Determination of Biologically Equivalent or Superior Preservation Report

2nd Street Improvement
Riverside County, Beaumont, California

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1 EXECUTIVE SUMMARY

This Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Determination of Biologically Equivalent or Superior Preservation (DBESP) report demonstrates that the mitigation proposed for impacts to four ephemeral waterways, including Potrero Creek, and a human-created ditch, present on the proposed 2nd Street Improvement project (Project) will provide a biologically equivalent or superior resource. Potential MSHCP Section 6.1.2 resources were assessed within 100-feet of the 2nd Street Right-of-Way (RW). Two of the ephemeral features on the Project, designated as Features A and B, are the result of storm runoff from roadways and railroads and totaled 0.82-acre. Feature D was observed to be a human-made earthen ditch for storm water runoff and totaled 0.06-acre. Potrero Creek, designated as Feature C, was observed to be ephemeral, although it is designated as a United States Geological Survey (USGS) blue line intermittent stream on the Beaumont 7.5 Minute USGS California Quadrangle. Feature C was located on the eastern end of the project and totaled 0.30-acre.

The City of Beaumont (City) is the Permittee of the MSHCP, Lead Agency for the California Environmental Quality Act (CEQA), and the Applicant for this Project as 2nd Street is a public works project. Based on the grading footprint and RW alignment, the Project will permanently impact 0.30-acre of ephemeral Riverine habitat in Features A and B by installing culverts, and temporarily impact 0.03-acre of ephemeral Riverine habitat in Feature C through minor grading activities. Based on these total impacts, the City will purchase offsite mitigation credits totaling 0.96-acre, a 3:1 mitigation to impact ratio for permanent impacts and 2:1 mitigation to impact ratio for the temporary impacts. The City will purchase Permittee Responsible credits at the Wilson Creek Habitat Restoration Plan (WCHRP) site in Aguanga, California to offset said impacts. This mitigation would provide a superior resource for MSHCP Covered Species in perpetuity by enhancing and restoring this portion of Wilson Creek through the planting of the appropriate native species. The WCHRP has been approved as a Permittee Responsible mitigation site since 2011. It totals 19.4-acres of streambed habitat where 100% of the tamarisk (*Tamarix ramosissima*) was already removed in 2011 and has been managed since to ensure tamarisk would not reestablish. Individual conservation easements are sold on a project-by-project basis within the 19.4-acre area.

2 INTRODUCTION

2.1 Project Area

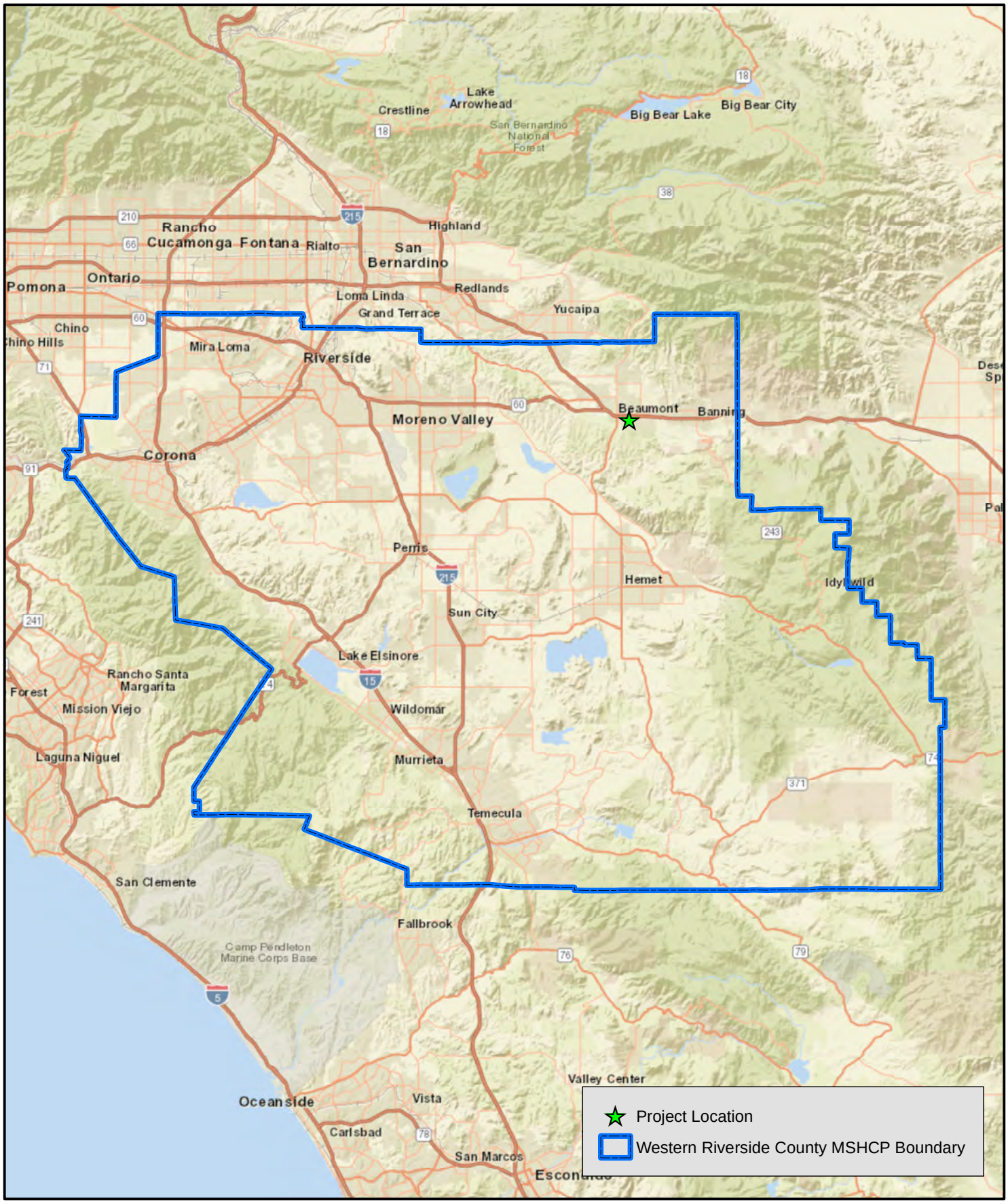
The Assessment Area was located in Beaumont, Riverside County, California, west of the existing 2nd Street between 1st Street and I-10 and east of Pennsylvania Avenue, approximately 0.2-mile aerial mile south/southeast of the Pennsylvania Avenue and I-10 intersection. *Figure 1 - Regional Map* (Page 3) and *Figure 2 - Vicinity Map* (Page 4) depict the location of the Assessment Area. The project resides outside of a Western Riverside County MSHCP criterial cell.

The Project was geographically located in Township 3 South, Range 1 West, Sections 10 and 11 of the Beaumont 7.5 Minute USGS California Quadrangle as depicted by *Figure 3 - USGS Topographic Map* (Page 5). The Universal Transverse Mercator (UTM) coordinates of the approximate center of the Project was Zone 11; 503,526-meters East; 3,753,648-meters North; North American Datum 1983 (NAD83).

2.2 Project Description

The City plans to alleviate traffic congestion on 1st Street between Highland Springs and Pennsylvania Avenue by extending 2nd Street, from the westerly boundary of the Home Depot shopping center to the proposed intersection at Pennsylvania Avenue. The improvements include widening and extending 2nd Street approximately 2,518-feet from the current terminus at the westerly boundary of First Street Self and RV Storage, to Pennsylvania Avenue. The Project site is relatively flat with elevations ranging from 2,576 feet to 2,593 feet above mean sea level (msl). This Project also entails widening 2nd Street approximately 862-lineal feet and extending it lineal 1,663-feet from its current terminus to the westerly boundary of the Home Depot shopping center. The Project will require construction of a new storm drain facility and may require improvements to existing drainage. The total potential disturbed Project site area is approximately 5.08 acres. The site is bounded by commercial uses on the east end and to southeast and by vacant land on the north, west, and southwest. The General Plan land use and zoning designations of the adjacent land uses are Industrial.

The new roadway will be an extension of the existing E. 2nd Street on the west boundary of the Home Depot shopping center to the proposed intersection at Pennsylvania Avenue. The new roadway and related improvements will provide safe and ready access to the commercial development for both pedestrians and vehicles from the west. The roadway will be designed to cross over the existing drainage culvert and have new culverts for the water crossings on the west side of the Project site. The new culverts will convey the



N

0 5 10 20 Miles

1:600,000

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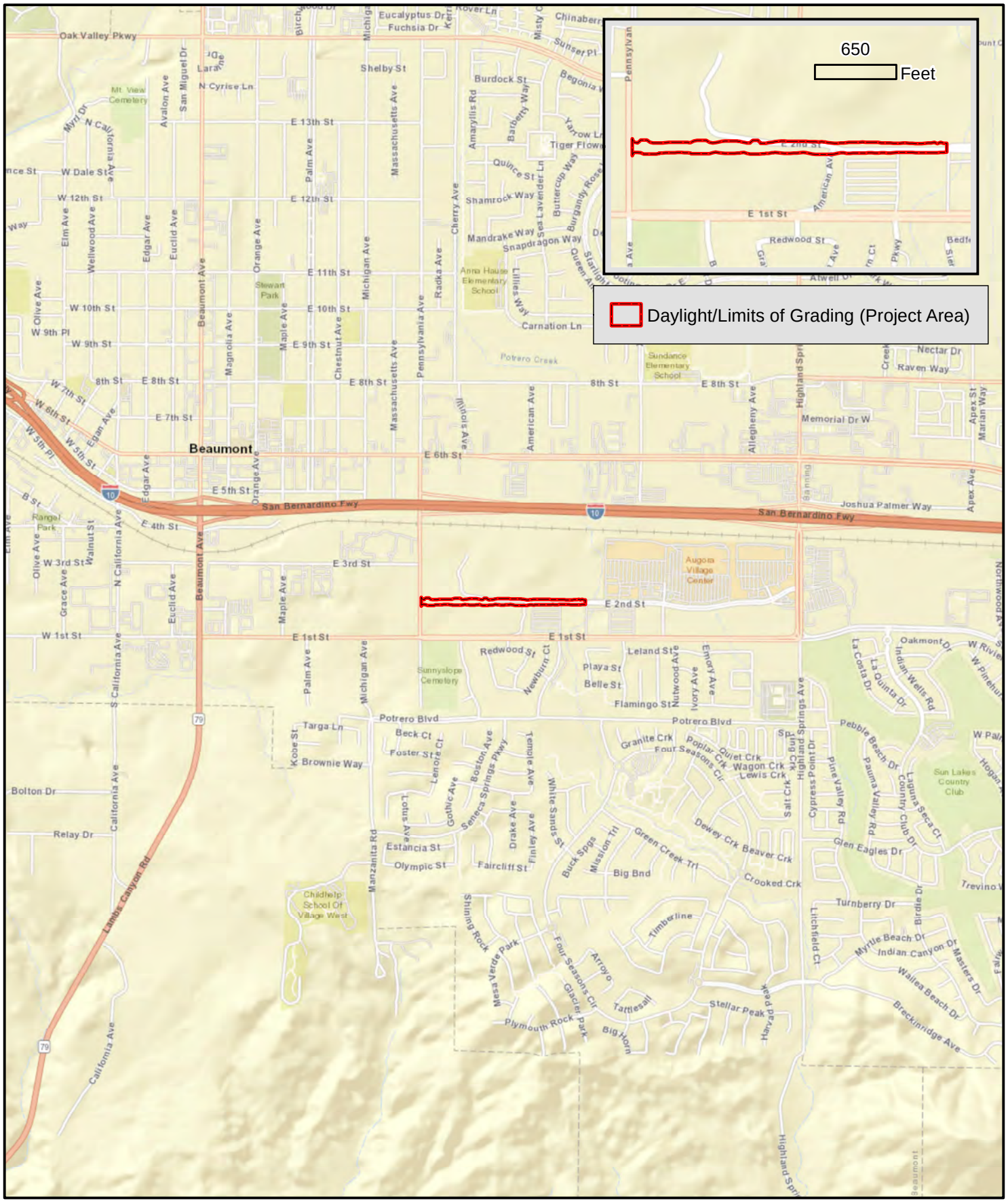
FIGURE 1
Regional Map

DATE: June 13, 2022
COORDINATE SYSTEM: NAD 1983 UTM Zone 11
SOURCE: ESRI World Street Map, Riverside County GIS Data, Cozad & Fox

PROJECT:
City of Beaumont
2nd Street Improvement



N

0 0.25 0.5 1 Miles

1:24,000

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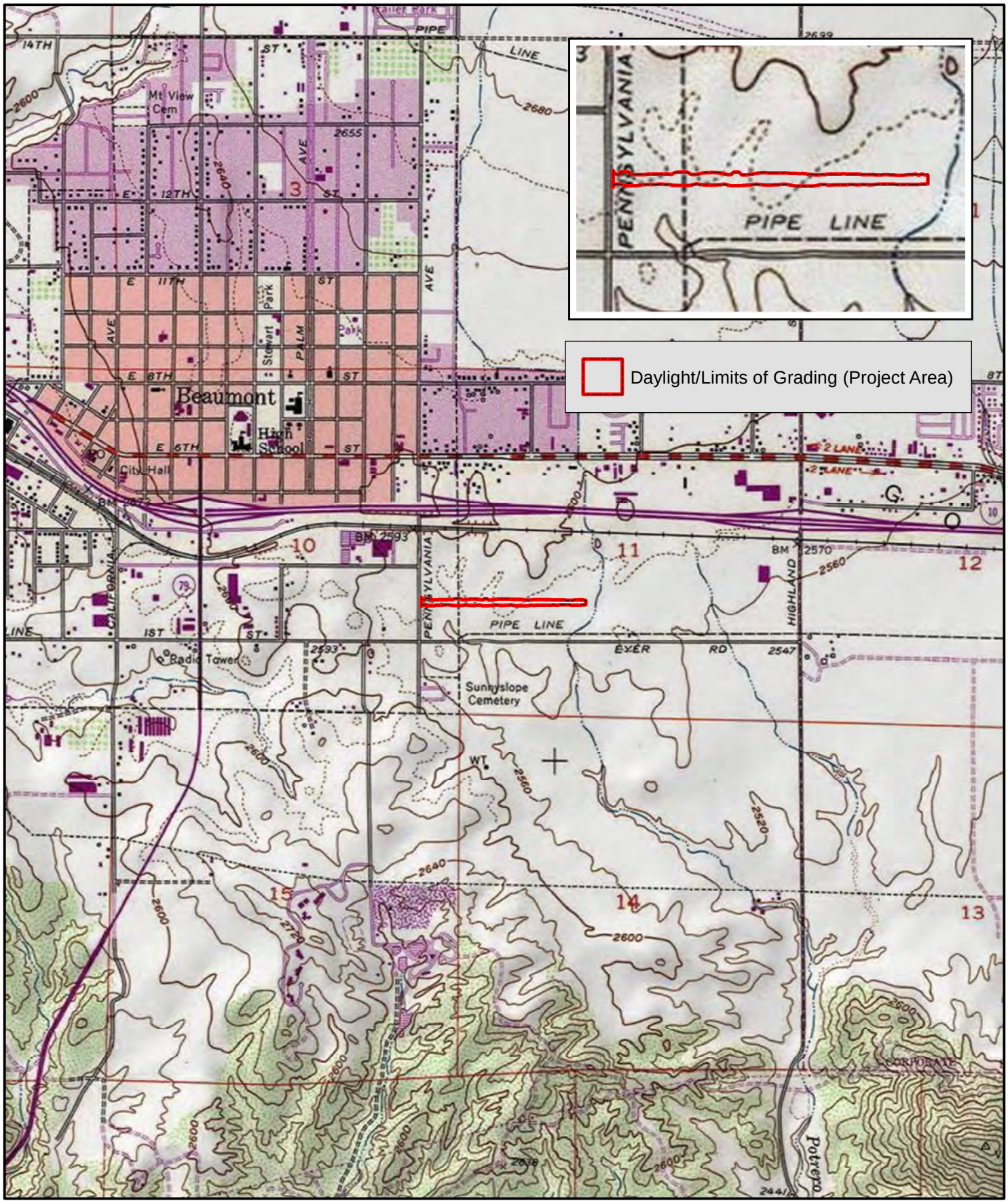
FIGURE 2
Vicinity Map

DATE: June 13, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Street Map, Cozad & Fox

PROJECT:
City of Beaumont
2nd Street Improvement



N

0 0.25 0.5 1 Miles

1:24,000

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FIGURE 3
USGS Topographic Map

DATE: June 15, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI USA Topo Maps, Cozad & Fox

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2nd Street Improvement

anticipated water flows based on the requirements set forth by the City and the Riverside County Flood Control and Water Conservation District (RCFCWCD). In addition, the Project will have an effective signage and striping plan for the planned phasing as well as any detour plans needed during construction to minimize the effects on local drivers or pedestrians.

There is also a proposed Pennsylvania Avenue Improvement Project that will widen the existing Pennsylvania Avenue from 1st Street to 6th Street (just west of the proposed Project). This improvement project will include new curb and gutter, a raised median, cross culvert extensions, and improvements at 6th Street intersection. The Pennsylvania project lies to the west of the proposed E. 2nd Street Improvement Project. An additional capital works project is currently being planned to expand the Pennsylvania Avenue interchange including a new westbound on-ramp and eastbound off-ramp to the I-10 Freeway just south of the site. These improvements depend on Caltrans and timing has not yet been determined.

2nd Street is classified as a major roadway in the City's General Plan Mobility Element. The proposed Project will build within the existing right-of-way for a major roadway; however, this Project will be an interim improvement built to secondary roadway standards. The proposed road cross section allows the south-half to meet the curb alignment for a Major (38') while the north-half will need to be widened in the future (at developer's expense) to complete the Major section – this future improvement is not included as part of this proposed Project. The interim condition is essentially a secondary road but shifted from centerline.

The Project area (i.e., grading footprint) was based on an AutoCAD file prepared by the Project's civil engineer Cozad & Fox that was converted for GIS use. According to the AutoCAD file, the grading associated with the Project will total 5.08-acres (221,274.37-square feet [SqFt]) with a total length of 2,518-linear feet.

MSHCP field assessments were conducted in 2020 and 2021 prior to the Project's grading footprint being developed. Due to this, the 2nd Street RW (6.44-acres) was used as a baseline and generated two assessment buffers using GIS. Narrow Endemic Plant Species (NEPS) habitat assessment, MSHCP Section 6.1.2 water resource field/habitat assessments and vegetation communities/land covers were assessed within the RW and 100-feet of the RW (20.52-acres). BUOW and MSHCP Section 6.1.2 riparian bird species were assessed within the RW and 500-feet of the RW (91.61-acres).

Figure 4 – Project Area (Page 8) and the site plan attached in Appendix A depict the above-described areas.

2.3 Existing Conditions

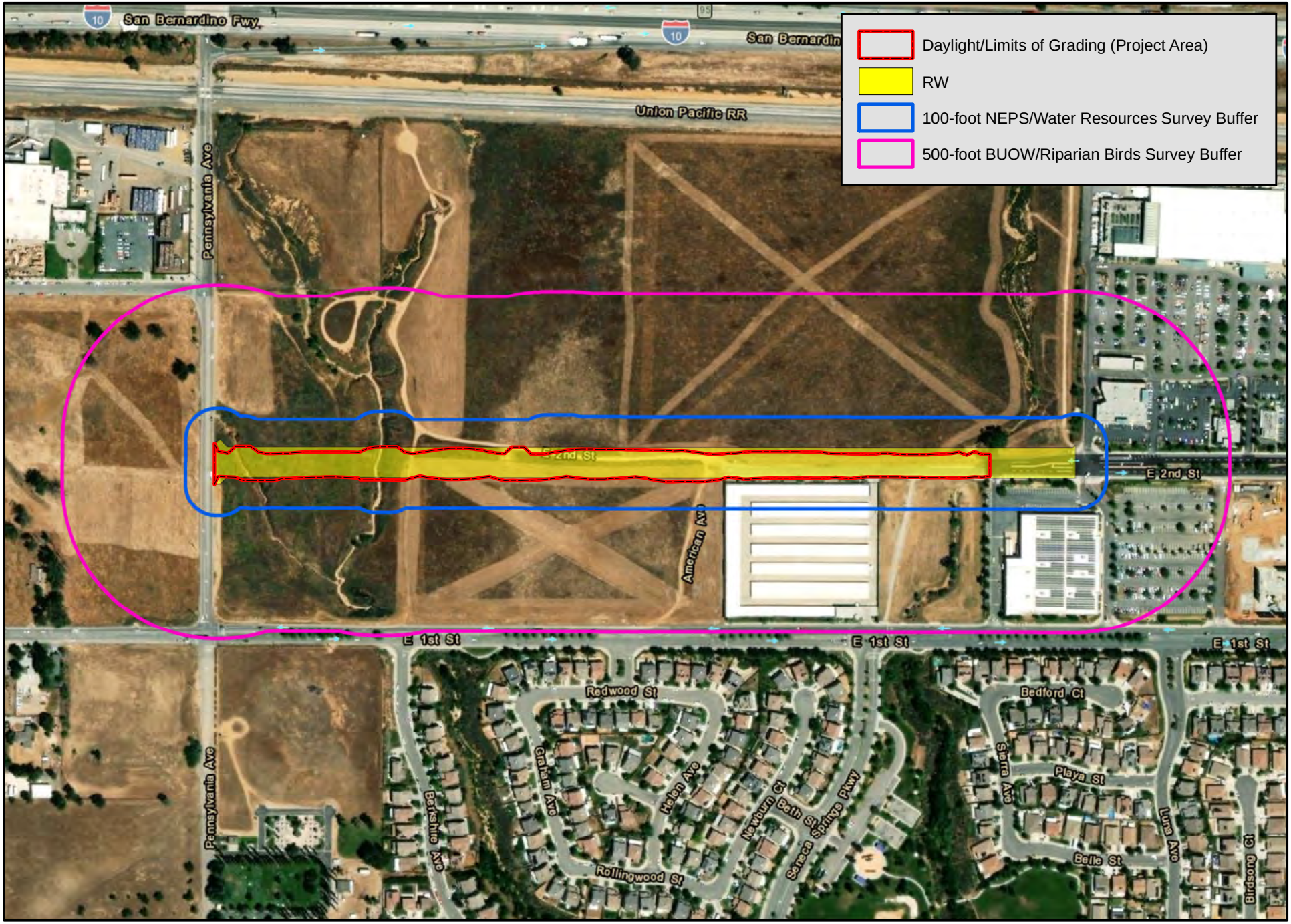
The Project was located in the western end of the San Gorgonio Pass approximately one aerial mile north of the foothills of the San Jacinto Mountains. The San Bernardino Mountains were located approximately 4.0-aerial miles north of the Project. Primary land uses around the Project included urban areas, vacant lots, and some agriculture.

The Project site is composed of an existing road, E. 2nd Street. Currently, there are both vehicular and pedestrian traffic travels on 1st Street to Commerce Way. Around the project location, there are existing commercial developments as well as undeveloped parcels of land. To the north of the proposed project location, lies a major highway, the I-10 Freeway. In the near north, of the proposed street improvement project lies the commercial development with a Home Depot and a Walmart Supercenter as the biggest establishments. To the south of the proposed project location lies a Kohl's as well as a storage facility. To the west of the undeveloped E. 2nd Street, there are large and vacant dirt parcels of land that lead up to Pennsylvania Avenue.

The Project was located within the central-eastern portion of the Santa Ana Watershed (HUC6 180702) within the following sub-watersheds: northern portion of the San Jacinto Watershed (HUC8 18070202), in the northern portion of the Middle San Jacinto River Watershed (HUC10 1807020202), in the northern portion of the Potrero Creek Watershed (HUC12 180702020201). Figure 5 – Watershed Location (Page 9) depicts the Project's location within each of these Hydrologic Units.

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (United States Department of Agriculture Natural Resources Conservation Service, 2021), the Project consisted of five soil series as depicted by *Figure 6 – NRCS Soils* (Page 10). A brief description, as described by the NRCS, is presented within the Jurisdictional Delineation included as Appendix B. No hydric, clay, or saline-alkali soils series were present on the Project.

In accordance with the California Department of Fish and Wildlife's (CDFW) Vegetation Classification and Mapping Program (VegCAMP) *List of Vegetation Alliances and Associations* (Natural Communities List) (California Department of Fish and Wildlife, 2021) and *A Manual of California Vegetation,* three vegetation communities and land covers were observed and mapped within the Project Area.



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N

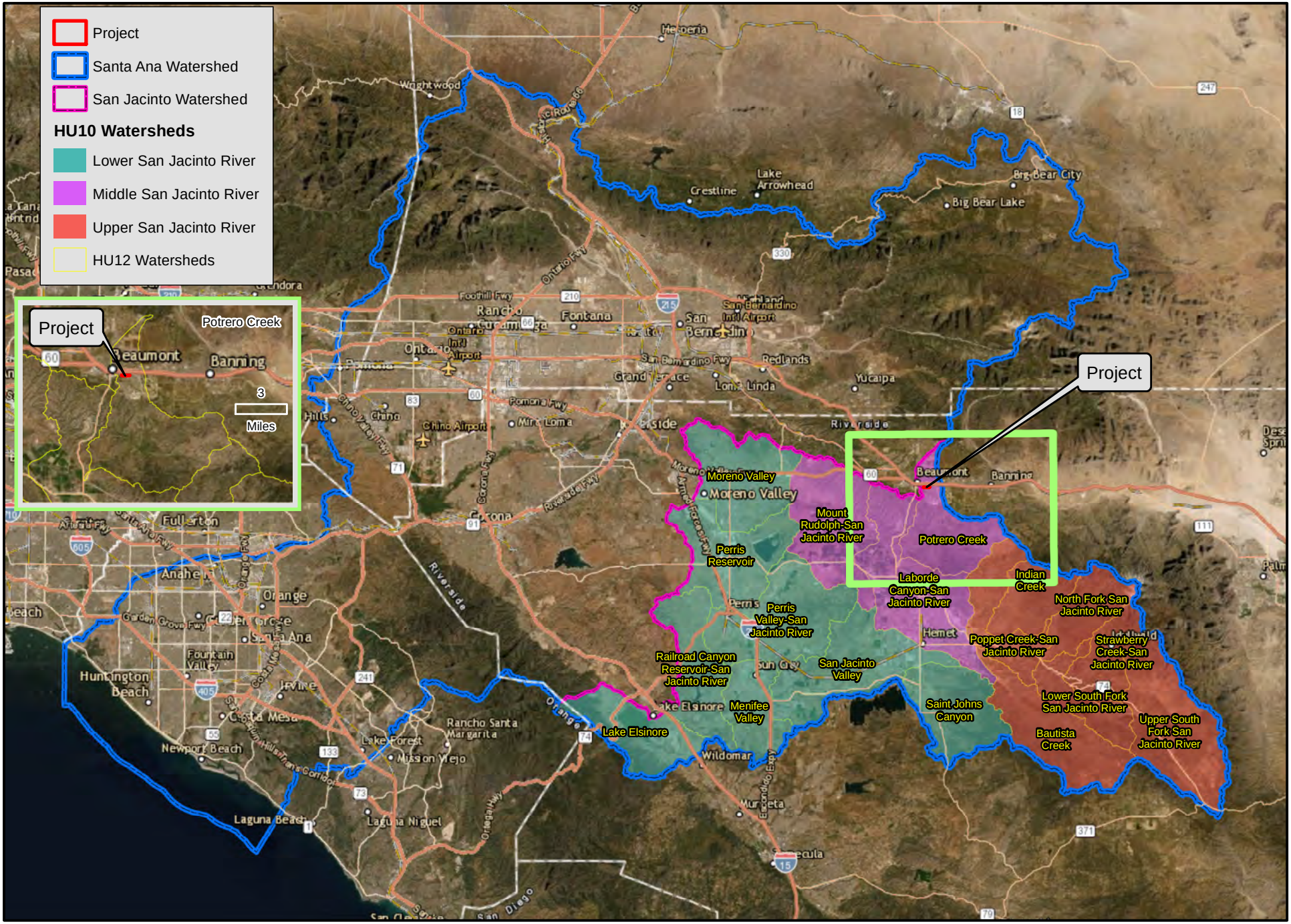
0 200 400 800 1,200 1,600 Feet

1 inch = 417 feet

FIGURE 4
Project Area

DATE: September 18, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement



N

0 10 20 40 Miles

1 in = 10 miles

FIGURE 5
Watershed Location

DATE: March 22, 2022
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, USGS

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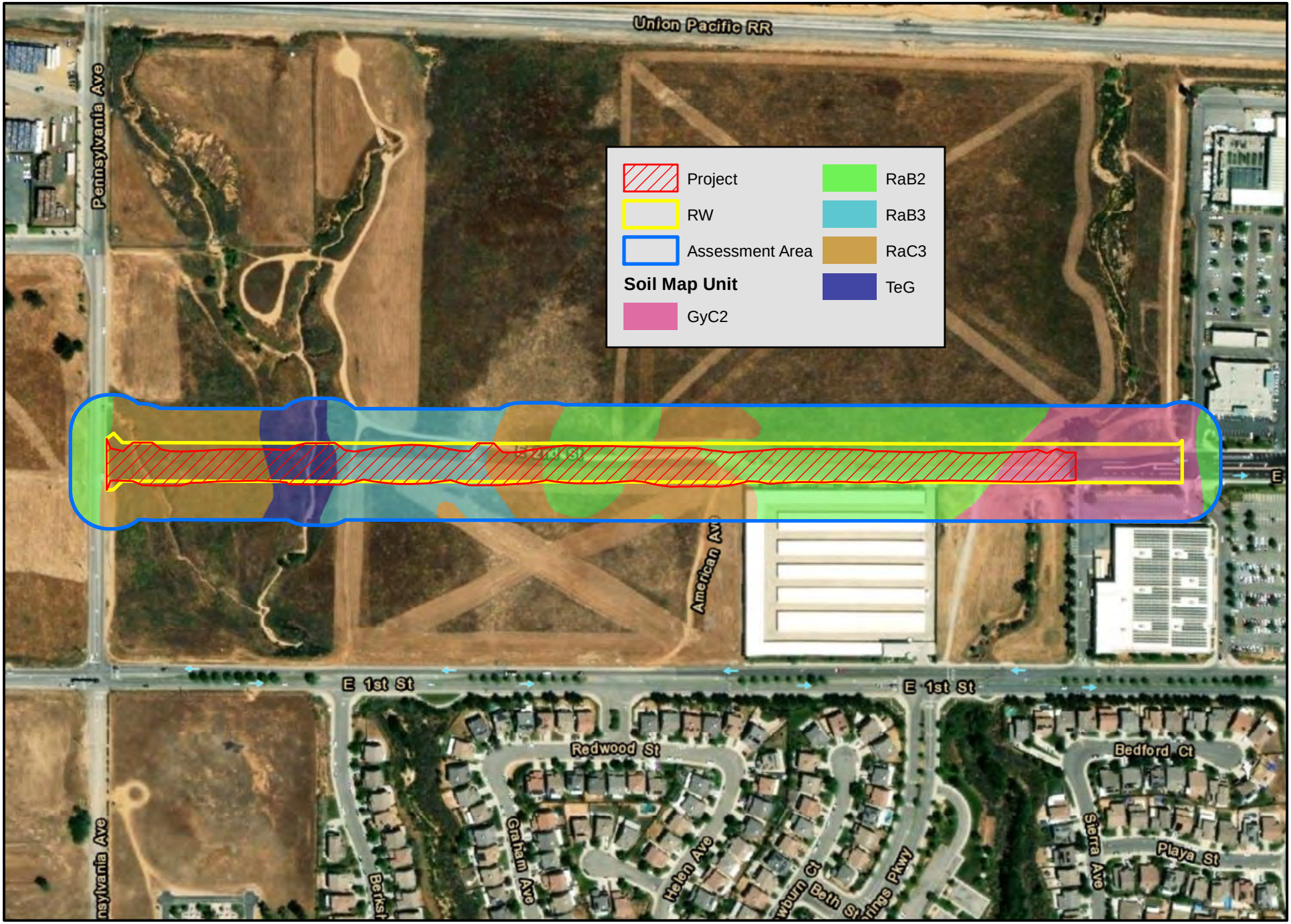
2nd Street Improvement



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N

0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 6
NRCS Soils

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, NRCS Web Soil Survey

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City of Beaumont
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Figure 7 – Vegetation Communities/Land Covers (Page 12) depicts the distribution across the Project. Please refer to the Jurisdictional Delineation, attached as Appendix B, for more details.

3 RIPARIAN/RIVERINE MITIGATION (SECTION 6.1.2)

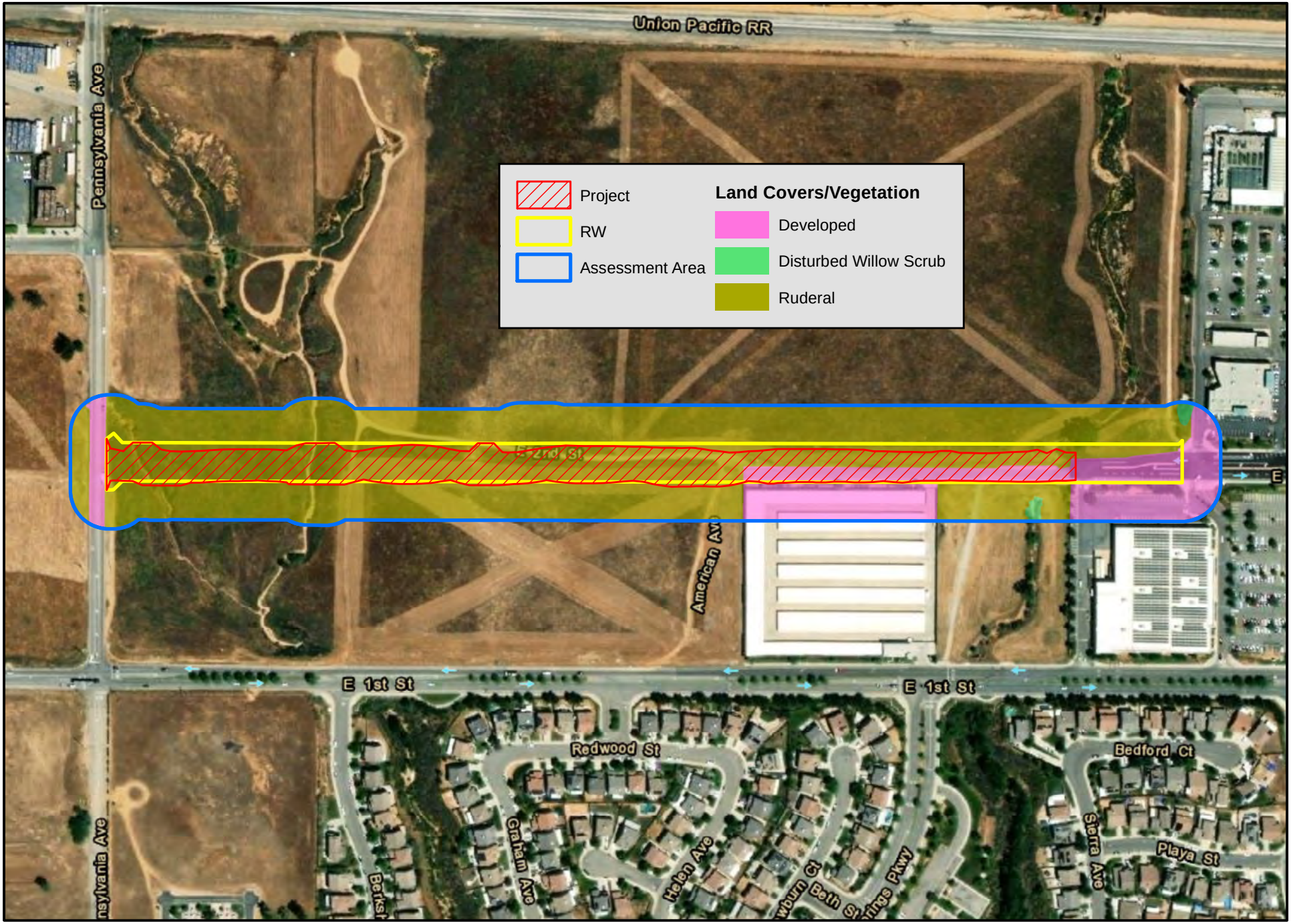
Section 6.1.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (MSHCP Section 6.1.2) of the MSHCP requires all private and public projects under the jurisdiction of the MSHCP that are proposing a land use change/applying for a discretionary permit to conduct a MSHCP Section 6.1.2 assessment. This includes a habitat assessment for Riparian/Riverine Areas, Vernal Pools, three fairy shrimp species; 1) Riverside fairy shrimp (*Streptocephalus woottoni*) (RFS), 2) vernal pool fairy shrimp (*Branchinecta lynchi*) (VPFS), and 3) Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*) (SRPFS), and three bird species; 1) Least Bell's Vireo (*Vireo bellii pusillus*) LBVI, 2) Southwestern Willow Flycatcher (*Empidonax traillii extimus*) (SWFL), and 3) Western Distinct Population Segment (DPS) Yellow-billed Cuckoo (*Coccyzus americanus*) (YBCU). If the assessment identifies suitable habitat for any of the six-species associated with Riparian/Riverine Areas and Vernal Pools listed above, and the proposed project design does not incorporate avoidance of the identified habitat, focused surveys would be required, and avoidance and minimization measures will be implemented in accordance with the MSHCP's species-specific objectives for these species.

According to MSHCP Section 6.1.2:

> *Riparian/Riverine Areas are lands which contain Habitat dominated by tress [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.*

3.1 Methods

Prior to initiating the field assessment, a review and analysis of the Beaumont 7.5 Minute USGS California Quadrangle, historic aerial photography from Historic Aerials online (Historic Aerials by Netronline, 2021) and Google Earth, and the U. S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI). Site-specific topographic data obtained from the Project's engineer, Cozad & Fox, was also utilized as the primary baseline source.



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N

0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 7
Vegetation Communities/ Land Covers

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, SBS

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A query of both the California Natural Diversity Database (CNDDB) and the USFWS Carlsbad Fish and Wildlife Office (CFWO) "Species Occurrence Data" GIS data was also conducted to determine if the three-targeted fairy shrimp and/or three-targeted bird species listed above in Section 5.0 have been documented within five miles of the Project. The Cornell Lab of Ornithology's eBird Hotspots (The Cornell Lab of Ornithology, 2021) was also referenced.

A potential Riparian/Riverine Area is walked and mapped with Collector, recording a vertex for every two feet traveled, as either a polyline and/or polygon depending on the habitat type (i.e., Riparian vs. Riverine) and the width of the feature[1]. The jurisdictional extent of a Riparian/Riverine Area is typically the dripline[2] of the riparian vegetation associated with the water feature, if present, or the top of the streambank in the absence of riparian vegetation[3]. Data collected while walking the potential Riparian/Riverine Area includes characteristics and functions such as hydrology, soils/substrates, dominant plant species/vegetation community, biological functions and values, presence/absence regarding the species listed in MSHCP Section 6.1.2, habitat suitability for LBVI, SWFL, YBCU, RFS, VPFS, SRPFS, and whether the feature contributes to downstream resources for MSHCP Section 6.1.2 species and/or MSHCP Conservation Areas.

Biologists Tim Searl and Arthur Davenport conducted the MSHCP Section 6.1.2 assessment following the guidelines described above on July 20, 2020. A follow-up assessment was conducted by biologists Tim Searl and Garret Fox on July 29, 2020. Potential MSHCP Section 6.1.2 resources were mapped in the field with Collector[4]. The Collector data collection was setup to record a vertex for every two feet traveled while recording a polyline or a polygon feature which was dependent on the width of the feature. Any feature ≤ to three feet in width, or lacking a discernable bed and bank (i.e., erosional gullies) or riparian vegetation, the centerline was mapped as a polyline and given a mean width. The feature was then calculated and depicted in ArcGIS by utilizing the Buffer tool to represent the mean width. Culvert locations were also recorded in the field with Collector with the Buffer tool in ArcGIS utilized to calculate the width.

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[1] Any feature ≤ to three feet in width, or lacking a discernable bed and bank, is mapped as a polyline, and given a mean width. The feature is then calculated and depicted in ArcGIS by utilizing the Buffer tool to represent the mean width.
[2] The area defined by the outermost circumference of a tree canopy where water drips from and onto the ground.
[3] The jurisdictional limits of a Riparian/Riverine Area generally coincide with that of CDFW 1600 streambeds. Though if a feature lacks riparian vegetation, a Riparian/Riverine Area must contribute to downstream resources to meet the criteria, unlike CDFW 1600 streambeds where CDFW may potentially assert jurisdiction over isolated streambeds regardless of it being vegetated or unvegetated.
[4] Horizontal accuracy of the GPS during data collection ranged from 30 to 60 centimeters (1-2 feet).

Marginally suitable LBVI habitat was observed within 500-feet of the Project but not within the Project/RW. A protocol-level survey for the presence/absence of LBVI was conducted in 2021; the results were negative. No Project impacts will occur to riparian birds. Suitable habitat for SWFL and YBCU was absent within the Project/RW and 500-feet of the Project/RW.

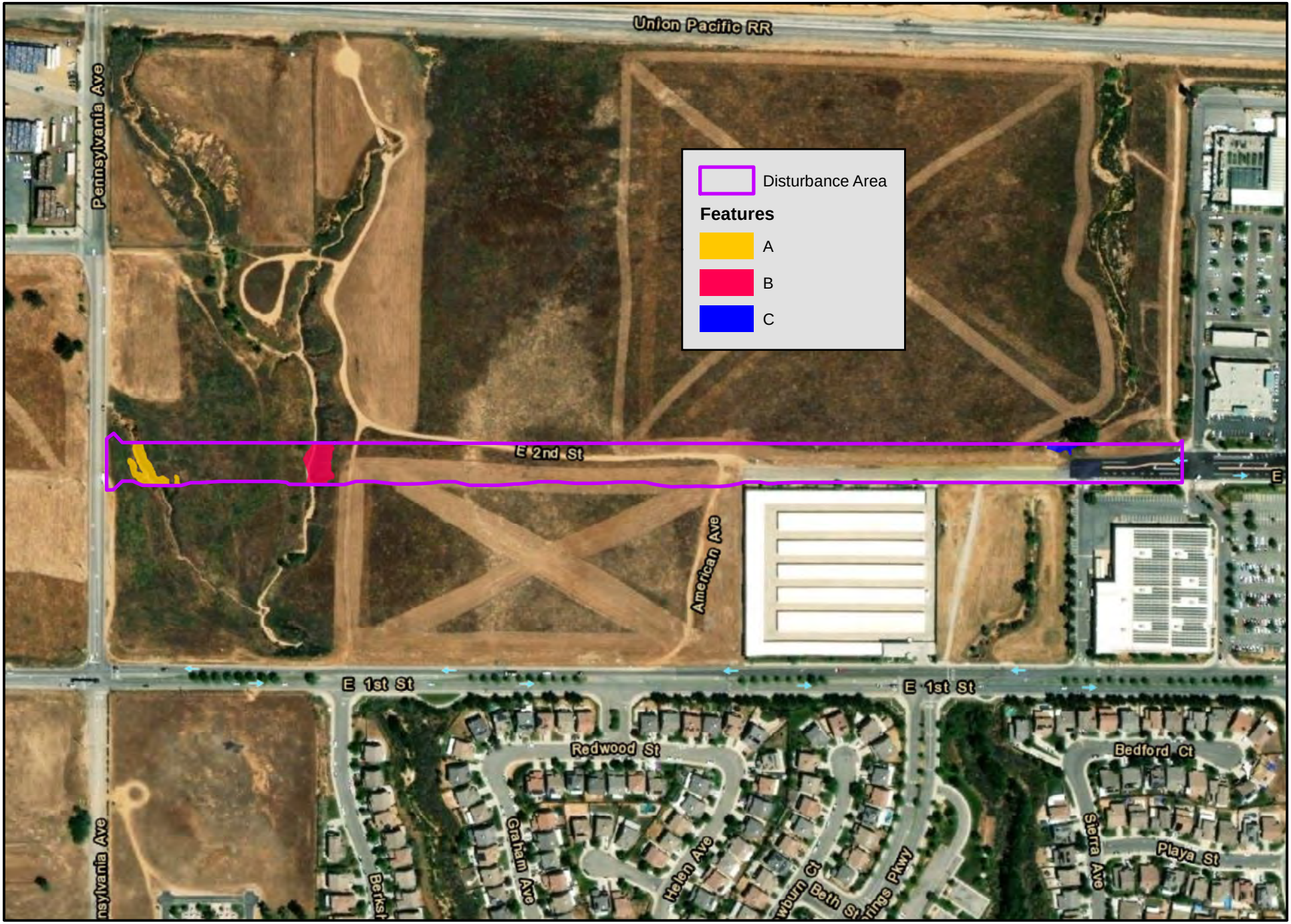
No vernal pools or habitat that would support vernal pools were observed within the Project Area during the site assessment; therefore, no focused surveys for vernal pool fairy shrimp were conducted.

3.2 Results/Impacts

Field personnel identified and mapped four features that potentially meet the criteria of a MSHCP Section 6.1.2 Riparian/Riverine Area; this included four ephemeral waterways, including Potrero Creek, and a human-created ditch. No wetland features were observed within the Project. Figure 8 – Potential MSHCP Section 6.1.2 Riparian/Riverine Areas (Page 15) depicts the location of Features A, B, C, and D on the Project. Based on the grading footprint and RW alignment, the Project will potentially permanently impact 0.30-acre of ephemeral Riverine habitat in Features A and B by placing culverts, and temporarily impact 0.03-acre of ephemeral Riverine habitat in Feature C through grading activities.

Feature A

This feature was a deeply incised gully and the result of storm runoff from Pennsylvania Avenue. A vertical drainpipe was located in the shoulder on the west side of Pennsylvania Avenue and was connected to a 5-foot-wide cement culvert that discharged on the eastside where Feature A originated. No drainage course was present on the westside indicating that all the flow originated from road runoff during storm events. Feature A primarily consisted of ruderal habitat with non-native, weedy vegetation such as red brome (*Bromus rubens*), ripgut grass (*Bromus diandrus*), slender wild oat (*Avena barbata*), and wall barley (*Hordeum murinum*) dominant. Some native upland vegetation was present, with the majority occurring on the banks, and included interior goldenbush (*Ericameria linearifolia*) and California buckwheat (*Eriogonum fasciculatum*). No riparian vegetation was present. As noted above, Feature A was a deeply incised gully with an approximate depth of 20-feet from the bed of the channel to the top of the bank at some of its deepest locations. Soils throughout primarily consisted of coarse sandy loams. Feature A converged with Feature B downstream of the Assessment Area. Feature A would be expected to be subject to MSHCP Section 6.1.2 Riparian/Riverine Areas' policies.



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N

0 160 320 640 960 1,280 Feet

1 inch = 333 feet

FIGURE 8
Potential MSHCP Section 6.1.2
Riparian/Riverine Areas

DATE: June 16, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement

Feature B

Feature B was similar to Feature A in that it was a deeply incised gully and possibly the result of storm runoff from Pennsylvania Avenue and the Union Pacific Railroad (UPR) located to the north. Two drainages converged approximately 110-feet north of the 100-foot assessment area. Feature B primarily consisted of ruderal habitat with non-native, weedy vegetation such as red brome, ripgut grass, slender wild oat, and wall barley dominant. Some native upland vegetation was present, with the majority occurring on the banks, and included interior goldenbush and California buckwheat. No riparian vegetation was present within the 100-foot assessment area; however, a patch of black willow was present to the northwest and a patch of arroyo willow was present to the south. As noted above, Feature B was a deeply incised gully with an approximate depth of 30-feet from the bed of the channel to the top of the bank at some of its deepest locations. Soils throughout primarily consisted of Terrace Escarpments and coarse sandy loams. Feature B would be expected to be subject to MSHCP Section 6.1.2 Riparian/Riverine Areas' policies.

Feature C (Potrero Creek)

Potrero Creek, a USGS-designated intermittent stream (i.e., blueline), was present in the eastern end of the 100-foot assessment area. The headwaters were located approximately 2.0-miles north according to the USGS Topographic Map. The headwaters were located in an area that has since been developed, and according to aerial photography, enters a series of human-created channels and underground storm drain systems before ultimately discharging from a culvert located beneath I-10 and the UPR approximately 900-feet north of the 100-foot assessment area.

The ephemeral drainage was divided by a box culvert with three cement culverts located under a paved portion of 2nd Street within the 100-foot assessment area. The two outside culverts measured 5-feet in width and the center culvert measured 3-feet. The entirety of Potrero Creek upstream of 2nd Street consisted of upland habitat with a homogenous stand of California buckwheat in the upstream end north of the 100-foot assessment area then transitioned to ruderal habitat with non-native, weedy vegetation such as red brome, ripgut grass, slender wild oat, and wall barley dominant. A single, large blue gum (*Eucalyptus globulus*) was present near 2nd Street. Some native upland vegetation was present, with the majority occurring on the banks, and consisted almost entirely of California buckwheat. Feature C consisted of a narrow channel with an approximate depth of 10-feet from the bed of the channel to the top of the bank at some of its deepest locations north of 2nd Street. Soils throughout primarily consisted of coarse sandy loams.

Potrero Creek downstream of 2nd Street included a mix of sparsely distributed willow species mixed with several non-native trees and included a mix of sparsely distributed willow species, which included narrow-leaved willow [sandbar willow] (*Salix exigua*), arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), and red willow (*Salix laevigata*). Mule fat was also present. Although the riparian plant diversity was high, species richness was low throughout the area. The habitat was also mixed with several non-native trees, such as Chinese elm (*Ulmus parvifolia*), Shamel ash (*Fraxinus uhdei*), and tree-of-heaven (*Ailanthus altissima*). Tamarisk was also present.

Feature C would be expected to be subject to MSHCP Section 6.1.2 Riparian/Riverine Areas' policies.

Feature D

Feature D was a human-created earthen ditch with a few concrete trapezoid aprons that totaled approximately 560-feet in length including the areas outside of the Assessment Area. The feature received surface flow from the commercial center to the east via drainage grates near the curb. Feature D was also irrigated via pop-up sprinklers. The feature supported a few, scattered black willow and generally lacked an understory though a few mule fat were present. Most of the ditch consisted of non-native, weedy vegetation. Trash was prevalent throughout the ditch and was likely the result of being located adjacent to a commercial parking lot. The downstream terminus of the ditch was near 2nd Street. A large, vertical drainpipe was present at the terminus where ephemeral flow entered the underground drainage system. Feature D may be subject to MSHCP Section 6.1.2 Riparian/Riverine Areas' policies.

3.3 Mitigation and Equivalency

3.3.1 Direct Effects

The Project, as currently designed, will have permanent impacts to Features A and B through the installation of culverts, and temporary impacts to Feature C with only minor grading proposed and no permanent structures or hardscape in that area. There are no conserved habitats or planning area species within or adjacent to the Project Area; therefore, no direct effects are anticipated. In addition, there are no MSHCP 6.1.2 conservation areas supporting the covered species within, or immediately adjacent to the Project and thus no direct effects are anticipated.

All Project impacts will be mitigated using an approved mitigation mechanism. Initially Project impacts were to be proposed through the purchase of credits through the Riverpark Mitigation Bank (Riverpark) located in the San Jacinto Valley; however, it was

recently learned that Riverpark does not currently have available credits. Therefore, the Project will mitigate impacts at The Wilson Creek Land Company Habitat Restoration Plan (WCHRP) located in Aguanga, CA which is an approved Permittee Responsible mitigation mechanism offering compensatory mitigation impacts to agency jurisdiction, and therefore, MSHCP Riparian/Riverine Areas. The Project is within the service area for this WCHRP, and credits are currently available to restore lands within the WCHRP. The Habitat Restoration Plan for Wilson Creek prepared by PCR Services is included in Appendix C further detailing restoration efforts and goals, and thus further demonstrating how the purchase of credits will provide a biologically superior resource.

Compensatory mitigation credits are available for riverine habitat impacts, which are in-kind as compared to Project Riverine impacts. The Applicant will be providing funding to the WCHRP to restore Riparian/Riverine habitat. The Project will permanently impact 0.30-acre of ephemeral Riverine habitat in Features A and B by installing culverts, and temporarily impact 0.03-acre of ephemeral Riverine habitat in Feature C through minor grading activities. Based on these potential impacts, the City will purchase offsite mitigation credits totaling 0.96-acre, a 3:1 mitigation to impact ratio for permanent impacts and 2:1 mitigation to impact ratio for the temporary impacts. The City will purchase Permittee Responsible credits of Riparian/Riverine habitat for re-establishment/restoration at the WCHRP. Once the mitigation credits are purchased, the WCHRP will provide greater acreage, habitat function, and wildlife connectivity as compared to the preservation of Project resources. Mitigation at the WCHRP will be biologically superior as compared to the preservation of the three ephemeral features located within the Project.

It should be noted that there will be no loss in connectivity associated with downstream resources once the onsite ephemeral features are impacted as the project scope includes the installation of culverts that will allow flows to continue. Likewise, wildlife will still have access to these features downstream via adjacent properties.

3.3.2 Indirect Effects

The proposed Project is consistent with the MSHCP as all direct and indirect impacts will be mitigated utilizing an approved mitigation mechanism. In addition to purchasing mitigation credits, the following avoidance and minimization measures will ensure there are no indirect effects as a result of the Project.

Edge Treatments

The Project is not immediately adjacent to a MSHCP Conservation Area and will not have significant indirect impacts to conserved lands under the MSHCP.

Landscaping

The Project will provide landscaping plans that will utilize native or non-invasive species to prevent the spread of noxious and/or invasive species to surrounding habitat.

Elevation Difference

The Project area is relatively level; there will be no significant elevation difference around its edges following the construction of the development plan. Additionally, the Project is not adjacent to any MSHCP Conservation Areas that could be impacted by elevation changes as a result of grading.

Noise

Noise levels will increase during Project development, but not beyond levels consistent with residential standards which could indirectly impact LBVI, BUOW or nesting birds that may occupy the surrounding habitat. To avoid potential indirect impacts to LBVI, BUOW and nesting birds with respect to noise, the Project will comply with all City requirements pertaining to noise and traffic standards. If nesting bird season cannot be avoided, a preconstruction clearance survey for nesting birds will be conducted. In the event nesting birds are observed, an avoidance buffer will be established, and an approved biologist will monitor the nest until the young fledge or the nest becomes inactive. As a result of these measures, the project will not have a significant impact on nesting birds due to noise levels.

Avoidance and Minimization Measures

Standard Best Management Practices (BMP) as included in Volume I, Appendix C of the MSHCP will be implemented during Project activities. BMPs to be utilized include the following:

- Prior to grading activities, a training session by a qualified biologist will be conducted to inform all project construction personnel of sensitive resources on the project site and measures that must be implemented to conserve species of concern.

- Construction equipment storage, fueling, and staging areas will be located in areas of minimal disturbance to open space habitat and away from drainages or streambeds.
- Trash and debris will be contained in covered containers and removed from the site in regular waste removal cycles.
- Construction employee parking and break time activities will occur within the development footprint and not encroach into native or natural areas.
- Feeding of wildlife will be prohibited and food or food remains will be placed in sealed containers and transported from the project in regular waste removal cycles.
- Construction personnel will not bring guns or pets to the site and will not play loud music or utilize bright lights before, during, or after regular work hours.
- Temporary impacts will be returned to pre-existing contours and revegetated with appropriate native species.
- Exclusion fencing will be used to ensure impacts do not encroach on avoidance areas.
- Any phases, not initially cleared and graded at the start of the project (in areas that are likely to contain nesting birds), will be cleared and graded prior to the next nesting season (February 15 through September 1). If the entire site is not cleared initially and work will resume during the nesting season, it must be examined again by the project biologist and certified to contain no active nests.
- Include a written description of project design features and mitigation measures that reduce indirect effects, such as edge treatments, landscaping, elevation difference, and minimization and/or compensation through restoration or enhancement.
- It is important to also consider and evaluate noise impacts to adjacent riparian/riverine resources and provide appropriate measures to attenuate these impacts. This may include committing to only constructing outside of nesting season, the use of sound walls that are installed outside of nesting season, etc.
- Applicant should also evaluate whether hydrology in the area is expected to change with project implementation. Will this change (caused by the project) result

in cutting off the hydrologic support to the riparian, riverine, or vernal pool resource?

4 NARROW ENDEMIC PLANT SPECIES MITIGATION (SECTION 6.1.3)

The Project is located within NEPS Assessment Area No. 8 which targets two species: many-stemmed dudleya (*Dudleya multicaulis*) and Yucaipa onion (*Allium marvinii*). The NEPS habitat assessment was conducted by biologist Tim Searl on July 20, 2020. The RW and area within 100-feet were determined to lack suitable habitat for many-stemmed dudleya and Yucaipa onion. The area did not provide the required habitat characteristics, and specifically, lacked clay soils. As a result, focused surveys were not conducted.

5 ADDITIONAL SURVEY NEEDS (SECTION 6.3.2)

5.1 Criteria Area Species Survey Area - Plants

The Project was not located within a designated assessment area for Criteria Area Plant Species (CAPS).

5.2 Burrowing Owl

The Project was located within a designated assessment area for BUOW. A BUOW survey was conducted per the MSHCP protocols, and the results were negative. Per the conditions of the MSHCP, a pre-construction BUOW survey will be required and conducted 30-days prior to the start of construction.

5.3 Mammals

The Project was not located within a designated assessment area for Mammals.

5.4 Amphibians

The Project was not located within a designated assessment area for Amphibians.

6 DELHI SANDS FLOWER-LOVING FLY

The Project was not located within an area with Delhi sands.

7 ADDITIONAL REGULATORY REQUIREMENTS

This Habitat Mitigation and Monitoring Plan (HMMP) was prepared to document off-site mitigation efforts to satisfy the requirements stated in the MSHCP. In order to remain consistent with previous mitigation efforts ongoing at Wilson Creek, this HMMP was

developed by referencing a successful HMMP developed by Helix Environmental Planning, Inc. (2017).

7.1 Introduction

7.1.1 Wilson Creek Habitat Restoration Plan

The WCHRP presents guidelines for the restoration of the approximately 19.4-acre WCHRP study area within the Wilson Creek streambed located in Aguanga, California. For information detailing the HRP Study Area, the jurisdictional waters and functional assessment, please refer to Appendix C, *Wilson Creek Habitat Restoration Plan*.

It is important to note that an official agreement between the City and Wilson Creek Land Company has not been entered into and the 0.96-acre Mitigation Area/Conservation Easement has not been created. This is expected to occur after agency approval of this DBESP/HMMP, and agency approval through other required regulatory mechanisms such as an USACE 404 permit, CDFW 1602 permit and RWQCB 401/Porter-Cologne Act discharge permit.

7.1.2 Off-site Mitigation Area

The HMMP addresses an off-site mitigation area that will be established within the WCHRP after the approval of this DBESP. The mitigation area is intended to provide compensatory mitigation. The proposed mitigation is intended to increase habitat quality and improve functional values associated with this section of Wilson Creek. Habitat dominated by native plant species is expected to attract native wildlife and encourage the development of a balanced ecosystem. An active effort in December 2011 targeted the removal of non-native invasive plant species, which focused primarily on tamarisk removal, but also included removal of some scattered stands of tree tobacco (*Nicotiana glauca*) and castor bean (*Ricinus communis*). Reducing the tamarisk cover to more manageable levels was successful and has continued to be suppressed to-date. Habitat dominated by native plant species is expected to attract native wildlife and encourage the development of a balanced ecosystem. For information detailing the HRP off-site mitigation area, the jurisdictional waters and functional assessment, please refer to Appendix B, *Wilson Creek Habitat Restoration Plan*.

7.2 Goal for Mitigation

Under this plan, the goal of the mitigation effort is to eliminate the remaining coverage of noxious invasive weeds and promote replacement of the non-native vegetation with

appropriate native species. This goal will be accomplished using a two-part approach over a five-year period:

1. clear the mitigation area of invasive noxious vegetation followed by selective weed control; and

2. plant and seed the mitigation area to restore native plant coverage.

These efforts are expected to result in improvement in two or more of the important characteristic functions and values attributed to this resource area. Implementation of compensatory mitigation measures is subject to review and approval of this HMMP.

7.2.1 Functions and Values to be Improved

Implementation of this HMMP is anticipated to provide both local and regional streambed benefits through the replacement of noxious tamarisk with native vegetation, and the eradication of a significant source of tamarisk seed from the Wilson Creek sub-watershed. Although most streambed functions within the mitigation area are expected to significantly increase over the long term, the scope of this HMMP and associated five-year monitoring period will be to demonstrate a benefit to a minimum of two of the following streambed functions:

1. hydrology function,

2. biogeochemical function, and

3. habitat function

Successful performance of a minimum of two of the three functions listed above will be based on 1) the hydrogeomorphic method (HGM) results, 2) the percent native/non-native coverage, and 3) the groundwater elevation results, or any combination of these factors that will be assessed in Years 3 and 5 of the mitigation monitoring effort. Functions assessed as part of the HGM assessment for this HMMP include all three streambed functions (hydrologic, biogeochemical, habitat). An estimate of native/non-native coverage will support habitat-based streambed functions, while groundwater elevation monitoring may support a determination of an increase in hydrologic streambed function.

The prescribed efforts will improve habitat quality by greatly decreasing noxious weed cover in favor of increased cover and diversity by native vegetation. The shift from tamarisk dominance to native dominance should improve nutrient cycling and increase subsurface water storage through decreased evapotranspiration rates. Establishing substantially higher percentages of native vegetative cover throughout the drainage feature as compared with the existing conditions is expected to improve wildlife habitat value. Other intended benefits will include improved water quality through improved bio-

filtration effects, dissipation of energy from storm flows within the braided low-flow channels, and soil stabilization. In general, establishing native vegetation in the subject area is intended to:

- provide reasonably effective erosion control to deter channel and habitat degradation by natural flows,
- enhance hydrologic and biogeochemical functions by reducing vegetative evapotranspiration rates contributing to more natural water table and/or soil moisture levels,
- enhance Beneficial Uses for Wilson Creek, including an increase in "groundwater recharge" benefits within the mitigation area through removal of tamarisk,
- enhance biological values (e.g., increase species richness and provide forage/cover habitat for wildlife) compared to existing conditions by replacing existing ruderal weedy vegetation with predominantly native plants, and
- substantially deter the establishment, reestablishment, and migration of particularly noxious invasive species (e.g., tamarisk, tree tobacco, giant reed (*Arundo donax*), perennial pepperweed (*Lepidium latifolium*), castor bean).

