# ADDENDUM #2 TO THE FACILITIES MASTER PLAN PROGRAM ENVIRONMENTAL IMPACT REPORT (SCH NO. 2016061064) FOR THE RP-5 EXPANSION OFFSITE FACILITIES PROJECTS

Prepared for:

**Inland Empire Utilities Agency**
6075 Kimball Avenue
Chino, California 91708

Prepared by:

**Tom Dodson & Associates**
P.O. Box 2307
San Bernardino, California 92406

**December 2023**

# TABLE OF CONTENTS



FIGURES



APPENDICES

# ADDENDUM #2 TO THE FACILITIES MASTER PLAN PROGRAM ENVIRONMENTAL IMPACT REPORT (SCH NO. 2016061064) FOR THE RP-5 EXPANSION OFFSITE FACILITIES PROJECTS

## I. INTRODUCTION

Inland Empire Utilities Agency (IEUA or Agency), in cooperation with the State Water Resources Control Board, has concluded that an Addendum to the Facilities Master Plan Program Environmental Impact Report (PEIR) should be prepared by the Agency for the Regional Plant No. 5 (RP-5) Expansion Offsite Facilities Projects. The RP-5 Plant Expansion Project was one of the program elements considered in IEUA's Facilities Master Plan (FMP) and the Program Environmental Impact Report (PEIR) in 2016-2017 (Appendix 1). The RP-5 Plant Expansion Project was fully addressed in the 2017 FMP PEIR (SCH#2016061064, certified in March 17, 2017). It was one of the many facility improvement projects considered for implementation over the next 20+ years in the FMP PEIR.

## II. PROJECT DESCRIPTION

Thus, this Addendum is being compiled to address the following issues related to the RP-5 Expansion Offsite Facilities Projects. These projects were not included in the PEIR, and in order to acquire funding to implement these four Offsite Projects, an Addendum has been selected to comply with the California Environmental Quality Act (CEQA). These four projects include:

1. Butterfield Ranch Pump Station (lift station): An existing pump station where two actions will be carried out. Internal to the existing building (refer to Figure 1), the existing pumps will be upsized and the existing Motor Control Center (MCC) will be replaced by a new MCC. The purpose of the modified lift station is to pump wastewater to RP-5 instead of the RP-2 Pump Station. There will be no new ground disturbance at the site, just modifications to the building interior. With no new ground disturbance, there is no potential to adversely impact any biological or cultural resources at the project site. See the attached engineering drawings in Appendix 2. In this analysis this facility will be referred to a Site 1.

2. Mountain Avenue Pump Station (lift station): This project will construct a new pump station lift station) adjacent to Mountain Avenue, across from Bickmore Avenue where it intersects Mountain Avenue (refer to Figure 2 and 3) at IEUA's Solids Handling Facility site. This lift station will connect to the Butterfield Dual Force Main on Mountain Avenue and will help convey wastewater to the modified RP-5 Water Recycling Plant for treatment. The new lift station will operate with two new pumps with a total of 560-gallons per minute (gpm) capacity. The new pump station will be approximately 30 feet by 10 feet, which includes the valve/meter vault and the lift station pumps. The lift station depth (i.e., pump wet well) is approximately 30 feet deep. Electricity will be delivered by a new connection to local Southern California Edison (SCE) power box P5545120. The new pump station will be installed on highly disturbed ground adjacent to Mountain Avenue and on the disturbed IEUA Solids Handling Facility site. Limited biological and cultural resources can occur on this site. See the attached engineering drawings in Appendix 2. In this analysis this facility will be referred to a Site 2.

3. Butterfield Force Mains: Dual force mains will be installed from El Prado Road to Kimball Avenue within the Mountain Avenue right-of-way (ROW). Both force mains are 8 inches (8") to 14" diameter HDPE DR 11 pipelines; Line A is a total of approximately 6,175 linear feet ('), and Line B is a total

of 6,200 linear feet. These two mains are needed to convey wastewater flows generated outside of Prado Basin. Primary flow will be from the Butterfield Ranch Pump Station. Lesser flows from the modified RP-2 Lift Station and from the Mountain Avenue Pump Station will be conveyed as well. These force mains will terminate at the main trunk sewer in Kimball Avenue for delivery to RP-5. The two force mains will be installed within the disturbed Mountain Avenue ROW (shoulder to shoulder) where the roadway has been graded, filled, compacted and/or paved. Refer to Figure 4. See the attached engineering drawings in Appendix 2. In this analysis this facility will be referred to a Site 3.

