT AVENUE, IN A LARGE BOULDER, AND MARKED WITH A TEE. MARK IS A METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA STANDARD DISK STAMPED 40Y 19831.
ELEV.=1494.66' (NAVD88) ; NGVD29+2.56'=NAVD88

SCALE:
H: 1"=XX' V: 1" = X'

CITY OF PERRIS

STREET IMPROVEMENT PLAN
STORM DRAIN IMPROVEMENT PLANS
CROSS SECTIONS

SHEET NO. 4 OF 5 SHEETS

FOR: XXX

W.O. 20–0182

CITY FILE NO. PX_XXX

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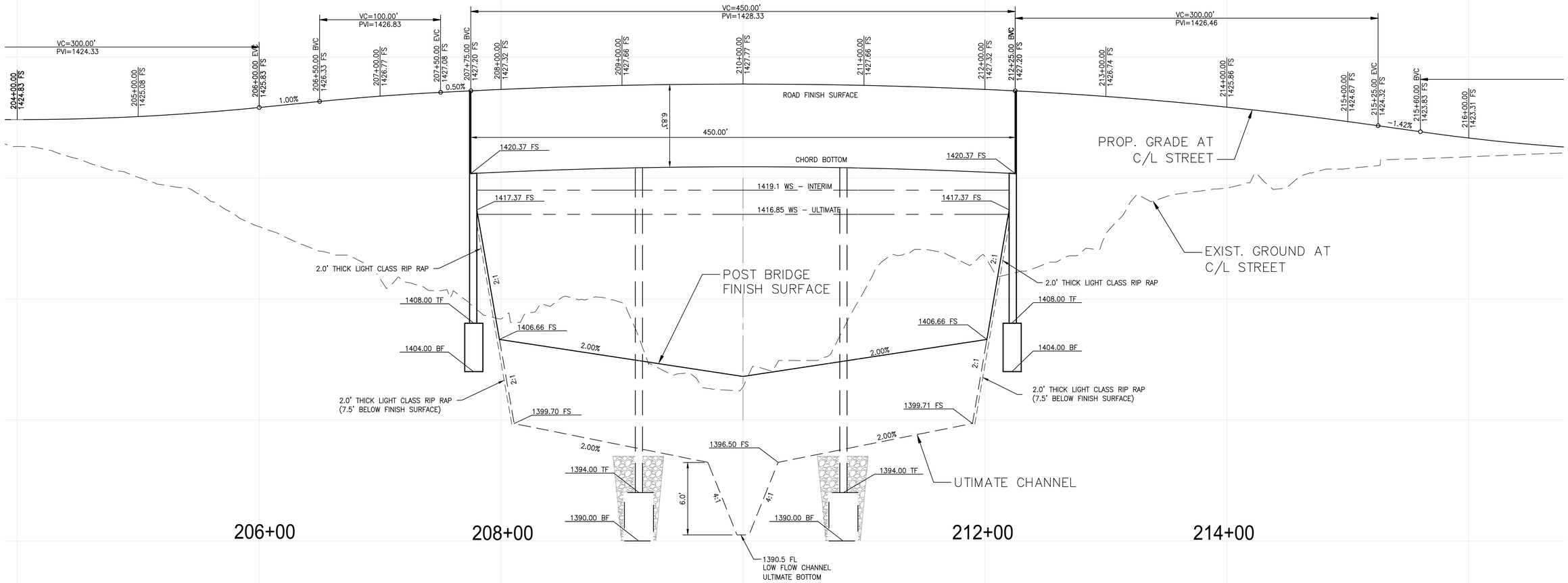
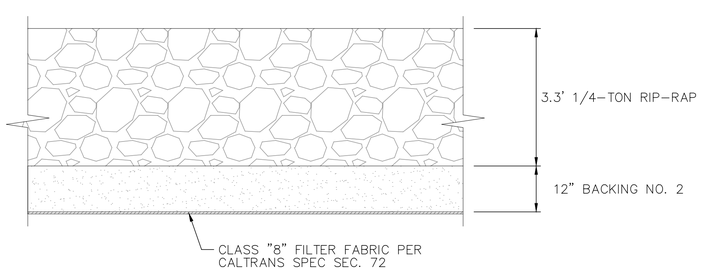


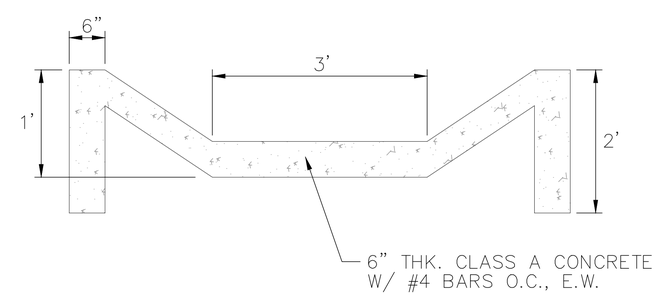
ETHANAC ROAD BRIDGE SECTION

SCALE: H:1"=40'
V:1"=4'



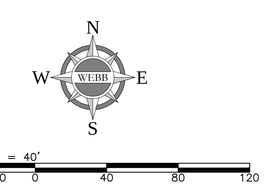
TYPICAL RIP-RAP DETAIL

N.T.S.



CONCRETE TRAPEZOIDAL SWALE DETAIL

N.T.S.



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ENGINEER				COUNTY	

CITY OF PERRIS
APPROVED BY:

CITY ENGINEER

DATE

SEAL – ENGINEER

REGISTERED PROFESSIONAL ENGINEER JOHN L. CASTANEDA NO. 59835 EXP. 12/31/19 CIVIL STATE OF CALIFORNIA

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

PREPARED UNDER THE SUPERVISION OF:

ENGINEER

DESIGNED BY: ## CHECKED BY: ##
R.C.E. NO.: XX

DATE

BENCHMARK:
USC & GS BENCHMARKS AND FROM WLA# 2013-0159 & 2016-0160, 40' (PID #DK2103)–3" BRASS DISK, SET IN BOULDER.
STATION IS ABOUT 4-1/2 MILES W OF LAKEVIEW, ABOUT ONE MILE W OF PASS THROUGH THE BERNARDINO MOUNTAINS, ABOUT 200 FEET SW OF THE INTERSECTION OF BRADLEY ROAD AND WALNUT AVENUE, 70 FEET S OF CENTER LINE OF WALNUT AVENUE, IN A LARGE BOULDER, AND MARKED WITH A TEE. MARK IS A METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA STANDARD DISK STAMPED 40Y 1983?.
ELEV.=1494.66' (NAVD88) ; N34D29'42.58"-W4D88

CITY OF PERRIS
STREET IMPROVEMENT PLAN
STORM DRAIN IMPROVEMENT PLANS
ETHANAC ROAD BRIDGE SECTION

SHEET NO. 5 OF 5 SHEETS

SCALE: H: 1"=XX' V: 1" = X'

FOR: XXX
W.O. 20-0182
CITY FILE NO. PX_XXX

G:\173.09.21\ENGINEERING\STORM_DRAIN_PLAN\173.09.21-SDIP-SHEET_5.DWG 5/3/2021 6:49:04 AM