7.2.2 Rationale for Expecting Successful Implementation

Successful implementation of the mitigation may be expected based on the following factors:

- tamarisk eradication methods have proved successful in other sites in the region;
- the plant palette consists of site-appropriate native species and include dominant and common native species found in existing habitat in Wilson Creek;
- plant palette includes long-lived perennial grasses and short-lived aggressive "weed beater" species, nitrogen-fixing legumes, and mycorrhizal hosts; and
- planting will take place during the appropriate seasons and supplemental irrigation will be provided in case of extended drought conditions during the establishment period.

Runoff from large tracts of adjacent agriculture on both sides of this segment of Wilson Creek is also anticipated to provide significant subsurface flows to the subject area along with storm runoff from the surrounding hillsides.

7.2.3 Responsible Parties

Wilson Creek Land Company or its successors in interest or assigns, is responsible for implementation of the mitigation and monitoring efforts and will provide funding to implement this plan on behalf of the Permittee. The mitigation sponsor intends to assign responsibilities for various plan elements to representative agents or contractors it engages to implement or oversee various plan elements, where necessary. The planting

and maintenance actions prescribed under this HMMP will be conducted or directed by a contractor with demonstrated habitat restoration experience. It will also be necessary to provide adequate oversight, monitoring, and periodic assessment and reporting of planting and maintenance activities and site progress.

A qualified firm with experience in planning and monitoring native habitat creation projects in the region should be retained by the sponsor or its designated agent/representative for this purpose. A third-party monitoring firm, hereinafter referred to as the Restoration Monitor (RM), will oversee implementation of all elements of this plan and will advise and assist the mitigation sponsor or its designated representative and its contractor(s) with issues pertaining to the mitigation effort. The RM will:

- provide appropriate recommendations where discretion or remedial measures are indicated and will be responsible for documentation and agency coordination;
- observe the critical phases of habitat implementation including site preparations, topsoil salvage and redistribution, irrigation system function, seeding, and supplemental seeding (if required);
- document deviations from the plan and provide reasonable justification for changes; and
- periodically observe, assess, and document maintenance activities and habitat developmentuntil the performance criteria have been satisfied.

7.3 Mitigation Guidelines and Specifications

7.3.1 Enhancement – Tamarisk Eradication

Tamarisk, and other previously mentioned targeted non-natives, were removed from the entire WCHRP in December 2011. A brush hog was the primary equipment used for removals, but hand-tools such as loppers and chainsaws were also utilized for manual removal. Garlon, an herbicide, was applied directly to cut stumps following removals. During the tamarisk removal operations, and with assistance from PCR, damage to existing native vegetation was avoided to the greatest extent practical. The bulk of the vegetative debris that was generated by the chopping and mulching effect of the brush hog was left in place to decompose and provide a source of carbon and to help limit weed proliferation in the WCHRP. Tamarisk re-sprouts have been treated with a foliar herbicide since 2011.

7.3.2 Restoration – Planting and Seeding

Areas that do not already contain native vegetation in the WCHRP will receive plantings/seed representativeof the existing native species that naturally occur in this section of Wilson Creek. In general, the lower-lying areas will be seeded with species typical of riparian scrub, while the more elevated areas (e.g., terraces and upper

benches) in the floodplain will be seeded with more drought-tolerant alluvial fan scrub species, such as California buckwheat and scale broom (*Lepidospartum squamatum*). Proposed seeding that is representative of plant species in both habitat types in addition to installing cuttings or containerized native trees and shrubs are expected to provide stratified canopy coverage.

The area where tamarisk was previously removed will be planted/seeded with appropriate native species. Seeded areas will be raked over lightly with available mulch and loose dirt to protect the seed bed and deter weed germination. Supplemental irrigation will be supplied by installing and operating a temporary irrigation system designed and built to provide drip-line irrigation to cuttings/plantings and overhead irrigation within seeded areas. Maintenance will consist of weed control and will be required during spring and early summer months.

7.3.3 Temporary Irrigation

The prescribed upland habitat type is composed mainly of drought-tolerant species and is not expected to require supplemental irrigation beyond the first two years during plant establishment. Due to extended drought conditions and to promote seed germination and plant establishment/growth, a main-line was connected to the off-site reservoir, which water is carried from the reservoir to the WCHRP study area through a six-inch polyvinyl chloride (PVC) pipe. Water is then supplied to the mitigation area via a two-inch PVC pipe.

Since the temporary irrigation system will not be permanently installed, a simple surface system with a basic layout will be utilized and no elaborate landscape plans or designs are necessary; only a basic “design-build” is warranted. Drip emitters were utilized for the cuttings/container plants to reduce weed proliferation in the area. Overhead spraying, which will be used for seeded areas only, will be accomplished by installing hose connection adapters on the main-line or drip-line. Irrigation applications will follow the natural rainfall patterns with supplemental watering to assist with germination and establishment of seedlings. If natural precipitation is not adequate, seeded areas will be periodically hand-watered with a hose and appropriate spray nozzle for a light, mist-type application. Supplemental irrigation is typically decreased in the first year after seeding and discontinued at the end of two years following seeding. The RM should determine adjustments to irrigation scheduling and whether to discontinue and remove irrigation at Year 1 or 2.

7.3.4 Planting Plan

In general, planting and seeding will be performed in areas that were formerly occupied by tamarisk and/orareas lacking significant native cover. The location of the mitigation areas will be specifically selected based on presence of existing cottonwoods and

willows, which the seeding will provide an increase in native cover within bare areas that were previously dominated by tamarisk. Planting and seeding will not occur in areas that are naturally vegetated with appropriate native species. Therefore, the pounds of seed per acre required for this mitigation area will likely be lower than what would be required for an area with little to no native vegetation. In order to apply seed in areas where tamarisk cover was previously dense, patches will be raked clear of excessive organic debris to expose soil in preparation to receive seed.

Manual broadcast seeding and raking will be performed to selectively distribute seed, which will be lightly raked into the soil. Seed will be spread in patches that are relatively free from an excessive amount of organic debris and existing vegetation. In some cases, only small amounts of seed will be scattered within the interstitial spaces where soil is exposed between clumps of existing vegetation. The more drought tolerant species (e.g., scale broom and buckwheat) will be spread on the highest ground in the mitigation area, such as across the upper benches and embankments.

Seeded areas will be watered with a fine spray as soon as possible after application (i.e., same day or next day). Seed application to barren areas will be protected by spreading a thin application of certified weed-free straw or other carbon-based mulch (e.g., bark, wood chips) over seeded areas. Carbon-based mulch materials absorb the soil nitrogen, reducing the high nitrogen levels that promote rapid weed growth. The carbon-based materials later breakdown providing a slow release of nitrogen back to the native plants within a year or two. Tables 1 and 2 below provide the planting palette[5] proposed for the 0.96-acre mitigation area. All species proposed have been detected within and near Wilson Creek at the WCHRP.

Table 1 – Proposed Cuttings/Plantings

COMMON NAME	SCIENTIFIC NAME	QUANTITY
Mule Fat	*Baccharis salicifolia*	300
Fremont's Cottonwood	*Populus fremontii*	20
Sandbar Willow	*Salix exigua*	25
Arroyo, Black, and/or Red Willow	*Salix lasiolepis/gooddingii/laevigata*	100
	TOTAL	**445**

[5] The numbers of cuttings/plantings and pounds of seed are considered tentative estimates based on the area and are subject to change depending on factors such as the presence and density of existing, naturally occurring plants in the mitigation area (i.e., mule fat, willows, cottonwood).

Table 2 - Proposed Seed Palette

COMMON NAME	SCIENTIFIC NAME	TOTAL LBS
Western Ragweed	*Ambrosia psilostachya*	2.00
Mugwort	*Artemisia douglasiana*	1.00
Tarragon	*Artemisia dracunculus*	1.00
California Buckwheat	*Eriogonum fasciculatum*	0.20
Wild Heliotrope	*Heliotropium curassivicum*	1.00
Scalebroom	*Lepidospartum squamatum*	1.00
Small Wire-Lettuce	*Stephanomeria exigua*	2.00
Yellow Pincushion	*Chaenactis glabriuscula*	2.00
Royal Goldfields	*Lasthenia gracilis*	2.00
California Ragwort	*Senecio californicus*	2.00
Tidy-Tips	*Layia platyglossa*	2.00
California Poppy	*Eschscholzia californica*	2.00
	TOTAL	**18.20**

Planting and seeding will follow the guidelines described in the HMMP attached in Appendix C.

7.4 Maintenance During Monitoring Period

7.4.1 Maintenance Activities

Appropriate maintenance efforts are vital to the successful establishment of the seeded areas until the desired vegetation becomes established. The mitigation area will require regular maintenance and periodic inspections to determine if actions are needed to address or correct erosion, weed invasion, irrigation adequacy, plant stress, or other adverse conditions. The mitigation planting area will be maintained regularly for up to five years, or as stipulated by the agencies following installation. In general, maintenance

should include any activity required to meet the performance standards set forth in this HMMP.

7.4.2 Weed Eradication

Annual weeds are extremely fast-growing and high water/nitrogen consumers. This allows these plants to quickly produce seeds before conclusion of their annual life cycle. Maintenance activities should be conducted in a manner that controls these annual weeds so that slower growing target species have anopportunity for water and sunlight. These activities may include pulling weeds, spraying herbicides, weed whipping, and mowing. The main goal is to promote the germination and growth of the projecttarget species by controlling the annual weeds. In no way should the annual weed control methods damage, destroy, or hamper the target native species. Eradication of unwanted species will include those invasive species identified by the California Invasive Plant Council but weed eradication will not be limited to those species alone. Appropriate timing is critical to control seed production. The contractor must remove, kill, or mow annual weeds before seed production. If the contractor misses the window to remove annual weeds before seed production, any mowing, spraying, or removal activities are unnecessary. These annual weeds will die once seed production occurs. Regardless of the success of target species, limitations in the production of annual weed seeds significantly decreases annual weed challenges in the following growing season

Unlike annual weeds, perennial weeds must be completely killed or removed in order to maintain thesespecies. Mowing in most cases enhances the growth of these species. In order to mow these plants shorter than the re-growth height, the contractor would also be cutting the target species too short. Perennial weeds most likely need to be hand pulled or sprayed with appropriate herbicides. Regardlessof the success of target native species, good removal of perennial weeds will offer significant advancements in mitigation success. Since tamarisk was the primary perennial weed eradicated from the site, maintenance efforts should focus on control of tamarisk in the mitigation area. The contractor will be responsible for eliminating

7.4.3 Herbicide Application

In specific circumstances, herbicide applications may be necessary. The contractor is responsible for determining the appropriate herbicide to achieve the maintenance goals. The contractor is also responsible for assuring that herbicides are applied in a manner that will not damage desirable plants in the mitigation areas or in adjacent areas. Also, any herbicide or pesticide application must be conducted or directly supervised by a person in possession of either a Qualified Applicator License (QAL) or a Qualified Applicator Certificate (QAC) issued by the California Department of Pesticide Regulation (CDPR).

7.4.4 Replacement of Dead or Diseased Plant Materials

Container plants or other nursery materials should be surveyed for one year following installation. Container plantings that die off or exhibit disease during the initial 120-day warrantee period following installation should be replaced by the contractor that installed the plants unless no warrantee is provided. After the first year, the maintenance contractor or staff may need to perform supplemental seed applications in coordination with the responsible party to assure that the project's mitigation area meets the performance standards.

7.5 Monitoring Plan

7.5.1 Performance Standards

All monitoring activities, including conducting the qualitative and quantitative assessments, will follow the guidelines described in the HMMP attached in Appendix C.

The performance standards for assessing success of the mitigation area will be based on demonstrating an increase in a minimum of two functions described below. The eradication and replacement of tamarisk with native vegetation within a streambed will result in significant benefits to hydrologic, biogeochemical, and habitat functions. The true scope of such benefits is likely to occur over a much longer period of time than five years, considering that the recent level of late succession tamarisk domination was the result of decades of growth. However, a measurable increase in a minimum of two streambed functions will be demonstrated over the five-year monitoring period. Therefore, the objective of this HMMP during the five-year monitoring period will be to demonstrate an improvement in a minimum of two streambed functions based on the HGM functional scores and/or the combination of any of the following criteria to be measured in Year 5 of the monitoring effort:

- HGM functional assessment compared to baseline data;
- percent of native and non-native vegetation coverage; and/or
- groundwater elevation data via monitoring of piezometers to be installed in proximity to themitigation area.

Functions assessed as part of the HGM assessment include hydrologic, biogeochemical, and habitat functions. Estimation of native/non-native coverage will support habitat-based streambed functions, while groundwater elevation monitoring may support a determination of an increase in hydrologic streambed function.

Success using solely the HGM assessment will require a measurable increase in a minimum of two out of three of the streambed functions in Year 5 of the mitigation effort. However, the percent of vegetation cover and/or the groundwater data may be independently used to demonstrate a measurable increase in streambed function.

In part, the success of the revegetation effort is based on establishing a reasonable and progressively increasing amount of cover by native species and a decrease in non-native species. Within the mitigation areas, native grasses and herbaceous species may constitute most of the vegetative cover during the first year after seeding. Scrub species are expected to provide most of the native cover by the end of the third year. In general, establishing progressively higher percentages of native vegetative cover is intended to:

- Provide reasonably effective erosion control;
- Enhance biological values (e.g., increase species richness and provide forage/cover habitat for wildlife) compared to pre-mitigation conditions that complements existing habitat in the localvicinity and in the adjacent segments of Wilson Creek;
- Exhibit characteristics that indicate the habitat is self-sustaining. A primary characteristic of self- sustaining habitat would be that it requires no supplemental irrigation for two years with little or no mortality; and
- Substantially deter the establishment of non-native species, particularly noxious invasive species (e.g., tamarisk, tree tobacco, giant reed, perennial pepperweed, castor bean), while impeding the continued migration of these species upstream and downstream from the mitigation area.

The primary macro-criteria for measuring habitat function are total vegetative cover, relative cover by native species, and diversity. Cover may be expressed in terms of the total cover (all vegetation) throughout the treated areas, as well as the relative cover (percent of vegetated areas) provided by native plants. Diversity is expressed in terms of the number of species of native plants that are dominant or sub-dominant in the mitigation area.

The following minimum standards must be achieved or exceeded for the revegetation effort to bedeemed as supporting an increase in habitat function related to the streambed:

1. **Relative Native Vegetation Coverage (50 percent):** Native species must provide at least 50 percent of the relative vegetation coverage within the mitigation area. Native vegetation may include seeded species, as well as “volunteers” (naturally recruited specimens), native to the area.
2. **Exotic/Invasive Vegetation Coverage:** Mitigation areas must be maintained free of perennial exotic plant species including, but not limited to, pampas grass, giant reed, tamarisk, sweet fennel, tree tobacco, castor bean, and pepper tree. Annual

exotic plant species must not occupy more than five percent of the mitigation areas.

3. **Irrigation Limitation:** Supplemental irrigation will be discontinued in the mitigation area for a minimum of two years. In order to reach success, the mitigation areas must be self-sustaining without irrigation for two years prior to release from regulatory oversight.

During post-installation monitoring, several features may be considered to represent progress toward successful establishment of native vegetation, including:

- Germination and growth of a variety of seeded plant species. The total cover may be somewhatsparse through the first year following seed application;
- Lack of evidence of significant erosion;
- Evidence of resistance to invasion by non-native species (zero to five percent composition ofnon-natives); and/or
- Evidence of natural recruitment of a variety of native species apparent by the third year after seeding.

Table 3 provides a guideline for the total percent cover values exhibited by all native plant species combined that may be considered to represent an acceptable increase in streambed habitat function during the annual monitoring inspections.

Table 3 – Target Native Coverage Guidelines

YEAR	ACCEPTABLE RANGE (%)
1	10-15
2	20-25
3	25-30
4	35-45
5	50 (minimum)

7.5.2 Monitoring Procedures

Progress monitoring and performance assessments will be conducted by the RM. During the first year after initial planting and seeding is accomplished, the mitigation area will be inspected quarterly in winter (January/February), spring (April/May), at least once in late summer (August/September), and once again prior to the onset of the rainy season (October/November). The fall inspection provides the opportunity to determine plans and specifications for any supplemental planting or seeding and maintenance actions that may be warranted during the winter. Monitoring visits will be reduced to two visits in Years 2 and 3 (in spring and fall) and at least annually during Years 4 and 5.

Qualitative surveys will be completed during each monitoring visit, which will consist of a general site walkover and characterization of the coverage and species distribution exhibited in the study area.

General observations, such as fitness and health of the revegetation species, weed or pest problems, signs of over watering, and drought stress, will be noted in each site walkover. The RM should visually estimate and record the total cover provided by native and non-native vegetation within the mitigation areas during the qualitative monitoring visits. The mitigation area may be divided into six equivalent segments and identified on a simple diagram for reference and inclusion with progress reports. The RM should also visually estimate and list the dominant species in each discrete quadrant area (all species that individually account for more than one to five percent of vegetative cover in each stratum) and estimate the approximate relative coverage provided by each. A list of species present will be compiled for each mitigation area during these visits in addition to photo documentation.

Additionally, quantitative data will be collected annually (typically in June or July) to determine survivorship and relative and total coverage by species, and to assess species composition. Cover estimates for individual species are used to calculate the total vegetation cover, total cover of non- natives, total cover of bare ground, total cover of litter and debris, and total cover for each vegetation strata.

From the data collected, the following information can be calculated:

- **Percent Cover:** The number of “hits” for each species divided by the total number of points, then multiplied by 100 is the absolute percent cover for that species (this calculation can also be conducted for all native species or all non-native species rather than individual species). Bare ground is treated as a plant species, except that it is not recorded if there is any plant present. The total cover will be greater than 100 percent unless there are no points with more than one plant species.

- **Vegetation Structure:** The percentage of plant species within the herbaceous, shrub, and treelayers can be calculated, in addition to bare or rocky areas.
- **Species Richness:** The number of plant species recorded on the transects, plus the number ofadditional species within the site but not on a transect, is the species richness. Both percent cover and species richness will be expressed separately for native and exotic plant species.

7.5.3 Reports

Documentation of the mitigation area will include an As-Built, progress reports, and an annual monitoring report.

Upon completion of mitigation installation, the RM will prepare an installation As-Built Report to document the implementation of the mitigation preparations and planting and seeding for the mitigation area. The report describes the site preparation methods used, species and quantities of seed and container stock, seeding methods, and planting locations. The As-Built Report will be submitted to the responsible party to confirm completion of initial installation and commencement of the maintenance and monitoring phase.

The mitigation area should be monitored quarterly in the first year, semi-annually in the second and third years, and at least annually in the last two years. Monitoring commenced after the primary planting and seeding is performed and will continue for five years or until either: (1) it can be demonstrated that functions and values have met or exceeded final success criteria; (2) agencies determine that monitoring is no longer required.

Observations during the monitoring visits will be recorded and a memorandum provided to the responsible party and contractor, as needed, to report site progress and identify necessary maintenance actions. Following the first full growing season after initial installation, typically in June or July, quantitative assessments will be conducted as described above and a progress report summarizing monitoring results will be prepared and distributed by the RM by January of each year.

Each annual report will document mitigation and maintenance activities and site performance and recommend corrective measures if deficiencies are observed. Annual reports will also describe observed features, including qualitative estimates of species cover and survivorship, success or failure rates of seeded species, and growth of perennial species, and will report quantitative measurements of the total vegetative cover and the percentage of relative cover by native species. Coverage values will be determined both by general inspection and by direct sampling using the line-intercept or point-step transect procedures described above. The frequency and volume of irrigation if utilized, observed weed or pest problems, additional maintenance procedures, and general condition and health of the vegetation will also be noted in each annual report.

Photographs taken from each photo station will provide visual records of the site's progress. Recommendations and schedules for corrective measures will be identified and described.

7.5.4 Contingency measures

If the RM determines the site is not on the trajectory to achieving the success criteria or the target success criteria are not attained by Year 5, contingency measures will be triggered whereby the responsible party will consult with the agencies to examine the cause of the deficiency. Remedial actions will be developed at that time to correct the cause of the deficiency. If the deficiency cannot be corrected, alternative mitigation areas or actions will be developed.

7.6 Long-Term Conservation Measures

The concept of streambed mitigation focuses on meeting success criteria, typically achieved through implementation of a HMMP and allowing the mitigation area to sustain itself in a natural setting. A primary component of establishing a self-sustaining natural habitat is the removal of non-native species from the mitigation area followed by establishment of native species. As such, non-native species removal and native plant cover are requirements of meeting the performance standards for the mitigation area as outlined in this HMMP. Wilson Creek Land Company shall undertake the compensatory mitigation activities, including the construction, maintenance, and monitoring of the mitigation area pursuant to this HMMP until the RM has confirmed that Wilson Creek Land Company has successfully completed construction, maintenance, and monitoring of the mitigation area and has met the performance standards (i.e., success criteria) defined in this HMMP. Long-term management would also include reporting of natural disasters, removal of any trash accumulation, maintaining signs, and/or controlling vandalism. Details of the long-term management activities will be described in the legal preservation mechanism.

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Signed: _____ Date: September 27, 2022

Jason Caskey, Owner/Biologist, Caskey Biological Consulting

APPENDIX A

Site Plan

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR
2ND STREET

GRADING NOTE:

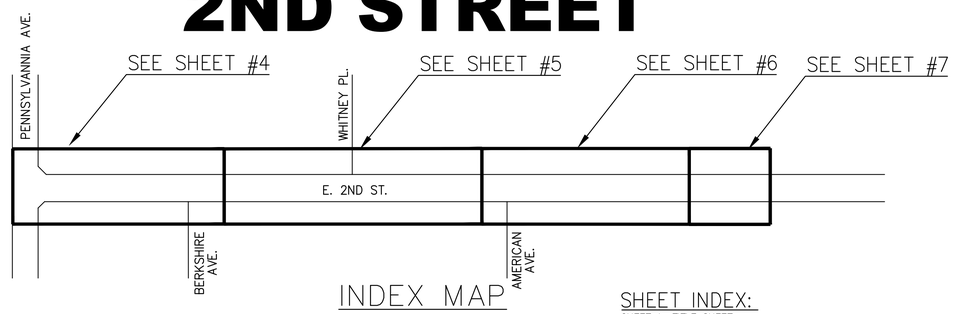
1. ALL GRADING SHALL CONFORM TO THE CITY OF BEAUMONT ORDINANCES, CURRENT ADOPTED CALIFORNIA BUILDING CODE, APPENDIX J, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, "LATEST EDITION" AND RECOMMENDATIONS OF THE SOILS ENGINEER.
2. NO WORK SHALL COMMENCED UNTIL ALL PERMITS HAVE BEEN OBTAINED FROM THE CITY AND OTHER APPROPRIATE AGENCIES.
3. ALL PROPERTY CORNERS SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION /GRADING.
4. DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE AND EROSION CONTROL SHOULD BE PROVIDED TD PREVENT PONDING WATER, SEDIMENT TRANSPORTATION, AND DAMAGE TO ADJACENT PROPERTIES.
5. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS.
6. NO FILL SHALL BE PLACED ON EXITING GROUND THAT HAS NOT BEEN CLEARED OF WEEDS. DEBRIS, TOPSOIL AND OTHER DELETERIOUS MATERIAL.
7. MAXIMUM CUT AND FILL SLOPE = 2: 1 EXCEPT WHERE SPECIFICALLY APPROVED OTHERWISE.
8. STABILITY CALCULATIONS WITH A FACTOR OF SAFETY OF AT LEAST ONE AND FIVE TENTHS (1.5) SHALL BE SUBMITTED BY A SOILS ENGINEER TO THE PUBLIC WORKS DEPARTMENT.
9. PROVIDE A 5' WIDE BY 1' HIGH BERM OR EQUIVALENT ALONG THE TOP OF ALL FILL SLOPES OVER 5' HIGH.
10. PROVIDE A BROW DITCH DESIGNED TO HANDLE 100 YR STORM FLOWS ALONG THE TOP OF CUT SLOPES.
11. MINIMUM BUILDING PAD AND DRAINAGE SWALE SLOPE SHALL BE 1% IF CUT OR FILL IS LESS THAN 10'. 2% IF CUT OR FILL IS GREATER THAN 10'. DRAINAGE SWALES SHALL BE A MINIMUM OF 0.2' DEEP AND BE CONSTRUCTED A MINIMUM OF 2' FROM THE TOE OF CUT OR FILL SLOPES.
12. NO OBSTRUCTION OF FLOODPLAIN OR NATURAL WATER COURSES SHALL BE PERMITTED.
13. ALL EXISTING DRAINAGE COURSES ON THE PROJECT SITE SHALL CONTINUE TO FUNCTION, ESPECIALLY DURING STORM CONDITIONS, PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT ADJOINING PROPERTIES DURING GRADING OPERATIONS.
14. FINISH GRADE SHALL BE SLOPED AWAY FROM ALL EXTERIOR WALLS AT NOT LESS THAN 5% FOR A MINIMUM OF 10'.
15. CUT AND FILL SLOPES EQUAL TO OR GREATER THAN 3' IN VERTICAL HEIGHT SHALL BE PLANTED WITH GRASS OR GROUND COVER TO PROTECT THE SLOPE FROM EROSION AND INSTABILITY IN ACCORDANCE WITH CITY OF BEAUMONT REQUIREMENTS PRIOR TO FINAL GRADING INSPECTION
16. ALL SLOPES REQUIRED TO BE PLANTED SHALL BE PLANTED WITH APPROVED GROUND COVER AT 12" ON CENTER. SLOPES EXCEEDING 15' IN VERTICAL HEIGHT SHALL BE PLANTED WITH APPROVED TREES SPACED NOT TO EXCEED 20' ON CENTER OR SHRUBS NOT TO EXCEED 10' OR A COMBINATION OF SHRUBS AND TREES NOT TO EXCEED 15' IN ADDITION TO A GRASS MIX GROUND COVER. SLOPES EQUAL TO OR GREATER THAN 4' IN VERTICAL HEIGHT SHALL BE PROVIDED WITH AN IN-GROUND IRRIGATION SYSTEM COMPLETE WITH AN APPROPRIATE BACKFLOW PREVENTION DEVICE PER CITY REQUIREMENTS.
17. IF STEEP SLOPING TERRAIN OCCURS UPON WHICH FILL IS TO BE PLACED. IT MUST BE CLEARED, KEYED, AND BENCHED INTO FIRM NATURAL SOIL FOR FULL SUPPORT. PREPARATION SHALL BF APPROVED BY A SUITABLY QUALIFIED AND REGISTERED GEOTECHNICAL ENGINEER OR GEOLOGIST PRIOR TO PLACEMENT OF FILL MATERIAL.
18. ALL GRADING SHALL BE CONTINUOUSLY OBSERVED BY A COMPETENT SOILS ENGINEER WHO SHALL VERIFY THAT ALL FILL HAS BEEN PROPERLY PLACED AND WHO SHALL SUBMIT A FINAL COMPACTION REPORT FOR ALL FILLS OVER 1' DEEP.
19. A FINAL GEOTECHNICAL REPORT OF COMPLETION OF THE ROUGH GRADING, STATING SUBSTANTIAL CONFORMANCE WITH THE APPROVED GRADING PLAN, SHALL BE SUBMITTED TO THE BUILDING AND SAFETY DEPARTMENT AND THE PUBLIC WORKS DEPARTMENT PRIOR TO REQUESTING INSPECTION AND ISSUANCE OF BUILDING PERMITS. CERTIFICATIONS SHALL INCLUDE LINE GRADES, ELEVATIONS, AND LOCATION OF CUT/FILL SLOPES.
20. A LAND SURVEYOR OR ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING SHALL SUBMIT A PAD CERTIFICATION FOR ALL PADS. THE ELEVATION WITH RESPECT TO MEAN SEA LEVEL SHALL BE GIVEN. IF AN ELEVATION WITH RESPECT TO ADJACENT GROUND SURFACE IS REQUIRED, THE ACTUAL DISTANCE ABOVE THE ADJACENT GROUND SHALL BE GIVEN.
21. A GEOTECHNICAL ENGINEER OR GEOLOGIST SHALL SUBMIT TO THE BUILDING AND SAFETY
22. DEPARTMENT AND THE PUBLIC WORKS DEPARTMENT A FINAL GEOTECHNICAL REPORT OF COMPLETION OF FINAL GRADING STATING SUBSTANTIAL CONFORMANCE WITH THE APPROVED PLANS FOR ALL GRADING DESIGNATED AS "ENGINEERED GRADING".
23. THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT AT LEAST 24 HOURS IN ADVANCE REQUESTING FINISH LOT GRADE AND DRAINAGE INSPECTION. THIS INSPECTION MUST BE APPROVED PRIOR TO BUILDING PERMIT FINAL INSPECTION FOR EACH LOT.
24. ALL STORM DRAINS, CATCH BASINS, AND STORM WATER RUNOFF STRUCTURES WILL BE PROVIDED WITH ADEQUATE CAPABILITIES TO FILTER AND RETAIN SEDIMENT, GRIT, OIL, AND GREASE TD PREVENT POLLUTION IN STORM WATER RUNOFF IN COMPLIANCE WITH THE CITY OF BEAUMONT'S BEST MANAGEMENT PRACTICES AND BEAUMONT'S DRAINAGE MASTER PLAN FOR STORMWATER AS WELL AS BEST MANAGEMENT PRACTICES IDENTIFIED IN THE CURRENT REPORT OF WASTE DISCHARGE FOR RIVERSIDE COUNTY PERMITTEES.
25. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT TWO DAYS BEFORE DIGGING AT 8-1-1 AND THE FOLLOWING UTILITY OR AGENCIES A MINIMUM OF TWO WORKING DAYS PRIOR TO COMMENCING ANY CONSTRUCTION OR GRADING:

CITY OF BEAUMONT.....(951) 769-8520
AT&T.....(808) 892-0123
SOUTHERN CALIFORNIA GAS COMPANY.....(909) 335-7955
BEAUMONT CHERRY VALLEY WATER DISTRICT.....(951) 845-9581
SOUTHERN CALIFORNIA EDISON.....(800) 409-2365
UNDERGROUND SERVICE ALERT.....(800) 422-4133

26. TRENCHING FOR UTILITIES AND STRUCTURES IS NOT ALLOWED UNTIL A SOIL COMPACTION REPORT IS SUBMITTED TO AND APPROVED BY THE PUBLIC WORKS DEPARTMENT.
27. THE CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, SAFE, CLEAN AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE CITY'S INSPECTOR. THE ADJACENT STREETS SHALL BE KEPT CLEAN OF SEDIMENT, DEBRIS AND OTHER NUISANCES AT ALL TIMES. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY THE CONSTRUCTION.
28. ALL OPERATIONS CONDUCTED ON THE SITE OR ADJACENT THERETO SHALL ADHERE TO THE NOISE ORDINANCE SET FORTH BY THE CITY MUNICIPAL CODE. ALL OPERATIONS SHALL BE LIMITED BY THE NOISE ORDINANCE TO THE LIMIT OF DECIBELS SPECIFIED FOR THE AREA AND TIME PERIOD. CONSTRUCTION ACTIVITIES WILL BE LIMITED TO THE PERIOD BETWEEN 7:00 A.M. AND 6:00 P.M. MONDAY THROUGH FRIDAY.
29. ALL OFF-SITE HAUL ROUTES SHALL BE SUBMITTED BY THE CONTRACTOR TO THE CITY ENGINEER FOR APPROVAL TWO FULL WORKING DAYS PRIOR TO BEGINNING OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEBRIS OR DAMAGE OCCURRING ALONG THE HAUL ROUTE OR ADJACENT STREETS AS A RESULT OF THE GRADING OPERATION.

STREET IMPROVEMENT NOTES:

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, GREENBOOK, LATEST EDITION AND THE RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT IMPROVEMENT STANDARDS AND SPECIFICATIONS, "LATEST EDITION," COUNTY ORDINANCE NO. 461 AND SUBSEQUENT AMENDMENTS.
2. CONTRACTOR SHALL COMPLY WITH THE STATE AND LOCAL SAFETY CODES DURING THE PROGRESS OF WORK.
3. CONSTRUCTION PROJECTS THAT DISTURB MORE THAN ONE ACRE MUST OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT. OWNER/DEVELOPERS ARE REQUIRED TO FILE A NOTICE OF INTENT (NOI) WITH THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) AND COMPLY WITH ALL REQUIREMENTS OF THE BEAUMONT DRAINAGE MANAGEMENT PLAN. BEAUMONT IS CO-PERMITTEE WITH R.CF.C. & W.C.D.
4. CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, SAFE, CLEAN AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE COUNTY'S OR DISTRICT'S INSPECTOR. THE ADJACENT STREETS SHALL BE KEPT CLEAN OF DEBRIS, WITH DUST AND OTHER NUISANCE BEING CONTROLLED AT ALL TIMES. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY HIS CONSTRUCTION. METHOD OF STREET CLEANING SHALL BE DRY SWEEPING OF ALL PAVED AREAS.
5. CONTRACTOR SHALL BE THE RESPONSIBILITY TO INSTALL AND MAINTAIN DURING CONSTRUCTION, REGULATORY GUIDE AND WARNING SIGNS WITHIN THE PROJECT LIMITS AND ITS SURROUNDINGS TO PROVIDE SAFE PASSAGE FOR THE TRAVELING PUBLIC AND WORKERS UNTIL THE FINAL COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE CITY OF BEAUMONT.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEARING OF THE PROPOSED WORK AREA AND RELOCATION COSTS OF ALL EXISTING UTILITIES. THIS INCLUDES UNDERGROUNDING OF EXISTING OVERHEAD LINES ALONG THE PROJECT FRONTAGE AS REQUIRED BY THE CONDITIONS OF APPROVAL. PERMITTEE MUST INFORM CITY OF CONSTRUCTION SCHEDULE AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION AT (951) 769-8520.
7. CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER, CITY OF BEAUMONT, AND THE DEVELOPER'S ENGINEER, HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNERS OR THE DEVELOPER'S ENGINEER.
8. CONTRACTOR SHALL BE THE RESPONSIBILE TO OBTAIN AN ENCROACHMENT PERMIT FOR ALL WORK PERFORMED WITHIN PUBLIC RIGHT-OF-WAY, DEDICATED AND ACCEPTED FOR PUBLIC USE; AND TO BE RESPONSIBLE FOR SATISFACTORY COMPLIANCE FOR ALL CURRENT ENVIRONMENTAL REGULATIONS DURING THE LIFE OF CONSTRUCTION ACTIVITIES FOR THIS PROJECT.



INDEX MAP

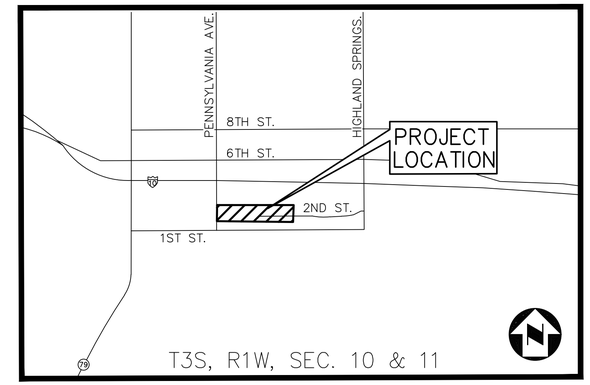
250 125 0 250 500 750
SCALE: 1"= 250'

SHEET INDEX:

SHEET 1: TITLE SHEET
SHEET 2: CITY OF BEAUMONT NOTES
SHEET 3: DETAIL SHEET
SHEET 4: STREET PLAN AND PROFILE (STA 205+00 – 212+00)
SHEET 5: STREET PLAN AND PROFILE (STA 212+00 – 220+65)
SHEET 6: STREET PLAN AND PROFILE (STA 220+65 – 229+00)
SHEET 7: STREET PLAN AND PROFILE (STA 229+00 – 230+00)
SHEET 8: SIGNAGE AND STRIPING
SHEET 9: CULVERT CROSSING (CULVERT A)
SHEET 10: CULVERT CROSSING (CULVERT A)
SHEET 11: CULVERT CROSSING (CULVERT C)
SHEET 12: SECTION SHEET (STA 205+00 – 217+50)
SHEET 13: SECTION SHEET (STA 218+00 – 228+50)

STREET IMPROVEMENT NOTES (CONTINUED):

9. CONTRACTOR MUST NOTIFY THE CITY OF BEAUMONT AT (951) 769-8520 AT LEAST ONE WEEK PRIOR TO CONSTRUCTION.
10. CONTRACTOR MUST PROVIDE CONSTRUCTION SCHEDULE TO THE CITY OF BEAUMONT AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
11. CONTRACTOR MUST CALL UNDERGROUND SERVICE ALERT AT 811 AT LEAST 48 HOURS BEFORE EXCAVATION.
12. CONTRACTOR SHALL BE RESPONSIBLE TO APPLY TO THE RIVERSIDE COUNTY FLOOD CONTROL (RCFC) FOR PERMITS WHEN ANY STORM DRAIN PIPE NEEDS TO BE CONNECTED WITH A RCFC FACILITY AND ADD PERMITEE NUMBER ON THE PLAN.
13. CONTRACTOR SHALL BE RESPONSIBLE TO APPLY TO THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) FOR AN ENCROACHMENT PERMIT FOR ALL WORK PERFORMED WITHIN STATE RIGHT-OF-WAY.
14. CONTRACTOR SHALL BE THE RESPONSIBILITY TO INSTALL AND MAINTAIN ALL CONSTRUCTION, REGULATORY, GUIDE AND WARNING SIGNS WITHIN THE PROJECT LIMITS AND ITS SURROUNDINGS TO PROVIDE SAFE PASSAGE FOR THE TRAVELING PUBLIC AND WORKERS UNTIL THE FINAL COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE CITY. A TRAFFIC CONTROL PLAN MUST BE SUBMITTED WITH APPROVED STREET PLAN FOR REVIEW TO THE PERMITS SECTION OR INSPECTION SECTION (FOR MAP CASES) PRIOR TO OBTAINING AN ENCROACHMENT PERMIT.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ADDITIONAL SIGNS AND MARKINGS NOT INCLUDED IN THE SIGNING AND STRIPING PLAN WITHIN THE PROJECT AREAS, OR ON ROADWAYS ADJACENT TO THE PROJECT BOUNDARIES, UPON THE REQUEST OF THE DIRECTOR OF PUBLIC WORKS OR HIS DESIGNEE TO IMPROVE TRAFFIC SAFETY ON THE ROADS UNDER THE JURISDICTION OF THE DEVELOPER.
16. CONTRACTOR SHALL HAVE GEOTECHNICAL/SOILS ENGINEERING FIRM OBSERVE TRENCHING, BACKFILLING, & SOIL COMPACTION OF ALL UTILITY TRENCHES WITHIN ALL EASEMENTS & ROAD RIGHTS OF WAY. TWO SETS OF COMPACTION REPORTS CERTIFYING THAT WORKS WERE DONE IN CONFORMANCE TO STANDARDS & GEOTECHNICAL REPORT SHALL BE SUBMITTED AFTER EACH UTILITY TRENCH IS COMPLETED & CERTIFIED. COMPACTION REPORT MUST BE SUBMITTED TO THE DEPT. OF PUBLIC WORKS AT LEAST TWO WORKING DAYS BEFORE AGGREGATE BASE MATERIALS ARE PLACED ONSITE.
17. ALL UNDERGROUND FACILITIES, WITH LATERALS, SHALL BE IN PLACE PRIOR TO PAVING THE STREET SECTION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: SEWER, WATER, ELECTRIC, GAS AND STORM DRAIN.
18. ALL STREET SECTIONS ARE TENTATIVE. ADDITIONAL SOIL TESTS SHALL BE TAKEN AFTER ROUGH GRADING TO DETERMINE THE EXACT STREET SECTION REQUIREMENTS. USE R.C.T.D. STANDARD NO. 401 IF EXPANSIVE SOILS ARE ENCOUNTERED.
19. ASPHALTIC EMULSION (FOG SEAL) SHALL BE APPLIED NOT LESS THAN FOURTEEN DAYS FOLLOWING PLACEMENT OF THE ASPHALT SURFACING. FOG SEAL AND PAINT BINDER SHALL BE APPLIED AT A RATE OF 0.05 AND 0.03 GALLON PER SQUARE YARD RESPECTIVELY. ASPHALTIC EMULSION SHALL CONFORM TO SECTIONS 37, 39 AND 94 OF THE STATE STANDARD SPECIFICATIONS.
20. PRIME COAT IS REQUIRED PRIOR TO PAVING ALL GRADES IN EXCESS OF TEN PERCENT.
21. ANY PRIVATE DRAINAGE FACILITIES SHOWN ON THESE PLANS ARE FOR INFORMATION ONLY. BY SIGNING THESE IMPROVEMENT PLANS, NO REVIEW OR APPROVAL OF THESE PRIVATE FACILITIES ARE IMPLIED OR INTENDED BY CITY OF BEAUMONT PUBLIC WORKS DEPT.
22. THE CONTRACTOR SHALL INSTALL STREET NAME SIGNS CONFORMING TO R.C.T.D. STANDARD NO. 816.
23. STREET LIGHTS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED STREET LIGHTING PLAN PER CITY OF BEAUMONT'S APPROVED STREET LIGHTING SPECIFICATIONS.
24. INSTALL STREET TREES IN ACCORDANCE WITH ORDINANCE 461 AND THE COMPREHENSIVE LANDSCAPING GUIDELINES (CHOOSE THREE SPECIES AND NAME THEM HERE).
25. FOR ALL DRIVEWAY RECONSTRUCTION BEYOND RIGHT-OF-WAY, PROOF OF DRIVEWAY OWNER NOTIFICATION IS REQUIRED PRIOR TO CONSTRUCTION.
26. CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE ENGINEER TO INSTALL STREET CENTERLINE MONUMENTS AS REQUIRED BY RIVERSIDE COUNTY ORDINANCE NO. 461. IF CONSTRUCTION CENTERLINE DIFFERS, PROVIDE A TIE TO EXISTING CENTERLINE OF RIGHT-OF-WAY. PRIOR TO ROAD CONSTRUCTION, SURVEY MONUMENTS INCLUDING CENTERLINE MONUMENTS, TIE POINTS, PROPERTY CORNERS AND BENCH MARKS SHALL BE REFERENCED OUT AND CORNER RECORDS FILED WITH THE COUNTY SURVEYOR PURSUANT TO SECTION 8771 OF THE BUSINESS & PROFESSIONAL CODE. SURVEY POINTS DESTROYED DURING CONSTRUCTION SHALL BE RESET, AND A SECOND CORNER RECORD FILED FOR THOSE POINTS PRIOR TO COMPLETION AND ACCEPTANCE OF THE IMPROVEMENTS.



VICINITY MAP
N.T.S.

EARTHWORK QUANTITIES:

CUT	5884 CU. YD.	FACTOR = 1.0	5884 CU. YD.
FILL	9251 CU. YD.	FACTOR = 1.15	10638 CU. YD.
NET (ADJ)	–	–	4754 CU. YD.

LEGEND

PROPOSED AC PAVEMENT
AC PAVEMENT REMOVAL
PROPOSED CONCRETE SIDEWALK
CENTERLINE
RIGHT OF WAY
PROPERTY LINE
OH (EX) OVERHEAD ELECTRIC EDISON
SS (EX) SEWER MAIN LINE
2"G (EX) 2" GAS LINE
W (EX) WATER LINE
EDGE OF DIRT ROAD
POWER POLE
ELECTRICAL VAULT
WATER VALVE
GAS VALVE
SEWER MANHOLE
FIREHYDRANT

DECLARATION OF RESPONSIBLE CHARGE:

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THESE 95-PERCENT DESIGN LEVEL DRAWINGS, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THESE DESIGN OF THIS PROJECT TO DATE AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF THE PROJECT DRAWINGS AND SPECIFICATIONS BY CITY OF BEAUMONT IS CONFINED TO A REVIEW ONLY, AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR THE PROJECT'S DESIGN.

APPROVED: _____
BRIAN D. FOX, P.E., P.L.S. — R.C.E. NO. 57264
COZAD AND FOX, INC.

BENCHMARK

BENCHMARK:
ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). DIFFERENTIAL LEVELS AND STATIC GPS OBSERVATIONS DETERMINED ELEVATIONS. THE NATIONAL GEODETIC SURVEY (NGS) DATASHEET ELEVATION AT THE NGS BENCHMARK WAS USED:

STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS SHOWN HEREON ARE BASED ON THE BEARING OF SECOND STREET BEING NORTH 89°54'34" WEST PER TRACT 28017-1, M.B. 254/71-72, IN THE CITY OF BEAUMONT, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA.

DATUM STATEMENT

COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM (CCS83), ZONE VI, NAD83 (NSRS2007, EPOCH 2011.00). ALL DISTANCES ARE US SURVEY FOOT GRID DISTANCES, UNLESS OTHERWISE NOTED. TO OBTAIN GROUND DISTANCES, DIVIDE GRID DISTANCES SHOWN BY THE COMBINED FACTOR 0.999888832.

NOTE: DISTANCES AND STATIONING FROM ROW MAPS FOR I-10 WERE IN CCS 29 GRID, SAID DATA WAS CONVERTED TO GROUND BY MULTIPLYING BY A CF OF 1.000117736 PER ROW MAP 49309-02 AND THEN CONVERTED TO NAD 83 BY USING THE CF STATED ABOVE.

97% SUBMITTAL (NOT FOR CONSTRUCTION)

DIGALERT
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811

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BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GIRARD STREET HEMET, CA 92544
TEL. (951) 652-4454 FAX (951) 766-8942
E-MAIL BFOX@HBCOZAD.COM

PREPARED UNDER THE SUPERVISION OF:
BRIAN D. FOX, P.E.; RCE NO. 57264 — DATE

PRINCIPAL ENGINEER
REGISTERED PROFESSIONAL ENGINEER — BRIAN D. FOX — CIVIL — STATE OF CALIFORNIA
PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT — CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER
RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER
APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
TITLE SHEET

SHEET 1 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG

STORM DRAIN NOTES:

1. CONTRACTOR SHALL CONSTRUCT THE DRAINAGE IMPROVEMENT SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT DESIGN MANUAL STANDARD DRAWINGS, RECENT EDITION, THE SSPWC 'LATEST EDITION', AND IN CONFORMANCE WITH THE REQUIREMENTS OF THE BEAUMONT DRAINAGE MANAGEMENT PLAN.
2. CONTRACTOR SHALL COMPLY WITH THE STATE AND LOCAL SAFETY CODES DURING THE PROGRESS OF WORK.
3. CONSTRUCTION PROJECTS THAT DISTURB MORE THAN ONE ACRE MUST OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT. OWNER/DEVELOPERS ARE REQUIRED TO FILE A NOTICE OF INTENT (NOI) WITH THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) AND COMPLY WITH ALL REQUIREMENTS OF THE BEAUMONT DRAINAGE MANAGEMENT PLAN. BEAUMONT IS CO-PERMITTEE WITH R.CF.C. & W.C.D.
4. ALL STORM DRAINS, CATCH BASINS, AND STORM WATER RUNOFF STRUCTURES WILL BE PROVIDED WITH ADEQUATE CAPABILITIES TO FILTER AND RETAIN SEDIMENT AND DIRT, Of, AND GREASE, TO PREVENT POLLUTION IN STORM WATER RUNOFF IN COMPLIANCE WITH THE CITY OF BEAUMONT'S BEST MANAGEMENT PRACTICES AND THE BEAUMONT DRAINAGE MASTER PLAN FOR STORM WATER AS WELL AS BEST MANAGEMENT PRACTICES IDENTIFIED IN THE CURRENT REPORT OF WASTE DISCHARGE FOR RIVERSIDE COUNTY PERMITTEES.
5. CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, SAFE, CLEAN AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE COUNTY'S OR DISTRICT'S INSPECTOR. THE ADJACENT STREETS SHALL BE KEPT CLEAN OF DEBRIS, WITH DUST AND OTHER NUISANCE BEING CONTROLLED AT ALL TIMES. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY HIS CONSTRUCTION. METHOD OF STREET CLEANING SHALL BE DRY SWEEPING OF ALL PAVED AREAS.
6. CONTRACTOR SHALL BE THE RESPONSIBILITY TO INSTALL AND MAINTAIN DURING CONSTRUCTION, REGULATORY GUIDE AND WARNING SIGNS WITHIN THE PROJECT LIMITS AND ITS SURROUNDINGS TO PROVIDE SAFE PASSAGE FOR THE TRAVELING PUBLIC AND WORKERS UNTIL THE FINAL COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE CITY OF BEAUMONT.
7. CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER, CITY OF BEAUMONT, AND THE DEVELOPER'S ENGINEER, HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNERS OR THE DEVELOPER'S ENGINEER.
8. CONTRACTOR SHALL BE THE RESPONSIBILE TO OBTAIN AN ENCROACHMENT PERMIT FOR ALL WORK PERFORMED WITHIN PUBLIC RIGHT-OF-WAY, DEDICATED AND ACCEPTED FOR PUBLIC USE; AND TO BE RESPONSIBLE FOR SATISFACTORY COMPLIANCE FOR ALL CURRENT ENVIRONMENTAL REGULATIONS DURING THE LIFE OF CONSTRUCTION ACTIVITIES FOR THIS PROJECT.
9. CONTRACTOR MUST NOTIFY THE CITY OF BEAUMONT AT (951) 769-8520 AT LEAST ONE WEEK PRIOR TO CONSTRUCTION.
10. CONTRACTOR MUST PROVIDE CONSTRUCTION SCHEDULE TO THE CITY OF BEAUMONT AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
11. CONTRACTOR MUST CALL UNDERGROUND SERVICE ALERT AT 811 AT LEAST 48 HOURS BEFORE EXCAVATION.
12. CONTRACTOR IS REQUIRED TO CONTACT ALL UTILITY AGENCIES REGARDING TEMPORARY SUPPORT AND SHORING REQUIREMENTS FOR THE VARIOUS UTILITIES SHOWN IN THE PLANS.
13. THE CONTRACTOR SHALL VERIFY, BY POT HOLING, THE LOCATION OF POTENTIALLY AFFECTED UTILITIES.
14. CONTRACTOR SHALL HAVE GEOTECHNICAL/SOILS ENGINEERING FIRM OBSERVE TRENCHING, BACKFILLING, & SOIL COMPACTION OF ALL UTILITY TRENCHES WITHIN ALL EASEMENTS & ROAD RIGHTS OF WAY. TWO SETS OF COMPACTION REPORTS CERTIFYING THAT WORKS WERE DONE IN CONFORMANCE TO STANDARDS & GEOTECHNICAL REPORT SHALL BE SUBMITTED AFTER EACH UTILITY TRENCH IS COMPLETED & CERTIFIED. COMPACTION REPORT MUST BE SUBMITTED TO THE DEPT. OF PUBLIC WORKS AT LEAST TWO WORKING DAYS BEFORE AGGREGATE BASE MATERIALS ARE PLACED ONSITE.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEARING OF THE PROPOSED WORK AREA AND RELOCATION COSTS OF ALL EXISTING UTILITIES.
16. ELEVATIONS AND LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE UNLESS OTHERWISE NOTED. ALL UTILITIES SHOWN ARE TO BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED.
17. ALL ELEVATIONS SHOWN ARE TO THE INVERTS OF PIPE, EXCEPT WHERE OTHERWISE NOTED.
18. STORM DRAIN PROFILES CONTAIN CALL--OUTS AND REFERENCE TO INTERSECTING STORM DRAIN LINES. INTERSECTIONS OF THESE JUNCTIONS ARE PROVIDED FOR REFERENCE ONLY. CONTRACTOR IS TO OBTAIN INVERT ELEVATIONS FROM THE RESPECTIVE PROFILE OF THE INTERSECTING PIPE.
19. ALL STATIONING REFERS TO THE CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
20. STATIONING FOR LATERALS AND CONNECTOR PIPE REFER TO THE CENTERLINE--CENTERLINE--INTERSECTION STATION.
21. ALL PIPE LENGTHS ARE HORIZONTAL PROJECTIONS (NOT TRUE LENGTHS OF PIPE) AND ARE THE BASIS OF THE ESTIMATES OF QUANTITIES. THE CONTRACTOR SHALL DETERMINE THE TRUE QUANTITY OF PIPE REQUIRED FOR THIS PROJECT PRIOR TO PLACING THE ORDER.
22. ALL CROSS SECTIONS ARE TAKEN LOOKING UPSTREAM.
23. OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6 INCHES OF CLASS "B" CONCRETE.
24. PIPE CONNECTED TO THE MAINLINE PIPE SHALL CONFORM TO JUNCTION STRUCTURE NO. 4 (JS 229) UNLESS OTHERWISE NOTED.
25. PIPE BEDDING SHALL CONFORM TO R.C.F.C. & W.C.D. STD. DWG. M 815
26. "V" IS THE DEPTH OF INLET AT THE CATCH BASINS MEASURED FROM THE TOP OF THE CURB TO THE INVERT OF CONNECTOR PIPE.
27. HYDRAULIC GRADE LINES SHOWN IN PROFILES ARE FOR 100 YEAR FREQUENCY FLOWS, UNLESS OTHERWISE NOTED.
28. ALL BACKFILL AND BEDDING AROUND STRUCTURES AND PIPES SHALL BE COMPACTED TO NOT LESS THAN 90 PERCENT RELATIVE COMPACTION EXCEPT WHERE SUCH MATERIAL IS PLACED UNDER EXISTING PAVED ROADWAYS. THE TOP 3 FEET, MEASURED FROM THE FINISH PAVING, SHALL BE COMPACTED TO 95 PERCENT RELATIVE COMPACTION.
29. CONTRACTOR SHALL DISPOSE OF ALL EXCESS EXCAVATED MATERIAL AT MANDATORY DISPOSAL SITE.
30. ALL CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED IN KIND PER LATEST COUNTY STANDARD AND AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED. FOR PAVEMENT OVERLAY, 0.10' MIN. FOR FULL LANE WIDTH IS REQUIRED.
31. ALL UNDERGROUND FACILITIES WITH LATERALS SHALL BE IN PLACE PRIOR TO PAVING THE STREET, INCLUDING BUT NOT LIMITED TO, THE FOLLOWING: SEWER, WATER, ELECTRIC, STORM DRAINS.
32. ALL SURVEY MONUMENTS SHALL BE REPLACED AS REQUIRED. MONUMENTS SHALL BE TIED OUT PRIOR TO CONSTRUCTION AND REPLACED UPON COMPLETION OF CONSTRUCTION.

ABBREVIATIONS

AC	ASPHALT CONCRETE
BEG	BEGIN
BC	BEGIN CURVE
BCR	BEGIN CURB RETURN
BF	BACK FLOW
BFP	BACK FLOW PREVENTER
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
CB	CATCH BASIN
CL/℄	CENTERLINE
CLF	CHAIN LINK FENCE
COB	CITY OF BEAUMONT
CONC	CONCRETE
COR	COUNTY OF RIVERSIDE
C&G	CURB & GUTTER
DI	DRAINAGE INLET
DWY	DRIVEWAY
E/ELEC	ELECTRICAL
E'LY	EASTERLY
E/O	EAST OF
ECR	END CURB RETURN
EC	END CURVE
EG	EXISTING GRADE
EMH	ELECTRICAL MANHOLE
EP	EDGE OF PAVEMENT
ES	EDGE OF SHOULDER
ETW	EDGE OF TRAVELED WAY
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX	EXISTING
FG	FINISH GRADE
FH	FIRE HYDRATE
HW	HEADWALL
IR	IRRIGATION
LAT	LATERAL
LIP	LIP OF GUTTER
LT	LEFT
MH	MANHOLE
N'LY	NORTHERLY
N/O	NORTH OF
PCC	PORTLAND CEMENT CONCRETE
PENN	PENNSYLVANIA
PG	PROPOSED GRADE
PP	POWER POLE
PVMT	PAVEMENT
PRWY	PARKWAY
PVI	POINT OF VERTICAL INTERSECTION
PRC	POINT OF REVERSE COURSE
PROP	PROPOSED
PT	POINT
R/W	RIGHT OF WAY
RCB	REINFORCED CONCRETE BOX
RCFC	RIVERSIDE COUNTY FLOOD CONTROL
RCP	REINFORCED CONCRETE PIPE
RT	RIGHT
SC	SAWCUT
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
S'LY	SOUTHERLY
S/O	SOUTH OF
SHLD	SHOULDER
SIC	SIGNAL INTERCONNECT
SL	STREET LIGHT
SMH	SEWER MANHOLE
SOCAL	SOUTHERN CALIFORNIA GAS COMPANY
SPPWC	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
SS	SANITARY SEWER
ST	STREET
STA	STATION
SW	SIDEWALK
STR	STRUCTURE
TC	TOP OF CURB
TELE	TELECOMMUNICATIONS
TRANS	TRANSITION
TW	TOP OF WALL
TYP	TYPICAL
UE	UNDERGROUND ELECTRICAL
UPRR	UNION PACIFIC RAILROAD
UTL	UTILITY
VC	VERTICAL CURVE
VCP	VERIFIED CLAY PIPE
W	WATER
W'LY	WESTERLY
W/O	WEST OF
WM	WATER METER
WCD	WATER CONSERVATION DISTRICT
WV	WATER VALVE

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PREPARED UNDER THE SUPERVISION OF:
BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER
REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA
PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ STAFF ENGINEER DATE: _____
RECOMMENDED BY: _____ PRINCIPAL ENGINEER DATE: _____
APPROVED BY: _____ CITY ENGINEER DATE: _____

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
CITY OF BEAUMONT NOTES

SHEET 2 OF 13 SHEETS
FILE NO:

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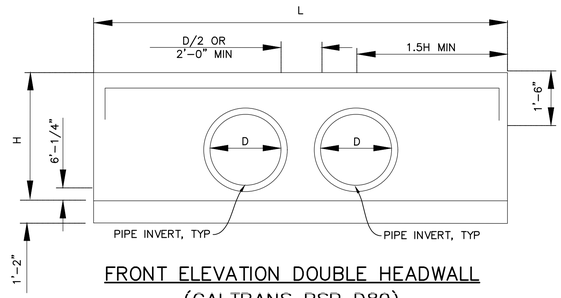
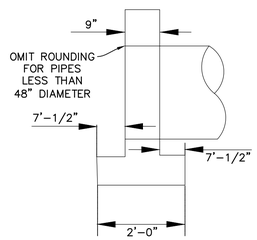


FRONT ELEVATION DOUBLE HEADWALL (CALTRANS RSP D89)

N.T.S.

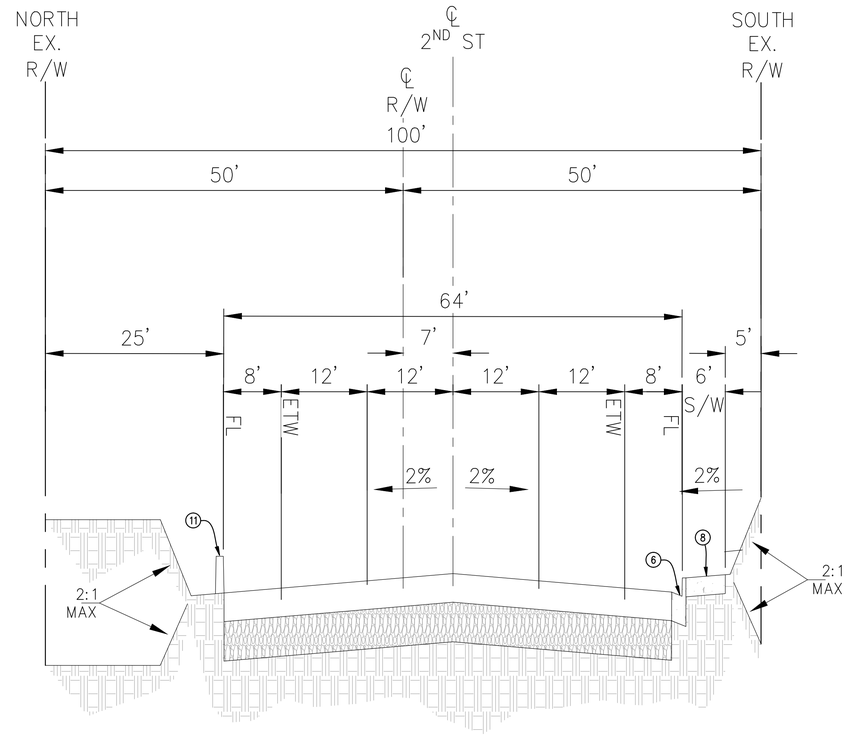
HEADWALL DIMENSION FOR CULVERT A, B, & C:		
DIMENSION	UNIT	AMOUNT
D	FT-IN	3'-0"
H	FT-IN	AS SHOWN
L	FT-IN	17'-0"

HEADWALL INVERT ELEVATIONS:		
CULVERT No.	ELEVATION (FT)	CULVERT FACING
A A	2570.00 2572.00	NORTH SOUTH
B B	2565.00 2567.00	NORTH SOUTH
C C	2577.00 2579.00	NORTH SOUTH



SECTION DOUBLE HEADWALL (CALTRANS RSP D89)

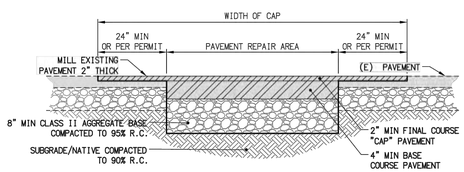
N.T.S.