4. RP-2 Lift Station: The existing lift station at RP-2 will be modified to receive flows generated within the Prado Basin from El Prado Golf Course and a private lift station on Pine Avenue. This pump station will deliver flows to the Butterfield Force Mains (discussed under item 3). Refer to Figure 5. See the attached engineering drawings in Appendix 2. The RP-2 Lift Station modifications include replacing the existing pumps at the RP-2 pump station with two smaller pumps, construction of an elevated platform for all electrical gear (to place the electrical equipment above the local 100-year flood level) and a standby generator. In this analysis this facility will be referred to as Site 4. The work proposed for RP-2 is in response to the U.S. Army Corps raising the height of Prado Dam Spillway and the expanded zone of inundation in the Prado Basin.

Thus, in this Addendum the four defined projects will be evaluated in the context of the RP-5 wastewater treatment facilities, the construction of which is approximately 60% completed. These four offsite facilities are expected to be constructed over the next 24 months, either individually or concurrently.

## III. ENVIRONMENTAL CIRCUMSTANCES

As indicated in the Project Description, the specific project being evaluated in this document consists of four separate facilities that are needed to deliver wastewater to the modified RP-5 Water Recycling facility for treatment and reuse. This evaluation relies on data in the PEIR and new data collected specifically for these projects.

## IV. CEQA REQUIREMENTS FOR AN ADDENDUM

This Addendum has been prepared in accordance with the current CEQA Statutes and Guidelines for implementing CEQA. CEQA Section 15164 includes the following procedures for the preparation and use of an Addendum:

- (a) The lead agency or responsibility agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR have occurred.

- (c) An addendum need not be circulated for public review, but can be included in or attached to the Final EIR or adopted negative declaration.

- (d) The decision-making body shall consider the addendum with the Final EIR or adopted negative declaration prior to making a decision on the project.

- (e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's required findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

If changes to a project or its circumstances occur or new information becomes available after certification of an EIR, the lead agency may: (1) prepare a subsequent EIR if the criteria of State CEQA Guidelines Section 15162(a) are met, (2) prepare a subsequent negative declaration, (3) prepare an addendum, or (4) prepare no further documentation. (State CEQA Guidelines Section 15162(b)) When only minor technical changes or additions to the approved EIR are necessary and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred, CEQA allows the lead agency to prepare and adopt an addendum. (State CEQA Guidelines, Section 15164(b))

Under Section 15162, a subsequent EIR or negative declaration is required only when:

(1) Substantial changes are proposed in the project which will require major revisions of the previous negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the negative declaration due to the involvement of any new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the negative declaration was adopted, shows any of the following:

    (A) The project will have one or more significant effects not discussed in the previous negative declaration;

    (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

    (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternative; or

    (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative."

As occurs in many complex infrastructure projects, the RP-5 Expansion Project has evolved over the past 3 years as the adequacy of existing supporting infrastructure is given more in depth evaluation before it is integrated into the key infrastructure component, which in this instance is the modified RP-5 treatment facility. IEUA concluded that these proposed project modifications (four offsite support facilities) constitute a "minor technical change" to the originally approved IEUA Facilities Master Plan and specifically the Wastewater Facilities Master Plan, i.e., replacing existing facilities with the new equipment and operations to meet future RP-5 operations into the foreseeable future.

## V. ENVIRONMENTAL ANALYSIS OF THE PROJECT MODIFICATIONS

Following the Agency's commitment to expand and update the RP-5 facilities, the four project "minor technical" modifications summarized in the preceding text need to be implemented to successfully complete the upgrade the RP-5 wastewater treatment operations. Based on the analysis provided below, the installation and implementation of these project modifications can be accomplished within the scope of the certified FMP PEIR. Thus, a decision was made to prepare an Addendum to provide an evaluation of potential project changes that could result from approving these project modifications and to assess the related potential environmental impacts that would result from these project changes, in comparison to the impact forecast contained in the FMP PEIR. The following evaluation provides an analysis of potential environmental impacts in relation to the facts and findings contained in the certified FMP PEIR CEQA document. The following conclusions were developed regarding potential impacts from approval and implementation of the proposed project modifications.

a) *POTENTIAL TO DEGRADE: Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?*

*Less than Significant Impact/No Changes or No New Information Requiring Preparation of an additional environmental document*.

Biology resources are evaluated on pages 3.4-1 through 3.4-35 of the PEIR and the whole analysis concluded that with mitigation no significant adverse impacts will result from project implementation. This was particularly the case with regard to the proposed modifications to the RP-5 site where the whole site being used for modifications had been previously disturbed and continues to be maintained in support of wastewater treatment operations and facilities. These facilities are not located within the original footprint of the RP-5 project. Of the new offsite projects, the biology report indicates that all four site locations have also been previously disturbed and do not contain any native or natural biological resources. Specifically, the following findings are supported in the projects' biology report in Appendix 3 and the projects' cultural resources report in Appendix 4:

- Site 1 (Butterfield Pump Station) does not include any exterior activities that could disturb any biological or cultural resources.
- Site 2 (Mountain Avenue Pump Station) does not include any surface natural habitat or any cultural resources based on the site surface surveys (Appendices 3 and 4), but a potential for accidental exposure of subsurface cultural resources does exist during installation of the pump wet well. Mitigation Measure CUL-1 from the PEIR shall be implemented, and based on the findings Appendix 4, if any cultural resources are exposed during subsurface construction activities at this site, an archaeologist shall examine the material found and make recommendations regarding future management actions to minimize potential impacts to a less than significant impact level.
- Site 3 (Butterfield Force Mains) does not include any surface natural habitat or any cultural resources based on the site surface surveys (Appendices 3 and 4), but a potential for accidental exposure of subsurface cultural resources does exist during installation of the force mains. Mitigation Measure CUL-1 from the PEIR shall be implemented, and based on the findings in Appendix 4, if any cultural resources are exposed during subsurface

construction activities at this site, an archaeologist shall examine the material found and make recommendations regarding future management actions to minimize potential impacts to a less than significant impact level.

- Site 4 (RP-2 Lift Station) does not include any remaining surface natural habitat or any cultural resources based on the site surface surveys (Appendices 3 and 4), but a limited potential for accidental exposure of subsurface cultural resources does exist during installation of the new support structures of the elevated platform and discharge connection from wet well and pump discharges. This potential impact is minimal because extensive subsurface excavation below historic disturbance within this closed wastewater treatment plant (WWTP) is not required for the proposed facility. Mitigation Measure CUL-1 from the PEIR shall be implemented, and based on the findings Appendix 4, if any cultural resources are exposed during subsurface construction activities at this site, an archaeologist shall examine the material found and make recommendations regarding future management actions to minimize potential impacts to a less than significant impact level.

Sites 2 through 4 have a potential to disturb bird nesting sites during the bird nesting season. Therefore, mitigation measure BIO-4 from the PEIR shall be implemented. The two mitigation measures are presented in the following text.

**BIO-4:** **The proposed improvement projects within the IEUA Service Area shall avoid, if possible, construction within the general nesting season of February 1 through August 31 for avian species protected under Fish and Game Code 3500 and the Migratory Bird Treaty Act (MBTA), if it is determined that suitable nesting habitat occurs on a project site. If construction cannot avoid the nesting season, a pre-construction clearance survey must be conducted to determine if any nesting birds or nesting activity is observed on or within 500-feet of a project site. If an active nest is observed during the survey, a biological monitor must be on site to ensure that no proposed project activities would impact the active nest. A suitable buffer will be established around the active nest until the nestlings have fledged and the nest is no longer active. Project activities may continue in the vicinity of the nest only at the discretion of the biological monitor.**

**CUL-1:** **Prior to development involving ground disturbance, IEUA shall retain a qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology to conduct a study of the project area(s) for all project components that involve ground disturbance. The archaeologist shall conduct a cultural resources inventory designed to identify potentially significant resources. The cultural resources inventory would consist of: a cultural resources records search to be conducted at the South Central Coastal Information Center located at California State University Fullerton; consultation with the NAHC and with interested Native Americans identified by the NAHC; a field survey where deemed appropriate by the archaeologist; and recordation of all identified archaeological resources located on a project site on California Department of Parks and Recreation 523 Site Record forms. The archaeologist shall provide recommendations regarding resource significance and additional work for those resources that may be affected by a project.**

Therefore, the implementation of the four offsite components of the RP-5 project will be consistent with the findings and conclusions in the FMP PEIR and Section 15162 of the State CEQA Guidelines and no significant adverse biological resource impacts will result.

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

*Less than Significant Impact/No Changes or No New Information Requiring Preparation of an EIR*. Those environmental resources or issues subject to cumulative effects include the following: agricultural resources, air quality/greenhouse gas, hydrology/water quality, land use and planning, minerals, noise, population and land use services, public services, transportation/traffic, and utilities/service systems. The following data substantiate the finding that the proposed project modifications will not significantly alter previous findings.

Agricultural Resources: There are no agricultural resources at the four offsite locations being proposed for implementation by IEUA. The FMP PEIR (pages 3.2-1 through 3.2-18) identified the potential to lose a few acres of agricultural land related to new facility siting activities. Mitigation was identified for agricultural resource impacts from implementing the FMP and a finding of less than significant impact was reached for this issue in the PEIR. Because there are no agricultural resources located within the any of the four offsite locations, implementation of the proposed project has no potential to cause any adverse impacts and also has no potential to contribute to cumulative loss of agricultural resources within the Chino Basin. Further, there have been no change in environmental circumstances within the project area of potential impact since the 2017FMP PEIR was compiled and certified. Thus, no change in impact conclusions relative to the original FMP PEIR agricultural resource conclusions result from implementing the four proposed project elements that are the subject of this Addendum.