TYPICAL STREET SECTION (LOOKING EAST)

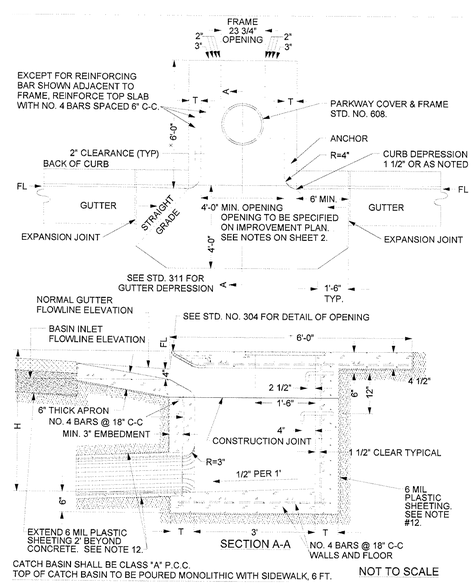
1" = 10'

	CONSTRUCTION NOTES	QUANTITY ESTIMATES
1	PROTECT IN PLACE.	–
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.	23,064 FT^2
3	COLDMILL EXISTING AC PAVEMENT (2").	23,064 FT^2
4	CONSTRUCT XX" HMA (1/2 INCH TYPE A PG-64-10) OVER XX" CLASS AB OVER COMPACTED SUBGRADE.	153,749 FT^2
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).	153,749 FT^2
6	CONSTRUCT TYPE A-8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201.	1,622 FT.
7	CONSTRUCT CURB RAMP (CASE PER PLAN) PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	2 EA.
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.	8,829 FT^2
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
10	REMOVE EXISTING CURB AND GUTTER.	3,338 FT.
11	CONSTRUCT AC DIKE TO 8" PER RIVERSIDE COUNTY STANDARD NO. 212.	2,457 FT.
12	REMOVE PCC SW.	–
13	CONSTRUCT TYPE D (8-INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.	–
14	EXISTING 36" ø CONCRETE PIPE.	1 EA
15	MATCH EXISTING SIDEWALK.	–
16	MATCH EXISTING ASPHALT CONCRETE.	–
17	GRIND AND CAP EXISTING ASPALT CONCRETE.	23,064 FT^2
18	PROTECT IN PLACE CURRENT SEWER LINE.	1 EA
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.	1 EA
20	PROPOSED STORM DRAIN STRUCTURE.	1 EA
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
22	CONSTRUCT DOUBLE STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.	3 EA
23	MATCH TO EXISTING CURB AND GUTTER.	–
24	EXISTING HEADWALL.	2 EA
25	EXISTING 60" ø CONCRETE PIPE.	2 EA



PAVEMENT RESTORATION

N.T.S.



CURB INLET CATCH BASIN (RIV. CO. STD. NO. 300)

N.T.S.

97% SUBMITTAL (NOT FOR CONSTRUCTION)

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PREPARED UNDER THE SUPERVISION OF:

BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA

PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
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SCALE: 1"=40'
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BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER

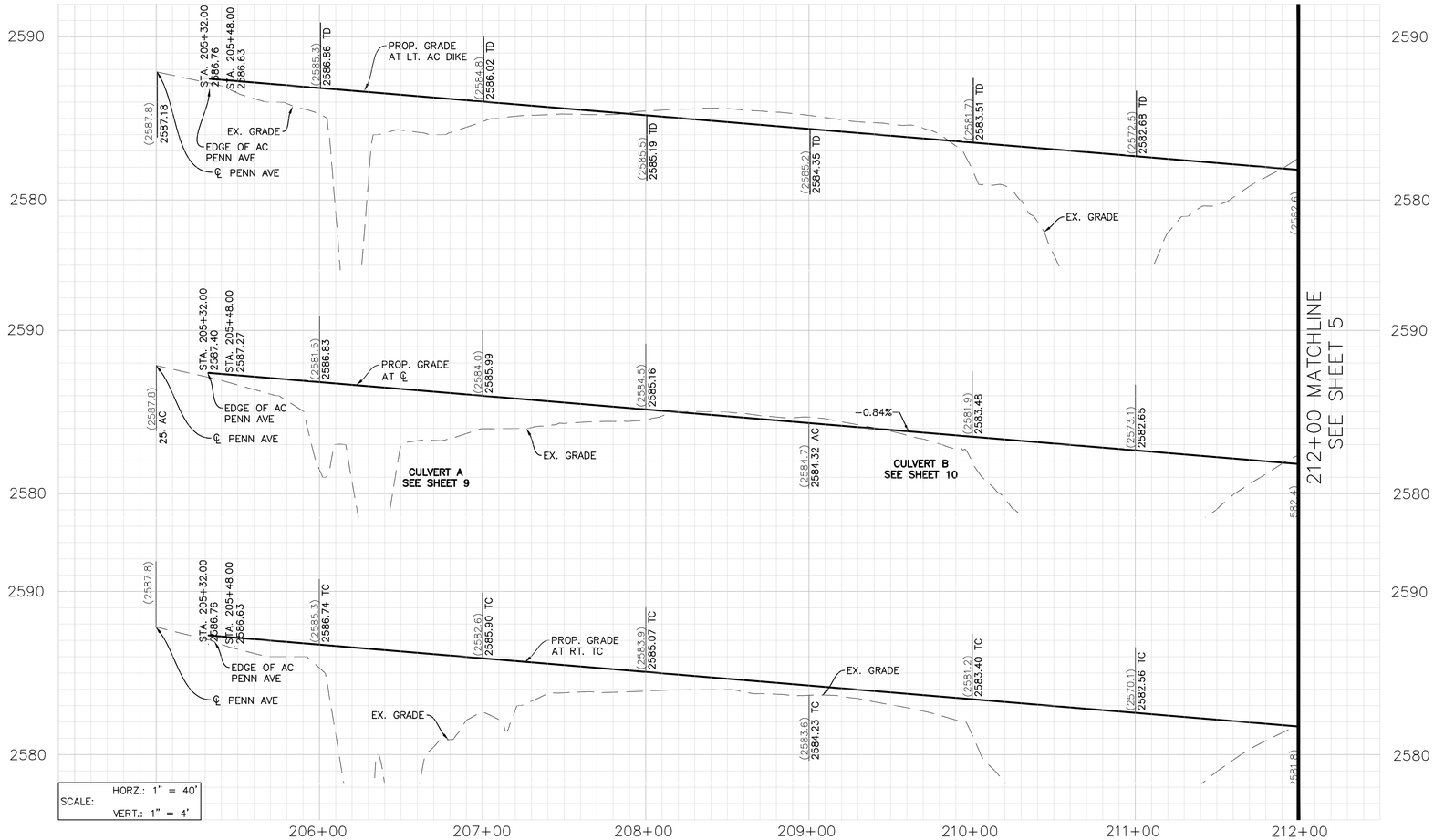
RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER

APPROVED BY: _____ DATE: _____
CITY ENGINEER

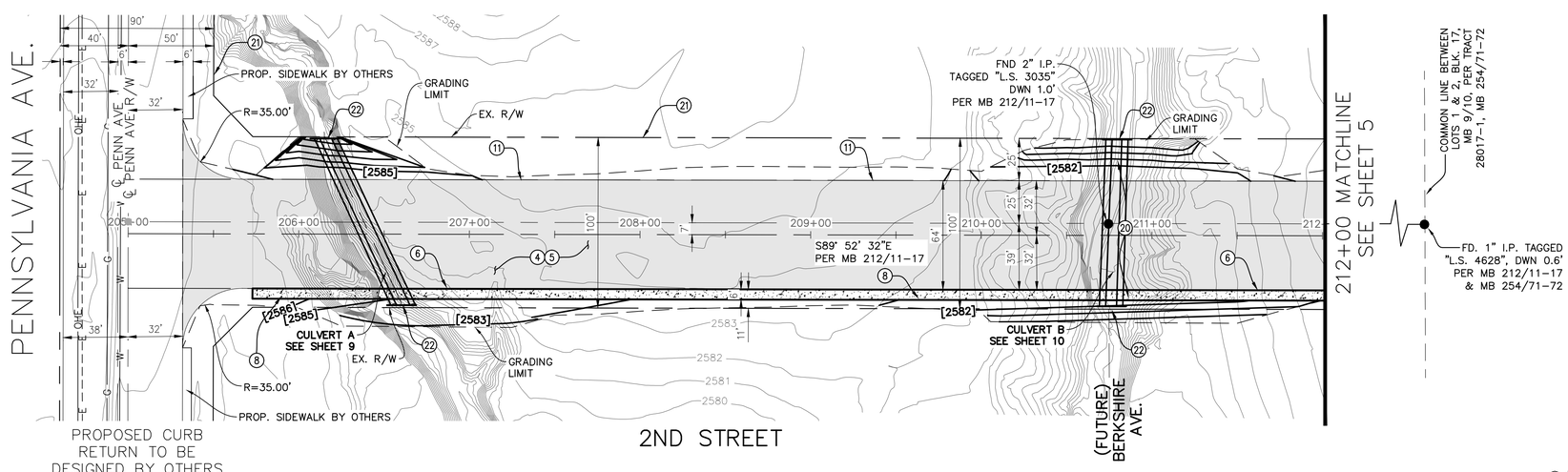
CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
SECTIONS/DETAIL SHEET

SHEET 3 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG



SCALE: HORZ.: 1" = 40'
VERT.: 1" = 4'



CONSTRUCTION NOTES

1	PROTECT IN PLACE.
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.
3	COLDMILL EXISTING AC PAVEMENT (2").
4	CONSTRUCT 8" HMA (1/2 INCH TYPE A PG-64-10) OVER 8" CLASS AB OVER COMPACTED SUBGRADE.
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).
6	CONSTRUCT TYPE A-8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201..
7	CONSTRUCT CURB RAMP (CASE PER PLAN) PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
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17	GRIND AND CAP EXISTING ASPHALT CONCRETE.
18	PROTECT IN PLACE CURRENT SEWER LINE.
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.
20	PROPOSED STORM DRAIN STRUCTURE.
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
22	CONSTRUCT STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.
23	MATCH TO EXISTING CURB AND GUTTER.
24	EXISTING HEADWALL.
25	EXISTING 60" ø CONCRETE PIPE.
26	INSTALL CURB INLET CATCH BASIN PER COUNTY OF RIVERSIDE STANDARD NO. 300.
27	CONSTRUCT RIP-RAP APRON.
28	FURNISH AND INSTALL PRECAST TYPE G3 DRAINAGE INLET PER CALTRANS STANDARD PLAN D73B AND GUTTER DEPRESSION PER CALTRANS STANDARD PLAN RSP D78A, TYPE G3 INLET IN GRADE SAG.
29	FURNISH AND INSTALL TWO (2) 36-INCH RCP WITH CONCRETE ENCASEMENT.
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31	FURNISH AND INSTALL TYPE "X" INLET PER COUNTY OF RIVERSIDE STANDARD NO. CB108.
32	REMOVE EXISTING MEDIAN STRIPPING.

NOTES

1. SEE THE SIGNING AND STRIPING PLANS FOR DISPOSITION OF STREET SIGN REMOVALS AND RELOCATIONS.
2. SEE DRAINAGE PLANS FOR DISPOSITION OF DRAINAGE APPURTENANCES.
3. EXISTING UTILITIES ARE DEPICTED ON PLAN.

LEGEND

- PROPOSED AC PAVEMENT
- AC PAVEMENT REMOVAL
- PROPOSED CONCRETE SIDEWALK
- REMOVE EXISTING AC PAVEMENT
  ADD PROPOSED AC PAVEMENT
- CENTERLINE
- RIGHT OF WAY
- PROPERTY LINE
- OH — (EX) OVERHEAD ELECTRIC EDISON
- SS — (EX) SEWER MAIN LINE
- 2"G — (EX) 2" GAS LINE
- W — (EX) WATER LINE
- EDGE OF DIRT ROAD
- XXXX' — (EX) TOPO
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- ELECTRICAL VAULT
- WATER VALVE
- GAS VALVE
- SEWER MANHOLE
- FIREHYDRANT

N

40 20 0 40 80 120
SCALE: 1"= 40'

97% SUBMITTAL (NOT FOR CONSTRUCTION)

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:
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STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GRAND STREET HEMET, CA 92544
TEL. (951) 652-4454 FAX (951) 766-8942
E-MAIL BFOX@BCOZAD.COM

PREPARED UNDER THE SUPERVISION OF:
BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER
REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA
PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER

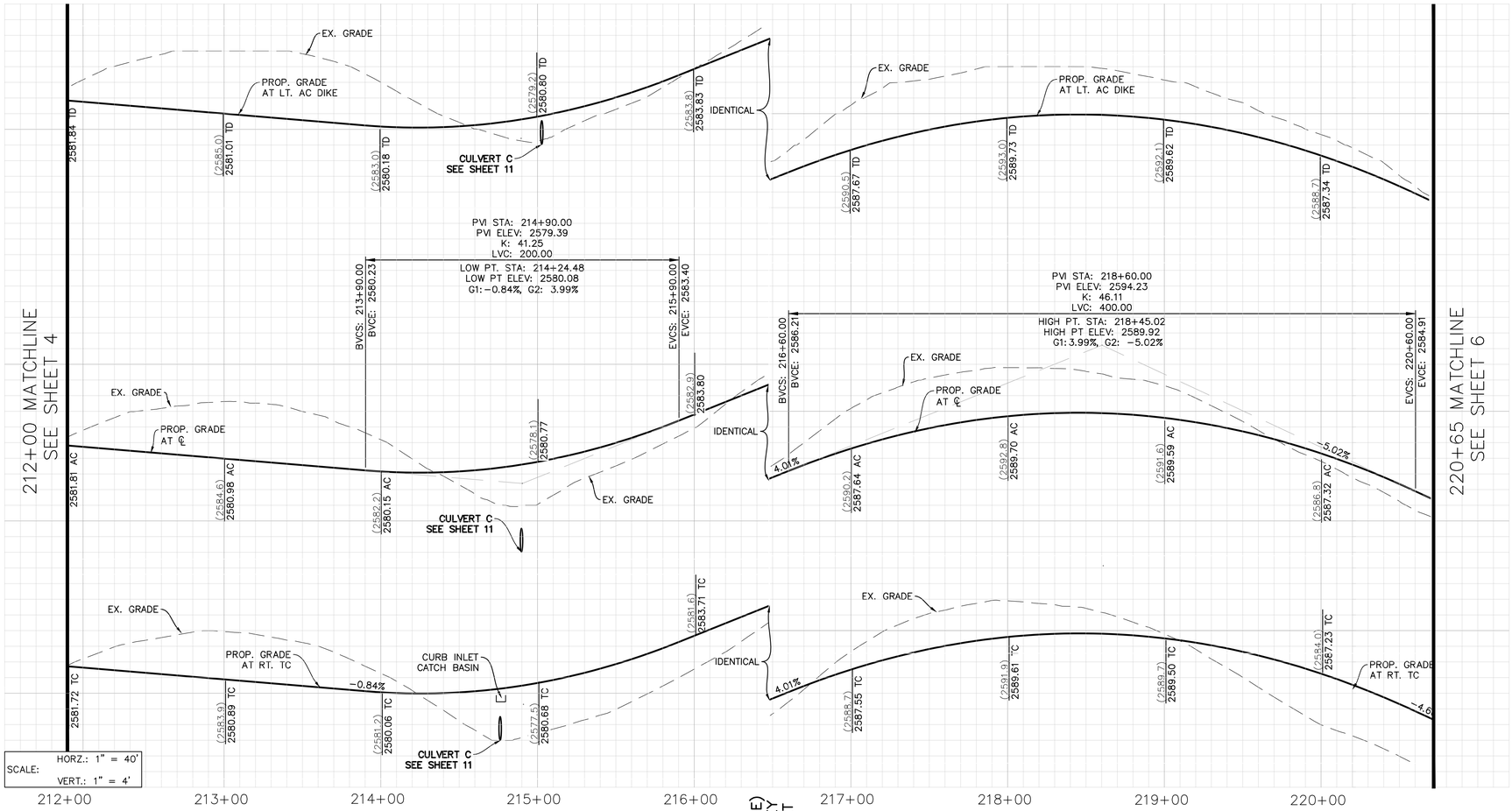
RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER

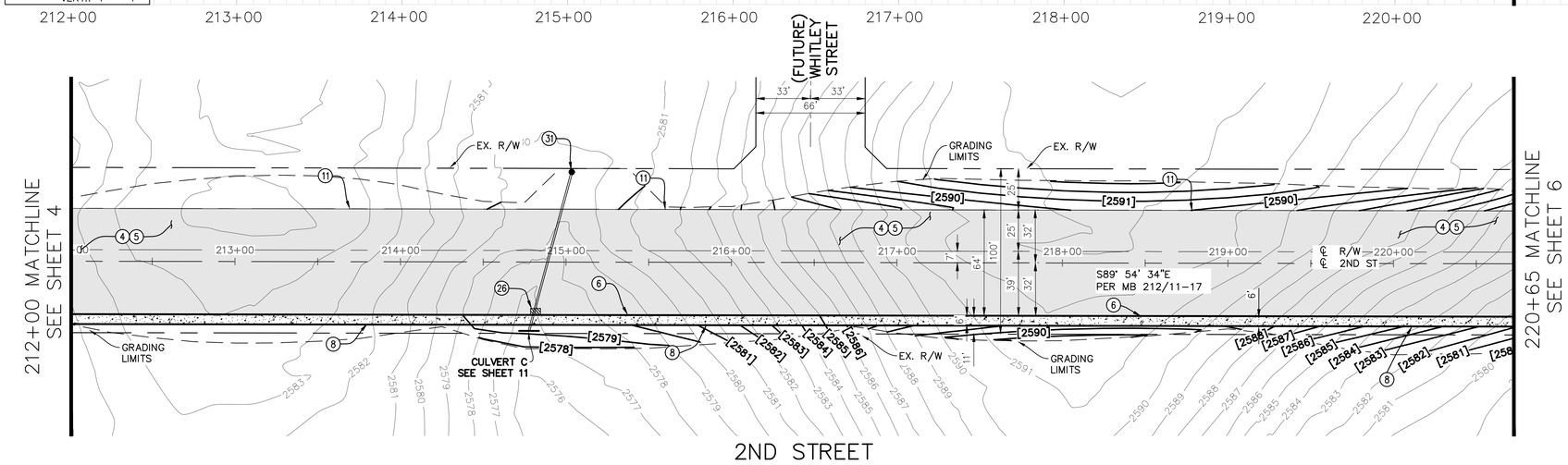
APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
STREET PLAN AND PROFILE
STA 205+00.00 - 212+00.00

SHEET 4 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG





CONSTRUCTION NOTES

1	PROTECT IN PLACE.
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.
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8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.
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N

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BY	MARK	DESCRIPTION	APPR.	DATE
ENGINEER		REVISIONS	CITY	

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PRINCIPAL ENGINEER
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PRELIMINARY

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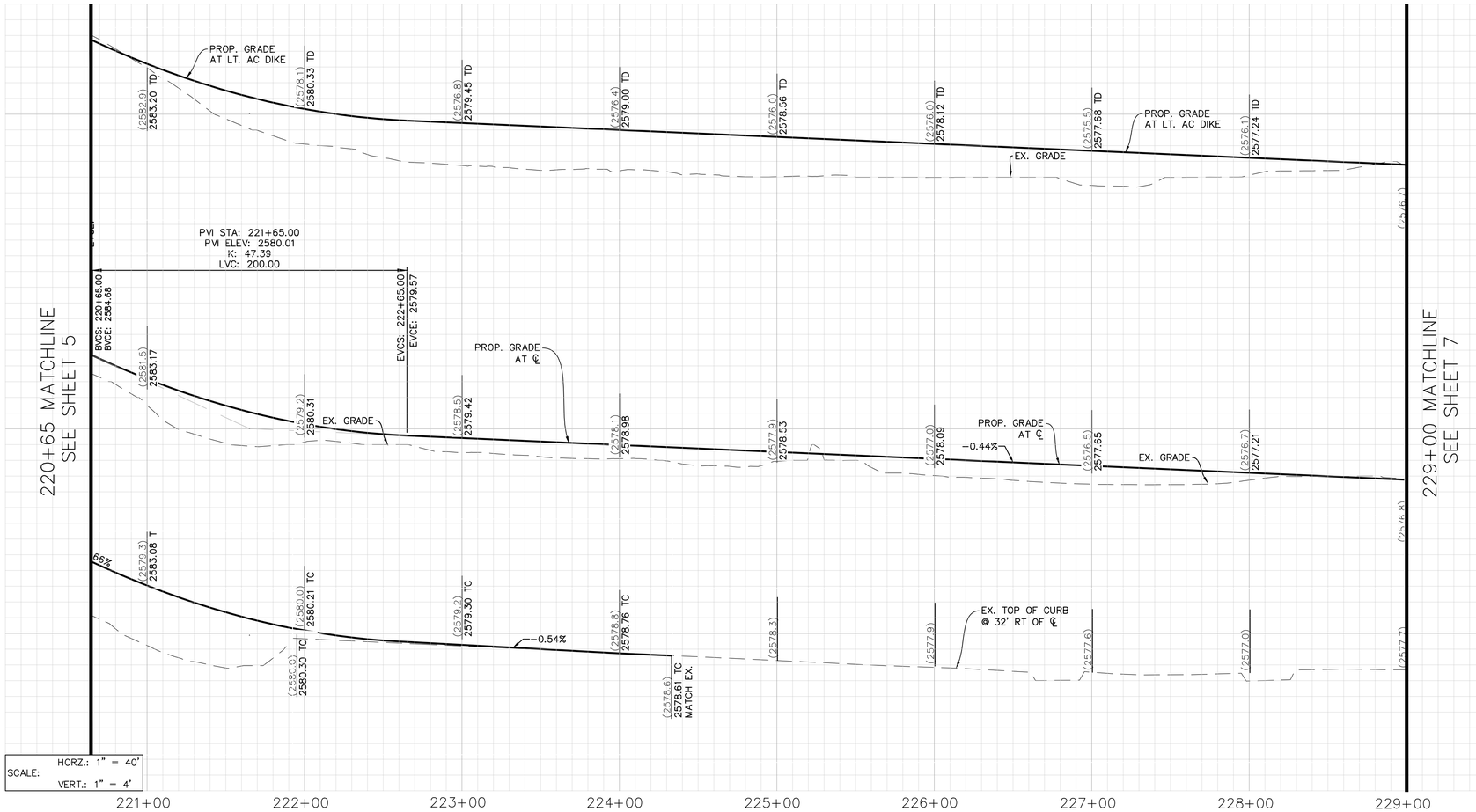
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

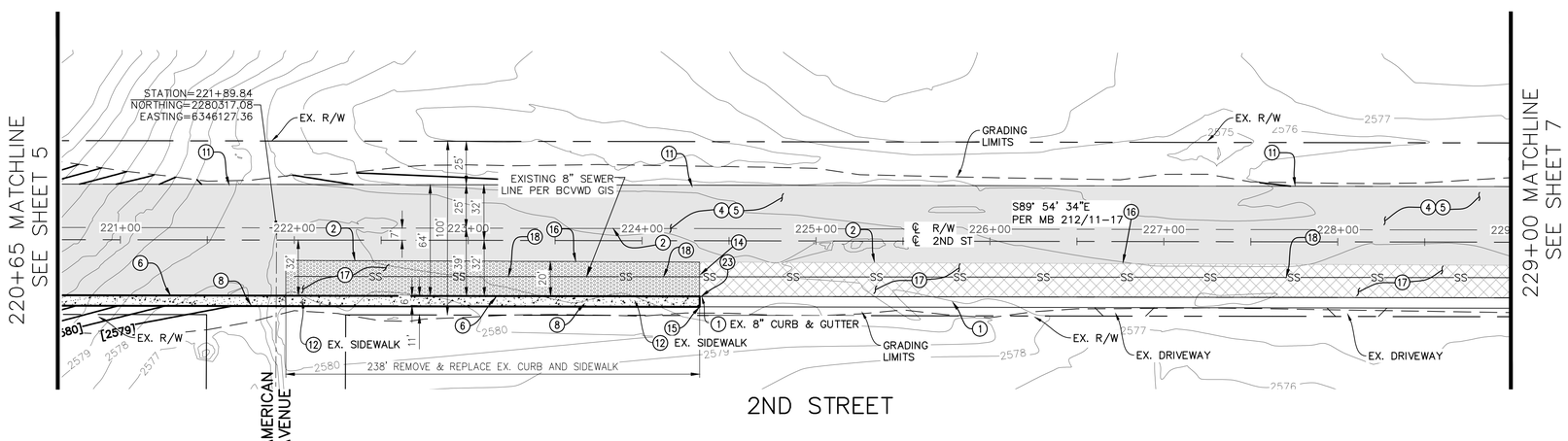
REVIEWED BY: _____ STAFF ENGINEER DATE: _____
RECOMMENDED BY: _____ PRINCIPAL ENGINEER DATE: _____
APPROVED BY: _____ CITY ENGINEER DATE: _____

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
STREET PLAN AND PROFILE
STA 212+00.00 - 220+65.00

SHEET 5 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG





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31	FURNISH AND INSTALL TYPE "X" INLET PER COUNTY OF RIVERSIDE STANDARD NO. CB10B.
32	REMOVE EXISTING MEDIAN STRIPPING.

NOTES

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N

40 20 0 40 80 120

SCALE: 1"= 40'

97% SUBMITTAL (NOT FOR CONSTRUCTION)

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BY	MARK	DESCRIPTION	APPR.	DATE
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PREPARED UNDER THE SUPERVISION OF:

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PRINCIPAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA

PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
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SCALE: 1"=40'
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PUBLIC WORKS DEPARTMENT
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STAFF ENGINEER

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CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
STREET PLAN AND PROFILE
STA 220+65.00 - 229+00.00

SHEET 6 OF 13 SHEETS
FILE NO:

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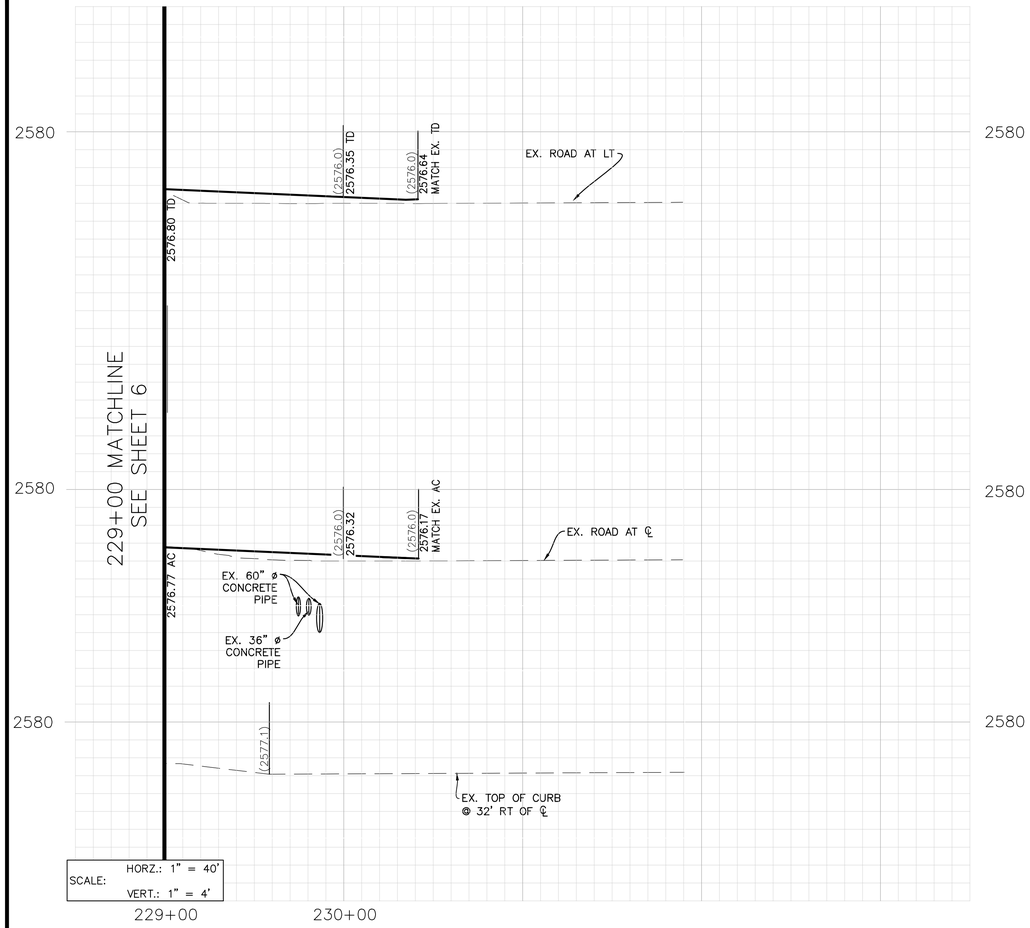

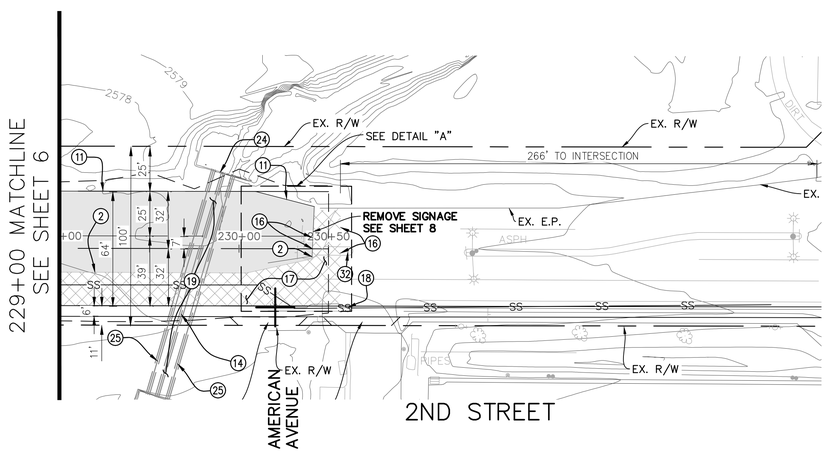

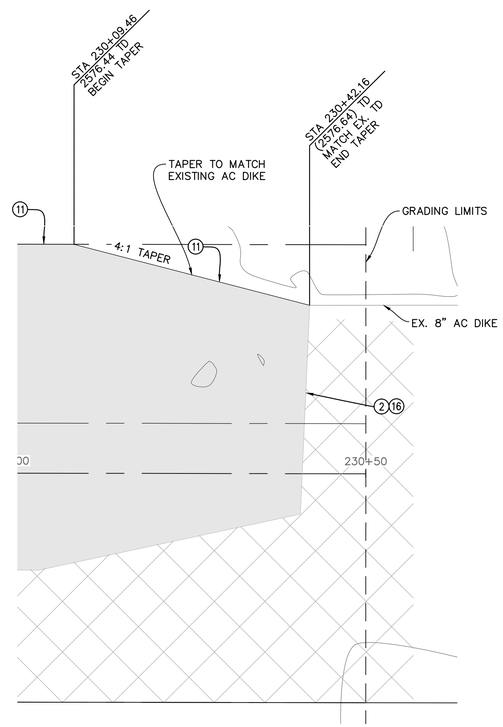

DETAIL "A"
SCALE: 1" = 10'

CONSTRUCTION NOTES

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SHEET 7 OF 13 SHEETS
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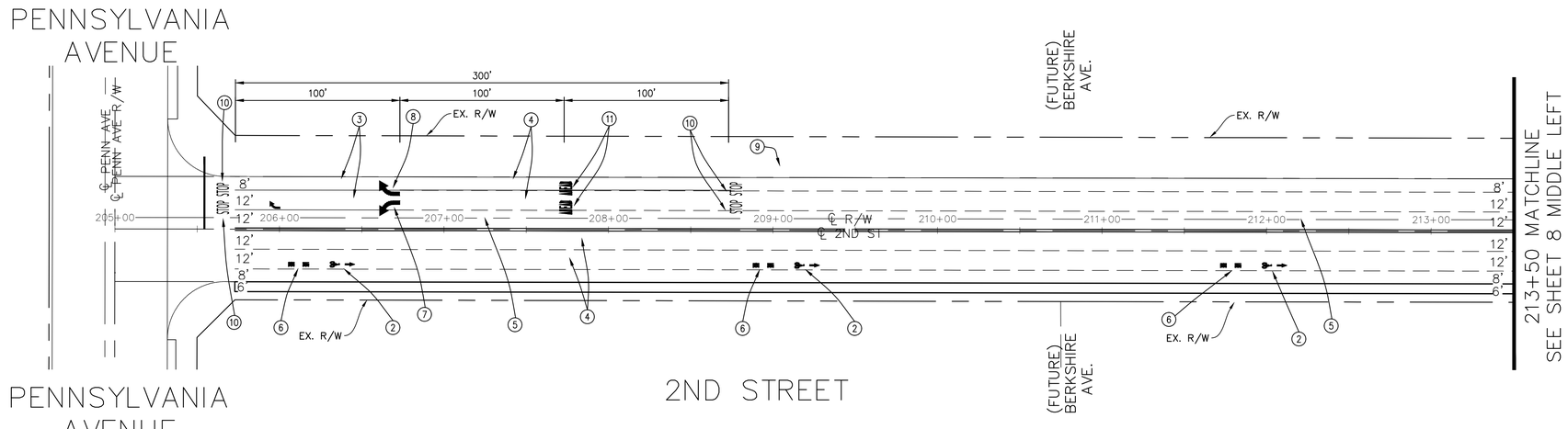

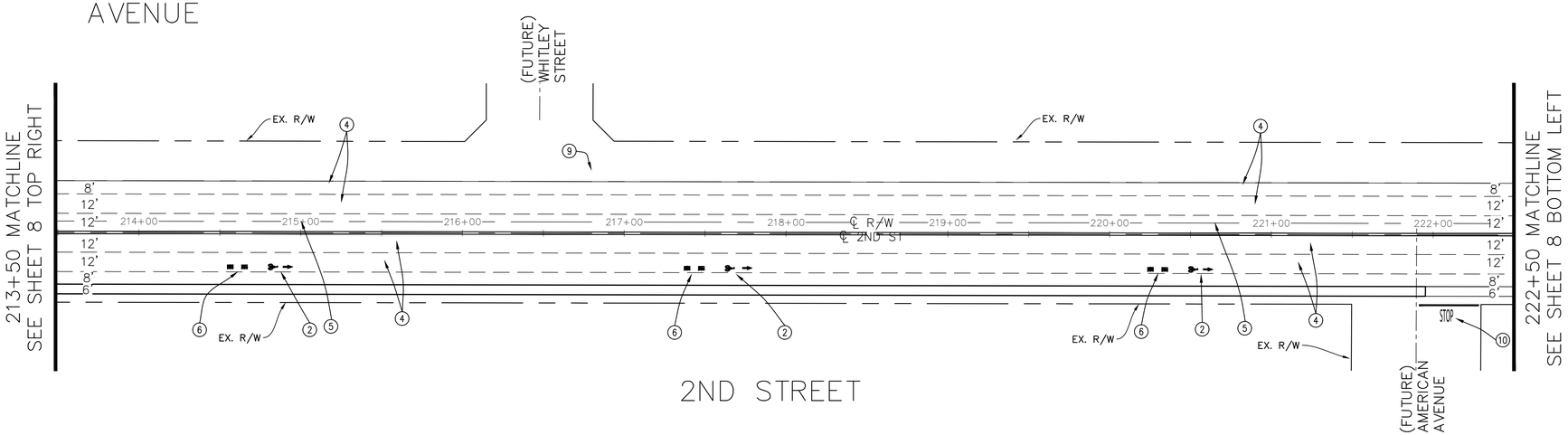

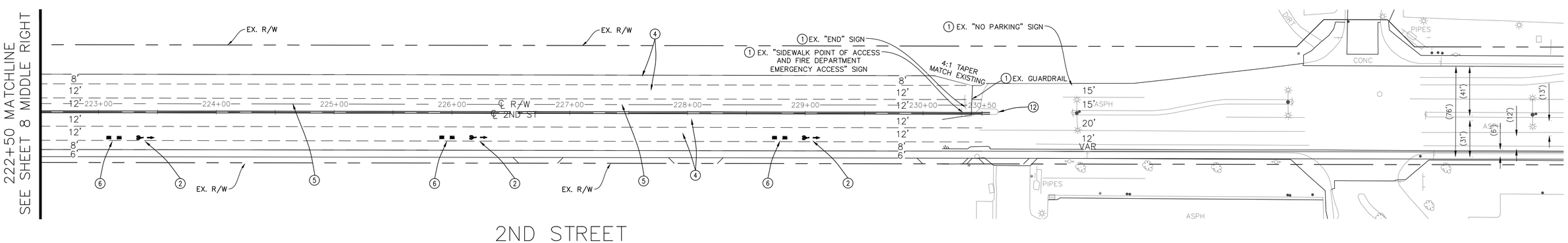

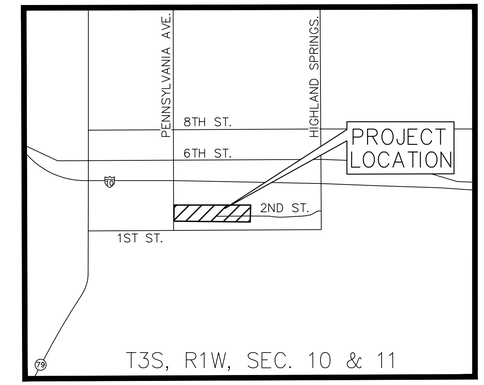

VICINITY MAP

N.T.S.

N

40 20 0 40 80 120

SCALE: 1"= 40'

SIGNAGE AND STRIPING NOTES

1	REMOVE CONFLICTING STRIPING AND MARKERS
2	INSTALL HELMETED BICYCLIST SYMBOL PER CALIFORNIA MUTCD SPECIFICATIONS
3	INSTALL DETAIL 38 CHANNELIZING LINE PER CALTRANS STANDARD PLAN A20D
4	INSTALL DETAIL 9 STRIPING PER CALTRANS STANDARD PLAN A20A
5	INSTALL DETAIL 22 STRIPING PER CALTRANS STANDARD PLAN A20A
6	INSTALL BIKE LANE SYMBOL PER CALIFORNIA MUTCD SPECIFICATIONS
7	INSTALL TYPE IV(L) PAVEMENT MARKING ARROW PER CALTRANS STANDARD PLAN A24A
8	INSTALL TYPE IV(R) PAVEMENT MARKING ARROW PER CALTRANS STANDARD PLAN A24A
9	INSTALL DETAIL 27B STRIPPING PER CALTRANS STANDARD PLAN A20B
10	INSTALL "STOP" LEGEND PER CALTRANS STANDARD PLAN A24D
11	INSTALL "AHEAD" LEGEND PER CALTRANS STANDARD PLAN A24D
12	REMOVE EXISTING MEDIAN STRIPING

97% SUBMITTAL (NOT FOR CONSTRUCTION)

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:
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STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

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BY	MARK	DESCRIPTION	APPR.	DATE
ENGINEER		REVISIONS	CITY	

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
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151 SOUTH GIRARD STREET HEMET, CA 92544
TEL. (951) 652-4454 FAX (951) 766-8942
E-MAIL BFOX@CBCOZAD.COM

PREPARED UNDER THE SUPERVISION OF:

BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX No. 57264 CIVIL STATE OF CALIFORNIA

PRELIMINARY

DESIGN BY: D.D.S.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER

RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER

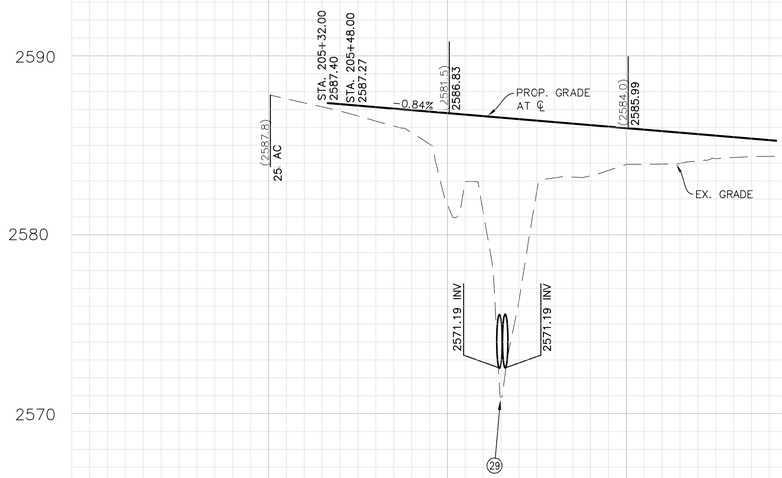
APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:

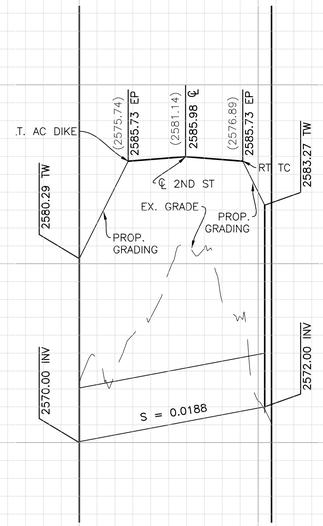
2ND STREET
SIGNAGE AND STRIPAGE

SHEET 8 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%_SIGNAGE&STRIPING.DWG

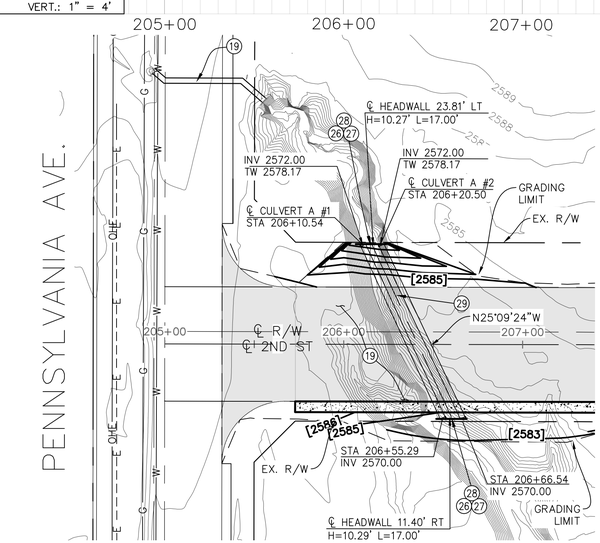


SECTION AT ℄



PROFILE
STA 0+00.00 – 1+07.45

SCALE: HORZ.: 1" = 40'
VERT.: 1" = 4'



PROPOSED CULVERT "A"

CONSTRUCTION NOTES

1	PROTECT IN PLACE.
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.
3	COLDMILL EXISTING AC PAVEMENT (2").
4	CONSTRUCT 8" HMA (1/2 INCH TYPE A PG-64-10) OVER 8" CLASS AB OVER COMPACTED SUBGRADE.
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).
6	CONSTRUCT TYPE A-8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201.
7	CONSTRUCT CURB RAMP (CASE PER PLAN) PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
10	REMOVE EXISTING CURB AND GUTTER.
11	CONSTRUCT 8" AC DIKE PER RIVERSIDE COUNTY STANDARD NO. 212.
12	REMOVE PCC SW.
13	CONSTRUCT TYPE D (8-INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.
14	EXISTING 36" ø CONCRETE PIPE.
15	MATCH EXISTING SIDEWALK.
16	MATCH EXISTING ASPHALT CONCRETE.
17	GRIND AND CAP EXISTING ASPHALT CONCRETE.
18	PROTECT IN PLACE CURRENT SEWER LINE.
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.
20	PROPOSED STORM DRAIN STRUCTURE.
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
22	CONSTRUCT STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.
23	MATCH TO EXISTING CURB AND GUTTER.
24	EXISTING HEADWALL.
25	EXISTING 60" ø CONCRETE PIPE.
26	INSTALL CURB INLET CATCH BASIN PER COUNTY OF RIVERSIDE STANDARD NO. 300.
27	CONSTRUCT RIP-RAP APRON.
28	FURNISH AND INSTALL PRECAST TYPE G3 DRAINAGE INLET PER CALTRANS STANDARD PLAN D73B AND GUTTER DEPRESSION PER CALTRANS STANDARD PLAN RSP D78A, TYPE G3 INLET IN GRADE SAG.
29	FURNISH AND INSTALL TWO (2) 36-INCH RCP WITH CONCRETE ENCASEMENT.
30	FURNISH AND INSTALL ONE (1) 18-INCH RCP WITH CONCRETE ENCASEMENT.
31	FURNISH AND INSTALL TYPE "X" INLET PER COUNTY OF RIVERSIDE STANDARD NO. CB108.
32	REMOVE EXISTING MEDIAN STRIPPING.

NOTES

1. SEE THE SIGNING AND STRIPING PLANS FOR DISPOSITION OF STREET SIGN REMOVALS AND RELOCATIONS.
2. SEE DRAINAGE PLANS FOR DISPOSITION OF DRAINAGE APPURTENANCES.
3. EXISTING UTILITIES ARE DEPICTED ON PLAN.

LEGEND

- PROPOSED AC PAVEMENT
- AC PAVEMENT REMOVAL
- PROPOSED CONCRETE SIDEWALK
- CENTERLINE
- RIGHT OF WAY
- PROPERTY LINE
- DH — (EX) OVERHEAD ELECTRIC EDISON
- SS — (EX) SEWER MAIN LINE
- 2"G — (EX) 2" GAS LINE
- W — (EX) WATER LINE
- EDGE OF DIRT ROAD
- XXXX' — (EX) TOPO
- [XXXX'] — PROP TOPO
- POWER POLE
- ELECTRICAL VAULT
- WATER VALVE
- GAS VALVE
- SEWER MANHOLE
- FIREHYDRANT

N

40 20 0 40 80 120
SCALE: 1"= 40'

97% SUBMITTAL (NOT FOR CONSTRUCTION)

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ENGINEER		REVISIONS	CITY	

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PREPARED UNDER THE SUPERVISION OF:

BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA

PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER

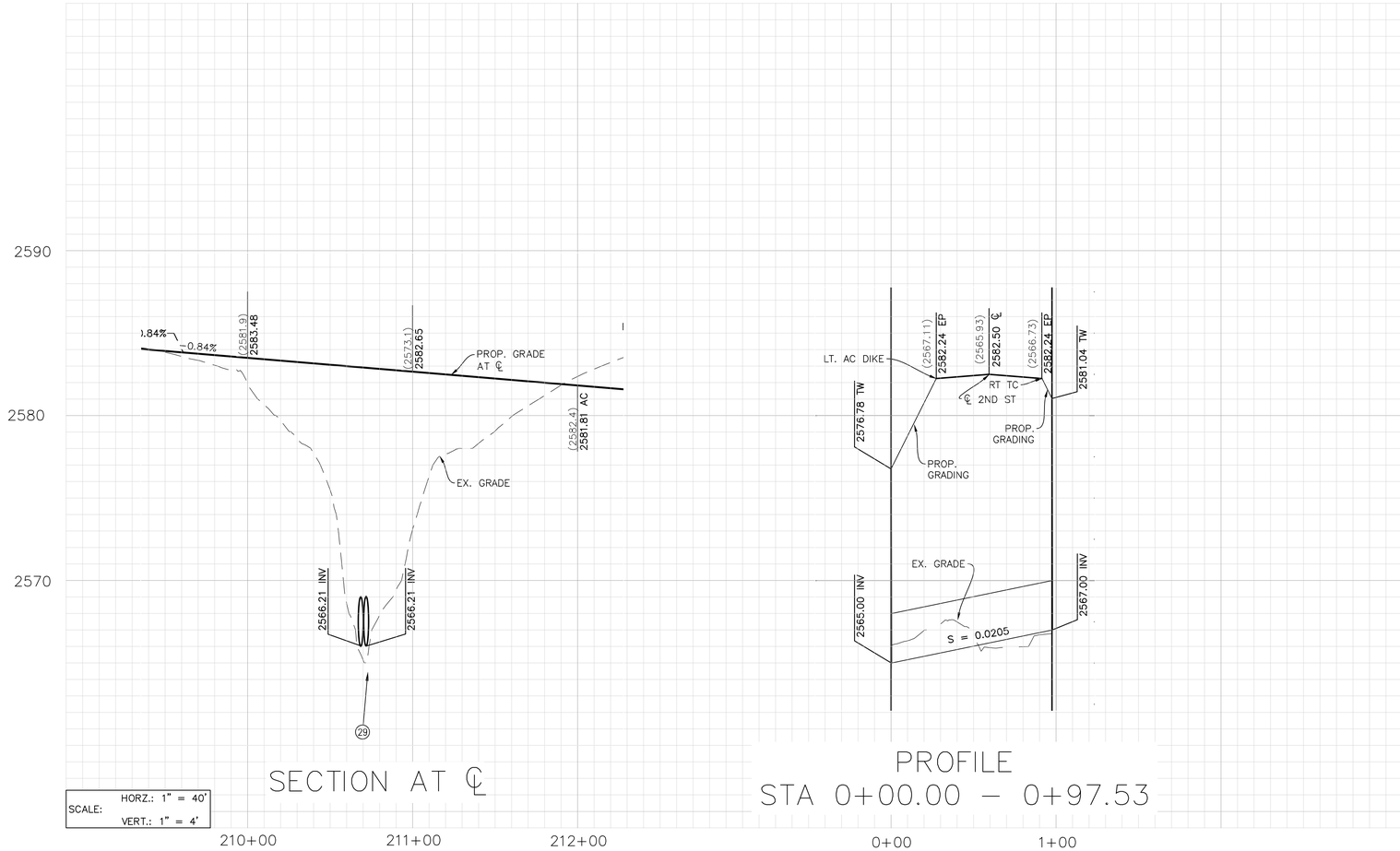
RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER

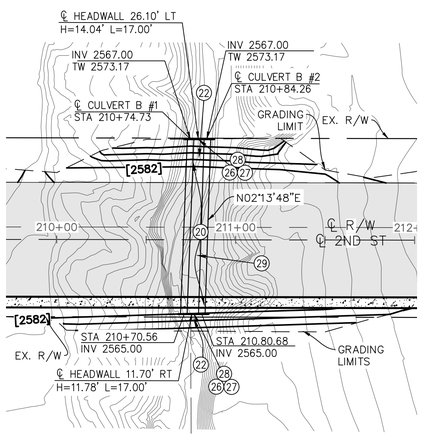
APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
CULVERT CROSSING

SHEET 9 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_CULVERTCROSSING_100%.DWG





PROPOSED CULVERT "B"

CONSTRUCTION NOTES

1	PROTECT IN PLACE.
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.
3	COLDMILL EXISTING AC PAVEMENT (2").
4	CONSTRUCT 8" HMA (1/2 INCH TYPE A PG-64-10) OVER 8" CLASS AB OVER COMPACTED SUBGRADE.
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).
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10	REMOVE EXISTING CURB AND GUTTER.
11	CONSTRUCT 8" AC DIKE PER RIVERSIDE COUNTY STANDARD NO. 212.
12	REMOVE PCC SW.
13	CONSTRUCT TYPE D (8-INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.
14	EXISTING 36" ø CONCRETE PIPE.
15	MATCH EXISTING SIDEWALK.
16	MATCH EXISTING ASPHALT CONCRETE.
17	GRIND AND CAP EXISTING ASPHALT CONCRETE.
18	PROTECT IN PLACE CURRENT SEWER LINE.
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.
20	PROPOSED STORM DRAIN STRUCTURE.
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
22	CONSTRUCT STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.
23	MATCH TO EXISTING CURB AND GUTTER.
24	EXISTING HEADWALL.
25	EXISTING 60" ø CONCRETE PIPE.
26	INSTALL CURB INLET CATCH BASIN PER COUNTY OF RIVERSIDE STANDARD NO. 300.
27	CONSTRUCT RIP-RAP APRON.
28	FURNISH AND INSTALL PRECAST TYPE G3 DRAINAGE INLET PER CALTRANS STANDARD PLAN D73B AND GUTTER DEPRESSION PER CALTRANS STANDARD PLAN RSP D78A, TYPE G3 INLET IN GRADE SAG.
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31	FURNISH AND INSTALL TYPE "X" INLET PER COUNTY OF RIVERSIDE STANDARD NO. CB108.
32	REMOVE EXISTING MEDIAN STRIPPING.

NOTES

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3. EXISTING UTILITIES ARE DEPICTED ON PLAN.

LEGEND

PROPOSED AC PAVEMENT
AC PAVEMENT REMOVAL
PROPOSED CONCRETE SIDEWALK
CENTERLINE
RIGHT OF WAY
PROPERTY LINE
(EX) OVERHEAD ELECTRIC EDISON
(EX) SEWER MAIN LINE
(EX) 2" GAS LINE
(EX) WATER LINE
EDGE OF DIRT ROAD
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PROP TOPO
POWER POLE
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WATER VALVE
GAS VALVE
SEWER MANHOLE
FIREHYDRANT

N

40 20 0 40 80 120
SCALE: 1"= 40'

97% SUBMITTAL (NOT FOR CONSTRUCTION)

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PRINCIPAL ENGINEER
REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA
PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
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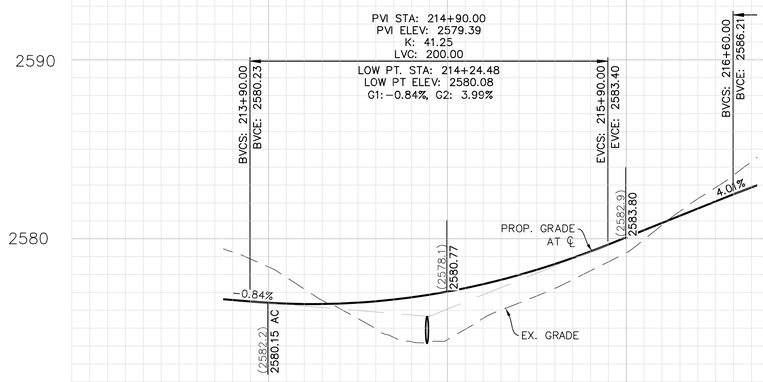
BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER
RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER
APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
CULVERT CROSSING

SHEET 10 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_CULVERTCROSSING_100%.DWG



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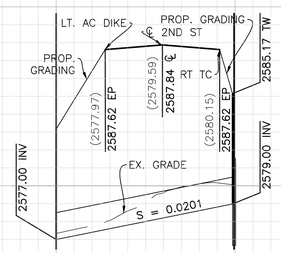

PROFILE
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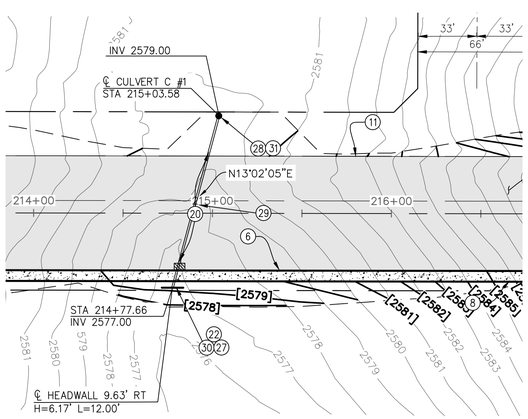
SCALE: HORZ.: 1" = 40'
VERT.: 1" = 4'

214+00 215+00 216+00 0+00 1+00



PROPOSED CULVERT C

CONSTRUCTION NOTES

1	PROTECT IN PLACE.
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.
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32	REMOVE EXISTING MEDIAN STRIPPING.