Air Quality/Greenhouse Gas: The project short-term construction emissions were concluded to be potentially significant in the FMP PEIR based on concurrent construction of several facility projects. Air quality issues are discussed in Chapter 3.3 of the PEIR, from 3.3-1 through 3.3-54 and in Appendix C. The proposed project includes construction activities that range from one project (Site 1) that will involve construction activities within a structure with minimal emissions, and three projects (Sites 2, 3, and 4) with limited areas of disturbance and also generating minimal emissions. The daily emissions and annual emissions for all four projects being constructed simultaneously are far below the significance thresholds as documented in Tables 7 and 9 of Appendix 5, the air quality/greenhouse gas evaluation of these four projects. This amount of disturbance and related construction activities is substantially less than evaluated in the FMP PEIR and total emissions from installation of these four projects will be far less than those emissions found to be potentially significant in the FMP PEIR. Also, the daily emission rates for construction will be reduced relative to the original forecast in 2017 because of the cleaner equipment now available to construct these projects.

There will be no substantial increase in operational emissions from implementing the offsite projects as will operate passively once installed. Further, there have been limited changes in air quality environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and approved, except that regional background ambient air pollution concentrations have been reduced. The proposed projects' air emissions are considered a *de minimis* increase in overall daily construction activity relative to construction emissions forecast in the PEIR. All four air quality mitigation measures identified in the 2017 FMP PEIR will be implemented by the construction activities as needed. Thus, no change in impact conclusions relative to the original FMP PEIR air quality impact conclusions result from implementing the four proposed project elements that are the subject of this Addendum.

Greenhouse Gas (GHG) emissions were determined to be less than significant in the 2017 FMP PEIR. Annual emissions were identified as being approximately 4,617 MTCO2e/year over a 20-year period. Based on information provided in Table 10 of Appendix 5, the proposed project will generate an estimated 179.6 MTCO2e total GHG emissions. Using the standard 30-year annual amortization, this equates to 6 MTCO2e annually. The additional 6 MTCO2e from the four offsite projects does not result in a cumulative or project specific significant impact. Thus, no change in impact conclusions relative to the original FMP PEIR GHG emission impact conclusions result from implementing the four proposed project elements that are the subject of this Addendum.

Energy: Energy was not a separate topic for evaluation in 2016 when the PEIR was published. A good portion of the RP-5 project has already been implemented and the four proposed offsite projects were identified after the FMP PEIR was certified in 2017. Therefore, instead of focusing on the specific energy activities related to construction of these four offsite support facilities, it seems appropriate to look at the overall change in energy resources and impacts in 2023.

The use of energy by the four offsite projects will reduce long-term energy use (operation) at the site relative to the original approved project if it had been constructed in 2016 and 2017. This is based on the reduced energy consumption of the current building code (2020, about a 7% reduction relative to the previous code) and demand for less fuel by the 2023 vehicle fleet in southern California relative to 2016. Further, Southern California Edison (SCE) has now achieved approximately 39% of its electricity from alternative energy resources (solar, wind, and hydro). Thus, the proposed modified project will consume less overall energy during future occupancy than the approved project had it been constructed in 2016-2017.

Based on the rationale provided under the Discussion, approval of the proposed project does not result in any new significant impacts or in a substantial increase in the severity of the energy impacts that would occur in 2017 that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum. *A*pproval of the proposed project does not result in any conflict with or obstruction of state or local energy plans or policies because the IEUA will require the project to implemented in conformance with the new building codes. Therefore, the modified project can be implemented with no new significant impacts or in a substantial increase in the severity of the energy impacts evaluated in the 2017 FMP PEIR that would trigger subsequent environmental review under Sections 15162 and 15164 and that would require preparation of a subsequent document other than this Addendum.

Hydrology/Water Quality: The Hydrology/Water Quality evaluation is provided on pages 3.8-1 through 3.8-37 of the FMP PEIR. The evaluation concluded that with implementation of six mitigation measures all potential Hydrology/Water Quality impacts would be less than significant. The project short-term construction water quality impacts were concluded to be nonsignificant with implementation of these mitigation measures, including the mandatory Storm Water Pollution Prevention Plan (SWPPP). This requirement applies at all four of the project locations. All offsite project construction activities will implement best management practices to control surface runoff discharges to minimize water quality degradation. The long-term operational runoff from the four offsite locations will remain about the same as they currently are because the amount of increased impervious surfaces area will be limited to the 10’ x 30’ area at the new Mountain Avenue pump station or a total increase in impervious surface of 300 square feet. All other construction areas consist of existing impervious surfaces. The proposed project modification has no potential to significantly increase the storm water runoff activity discharges described in the FMP PEIR. The FEMA FIRM Panel for this area verifies that the one of two of the offsite projects (Sites 3 and 4)

subject to significant flood hazards, but Site 3 will be an underground pipeline and Site 4 will be elevated and hardened to withstand the potential flood hazard. Further, there have been no changes in hydrology or water quality environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and certified. Thus, no change in impact conclusions relative to the original FMP PEIR Hydrology and Water Quality conclusions result from implementing the proposed modified project elements that are the subject of this Addendum.

Land Use/Planning: The Land Use/Planning evaluation is provided on pages 3.9-1 through 3.9-21 of the FMP PEIR. The evaluation concluded that the projects envisioned by the FMP PEIR would not cause project specific or cumulative land use or planning impacts with implementation of a mitigation measure from the Biology section, and would not be growth inducing. The four proposed offsite projects will not substantially alter existing land uses. Specifically:

- Site 1 (Butterfield Pump Station) does not include any exterior activities that could alter existing land uses at this pump station location.
- Site 2 (Mountain Avenue Pump Station) will be installed on IEUA land that currently hosts the Agency's Solids Handling Facility at the IEUA campus. This pump station will be located at a site that already supports IEUA operations and the pump station use will be consistent with overall operations performed by IEUA. The area is surrounded by industrial uses, Mountain Avenue, and open space and pump station construction and operation will not conflict with adjacent uses.
- Site 3 (Butterfield Force Mains) consists of pipelines that will be installed under the Mountain Avenue roadway consistent with other underground utility infrastructure. Once the force mains are installed, no conflict with the existing roadway's function will occur.
- Site (RP-2 Lift Station) will install a lift station and special operating equipment that is consistent with the existing use of the RP-2 site.

Based on the findings presented above, the four proposed offsite facilities will not cause any project specific or cumulative significant land use or planning impacts or conflicts. Thus, no change in impact conclusions relative to the original FMP PEIR land use/planning result from implementing the proposed modified project elements that are the subject of this Addendum.

Noise: Noise will be generated by construction activities at all four proposed offsite project locations. The Noise evaluation is provided on pages 3.10-1 through 3.10-42 of the FMP PEIR. The evaluation concluded that with implementation of six mitigation measures all potential Noise impacts would be less than significant. All construction activities at Site 1 will be conducted within the existing pump station building, so no adverse noise impacts are anticipated. At the other three sites, exterior construction activities will occur, but there are no sensitive noise receptors at any of the site locations (except for migratory bird nests (addressed in the Biology discussion above). The noise levels at the pull box and RP-2 sites were and are dominated by vehicle travel on the adjacent El Prado Road. Thus, even though construction noise will occur at these three sites and operational noise will be generated at Sites 2 and 4, it is not forecast to cause a significant site specific or cumulative noise impact based on the standard noise mitigation measures included in the FMP PEIR. No significant adverse direct or cumulative noise impact will result from implementing the proposed modified project. Further, there have been no changes in noise environmental circumstances within the project area of potential impact since the 2017 FMP PEIR was compiled and certified. Thus, no change in impact conclusions relative to the original FMP PEIR noise conclusions result from implementing the four proposed offsite project elements that are the subject of this Addendum.

Population, Housing and Land Planning: The Population and Housing evaluation is provided on pages 3.11-1 through 3.11-10 of the FMP PEIR. The evaluation concluded that no mitigation would be required and potential Population and Housing impacts related to the various master plans would be less than significant. None of the four proposed offsite locations have any residences that will be impacted by their implementation. Similarly, once these facilities are installed no new employees will be required to oversee their operation. Operations will be automated, and maintenance will be conducted by IEUA's maintenance staff. Thus, the proposed project components have no potential to cause physical changes in population or housing since no new population will be generated and no residences will be impacted. No change in project specific or cumulative impact conclusions relative to the original FMP PEIR Population and Housing findings result from implementing the four proposed modified project elements that are the subject of this Addendum.

Public Services/Recreation: The Public Service evaluation is provided on pages 3.12-1 through 3.12-18 of the FMP PEIR. The evaluation concluded that one mitigation measure would be required and potential Public Service impacts would be less than significant. Aside from random demand for police or fire service, implementation of the IEUA Master Plans was determined not make any substantial demand on any public services or recreation. During construction a potential exists for accidents, trespass and theft of equipment and material. However, normal access controls for construction staging areas (at RP-2, Site 4) and safety requirements for contractors was concluded to be sufficient to control this potential impact. Demand for emergency services may occur, but this is a random requirement and does not rise to level of significant impact. The Recreation evaluation is provided on pages 3.13-1 and 3.13-12. One mitigation measure (PS-1) was required regarding recreation facility impacts, but no recreation facilities will be impacted by the four proposed offsite projects considered in this document. Thus, the impact is directly comparable under both the approved project and the proposed modified projects. No additional adverse direct or cumulative demand for public services or recreation will result from implementing the four proposed offsite projects. Further, there have been no change in public service environmental circumstances within the project area of potential impact since the 2017 FMP PEIR was compiled and certified. Thus, no change in impact conclusions relative to the original FMP PEIR Public Service/Recreation conclusions result from implementing the four proposed offsite project elements that are the subject of this Addendum.