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LEGEND

PROPOSED AC PAVEMENT
AC PAVEMENT REMOVAL
PROPOSED CONCRETE SIDEWALK
CENTERLINE
RIGHT OF WAY
PROPERTY LINE
OH (EX) OVERHEAD ELECTRIC EDISON
SS (EX) SEWER MAIN LINE
2"G (EX) 2" GAS LINE
W (EX) WATER LINE
EDGE OF DIRT ROAD
XXXX' (EX) TOPO
[XXXX'] PROP TOPO
POWER POLE
ELECTRICAL VAULT
WATER VALVE
GAS VALVE
SEWER MANHOLE
FIREHYDRANT

N

40 20 0 40 80 120
SCALE: 1"= 40'

97% SUBMITTAL (NOT FOR CONSTRUCTION)

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	1			

ENGINEER — REVISIONS — CITY

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PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

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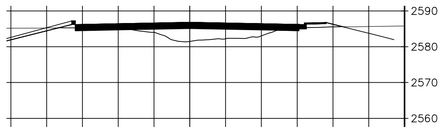
STAFF ENGINEER
RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER
APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
CULVERT CROSSING

SHEET 11 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_CULVERTCROSSING_100%.DWG



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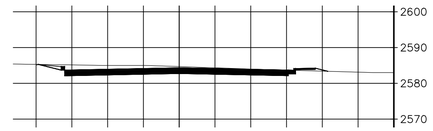

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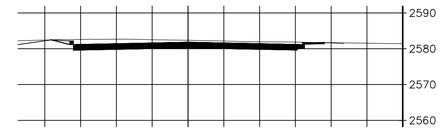

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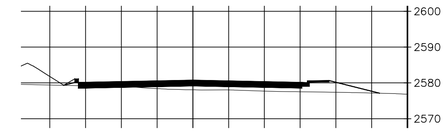

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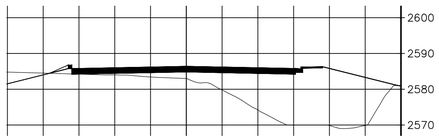

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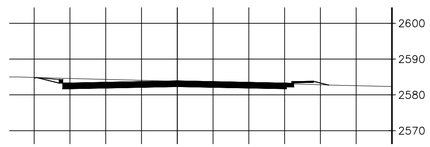

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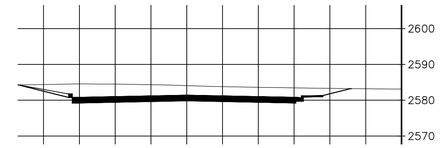

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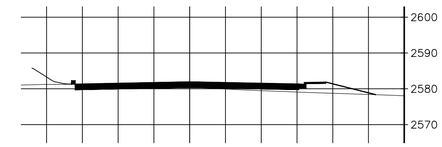

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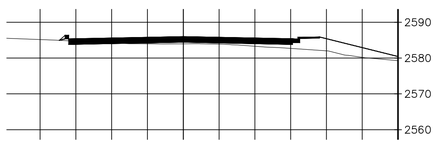

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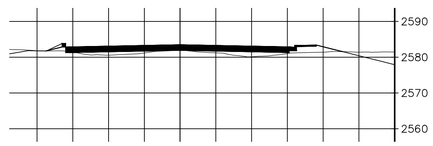

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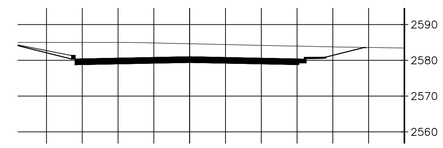

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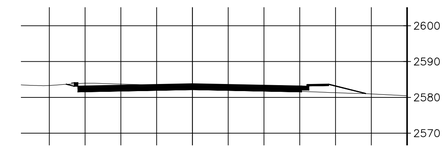

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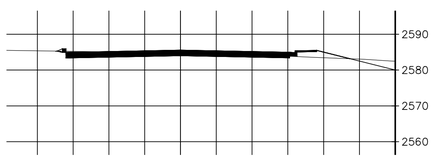

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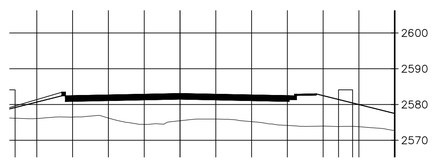

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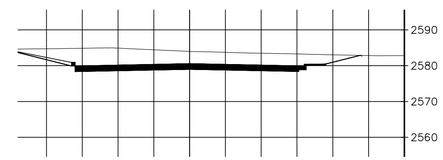

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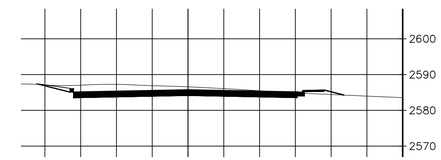

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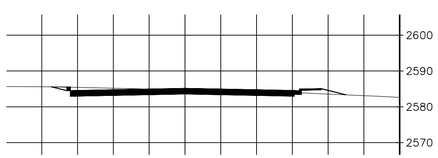

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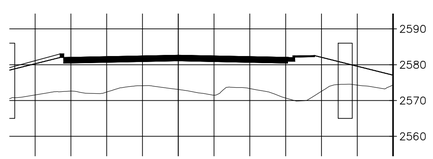

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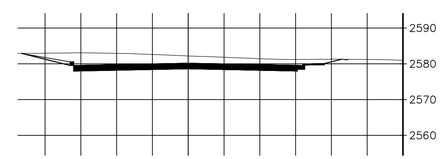

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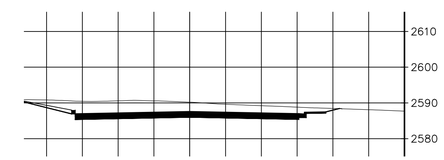

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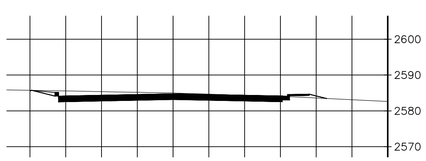

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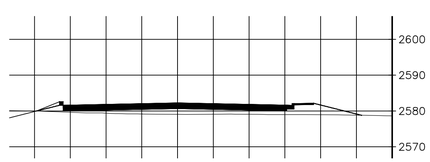

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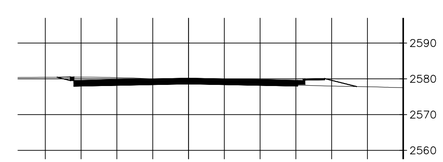

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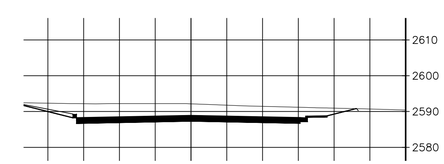

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	CONSTRUCTION NOTES	QUANTITY ESTIMATES
1	PROTECT IN PLACE.	–
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.	23,064 FT^2
3	COLDMILL EXISTING AC PAVEMENT (2").	23,064 FT^2
4	CONSTRUCT XX" HMA (1/2 INCH TYPE A PG-64-10) OVER XX" CLASS AB OVER COMPACTED SUBGRADE.	153,749 FT^2
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).	153,749 FT^2
6	CONSTRUCT TYPE A-8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201.	1,622 FT.
7	CONSTRUCT CURB RAMP (CASE PER PLAN) PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	2 EA.
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.	8,829 FT^2
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
10	REMOVE EXISTING CURB AND GUTTER.	3,338 FT.
11	CONSTRUCT AC DIKE TO 8" PER RIVERSIDE COUNTY STANDARD NO. 212.	2,457 FT.
12	REMOVE PCC SW.	–
13	CONSTRUCT TYPE D (8-INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.	–
14	EXISTING 36" ø CONCRETE PIPE.	1 EA
15	MATCH EXISTING SIDEWALK.	–
16	MATCH EXISTING ASPHALT CONCRETE.	–
17	GRIND AND CAP EXISTING ASPALT CONCRETE.	23,064 FT^2
18	PROTECT IN PLACE CURRENT SEWER LINE.	1 EA
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.	1 EA
20	PROPOSED STORM DRAIN STRUCTURE.	1 EA
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
22	CONSTRUCT DOUBLE STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.	3 EA
23	MATCH TO EXISTING CURB AND GUTTER.	–
24	EXISTING HEADWALL.	2 EA
25	EXISTING 60" ø CONCRETE PIPE.	2 EA

20 10 0 20 40 60

SCALE: 1"= 20'

97% SUBMITTAL (NOT FOR CONSTRUCTION)

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:
ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). DIFFERENTIAL LEVELS AND STATIC GPS OBSERVATIONS DETERMINED ELEVATIONS. THE NATIONAL GEODETIC SURVEY (NGS) DATASHEET ELEVATION AT THE NGS BENCHMARK WAS USED:

STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GIRARD STREET HEMET, CA 92544
TEL (951) 652-4454 FAX (951) 766-8942
E-MAIL BFOX@HBCGCZAD.COM

PREPARED UNDER THE SUPERVISION OF:

BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA

PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ STAFF ENGINEER DATE: _____
RECOMMENDED BY: _____ PRINCIPAL ENGINEER DATE: _____
APPROVED BY: _____ CITY ENGINEER DATE: _____

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
SECTIONS/DETAIL SHEET

SHEET 12 OF 13 SHEETS
FILE NO:

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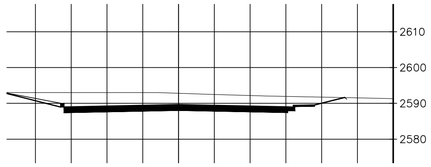

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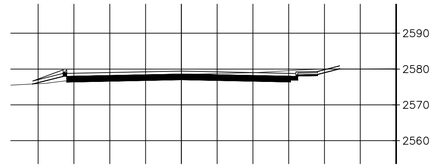

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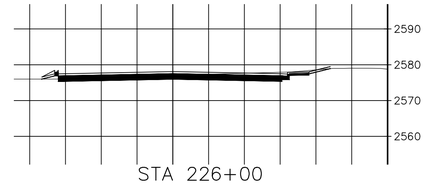

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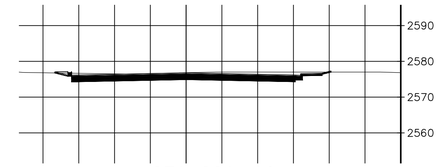

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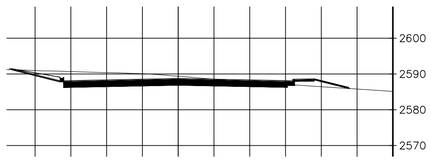

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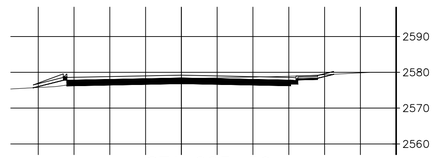

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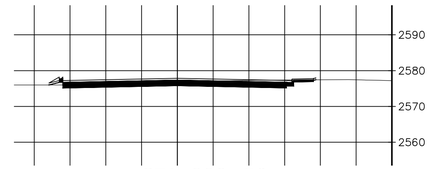

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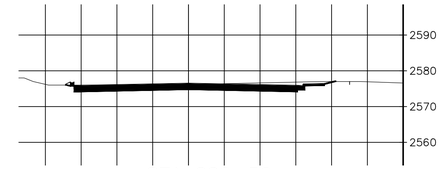

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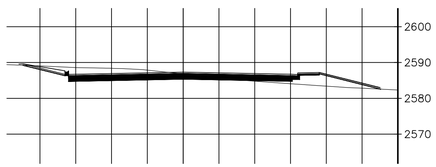

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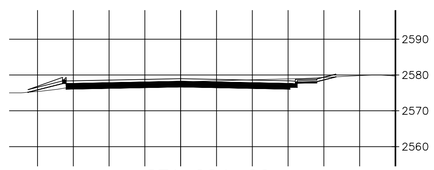

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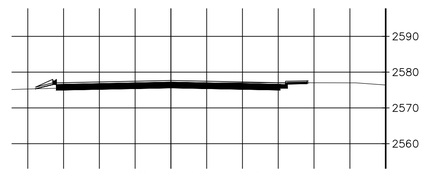

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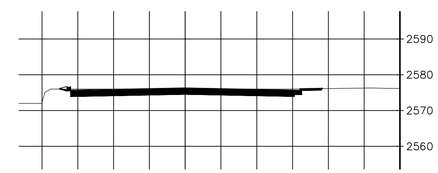

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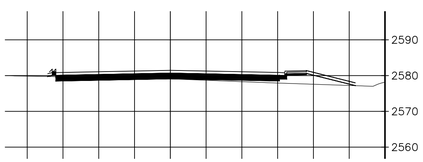

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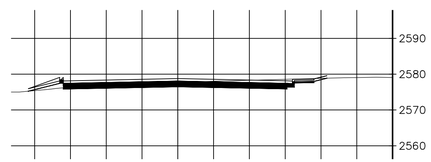

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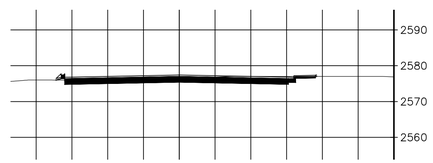
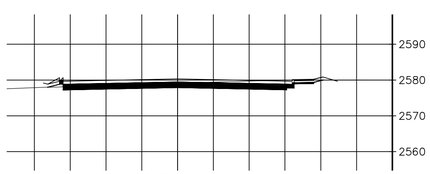


STA 227+50

SCALE: 1"= 20'



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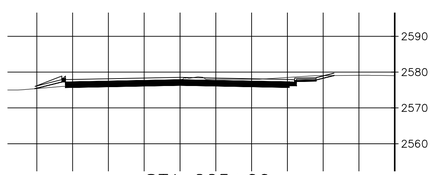

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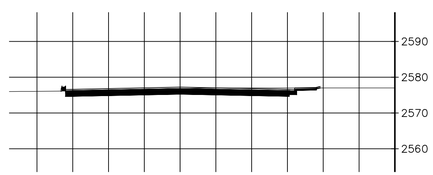

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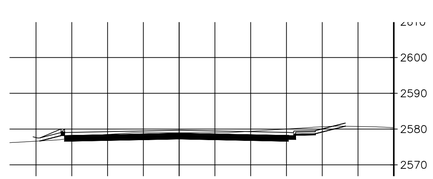

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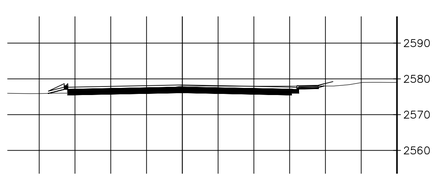

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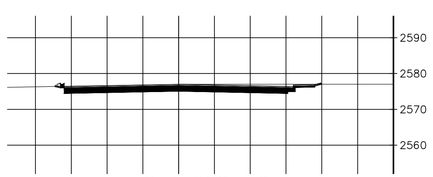

STA 228+50

	CONSTRUCTION NOTES	QUANTITY ESTIMATES
1	PROTECT IN PLACE.	–
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.	23,064 FT^2
3	COLDMILL EXISTING AC PAVEMENT (2").	23,064 FT^2
4	CONSTRUCT XX" HMA (1/2 INCH TYPE A PG–64–10) OVER XX" CLASS AB OVER COMPACTED SUBGRADE.	153,749 FT^2
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).	153,749 FT^2
6	CONSTRUCT TYPE A–8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201.	1,622 FT.
7	CONSTRUCT CURB RAMP {CASE PER PLAN} PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	2 EA.
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.	8,829 FT^2
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
10	REMOVE EXISTING CURB AND GUTTER.	3,338 FT.
11	CONSTRUCT AC DIKE TO 8" PER RIVERSIDE COUNTY STANDARD NO. 212.	2,457 FT.
12	REMOVE PCC SW.	–
13	CONSTRUCT TYPE D (8–INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.	–
14	EXISTING 36" ø CONCRETE PIPE.	1 EA
15	MATCH EXISTING SIDEWALK.	–
16	MATCH EXISTING ASPHALT CONCRETE.	–
17	GRIND AND CAP EXISTING ASPALT CONCRETE.	23,064 FT^2
18	PROTECT IN PLACE CURRENT SEWER LINE.	1 EA
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.	1 EA
20	PROPOSED STORM DRAIN STRUCTURE.	1 EA
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
22	CONSTRUCT DOUBLE STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.	3 EA
23	MATCH TO EXISTING CURB AND GUTTER.	–
24	EXISTING HEADWALL.	2 EA
25	EXISTING 60" ø CONCRETE PIPE.	2 EA

97% SUBMITTAL (NOT FOR CONSTRUCTION)

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:
ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). DIFFERENTIAL LEVELS AND STATIC GPS OBSERVATIONS DETERMINED ELEVATIONS. THE NATIONAL GEODETIC SURVEY (NGS) DATASHEET ELEVATION AT THE NGS BENCHMARK WAS USED:

STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I–10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GIRARD STREET HEMET, CA 92544
TEL. (951) 652–4454 FAX (951) 766–8942
E–MAIL BFOX@MBCOZAD.COM

PREPARED UNDER THE SUPERVISION OF:

BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX No. 57264 CIVIL STATE OF CALIFORNIA

PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT — CALIFORNIA —
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER

RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER

APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
SECTIONS/DETAIL SHEET

SHEET 13 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG

APPENDIX B

Jurisdictional Delineation

Jurisdictional Delineation Report

City of Beaumont – 2nd Street Improvement

JURISDICTIONAL DELINEATION REPORT

2nd STREET IMPROVEMENT
RIVERSIDE COUNTY, BEAUMONT, CALIFORNIA

Prepared For:

City of Beaumont, California (Permittee/Applicant)
Beaumont Civic Center
550 E. 6th Street
Beaumont, CA 92223

Prepared By:

SEARL BIOLOGICAL SERVICES

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Hemet, California 92544
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September 26, 2022

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1.0 EXECUTIVE SUMMARY

The purpose of this Jurisdictional Delineation Report (JD) was to identify areas that potentially meet the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) as Waters of the United States (WOTUS) pursuant to Section 404 of the Clean Water Act (33 USC 1344); Regional Water Quality Control Board (RWQCB) as Waters of the State (WOS) pursuant to Section 401 of the Clean Water Act and State Porter-Cologne Water Quality Control Act; and California Department of Fish and Wildlife (CDFW) as jurisdictional streambed and riparian habitat pursuant to Sections 1600 et seq. (CDFW 1600) of the California Fish and Game Code (CFG Code) for the City of Beaumont's (City) proposed 2nd Street Improvement project (Project).

Searl Biological Services (SBS) conducted the above field assessments in July 2020 prior to being in receipt of the Project's grading footprint. Due to this, SBS utilized the 2nd Street Right-of-Way (RW) as a baseline and generated a 100-foot assessment buffer using ESRI ArcGIS (GIS). Potential WOTUS, WOS, and CDFW 1600 were assessed and mapped within the RW and the 100-foot buffer. The Project, RW, and 100-foot buffer area will collectively be referred to as the Assessment Area herein.

The Assessment Area was located in Beaumont, Riverside County, California, west of the existing 2nd Street between 1st Street and Interstate 10 (I-10) and east of Pennsylvania Avenue, approximately 0.2-mile aerial mile south/southeast of the Pennsylvania Avenue and I-10 intersection. The Project development footprint totaled 4.84-acres.

The Assessment Area was located within the central-eastern portion of the Santa Ana Watershed. SBS personnel identified and mapped four potentially WOTUS/WOS/CDFW 1600 jurisdictional features; this included three ephemeral waterways, including Potrero Creek, and a human-created ditch. No wetland features were observed within the Project.

2.0 INTRODUCTION

The purpose of this Jurisdictional Delineation Report (JD) was to identify areas that potentially meet the regulatory jurisdiction of the USACE as WOTUS; RWQCB as WOS; and CDFW 1600 for the Project.

The Assessment Area was located in Beaumont, Riverside County, California, west of the existing 2nd Street between 1st Street and I-10 and east of Pennsylvania Avenue, approximately 0.2-mile aerial mile south/southeast of the Pennsylvania Avenue and I-10 intersection. *Figure 1 - Regional Map* (Page 2) and *Figure 2 - Vicinity Map* (Page 3) depict the location of the Assessment Area.

The Assessment Area was geographically located in Township 3 South, Range 1 West, Sections 10 and 11 of the Beaumont 7.5 Minute United States Geological Survey (USGS) California Quadrangle as depicted by *Figure 3 - USGS Topographic Map* (Page 4). The Universal Transverse Mercator (UTM) coordinates of the approximate center of the Assessment Area was Zone 11; 503,526-meters East; 3,753,648-meters North; North American Datum 1983 (NAD83).

2.1 Project Description

The City plans to alleviate traffic congestion on 1st Street between Highland Springs and Pennsylvania Avenue by extending 2nd Street, from the westerly boundary of the Home Depot shopping center to the proposed intersection at Pennsylvania Avenue. The improvements include widening and extending 2nd Street approximately 2,518-feet from the current terminus at the westerly boundary of First Street Self and RV Storage, to Pennsylvania Avenue. The Project site is relatively flat with elevations ranging from 2,576 feet to 2,593 feet above mean sea level (msl). This Project also entails widening 2nd Street approximately

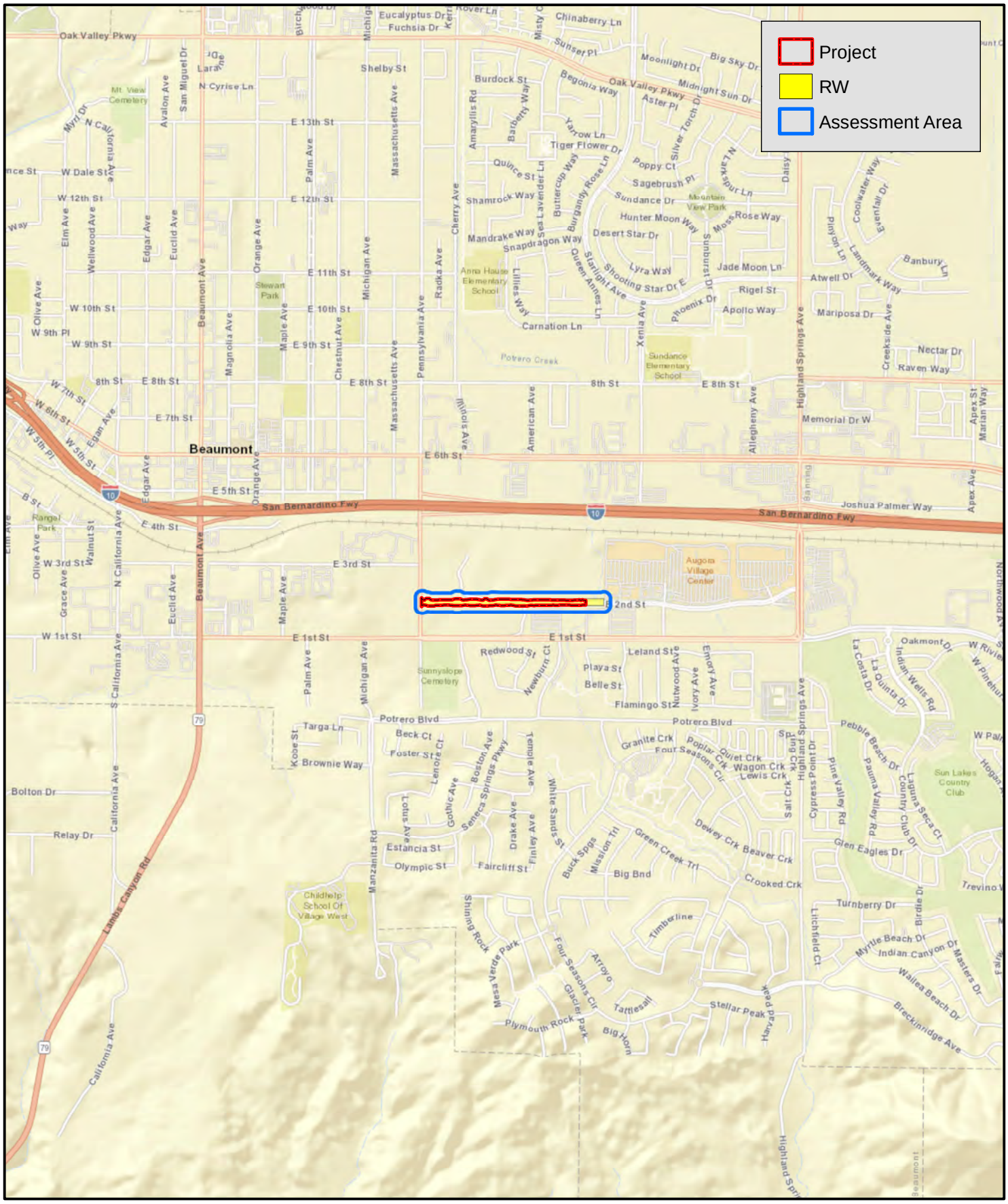
0 10 20 40 Miles

1:750,000

FIGURE 1
Regional Map

DATE: March 21, 2022
COORDINATE SYSTEM: NAD 1983 UTM Zone 11
SOURCE: ESRI World Street Map, Cozad & Fox

PROJECT:
City of Beaumont
2nd Street Improvement



N

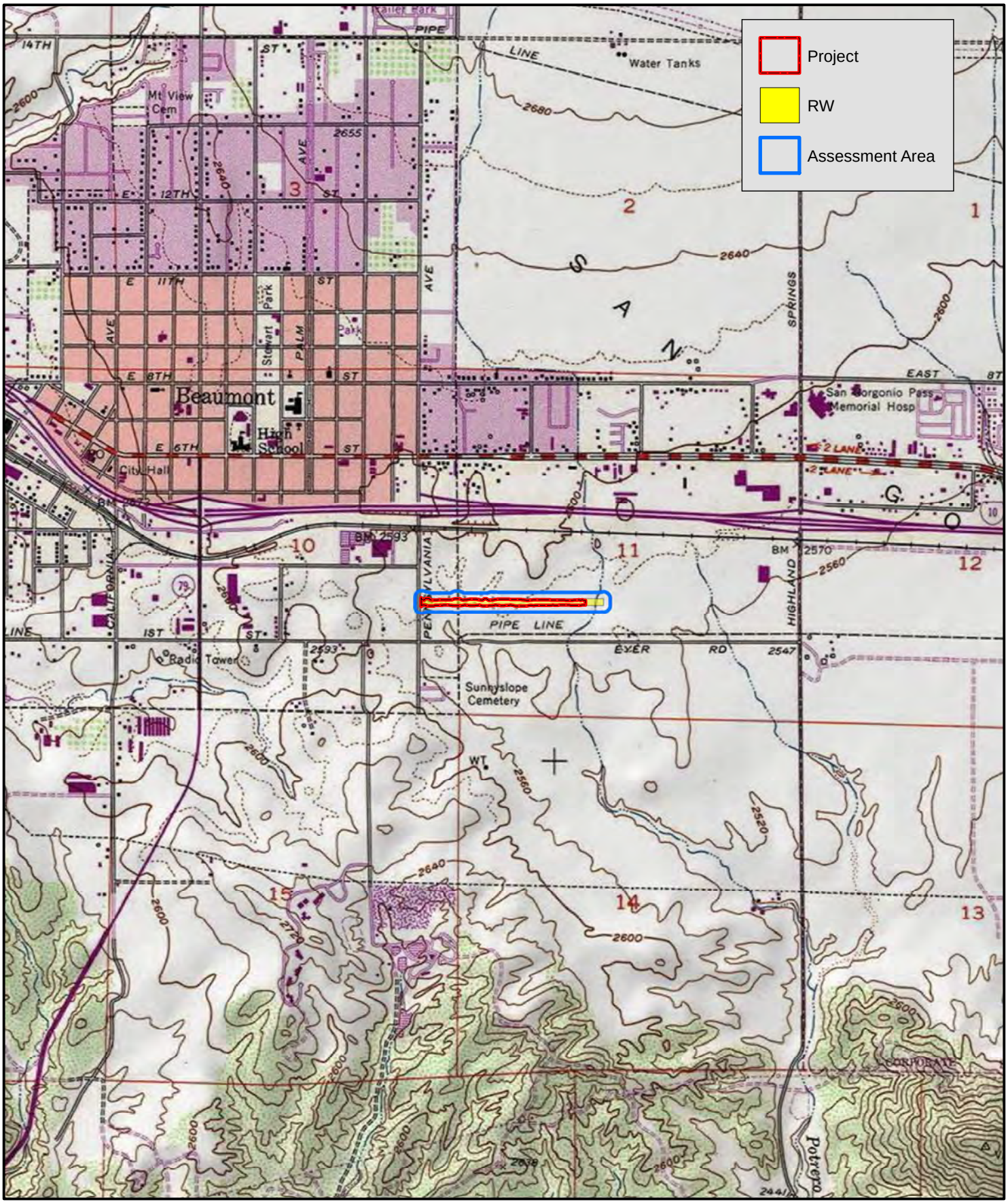
0 0.25 0.5 1 Miles

1:24,000

FIGURE 2
Vicinity Map

DATE: May 30, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Street Map, National Geographic World Map, Cozad & Fox

PROJECT:
City of Beaumont
2nd Street Improvement



N

0 0.25 0.5 1 Miles

1:24,000

FIGURE 3
USGS Topographic Map

DATE: May 30, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI USA Topo Maps, Cozad & Fox

PROJECT:
City of Beaumont
2nd Street Improvement

862-lineal feet and extending it lineal 1,663-feet from its current terminus to the westerly boundary of the Home Depot shopping center. The Project will require construction of a new storm drain facility and may require improvements to existing drainage. The total potential disturbed Project site area is approximately 5.08 acres. The site is bounded by commercial uses on the east end and to southeast and by vacant land on the north, west, and southwest. The General Plan land use and zoning designations of the adjacent land uses are Industrial.

The new roadway will be an extension of the existing E. 2nd Street on the west boundary of the Home Depot shopping center to the proposed intersection at Pennsylvania Avenue. The new roadway and related improvements will provide safe and ready access to the commercial development for both pedestrians and vehicles from the west. The roadway will be designed to cross over the existing drainage culvert and have new culverts for the water crossings on the west side of the Project site. The new culverts will convey the anticipated water flows based on the requirements set forth by the City and the Riverside County Flood Control and Water Conservation District (RCFCWCD). In addition, the Project will have an effective signage and striping plan for the planned phasing as well as any detour plans needed during construction to minimize the effects on local drivers or pedestrians.

There is also a proposed Pennsylvania Avenue Improvement Project that will widen the existing Pennsylvania Avenue from 1st Street to 6th Street (just west of the proposed Project). This improvement project will include new curb and gutter, a raised median, cross culvert extensions, and improvements at 6th Street intersection. The Pennsylvania project lies to the west of the proposed E. 2nd Street Improvement Project. An additional capital works project is currently being planned to expand the Pennsylvania Avenue interchange including a new westbound on-ramp and eastbound off-ramp to the I-10 Freeway just south of the site. These improvements depend on Caltrans and timing has not yet been determined.

2nd Street is classified as a major roadway in the City's General Plan Mobility Element. The proposed Project will build within the existing right-of-way for a major roadway; however, this Project will be an interim improvement built to secondary roadway standards. The proposed road cross section allows the south-half to meet the curb alignment for a Major (38') while the north-half will need to be widened in the future (at developer's expense) to complete the Major section – this future improvement is not included as part of this proposed Project. The interim condition is essentially a secondary road but shifted from centerline.

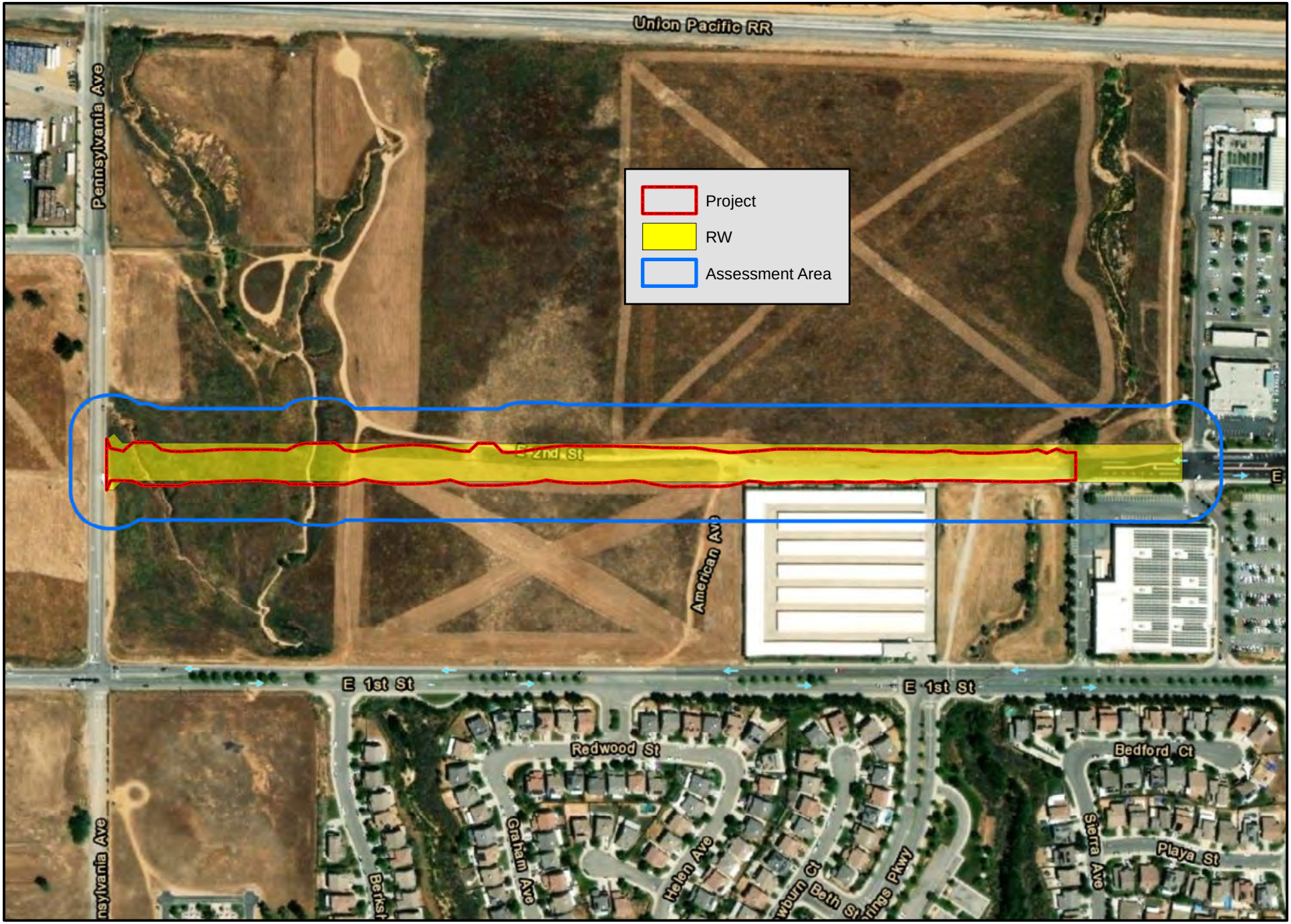
The site plan is attached in Appendix A.

2.2 Project Setting

The Project area (i.e., grading footprint) was based on an AutoCAD file prepared by the Project's civil engineer Cozad & Fox that was converted for GIS use by SBS. According to the AutoCAD file, the grading associated with the Project will total 5.08-acres (221,274.37-square feet [SqFt]) with a total length of 2,518.03-linear feet.

SBS conducted the field assessment in July 2020 prior to being in receipt of the Project's grading footprint. Due to this, SBS utilized the 2nd Street RW (6.44-acres) as a baseline and generated a 100-foot assessment buffer (20.52-acres) using GIS.

Figure 4 – Project Area/Assessment Area (Page 6) depicts the above-described areas. The Project site plan is attached in Appendix A.



N

0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 4
Project Area/
Assessment Area

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement

2.2.1 Watershed Location

The Assessment Area was located within the central-eastern portion of the Santa Ana Watershed (HUC6 180702) within the following sub-watersheds: northern portion of the San Jacinto Watershed (HUC8 18070202), in the northern portion of the Middle San Jacinto River Watershed (HUC10 1807020202), in the northern portion of the Potrero Creek Watershed (HUC12 180702020201). *Figure 5 – Watershed Location* (Page 8) depicts the Property's location within each of these Hydrologic Units.

2.2.2 Soils

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (United States Department of Agriculture Natural Resources Conservation Service, 2021), the Assessment Area consisted of five soil series as depicted by *Figure 6 – NRCS Soils* (Page 9). A brief description, as described by the NRCS, is presented below. Acreages are provided in *Table 1 – NRCS Soils* (below). No hydric, clay, or saline-alkali soils series were present on the Project.

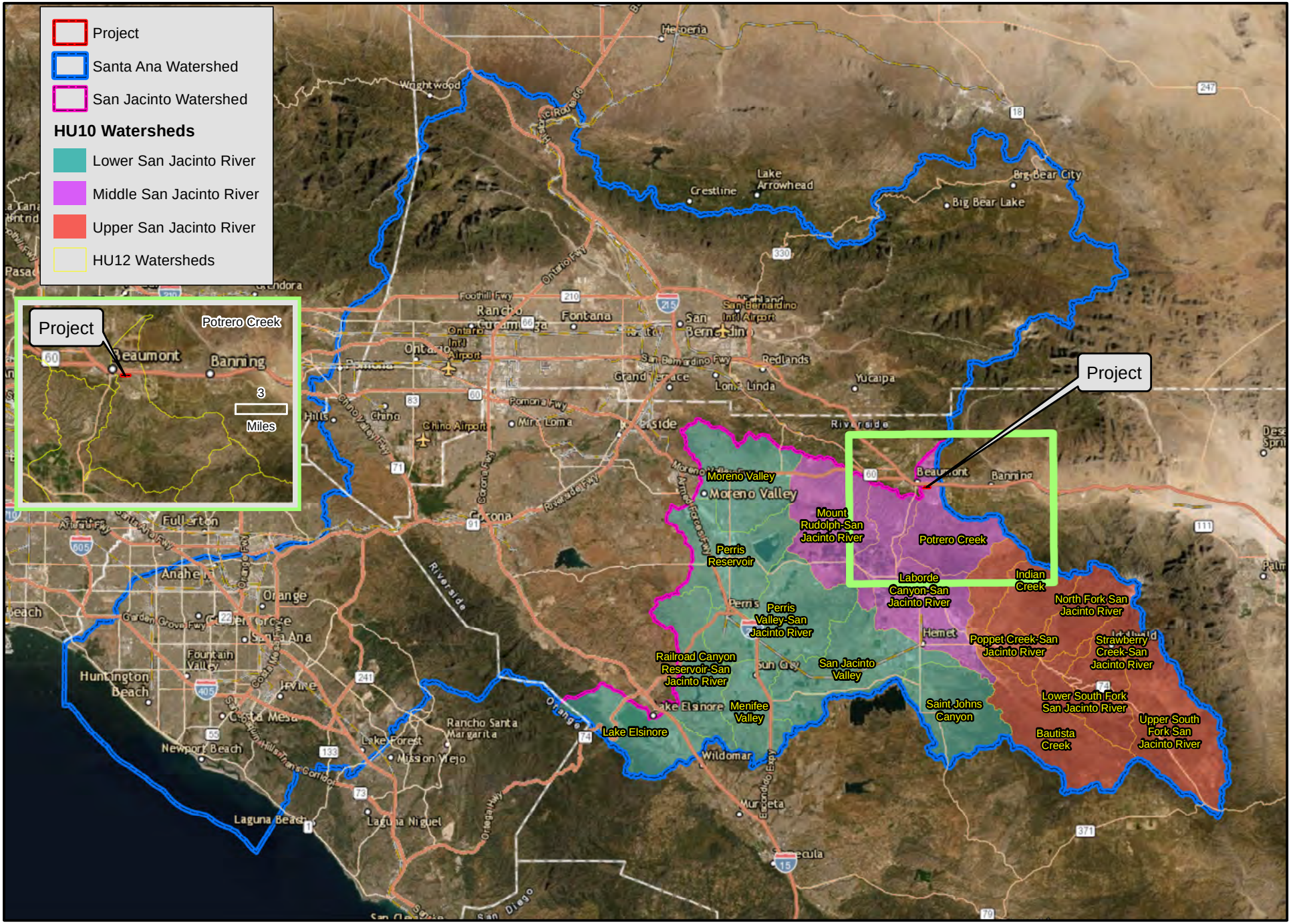
- **Greenfield sandy loam, 2 to 8 percent slopes, eroded (GyC2)**: A well-drained alluvium soil derived from granite. The depth to the restrictive feature and water table is more than 80-inches. The frequency of ponding, according to the NRCS, is none.
- **Ramona sandy loam, 2 to 5 percent slopes, eroded (RaB2)**: A well-drained alluvium soil derived from granite. The depth to the restrictive feature and water table is more than 80-inches. The frequency of ponding, according to the NRCS, is none.
- **Ramona sandy loam, 0 to 5 percent slopes, severely eroded (RaB3)**: RaB3 was also a well-drained alluvium soil derived from granite with identical features to RaB2. The frequency of ponding, according to the NRCS, is none.
- **Ramona sandy loam, 5 to 8 percent slopes, severely eroded (RaC3)**: RaC3 was also a well-drained alluvium soil derived from granite with identical features to RaB2 and RaB3. The frequency of ponding, according to the NRCS, is none.
- **Terrace escarpments (TeG)**: Consists of variable alluvium that typically occurs on steep terraced slopes.

Table 1 – NRCS Soils

SOIL	PROJECT ACRES	RW ACRES	ASSESSMENT AREA
GyC2	0.34	1.07	3.49
RaB2	1.85	2.26	7.20
RaB3	0.84	0.90	2.85
RaC3	1.65	1.80	5.78
TeG	0.40	0.41	1.20
TOTAL	**5.08**	**6.44**	**20.52**

2.2.3 Topography

The Assessment Area was located in the western end of the San Gorgonio Pass approximately one aerial mile north of the foothills of the San Jacinto Mountains. The San Bernardino Mountains were located approximately 4.0-aerial miles north of the Assessment Area. Topography on the Project was primarily flat with elevation slowly rising from the south to the north. Elevations on the Project ranged from approximately 2,500-feet (762-meters) above mean sea level (msl) to 2,560-feet (780-meters) msl.



N

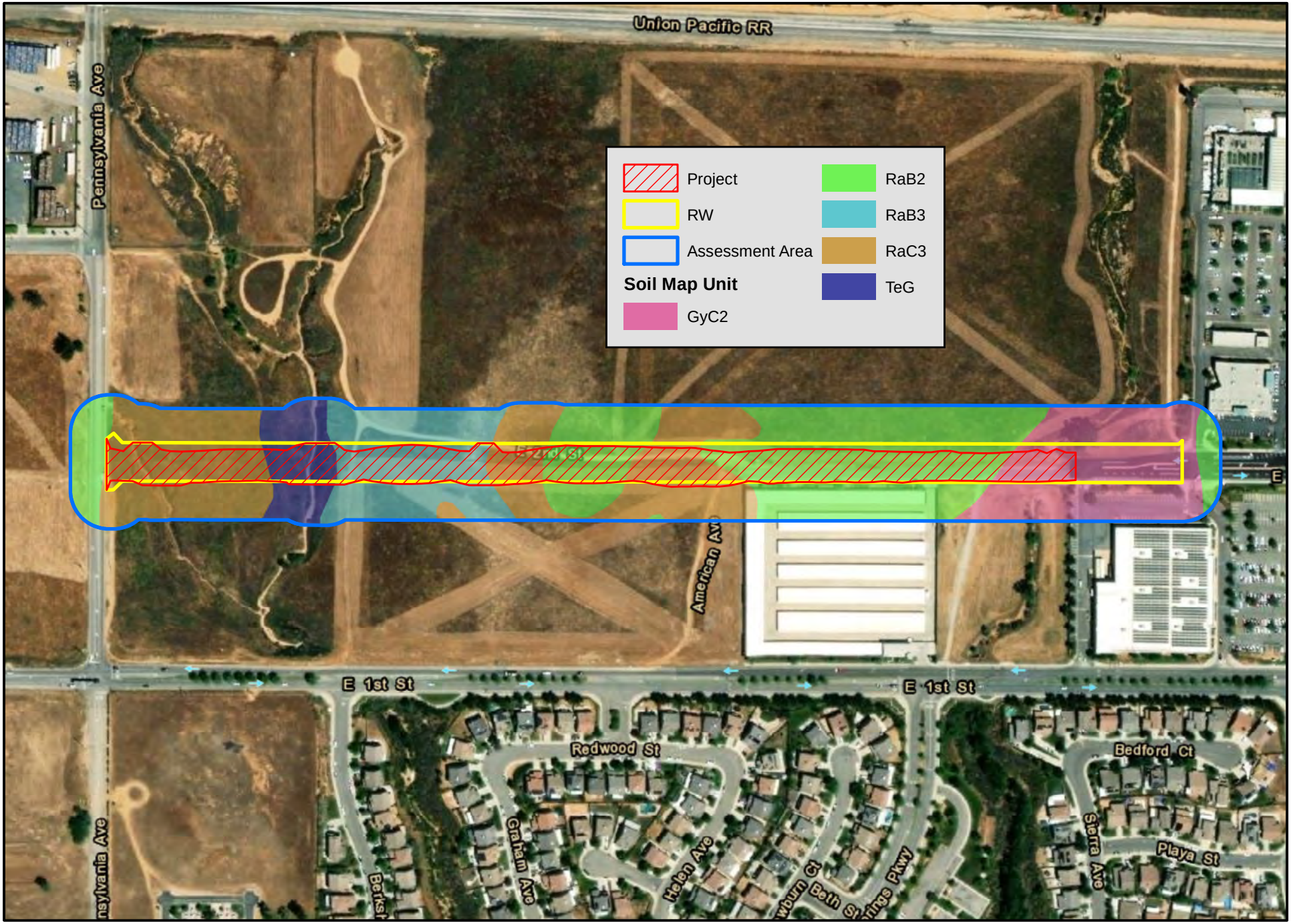
0 10 20 40 Miles

1 in = 10 miles

FIGURE 5
Watershed Location

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, USGS

PROJECT:
City of Beaumont
2nd Street Improvement



N

0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 6
NRCS Soils

DATE: JUne 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, NRCS Web Soil Survey

PROJECT:
City of Beaumont
2nd Street Improvement

2.2.4 Vegetation

Vegetation community classifications are typically conducted in accordance with the California Department of Fish and Wildlife's (CDFW) Vegetation Classification and Mapping Program (VegCAMP) *List of Vegetation Alliances and Associations* (Natural Communities List) (California Department of Fish and Wildlife, 2021) and *A Manual of California Vegetation.* Vegetation communities and land covers are mapped in the field utilizing both paper maps (i.e., aerial photographs and USGS topographic maps) and Collector for ArcGIS installed on a smart phone connected to a SXBlue II + GNSS submeter unit and antenna (Collector).

Some land cover types are not classified in the above-referenced sources (i.e., developed, disturbed, ornamental); therefore, each land cover is designated with a common name for the purpose of this report. A brief description of the vegetation communities/land covers present on the Project is presented below. Acreages are provided in *Table 2 – Vegetation Communities/Land Covers* (Page 11). The distribution of vegetation communities and land covers on the Project are depicted on *Figure 7 – Vegetation Communities/Land Covers* (Page 12).

- **Developed**: This land cover consisted of developed areas and included commercial centers in the eastern end, asphalt/developed portions of 2nd Street, a self-storage facility, and the asphalt/developed portions of Pennsylvania Avenue.
- **Disturbed Willow Scrub**: The disturbed willow scrub was present in two small patches within 100-feet of the RW. The disturbed willow scrub downstream of 2nd Street was present within Potrero Creek and included a mix of sparsely distributed willow species, which included narrow-leaved willow [sandbar willow] (*Salix exigua*), arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), and red willow (*Salix laevigata*). Mule fat (*Baccharis salicifolia* subsp. *salicifolia*), a common riparian associated shrub, was also present. Although the riparian plant diversity was high, species richness was low throughout the area. The habitat was also mixed with several non-native trees, such as Chinese elm (*Ulmus parvifolia*), Shamel ash (*Fraxinus uhdei*), and tree-of-heaven (*Ailanthus altissima*). Saltcedar (*Tamarix ramosissima*), an invasive species, was also present. The presence and abundance of non-natives was the disturbance factor within the land cover.

  The disturbed willow scrub in the northeast corner within 100-feet of the RW was present within a human-created ditch. According to Google Earth, the commercial center, including the drainage ditch, to the east began construction in late 2005/early 2006. Most of the ditch was earthen with a few concrete trapezoid aprons. The human-created ditch supported only a few, scattered black willow and generally lacked an understory though a few mule fat were present. Most of the ditch consisted of non-native, weedy vegetation. Trash was prevalent throughout the ditch and was likely the result of being located adjacent to a commercial parking lot. The downstream terminus of the ditch was near 2nd Street. A large, vertical drainpipe was present at the terminus where ephemeral flow entered the underground drainage system.

- **Ruderal**: The dominant land cover within 100-feet of the RW was ruderal habitat that primarily consisted of non-native, weedy vegetation such as red brome (*Bromus rubens*), ripgut grass (*Bromus diandrus*) slender wild oat (*Avena barbata*), and wall barley (*Hordeum murinum*) dominant. Some native upland vegetation was present, with the majority present on the banks of the two ephemeral washes in the western portion and included interior goldenbush (*Ericameria linearifolia*) and California buckwheat (*Eriogonum fasciculatum*).

Table 2 – Vegetation Communities/Land Covers

COMMON NAME/VEGCAMP COMMUNITY	PROJECT ACRES	RW ACRES	ASSESSMENT AREA
Developed No corresponding VegCAMP Alliance	0.77	1.25	3.97
Disturbed Willow Scrub VegCAMP Alliance 61.209.00 Sandbar willow thickets VegCAMP Semi-Natural Alliance 42.027.00 Wild oats and annual brome grasslands VegCAMP Semi-Natural Alliance 79.100.00 Eucalyptus–tree of heaven–black locust groves	0	0	0.09
Ruderal VegCAMP Semi-Natural Alliance 42.027.00 Wild oats and annual brome grasslands	4.31	5.19	16.46
TOTAL	**5.08**	**6.44**	**20.52**

3.0 REGULATORY SETTING

3.1 U.S. Army Corps of Engineers

3.1.1 Non-Wetland Waters of the United States

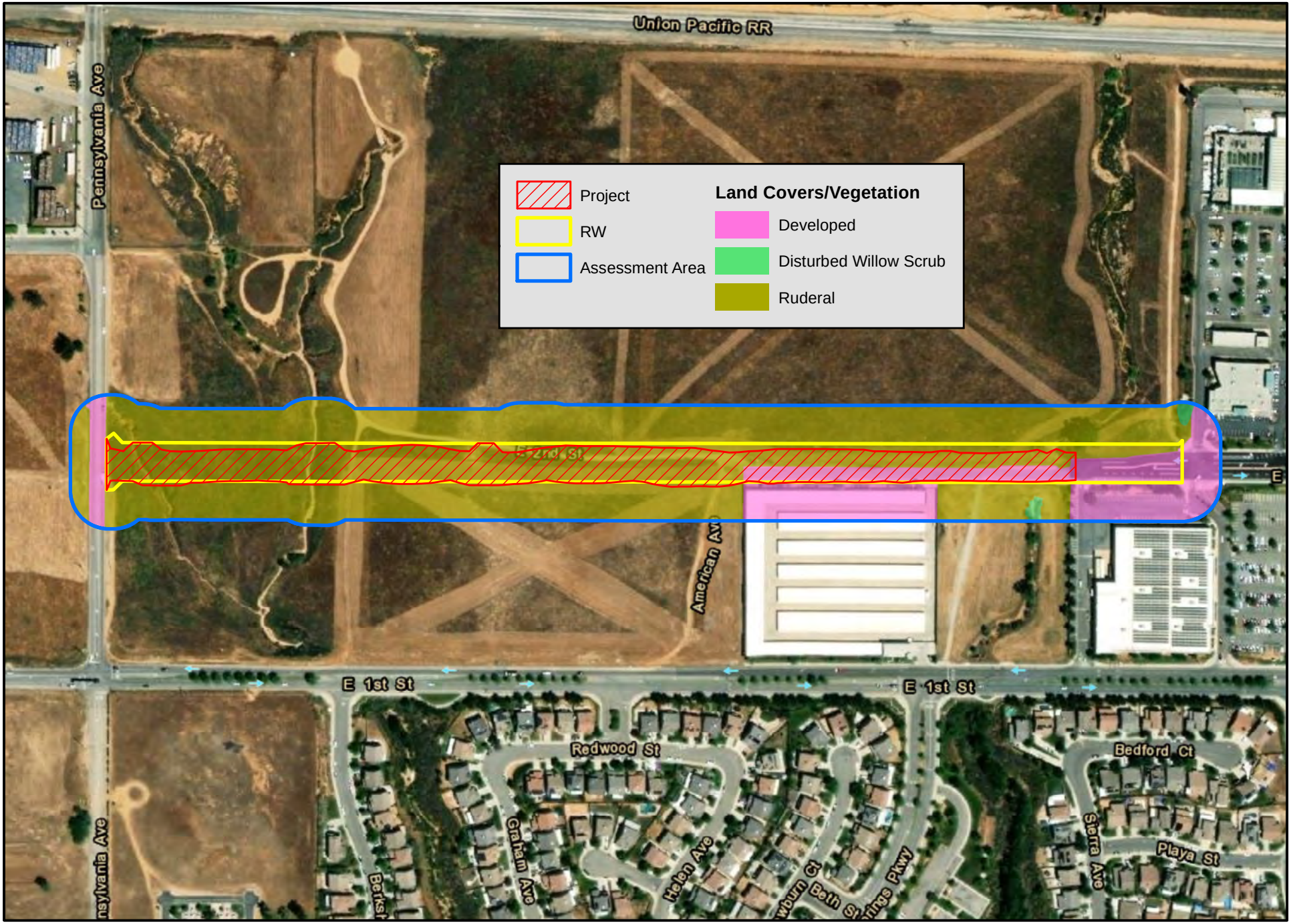
The USACE defines non-wetland WOTUS in the Arid West Region by determining the ordinary high-water mark (OHWM) in stream channels. The OHWM is defined in 33 CFR 328.3(e) as:

> *"…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses 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."*

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WOTUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

3.1.2 Wetland Waters of the United States

According to routine delineation procedure within the *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U. S. Army Corps of Engineers, 2008), three indicators are used to classify an area as a wetland under the jurisdiction of the USACE: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soil saturation, at least seasonally (wetland hydrology). The 2020 USACE National Wetland Plant List was used to determine the indicator status of the examined vegetation by the following indicator



N

0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 7
Land Covers

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement

status categories: Upland (UPL), Facultative Upland (FACU), Facultative (FAC), Facultative Wetland (FACW), and Obligate Wetland (OBL).

Additionally, SBS evaluated sources of water, potential connections, and distances to traditional navigable waters (TNWs), and other factors that affect whether waters qualify as WOTUS under current regulations. Due to recent efforts by the USACE to replace the Clean Water Rule with the pre-existing regulations and guidance, specific attention was dedicated during the survey to any features where jurisdictional status would be affected by the regulatory changes.

3.2 Regional Water Quality Control Board

3.2.1 Waters of the State

The State Water Resources Control Board (SWRCB) has formally implemented the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Board, 2019), which provides a wetland definition, framework for determining if a wetland is a water of the State, and wetland delineation procedures. The SWRCB defines an area as a wetland if, under normal circumstances:

(i) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;

(ii) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and

(iii) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's *Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State* (State Water Resources Control Board, 2020), states that WOTUS and WOS should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland. The SWRCB Procedures only apply to wetlands, and they do not include updated definitions or delineation methods for non-wetland aquatic features.

The limits of WOS, as defined under the Porter-Cologne Act (California Water Code section 13000 et seq.) (PCA), were determined by first examining the topography and morphology to identify those features with an OHWM. In the absence of USACE 404 jurisdiction, and thus the absence of RWQCB 401 jurisdiction, PCA jurisdiction/WOS is generally coterminous with CDFW's jurisdiction.

3.3 California Department of Fish and Wildlife

3.3.1 California Department of Fish and Wildlife Streams and Riparian Habitat

The CFG Code states that CDFW regulates activities which

> *"will substantially divert, obstruct or change the natural flow or bed, channel or bank of any river, stream, or lake designated by the Department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit, or will use material from the streambeds."*

CDFW is charged with the authority through provisions of the CFG Code Sections 1600 et seq. to issue agreements for any alteration of rivers, streams, or lakes where fish and wildlife resources may be adversely affected through modification or removal of support resources (vegetation, diversion of water, modification of riparian communities, etc.).

Streams are generally defined by the presence of bed and banks, channels, shorelines, and similar features. CDFW has discretion to assert jurisdiction over riparian communities associated with streams and waterbodies, as well as isolated waterbodies.

4.0 METHODS

4.1 Office Review

Prior to initiating the JD field assessment, SBS conducted a review and analysis of the Beaumont 7.5 Minute USGS California Quadrangle, historic aerial photography from Historic Aerials online (Historic Aerials by Netronline, 2021) and Google Earth, and the U. S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI). SBS also utilized as the primary baseline source, site-specific topographic data obtained from the Project's engineer Cozad & Fox.

4.1.1 Assessing Potentially Jurisdictional Features

Potentially jurisdictional areas were assessed following the guidance described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (U. S. Army Corps of Engineers, 2008), and guidance provided in CFG Code Sections 1600 et seq. Other resources utilized included the *Munsell Soil Color Book* (Munsell Color (firm), 2009), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar & McColley, 2008), *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis & Lichvar, 2010), *Field Indicators of Hydric Soils in the United States* (United States Department of Agriculture, Natural Resources Conservation Service, 2018), and the *Arid West 2018 Regional Wetland Plant List* (U.S. Army Corps of Engineers, 2018).

4.2 Field Assessment

Biologists Tim Searl and Arthur Davenport conducted the JD field assessment following the guidelines described in the sources above on July 20, 2020 with a follow-up survey conducted by Tim Searl and field technician Garrett Fox on July 29, 2020. Potentially jurisdictional features were mapped in the field with Collector[1]. The Collector data collection was setup to record a vertex for every two feet traveled while recording a polyline or a polygon feature which was dependent on the width of the feature. Any feature ≤ to three feet in width, or lacking a discernable bed and bank (i.e., erosional gullies) or riparian vegetation, the centerline was mapped as a polyline and given a mean width. The feature was then calculated and depicted in ArcGIS by utilizing the Buffer tool to represent the mean width. Culvert locations were also recorded in the field with Collector with the Buffer tool in ArcGIS utilized to calculate the width.

5.0 RESULTS

5.1 Office Review

5.1.1 Site History

A georeferenced historic aerial photograph from April 16, 1966 was purchased from Netronline. Google Earth images were reviewed from 1985 to 2021 with images downloaded and georeferenced by SBS from October 2003, January 2006, and June 2009. The overall result of the historical analysis indicates that the Project has remained in a relatively similar condition for over 50 years, and residential/commercial development has increased in the vicinity of the Project.

[1] Horizontal accuracy of the GPS during data collection ranged from 30 to 60 centimeters (1-2 feet).

April 1966

In 1966 the Project and its immediate vicinity was similar to the current conditions though the primary difference was no development was present. The three ephemeral washes were present; however, Potrero Creek in the eastern end followed a more north/south alignment and was located a bit further east from the Project. The upland areas in the vicinity were likely utilized for dryland agriculture. Pennsylvania Avenue and 1st Street to the south were unimproved, dirt roads at the time. *Figure 8 – 1966 Aerial Photograph* (Page 16) depicts the Project and the immediate surrounding area.

October 2003

The conditions in 2003 were similar to those in 1966. Potrero Creek appeared wider and veered southwest near the Project. Pennsylvania Avenue and 1st Street were still dirt roads and the planted trees along 1st and perpendicular to the Project were also still present. Dryland agriculture was likely still the primary land use in the vicinity. *Figure 9 – 2003 Aerial Photograph* (Page 17) depicts the Project and the immediate surrounding area.

January 2006

The surrounding area had changed by 2006 with the area undergoing active development. Pennsylvania Avenue and 1st Street were paved, and the eastern portion of 2nd Street was under construction. The commercial center to the east and residential area to the south were also under construction. The ephemeral washes were present and appeared relatively unchanged since 2003 within the Project; however, they were being altered to the south by the development. *Figure 10 – 2006 Aerial Photograph* (Page 18) depicts the Project and the immediate surrounding area.

June 2009

By 2009, conditions similar to the existing conditions were present. The commercial center to the east had been completed and the self-storage facility to the south had been built. Potrero Creek now entered the culvert beneath 2nd Street. The residential area to the south was still being constructed and the "avoided" ephemeral washes appeared to support more vegetation. *Figure 11 – 2009 Aerial Photograph* (Page 19) depicts the Project and the immediate surrounding area.

5.1.2 NWI

which utilized an aerial photograph from 1985 as its base to map potential wetland resources, Potrero Creek was mapped as Riverine habitat. The other two ephemeral washes were only mapped downstream of the confluence as Riverine habitat. *Figure 12 – NWI* (Page 20) depicts the NWI data. The *Classification of Wetlands and Deepwater Habitats of the United States* (Federal Geographic Data Committee (FGDC), 2013) defines Riverine as:

- **Riverine**
  "The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts of 0.5 ppt or greater. A channel is "an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water."