Transportation/Traffic: The Transportation/Traffic evaluation is provided on pages 3.14-1 through 3.14-17 of the FMP PEIR. The evaluation concluded that one mitigation measure (TT-1) would be required and potential Transportation/Traffic impacts would be less than significant. The approved project did not have any identified significant traffic or circulation system impacts. This includes construction and operation of the FMP facilities, which was evaluated in the FMP PEIR. The four proposed offsite projects will involve a nominal number of construction-related trips (no more than 30 round trips per day) and no additional daily routine trips during future operations. The offsite projects at Sites 3 and 4 will require the implementation of mitigation measure TT-1 to manage traffic during construction. The potential impacts on the circulation system are nonsignificant without implementation of mitigation measures. Further, there have been no substantial changes in the local circulation system environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and certified. Thus, no change in impact conclusions relative to the original FMP PEIR Transportation/Traffic conclusions result from implementing the four proposed offsite project elements that are the subject of this Addendum.

Tribal Cultural Resources: The Native American consultation process, AB-52, was implemented by IEUA in 2016 and two tribes, the Morongo Band of Mission Indians and the Gabrieleño Band

of Mission Indians – Kizh Nation, were contacted. Under normal circumstances an Addendum does not require AB-52 consultation, but in this instance IEUA will coordinate with both tribes regarding their level of interest regarding the three of the four proposed offsite projects. The activities at Site 1 will not disturb any new ground, and no potential requirement for monitoring exists at this location. For the other three sites, IEUA will afford the Gabrieleño Band (they have an opportunity to monitor the Site 2 through Site 4 projects) the opportunity to conduct monitoring when these projects are implemented.

Utilities/Service Systems: The Utilities/Service Systems evaluation is provided on pages 3.15-1 through 3.15-26 of the FMP PEIR. The evaluation concluded that one mitigation measure would be required and potential Utilities/Service Systems impacts would be less than significant. The approved project did not have any identified significant utility or service system impacts. The four proposed offsite projects do not make any substantial demand on any utilities or service systems due to their short-term construction duration and limited increase in permanent demands on such systems. During construction no potential exists for any demand on any public utility, other than small quantities of water which the RP-5 recycled water system can supply to control fugitive dust. Solid waste generated during construction will be slightly increased and will be less than significant as only limited non-native vegetation may be removed in conjunction with implementation of projects at Sites 2 through 4. No mitigation was required for this issue other than IEUA programs to generate energy from its own sources of fuel (biomass, solar, wind and gases generated by wastewater treatment). The impact is directly comparable under both the adopted project and the proposed added projects. No additional adverse direct or cumulative demand for utilities or service systems will result from implementing the proposed project. Further, there have been no change in utility environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and certified. Thus, no change in impact conclusions relative to the original FMP PEIR Utility/Service Systems conclusions result from implementing the four proposed offsite projects that are the subject of this Addendum.

Based on the above analysis, the implementation of the four proposed offsite projects that are the subject of this Addendum is not forecast to cause any significant new direct, indirect, or cumulatively considerable environmental impacts. The proposed offsite projects are of such limited scale relative to the proposed RP-5 re-construction activities that it will not contribute to any new considerable cumulative impacts.

c) *ADVERSE IMPACTS ON HUMANS: Does the project have environmental effects on human beings, either directly or indirectly?*

*Less than Significant Impact/No Changes or No New Information Requiring Preparation of an EIR*. The FMP PEIR identified and evaluated those issues which may have a potential adverse impact on human beings, directly or indirectly. These issues include: aesthetics, air quality, geology & soils, hazards & hazardous waste, hydrology & water quality, noise, transportation/traffic (roadway hazards), and wildfire. While the proposed modified project will result in the implementation of four offsite project elements, implementation of the proposed project is not forecast to create or result in significant direct or indirect adverse environmental impacts on humans with mitigation, beyond that identified and addressed in the FMP PEIR. This conclusion is based on the following substantiation:

Aesthetics: The Aesthetics evaluation is provided on pages 3.1-1 through 3.1-18 of the FMP PEIR. The evaluation concluded that four mitigation measures would be required and potential impacts to Aesthetic issues would be less than significantly adverse. The project will cause short-

term disturbances of the man-made environment at each of the four offsite locations (Sites 1 through 4).

- Site 1 (Butterfield Pump Station) does not include any exterior modifications, but it will include some exterior activities that will change the existing aesthetic environment at the project site for about a week. This activity will not be permanent and is considered a less than significant aesthetic impact.
- Site 2 (Mountain Avenue Pump Station) will be installed on IEUA land that currently hosts the Agency's Solids Handling Facility at the IEUA campus (which includes RP-5, the Laboratory, and Headquarters Offices). This pump station will be located at a site that already supports IEUA operations and the pump station use will be consistent with overall operations performed by IEUA. The area is surrounded by industrial uses, Mountain Avenue, and open space and pump station construction and operation will not conflict with the visual setting or aesthetics of the site. This facility will not aesthetically conflict with the surrounding uses and is considered a less than significant aesthetic impact.
- Site 3 (Butterfield Force Mains) consists of pipelines that will be installed under the Mountain Avenue roadway consistent with other underground utility infrastructure. Construction activities will create a short-term visual change, but it is not permanent and construction activities on their own are not a significant aesthetic impact. Once the force mains are installed, no conflict with or change in the existing roadway's visual setting will occur.
- Site (RP-2 Lift Station) will install a lift station and special operating equipment that are is consistent with the historic and existing use of the RP-2 site. Thus, this proposed offsite project will continue the use of this site to support wastewater management operations and the aesthetic impact will not be a significant adverse change.

Thus, the proposed four offsite projects aesthetic impacts will be less than significant without mitigation. No additional adverse aesthetic effects to humans will result from implementing the proposed project. Further, there have been no change in aesthetic environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and approved. Thus, no change in impact conclusions relative to the original FMP PEIR Aesthetic conclusions result from implementing the four proposed offsite projects that are the subject of this Addendum.

Air Quality: Refer to the Air Quality impact conclusions in the preceding section. The proposed project short-term construction emissions were concluded to be potentially significant even with implementation of mitigation measures because more than one project may be under construction at one time. However, the four proposed offsite projects' additional emissions are such a small-scale contribution that they will not cause a substantial additional increment of impact locally. In addition, the modified project will not generate any local operational emissions. The localized air emissions during construction were evaluated (LSTs, refer to Table 8) and found not to pose a significant impact to any residents within the local environment. Further, there have been no adverse major change in air quality environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and certified. No additional significant adverse direct or cumulative air quality effects will result to humans from implementing the proposed modified project.

Geology and Soils: The Geology and Soils evaluation is provided on pages 3.6-1 through 3.6-27 of the FMP PEIR. First and most important, none of the proposed facilities are being designed for human habitation and or routine employee presence. The evaluation concluded that two mitigation measures would be required and potential Geology and Soils impacts would be less

than significant. The approved project did not have any identified significant Geology or Soil impacts. Major geology and soil constraints were identified within the Chino Basin; however, mitigation was identified to control seismic hazards, subsidence hazards and liquefaction hazards. Based on the lack of any habitable structures being installed as part of this project, the potential for real geotechnical hazards to affect the proposed modified project is very low regardless of the mitigation. The impact is directly comparable under the proposed modified project to that forecast in the FMP PEIR. No additional adverse direct geology/soil effects on humans will result from implementing the proposed project. Further, there have been no change in geology or soil environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and approved. Thus, no change in impact conclusions relative to the original FMP PEIR Geology and Soil conclusions result from implementing the four proposed offsite projects that are the subject of this Addendum.

Hazards and Hazardous Materials: The Hazards and Hazardous Materials evaluation is provided on pages 3.7-1 through 3.7-36 of the FMP PEIR. The evaluation concluded that five mitigation measures would be required and potential Hazards and Hazardous Materials impacts would be less than significant. The approved project did not have any identified significant Hazards or Hazardous Materials impacts. The only hazards associated with the adopted project in the FMP PEIR is a potential to accidentally spill hazardous materials during construction activities. The same hazard applies to the four proposed offsite projects. Mitigation will be incorporated into the SWPPP to control any accidentally released hazardous substances during construction and the potential health hazards such substances could pose when released into the environment will be effectively controlled. No additional significant adverse direct hazard effects on humans will result from implementing the proposed project. Further, there have been no change in hazard environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and certified. Thus, no change in impact conclusions relative to the original FMP PEIR Hazards and Hazardous Materials forecast result from implementing the four proposed offsite projects that are the subject of this Addendum.