BSEARL BIOLOGICAL SERVICES

N

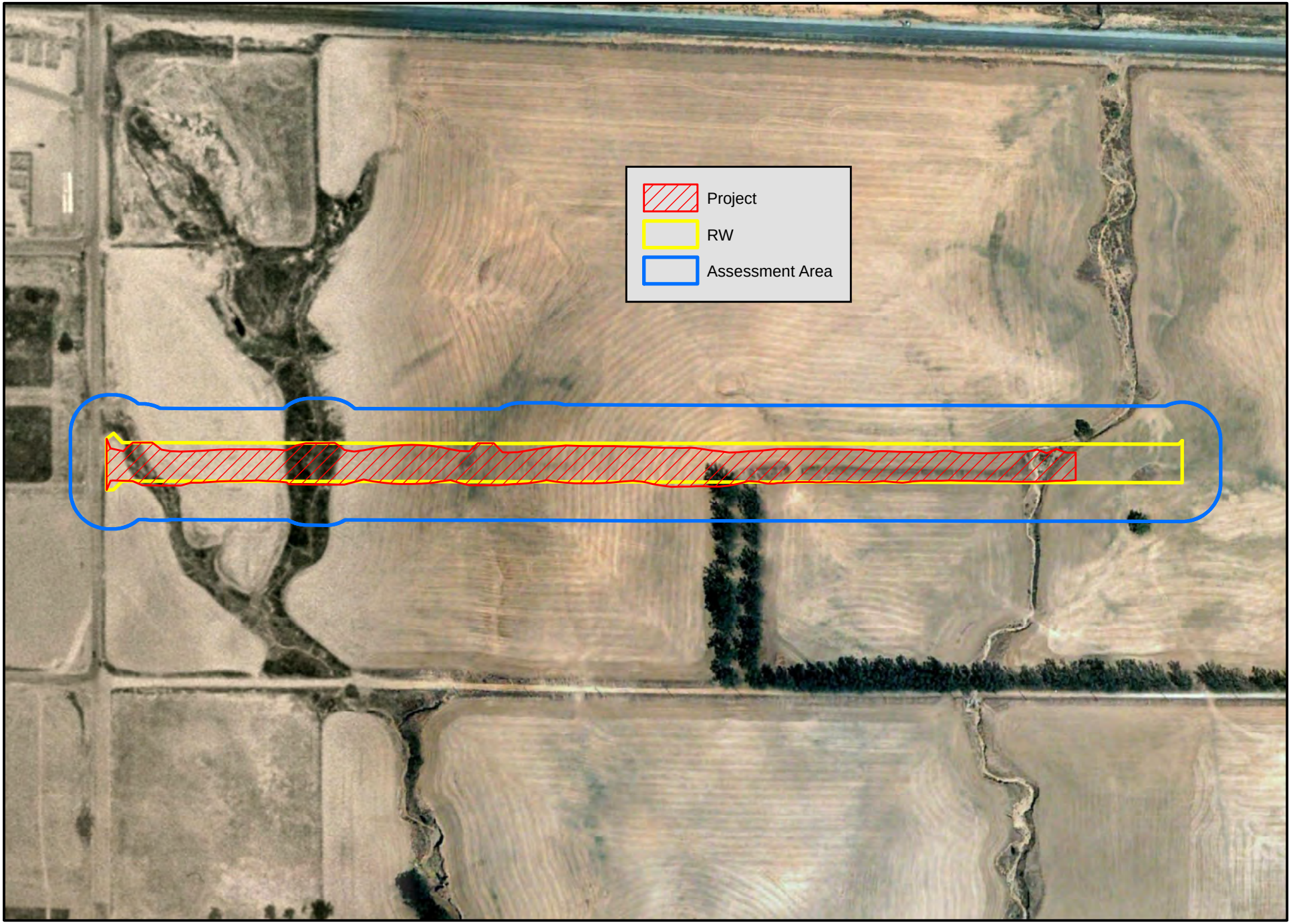
0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 8
1966 Aerial Photograph

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: Netronline Historic Aerials, Cozad & Fox

PROJECT:
City of Beaumont
2nd Street Improvement



N

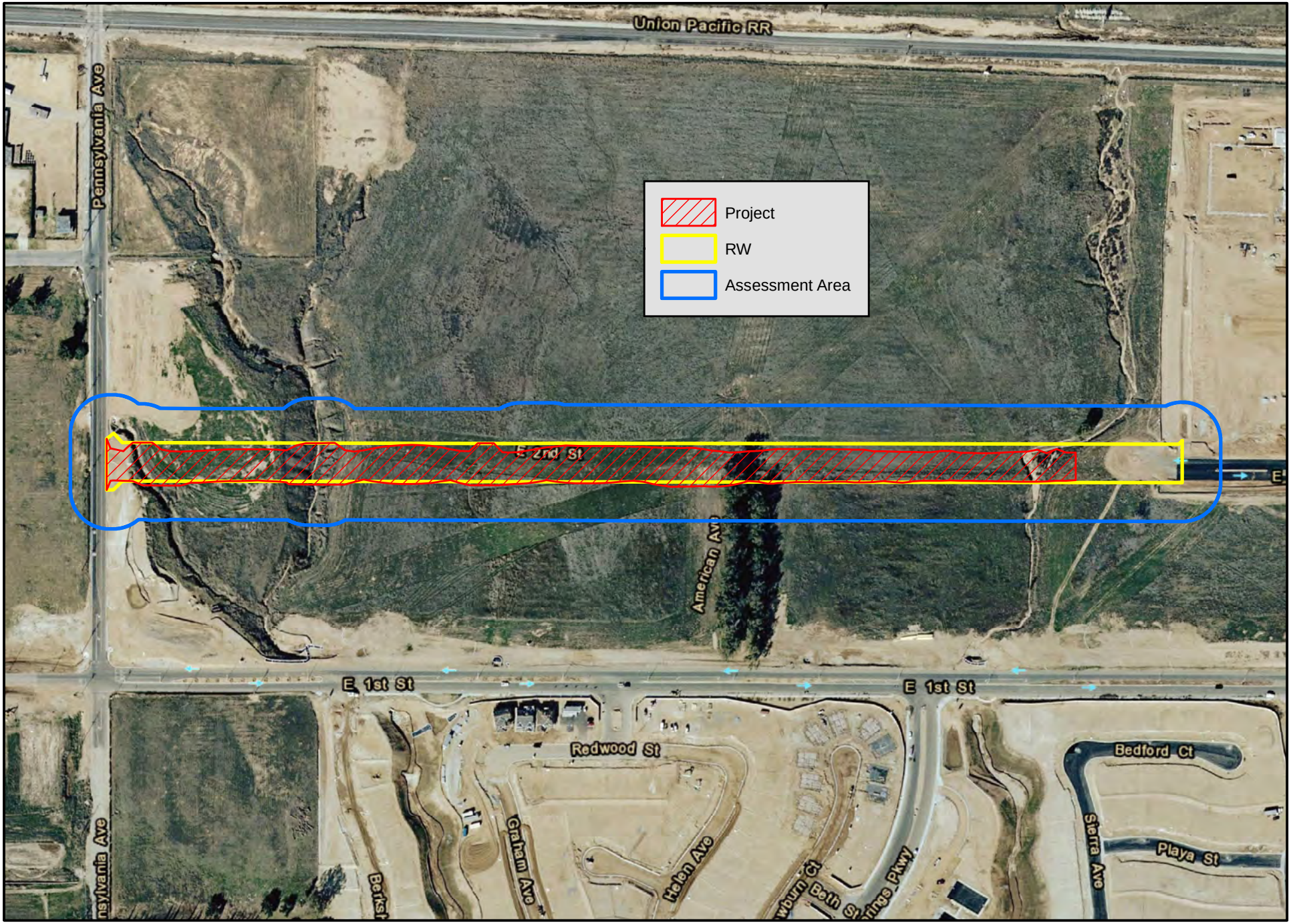
0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 9
2003 Aerial Photograph

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: Google Earth, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement



N

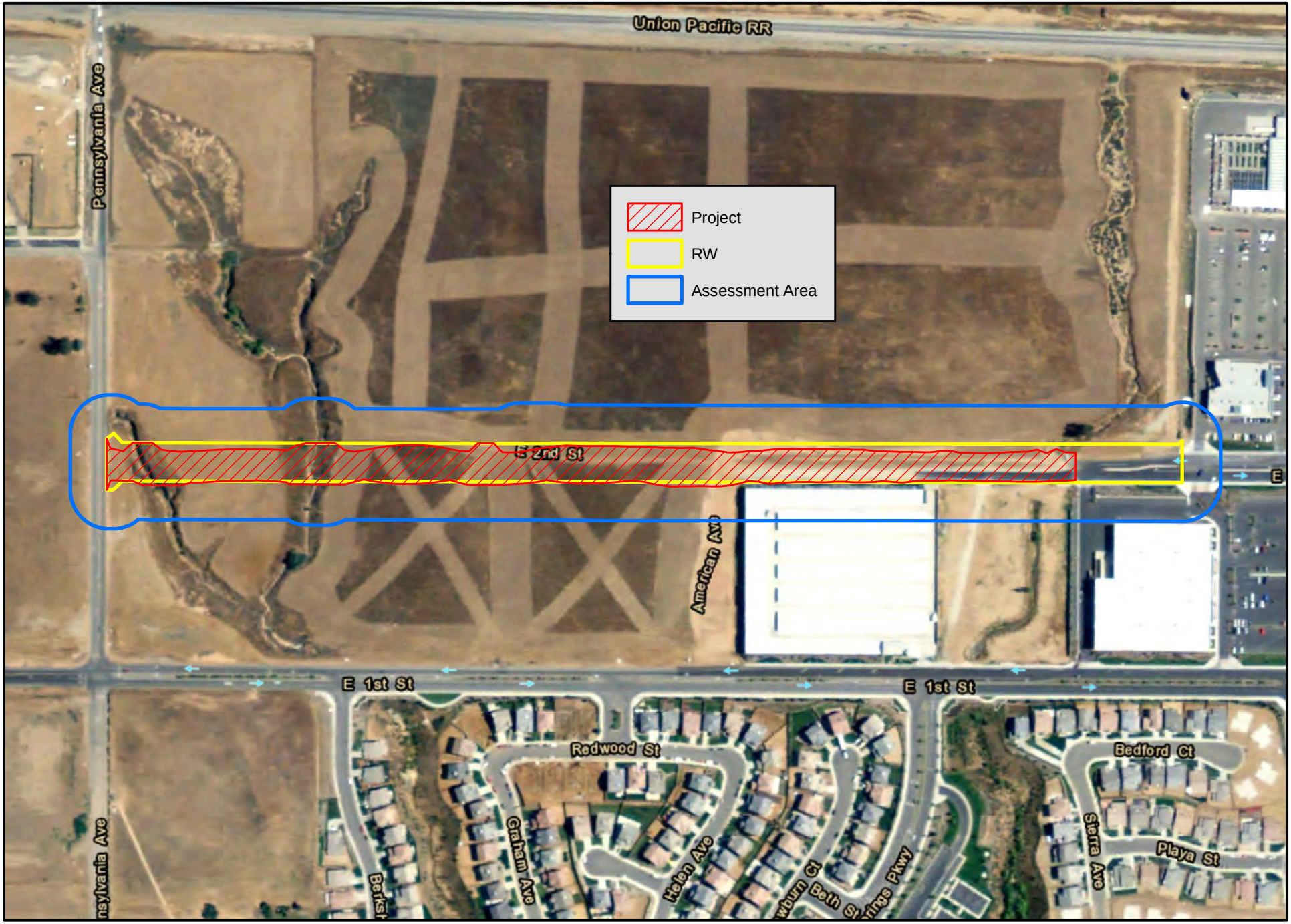
0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 10
2006 Aerial Photograph

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: Google Earth, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement



N

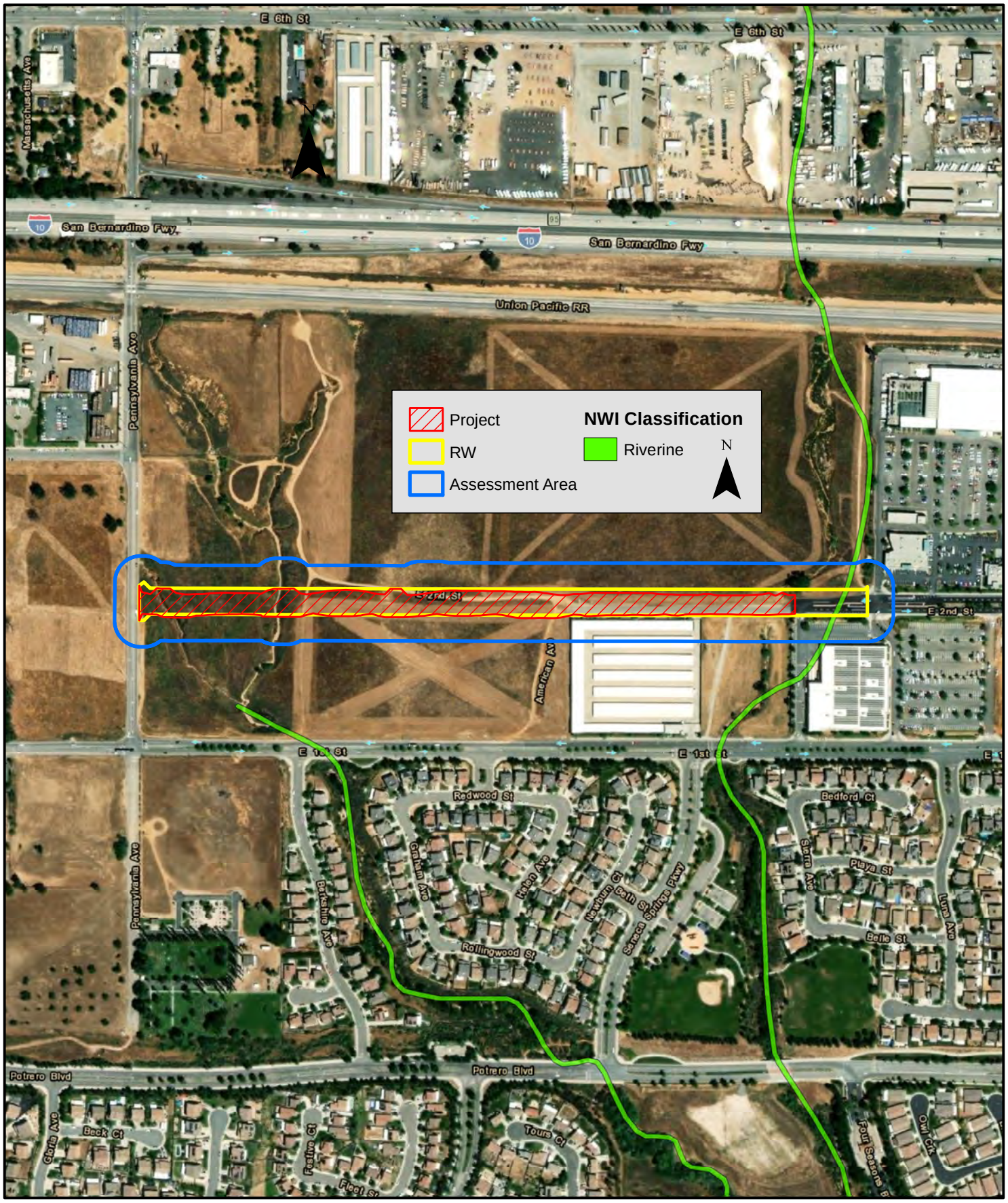
0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 11
2009 Aerial Photograph

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: Google Earth, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement



0 225 450 900 1,350 1,800 Feet

1 inch = 500 feet

FIGURE 12
NWI

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery, Cozad & Fox, USFWS

PROJECT:
City of Beaumont
2nd Street Improvement

5.2 Preliminary Jurisdictional Assessment Results

SBS personnel identified and mapped four potentially jurisdictional features three of which were considered ephemeral waterways (designated as Features A, B, and C) and the fourth was a human-created ditch (designated as Feature D). The human-created ditch was located on private property and had a wrought-iron fence around the perimeter; therefore, this area was mapped by estimating visually using aerial photography and topographic maps, not by walking the potential JD limits like the three ephemeral waterways. The three ephemeral waterways were ultimately tributary to the San Jacinto River. The human-created ditch entered the underground drainage system via a vertical standpipe. No wetland features were observed within the Project.

Table 3 – Potential WOTUS/WOS Jurisdiction (below) provides the linear feet, square feet, and acreage for the potential JD area for USACE WOTUS and RWQCB WOS of each feature. *Table 4 – Potential CDFW 1600 Jurisdiction* (below) provides the square feet and acreage for the potential JD area for CDFW of each feature. *Figure 13 – Potentially Jurisdictional Areas* (Page 22) depicts the location and extent of the potentially jurisdictional features. Appendix B provides representative photographs of the field delineation.

According to the Wetlands Climate Tables (WETs) provided in Appendix C, the location of the Project was not experiencing drought conditions during the July field assessments, and the field work was conducted during normal conditions.

Table 3 – Potential WOTUS/WOS Jurisdiction

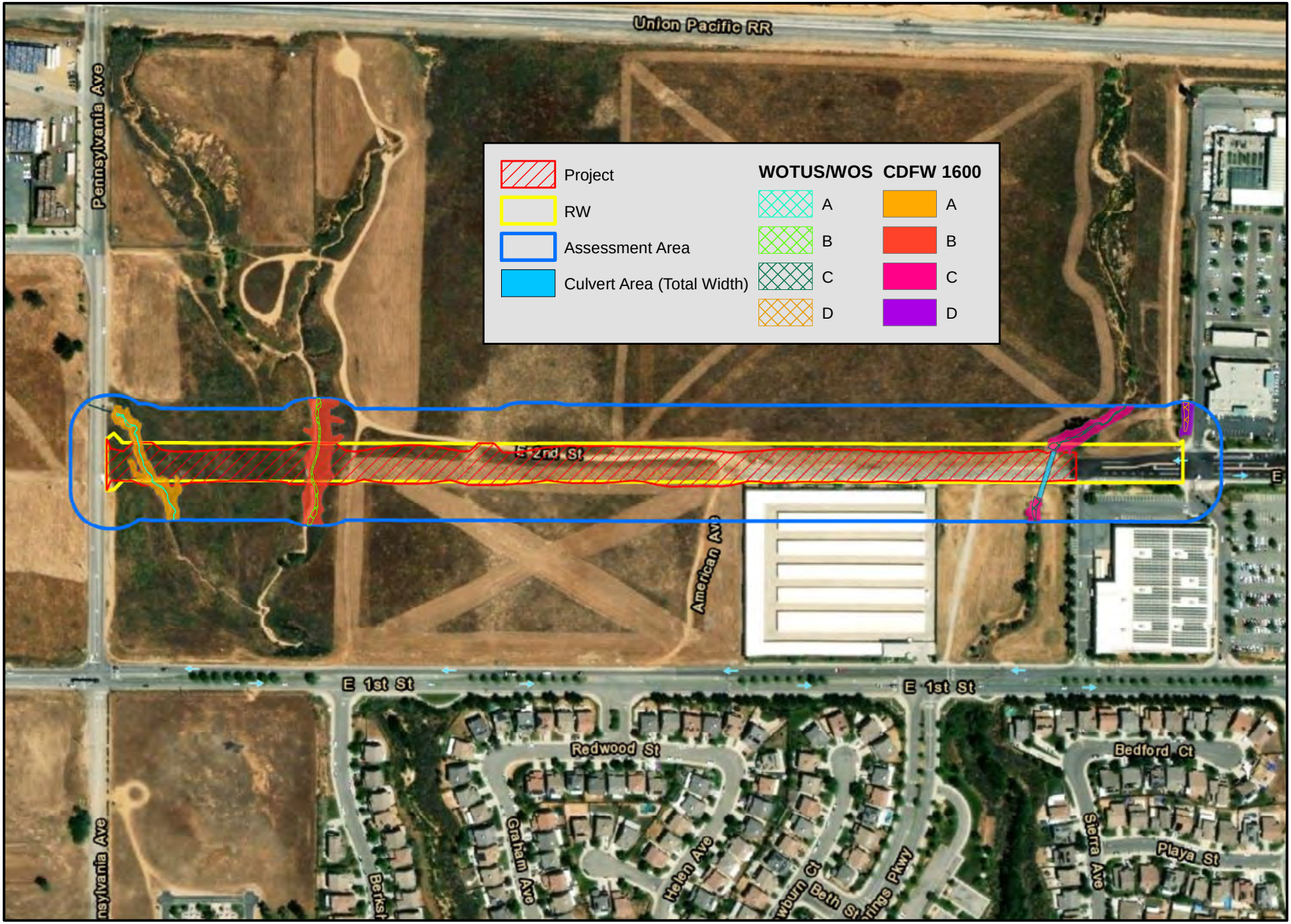
FEATURE ID[2]	PROJECT			RW			ASSESSMENT AREA		
	Linear Feet	SqFt	Acres	Linear Feet	SqFt	Acres	Linear Feet	SqFt	Acres
A	128.87	168.71	0.004	110.51	101.31	0.002	412.28	940.18	0.02
B	111.30	480.61	0.01	102.75	430.67	0.01	338.47	2,179.77	0.05
C	92.62	1,088.34	0.02	104.42	1,482.34	0.03	422.16	3,602.36	0.08
D	0	0	0	0	0	0	75.52	820.82	0.02
TOTAL	**332.79**	**1,737.66**	**0.034**	**317.68**	**2,014.32**	**0.042**	**1,244.64**	**7,543.13**	**0.17**

Table 4 – Potential CDFW 1600 Jurisdiction

FEATURE ID[3]	PROJECT		RW		ASSESSMENT AREA	
	SqFt	Acres	SqFt	Acres	SqFt	Acres
A	6,080.55	0.14	5,105.00	0.12	14,981.94	0.34
B	7,114.76	0.16	6,699.66	0.15	20,829.95	0.48
C	1,232.42	0.03	2,490.33	0.06	12,851.92	0.30
D	0	0	0	0	2,799.29	0.06
TOTAL	**14,427.73**	**0.33**	**14,294.99**	**0.33**	**51,463.09**	**1.17**

[2] The area and length for Features A and C include the existing culverts depicted on Figure 13. Feature A culvert width was 5-feet with an area of 188.20-SqFt (0.004-acre) and Feature C culvert (box culvert with 3 cement culverts beneath 2nd Street) totaled a width of 13-feet with an area of 1,640.98-SqFt (0.04-acre).

[3] The areas for Features A and C include the existing culverts depicted on Figure 13. Feature A culvert width was 5-feet with an area of 188.20-SqFt (0.004-acre) and Feature C culvert (box culvert with 3 cement culverts beneath 2nd Street) totaled a width of 13-feet with an area of 1,640.98-SqFt (0.04-acre).



N

0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 13
Potentially Jurisdictional Areas

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement

5.2.1 Summary of Potentially Jurisdictional Areas

Feature A

This feature was a deeply incised gully and the result of storm runoff from Pennsylvania Avenue. A vertical drainpipe was located in the shoulder on the westside of Pennsylvania Avenue and was connected to a 5-foot-wide cement culvert that discharged on the eastside where Feature A originated. No drainage course was present on the westside indicating that all the flow originated from road runoff during storm events. Feature A primarily consisted of ruderal habitat with non-native, weedy vegetation such as red brome, ripgut grass, slender wild oat, and wall barley dominant. Some native upland vegetation was present, with the majority occurring on the banks, and included interior goldenbush and California buckwheat. No riparian vegetation was present. As noted above, Feature A was a deeply incised gully with an approximate depth of 20-feet from the bed of the channel to the top of the bank at some of its deepest locations. Soils throughout primarily consisted of coarse sandy loams. Feature A converged with Feature B downstream of the Assessment Area. Feature A would be expected to be subject to the jurisdiction of the USACE, RWQCB, and CDFW.

Feature B

Feature B was similar to Feature A in that it was a deeply incised gully and possibly the result of storm runoff from Pennsylvania Avenue and the Union Pacific Railroad (UPR) located to the north. Two drainages converged approximately 110-feet north of the Assessment Area. Feature B primarily consisted of ruderal habitat with non-native, weedy vegetation such as red brome, ripgut grass, slender wild oat, and wall barley dominant. Some native upland vegetation was present, with the majority occurring on the banks, and included interior goldenbush and California buckwheat. No riparian vegetation was present within the Assessment Area; however, a patch of black willow was present to the northwest and a patch of arroyo willow was present to the south. As noted above, Feature B was a deeply incised gully with an approximate depth of 30-feet from the bed of the channel to the top of the bank at some of its deepest locations. Soils throughout primarily consisted of Terrace Escarpments and coarse sandy loams. Feature B would be expected to be subject to the jurisdiction of the USACE, RWQCB, and CDFW.

Feature C (Potrero Creek)

Potrero Creek, a USGS-designated intermittent stream (i.e., blueline), was present in the eastern end of the Assessment Area. The headwaters were located approximately 2.0-miles north according to the USGS Topographic Map. The headwaters were located in an area that has since been developed, and according to aerial photography, enters a series of human-created channels and underground storm drain systems before ultimately discharging from a culvert located beneath I-10 and the UPR approximately 900-feet north of the Assessment Area.

The ephemeral drainage was divided by a box culvert with three cement culverts located under a paved portion of 2nd Street within the Assessment Area. The two outside culverts measured 5-feet in width and the center culvert measured 3-feet. The entirety of Potrero Creek upstream of 2nd Street consisted of upland habitat with a homogenous stand of California buckwheat in the upstream end north of the Assessment Area then transitioned to ruderal habitat with non-native, weedy vegetation such as red brome, ripgut grass, slender wild oat, and wall barley dominant. A single, large blue gum (*Eucalyptus globulus*) was present near 2nd Street. Some native upland vegetation was present, with the majority occurring on the banks, and consisted almost entirely of California buckwheat. Feature C consisted of a narrow channel with an approximate depth of 10-feet from the bed of the channel to the top of the bank at some of its deepest locations north of 2nd Street. Soils throughout primarily consisted of coarse sandy loams.

Potrero Creek downstream of 2nd Street included a mix of sparsely distributed willow species mixed with several non-native trees as described in Subsection 2.2.4 of this report. Feature C would be expected to be subject to the jurisdiction of the USACE, RWQCB, and CDFW.

Feature D

Feature D was a human-created earthen ditch with a few concrete trapezoid aprons that totaled approximately 560-feet in length including the areas outside of the Assessment Area. The feature received surface flow from the commercial center to the east via drainage grates near the curb. Feature D was also irrigated via pop-up sprinklers. The feature supported a few, scattered black willow and generally lacked an understory though a few mule fat were present. Most of the ditch consisted of non-native, weedy vegetation. Trash was prevalent throughout the ditch and was likely the result of being located adjacent to a commercial parking lot. The downstream terminus of the ditch was near 2nd Street. A large, vertical drainpipe was present at the terminus where ephemeral flow entered the underground drainage system. Feature D may be subject to the jurisdiction of the USACE and would be expected to be subject to the jurisdiction of the RWQCB and CDFW.

5.3 Impact Assessment

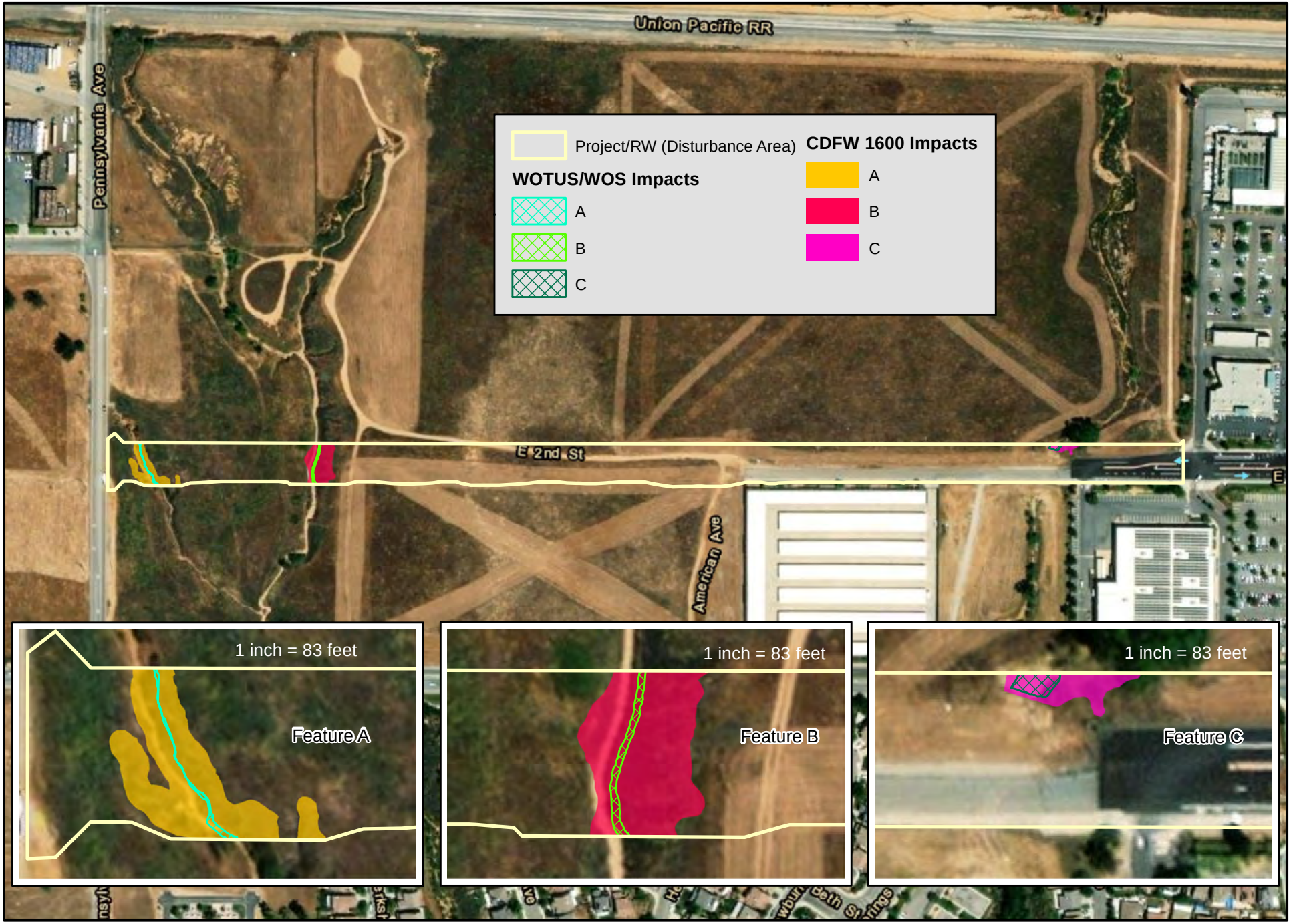
According to the site plan attached in Appendix A, construction of the road will include the installation of new culverts and a headwall in Features A and B. Portions of the Project extend beyond the limits of the RW. Due to this, SBS used GIS to merge the Project and RW to calculate the potential impacts associated. The culverts present in Potrero Creek will remain in place; however, a minor amount of additional grading will occur outside of the existing culvert area in the north end. *Table 5 – Potential Riparian/Riverine Areas Impacts* (below) provides the potential impact area and excludes the existing culvert in Feature C as this is proposed to remain in place as-is. *Figure 14 – Potentially Jurisdictional Area Impacts* (Page 25) depicts a detailed view of the three features within the merged Disturbance Area.

USACE, RWQCB, and CDFW will be consulted on the impacts to the potentially jurisdictional waterbodies. Mitigation through an approved mitigation bank, in-lieu fee program, and/or permittee responsible conservation easement program is anticipated and will be detailed in a Determination of Biologically Equivalent or Superior Preservation (DBESP) report since the Project was located within the jurisdiction of the Western Riverside County MSHCP.

Table 5 – Potential Jurisdictional Impacts

FEATURE ID[4]	DISTURBANCE AREA				
	WOTUS/WOS			CDFW 1600	
	Linear Feet	SqFt	Acres	SqFt	Acres
A	129.33	168.92	0.004	6,083.32	0.14
B	111.73	482.17	0.01	7,136.45	0.16
C	15.31	358.18	0.008	1,366.18	0.03
D	0	0	0	0	0
TOTAL	**256.37**	**1,009.27**	**0.02**	**14,585.95**	**0.33**

[4] The area for Feature C excludes the culvert within the Disturbance Area as this will remain in-place.



N

0 150 300 600 900 1,200 Feet

1 inch = 333 feet

FIGURE 14
Potentially Jurisdictional Area Impacts

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement

6.0 CONCLUSION

Based on the assessment conducted by SBS and the currently proposed Project footprint, a total of 0.02-acre of WOTUS/WOS and 0.33-acre of CDFW 1600 jurisdiction were potentially present within the Disturbance Area. The Project is anticipated to permanently impact the area identified within Features A and B for the installation of the proposed culverts which totaled 0.015-acre (651.08-SqFt) of WOTUS/WOS and 0.30-acre (13,219.77-SqFt) of CDFW 1600 jurisdiction. Based on the site plan, the impact area associated with Feature C may only result in a temporary impact given no hardscape appears proposed in that location, only grading. That area totaled 0.008-acre (358.18-SqFt) of WOTUS/WOS and 0.03-acre (1,366.18-SqFt) of CDFW 1600 jurisdiction.

Upon consulting with the appropriate agencies, the Project will undergo the permitting process and impacts will be mitigated based on agency requirements. This notwithstanding, the findings and conclusions presented in this report, including the location and extent of waterbodies potentially subject to regulatory jurisdiction, represent the professional opinion of SBS personnel. These findings and conclusions should be considered preliminary until verified by the appropriate regulatory agencies. This report will be submitted to the City, the project proponent, and the regulatory agencies as part of the CEQA review process.

7.0 REFERENCES

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8.0 CERTIFICATION

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

Signed: Tim Searl _____ Date: September 26, 2022

Tim Searl, Biologist, Searl Biological Services

FIGURE DISCLAIMER

Figures and data are to be used for reference purposes only. Map features are approximate and are not necessarily accurate to surveying or engineering standards. Tim Searl, SBS makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on any of the figures associated with this report.

APPENDIX A

Site Plan

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR
2ND STREET

GRADING NOTE:

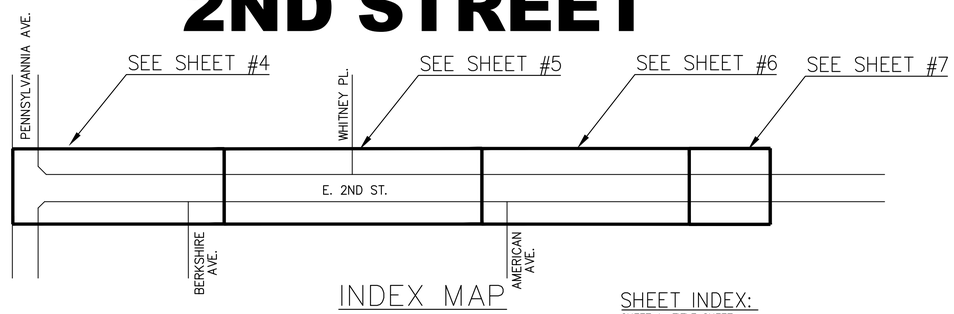
1. ALL GRADING SHALL CONFORM TO THE CITY OF BEAUMONT ORDINANCES, CURRENT ADOPTED CALIFORNIA BUILDING CODE, APPENDIX J, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, "LATEST EDITION" AND RECOMMENDATIONS OF THE SOILS ENGINEER.
2. NO WORK SHALL COMMENCED UNTIL ALL PERMITS HAVE BEEN OBTAINED FROM THE CITY AND OTHER APPROPRIATE AGENCIES.
3. ALL PROPERTY CORNERS SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION /GRADING.
4. DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE AND EROSION CONTROL SHOULD BE PROVIDED TD PREVENT PONDING WATER, SEDIMENT TRANSPORTATION, AND DAMAGE TO ADJACENT PROPERTIES.
5. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS.
6. NO FILL SHALL BE PLACED ON EXITING GROUND THAT HAS NOT BEEN CLEARED OF WEEDS. DEBRIS, TOPSOIL AND OTHER DELETERIOUS MATERIAL.
7. MAXIMUM CUT AND FILL SLOPE = 2: 1 EXCEPT WHERE SPECIFICALLY APPROVED OTHERWISE.
8. STABILITY CALCULATIONS WITH A FACTOR OF SAFETY OF AT LEAST ONE AND FIVE TENTHS (1.5) SHALL BE SUBMITTED BY A SOILS ENGINEER TO THE PUBLIC WORKS DEPARTMENT.
9. PROVIDE A 5' WIDE BY 1' HIGH BERM OR EQUIVALENT ALONG THE TOP OF ALL FILL SLOPES OVER 5' HIGH.
10. PROVIDE A BROW DITCH DESIGNED TO HANDLE 100 YR STORM FLOWS ALONG THE TOP OF CUT SLOPES.
11. MINIMUM BUILDING PAD AND DRAINAGE SWALE SLOPE SHALL BE 1% IF CUT OR FILL IS LESS THAN 10'. 2% IF CUT OR FILL IS GREATER THAN 10'. DRAINAGE SWALES SHALL BE A MINIMUM OF 0.2' DEEP AND BE CONSTRUCTED A MINIMUM OF 2' FROM THE TOE OF CUT OR FILL SLOPES.
12. NO OBSTRUCTION OF FLOODPLAIN OR NATURAL WATER COURSES SHALL BE PERMITTED.
13. ALL EXISTING DRAINAGE COURSES ON THE PROJECT SITE SHALL CONTINUE TO FUNCTION, ESPECIALLY DURING STORM CONDITIONS, PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT ADJOINING PROPERTIES DURING GRADING OPERATIONS.
14. FINISH GRADE SHALL BE SLOPED AWAY FROM ALL EXTERIOR WALLS AT NOT LESS THAN 5% FOR A MINIMUM OF 10'.
15. CUT AND FILL SLOPES EQUAL TO OR GREATER THAN 3' IN VERTICAL HEIGHT SHALL BE PLANTED WITH GRASS OR GROUND COVER TO PROTECT THE SLOPE FROM EROSION AND INSTABILITY IN ACCORDANCE WITH CITY OF BEAUMONT REQUIREMENTS PRIOR TO FINAL GRADING INSPECTION
16. ALL SLOPES REQUIRED TO BE PLANTED SHALL BE PLANTED WITH APPROVED GROUND COVER AT 12" ON CENTER. SLOPES EXCEEDING 15' IN VERTICAL HEIGHT SHALL BE PLANTED WITH APPROVED TREES SPACED NOT TO EXCEED 20' ON CENTER OR SHRUBS NOT TO EXCEED 10' OR A COMBINATION OF SHRUBS AND TREES NOT TO EXCEED 15' IN ADDITION TO A GRASS MIX GROUND COVER. SLOPES EQUAL TO OR GREATER THAN 4' IN VERTICAL HEIGHT SHALL BE PROVIDED WITH AN IN-GROUND IRRIGATION SYSTEM COMPLETE WITH AN APPROPRIATE BACKFLOW PREVENTION DEVICE PER CITY REQUIREMENTS.
17. IF STEEP SLOPING TERRAIN OCCURS UPON WHICH FILL IS TO BE PLACED. IT MUST BE CLEARED, KEYED, AND BENCHED INTO FIRM NATURAL SOIL FOR FULL SUPPORT. PREPARATION SHALL BF APPROVED BY A SUITABLY QUALIFIED AND REGISTERED GEOTECHNICAL ENGINEER OR GEOLOGIST PRIOR TO PLACEMENT OF FILL MATERIAL.
18. ALL GRADING SHALL BE CONTINUOUSLY OBSERVED BY A COMPETENT SOILS ENGINEER WHO SHALL VERIFY THAT ALL FILL HAS BEEN PROPERLY PLACED AND WHO SHALL SUBMIT A FINAL COMPACTION REPORT FOR ALL FILLS OVER 1' DEEP.
19. A FINAL GEOTECHNICAL REPORT OF COMPLETION OF THE ROUGH GRADING, STATING SUBSTANTIAL CONFORMANCE WITH THE APPROVED GRADING PLAN, SHALL BE SUBMITTED TO THE BUILDING AND SAFETY DEPARTMENT AND THE PUBLIC WORKS DEPARTMENT PRIOR TO REQUESTING INSPECTION AND ISSUANCE OF BUILDING PERMITS. CERTIFICATIONS SHALL INCLUDE LINE GRADES, ELEVATIONS, AND LOCATION OF CUT/FILL SLOPES.
20. A LAND SURVEYOR OR ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING SHALL SUBMIT A PAD CERTIFICATION FOR ALL PADS. THE ELEVATION WITH RESPECT TO MEAN SEA LEVEL SHALL BE GIVEN. IF AN ELEVATION WITH RESPECT TO ADJACENT GROUND SURFACE IS REQUIRED, THE ACTUAL DISTANCE ABOVE THE ADJACENT GROUND SHALL BE GIVEN.
21. A GEOTECHNICAL ENGINEER OR GEOLOGIST SHALL SUBMIT TO THE BUILDING AND SAFETY
22. DEPARTMENT AND THE PUBLIC WORKS DEPARTMENT A FINAL GEOTECHNICAL REPORT OF COMPLETION OF FINAL GRADING STATING SUBSTANTIAL CONFORMANCE WITH THE APPROVED PLANS FOR ALL GRADING DESIGNATED AS "ENGINEERED GRADING".
23. THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT AT LEAST 24 HOURS IN ADVANCE REQUESTING FINISH LOT GRADE AND DRAINAGE INSPECTION. THIS INSPECTION MUST BE APPROVED PRIOR TO BUILDING PERMIT FINAL INSPECTION FOR EACH LOT.
24. ALL STORM DRAINS, CATCH BASINS, AND STORM WATER RUNOFF STRUCTURES WILL BE PROVIDED WITH ADEQUATE CAPABILITIES TO FILTER AND RETAIN SEDIMENT, GRIT, OIL, AND GREASE TD PREVENT POLLUTION IN STORM WATER RUNOFF IN COMPLIANCE WITH THE CITY OF BEAUMONT'S BEST MANAGEMENT PRACTICES AND BEAUMONT'S DRAINAGE MASTER PLAN FOR STORMWATER AS WELL AS BEST MANAGEMENT PRACTICES IDENTIFIED IN THE CURRENT REPORT OF WASTE DISCHARGE FOR RIVERSIDE COUNTY PERMITTEES.
25. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT TWO DAYS BEFORE DIGGING AT 8-1-1 AND THE FOLLOWING UTILITY OR AGENCIES A MINIMUM OF TWO WORKING DAYS PRIOR TO COMMENCING ANY CONSTRUCTION OR GRADING:

CITY OF BEAUMONT.....(951) 769-8520
AT&T.....(808) 892-0123
SOUTHERN CALIFORNIA GAS COMPANY.....(909) 335-7955
BEAUMONT CHERRY VALLEY WATER DISTRICT.....(951) 845-9581
SOUTHERN CALIFORNIA EDISON.....(800) 409-2365
UNDERGROUND SERVICE ALERT.....(800) 422-4133

26. TRENCHING FOR UTILITIES AND STRUCTURES IS NOT ALLOWED UNTIL A SOIL COMPACTION REPORT IS SUBMITTED TO AND APPROVED BY THE PUBLIC WORKS DEPARTMENT.
27. THE CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, SAFE, CLEAN AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE CITY'S INSPECTOR. THE ADJACENT STREETS SHALL BE KEPT CLEAN OF SEDIMENT, DEBRIS AND OTHER NUISANCES AT ALL TIMES. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY THE CONSTRUCTION.
28. ALL OPERATIONS CONDUCTED ON THE SITE OR ADJACENT THERETO SHALL ADHERE TO THE NOISE ORDINANCE SET FORTH BY THE CITY MUNICIPAL CODE. ALL OPERATIONS SHALL BE LIMITED BY THE NOISE ORDINANCE TO THE LIMIT OF DECIBELS SPECIFIED FOR THE AREA AND TIME PERIOD. CONSTRUCTION ACTIVITIES WILL BE LIMITED TO THE PERIOD BETWEEN 7:00 A.M. AND 6:00 P.M. MONDAY THROUGH FRIDAY.
29. ALL OFF-SITE HAUL ROUTES SHALL BE SUBMITTED BY THE CONTRACTOR TO THE CITY ENGINEER FOR APPROVAL TWO FULL WORKING DAYS PRIOR TO BEGINNING OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEBRIS OR DAMAGE OCCURRING ALONG THE HAUL ROUTE OR ADJACENT STREETS AS A RESULT OF THE GRADING OPERATION.

STREET IMPROVEMENT NOTES:

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, GREENBOOK, LATEST EDITION AND THE RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT IMPROVEMENT STANDARDS AND SPECIFICATIONS, "LATEST EDITION," COUNTY ORDINANCE NO. 461 AND SUBSEQUENT AMENDMENTS.
2. CONTRACTOR SHALL COMPLY WITH THE STATE AND LOCAL SAFETY CODES DURING THE PROGRESS OF WORK.
3. CONSTRUCTION PROJECTS THAT DISTURB MORE THAN ONE ACRE MUST OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT. OWNER/DEVELOPERS ARE REQUIRED TO FILE A NOTICE OF INTENT (NOI) WITH THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) AND COMPLY WITH ALL REQUIREMENTS OF THE BEAUMONT DRAINAGE MANAGEMENT PLAN. BEAUMONT IS CO-PERMITTEE WITH R.CF.C. & W.C.D.
4. CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, SAFE, CLEAN AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE COUNTY'S OR DISTRICT'S INSPECTOR. THE ADJACENT STREETS SHALL BE KEPT CLEAN OF DEBRIS, WITH DUST AND OTHER NUISANCE BEING CONTROLLED AT ALL TIMES. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY HIS CONSTRUCTION. METHOD OF STREET CLEANING SHALL BE DRY SWEEPING OF ALL PAVED AREAS.
5. CONTRACTOR SHALL BE THE RESPONSIBILITY TO INSTALL AND MAINTAIN DURING CONSTRUCTION, REGULATORY GUIDE AND WARNING SIGNS WITHIN THE PROJECT LIMITS AND ITS SURROUNDINGS TO PROVIDE SAFE PASSAGE FOR THE TRAVELING PUBLIC AND WORKERS UNTIL THE FINAL COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE CITY OF BEAUMONT.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEARING OF THE PROPOSED WORK AREA AND RELOCATION COSTS OF ALL EXISTING UTILITIES. THIS INCLUDES UNDERGROUNDING OF EXISTING OVERHEAD LINES ALONG THE PROJECT FRONTAGE AS REQUIRED BY THE CONDITIONS OF APPROVAL. PERMITTEE MUST INFORM CITY OF CONSTRUCTION SCHEDULE AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION AT (951) 769-8520.
7. CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER, CITY OF BEAUMONT, AND THE DEVELOPER'S ENGINEER, HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNERS OR THE DEVELOPER'S ENGINEER.
8. CONTRACTOR SHALL BE THE RESPONSIBILE TO OBTAIN AN ENCROACHMENT PERMIT FOR ALL WORK PERFORMED WITHIN PUBLIC RIGHT-OF-WAY, DEDICATED AND ACCEPTED FOR PUBLIC USE; AND TO BE RESPONSIBLE FOR SATISFACTORY COMPLIANCE FOR ALL CURRENT ENVIRONMENTAL REGULATIONS DURING THE LIFE OF CONSTRUCTION ACTIVITIES FOR THIS PROJECT.



INDEX MAP

250 125 0 250 500 750
SCALE: 1"= 250'

SHEET INDEX:

SHEET 1: TITLE SHEET
SHEET 2: CITY OF BEAUMONT NOTES
SHEET 3: DETAIL SHEET
SHEET 4: STREET PLAN AND PROFILE (STA 205+00 – 212+00)
SHEET 5: STREET PLAN AND PROFILE (STA 212+00 – 220+65)
SHEET 6: STREET PLAN AND PROFILE (STA 220+65 – 229+00)
SHEET 7: STREET PLAN AND PROFILE (STA 229+00 – 230+00)
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SHEET 9: CULVERT CROSSING (CULVERT A)
SHEET 10: CULVERT CROSSING (CULVERT A)
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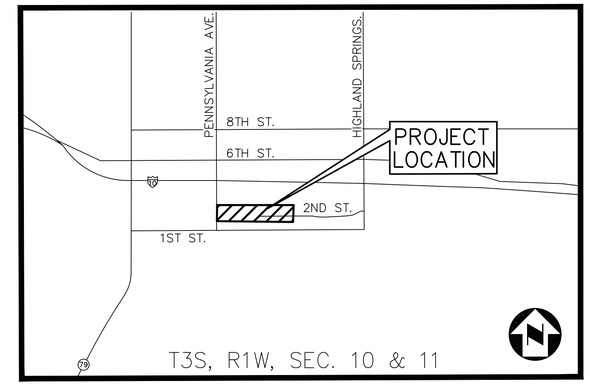
SHEET 12: SECTION SHEET (STA 205+00 – 217+50)
SHEET 13: SECTION SHEET (STA 218+00 – 228+50)

STREET IMPROVEMENT NOTES (CONTINUED):

9. CONTRACTOR MUST NOTIFY THE CITY OF BEAUMONT AT (951) 769-8520 AT LEAST ONE WEEK PRIOR TO CONSTRUCTION.
10. CONTRACTOR MUST PROVIDE CONSTRUCTION SCHEDULE TO THE CITY OF BEAUMONT AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
11. CONTRACTOR MUST CALL UNDERGROUND SERVICE ALERT AT 811 AT LEAST 48 HOURS BEFORE EXCAVATION.
12. CONTRACTOR SHALL BE RESPONSIBLE TO APPLY TO THE RIVERSIDE COUNTY FLOOD CONTROL (RCFC) FOR PERMITS WHEN ANY STORM DRAIN PIPE NEEDS TO BE CONNECTED WITH A RCFC FACILITY AND ADD PERMITEE NUMBER ON THE PLAN.
13. CONTRACTOR SHALL BE RESPONSIBLE TO APPLY TO THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) FOR AN ENCROACHMENT PERMIT FOR ALL WORK PERFORMED WITHIN STATE RIGHT-OF-WAY.
14. CONTRACTOR SHALL BE THE RESPONSIBILITY TO INSTALL AND MAINTAIN ALL CONSTRUCTION, REGULATORY, GUIDE AND WARNING SIGNS WITHIN THE PROJECT LIMITS AND ITS SURROUNDINGS TO PROVIDE SAFE PASSAGE FOR THE TRAVELING PUBLIC AND WORKERS UNTIL THE FINAL COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE CITY. A TRAFFIC CONTROL PLAN MUST BE SUBMITTED WITH APPROVED STREET PLAN FOR REVIEW TO THE PERMITS SECTION OR INSPECTION SECTION (FOR MAP CASES) PRIOR TO OBTAINING AN ENCROACHMENT PERMIT.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ADDITIONAL SIGNS AND MARKINGS NOT INCLUDED IN THE SIGNING AND STRIPING PLAN WITHIN THE PROJECT AREAS, OR ON ROADWAYS ADJACENT TO THE PROJECT BOUNDARIES, UPON THE REQUEST OF THE DIRECTOR OF PUBLIC WORKS OR HIS DESIGNEE TO IMPROVE TRAFFIC SAFETY ON THE ROADS UNDER THE JURISDICTION OF THE DEVELOPER.
16. CONTRACTOR SHALL HAVE GEOTECHNICAL/SOILS ENGINEERING FIRM OBSERVE TRENCHING, BACKFILLING, & SOIL COMPACTION OF ALL UTILITY TRENCHES WITHIN ALL EASEMENTS & ROAD RIGHTS OF WAY. TWO SETS OF COMPACTION REPORTS CERTIFYING THAT WORKS WERE DONE IN CONFORMANCE TO STANDARDS & GEOTECHNICAL REPORT SHALL BE SUBMITTED AFTER EACH UTILITY TRENCH IS COMPLETED & CERTIFIED. COMPACTION REPORT MUST BE SUBMITTED TO THE DEPT. OF PUBLIC WORKS AT LEAST TWO WORKING DAYS BEFORE AGGREGATE BASE MATERIALS ARE PLACED ONSITE.
17. ALL UNDERGROUND FACILITIES, WITH LATERALS, SHALL BE IN PLACE PRIOR TO PAVING THE STREET SECTION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: SEWER, WATER, ELECTRIC, GAS AND STORM DRAIN.
18. ALL STREET SECTIONS ARE TENTATIVE. ADDITIONAL SOIL TESTS SHALL BE TAKEN AFTER ROUGH GRADING TO DETERMINE THE EXACT STREET SECTION REQUIREMENTS. USE R.C.T.D. STANDARD NO. 401 IF EXPANSIVE SOILS ARE ENCOUNTERED.
19. ASPHALTIC EMULSION (FOG SEAL) SHALL BE APPLIED NOT LESS THAN FOURTEEN DAYS FOLLOWING PLACEMENT OF THE ASPHALT SURFACING. FOG SEAL AND PAINT BINDER SHALL BE APPLIED AT A RATE OF 0.05 AND 0.03 GALLON PER SQUARE YARD RESPECTIVELY. ASPHALTIC EMULSION SHALL CONFORM TO SECTIONS 37, 39 AND 94 OF THE STATE STANDARD SPECIFICATIONS.
20. PRIME COAT IS REQUIRED PRIOR TO PAVING ALL GRADES IN EXCESS OF TEN PERCENT.
21. ANY PRIVATE DRAINAGE FACILITIES SHOWN ON THESE PLANS ARE FOR INFORMATION ONLY. BY SIGNING THESE IMPROVEMENT PLANS, NO REVIEW OR APPROVAL OF THESE PRIVATE FACILITIES ARE IMPLIED OR INTENDED BY CITY OF BEAUMONT PUBLIC WORKS DEPT.
22. THE CONTRACTOR SHALL INSTALL STREET NAME SIGNS CONFORMING TO R.C.T.D. STANDARD NO. 816.
23. STREET LIGHTS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED STREET LIGHTING PLAN PER CITY OF BEAUMONT'S APPROVED STREET LIGHTING SPECIFICATIONS.
24. INSTALL STREET TREES IN ACCORDANCE WITH ORDINANCE 461 AND THE COMPREHENSIVE LANDSCAPING GUIDELINES (CHOOSE THREE SPECIES AND NAME THEM HERE).
25. FOR ALL DRIVEWAY RECONSTRUCTION BEYOND RIGHT-OF-WAY, PROOF OF DRIVEWAY OWNER NOTIFICATION IS REQUIRED PRIOR TO CONSTRUCTION.
26. CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE ENGINEER TO INSTALL STREET CENTERLINE MONUMENTS AS REQUIRED BY RIVERSIDE COUNTY ORDINANCE NO. 461. IF CONSTRUCTION CENTERLINE DIFFERS, PROVIDE A TIE TO EXISTING CENTERLINE OF RIGHT-OF-WAY. PRIOR TO ROAD CONSTRUCTION, SURVEY MONUMENTS INCLUDING CENTERLINE MONUMENTS, TIE POINTS, PROPERTY CORNERS AND BENCH MARKS SHALL BE REFERENCED OUT AND CORNER RECORDS FILED WITH THE COUNTY SURVEYOR PURSUANT TO SECTION 8771 OF THE BUSINESS & PROFESSIONAL CODE. SURVEY POINTS DESTROYED DURING CONSTRUCTION SHALL BE RESET, AND A SECOND CORNER RECORD FILED FOR THOSE POINTS PRIOR TO COMPLETION AND ACCEPTANCE OF THE IMPROVEMENTS.



VICINITY MAP
N.T.S.

EARTHWORK QUANTITIES:

CUT	5884 CU. YD.	FACTOR = 1.0	5884 CU. YD.
FILL	9251 CU. YD.	FACTOR = 1.15	10638 CU. YD.
NET (ADJ)	–	-	4754 CU. YD.

LEGEND

PROPOSED AC PAVEMENT
AC PAVEMENT REMOVAL
PROPOSED CONCRETE SIDEWALK
CENTERLINE
RIGHT OF WAY
PROPERTY LINE
OH (EX) OVERHEAD ELECTRIC EDISON
SS (EX) SEWER MAIN LINE
2"G (EX) 2" GAS LINE
W (EX) WATER LINE
EDGE OF DIRT ROAD
POWER POLE
ELECTRICAL VAULT
WATER VALVE
GAS VALVE
SEWER MANHOLE
FIREHYDRANT

DECLARATION OF RESPONSIBLE CHARGE:

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THESE 95-PERCENT DESIGN LEVEL DRAWINGS, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THESE DESIGN OF THIS PROJECT TO DATE AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF THE PROJECT DRAWINGS AND SPECIFICATIONS BY CITY OF BEAUMONT IS CONFINED TO A REVIEW ONLY, AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR THE PROJECT'S DESIGN.

APPROVED: _____

BRIAN D. FOX, P.E., P.L.S. R.C.E. NO. 57264
COZAD AND FOX, INC.

BENCHMARK

BENCHMARK:
ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). DIFFERENTIAL LEVELS AND STATIC GPS OBSERVATIONS DETERMINED ELEVATIONS. THE NATIONAL GEODETIC SURVEY (NGS) DATASHEET ELEVATION AT THE NGS BENCHMARK WAS USED:

STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS SHOWN HEREON ARE BASED ON THE BEARING OF SECOND STREET BEING NORTH 89°54'34" WEST PER TRACT 28017-1, M.B. 254/71-72, IN THE CITY OF BEAUMONT, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA.

DATUM STATEMENT

COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM (CCS83), ZONE VI, NAD83 (NSRS2007, EPOCH 2011.00). ALL DISTANCES ARE US SURVEY FOOT GRID DISTANCES, UNLESS OTHERWISE NOTED. TO OBTAIN GROUND DISTANCES, DIVIDE GRID DISTANCES SHOWN BY THE COMBINED FACTOR 0.999888832.

NOTE: DISTANCES AND STATIONING FROM ROW MAPS FOR I-10 WERE IN CCS 29 GRID, SAID DATA WAS CONVERTED TO GROUND BY MULTIPLYING BY A CF OF 1.000117736 PER ROW MAP 49309-02 AND THEN CONVERTED TO NAD 83 BY USING THE CF STATED ABOVE.

97% SUBMITTAL (NOT FOR CONSTRUCTION)

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:
ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). DIFFERENTIAL LEVELS AND STATIC GPS OBSERVATIONS DETERMINED ELEVATIONS. THE NATIONAL GEODETIC SURVEY (NGS) DATASHEET ELEVATION AT THE NGS BENCHMARK WAS USED:

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BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GIRARD STREET HEMET, CA 92544
TEL. (951) 652-4454 FAX (951) 766-8942
E-MAIL BFOX@HBCOZAD.COM

PREPARED UNDER THE SUPERVISION OF:
BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER
REGISTERED PROFESSIONAL ENGINEER — BRIAN D. FOX — CIVIL — STATE OF CALIFORNIA
PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT — CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER

RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER

APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
TITLE SHEET

SHEET 1 OF 13 SHEETS
FILE NO:

STORM DRAIN NOTES:

1. CONTRACTOR SHALL CONSTRUCT THE DRAINAGE IMPROVEMENT SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT DESIGN MANUAL STANDARD DRAWINGS, RECENT EDITION, THE SSPWC 'LATEST EDITION', AND IN CONFORMANCE WITH THE REQUIREMENTS OF THE BEAUMONT DRAINAGE MANAGEMENT PLAN.
2. CONTRACTOR SHALL COMPLY WITH THE STATE AND LOCAL SAFETY CODES DURING THE PROGRESS OF WORK.
3. CONSTRUCTION PROJECTS THAT DISTURB MORE THAN ONE ACRE MUST OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT. OWNER/DEVELOPERS ARE REQUIRED TO FILE A NOTICE OF INTENT (NOI) WITH THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) AND COMPLY WITH ALL REQUIREMENTS OF THE BEAUMONT DRAINAGE MANAGEMENT PLAN. BEAUMONT IS CO-PERMITTEE WITH R.C.F.C. & W.C.D.
4. ALL STORM DRAINS, CATCH BASINS, AND STORM WATER RUNOFF STRUCTURES WILL BE PROVIDED WITH ADEQUATE CAPABILITIES TO FILTER AND RETAIN SEDIMENT AND DIRT, Of, AND GREASE, TO PREVENT POLLUTION IN STORM WATER RUNOFF IN COMPLIANCE WITH THE CITY OF BEAUMONT'S BEST MANAGEMENT PRACTICES AND THE BEAUMONT DRAINAGE MASTER PLAN FOR STORM WATER AS WELL AS BEST MANAGEMENT PRACTICES IDENTIFIED IN THE CURRENT REPORT OF WASTE DISCHARGE FOR RIVERSIDE COUNTY PERMITTEES.
5. CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, SAFE, CLEAN AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE COUNTY'S OR DISTRICT'S INSPECTOR. THE ADJACENT STREETS SHALL BE KEPT CLEAN OF DEBRIS, WITH DUST AND OTHER NUISANCE BEING CONTROLLED AT ALL TIMES. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY HIS CONSTRUCTION. METHOD OF STREET CLEANING SHALL BE DRY SWEEPING OF ALL PAVED AREAS.
6. CONTRACTOR SHALL BE THE RESPONSIBILITY TO INSTALL AND MAINTAIN DURING CONSTRUCTION, REGULATORY GUIDE AND WARNING SIGNS WITHIN THE PROJECT LIMITS AND ITS SURROUNDINGS TO PROVIDE SAFE PASSAGE FOR THE TRAVELING PUBLIC AND WORKERS UNTIL THE FINAL COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE CITY OF BEAUMONT.
7. CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER, CITY OF BEAUMONT, AND THE DEVELOPER'S ENGINEER, HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNERS OR THE DEVELOPER'S ENGINEER.
8. CONTRACTOR SHALL BE THE RESPONSIBILE TO OBTAIN AN ENCROACHMENT PERMIT FOR ALL WORK PERFORMED WITHIN PUBLIC RIGHT-OF-WAY, DEDICATED AND ACCEPTED FOR PUBLIC USE; AND TO BE RESPONSIBLE FOR SATISFACTORY COMPLIANCE FOR ALL CURRENT ENVIRONMENTAL REGULATIONS DURING THE LIFE OF CONSTRUCTION ACTIVITIES FOR THIS PROJECT.
9. CONTRACTOR MUST NOTIFY THE CITY OF BEAUMONT AT (951) 769-8520 AT LEAST ONE WEEK PRIOR TO CONSTRUCTION.
10. CONTRACTOR MUST PROVIDE CONSTRUCTION SCHEDULE TO THE CITY OF BEAUMONT AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
11. CONTRACTOR MUST CALL UNDERGROUND SERVICE ALERT AT 811 AT LEAST 48 HOURS BEFORE EXCAVATION.
12. CONTRACTOR IS REQUIRED TO CONTACT ALL UTILITY AGENCIES REGARDING TEMPORARY SUPPORT AND SHORING REQUIREMENTS FOR THE VARIOUS UTILITIES SHOWN IN THE PLANS.
13. THE CONTRACTOR SHALL VERIFY, BY POT HOLING, THE LOCATION OF POTENTIALLY AFFECTED UTILITIES.
14. CONTRACTOR SHALL HAVE GEOTECHNICAL/SOILS ENGINEERING FIRM OBSERVE TRENCHING, BACKFILLING, & SOIL COMPACTION OF ALL UTILITY TRENCHES WITHIN ALL EASEMENTS & ROAD RIGHTS OF WAY. TWO SETS OF COMPACTION REPORTS CERTIFYING THAT WORKS WERE DONE IN CONFORMANCE TO STANDARDS & GEOTECHNICAL REPORT SHALL BE SUBMITTED AFTER EACH UTILITY TRENCH IS COMPLETED & CERTIFIED. COMPACTION REPORT MUST BE SUBMITTED TO THE DEPT. OF PUBLIC WORKS AT LEAST TWO WORKING DAYS BEFORE AGGREGATE BASE MATERIALS ARE PLACED ONSITE.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEARING OF THE PROPOSED WORK AREA AND RELOCATION COSTS OF ALL EXISTING UTILITIES.
16. ELEVATIONS AND LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE UNLESS OTHERWISE NOTED. ALL UTILITIES SHOWN ARE TO BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED.
17. ALL ELEVATIONS SHOWN ARE TO THE INVERTS OF PIPE, EXCEPT WHERE OTHERWISE NOTED.
18. STORM DRAIN PROFILES CONTAIN CALL--OUTS AND REFERENCE TO INTERSECTING STORM DRAIN LINES. INTERSECTIONS OF THESE JUNCTIONS ARE PROVIDED FOR REFERENCE ONLY. CONTRACTOR IS TO OBTAIN INVERT ELEVATIONS FROM THE RESPECTIVE PROFILE OF THE INTERSECTING PIPE.
19. ALL STATIONING REFERS TO THE CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
20. STATIONING FOR LATERALS AND CONNECTOR PIPE REFER TO THE CENTERLINE--CENTERLINE--INTERSECTION STATION.
21. ALL PIPE LENGTHS ARE HORIZONTAL PROJECTIONS (NOT TRUE LENGTHS OF PIPE) AND ARE THE BASIS OF THE ESTIMATES OF QUANTITIES. THE CONTRACTOR SHALL DETERMINE THE TRUE QUANTITY OF PIPE REQUIRED FOR THIS PROJECT PRIOR TO PLACING THE ORDER.
22. ALL CROSS SECTIONS ARE TAKEN LOOKING UPSTREAM.
23. OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6 INCHES OF CLASS "B" CONCRETE.
24. PIPE CONNECTED TO THE MAINLINE PIPE SHALL CONFORM TO JUNCTION STRUCTURE NO. 4 (JS 229) UNLESS OTHERWISE NOTED.
25. PIPE BEDDING SHALL CONFORM TO R.C.F.C. & W.C.D. STD. DWG. M 815
26. "V" IS THE DEPTH OF INLET AT THE CATCH BASINS MEASURED FROM THE TOP OF THE CURB TO THE INVERT OF CONNECTOR PIPE.
27. HYDRAULIC GRADE LINES SHOWN IN PROFILES ARE FOR 100 YEAR FREQUENCY FLOWS, UNLESS OTHERWISE NOTED.
28. ALL BACKFILL AND BEDDING AROUND STRUCTURES AND PIPES SHALL BE COMPACTED TO NOT LESS THAN 90 PERCENT RELATIVE COMPACTION EXCEPT WHERE SUCH MATERIAL IS PLACED UNDER EXISTING PAVED ROADWAYS. THE TOP 3 FEET, MEASURED FROM THE FINISH PAVING, SHALL BE COMPACTED TO 95 PERCENT RELATIVE COMPACTION.
29. CONTRACTOR SHALL DISPOSE OF ALL EXCESS EXCAVATED MATERIAL AT MANDATORY DISPOSAL SITE.
30. ALL CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED IN KIND PER LATEST COUNTY STANDARD AND AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED. FOR PAVEMENT OVERLAY, 0.10' MIN. FOR FULL LANE WIDTH IS REQUIRED.
31. ALL UNDERGROUND FACILITIES WITH LATERALS SHALL BE IN PLACE PRIOR TO PAVING THE STREET, INCLUDING BUT NOT LIMITED TO, THE FOLLOWING: SEWER, WATER, ELECTRIC, STORM DRAINS.
32. ALL SURVEY MONUMENTS SHALL BE REPLACED AS REQUIRED. MONUMENTS SHALL BE TIED OUT PRIOR TO CONSTRUCTION AND REPLACED UPON COMPLETION OF CONSTRUCTION.

ABBREVIATIONS

AC	ASPHALT CONCRETE
BEG	BEGIN
BC	BEGIN CURVE
BCR	BEGIN CURB RETURN
BF	BACK FLOW
BFP	BACK FLOW PREVENTER
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
CB	CATCH BASIN
CL/℄	CENTERLINE
CLF	CHAIN LINK FENCE
COB	CITY OF BEAUMONT
CONC	CONCRETE
COR	COUNTY OF RIVERSIDE
C&G	CURB & GUTTER
DI	DRAINAGE INLET
DWY	DRIVEWAY
E/ELEC	ELECTRICAL
E'LY	EASTERLY
E/O	EAST OF
ECR	END CURB RETURN
EC	END CURVE
EG	EXISTING GRADE
EMH	ELECTRICAL MANHOLE
EP	EDGE OF PAVEMENT
ES	EDGE OF SHOULDER
ETW	EDGE OF TRAVELED WAY
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX	EXISTING
FG	FINISH GRADE
FH	FIRE HYDRATE
HW	HEADWALL
IR	IRRIGATION
LAT	LATERAL
LIP	LIP OF GUTTER
LT	LEFT
MH	MANHOLE
N'LY	NORTHERLY
N/O	NORTH OF
PCC	PORTLAND CEMENT CONCRETE
PENN	PENNSYLVANIA
PG	PROPOSED GRADE
PP	POWER POLE
PVMT	PAVEMENT
PRWY	PARKWAY
PVI	POINT OF VERTICAL INTERSECTION
PRC	POINT OF REVERSE COURSE
PROP	PROPOSED
PT	POINT
R/W	RIGHT OF WAY
RCB	REINFORCED CONCRETE BOX
RCFC	RIVERSIDE COUNTY FLOOD CONTROL
RCP	REINFORCED CONCRETE PIPE
RT	RIGHT
SC	SAWCUT
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
S'LY	SOUTHERLY
S/O	SOUTH OF
SHLD	SHOULDER
SIC	SIGNAL INTERCONNECT
SL	STREET LIGHT
SMH	SEWER MANHOLE
SOCAL	SOUTHERN CALIFORNIA GAS COMPANY
SPPWC	STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
SS	SANITARY SEWER
ST	STREET
STA	STATION
SW	SIDEWALK
STR	STRUCTURE
TC	TOP OF CURB
TELE	TELECOMMUNICATIONS
TRANS	TRANSITION
TW	TOP OF WALL
TYP	TYPICAL
UE	UNDERGROUND ELECTRICAL
UPRR	UNION PACIFIC RAILROAD
UTL	UTILITY
VC	VERTICAL CURVE
VCP	VERIFIED CLAY PIPE
W	WATER
W'LY	WESTERLY
W/O	WEST OF
WM	WATER METER
WCD	WATER CONSERVATION DISTRICT
WV	WATER VALVE

97% SUBMITTAL (NOT FOR CONSTRUCTION)

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STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GRARD STREET HEMET, CA 92544
TEL. (951) 652-4454 FAX (951) 766-8942
E-MAIL BFOX@KBCOZAD.COM

PREPARED UNDER THE SUPERVISION OF:
BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER
REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA
PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

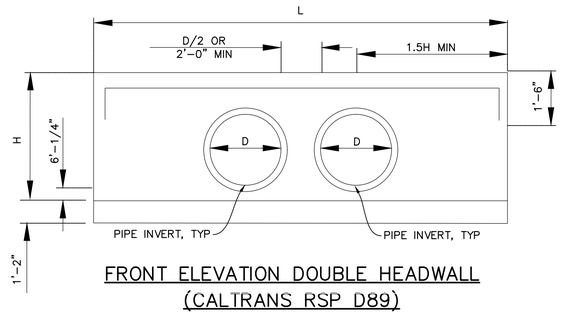
BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ STAFF ENGINEER DATE: _____
RECOMMENDED BY: _____ PRINCIPAL ENGINEER DATE: _____
APPROVED BY: _____ CITY ENGINEER DATE: _____

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
CITY OF BEAUMONT NOTES

SHEET 2 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG

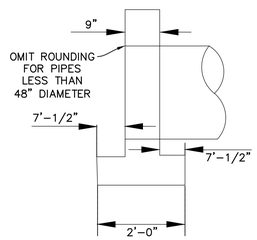


FRONT ELEVATION DOUBLE HEADWALL (CALTRANS RSP D89)

N.T.S.

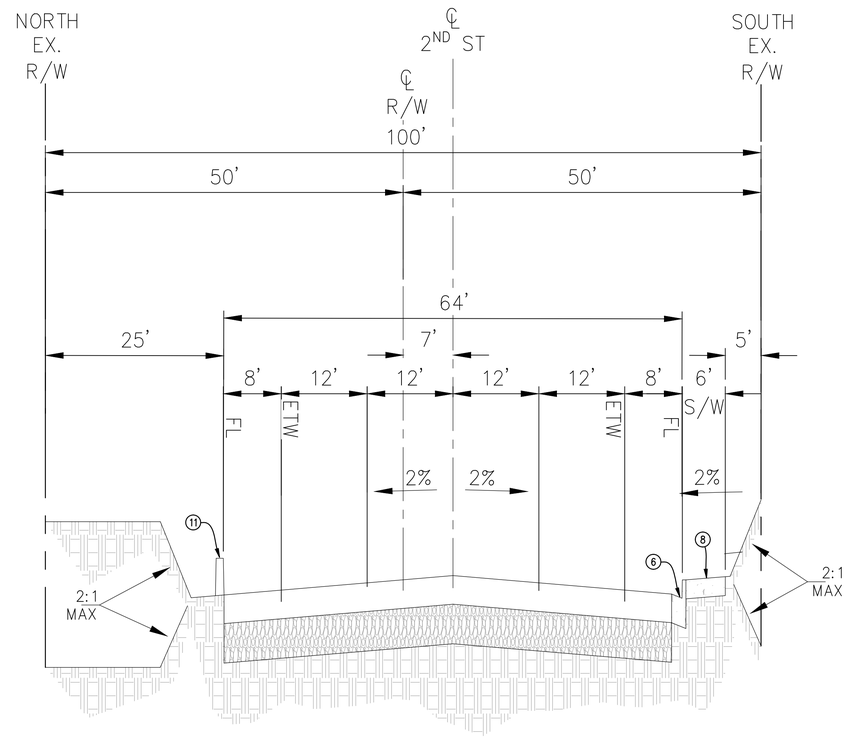
HEADWALL DIMENSION FOR CULVERT A, B, & C:		
DIMENSION	UNIT	AMOUNT
D	FT-IN	3'-0"
H	FT-IN	AS SHOWN
L	FT-IN	17'-0"

HEADWALL INVERT ELEVATIONS:		
CULVERT No.	ELEVATION (FT)	CULVERT FACING
A A	2570.00 2572.00	NORTH SOUTH
B B	2565.00 2567.00	NORTH SOUTH
C C	2577.00 2579.00	NORTH SOUTH



SECTION DOUBLE HEADWALL (CALTRANS RSP D89)

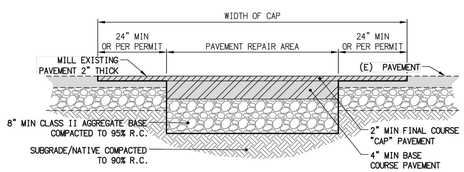
N.T.S.



TYPICAL STREET SECTION (LOOKING EAST)

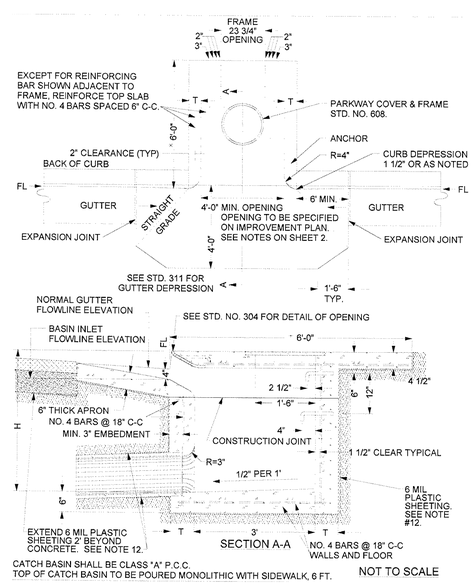
1" = 10'

	CONSTRUCTION NOTES	QUANTITY ESTIMATES
1	PROTECT IN PLACE.	–
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.	23,064 FT^2
3	COLDMILL EXISTING AC PAVEMENT (2").	23,064 FT^2
4	CONSTRUCT XX" HMA (1/2 INCH TYPE A PG-64-10) OVER XX" CLASS AB OVER COMPACTED SUBGRADE.	153,749 FT^2
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).	153,749 FT^2
6	CONSTRUCT TYPE A-8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201.	1,622 FT.
7	CONSTRUCT CURB RAMP (CASE PER PLAN) PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	2 EA.
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.	8,829 FT^2
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
10	REMOVE EXISTING CURB AND GUTTER.	3,338 FT.
11	CONSTRUCT AC DIKE TO 8" PER RIVERSIDE COUNTY STANDARD NO. 212.	2,457 FT.
12	REMOVE PCC SW.	–
13	CONSTRUCT TYPE D (8-INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.	–
14	EXISTING 36" ø CONCRETE PIPE.	1 EA
15	MATCH EXISTING SIDEWALK.	–
16	MATCH EXISTING ASPHALT CONCRETE.	–
17	GRIND AND CAP EXISTING ASPALT CONCRETE.	23,064 FT^2
18	PROTECT IN PLACE CURRENT SEWER LINE.	1 EA
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.	1 EA
20	PROPOSED STORM DRAIN STRUCTURE.	1 EA
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
22	CONSTRUCT DOUBLE STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.	3 EA
23	MATCH TO EXISTING CURB AND GUTTER.	–
24	EXISTING HEADWALL.	2 EA
25	EXISTING 60" ø CONCRETE PIPE.	2 EA



PAVEMENT RESTORATION

N.T.S.



CURB INLET CATCH BASIN (RIV. CO. STD. NO. 300)

N.T.S.

97% SUBMITTAL (NOT FOR CONSTRUCTION)

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STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

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PREPARED UNDER THE SUPERVISION OF:
BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER
REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA
PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER
RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER
APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
SECTIONS/DETAIL SHEET

SHEET 3 OF 13 SHEETS
FILE NO:

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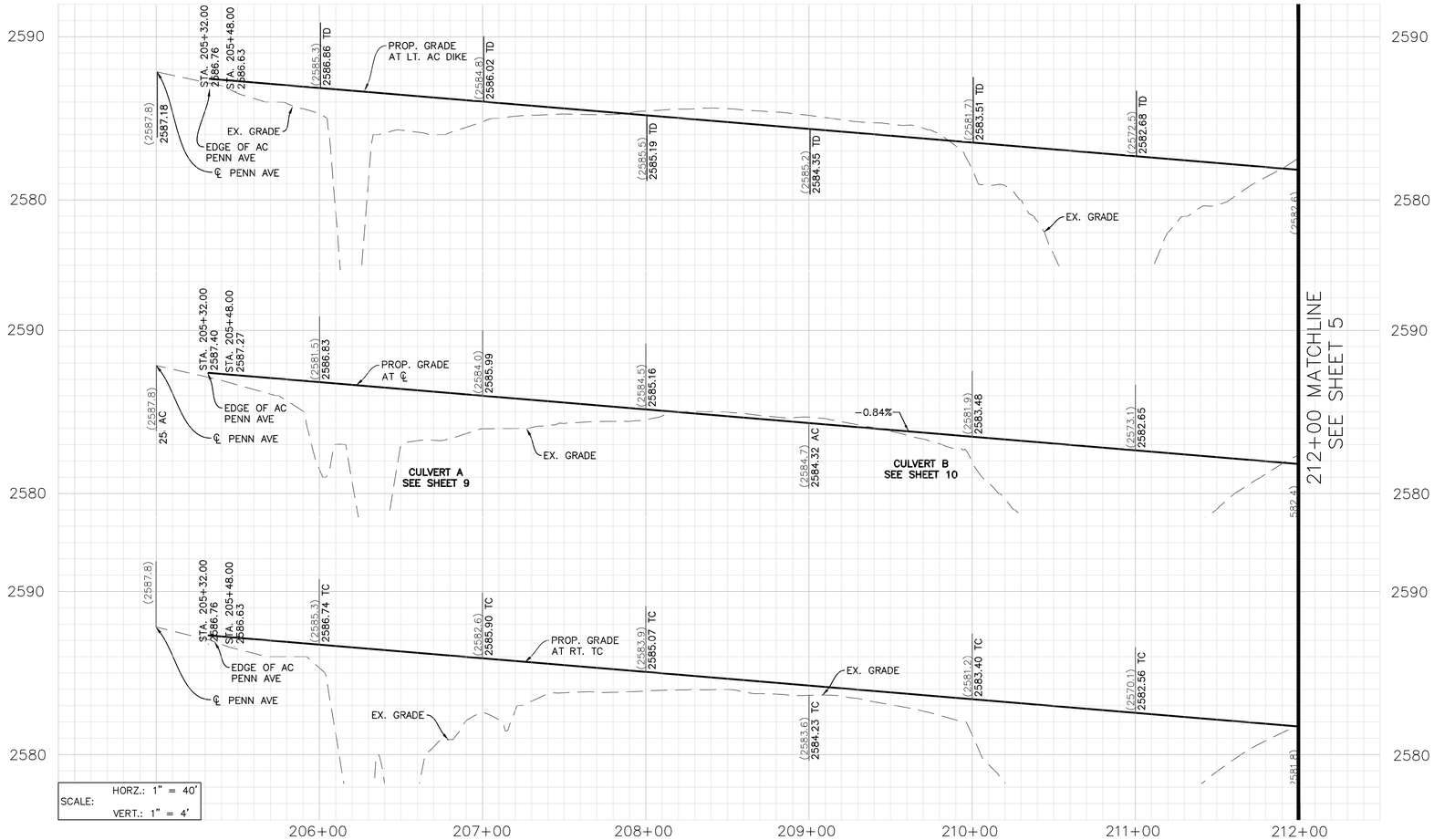
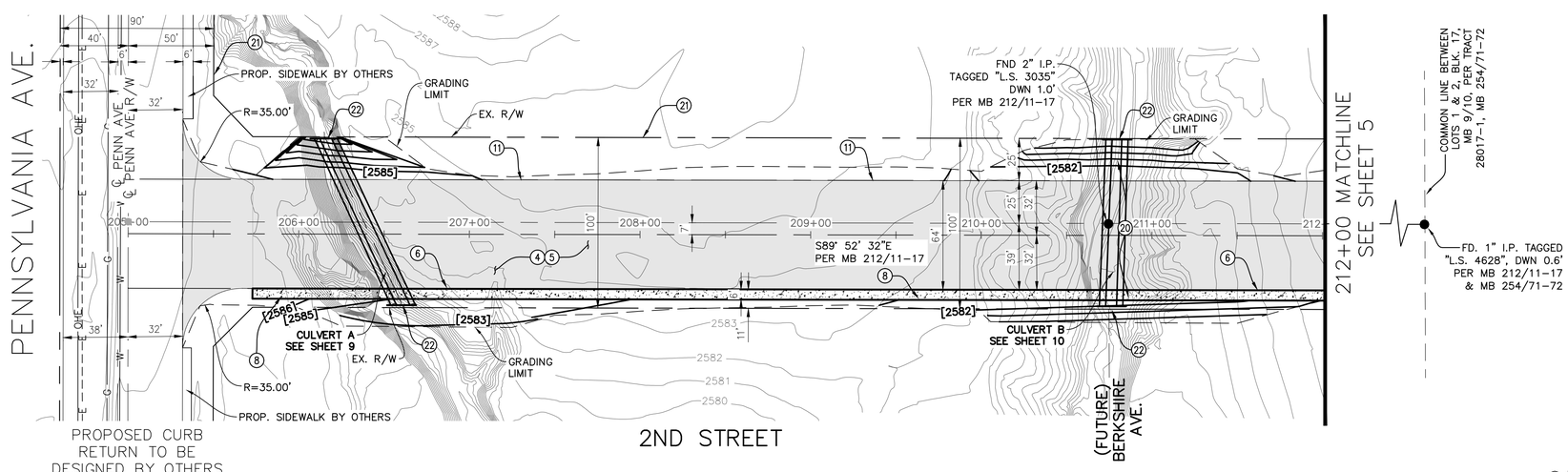


SCALE: HORZ.: 1" = 40'
VERT.: 1" = 4'



CONSTRUCTION NOTES

1	PROTECT IN PLACE.
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.
3	COLDMILL EXISTING AC PAVEMENT (2").
4	CONSTRUCT 8" HMA (1/2 INCH TYPE A PG-64-10) OVER 8" CLASS AB OVER COMPACTED SUBGRADE.
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).
6	CONSTRUCT TYPE A-8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201..
7	CONSTRUCT CURB RAMP (CASE PER PLAN) PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
10	REMOVE EXISTING CURB AND GUTTER.
11	CONSTRUCT 8" AC DIKE PER RIVERSIDE COUNTY STANDARD NO. 212.
12	REMOVE PCC SW.
13	CONSTRUCT TYPE D (8-INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.
14	EXISTING 36" ø CONCRETE PIPE.
15	MATCH EXISTING SIDEWALK.
16	MATCH EXISTING ASPHALT CONCRETE.
17	GRIND AND CAP EXISTING ASPHALT CONCRETE.
18	PROTECT IN PLACE CURRENT SEWER LINE.
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.
20	PROPOSED STORM DRAIN STRUCTURE.
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
22	CONSTRUCT STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.
23	MATCH TO EXISTING CURB AND GUTTER.
24	EXISTING HEADWALL.
25	EXISTING 60" ø CONCRETE PIPE.
26	INSTALL CURB INLET CATCH BASIN PER COUNTY OF RIVERSIDE STANDARD NO. 300.
27	CONSTRUCT RIP-RAP APRON.
28	FURNISH AND INSTALL PRECAST TYPE G3 DRAINAGE INLET PER CALTRANS STANDARD PLAN D73B AND GUTTER DEPRESSION PER CALTRANS STANDARD PLAN RSP D78A, TYPE G3 INLET IN GRADE SAG.
29	FURNISH AND INSTALL TWO (2) 36-INCH RCP WITH CONCRETE ENCASEMENT.
30	FURNISH AND INSTALL ONE (1) 18-INCH RCP WITH CONCRETE ENCASEMENT.
31	FURNISH AND INSTALL TYPE "X" INLET PER COUNTY OF RIVERSIDE STANDARD NO. CB108.
32	REMOVE EXISTING MEDIAN STRIPPING.

NOTES

1. SEE THE SIGNING AND STRIPING PLANS FOR DISPOSITION OF STREET SIGN REMOVALS AND RELOCATIONS.
2. SEE DRAINAGE PLANS FOR DISPOSITION OF DRAINAGE APPURTENANCES.
3. EXISTING UTILITIES ARE DEPICTED ON PLAN.

LEGEND

- PROPOSED AC PAVEMENT
- AC PAVEMENT REMOVAL
- PROPOSED CONCRETE SIDEWALK
- REMOVE EXISTING AC PAVEMENT
  ADD PROPOSED AC PAVEMENT
- CENTERLINE
- RIGHT OF WAY
- PROPERTY LINE
- OH — (EX) OVERHEAD ELECTRIC EDISON
- SS — (EX) SEWER MAIN LINE
- 2"G — (EX) 2" GAS LINE
- W — (EX) WATER LINE
- EDGE OF DIRT ROAD
- XXXX' — (EX) TOPO
- [XXXX'] — PROP TOPO
- POWER POLE
- ELECTRICAL VAULT
- WATER VALVE
- GAS VALVE
- SEWER MANHOLE
- FIREHYDRANT

N

40 20 0 40 80 120
SCALE: 1"= 40'

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ENGINEER		REVISIONS	CITY	

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PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

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STAFF ENGINEER

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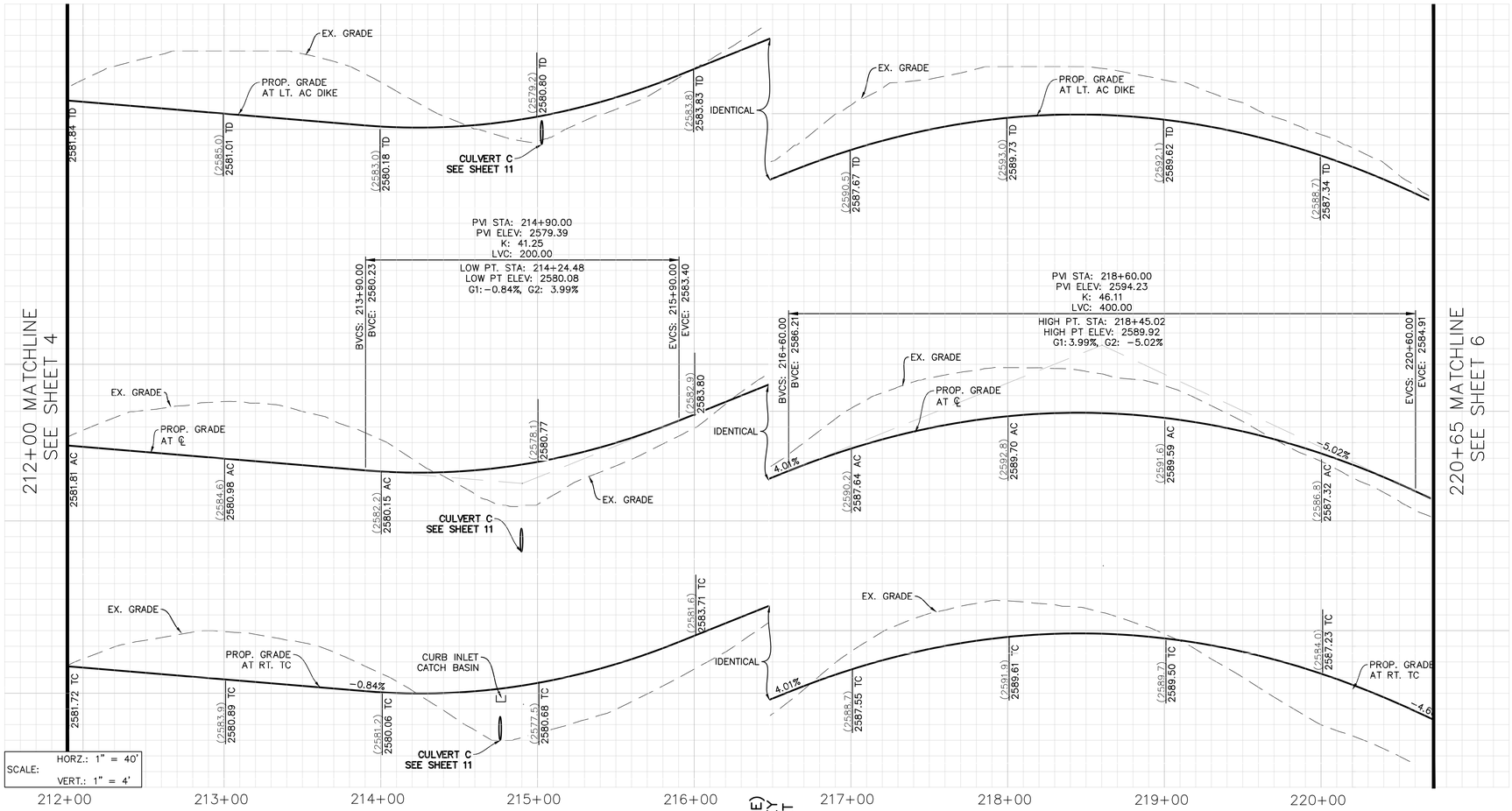
PRINCIPAL ENGINEER

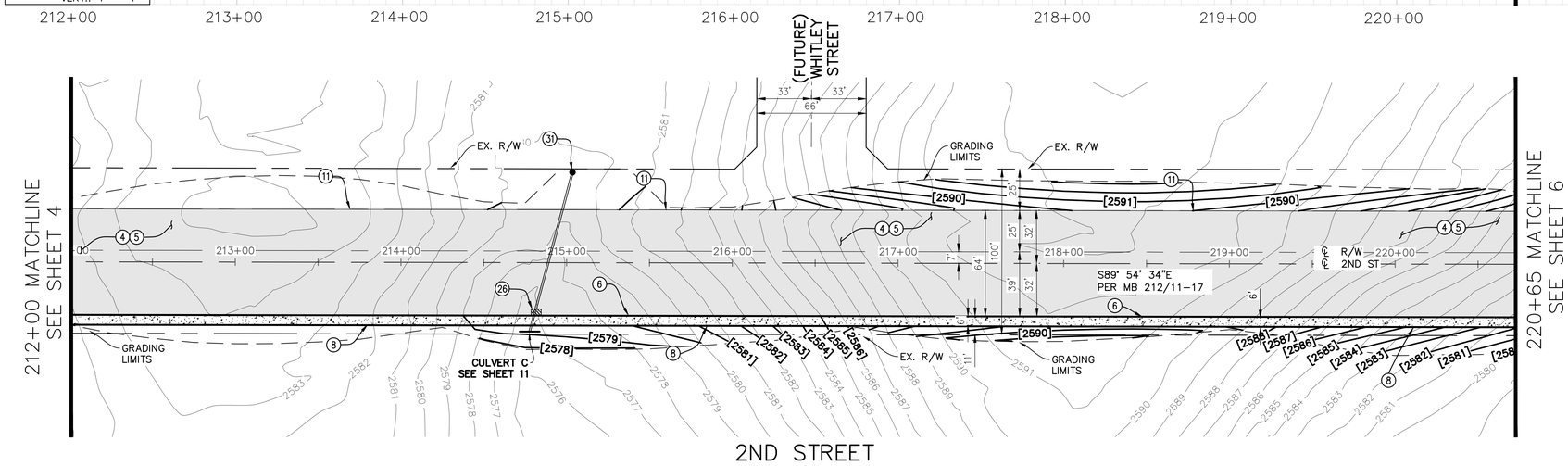
APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
STREET PLAN AND PROFILE
STA 205+00.00 - 212+00.00

SHEET 4 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG





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N

40 20 0 40 80 120

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811

BENCHMARK:
ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). DIFFERENTIAL LEVELS AND STATIC GPS OBSERVATIONS DETERMINED ELEVATIONS. THE NATIONAL GEODETIC SURVEY (NGS) DATASHEET ELEVATION AT THE NGS BENCHMARK WAS USED:

STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BY	MARK	DESCRIPTION	APPR.	DATE
ENGINEER		REVISIONS	CITY	

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GIRARD STREET HEMET, CA 92544
TEL. (951) 652-4454 FAX (951) 766-8942
E-MAIL BROWN@COZAD.COM

PREPARED UNDER THE SUPERVISION OF:
BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER
REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA
PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

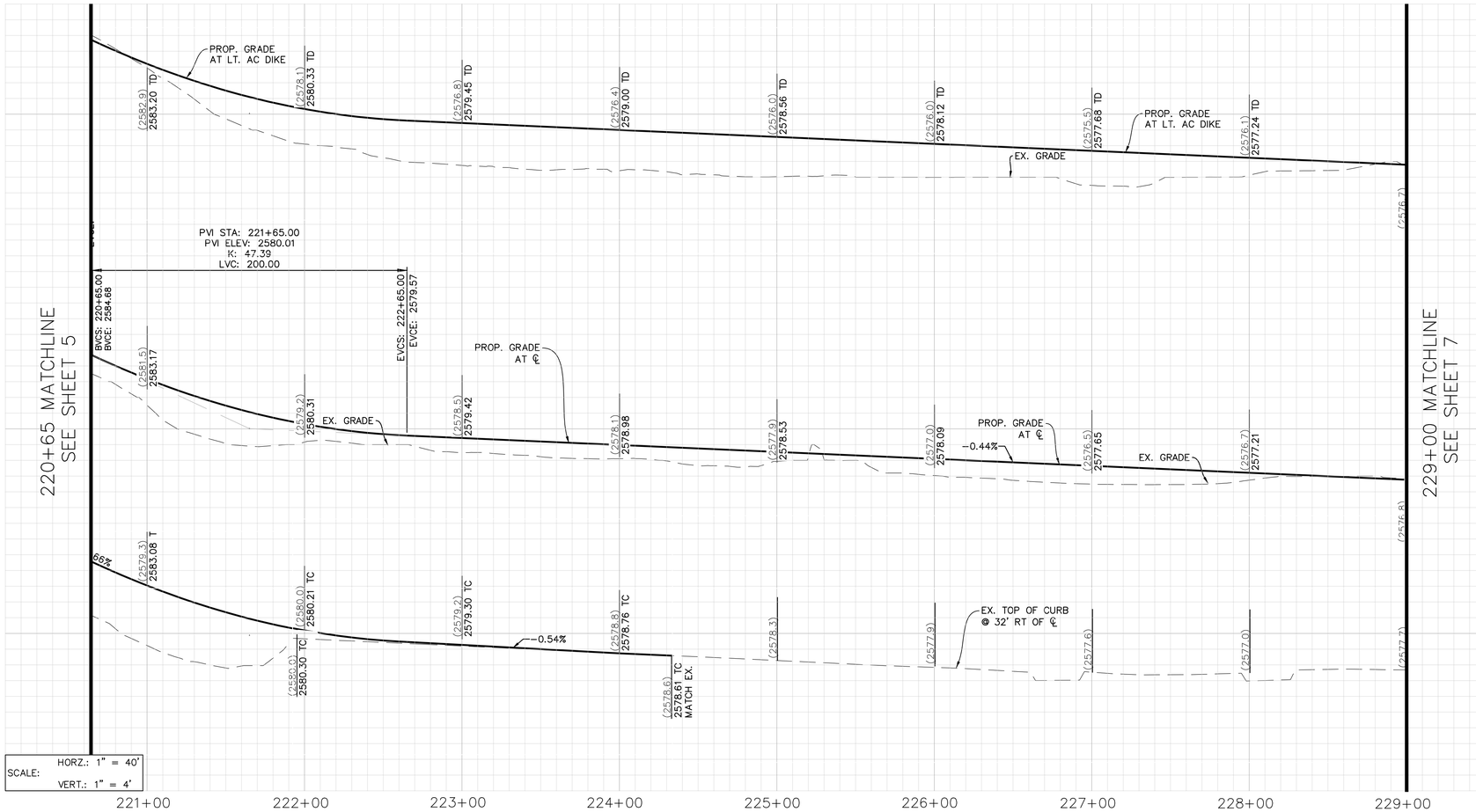
BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

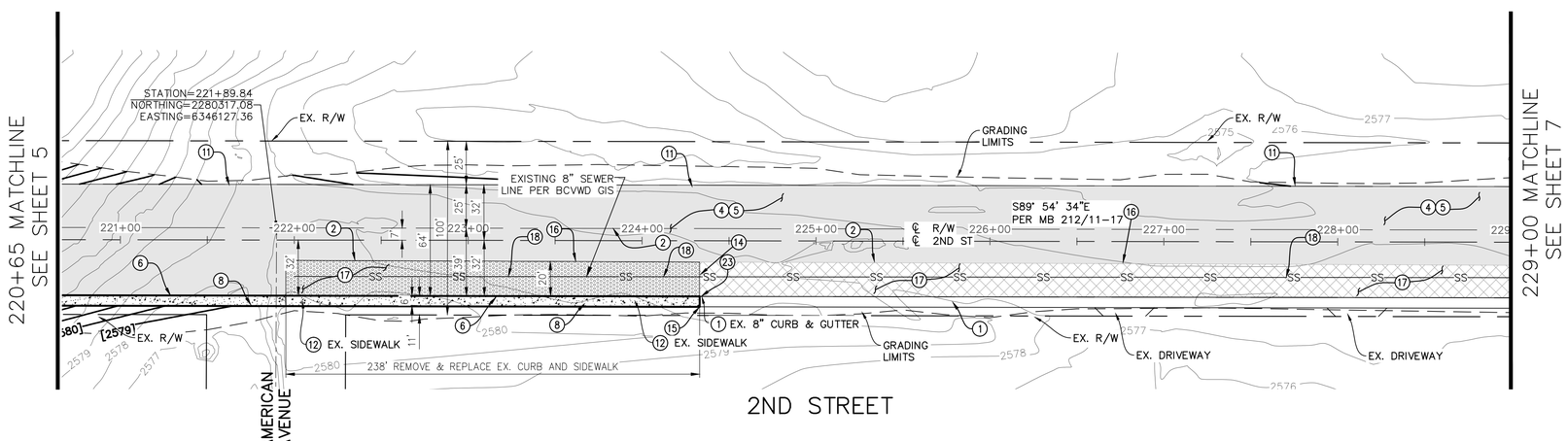
REVIEWED BY: _____ STAFF ENGINEER DATE: _____
RECOMMENDED BY: _____ PRINCIPAL ENGINEER DATE: _____
APPROVED BY: _____ CITY ENGINEER DATE: _____

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
STREET PLAN AND PROFILE
STA 212+00.00 - 220+65.00

SHEET 5 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG





CONSTRUCTION NOTES

1	PROTECT IN PLACE.
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.
3	COLDMILL EXISTING AC PAVEMENT (2").
4	CONSTRUCT 8" HMA (1/2 INCH TYPE A PG-64-10) OVER 8" CLASS AB OVER COMPACTED SUBGRADE.
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).
6	CONSTRUCT TYPE A-8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201.
7	CONSTRUCT CURB RAMP (CASE PER PLAN) PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
10	REMOVE EXISTING CURB AND GUTTER.
11	CONSTRUCT 8" AC DIKE PER RIVERSIDE COUNTY STANDARD NO. 212.
12	REMOVE PCC SW.
13	CONSTRUCT TYPE D (8-INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.
14	EXISTING 36" ø CONCRETE PIPE.
15	MATCH EXISTING SIDEWALK.
16	MATCH EXISTING ASPHALT CONCRETE.
17	GRIND AND CAP EXISTING ASPHALT CONCRETE.
18	PROTECT IN PLACE CURRENT SEWER LINE.
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.
20	PROPOSED STORM DRAIN STRUCTURE.
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
22	CONSTRUCT STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.
23	MATCH TO EXISTING CURB AND GUTTER.
24	EXISTING HEADWALL.
25	EXISTING 60" ø CONCRETE PIPE.
26	INSTALL CURB INLET CATCH BASIN PER COUNTY OF RIVERSIDE STANDARD NO. 300.
27	CONSTRUCT RIP-RAP APRON.
28	FURNISH AND INSTALL PRECAST TYPE G3 DRAINAGE INLET PER CALTRANS STANDARD PLAN D73B AND GUTTER DEPRESSION PER CALTRANS STANDARD PLAN RSP D78A, TYPE G3 INLET IN GRADE SAG.
29	FURNISH AND INSTALL TWO (2) 36-INCH RCP WITH CONCRETE ENCASEMENT.
30	FURNISH AND INSTALL ONE (1) 18-INCH RCP WITH CONCRETE ENCASEMENT.
31	FURNISH AND INSTALL TYPE "X" INLET PER COUNTY OF RIVERSIDE STANDARD NO. CB10B.
32	REMOVE EXISTING MEDIAN STRIPPING.

NOTES

1. SEE THE SIGNING AND STRIPING PLANS FOR DISPOSITION OF STREET SIGN REMOVALS AND RELOCATIONS.
2. SEE DRAINAGE PLANS FOR DISPOSITION OF DRAINAGE APPURTENANCES.
3. EXISTING UTILITIES ARE DEPICTED ON PLAN.

LEGEND

- PROPOSED AC PAVEMENT
- AC PAVEMENT REMOVAL
- PROPOSED CONCRETE SIDEWALK
- REMOVE EXISTING AC PAVEMENT ADD PROPOSED AC PAVEMENT
- CENTERLINE
- RIGHT OF WAY
- PROPERTY LINE
- (EX) OVERHEAD ELECTRIC EDISON
- (EX) SEWER MAIN LINE
- (EX) 2" GAS LINE
- (EX) WATER LINE
- EDGE OF DIRT ROAD
- XXXX' (EX) TOPO
- [XXXX'] PROP TOPO
- POWER POLE
- ELECTRICAL VAULT
- WATER VALVE
- GAS VALVE
- SEWER MANHOLE
- FIREHYDRANT

N

40 20 0 40 80 120

SCALE: 1"= 40'

97% SUBMITTAL (NOT FOR CONSTRUCTION)

DIGALERT

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BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

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PRINCIPAL ENGINEER

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CITY ENGINEER

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IMPROVEMENT PLANS FOR:
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STREET PLAN AND PROFILE
STA 220+65.00 - 229+00.00

SHEET 6 OF 13 SHEETS
FILE NO:

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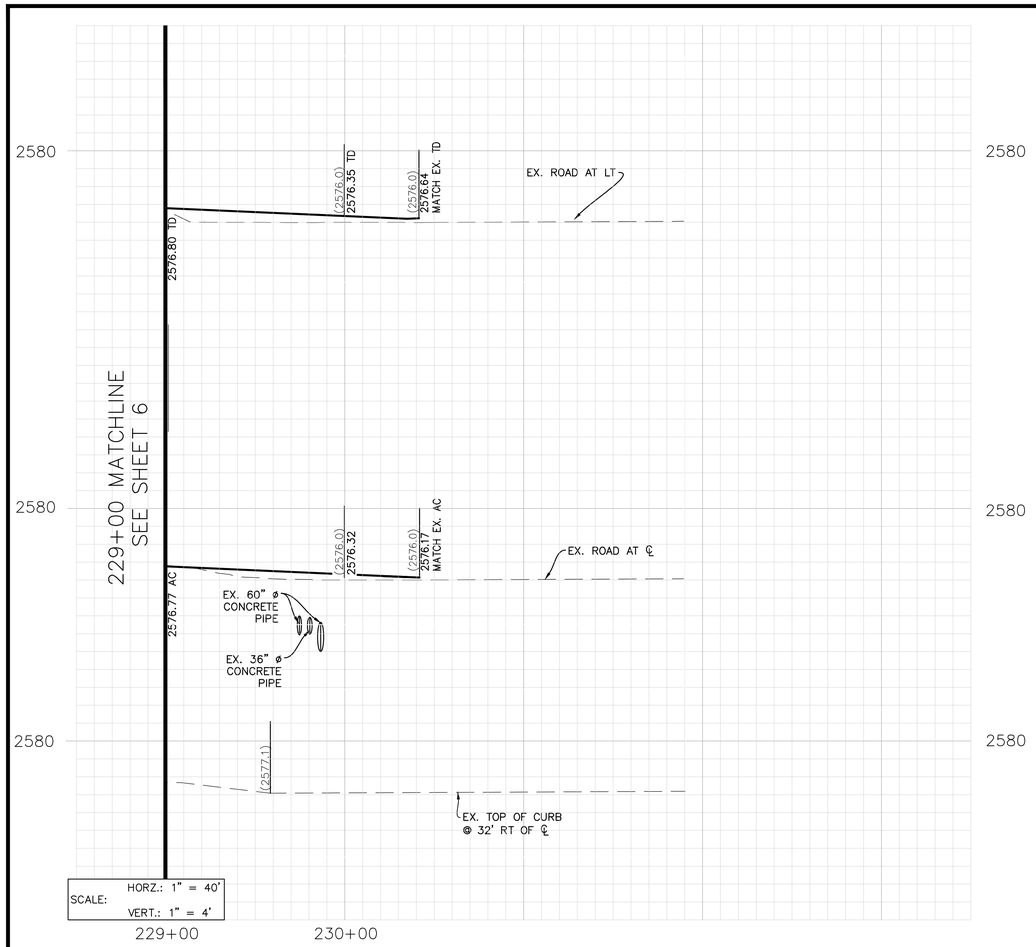

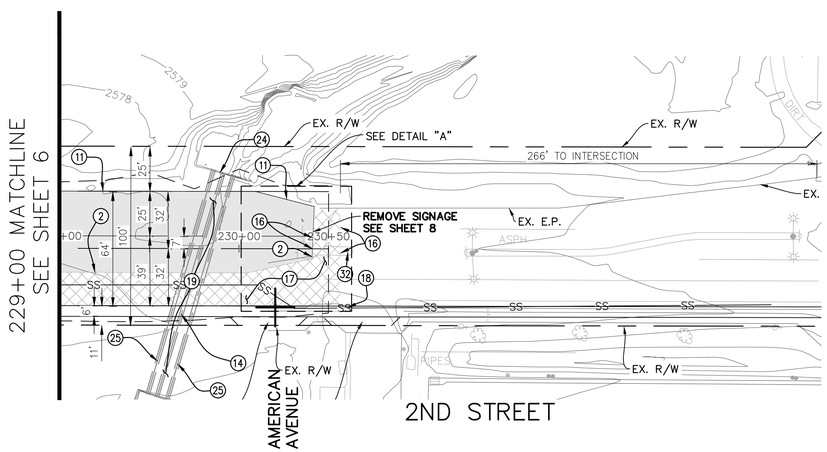

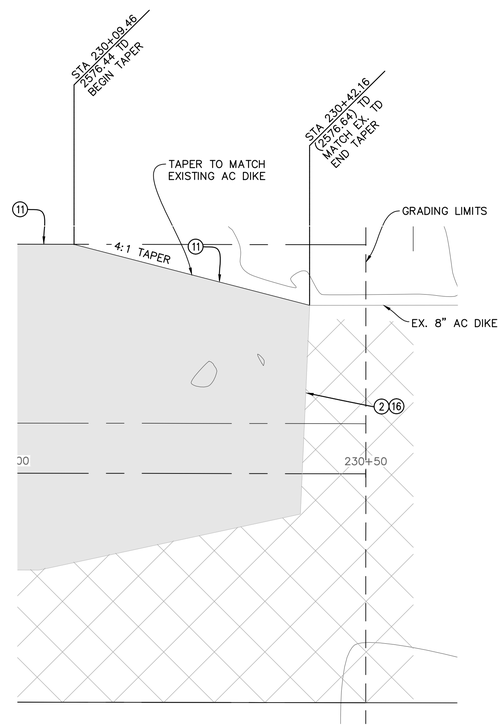

DETAIL "A"
SCALE: 1" = 10'

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N

40 20 0 40 80 120
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CITY ENGINEER

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IMPROVEMENT PLANS FOR:
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STREET PLAN AND PROFILE
STA 229+00.00 - 230+00.00

SHEET 7 OF 13 SHEETS
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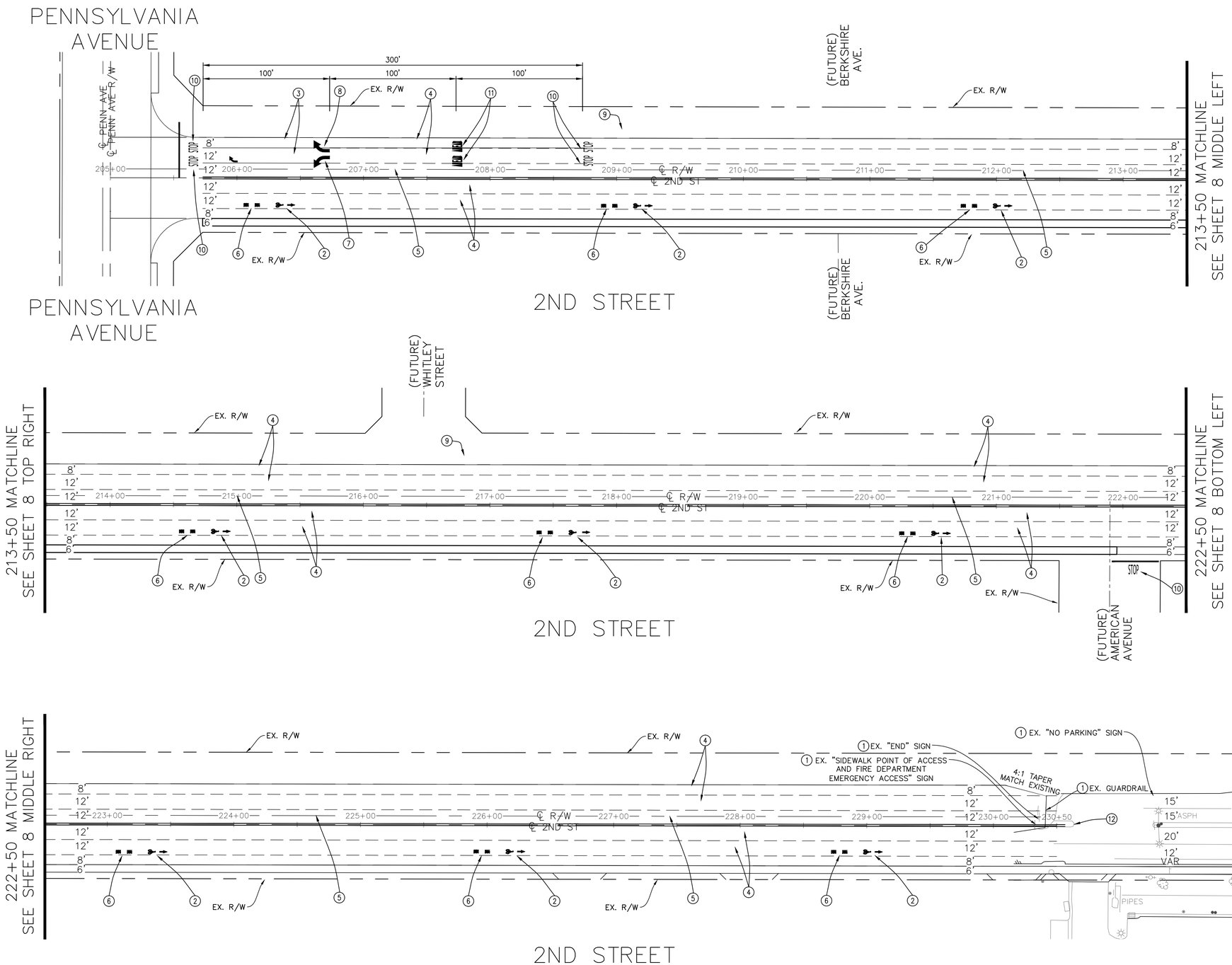

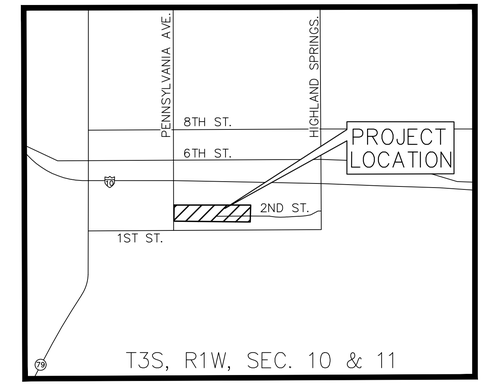

VICINITY MAP

N.T.S.

N

40 20 0 40 80 120

SCALE: 1"= 40'

SIGNAGE AND STRIPING NOTES

1	REMOVE CONFLICTING STRIPING AND MARKERS
2	INSTALL HELMETED BICYCLIST SYMBOL PER CALIFORNIA MUTCD SPECIFICATIONS
3	INSTALL DETAIL 38 CHANNELIZING LINE PER CALTRANS STANDARD PLAN A20D
4	INSTALL DETAIL 9 STRIPING PER CALTRANS STANDARD PLAN A20A
5	INSTALL DETAIL 22 STRIPING PER CALTRANS STANDARD PLAN A20A
6	INSTALL BIKE LANE SYMBOL PER CALIFORNIA MUTCD SPECIFICATIONS
7	INSTALL TYPE IV(L) PAVEMENT MARKING ARROW PER CALTRANS STANDARD PLAN A24A
8	INSTALL TYPE IV(R) PAVEMENT MARKING ARROW PER CALTRANS STANDARD PLAN A24A
9	INSTALL DETAIL 27B STRIPPING PER CALTRANS STANDARD PLAN A20B
10	INSTALL "STOP" LEGEND PER CALTRANS STANDARD PLAN A24D
11	INSTALL "AHEAD" LEGEND PER CALTRANS STANDARD PLAN A24D
12	REMOVE EXISTING MEDIAN STRIPING

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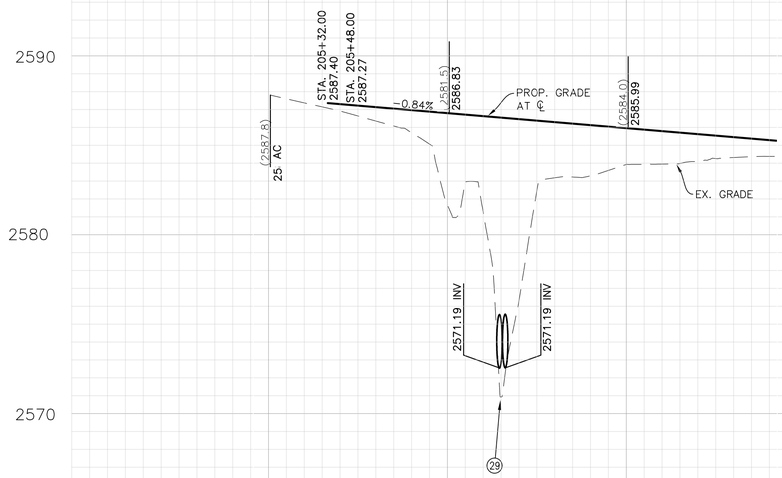
IMPROVEMENT PLANS FOR:

2ND STREET
SIGNAGE AND STRIPAGE

SHEET 8 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%_SIGNAGE&STRIPING.DWG



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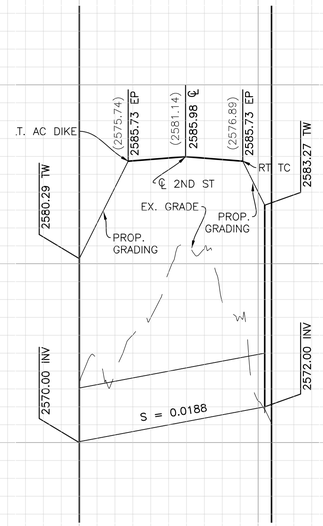
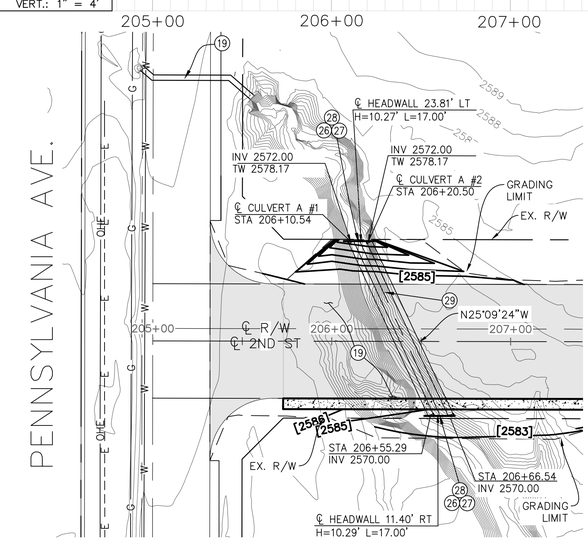


PROFILE
STA 0+00.00 – 1+07.45

SCALE: HORZ.: 1" = 40'
VERT.: 1" = 4'



PROPOSED CULVERT "A"

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- PROPOSED CONCRETE SIDEWALK
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- RIGHT OF WAY
- PROPERTY LINE
- DH — (EX) OVERHEAD ELECTRIC EDISON
- SS — (EX) SEWER MAIN LINE
- 2"G — (EX) 2" GAS LINE
- W — (EX) WATER LINE
- EDGE OF DIRT ROAD
- XXXX' — (EX) TOPO
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MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GRARD STREET HEMET, CA 92544
TEL. (951) 652-4454 FAX (951) 766-8942
E-MAIL BFOX@KBCOZAD.COM

PREPARED UNDER THE SUPERVISION OF:

BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA

PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER

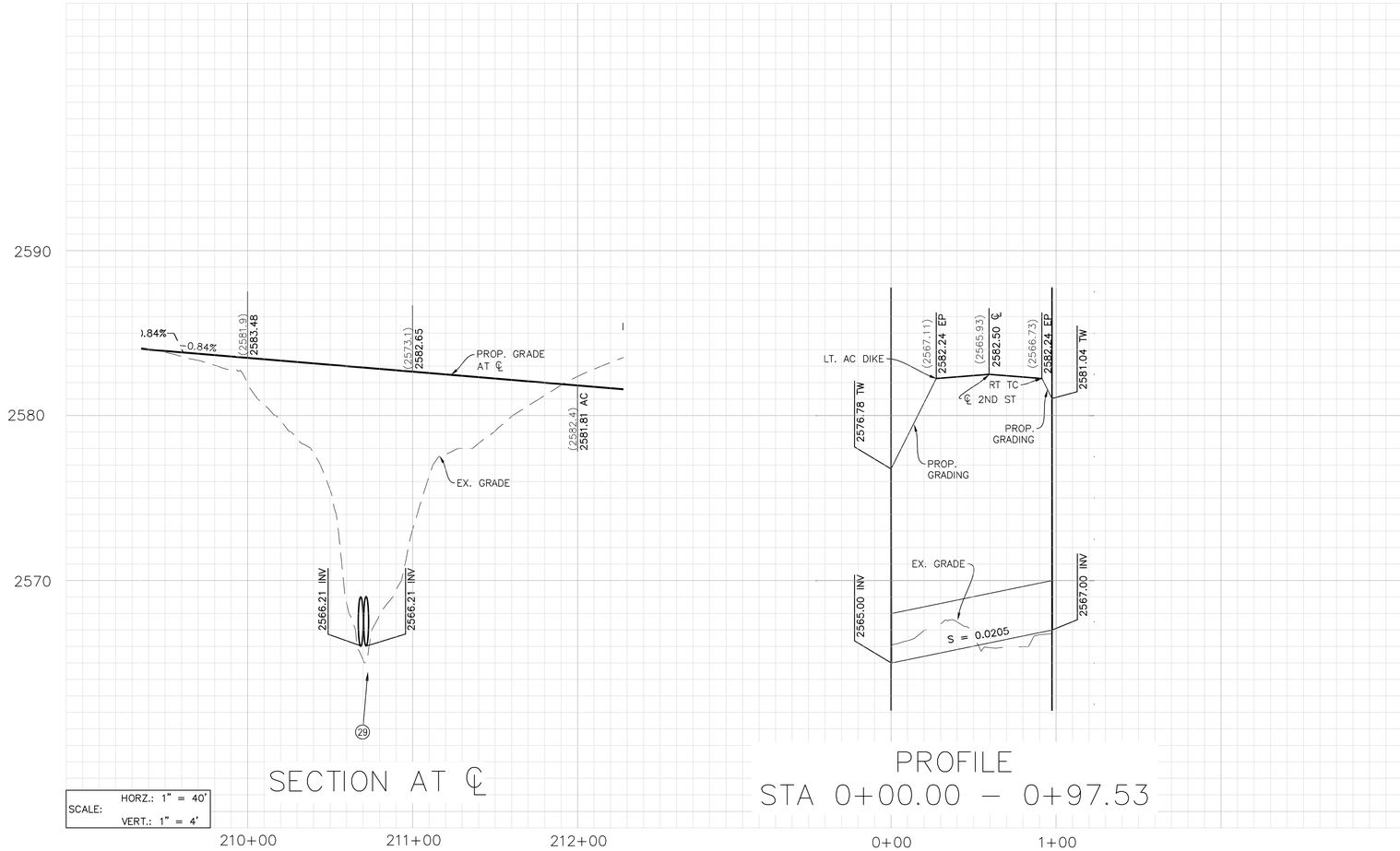
RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER

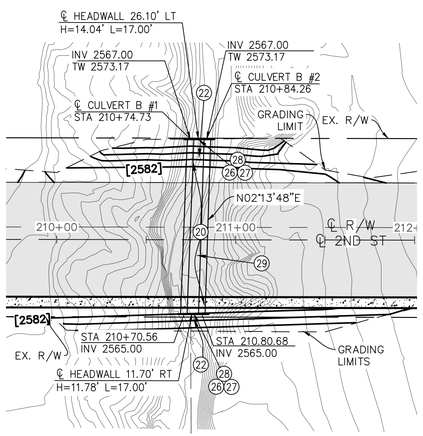
APPROVED BY: _____ DATE: _____
CITY ENGINEER

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
CULVERT CROSSING

SHEET 9 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_CULVERTCROSSING_100%.DWG





PROPOSED CULVERT "B"

CONSTRUCTION NOTES

1	PROTECT IN PLACE.
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.
3	COLDMILL EXISTING AC PAVEMENT (2").
4	CONSTRUCT 8" HMA (1/2 INCH TYPE A PG-64-10) OVER 8" CLASS AB OVER COMPACTED SUBGRADE.
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).
6	CONSTRUCT TYPE A-8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201.
7	CONSTRUCT CURB RAMP (CASE PER PLAN) PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
10	REMOVE EXISTING CURB AND GUTTER.
11	CONSTRUCT 8" AC DIKE PER RIVERSIDE COUNTY STANDARD NO. 212.
12	REMOVE PCC SW.
13	CONSTRUCT TYPE D (8-INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.
14	EXISTING 36" ø CONCRETE PIPE.
15	MATCH EXISTING SIDEWALK.
16	MATCH EXISTING ASPHALT CONCRETE.
17	GRIND AND CAP EXISTING ASPHALT CONCRETE.
18	PROTECT IN PLACE CURRENT SEWER LINE.
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.
20	PROPOSED STORM DRAIN STRUCTURE.
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]
22	CONSTRUCT STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.
23	MATCH TO EXISTING CURB AND GUTTER.
24	EXISTING HEADWALL.
25	EXISTING 60" ø CONCRETE PIPE.
26	INSTALL CURB INLET CATCH BASIN PER COUNTY OF RIVERSIDE STANDARD NO. 300.
27	CONSTRUCT RIP-RAP APRON.
28	FURNISH AND INSTALL PRECAST TYPE G3 DRAINAGE INLET PER CALTRANS STANDARD PLAN D73B AND GUTTER DEPRESSION PER CALTRANS STANDARD PLAN RSP D78A, TYPE G3 INLET IN GRADE SAG.
29	FURNISH AND INSTALL TWO (2) 36-INCH RCP WITH CONCRETE ENCASEMENT.
30	FURNISH AND INSTALL ONE (1) 18-INCH RCP WITH CONCRETE ENCASEMENT.
31	FURNISH AND INSTALL TYPE "X" INLET PER COUNTY OF RIVERSIDE STANDARD NO. CB108.
32	REMOVE EXISTING MEDIAN STRIPPING.

NOTES

1. SEE THE SIGNING AND STRIPING PLANS FOR DISPOSITION OF STREET SIGN REMOVALS AND RELOCATIONS.
2. SEE DRAINAGE PLANS FOR DISPOSITION OF DRAINAGE APPURTENANCES.
3. EXISTING UTILITIES ARE DEPICTED ON PLAN.

LEGEND

PROPOSED AC PAVEMENT
AC PAVEMENT REMOVAL
PROPOSED CONCRETE SIDEWALK
CENTERLINE
RIGHT OF WAY
PROPERTY LINE
(EX) OVERHEAD ELECTRIC EDISON
(EX) SEWER MAIN LINE
(EX) 2" GAS LINE
(EX) WATER LINE
EDGE OF DIRT ROAD
(EX) TOPO
PROP TOPO
POWER POLE
ELECTRICAL VAULT
WATER VALVE
GAS VALVE
SEWER MANHOLE
FIREHYDRANT

N

40 20 0 40 80 120
SCALE: 1"= 40'

97% SUBMITTAL (NOT FOR CONSTRUCTION)

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:
ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). DIFFERENTIAL LEVELS AND STATIC GPS OBSERVATIONS DETERMINED ELEVATIONS. THE NATIONAL GEODETIC SURVEY (NGS) DATASHEET ELEVATION AT THE NGS BENCHMARK WAS USED:

STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BY	MARK	DESCRIPTION	APPR.	DATE
ENGINEER		REVISIONS	CITY	

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CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
CULVERT CROSSING

SHEET 10 OF 13 SHEETS
FILE NO:

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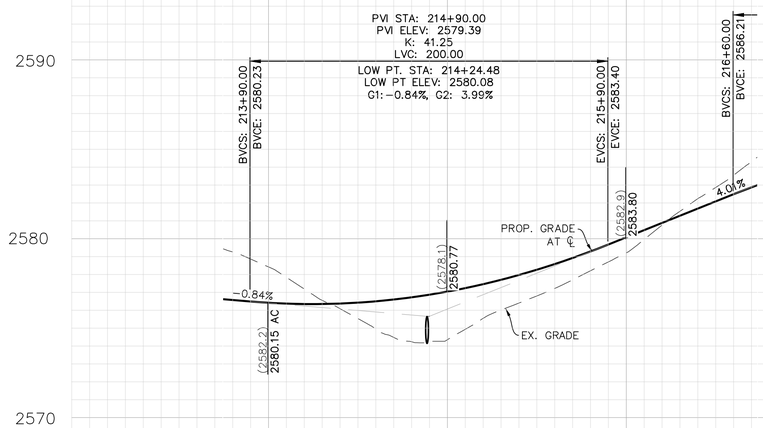

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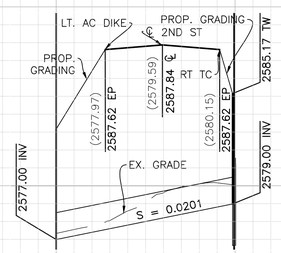
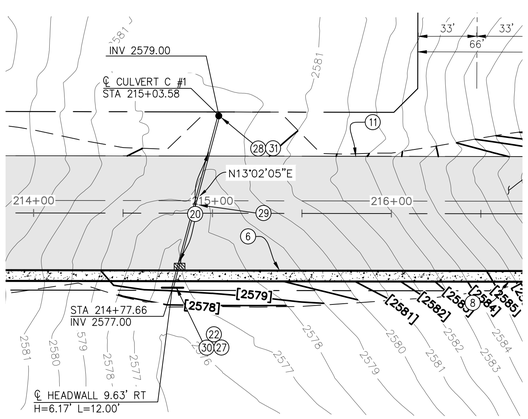


PROFILE
STA 0+00.00 – 0+99.46

SCALE: HORZ.: 1" = 40'
VERT.: 1" = 4'

214+00 215+00 216+00 0+00 1+00



PROPOSED CULVERT C

CONSTRUCTION NOTES

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BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

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IMPROVEMENT PLANS FOR:
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CULVERT CROSSING

SHEET 11 OF 13 SHEETS
FILE NO:

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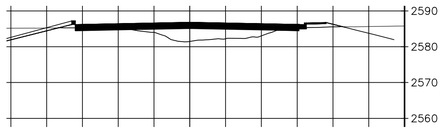

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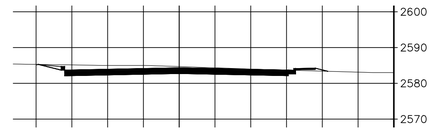

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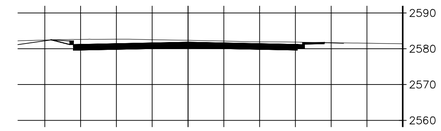

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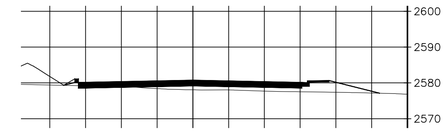

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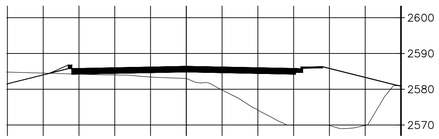

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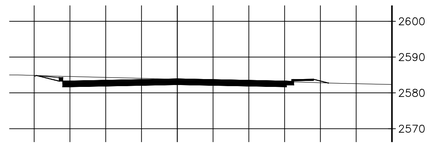

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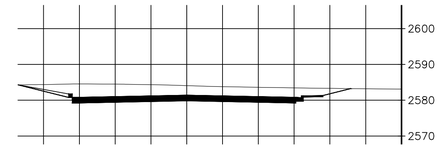

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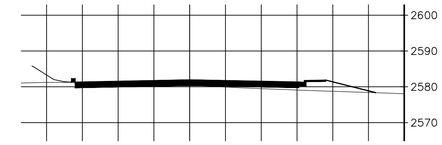

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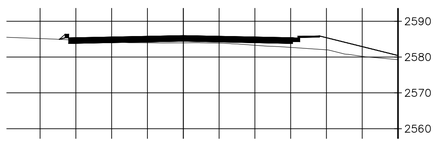

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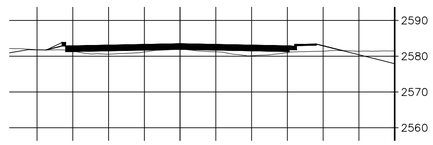

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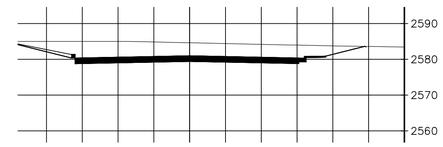

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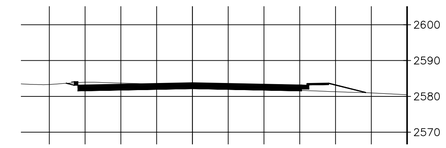

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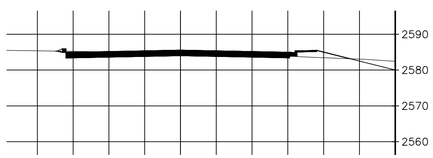

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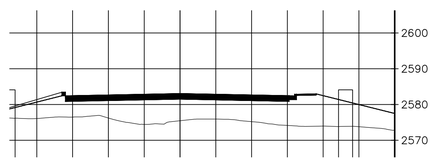

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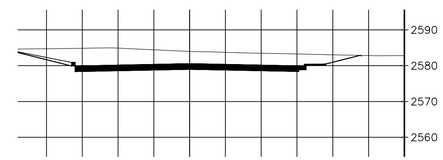

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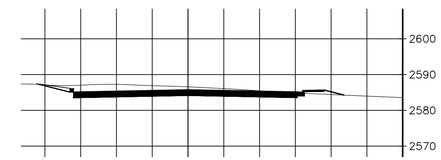

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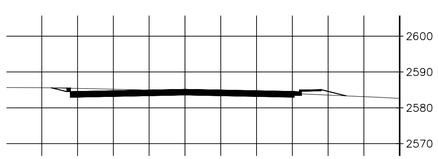

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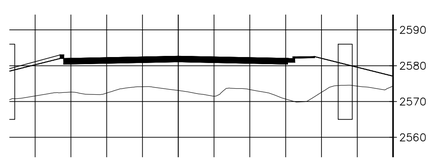

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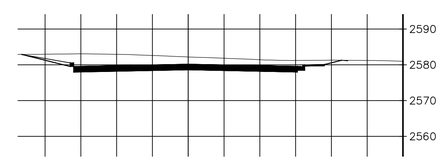

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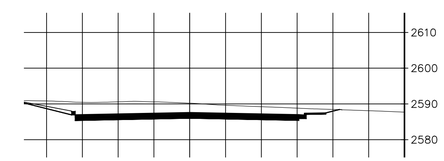

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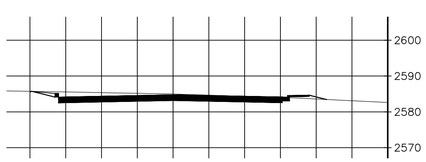

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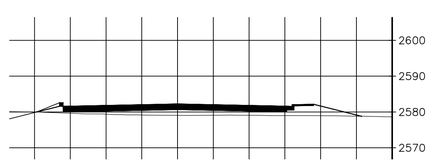

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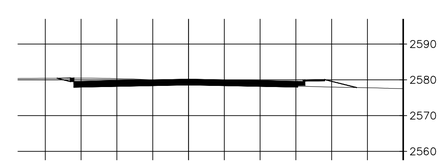

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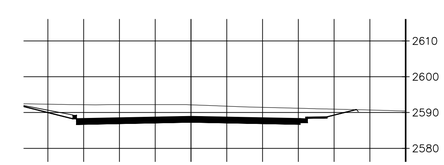


STA 217+50

	CONSTRUCTION NOTES	QUANTITY ESTIMATES
1	PROTECT IN PLACE.	–
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.	23,064 FT^2
3	COLDMILL EXISTING AC PAVEMENT (2").	23,064 FT^2
4	CONSTRUCT XX" HMA (1/2 INCH TYPE A PG-64-10) OVER XX" CLASS AB OVER COMPACTED SUBGRADE.	153,749 FT^2
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).	153,749 FT^2
6	CONSTRUCT TYPE A-8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201.	1,622 FT.
7	CONSTRUCT CURB RAMP (CASE PER PLAN) PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	2 EA.
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.	8,829 FT^2
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
10	REMOVE EXISTING CURB AND GUTTER.	3,338 FT.
11	CONSTRUCT AC DIKE TO 8" PER RIVERSIDE COUNTY STANDARD NO. 212.	2,457 FT.
12	REMOVE PCC SW.	–
13	CONSTRUCT TYPE D (8-INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.	–
14	EXISTING 36" ø CONCRETE PIPE.	1 EA
15	MATCH EXISTING SIDEWALK.	–
16	MATCH EXISTING ASPHALT CONCRETE.	–
17	GRIND AND CAP EXISTING ASPALT CONCRETE.	23,064 FT^2
18	PROTECT IN PLACE CURRENT SEWER LINE.	1 EA
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.	1 EA
20	PROPOSED STORM DRAIN STRUCTURE.	1 EA
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
22	CONSTRUCT DOUBLE STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.	3 EA
23	MATCH TO EXISTING CURB AND GUTTER.	–
24	EXISTING HEADWALL.	2 EA
25	EXISTING 60" ø CONCRETE PIPE.	2 EA

20 10 0 20 40 60

SCALE: 1"= 20'

97% SUBMITTAL (NOT FOR CONSTRUCTION)

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:
ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). DIFFERENTIAL LEVELS AND STATIC GPS OBSERVATIONS DETERMINED ELEVATIONS. THE NATIONAL GEODETIC SURVEY (NGS) DATASHEET ELEVATION AT THE NGS BENCHMARK WAS USED:

STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GIRARD STREET HEMET, CA 92544
TEL (951) 652-4454 FAX (951) 766-8942
E-MAIL BFOX@HBCGCZAD.COM

PREPARED UNDER THE SUPERVISION OF:

BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA

PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

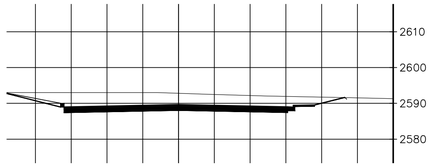
BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ STAFF ENGINEER DATE: _____
RECOMMENDED BY: _____ PRINCIPAL ENGINEER DATE: _____
APPROVED BY: _____ CITY ENGINEER DATE: _____

CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
SECTIONS/DETAIL SHEET

SHEET 12 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG



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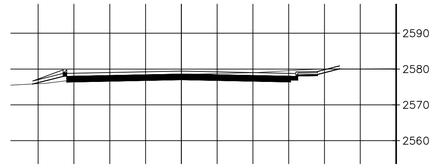

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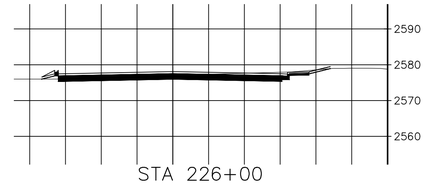

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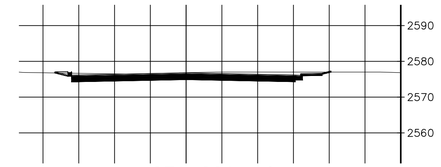

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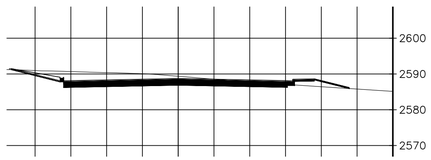

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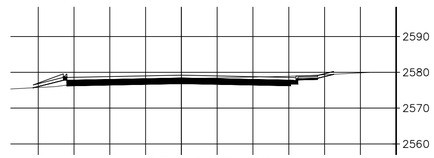

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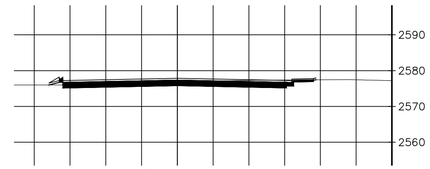

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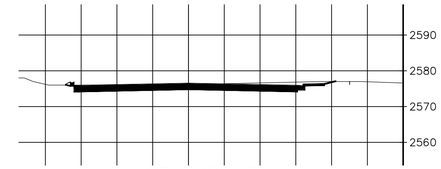

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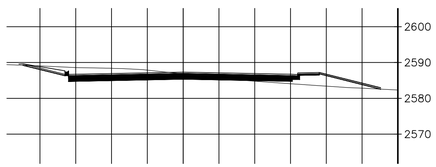

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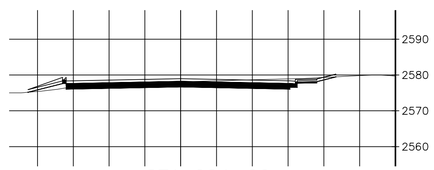

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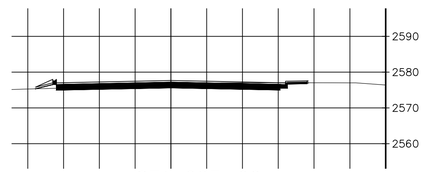

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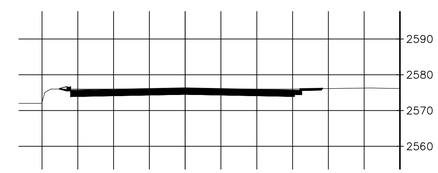

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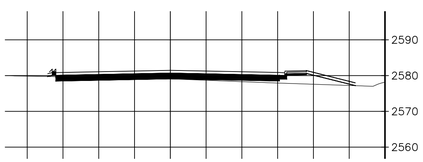

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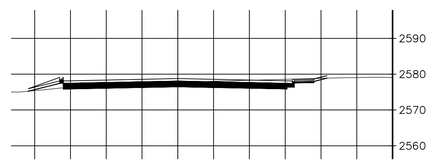

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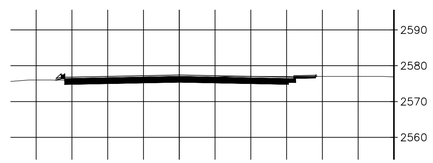

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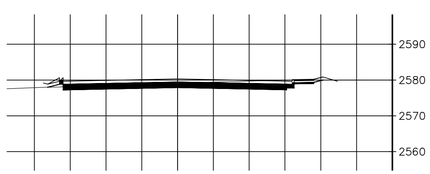
SCALE: 1"= 20'



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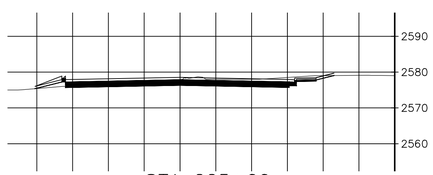

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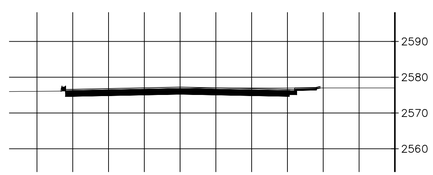

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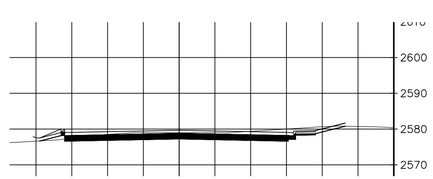

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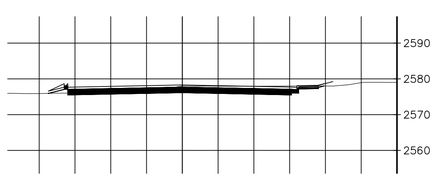

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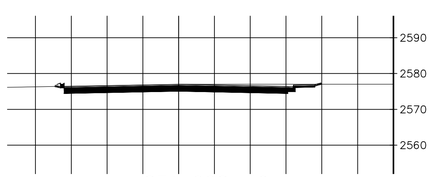


STA 228+50

	CONSTRUCTION NOTES	QUANTITY ESTIMATES
1	PROTECT IN PLACE.	–
2	SAWCUT AND REMOVE EXISTING AC PAVEMENT TO SUBGRADE.	23,064 FT^2
3	COLDMILL EXISTING AC PAVEMENT (2").	23,064 FT^2
4	CONSTRUCT XX" HMA (1/2 INCH TYPE A PG–64–10) OVER XX" CLASS AB OVER COMPACTED SUBGRADE.	153,749 FT^2
5	CONSTRUCT VARIABLE DEPTH AC OVERLAY (2" MIN).	153,749 FT^2
6	CONSTRUCT TYPE A–8 CURB AND GUTTER PER COUNTY OF RIVERSIDE STD. DETAIL 201.	1,622 FT.
7	CONSTRUCT CURB RAMP {CASE PER PLAN} PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	2 EA.
8	CONSTRUCT PCC SIDEWALK PER COUNTY OF RIVERSIDE STD. DETAIL 401.	8,829 FT^2
9	CONSTRUCT 4'X3' TRUNCATED DOMES. DETECTABLE WARNING DETAIL PER COUNTY OF RIVERSIDE STD. DETAIL 403. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
10	REMOVE EXISTING CURB AND GUTTER.	3,338 FT.
11	CONSTRUCT AC DIKE TO 8" PER RIVERSIDE COUNTY STANDARD NO. 212.	2,457 FT.
12	REMOVE PCC SW.	–
13	CONSTRUCT TYPE D (8–INCH) CURB PER COUNTY OF RIVERSIDE STD DETAIL 201.	–
14	EXISTING 36" ø CONCRETE PIPE.	1 EA
15	MATCH EXISTING SIDEWALK.	–
16	MATCH EXISTING ASPHALT CONCRETE.	–
17	GRIND AND CAP EXISTING ASPALT CONCRETE.	23,064 FT^2
18	PROTECT IN PLACE CURRENT SEWER LINE.	1 EA
19	PROTECT IN PLACE CURRENT STORM DRAIN SYSTEM.	1 EA
20	PROPOSED STORM DRAIN STRUCTURE.	1 EA
21	PROPOSED R/W. [IMPROVEMENTS BY OTHERS; NOT PART OF PROJECT]	–
22	CONSTRUCT DOUBLE STRAIGHT HEADWALL PER CALTRANS STANDARD PLAN NO. RSP D89.	3 EA
23	MATCH TO EXISTING CURB AND GUTTER.	–
24	EXISTING HEADWALL.	2 EA
25	EXISTING 60" ø CONCRETE PIPE.	2 EA

97% SUBMITTAL (NOT FOR CONSTRUCTION)

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:
ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). DIFFERENTIAL LEVELS AND STATIC GPS OBSERVATIONS DETERMINED ELEVATIONS. THE NATIONAL GEODETIC SURVEY (NGS) DATASHEET ELEVATION AT THE NGS BENCHMARK WAS USED:

STATION	NGS POINT ID	ELEVATION (FT)
K1311	DX3472	2601.93

DESCRIPTION: 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF I–10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVENUE CENTERLINE, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

BY	MARK	DESCRIPTION	APPR.	DATE
	1			

ENGINEER — REVISIONS — CITY

Cozad & Fox, Inc.
CIVIL / STRUCTURAL ENGINEERS
MUNICIPAL CONSULTANTS / PLANNERS
SURVEYORS / GPS
151 SOUTH GIRARD STREET HEMET, CA 92544
TEL. (951) 652–4454 FAX (951) 766–8942
E–MAIL BFOX@RSCOZAD.COM

PREPARED UNDER THE SUPERVISION OF:

BRIAN D. FOX, P.E.; RCE NO. 57264 DATE

PRINCIPAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER BRIAN D. FOX CIVIL STATE OF CALIFORNIA

PRELIMINARY

DESIGN BY: A.J.R.
DRAWN BY: D.D.S.
CHECKED BY: B.D.F.
SCALE: 1"=40'
DATE: 03/2022
JOB NUMBER: 2001800.00

BEAUMONT CALIFORNIA
PUBLIC WORKS DEPARTMENT
550 E. 6TH ST, BEAUMONT, CA 92223

REVIEWED BY: _____ DATE: _____
STAFF ENGINEER

RECOMMENDED BY: _____ DATE: _____
PRINCIPAL ENGINEER

APPROVED BY: _____ DATE: _____
CITY ENGINEER

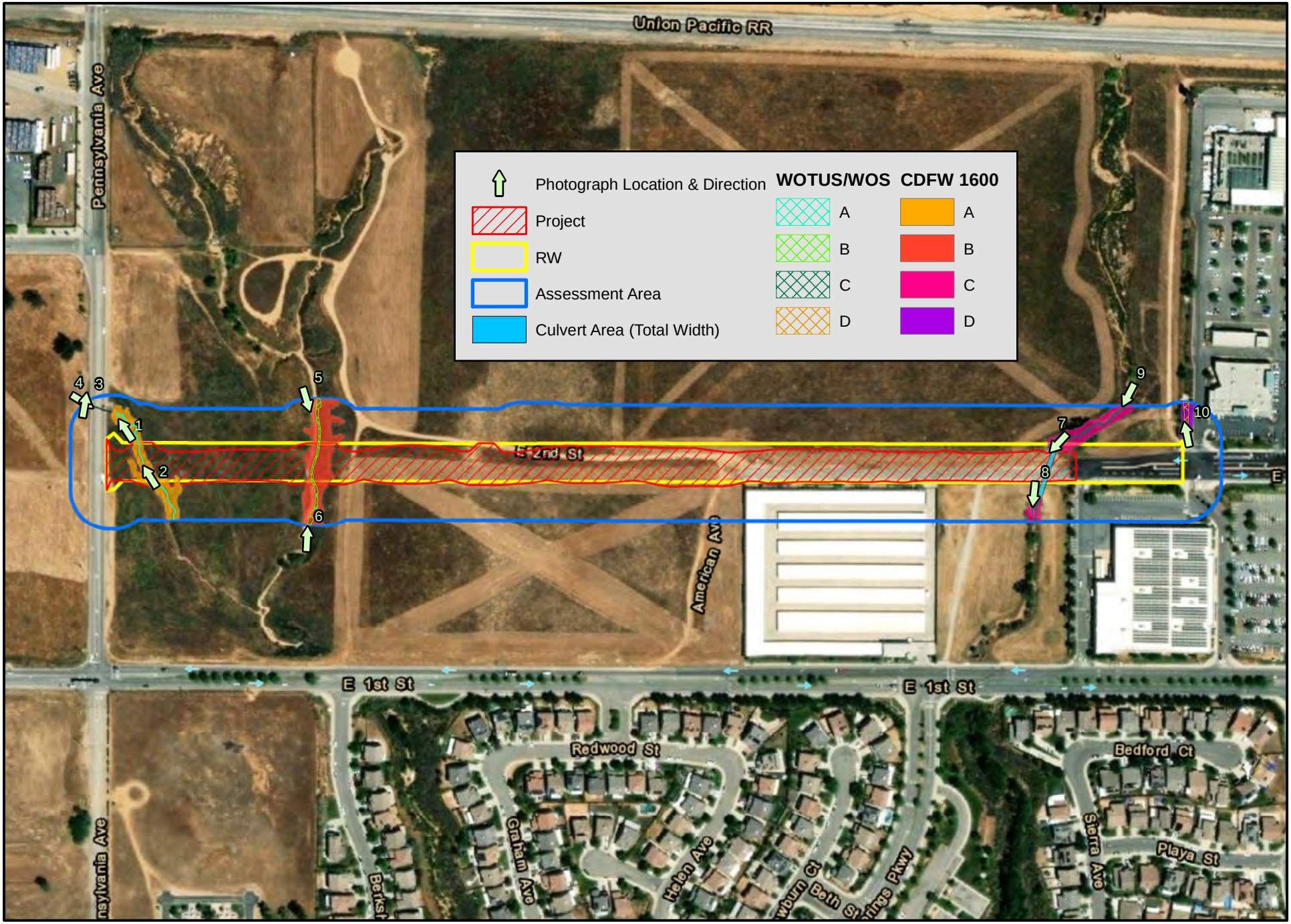
CITY OF BEAUMONT, CALIFORNIA
IMPROVEMENT PLANS FOR:
2ND STREET
SECTIONS/DETAIL SHEET

SHEET 13 OF 13 SHEETS
FILE NO:

Z:\2001800\DWG\2001800.00_2NDSTREET_100%.DWG

APPENDIX B

Assessment Photographs



N

0 150 300 600 900 1,200 Feet

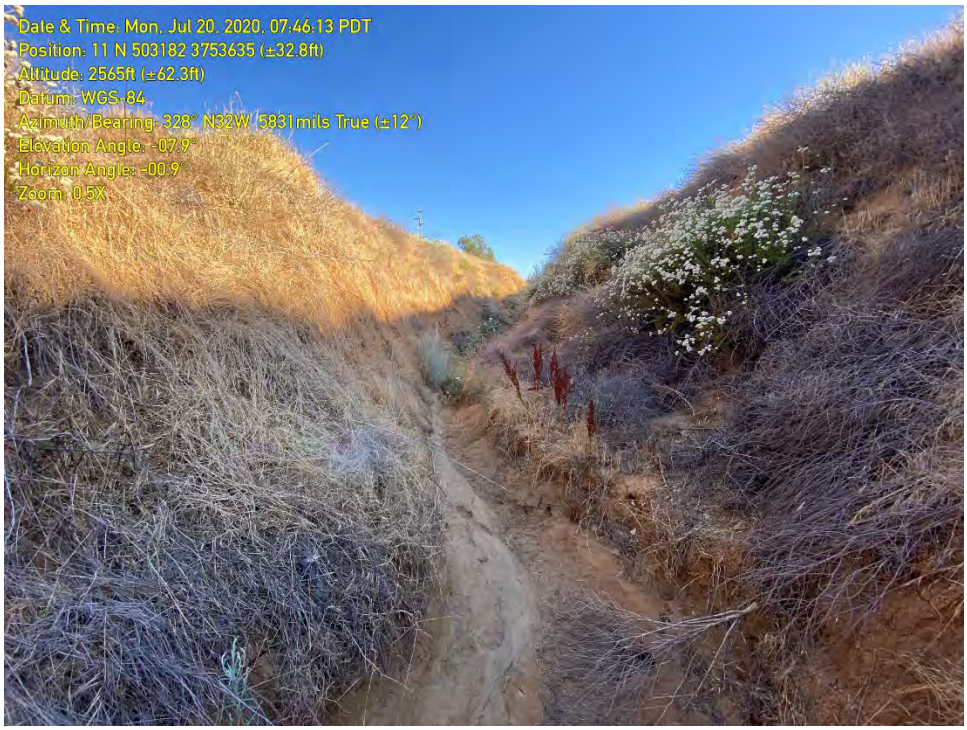
1 inch = 333 feet

APPENDIX B
Assessment Photographs
Key Map

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement

PHOTOGRAPH 1: The upstream portion of Feature A where the culvert begins the feature beneath Pennsylvania Avenue.



PHOTOGRAPH 2: The bed and bank of Feature A was narrow and deeply incised.

PHOTOGRAPH 3: The westside of Pennsylvania Avenue where storm runoff entered a standpipe connected to the culvert where Feature A began.

PHOTOGRAPH 4: No roadside drainage was present, or evidence thereof, indicating all flow for Feature A originated from road runoff.

PHOTOGRAPH 5: A view looking down Feature B.

PHOTOGRAPH 6: The depth of Feature B varied and decreased from the upstream end to the downstream portion.

PHOTOGRAPH 7: The culvert at 2nd Street from the upstream end of Feature C (Potrero Creek).

PHOTOGRAPH 8: The low-quality willow scrub in Feature C downstream of 2nd Street.

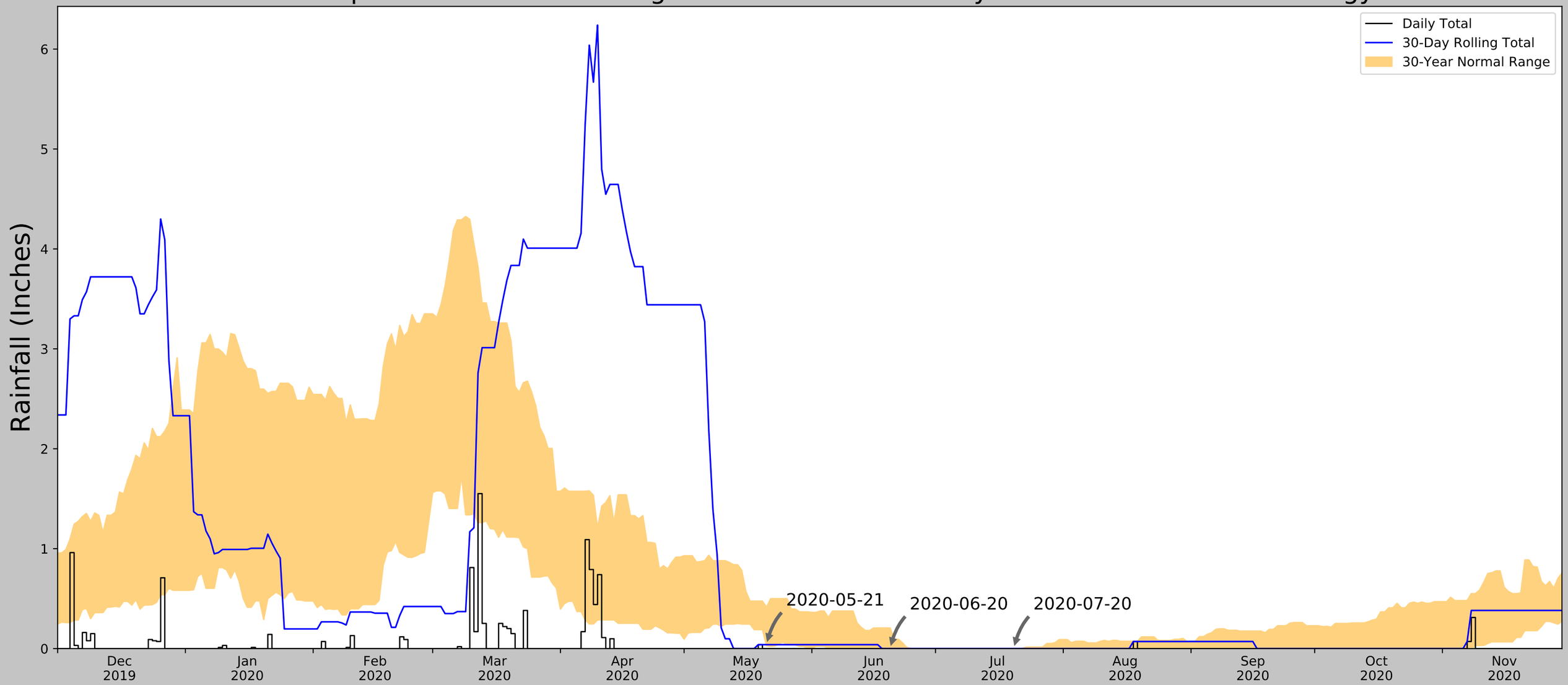
PHOTOGRAPH 9: Feature C upstream of 2nd Street looking downstream. No riparian habitat present. The large blue gum tree depicted in the background.

PHOTOGRAPH 10: The human-created ditch Feature D with low-quality riparian habitat. The drainpipe entered the underground drainage system.

APPENDIX C

Wetlands Climate Tables

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.923289, -116.961809
Observation Date	2020-07-20
Elevation (ft)	2586.24
Drought Index (PDSI)	Normal
WebWIMP H_2O Balance	Dry Season

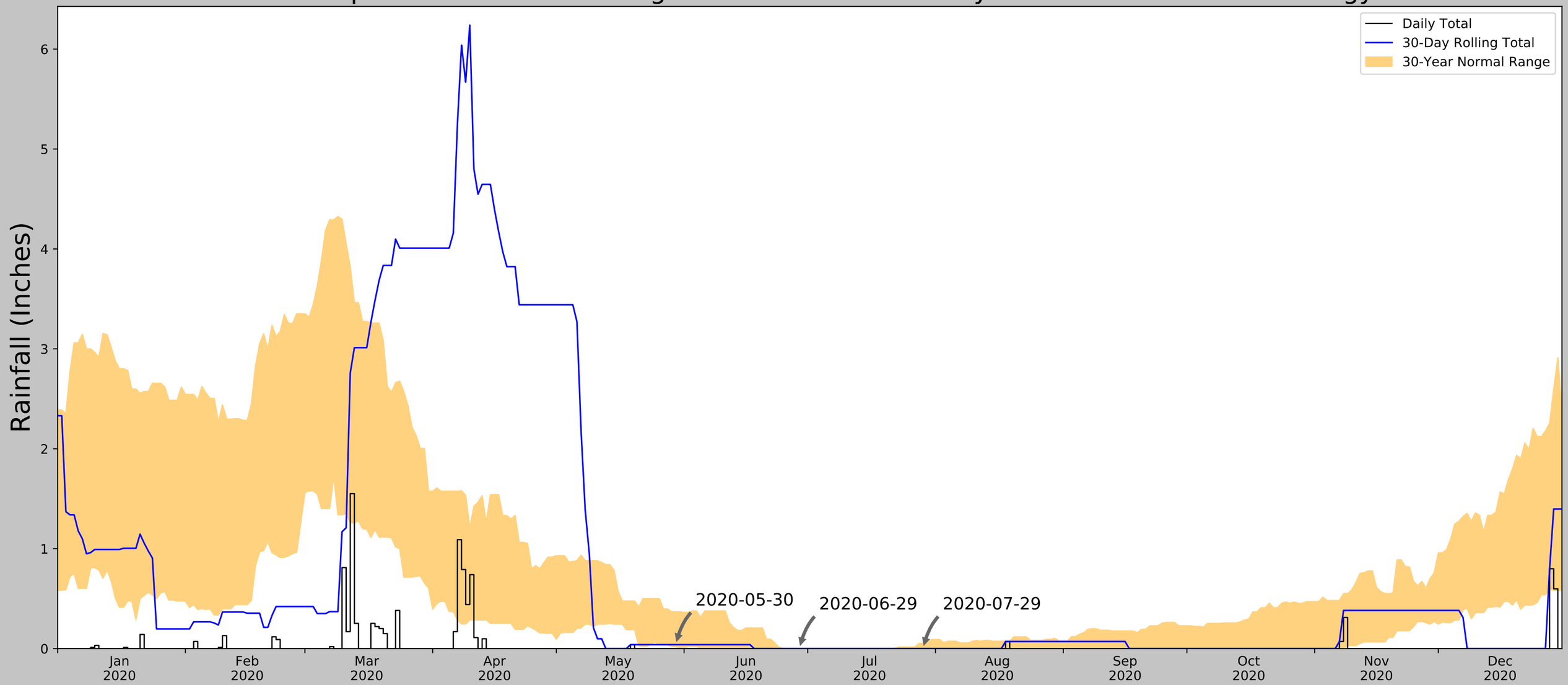
30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2020-07-20	0.0	0.0	0.0	Normal	2	3	6
2020-06-20	0.0	0.206693	0.0	Normal	2	2	4
2020-05-21	0.027953	0.414567	0.03937	Normal	2	1	2
Result							Normal Conditions - 12

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
SAN JACINTO	33.7964, -116.9753	1524.934	8.801	1061.306	13.301	10972	90
BEAUMONT #2	33.9286, -116.9814	2590.879	1.182	4.639	0.537	163	0
BEAUMONT 2.5 NW	33.9543, -117.012	2532.152	3.587	54.088	1.808	18	0
HOMELAND 1.7 NNE	33.769, -117.0923	2248.032	13.028	338.208	10.268	11	0
HEMET 4.1 ENE	33.7527, -116.9196	1698.163	12.033	888.077	16.101	3	0
HEMET	33.7381, -116.8939	1811.024	13.376	775.216	16.388	185	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.923289, -116.961809
Observation Date	2020-07-29
Elevation (ft)	2586.24
Drought Index (PDSI)	Normal
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2020-07-29	0.0	0.051181	0.0	Normal	2	3	6
2020-06-29	0.0	0.0	0.0	Normal	2	2	4
2020-05-30	0.022047	0.36811	0.03937	Normal	2	1	2
Result							Normal Conditions - 12

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
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BEAUMONT 2.5 NW	33.9543, -117.012	2532.152	3.587	54.088	1.808	18	0
HOMELAND 1.7 NNE	33.769, -117.0923	2248.032	13.028	338.208	10.269	11	0
HEMET 4.1 ENE	33.7527, -116.9196	1698.163	12.033	888.077	16.101	3	0
HEMET	33.7381, -116.8939	1811.024	13.376	775.216	16.388	185	0

APPENDIX D

Plants Observed

The plants listed below were detected either on or within 500-feet of the Project during field surveys conducted in July 2020, April, May, June, and July 2021. Nomenclature follows *The Jepson Online Interchange*. Introduced/Naturalized species are indicated with an (I). Remnant volunteer cereal crops detected are indicated with a (C). Not all planted ornamentals are included in the list below.

COMMON NAME	SCIENTIFIC NAME
Amaranth Family	**Amaranthaceae**
Palmer's amaranth	*Amaranthus palmeri*
procumbent pigweed	*Amaranthus blitoides*
tumbleweed (I)	*Amaranthus albus*
Borage Family	**Boraginaceae**
common cryptantha	*Cryptantha intermedia*
common fiddleneck	*Amsinckia menziesii*
Buckwheat Family	**Polygonaceae**
California buckwheat	*Eriogonum fasciculatum*
common knotweed (I)	*Polygonum aviculare* subsp. *depressum*
curly dock (I)	*Rumex crispus*
slender buckwheat	*Eriogonum gracile*
willow weed	*Persicaria lapathifolia*
Caltrop Family	**Zygophyllaceae**
puncture vine (I)	*Tribulus terrestris*
Elm Family	**Ulmaceae**
Chinese elm (I)	*Ulmus parvifolia*
Evening-Primrose Family	**Onagraceae**
willow herb	*Epilobium ciliatum*
Geranium Family	**Geraniaceae**
long beaked filaree (I)	*Erodium botrys*
redstem filaree (I)	*Erodium cicutarium*
Goosefoot Family	**Chenopodiaceae**
lamb's quarters (I)	*Chenopodium album*
Russian thistle (I)	*Salsola tragus*
Gourd Family	**Cucurbitaceae**
buffalo gourd	*Cucurbita foetidissima*
Grass Family	**Poaceae**
alkali sacaton	*Sporobolus airoides*
barley (C)	*Hordeum vulgare*
cheat grass (I)	*Bromus tectorum*
giant reed (I)	*Arundo donax*
rattail sixweeks grass (I)	*Festuca myuros*
red brome (I)	*Bromus rubens*
ripgut grass (I)	*Bromus diandrus*
rye grass (I)	*Festuca perennis*
slender wild oat (I)	*Avena barbata*
wall barley (I)	*Hordeum murinum*
wheat (C)	*Triticum aestivum*
Hemp Family	**Cannabaceae**
netleaf hackberry	*Celtis reticulata*
Legume Family	**Fabaceae**
burclover (I)	*Medicago polymorpha*

COMMON NAME	SCIENTIFIC NAME
hairy vetch (I)	*Vicia villosa*
honey mesquite	*Prosopis glandulosa* var. *torreyana*
Mexican palo verde (I)	*Parkinsonia aculeata*
miniature lupine	*Lupinus bicolor*
Spanish clover	*Acmispon americanus* var. *americanus*
white sweetclover (I)	*Melilotus albus*
Miner's Lettuce Family	**Montiaceae**
red maids	*Calandrinia menziesii*
Mint Family	**Lamiaceae**
horehound (I)	*Marrubium vulgare*
vinegar weed	*Trichostema lanceolatum*
Morning-Glory Family	**Convolvulaceae**
bindweed (I)	*Convolvulus arvensis*
Muskroot Family	**Adoxaceae**
blue elderberry	*Sambucus nigra* subsp. *caerulea*
Mustard Family	**Brassicaceae**
black mustard (I)	*Brassica nigra*
eastern rocket (I)	*Sisymbrium orientale*
London rocket (I)	*Sisymbrium irio*
radish (I)	*Raphanus sativus*
shortpod mustard (I)	*Hirschfeldia incana*
tumble mustard (I)	*Sisymbrium altissimum*
Myrtle Family	**Myrtaceae**
blue gum (I)	*Eucalyptus globulus*
Nightshade Family	**Solanaceae**
jimson weed	*Datura wrightii*
tree tobacco (I)	*Nicotiana glauca*
Olive Family	**Oleaceae**
shamel ash (I)	*Fraxinus uhdei*
Poppy Family	**Papaveraceae**
California poppy	*Eschscholzia californica*
Quassia Family	**Simaroubaceae**
tree-of-heaven (I)	*Ailanthus altissima*
Spurge Family	**Euphorbiaceae**
doveweed	*Croton setiger*
rattlesnake sandmat	*Euphorbia albomarginata*
Sunflower Family	**Asteraceae**
annual bur-sage	*Ambrosia acanthicarpa*
cocklebur	*Xanthium strumarium*
common sandaster	*Corethrogyne filaginifolia*
common sunflower	*Helianthus annuus*
hairy horsebrush	*Tetradymia comosa*
Canada horseweed	*Erigeron canadensis*
interior goldenbush	*Ericameria linearifolia*
mule fat	*Baccharis salicifolia* subsp. *salicifolia*
Palmer's goldenbush	*Ericameria palmeri*
prickly lettuce (I)	*Lactuca serriola*
small wirelettuce	*Stephanomeria exigua* subsp. *deanei*

COMMON NAME	SCIENTIFIC NAME
stinknet (I)	*Oncosiphon pilulifer*
tall wreath plant	*Stephanomeria virgata*
tarragon	*Artemisia dracunculus*
telegraph weed	*Heterotheca grandiflora*
tocalote (I)	*Centaurea melitensis*
western ragweed	*Ambrosia psilostachya*
yellow star-thistle (I)	*Centaurea solstitialis*
Tamarisk Family	**Tamaricaceae**
saltcedar (I)	*Tamarix ramosissima*
Willow Family	**Salicaceae**
arroyo willow	*Salix lasiolepis*
Goodding's black willow	*Salix gooddingii*
Fremont cottonwood	*Populus fremontii* subsp. *fremontii*
narrow-leaved willow	*Salix exigua*
red willow	*Salix laevigata*

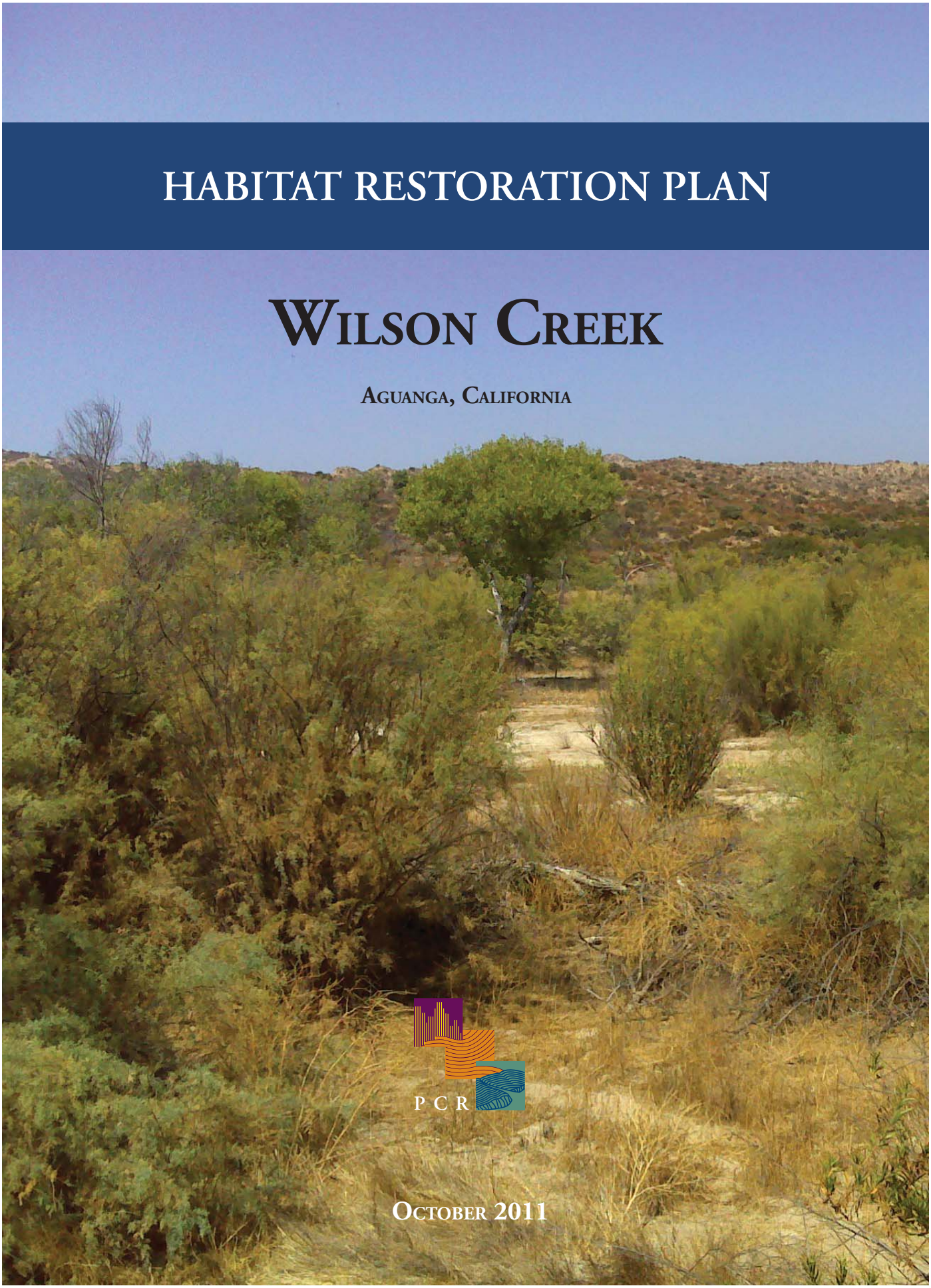
APPENDIX C

Habitat Restoration Plan Wilson Creek

HABITAT RESTORATION PLAN

WILSON CREEK

AGUANGA, CALIFORNIA



PCR

OCTOBER 2011

HABITAT RESTORATION PLAN

WILSON CREEK

AGUANGA, CALIFORNIA

Prepared for:
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P.O. Box 2921
Hemet, California 92546
Contact: Mr. Joe Gonzalez

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PCR SERVICES CORPORATION
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Scott Holbrook, Senior Biologist

OCTOBER 2011

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Report Date:
October 2011

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Habitat Mitigation and Monitoring Plan

1.0 INTRODUCTION

This Habitat Restoration Plan (HRP, "Plan") describes a strategy and presents guidelines and specifications for the enhancement and restoration of riparian habitat along a section of Wilson Creek in Aguanga, California (**Figure 1**, *Regional Map*). The restoration site area covers approximately 19.4 acres (**Figure 2**, *Vicinity Map*). The project will involve tamarisk eradication throughout the entire area with supplemental planting efforts to reestablish native riparian woodland and scrub vegetation. The site is proposed to be planted in phases with the first phase of planting to commence in the fall of 2012 and planting in Phases 2 and 3 planned in the 2013 and 2014, respectively (**Figure 3**, *Wilson Creek Restoration Area*). However, Wilson Creek Farms, LLC may conduct all planting in just one or two phases. The phasing and schedule for initial planting will be determined prior to implementation of the planting currently planned as Phase 1 to commence in Fall 2012. The proposed enhancement and restoration efforts prescribed herein are intended to increase habitat quality and improve functional values associated with this section of Wilson Creek. The restored areas will be made available for projects conducted off site by others that require compensatory habitat mitigation to offset impacts to jurisdictional areas regulated by the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and/or California Department of Fish and Game (CDFG). Each project will be subject to review and approval by the resource agencies through individual Habitat Mitigation and Monitoring Plan's (HMMP) to ensure consistency with the intent of this HRP as appropriate.

This Plan describes the objectives, procedures, and performance criteria for habitat enhancement and restoration and provides discretionary recommendations to guide noxious weed eradication, site preparations, planting, maintenance, monitoring activities, and specifies requirements for reporting the implementation and progressive results of the prescribed habitat restoration efforts.

1.1 Project Location

The proposed project site encompasses approximately 19.4 acres within the rural Lancaster Valley area of Aguanga, situated in unincorporated Riverside County, California. The site lies to the east of Vail Lake just north of State Route (SR) 79 and approximately 16.7 miles east/southeast of the Interstate 15 (I-15) and Interstate 215 (I-215) interchange. The site is accessed from the end of the Cottonwood School Road which lies approximately 1.2 miles up Sage Road (County Road No. 3) north from the SR-79. The project site is found on the U.S. Geological Survey (USGS) 7.5-minute quadrangle map for Vail Lake, California, in Sections 17 and 18, Township 8 South, Range 1 East (Figure 2). The Universal Transverse Mercator (UTM) coordinates corresponding to the approximate center of the project site are 508935.52 m E and 3705008.43 m N (UTM Zone 11).

1.2 General Site Description

The restoration site in Wilson Creek is located in a rural area surrounded by active agriculture and natural open space with very little development in the near vicinity. The subject site and immediately adjacent farming areas vicinity lie within a relatively flat valley bottom. This segment of Wilson Creek is almost 3,000 feet in length and slopes gradually downward from east to west in the direction of flow. This

streambed area ranges in elevation from approximately 1,700 feet above mean sea level (MSL) at the eastern limits to about 1,645 above MSL at the western limits.

Wilson Creek is the single significant drainage feature in the area and it flows from east to west toward Sage Road. The southern banks of Wilson Creek are characterized by a historic levee that ranges from approximately 8 to 15 feet in height. The levee was constructed in the late 1800's to isolate Wilson Creek from farming activities in the Lancaster Valley just south of the Creek. In the last 20 years the project reach has been subjected to invasion by non-native tamarisk. Historic aerial imagery indicates that tamarisk has migrated upstream from Sage Road, located directly off-site to the east, until it became the dominant vegetation throughout the entire streambed up to the eastern boundary of the proposed 19.4-acre tamarisk removal area.

1.3 Jurisdictional Areas

Wilson Creek is an intermittent drainage feature and riparian corridor that is subject to CDFG regulatory jurisdiction The streambed area and the active floodplain between the northern and southern embankments are also considered Waters of the U.S. and thus subject to ACOE and RWQCB jurisdiction (**Figure 4**, *Jurisdictional Limits and Photo Locations*).

Wilson Creek is considered to support intermittent flow through the Lancaster Valley as evidenced by USGS topographic blueline stream mapping of Wilson Creek (see Figure 2). However the flow within this portion of the creek is in ephemeral in nature due to the gentle topographic relief of the streambed, the presence of excessively well drained sandy soils, and the occurrence of historic farming levees that confine the creek and minimize hydrologic inputs from historic tributaries and/or upland sheet flow[1]. The Wilson Creek restoration area supports ephemeral surface flows through a braided network of low-flow channels separated by sand bars that are experiencing incision due to stabilization by dense patches of tamarisk shrubs. However, evidence of continued lateral migration of smaller low-flow channels was observed in the field. Soils within the channel are dominated by Riverwash (Rw) based on Natural Resources Conservation Service (NRCS) Soil Web mapping in Google Earth, which are typically considered to be non-soils (NRCS 2011).

Given the dynamic nature of this streambed system, the sandy ephemeral classification of the stream, and its location in the arid southwest, the limits of ACOE jurisdiction were assessed based on the limits of the active floodplain pursuant to *A Field Guide to the identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (ACOE, 2008). CDFG jurisdiction was assessed based on the top-of-bank of the historic farming levee along the southern extent of the boundary only, as the northern boundary is contained entirely within the floodplain of the creek. The active floodplain of the restoration area supports an average width ranging from 300-600 feet in width and includes approximately 3,000 linear feet of braided channel.

Vegetation within the study area supports dense thickets of tamarisk scrub intermixed with sparse stands of mature cottonwood trees (*Populus fremontii*) and several species of mature willow trees (*Salix* sp.) that are mainly located along the southern perimeter of the Wilson Creek study area. More drought tolerant species such as scale broom (*Lepidospartum squamatum*), tarragon (*Artemisia dracunculus*) and California buckwheat (*Eriogonum fasciculatum*), and occasional cacti specimens including prickly pear cactus (*Opuntia*

[11] *Ephemeral streambeds generally support flow during, and immediately after, a rain event.*

N

0 5 10 Miles

Regional Map

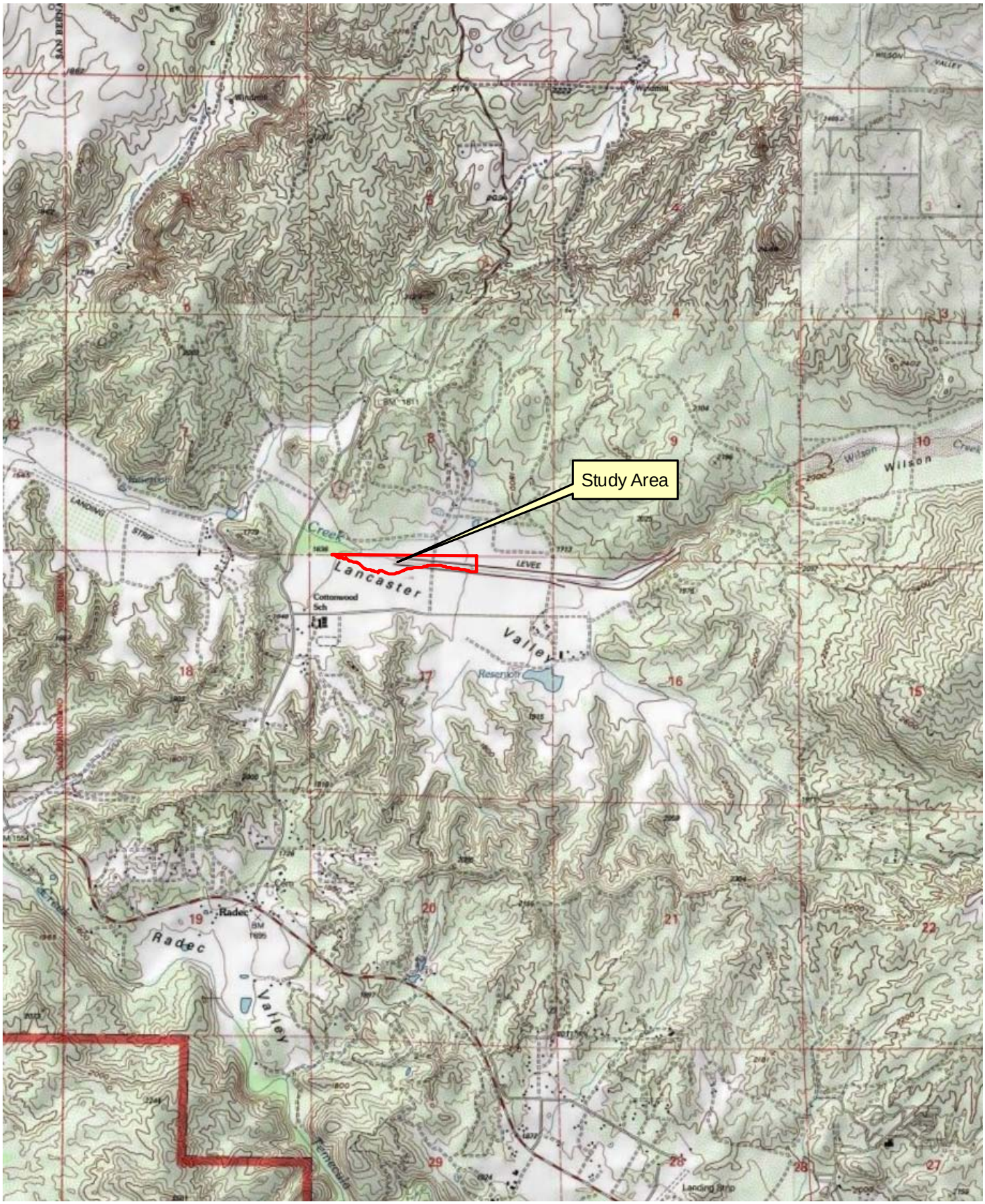
Wilson Creek Restoration Area

Source: ESRI Street Map, 2009; PCR Services Corporation, 2011.

FIGURE

1

PCR



N

0 2,000 4,000 Feet

Vicinity Map

Wilson Creek Restoration Area

Source: USGS Topographic Series (, CA); PCR Services Corporation, 2011.

FIGURE

2

PCR

PCR

N

0 225 450 Feet

Wilson Creek Restoration Area

Wilson Creek Restoration Area
Source: Eagle Aerial 2010; PCR Services Corporation, 2011.

FIGURE
3

P C R

N

0 225 450 Feet

Jurisdictional Limits and Photo Locations

Wilson Creek Restoration Area

Source: Eagle Aerial 2010; PCR Services Corporation, 2011.

FIGURE

4

Representative Photograph 1

Representative Photograph 2

Representative Photograph 3

Representative Photograph 4

PCR

Representative Photographs

Wilson Creek Restoration Area

Source: PCR Services Corporation, 2011.

FIGURE

5

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littoralis) and cholla (*Cylindropuntia* sp.) are present on the benches and low terraces within the floodplain and represent a form of alluvial scrub vegetation that is common in similar situations in this region. Representative photographs of on-site vegetation are included on (**Figure 5**, *Representative Photographs*).

1.4 Assessment of Functions and Values (HGM Assessment)

PCR has conducted a baseline functional assessment for the restoration area using the Santa Margarita Regional Riverine Hydrogeomorphic (HGM) Guidebook (Lee et al., 1997). The application of the HGM functional assessment is consistent with that of a previous assessment conducted by PCR in October 2001 for a section of Wilson Creek upstream from Sage Road, including the restoration area (PCR, 2001). The use of the HGM model for this assessment, as opposed to the California Rapid Assessment Method (CRAM) was directed by recommendations from the ACOE. The results of the HGM assessment, presented below, provide a baseline for comparison with the progress of the restoration efforts. Using the same parameters, the performance criteria for the restoration involves demonstrating functional improvements to at least two streambed functions as detailed in Section 5.1.

Methods

PCR biologists conducted a field assessment of the approximately 19-acre study area in order to characterize the physical structure, evaluate the biological condition, and assess the functional condition of the stream consistent with the HGM performed by PCR in 2001. Field investigations were performed on October 5, 2011 by PCR Principal Environmental Scientist, Amir Morales and Biologist, Zeke Cooley. Although only minor geomorphic and vegetative differences were observed throughout the study area, the creek was divided into three relatively homogenous "reaches" for the purpose of this assessment. Data was collected along three transects and used to characterize the condition of each reach. Given the homogenous nature of the vegetative cover in each reach, it was determined that one transect per reach would provide an adequate baseline assessment of functions within each reach for the purpose of this HRP. **Table 1**, *Location and Size of Reaches within the Study Area* provides a summary of the location and size of each reach of the study area and depicts transects that were used to evaluate that reach as depicted on (**Figure 6**, *Transect Location Map*).

Table 1

Location and Size of Reaches within the Study Area

Reach	Location	Transect	Length (feet)	Acres
1	Lancaster Valley	1	190	1.4
2	Lancaster Valley	2	1,750	12
3	Lancaster Valley	3	1,050	5

Source: PCR Services Corporation, 2011

At each transect, data was collected with regard to the physical and biological structure of the stream and a semi-quantitative functional assessment was performed using the Draft Santa Margarita Regional Riverine HGM Guidebook (Lee et al., 1997). Measures of the physical structure included channel geometry, number of geomorphic surfaces, soil characteristics and presence of hydrologic indicators. Measures of the biological

structure included documentation of the plant community composition, vertical structure of the habitat, and patchiness of different habitat types.

1.4.1 Overview of the Santa Margarita Regional HGM Guidebook

The HGM (Smith et al., 1995), developed by the U.S. Army Corps of Engineers Waterways Experiment Station assesses wetland functional capacity (as opposed to functional opportunity). The HGM approach uses variables measured in the field to compute Functional Indices for biotic, hydrologic, and biogeochemical riverine functions. Variables are the attributes or characteristics of a riverine ecosystem or surrounding landscape, that influence the capacity of a streambed to perform one or more functions. Variables are scored using an ordinal scale (in the case of the Santa Margarita model) from 0.0 to 1.0, based on their similarity to local sites with reference standard conditions. Comparing the variables assessed for the Wilson Creek study area against representative local reference sites within the same watershed, allows for a relative understanding of functional variations. Functional Capacity Indices (FCI's) are calculated based on defined relationships between variables for riverine systems that have been applied to similar resources across the watershed. FCI's range from 0 to 1.0, with 0 representing the most degraded condition and 1.0 representing functional capacity comparable to that found at standard reference sites.

The Santa Margarita Regional Riverine HGM Guidebook (Lee et al., 1997) was developed to evaluate the functional capacity of riverine wetlands and waters of the U. S. in the Santa Margarita Watershed. The regional model is divided into six subclasses and was calibrated based on data collected from approximately 150 reference sites in the watershed. Although a peer review workshop was conducted in October 1997, the recommendations that were developed from this workshop have never been incorporated into the model. Consequently, the model is still considered draft and does not comply with all requirements of the National Action Plan to Develop the Hydrogeomorphic Approach for Assessing Wetland Functions (Federal Register: August 16, 1996, Vol. 61, No. 160, pp 42593-42603).

1.4.2 Existing Stream Condition and Function

Wilson Creek is one of the major tributaries in the upper Santa Margarita Watershed. Below the confluence with Cahuilla Creek, Wilson Creek is a fourth order stream and is one of two major streams that flows into Vail Lake; the other being Temecula Creek. Through the study area, the active floodplain varies in width from 300 to 600 feet in channel width (from southern levy to northern property boundary) and encompasses a braided network of low-flow channels. The creek supports gentle topographic relief evidenced by an elevation of approximately 1,700 feet above mean sea level (msl) in Reach 1 (upstream reach) and at approximately 1,650 feet above msl in Reach 3 (downstream reach). Figure 6, depicts the Wilson Creek restoration area.

Wilson Creek is considered to support intermittent flow through the Lancaster Valley as evidenced by USGS topographic blueline stream mapping (Figure 2) of the creek. However the flow within this portion of the creek is in ephemeral in nature due to the gentle topographic relief of the streambed, the presence of excessively well drained sandy soils, and the occurrence of historic farming levees that confine the creek and minimize hydrologic inputs from historic tributaries and/or upland sheet flow. This condition is exacerbated by the ongoing spread of tamarisk (salt cedar) that results in the reduction of available moisture from the surface and subsurface of the streambed through evapotranspiration, resulting in a drier habitat compared to pre-invasive conditions. The levees limit the ability of flows to overtop the channel and spread across the floodplain, thereby reducing the following functions: energy dissipation, surface water storage,

N

0 200 400 Feet

P C R

Transect Location Map

Wilson Creek Restoration Area

Source: Eagle Aerial (Aerial), 2009; PCR Services Corporation, 2011.

FIGURE

6

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detention of particulates, and detention of elements and compounds. Vegetation within the study area supports dense thickets of tamarisk scrub intermixed with sparse stands of mature cottonwood trees (*Populus fremontii*) and several species of mature willow trees (*Salix* sp.) that are mainly located along the southern perimeter of the Wilson Creek study area. Dense monotypic stands of tamarisk shrubs generally exhibit higher water-use and increased evapotranspiration rates when compared to native riparian species such as cottonwoods, willows, and mule fat. Over time, water table levels are reduced through the rapid progression of dense stands of tamarisk which results in direct competition with, and eventually mortality of, native riparian vegetation (Zouhar, 2003). Such mortality of native riparian vegetation is evident on the restoration site as much of the cottonwood and willow trees throughout the study area are significantly stressed and/or are in different stages of decline or mortality due to the long-term reduction in the water table and increased competition from invading salt cedar. The salt cedar stands have also stabilized the sand bars to the point where many of the low-flow channels are becoming more stable and incised. Figure 5 provides representative photographs of the non-native invasive dominated riparian habitat present in the study area. The location of each site photographs is depicted on Figure 4, *Jurisdictional Areas*.

Based on the NRCS Web Soil Survey in Google Earth, the restoration area encompasses Riverwash (RsC), Tujunga loamy sand (TvC) and Visalia sandy loam (VlC2), with the Riverwash soils occurring predominately in Reaches 1 and 2. Riverwash soils consist of unconsolidated sands, gravels, and cobbles that are typically considered "non-soils." Portions of Tujunga loamy sand and Visalia sandy loam occur in Reach 3 and consist of very deep, somewhat excessively drained soils, formed in alluvium weathered mostly from granitic sources.

The majority of the landscape surrounding Wilson Creek is currently in agricultural production or has been in the recent past consistent with historic conditions. The adjacent uplands off-site to the north of the study area, which is not currently in agricultural production, are relatively free of non-native grasses that are typically associated with prior clearing or grazing[2]. The characteristics and functional condition of each reach are discussed in the sections below:

1.4.3 Reach 1 (Transect 1)

Characteristics of the Stream Reach

Reach 1 begins approximately 0.8 miles east of Sage Road, where the active floodplain habitat transitions from alluvial fan sage scrub to dense tamarisk scrub with remnant stands of cottonwood and willow trees located mainly along the perimeter of the study area. In Reach 1, the active floodplain of Wilson Creek ranges from 400 to 500 feet wide and is generally confined between earthen levees. Reach 1 supports confined flows within the creek levees, which consequently reduces the opportunity for overbank flow onto the historic floodplain. Between the levees, Reach 1 of Wilson Creek is a braided ephemeral stream, with each flow path being several feet wide and approximately one to two feet deep, with numerous interspersed sand bars dominated by tamarisk. It appears that much of the cottonwood and willow trees in this area, and throughout the study area, are significantly stressed, and many are in different stages of mortality likely due to the long-term reduction in the water table and competition from invading salt cedar. The interior portion of the creek is dominated by dense thickets of tamarisk scrub. In this area, the salt cedar grows in monotypic

[2] *A general biological assessment of the upland resources south of the study area has been completed by PCR Services Corp. (2001), and is available under separate cover.*

stands and has largely excluded the establishment of cottonwood or willow saplings and/or seedlings resulting in the presence of sparse old growth native vegetation. The salt cedar stands have also stabilized the bars to the point where some of the flow areas are beginning to incise. Total canopy cover is estimated at approximately 55 percent of the total study area. Overall, salt cedar accounts for between 65 percent and 75 percent of the canopy cover in Reach 1. Areas adjacent to the creek (outside the levees) are primarily ruderal or agriculture.

Functional Condition

As indicated in **Table 2**, *HGM Functional Index Scores for Wilson Creek*, the average Functional Capacity Index (FCI) scores were 0.55 or greater. Hydrologic and biogeochemical functions are depressed due to the constriction of the floodplain between the earthen levees. The levees limit the ability of flows to overtop the channel and spread across the floodplain, thereby reducing the following functions: energy dissipation, surface water storage, detention of particulates, and detention of elements and compounds. Reach 1 supports less structurally diverse riparian habitat than the downstream reaches of the Wilson Creek study area. The dominant vegetation type within the interior portion of Reach 1 is the non-native invasive salt cedar, which reduces habitat function for most organisms. Reach 1 supports riverine functions that have been reduced significantly due to the spread of invasive salt cedar.

Table 2

HGM Functional Scores for Wilson Creek Assessment Area

	Transect		
	1	2	3
Hydrologic Functions			
Maintenance of Characteristics Channel Dynamics	0.58	0.64	0.47
Dynamic Surface Water Storage and Energy Dissipation	0.38	0.54	0.38
Long-term Surface Water Storage	0.50	0.50	0.50
Dynamic Subsurface Water Storage	0.67	0.67	0.67
	0.53	0.59	0.50
Biogeochemical Functions			
Nutrient Cycling	0.25	0.42	0.17
Detention of Imported Elements and Compounds	0.41	0.50	0.38
Detention of Particulates	0.46	0.61	0.43
Organic Carbon Export	0.56	0.65	0.55
	0.42	0.54	0.38
Habitat Functions			
Maintain Characteristic Plant Community	0.35	0.40	0.25
Maintain Habitat Interspersion and Connectivity	0.45	0.55	0.55
Maintain Characteristic Detrital Biomass	0.75	0.83	0.71
Maintain Spatial Structure of Habitat	0.50	0.56	0.42
Maintain Characteristic Invertebrate Diversity	0.75	0.75	1.00
Maintain Characteristic Vertebrate Diversity	1.00	1.00	1.00
	0.63	0.68	0.66

Source: PCR Services Corporation, 2011

1.4.4 Reach 2 (Transect 2)

Characteristics of the Stream Reach

Reach 2 begins 0.6 miles east of Sage Road, where stream habitat consists of dense tamarisk intermixed with patches of cottonwood and willow trees. In Reach 2 Wilson Creek ranges from 400 to 600 feet wide and is generally confined between earthen levees. Reach 2 appears to be effective at containing flows within the creek, and consequently reducing the opportunity for overbank flow onto the floodplain. Between the levees, Reach 2 of Wilson Creek is a braided stream, with each flow path being several feet wide and approximately two feet deep, with numerous interspersed vegetated sand bars. It appears that most of the cottonwood and willow trees in Reach 2, and throughout the study area, are significantly stressed and many are in different stages of mortality likely due to the long-term reduction in the water table and competition from invading salt cedar. Similar to Reach 1, in Reach 2 the salt cedar grows in monotypic stands and has largely excluded the establishment of cottonwood or willow saplings and/or seedlings, leaving only old growth native trees in the area. The salt cedar stands have also stabilized the bars to the point where some of the flow areas are beginning to incise. Total canopy cover is estimated at approximately 60 percent in Reach 2. Overall, salt cedar accounts for between 70 and 75 percent of the canopy cover in Reach 2.

Functional Condition

As indicated in **Table 2**, *HGM Functional Index Scores for Wilson Creek*, below, the average FCI scores for all functions ranged from 0.64 to 0.70. Hydrologic and biogeochemical functions are depressed due to the constriction of the floodplain between the earthen levees. The levees limit the ability of flows to overtop the channel and spread across the floodplain, thereby reducing the following functions: energy dissipation, surface water storage, detention of particulates, and detention of elements and compounds. The dominant vegetation type within the interior portion of the creek is the non-native salt cedar, which reduces habitat function for most organisms. Reach 2 contains a 400 to 600-foot wide riparian corridor that supports riverine functions which have been reduced due to the infestation of invasive salt cedar.

1.4.5 Reach 3 (Transect 3)

Characteristics of the Stream Reach

Reach 3 begins approximately 0.4 miles east of Sage Road, where the streambed associated habitat transitions from tamarisk scrub with intermixed cottonwood trees, to a disturbed mule fat scrub among dense stands of tamarisk shrubs. In Reach 3 Wilson Creek ranges from 300 to 400 feet wide and is generally confined between earthen levees. Reach 3 appears to be effective at containing flows within the creek, and consequently reducing the opportunity for overbank flow onto the historic floodplain. Between the levees, Reach 3 of Wilson Creek is a braided stream, with each flow path being several feet wide and approximately one to two feet deep, with numerous interspersed vegetated sand bars. Reach 3 exhibits field indicators of ephemeral flow; however, this reach supports a slightly wetter plant community than Reaches 1 and 2. A backwater effect behind Sage Road may contribute to greater soil moisture in this area compared to other Reaches 1 and 2 upstream. In this reach, salt cedar grows in monotypic stands and has largely excluded the establishment of cottonwood or willow saplings and/or seedlings. Although vegetative cover is less than Reaches 1 and 2, a slightly greater density of native mule fat has established in this area.

Functional Condition

As indicated in Table 2, the average FCI scores for all functions associated with Reach 3 range between 0.43 and 0.67. The individual FCI scores for Reach 3 range between 0.25 and 1.0. Hydrologic and biogeochemical functions are depressed in this area due to the constriction of the floodplain between the earthen levees. Reach 3 supports less structurally diverse riparian habitat than the upstream portions of Wilson Creek. However, the dominant vegetation type within the interior portion of the creek is the non-native salt cedar, which reduces habitat function for most organisms. Total canopy cover is estimated at approximately 50 percent in Reach 3. Overall, salt cedar accounts for between 65 and 70 percent of the canopy cover in Reach 3. Reach 2 contains a 300 to 400-foot wide streambed corridor that supports riverine functions which have been reduced significantly due to the spread of invasive salt cedar.

1.4.6 Summary of Wilson Creek Functional Condition

All 3 reaches represent intact riverine systems with low to moderate topographic and geomorphic complexity, and spatially and structurally low habitat diversity. The historic floodplain adjacent to the study area has been subjected to anthropogenic alteration through the construction of levees dating back over 100 years. The levees limit the ability of flows to overtop the channel and spread across the floodplain, thereby reducing the following functions: energy dissipation, surface water storage, detention of particulates, and detention of elements and compounds. No direct impacts from anthropogenic disturbance within the streambed were observed. The Wilson Creek floodplain is contiguous up and downstream, but is laterally confined within a relatively broad floodplain area bound within the farming levees. Reaches 1, 2, and 3 support a reduced functional capacity compared to pre-anthropogenic influences due primarily to constriction of the floodplain and significant infestation with non-native salt cedar. The average FCI for these reaches ranges from 0.43 to 0.70, indicating that this portion of Wilson Creek supports a measureable reduction in function and value compared to more pristine riverine resources within the region. Construction of earthen levees has reduced floodplain connection, resulting in lower hydrologic and biogeochemical functions. In the study area, the high rates of infiltration into the deep alluvium of the Lancaster Valley, combined with the high rates of evapotranspiration from salt cedar infestation have resulted in a more xeric habitat. The habitat in the assessment area has substantially lower structural and spatial diversity than similar reference reaches within the watershed. Removal of salt cedar, and native restoration through the installation of local vegetation cuttings are believed to be the most productive methods to increase hydrologic, biogeochemical, and/or habitat functions within this portion of Wilson Creek.

2.0 GOAL FOR RESTORATION

Under this plan, the goal of the prescribed enhancement and restoration efforts is to eliminate the current coverage of noxious invasive weeds in the project area and promote replacement of the non-native vegetation with appropriate native riparian species. This goal will be accomplished using a two-part approach that includes 1) clearing the site of noxious vegetation followed by selective weed control for several years, and 2) progressively planting and seeding the site to restore native plant coverage in this segment of Wilson Creek.

These efforts are expected to result in improvement in two or more of the important characteristic functions and values attributed to this resource area. The improvements in resource functions and values is planned to provide mitigation for third parties that are required to provide compensatory habitat mitigation for

unavoidable project impacts in the local region. Implementation of compensatory mitigation measures will be subject to review and approval of a project-specific Habitat Mitigation and Monitoring Plan (HMMP) by the appropriate resource agencies. Project-specific HMMP's will be prepared and implemented by Wilson Creek Farms, LLC on behalf prospective permittees to ensure consistency with the intent and framework of this restoration Plan.

Proceeds from the granting of compensatory mitigation within the restoration area are anticipated to assist with funding of the following activities:

1. Implementation of the restoration efforts summarized in this Plan, which will be accomplished on a project-by-project basis through individual Habitat Mitigation and Monitoring Plans (HMMP) that will be reviewed and approved by the resource agencies to ensure consistency with this plan as appropriate.

2. Installation of piezometers to collect water table readings over the course of this Plan.

3. Preparation and processing of a prospectus and associated HMMP for 30-100 acres of streambed creation in Wilson Creek (upstream of the restoration area) through the lateral expansion of existing levees.

4. ACOE approval of the proposed upstream streambed creation area as part of a private mitigation bank for compensatory streambed mitigation.

2.1 Habitat Enhancement and Restoration Concept Plan

This plan consists of two parts. The first part involves enhancement through the eradication of Tamarisk from the project site; part two consists of habitat restoration by re-establishing native riparian vegetation in areas cleared of tamarisk.

2.1.1 Enhancement – Tamarisk Eradication (Part One)

Tamarisk eradication – the first part of the plan - constitutes substantial enhancement of the project area for at least two reasons. First, it provides an ample opportunity for restoration by providing open areas for establishing natural riparian habitat. Second, it should also significantly reduce water loss from this part of the hydrologic system via evapotranspiration, which is believed to be disproportionately high in areas dominated by tamarisk. Part one is proposed to commence immediately (e.g., November 2011) and will occur throughout the 19.4-acre project area in this sandy ephemeral floodplain. Eradication will first involve cutting and stump treatment of standing live tamarisk with the aboveground portion of plants being ground up in place using a flotation tire-mounted Barko Fecon mulcher. In addition to initial tamarisk removal and stump treatment with herbicide, other noxious invasive species such as tree tobacco (*Nicotiana glauca*) and castor bean (*Ricinis communis*) will also be cut and stump treated wherever they may occur on the project site. Subsequent to initial removal and treatment of these invasive exotic species, the entire project area will be monitored for re-growth and treated as needed to eliminate these species for five years.

2.1.2 Restoration – Progressive Planting (Part Two)

Restoration of native riparian vegetation is proposed to be conducted in a total area covering approximately 19.4 acres comprising the "site". Establishment of native vegetation is not currently proposed to commence

all at one time, although it is entirely possible that planting may occur in just one or two phases instead of three. In any case, planting will start upstream and progress downstream. The first round of planting in the first phase of the restoration is proposed to formally commence in the late fall next year (2012). Phase 1 is expected to involve at least three to five acres near the eastern, upstream end of the. The second phase, as presently envisioned, would commence one year later, and the third phase the year after that, with each subsequent phase expected to include 5 acres or more, downstream from the previous phase area. Figure 4 depicts the progressive planting scheme and shows the separation between the phases as a dashed line since the exact acreage of each phase is not yet certain but will depend on the amount of mitigation required by participants.

2.1.3 Pilot Planting Project

Once initial tamarisk removal is completed, a preliminary trial or "pilot project" will be conducted to test and evaluate planting materials and methods within one or more small portions of the enhancement area.. The location and extent of the pilot areas will be determined by Wilson Creek Farms based on recommendations by PCR and/or the RM. However, this HRP anticipates the implementation of 1-3 pilot project areas ranging from approximately 0.10-0.50 acre. The pilot program is being implemented voluntarily by Wilson Creek Farms to help identify the most successful approach to reestablishing native vegetation prior to implementation of Part 2 of this HRP (see Section 2.1.1). Planting in the trial site(s) will include installation of cuttings of native riparian scrub and woodland species such as mule fat, willow, and cottonwood, at varying soil depths, along with seed applications in a few patch areas. The trial effort is planned to avoid or minimize the use of supplemental irrigation as much as possible. If the weather is particularly dry and/or hot during the winter and spring months, or if the majority of installed plant materials appear to be severely stressed, supplemental irrigation may be applied. If applied, irrigation would involve direct hose application to installed plants and/or spray application directed into specific areas for short periods until the desired area is irrigated appropriately.

Seed germination, survivorship of cuttings, and potential irrigation requirements will be observed by Wilson Creek Farms and the knowledge gained from the trial planting and seeding will help determine the best methods and materials to be used during the actual planting effort that will commence with Phase 1 in 2012. Pilot project areas not immediately subject to performance criteria, but will ultimately be integrated into project-specific restoration efforts that will be subject to the performance criteria detailed in Section 5.1 of this HRP. The Year 2 monitoring "time clock" associated with project-specific mitigation areas will commence upon implementation of the Part 2 native revegetation efforts detailed in Section 2.1.1, and will include those project mitigation areas that may encompass a pilot site. Although implementation of pilot trial sites will occur immediately after the tamarisk removal enhancement (Part 1), and prior to the installation of project-specific restoration, trial sites will be integrated into project-specific mitigation areas by supplementing them with native vegetation as needed to meet the necessary vegetation densities proposed for the restoration effort (Part 2).

2.2 Functions and Values to be Improved

Implementation of this Plan is anticipated to provide both local and regional streambed benefits through the replacement of noxious tamarisk with native riparian vegetation, and the eradication of a significant source of tamarisk seed from the Wilson Creek sub-watershed. Although most streambed functions are expected to significantly increase over the long-term, the scope of this restoration Plan and associated five-year

monitoring schedule[3] will be to demonstrate a benefit to a minimum of two of the following streambed functions:

1. Hydrology Function
2. Biogeochemical Function
3. Habitat Function

Successful performance of a minimum of two, of the three functions listed above, will be based on 1) the HGM results, 2) the percent native/non-native coverage, 3) the groundwater elevation results, or any combination of these factors that will be assessed in years 3 and 5 of the restoration monitoring effort. Functions assessed as part of the HGM assessment for this restoration Plan include all three streambed functions (hydrologic, biogeochemical, habitat) as detailed in Section 1.4 of this Plan. Estimation of riparian native/non-native coverage will support habitat based streambed functions, while groundwater elevation monitoring may support a determination of an increase in hydrologic streambed function.

The prescribed efforts will improve habitat quality by greatly decreasing noxious weed cover in favor of increased cover and diversity by native vegetation. In turn, the shift from tamarisk dominance to native dominance should improve nutrient cycling and increase subsurface water storage through decreased evapotranspiration rates. Although piezometers (wells) will be installed to monitor subsurface (water table) conditions, it's unclear if data from the wells will conclusively demonstrate a measurable increase in water table elevations over the scope of this restoration Plan. However, data will be kept over the course of the proposed phases of restoration in the event that useful information regarding the correlation of water table elevations and the reduction of salt cedar can be derived.

Establishing substantially higher percentages of native vegetative cover throughout the drainage feature as compared with the existing conditions is intended primarily to improve wildlife habitat values. Other intended benefits will include improved water quality through improved bio-filtration effects, dissipation of energy from storm flows within the braided washes, and soil stabilization. In general, establishing native vegetation in the subject area is intended to:

- Provide reasonably effective erosion control to deter channel and habitat degradation by natural flows;
- Enhance hydrologic and biogeochemical functions by reducing vegetative evapotranspiration rates contributing to more natural soil moisture levels;
- Enhance Beneficial Uses for Wilson Creek including an increase in "groundwater recharge" benefits within the restoration area through removal of tamarisk;
- Enhance biological values (e.g., species diversity, forage and cover for wildlife), as compared with existing conditions, by replacing existing ruderal (weedy) vegetation with predominantly native plants;

[3] *The monitoring schedule proposed by this restoration Plan is anticipated to include one year of monitoring following tamarisk removals (part 1) followed by four years of monitoring after installation of native vegetation (part 2).*

- Substantially deter the establishment, reestablishment, and migration of particularly noxious invasive species (e.g., tamarisk, tree tobacco, giant reed, perennial pepperweed, castor bean).

2.3 Rationale for Expecting Successful Implementation

Successful implementation of habitat restoration may be expected based on the following factors:

- Tamarisk eradication methods have proved successful in other sites in the region.
- The plant palettes consist of site-appropriate native species and include dominant and common native species found in existing habitat on-site in Wilson Creek.
- Plant palette includes long-lived dominant perennial grasses and short-lived, aggressive "weed beater" species, nitrogen-fixing legumes, and mycorrhizal hosts.
- Planting will take place during the appropriate seasons and supplemental irrigation will be provided in case of extended drought conditions during the establishment period.
- The riparian restoration areas are situated in the low-lying floodplain with less than 3 feet elevation difference between the planting surface and the near adjacent braided low-flow stream bottom. Runoff from large tracts of adjacent agriculture on both sides of this segment of Wilson Creek is also anticipated to provide significant subsurface flows to the subject area along with storm runoff from the surrounding hillsides.

2.4 Responsible Parties

Wilson Creek Farms LLC, or its successors in interest or assigns, is responsible for implementation of the habitat restoration and monitoring efforts and will provide funding to implement this plan. Wilson Creek Farms intends to assign responsibilities for various plan elements to representative agents or contractors it engages to implement or oversee various plan elements. The planting and maintenance actions prescribed under this plan will be conducted or directed by a contractor with demonstrated habitat restoration experience. It will also be necessary to provide for adequate oversight, monitoring, and periodic assessment and reporting of planting and maintenance activities and site progress.

Therefore, a qualified firm with experience in planning and monitoring native habitat creation projects in the region should be retained by Wilson Creek Farms or its designated agent/representative for this purpose. The monitoring firm, hereinafter referred to as the Restoration Monitor (RM) will oversee implementation of all elements of this plan and will advise and assist Wilson Creek Farms or its designated representative and its contractor(s) with issues pertaining to the mitigation effort. The RM will:

- Provide appropriate recommendations where discretion or remedial measures are indicated and will be responsible for documentation and agency coordination.
- Observe the critical phases of habitat implementation including site preparations, topsoil salvage and redistribution, irrigation system function, seeding, and supplemental planting (if required).
- Document deviations from the plan and provide reasonable justification for changes.
- Periodically observe, assess and document maintenance activities and habitat development until the performance criteria have been satisfied.

- Communicate to the Applicant or designated representative regarding site implementation, maintenance activities, and habitat creation progress, and prepare annual monitoring reports for submittal to CDFG, ACOE, and RWQCB, if required.

3.0 ENHANCEMENT AND RESTORATION – GUIDELINES AND SPECIFICATIONS

3.1 Enhancement – Tamarisk Eradication

It is anticipated that initial tamarisk removal efforts will be conducted by Washburn Grove Associates (contractor), a licensed/bonded/insured company, with significant experience conducting large-scale mechanized and non-mechanized non-native invasive vegetation removals within jurisdictional streambeds. Tamarisk will be removed by cutting, grinding, and stump treatment of tamarisk with approved herbicides by licensed applicators, using low pressure rubber-tired mechanized equipment. Tamarisk shrubs adjacent to native riparian vegetation will be removed by hand crews with chain saws. Tamarisk removal is anticipated to take approximately one week. In the event that significant rain events are forecasted in the Aguanga area, the tamarisk removal effort will be temporarily demobilized and all equipment removed from the streambed until the next dry period. Tamarisk cuttings will be stock piled within the floodplain outside of low-flow channels, and will be protected with the appropriate Best Management Practices (BMP's) during rain events to minimize transport downstream. The RM (a qualified biologist) will conduct a thorough site inspection with the contractor to assure that native vegetation is avoided during tamarisk removals to the extent feasible. The RM will assist the contractor and perform subsequent inspections as necessary to observe that impacts to native vegetation are avoided.

Access to the site is available via existing unpaved Arizona crossings to the east and west of the nearly 21-acre tamarisk removal area. Cutting and mulching will be performed using a Barko 930 Mulcher with a Recon Cutting Head mounted on low ground pressure flotation tires to minimize ground disturbance. Applicators will follow immediately behind the cutting and mulching equipment to uncover fresh cut stumps and apply herbicide directly.

Subsequent herbicide applications will be necessary for at least two to three years after initial cut- stump treatments to assure complete eradication. Follow up treatments will generally consist of low volume foliar spray applications wherever new tamarisk or regrowth appears. Herbicide applications will be conducted in accordance with product labels and manufacturer's instructions and/or as directed by a licensed Pest Control Adviser. Monitoring and maintenance will continue for at least three years to assure effective eradication as described in Section 4 below.

3.2 Restoration – Planting and Seeding

Areas that do not already contain native vegetation in the 19.4 acre site will receive seed and/or be planted with appropriate plant materials representing the existing native species that naturally occur in this section of Wilson Creek. In general, the lower-lying areas will be planted and/or seeded with species typical of riparian scrub and cottonwood-willow riparian woodland while the more elevated areas (e.g., terraces and upper benches) in the floodplain should be seeded with more drought tolerant alluvial fan scrub species such as California buckwheat and scale broom. The combination of proposed seeding of representative plant species in both habitat types, along with installing cuttings or containerized native trees and shrub plantings are expected to provide stratified canopy coverage.

Results of seeding and planting observed in the trial planting pilot project area will be used to refine the selection of the specific plant materials and techniques to be used. Cuttings and/or container plantings (if used) will be installed during late fall or winter using materials, densities, and techniques derived from the pilot project results.

As each phase of the Restoration effort commences, specific planting area acreage will be identified and the portion of the area where tamarisk has been removed will be planted and/or seeded with appropriate native species. Seeded areas will then be raked over lightly with available mulch and loose dirt to protect the seed bed and deter weed germination.

Supplemental irrigation may be supplied by installing and operating a temporary irrigation system designed and built to provide overhead spray coverage within planted areas.

Maintenance will consist primarily of weed control and would be required mostly during the spring and early summer months.

Monitoring of the revegetation process will be conducted periodically throughout the year and annual performance evaluations will be performed in the summer when the site is driest. Annual monitoring reports will be submitted to the resource agencies, if requested, describing the site's performance through the year and any supplemental planting conducted.

3.3 Schedule

Enhancement efforts involving initial mulching and stump treatments to eradicate tamarisk is expected to commence by mid-November 2011. The trial planting and seeding in the pilot project will commence directly thereafter in December 2011. Planting and seeding efforts in subsequent Phases 1, 2, and 3 (depending on actual schedule for phased planting TBD), to formally commence progressive habitat restoration in selected areas, are expected to commence in the late fall of 2012, 2013, and 2014, respectively. Initial seeding and installation of cuttings and container planting (if any) should be conducted during the late fall and early winter (October 15 - January 15) after installation of a temporary irrigation system (if needed). Likewise, supplemental planting and seeding (if needed) should be conducted in the late fall or early winter in subsequent years.

3.4 Site Preparations

Site preparations prior to planting in each of the sections of the restoration site, by phase, may include a certain amount of clearing ruderal (weedy) vegetation and excessive accumulations of vegetative debris (as may be left behind by mulching tamarisk) to provide exposed soils for planting and seeding. This effort should be accomplished by manual raking. If substantial ruderal cover becomes established in areas slated for seeding or planting, it may be advantageous to perform a selective foliar herbicide application several weeks, in the spring and/or just prior to planting to reduce weed cover in specific planting sites.

Depending on the results observed in the pilot project, it may also be desirable to provide for temporary irrigation to sustain plants for the first two to three years after planting.

3.4.1 Temporary Irrigation

The prescribed upland habitat type is composed mainly of drought tolerant species and is not expected to require supplemental irrigation beyond the first three years during plant establishment.. However, if the results of the pilot project indicate the need to provide temporary irrigation in order to promote seed germination and plant establishment and growth, particularly in case of extended drought conditions, a temporary irrigation system may be needed. If so, it will be necessary to provide a reliable connection to the local water source and may be prudent to provide a water tank and pumping device(s) to assure sufficient volume and pressure is available for use.

Since the irrigation system will not be a permanent installation, a simple surface system with a basic layout is recommended, and no elaborate landscape plans or designs are necessary; only a basic "design-build" is warranted. The system should provide overhead spray coverage throughout the specific areas designated for planting and seeding. Supplemental irrigation applications will follow the natural rainfall patterns, with watering provided to assist with germination and establishment of plantings. Supplemental irrigation is typically decreased in the second year after planting and discontinued at the end of three years following plant installation. The RM should determine adjustments to irrigation scheduling and whether to discontinue and remove irrigation at 2-3 years.

3.4.2 Pre-Planting Weed Control

If necessary, prior to planting in each successive phase area, control of perennial woody species such as castor bean, tamarisk, and tree tobacco and other noxious perennials may include cutting and removal followed by direct stump treatment with herbicide. Annual herbaceous weeds may be mowed or weed whipped before they can germinate to prevent growth, flowering and seed set. Any pesticide application must be performed in coordination with the RM and must be conducted or directly supervised by someone in possession of either a Qualified Applicator License (QAL) or a Qualified Applicator Certificate (QAC) issued by the California Department of Pesticide Regulation (DPR).

3.5 Planting Plan

In general, planting and seeding will be performed in areas that are currently occupied by tamarisk or are otherwise lacking significant native cover. Tamarisk cover currently ranges from 25 to 50 percent of total cover in most patch areas. However, existing native vegetation also provides up to 25 percent or more of the cover in some areas. Therefore, on average, planting and seeding is expected to be performed in not more than about half the acreage in any given patch area. Thus, the quantities of plants to be installed or pounds of seed applied per acre, is substantially lower for this project than it would typically be if the areas exhibited little or no vegetation. Moreover, in order to install plants or apply seed in some areas where tamarisk cover was particularly dense prior to treatment and mulching, patches may need to be raked clear of excessive organic debris to expose soil in preparation to receive plants or seed.

Initial seeding and planting must be conducted during the late fall or early winter and should not be performed later than January 15 to maximize the benefits of natural precipitation and cool weather for germination and growth seedlings as well as for rooting and development of cuttings and container plants through the rainy season.

3.5.1 Plant Materials

Seed materials should be derived from the local region. Installing propagules of local origin, which are adapted to local conditions, increases the likelihood that revegetation will be successful, and helps to maintain the genetic integrity of the local ecosystem. However, widespread herbaceous species and grasses are more likely to be genetically homogeneous and site specificity is a less important consideration. Therefore, seed for native grasses and wildflowers may be procured from commercial sources in Southern California, unless local sources are readily available. If seed for certain species is unavailable in the local area, the RM will request information regarding available sources in the region and determine whether more distant sources will be acceptable.

Container plants will be grown from local obtained cuttings or from reputable nurseries in the region that specialize in native and drought tolerant plants (e.g., Native Grow, Mockingbird Nursery, Tree O'Life). Container stock originating from cismontane southern California may be used. For species that occur over widespread areas in southern California, it is not critical to procure custom grown, site-specific plant materials.

The species selected for planting and seeding are listed on **Table 3**, *Riparian Scrub - Cuttings*, and **Table 4**, *Riparian Habitat Seed Palette,* respectively. All species listed were observed on site and/or are native to the local area. The total number and type of cuttings installed may be modified, or cuttings may be substituted with rooted container plants, subject to approval by the RM.

Table 3

Riparian Scrub – Cuttings (per acre)

Scientific Name	Common Name	Size	Quantity (spacing)
Baccharis salicifolia	Mule fat	Cuttings	450 (8 '- 10')
Populus fremontii	Cottonwood	Cuttings	25 (15'-20')
Salix exigua	Sandbar willow	Cuttings	50 (10'-12')
Salix laevigata or gooddingii	Red or Black Willow	Cuttings	50 (10'-12')
Salix lasiolepis	Arroyo Willow	Cuttings	50 (10'-12')

Source: PCR Services Corporation, 2011

3.5.2 Installing Cuttings or Container Plant Stock

Only native riparian species that are indigenous to the area will be planted. Willows (*Salix* spp.) and mule fat are used extensively due to their high survival rates and commonness in the project area. Some cottonwoods will be planted at low densities in an effort to supplement the plant palette given the presence of cottonwoods in the area today. However, the successful establishment of cottonwood saplings may be not be feasible over a 5 year period, given the long-term reduction of the water table by tamarisk and the generally poor health of many of the existing cottonwood specimens on the site due to the tamarisk invasion. Cottonwoods that do not survive installation may be replaced by willows and/or mule fat per the discretion of the RM.

Table 4

Riparian Habitat Seed Palette – Seed Rate (per acre)

Botanical Name	Common Name	Life Form	Seed Count	Total Bulk Lbs.
Ambrosia psilostachya	Western ragweed	Herb	20,000	2.0
Artemisia douglasiana	Mugwort	Forb	500,000	1.0
Artemisia dracunculus	Tarragon	Sub-shrub	350,000	1.0
Baccharis salicifolia	Mule fat	Shrub	12,000,000	0.5
Cressa truxillensis	Alkai weed	Herb	60,000	0.3
Eriodictyon crassifolium	Yerba santa	Shrub	500,000	1.0
Eriogonum fasciculatum	Cal. buckwheat	Shrub	20,000	3.0
Heliotropium curassavicum	Wild heliotrope	Herb	900,000	0.2
Lepidospartum squamatum	Scale broom	Shrub	390,000	0.5
Muhlenbergia rigens	Deergrass	Grass	1,500,000	1.0
Plantago insularis	Plantain	Herb		6.0
			Subtotal (Pounds)	**16.5**

Source: PCR Services Corporation, 2011.

Cuttings should be collected and installed during the winter season when the plants are dormant before the leaves utilize the food reserves stored in the stem. When planted during the season of relative dormancy food reserves will be primarily used in the development of a root system if the stem is in contact with moisture.

Collecting and Installing Live-stakes (Plant Cuttings):

Plant cuttings will be collected locally and installed during periods of ample moisture, preferably during the winter season, to ensure establishment of the root system.

- Collect cuttings from many individual plant specimens in the immediate area. To improve survival, cuttings should be at least 40" long, preferably 48' or more, to enable planting at least 3' of the stake in the ground for maximum soil contact and proximity to ground water.
- Make the cuttings as straight and clean as possible so there are no split ends or torn bark. The optimum diameter is one inch and the minimum length is 40 inches with 48 inches preferred when practical.
- After the cutting is removed from the tree, cut off the side branches as close to the stem as possible. Cut the stem to the chosen length and remove any leaves.
- Sharpen the bottom of the cutting to aid in staking. Keep cuttings moist at all times by storing them in water or covering with a wet fabric until they are planted.
- Punch a hole in the desired planting location to a minimum depth of 3'. A long pry bar is typically used to open the hole to insert the live stake.
- Irrigate the hole (i.e., using a hose or bucket of water) prior to inserting the live stake.

- Drive the cutting into the ground until 75 to 80 percent of the length is below ground (about 3 feet of a 48" stake).
- Maximize soil contact by firmly tamping the soil around the stake. It must be firmly in the ground so it cannot be easily moved or pulled up.

Installing Container Plants

Planting is presently proposed to rely primarily on the use of locally collected cuttings. However, planting rooted container stock from one or more species of the same group of woody riparian plants is also acceptable and may be an appropriate alternative. Therefore, the pilot project effort is intended to utilize some plantings of rooted container plants using one gallon or smaller container sizes. As this is the case, and planting in the successive project phases may utilize such materials for planting in place of or as a supplement to installing live stake cuttings, the following guidelines are provided for storing and planting container stock:

- **Container Plant Inspection.** The RM will inspect all container plants upon delivery and reject any specimens that are unsatisfactory (e.g., diseased, root bound, wrong species, etc.) and should specify storage areas and watering requirements until specimens are planted to prevent overheating or drying out.
- **Root Protection.** Roots should be adequately protected at all times from sun and/or drying winds.
- **Planting Holes.** All planting holes should be dug with a shovel or posthole digger. The holes should have vertical sides with roughened surfaces, and be initially excavated to a depth to at least twice as deep as the container plant's root ball and two times as wide.
- **Planting Location Preparation.** Existing non-native vegetation, thatch, and debris must be cleared at least 18 inches away from plant centers (e.g., clear a 3-foot diameter area around each planted stem).
- **Container Plant Preparation.** The root ball should be thoroughly soaked while still in the container. After removing the root ball from the container, any roots wrapped around the sides of the container should be pulled loose from the root ball. The sides of the rootball may need to be scarified and tangled roots pulled free to promote new root growth into the surrounding soil.
- **Mycorrhizal Inoculation.** Add and thoroughly mix three (3) teaspoons of mycorrhizal fungi inoculum, either Endonet or Bionet to native backfill material replaced in each planting hole.
- **Watering In Plants.** After excavation and before planting, planting holes should be thoroughly wetted by filling each empty hole approximately half full with water, then backfill with thoroughly broken up native topsoil, then add water to the filled hole and tamp down firmly to eliminate air pockets and avoid excessive settling after installation.
- **Installing Plants.** Set the root ball atop the moistened soil backfill so that the collar (crown) sets between one-half inch to one full inch higher than the finished grade (or mean grade on slopes). Thoroughly water at least once or twice again after plants are set. Check each plant after deep soaking to determine whether the specimen has sunk. Replant if necessary to reset crown slightly above grade.

Irrigation basins or berms should be formed around each plant (downslope side only, for plantings set on slopes) to trap water so that it infiltrates the root zone. Berms must be tamped firmly to form at least a 2 inches high ridge at a minimum 18-inch radius around the stem.

- **Initial Watering.** Each plant must be individually watered at the time of planting as specified above, with sufficient water to reach to the lower roots.
- **Mulching.** A 1 inch to 2-inch thick top dressing of coarse, organic, weed-free mulch (e.g. bark, woodchips) is recommended to be placed around each plant stem to cover the entire basin area (at least 2-foot diameter). "Green waste" is not an acceptable form of mulch material.
- **Post-planting Irrigation.** Shortly after plants are set and mulch is placed, each specimen should receive additional hand watering as follows. Irrigate from the top, filling the basin with water and sprinkling around to settle the backfill, mulch, and berm. Allow water to soak in and repeat.

3.5.3 Seed Application

Manual broadcast seeding and raking will be performed to selectively distribute and lightly rake seed into the soil in the restoration areas. Seed shall be spread in patches that are relatively free from excessive amounts of organic debris and existing vegetation. In some cases, only very small amounts of seed may need to be scattered within the interstitial spaces where soil is exposed between clumps of existing vegetation. The seed palette provided in Table 4 may be pre-mixed, but it is recommended that the more drought tolerant species (e.g., scale broom and buckwheat) should be spread separately on the highest ground in the restoration area such as across the upper benches and embankments. Specifications for seed materials, rates and application technique may be adjusted by the RM, based on performance observed in the pilot project site and based on specific site conditions.

Seeded areas should be thoroughly watered with a fine spray as soon as possible after application (i.e., same day or next day). Therefore, it is recommended that initial seeding be performed when a significant rain event is forecast in the immediate future. It is also recommended that seed applied in barren areas should be protected by spreading a thin application of certified weed-free straw or other carbon based mulch (e.g., bark, wood chips) over seeded areas. Carbon-based mulch materials absorb the soil nitrogen, reducing the high nitrogen levels that promote rapid weed growth. The carbon based materials later breakdown providing a slow release of nitrogen back to the native plants within a year or two.

3.6 Install Complete (As-Built) Reports - For Each Phase

An As-Built Report will be prepared within 30 days of implementing the initial enhancement effort to cut down and chip existing tamarisk. This report will be submitted to the owner, CDFG, the San Diego RWQCB, and if requested, to the ACOE to provide a record of the initial tamarisk removal effort. In subsequent years as the restoration efforts commence in the several project phases, memoranda will be prepared and submitted to the owner and each regulatory agency within 30 days of completion of initial planting efforts for each phase of the project to indicate how and when site preparations and planting efforts were completed and to document and explain any significant modifications to, or deviations from the prescribed methods and materials as indicated in this Plan.

4.0 MAINTENANCE DURING MONITORING PERIOD

4.1 Maintenance Activities

Appropriate maintenance efforts are vital to the successful establishment of the planted and seeded areas until the desired vegetation becomes established. The restoration area will require regular maintenance and periodic inspections to determine if actions are needed to address or correct erosion, weed invasion, irrigation adequacy, plant stress, or other adverse conditions. Each phase of the restoration planting area will be maintained regularly for up to five years, or as stipulated by the agencies following installation. In general, maintenance should include any activity required to meet the performance standards set forth in this mitigation plan. The RM is responsible for making recommendations regarding maintenance to the contractor.

4.2 Weed Eradication

4.2.1 Annual Weeds

The purpose of controlling annual weeds is two-fold, to temporarily immobilize completion and prevent the production of additional seeds. Annual weeds are extremely fast-growing and high water/nitrogen consumers. This allows these plants to quickly produce seeds before conclusion of their annual life cycle. Maintenance activities should be conducted in a manner that controls these annual weeds so that slower growing target species have an opportunity for water and sunlight. These activities may include pulling weeds, spraying herbicides, and mowing. The main goal is to promote the germination and growth of the project target species by controlling the annual weeds. In no way should the annual weed control methods damage, destroy, or hamper the target species. Eradication of unwanted species will include those invasive species identified by the California Invasive Plant Council but weed eradication will not be limited to those species alone. Appropriate timing is critical to control seed production. The contractor must remove, kill, or mow annual weeds before seed production. If the contractor misses the window to remove annual weeds before seed production, any mowing, spraying, or removal activities are unnecessary. These annual weeds will die once seed production occurs. Regardless of the success of target species, limitations in the production of annual weed seeds significantly decreases annual weed challenges in the following growing season.

4.2.2 Perennial Weeds

Unlike annual weeds, perennial weeds must be completely killed or removed in order to maintain these species. Mowing in most cases enhances the growth of these species. In order to mow these plants shorter than the re-growth height, the contractor would also be cutting the target species too short. Perennial weeds most likely need to be hand pulled or sprayed with appropriate herbicides. Regardless of the success of target species, good removal of perennial weeds will offer significant advancements in project success.

As tamarisk is the primary target species for eradication for this site, it will be the focus of most of the maintenance effort to control this noxious perennial. The contractor will be responsible for eliminating tamarisk specimens during their normal routine maintenance visits and may use any appropriate means to carry out this task as long as any herbicide applications are approved for use in California and are applied as specified below:

4.3 Herbicide Applications

In specific circumstances, herbicide applications may be necessary. The contractor is responsible for determining the appropriate herbicide to achieve the maintenance goals. The contractor is also responsible for assuring that herbicides are applied in a manner that will not damage desirable plants in the mitigation areas or in adjacent areas. Also, any herbicide or pesticide application must be performed in coordination with the RM and must be conducted or directly supervised by a person in possession of either a QAL or a QAC issued by the California DPR.

4.4 Pest Control

Insect and rodent (herbivore) damage is not typically observed to interfere with habitat mitigation projects. The contractor is encouraged to tolerate reasonable levels of predation or disruption by wildlife species during habitat establishment. However, under certain occasions, for example, extreme levels of insect infestation or browsing by deer, pocket gophers, or rabbits, may require the contractor to take appropriate measures to deter or suppress pest populations.

4.5 Replacement of Dead or Diseased Plant Materials

Any container plants or other nursery materials should be surveyed by the RM for one year following installation. Container plantings that die off or exhibit disease during the initial 120-day warrantee period following installation should be replaced by the contractor that installed (unless no warrantee is provided). After the first year the maintenance contractor (or staff) may be required to perform supplemental planting or seed applications as directed by the RM in coordination with the owner to assure that the project's several restoration areas meet the performance standards set forth in Section 5, *Monitoring Plan*, below.

5.0 MONITORING PLAN

5.1 Performance Standards

The performance standards for assessing success of the Wilson Creek restoration area will be based on demonstrating an increase in a minimum of two (2) streambed functions within the restoration area. Intuitively, the eradication and replacement of tamarisk within native vegetation within a streambed will result in significant benefits to hydrologic, biogeochemical, habitat functions. However, the true scope of such benefits is likely to occur over a much longer period of time than five years, considering that the current level of late succession tamarisk domination has taken decades to establish. However, we believe that a measurable increase in a minimum of two streambed functions can be demonstrated over the time frame for this restoration Plan as requested by the San Diego Regional Water Quality Control Board. Therefore, the objective of this restoration Plan during the course of its five-year monitoring schedule[4] will be to demonstrate an improvement to a minimum of two (2) streambed functions based on the HGM functional scores and/or the combination of any of the following criteria to be measured in years 3 and 5 of the monitoring effort:

[4] *The monitoring schedule proposed by this restoration Plan is anticipated to include one year of monitoring following tamarisk removals (part 1) followed by four years of monitoring after installation of native vegetation (part 2).*

- HGM functional assessment compared to baseline data;
- Percent of native and non-native vegetation coverage;
- Groundwater elevation data via monitoring of piezometers to be installed in proximity to the restoration area.

Functions assessed as part of the HGM assessment for this restoration Plan include hydrologic, biogeochemical, and habitat functions as detailed in Section 1.4 of this Plan. Estimation of riparian native/non-native coverage will support habitat based streambed functions, while groundwater elevation monitoring may support a determination of an increase in hydrologic streambed function.

5.1.1 HGM Functional Assessment

Section 4.1 provides a summary of the Functional Capacity Indeces (FCI) utilized to determine the baseline functions for hydrologic, biogeochemical, and habitat functions assessed within the restoration area prior to implementation of Part 1 of this plan. The FCI's are developed using 20 HGM variables derived by the Santa Margarita Regional Riverine HGM Guidebook consistent with the methods utilized in the PCR functional assessment performed in 2001 which included the restoration area. Success using solely the HGM assessment will require a measurable increase in two of three of the baseline streambed functions in year 5 of the restoration effort. However, the percent of vegetation cover and/or the groundwater data may be independently used to demonstrate a measurable increase in streambed function.

5.1.2 Percent Cover

In part, the success of the revegetation effort for the habitat restoration area is based on establishing a reasonable and progressively increasing amount of cover by native species. Native grasses and herbaceous species may constitutemost of the vegetative cover during the first year after planting. Scrub species are expected to provide most of the native cover by the end of the third year. Tree species should provide reasonable canopy cover after three or four years. In general, establishing progressively higher percentages of native vegetative cover is intended to:

- Provide reasonably effective erosion control;
- Enhance biological values (e.g., species diversity, forage and cover for wildlife), as compared with pre-existing conditions in the restoration areas that complements existing habitat in the local vicinity and in the adjacent segments of Wilson Creek;
- Exhibit characteristics that indicate the habitat is self-sustaining. A primary characteristic of self-sustaining habitat would be that it requires no supplemental irrigation for two years with little or no mortality. .
- Substantially deter the establishment of non-native species, particularly noxious invasive species (e.g., tamarisk, castor bean, artichoke thistle (*Cynara cardunculus*)), while impeding the continued migration of these species up and downstream from the restoration area.

The primary macro-criteria for measuring habitat function are total vegetative cover, relative cover by native species, and diversity. Cover may be expressed in terms of the total cover (all vegetation) throughout the treated areas, as well as the relative cover (percent of vegetated areas) provided by native plants. Diversity

is expressed in terms of the number of species of native plants that are dominant or sub-dominant in the restoration area.

The following minimum standards must be achieved or exceeded for the revegetation effort to be deemed as supporting an increase in habitat function related to the streambed:

1. **Relative Native Vegetation Coverage (50%):** Native species must provide at least 50 percent of the relative coverage within the mitigation area. Therefore, in any area covering at least ¼ of the mitigation area (e.g., patch area covering greater than or equal to 0.25 acre) that exhibits the minimum of 50 percent total cover by plant material (e.g., if the remaining 20 percent is barren) appropriate native species must contribute at least 50 percent of the relative cover in that particular mitigation area. Native vegetation may include seeded species as well as "volunteers" (naturally recruited specimens), native to the area.

2. **Exotic/Invasive Vegetation Coverage:** Particularly noxious invasive exotic species (e.g., tree tobacco, artichoke thistle, castor bean, pampas grass, tamarisk, arundo etc.) must not contribute more than 5 percent of all vegetative cover. In addition, non-native invasive species listed as "high" or "moderate" in the California Invasive Plant Council (Cal-IPC) Inventory menu (Cal-IPC, 2006) must not contribute more than 10 percent of tree and shrub cover. Generally, no more than 10 percent of all vegetative cover may consist of ruderal non-native species. However, of the ruderal species "permitted" within the mitigation site, only species of common, "naturalized," non-native grasses and herbs (e.g., California Brome),, oat (*Avena spp.)*, mustard (*Brassica spp*.) may be allowed to contribute more than 10 percent of the total cover (see criterion 3 below), particularly if their removal would be likely to promote erosion or incur significant collateral damage to healthy native species.

3. **Irrigation Limitation:** If irrigation is warranted, based on results observed from the "pilot program", supplemental irrigation will be discontinued in the mitigation area for a minimum of two years. In order to reach success the mitigation areas must be self-sustaining without irrigation for two years prior to release from regulatory oversight.

During post-installation monitoring, several features may be considered to represent progress toward successful establishment of native vegetation.

- Germination and growth of a variety of seeded plant species (total area coverage may be somewhat sparse through the first year following seed application).
- Lack of evidence of significant erosion.
- Evidence of resistance to invasion by non-native species (0-5 percent composition of non-natives).
- Evidence of natural recruitment of a variety of native species apparent by the third year after planting.

Table 5, *Target Total Native Coverage Guidelines,* provides a guideline for the total percent cover values exhibited by all native plant species combined that may be considered to represent an acceptable increase in streambed habitat function during the annual monitoring inspections.

Table 5

Target Total Native Coverage Guidelines

Year	Acceptable Range
1	10 - 15%
2	20 - 25%
3	25 - 30%
4	35 - 45%
5	Minimum 50%)

Source: PCR Services Corporation, 2011

5.2 Monitoring Procedures

Progress monitoring and performance assessments will be conducted by the RM. After initial seeding is accomplished, for the first year, the revegetation areas will be inspected quarterly winter (January/February), spring (April/May), at least once in late summer (August/September), and once again prior to the onset of the rainy season (October/November). The fall inspection provides the opportunity to determine plans and specifications for any supplemental planting and seeding and maintenance actions that may be warranted during the winter. Monitoring reports will be grouped by phase and will provide the independent monitoring results associated with each individual project mitigation area within that phase.[5] Each project area will be surveyed and marked in the field to ensure the RM can accurately distinguish individual project areas during monitoring activities.

Qualitative surveys, consisting of a general site walkover and characterization of the coverage and species distribution exhibited in each channel segment, will be completed during each monitoring visit and will include each project area as defined in the individual HMMP's. General observations, such as fitness and health of the revegetation species, weed or pest problems, signs of over watering, and drought stress, will be noted in each site walkover.

A qualitative visual estimate of cover values in within each individual restoration area and over the aggregate total area will be useful for comparison with the data recorded from the linear transects to determine whether the transect data is representative of prevailing conditions of the mitigation site. The RM should visually estimate and record the total cover provided by vegetation within the treated area. The mitigation areas may be divided into six equivalent segments and identified on a simple diagram for reference and inclusion with progress reports. The RM should also visually estimate and list the dominant species in each discrete quadrant area (all species that individually account for more than 1 to 5 percent of vegetative cover in each stratum) and estimate the approximate relative coverage provided by each. Quantitative data will be collected annually (typically in June/July) to determine survivorship, relative and total coverage by species, and to assess species composition. A list of species present is compiled for each planned vegetation community making up the mitigation. Cover estimates for individual species are used to calculate the total vegetation cover, total cover of non-natives, total cover of bare ground, total cover of litter and debris, and total cover for each vegetation strata.

[5] *Each project HMMP will be modeled after this HRP and is subject to approval by the appropriate resource agency.*

Either of the two techniques described below may be employed to assess percent coverage of plant species in the revegetated areas during the annual quantitative surveys: line intercept transect sampling or the point-step method.

5.2.1 Line Intercept Transect Method

At least one permanent sampling transect for annual quantitative monitoring is established within each one-acre patch of the relevant restoration area at appropriate locations as determined by the RM. Transects are typically a minimum length of 100 feet (approximately 30 meters). Then data on plant coverage or bare ground is collected by extending a measuring tape between two staked points marking the ends of the permanent transects. Percent cover is then determined by measuring the plant intercept length, which is the length of the plant directly under the tape measure, for each species intercepted under (or over) the line. Ocular estimates of percent absolute areal cover (cover) are recorded for each entry. Cover is the vertical projection of vegetation from the ground as viewed from above. Areal cover includes the extent of the entire plant canopy. Absolute cover is measured relative to the entire sampling unit (i.e., mitigation component) including unvegetated surfaces, recorded as "bare ground", and vegetative overlap. Intercept length measurements are made for each individual plant (or cluster) and summed for each species to provide percent cover for each species. From the sum for each species the total native and non-native cover can be calculated according to the following equation: $PC = t/T \times 100$, where "PC" is percent coverage, "t" is the sum of all intercepts for a species, and "T" is the total length of the transect. Percent coverage figures can be greater than 100 percent due to the overlap between the herbaceous and shrub canopies.

5.2.2 Point-Step Method

The point-step method provides a quantitative determination of native and exotic plant cover using a series of transects laid out to represent the entire restoration area. When applying this method, the position of the transects is not fixed but is determined independently at the time of each annual survey. The intention is not to document the progress of small permanent strips of habitat in each successive year, but to measure the performance of the whole area. (In this case the "whole area" would consist of the relevant Phase of planting being evaluated.) This is accomplished with a large number of points laid down randomly or nearly so in an independent manner on each sampling date.

Since vegetation is intrinsically variable and its measurement necessarily imprecise, this method of sampling is based on the idea that the number of samples is more important than the precision of their placement, as long as no systematic bias is built into the method of placement.

To facilitate collection of a large number of data points the following procedures should be followed for their placement and evaluation:

- An initial direction for the first transect will be selected by tossing an object from the edge toward the interior of the vegetated area.
- The RM will walk in a straight line in the indicated direction, passing through the interior of the area until reaching the opposite boundary of the area.

- Upon reaching the opposite boundary the RM will turn at an angle approximately equal to the angle of approach to the boundary. This motion resembles that of a billiard ball bouncing from the edge of the table. A similar turn will be made each time the edge of the area is reached.
- At each step the RM will note the position of the same point on the toe of his or her left shoe. That point is the intercept point and each plant species intercepted by a vertical line through that point is recorded. There may be from none to several plant species intercepted, and the record must record clearly that all intercepted species are assigned to that intercept.
- The intercept is a single vertical line, not a circle or volume of space. The calculation of depends heavily on adherence to the one-dimensional line.
- At the discretion of the biologist the number of points may be doubled by considering corresponding points on each shoe.
- When the RM encounters an impassible object such as a large boulder, cactus patch, hole, or body of water, the biologist will move to the side of the object and proceed in the same direction. As soon as possible the RM will return to the original track. While off the intended pathway the RM will record from as near as possible the intercepts that would have been encountered had he been able to remain on the original course.
- During the course of the survey any native or exotic species seen within the planted area but not encountered on the transect will be recorded on a separate list.
- Plant species not immediately known to the biologist will be designated with a number or code and specimens or photographs taken for later identification.
- The procedure will be continued until the entire planted area has been covered to an approximately equal extent by the straight-line transects. The final number of points must be at least 200, and may be higher in the case of large or irregularly-shaped areas.
- The procedure will be repeated for each defined or separately mapped restoration area.
- Within each survey area, the number of "hits" on each plant species will be tallied. The number of points is recorded and is lower than the number of points.
- The number of points for each species divided by the number of points, then multiplied by 100 is the absolute percent cover for that species. Bare ground is treated as a plant species, except that it is not recorded if there is any plant present. The total cover will be greater than 100 percent unless there are no points with more than one plant species.
- The number of plant species recorded on the transects, plus the number of additional species within the Site, but not on a transect, is the species richness. Both cover and species richness will be expressed separately for native and exotic plant species.

5.3 Reports

Monitoring results will be recorded within each distinct project mitigation area and included in the annual monitoring reports submitted to the appropriate resource agencies and the Applicant, if requested.

Documentation will include the following:

5.3.1 Recording the Initial Planting Effort (by Phase)

Upon completion of seeding and planting in each phase of the restoration area, the RM should prepare an installation As-Built Report to document the implementation of the mitigation site preparations, planting and seeding. This report should describe the site preparation methods used, species and quantities of seed and container stock installed, seeding methods, and planting locations. Any significant problems encountered will be recorded. Documentation of the finished installation will include a graphic exhibit depicting each area as planted or seeded and whether treatments varied from the alternative methods provided in this HMMP. Any significant deviations from this plan must be reported, particularly with respect to site preparation activities, plant materials actually installed, and irrigation facilities and coverage. This document will be submitted to the Applicant and the regulatory agencies, if requested, to confirm completion of initial installation and commencement of the maintenance and monitoring phase.

5.3.2 Annual Monitoring and Reports

Each successive phase of the restoration area shall be monitored quarterly during the first year, semi-annually during the second and third years, and at least annually during the last two years. Each phase of the restoration will encompass one year of monitoring following tamarisk removals[6], followed by four years of monitoring following the installation of native material to be detailed in project-specific HMMP's,, for a total monitoring period of five years. Therefore, the Year 2 monitoring "time clock" associated with project-specific mitigation areas will commence upon implementation of the Part 2 native revegetation efforts detailed in Section 2.1.1. Observations will be recorded and memoranda provided to the Applicant and contractor as needed to report site progress and identify necessary maintenance actions. In the month of June/July following the first full growing season after initial installation, quantitative assessments will be conducted as described above and a progress report summarizing monitoring results will be prepared and distributed by the RM not later than January 1 each year.

Monitoring will commence through individual project HMMP implementation after the primary planting and seeding is performed in each successive phase and will continue for five years in each Phase or until either: (1) it can be demonstrated that functions and values have met or exceeded final success criteria; (2) the resource agencies determine that monitoring is no longer required.

Each annual report will document mitigation and maintenance activities and site performance and recommend corrective measures if deficiencies are observed. Annual reports will also describe observed features including qualitative estimates of species cover and survivorship, success or failure rates of seeded species, growth of perennial species, and will report quantitative measurements of the total vegetative cover and the percentage of relative cover by native species. Coverage values will be determined both by general inspection and by direct sampling using the line-intercept transect procedures described above. The frequency and volume of irrigation if utilized, observed weed or pest problems, additional maintenance procedures, and general condition and health of the vegetation will also be noted in each annual report. Photographs taken from each photo station will provide visual records of the site's progress. Recommendations and schedules for corrective measures will be identified and described.

[6] *Tamarisk removals currently scheduled for November 2011 will be implemented throughout the entire 19.4-acre restoration area by Wilson Creek Farms and will be integrated into project-specific HMMP's as part of Year 1 monitoring/reporting.*

5.4 Contingency Measures

If the interim success criteria are not attained by the 3rd year or the ultimate success criteria are not attained by the 5th year of monitoring then contingency measures will be triggered whereby the responsible parties will consult with the regulatory agencies to examine the cause of the deficiency. Remedial actions will be developed at that time to correct the cause of the deficiency. If the deficiency cannot be corrected then alternative mitigation sites or actions will be developed.

6.0 REFERENCES

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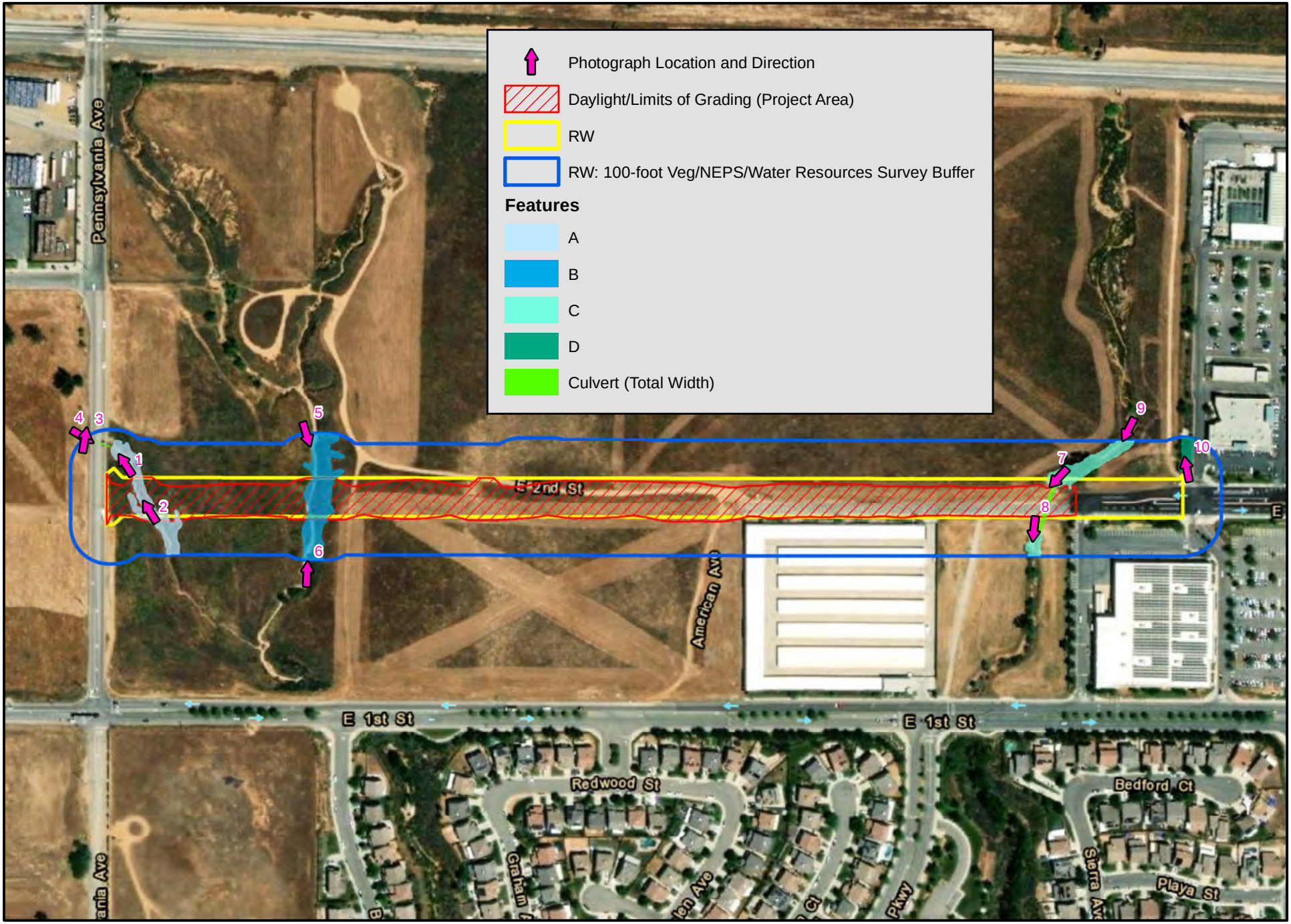
APPENDIX D

Assessment Photographs



N

0 150 300 600 900 1,200 Feet

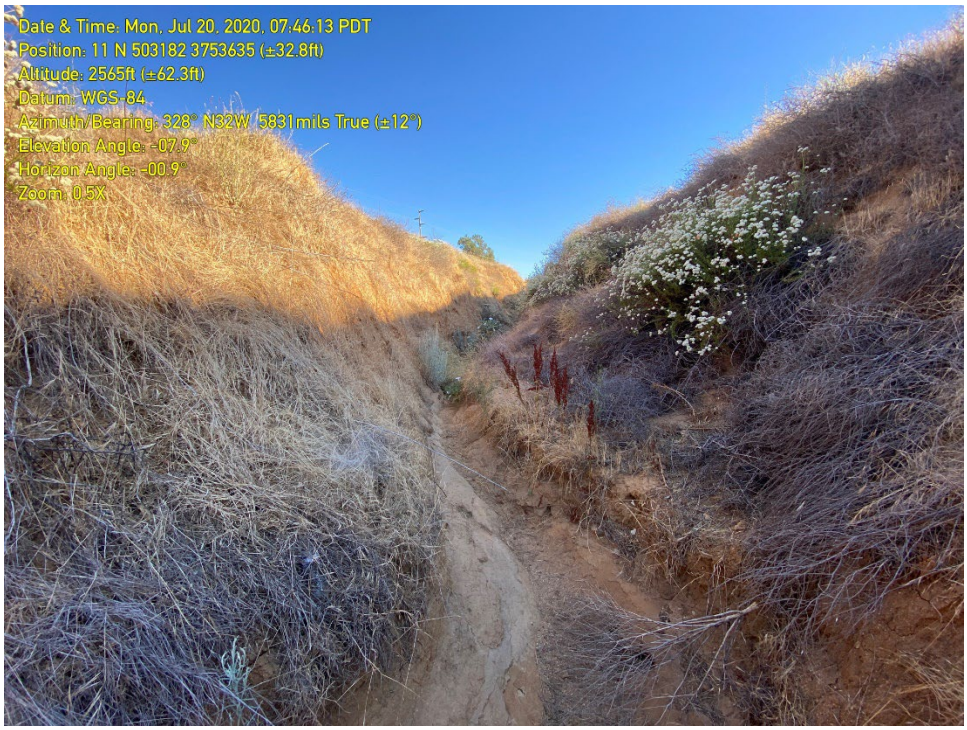
1 inch = 333 feet

APPENDIX D
Riparian/Riverine Areas Assessment Photographs

DATE: June 17, 2022
COORDINATE SYSTEM: NAD 1983 State Plane California Zone VI
SOURCE: ESRI World Imagery Basemap, ESRI World Transportation, Cozad & Fox, SBS

PROJECT:
City of Beaumont
2nd Street Improvement

PHOTOGRAPH 1: The upstream portion of Feature A where the culvert begins the feature beneath Pennsylvania Avenue.



PHOTOGRAPH 2: The bed and bank of Feature A was narrow and deeply incised.

PHOTOGRAPH 3: The westside of Pennsylvania Avenue where storm runoff entered a standpipe connected to the culvert where Feature A began.

PHOTOGRAPH 4: No roadside drainage was present, or evidence thereof, indicating all flow for Feature A originated from road runoff.

PHOTOGRAPH 5: A view looking down Feature B.

PHOTOGRAPH 6: The depth of Feature B varied and decreased from the upstream end to the downstream portion.

PHOTOGRAPH 7: The culvert at 2nd Street from the upstream end of Feature C (Potrero Creek).

PHOTOGRAPH 8: The low-quality willow scrub in Feature C downstream of 2nd Street.

PHOTOGRAPH 9: Feature C upstream of 2nd Street looking downstream. No riparian habitat present. The large blue gum tree depicted in the background.

PHOTOGRAPH 10: The human-created ditch Feature D with low-quality riparian habitat. The drainpipe entered the underground drainage system.