Hydrology/Water Quality: Refer to the Hydrology/Water Quality discussion under the preceding discussion for basic facts. The evaluation concluded that with implementation of six mitigation measures all potential Hydrology/Water Quality impacts would be less than significant. Two of the four project sites (Sites 3 and 4) are subject to significant flood hazards but these factors have been taken into consideration by either burying the force mains or elevating some of the equipment at RP-2. The FEMA FIRM Panel for this area verifies that these two project sites are subject to significant flood hazards, while the other two are not. Further, there have been no change in hydrology environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and approved. Thus, no change in impact conclusions relative to the original FMP PEIR Hydrology and Water Quality conclusions result from implementing the four proposed offsite projects that are the subject of this Addendum.

Noise: Refer to the Noise discussion under the preceding section for basic facts. The evaluation concluded that with implementation of six mitigation measures all potential Noise impacts would be less than significant. The three of the four project areas do not have nearby sensitive noise receptors and at Site 1 the noise generating activities will occur within the existing pump station structure. Thus, humans will not be subject to significant hazards from noise. Thus, the implementation of the four proposed offsite projects has no potential to cause a significant increase in either construction or operational noise levels that would harm humans. Further, there have been no change in noise environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and approved. Thus, no change in impact

conclusions relative to the Noise conclusions result from implementing the four proposed offsite projects that are the subject of this Addendum.

Transportation/Traffic: The Transportation/Traffic evaluation is provided on pages 3.14-1 through 3.14-17 of the FMP PEIR. The evaluation concluded the proposed project Transportation/Traffic impacts will require two mitigation measures (one of these measures can be found in the Hazard's Section) would be required and potential Transportation/Traffic impacts would be less than significant. The approved project did not have any identified significant traffic or circulation system impacts. By implementing traffic control measures where construction traffic could indirectly harm humans, the proposed modified project can control impacts to a less than significant level. Further, there have been no change in the Transportation/Traffic system environmental circumstances within the project area of potential effect since the 2017 FMP PEIR was compiled and approved. Thus, no change in impact conclusions relative to the Transportation/Traffic conclusions result from implementing the four proposed offsite projects that are the subject of this Addendum.

Wildfire: Wildfire is a new topic under CEQA. Only one site, Site 1, is located in a high fire hazard zone, but the work at this location will actually be within an existing structure with minimal potential to cause/contribute to a wildland fire at this location. The other three sites will be implemented on disturbed areas with limited fuel load and moderate wildland fire hazards. There have been no changes in wildland fire hazard designations within the project area of potential effect since the 2017 FMP PEIR was compiled and approved. Thus, no change in impact conclusions relative to the Wildfire hazard conclusions result from implementing the four proposed offsite projects that are the subject of this Addendum.

Based on the above analysis, the implementation of the modified project, including the four offsite projects, is not forecast to cause significant unavoidable direct or indirect wildfire impacts on humans, which is consistent with the findings in the FMP PEIR.

## VI. CONCLUSION

The earlier analyses from the FMP PEIR were used as a basis for compiling this Addendum, updated with information contained in the 2017 FMP PEIR and with current information from sources cited and referenced, where necessary. It is the conclusion of this Addendum that the potential adverse environmental impacts from implementation of this subsequent four offsite projects, will not be significantly greater than those identified for the approved RP-5 Expansion Project as forecast in the Final FMP PEIR. There are no new significant impacts that result from the proposed project and no new circumstances occur at the four project site locations that would change previous conclusions in the FMP PEIR regarding adverse environmental impacts. This Addendum provides an update of the RP-5 Expansion Project and the mitigation measures required in the FMP PEIR. No new mitigation measures are required.

This Addendum provides IEUA with the information substantiating the conclusion that the implementation of the four proposed offsite projects will not cause substantial physical changes in the environment which would require preparation and processing of a new negative declaration or a new environmental impact report. Such documentation would only be required due to the involvement of new significant environmental effects, a substantial increase in the severity of previously identified significant effects from the original project, or the need for new mitigation measures to reduce impacts from the four proposed offsite projects. This determination allows for the use of an Addendum in accordance with Section 15164(a) of the State CEQA Guidelines.

Pursuant to CEQA Section 15164, the Final FMP PEIR (2017), as updated by this Addendum, can be relied upon for documentation of the effects of the modified project on the environment encompassed by the four proposed offsite projects. Because the changes in the proposed project do not exceed the thresholds outlined in Sections 15162 and 15164 of the State CEQA Guidelines, no further analysis of the environmental impacts of the four proposed offsite projects is required in a follow-on Negative Declaration or Supplemental/Subsequent EIR. Based on all of the data summarized above, it is recommended that the proposed project modifications be processed as an Addendum to the certified FMP PEIR. Implementation of this proposed second-tier set of projects does not alter the conclusions contained in the FMP PEIR document. The analysis presented above of the changes and additions to the adopted project (RP-5 Expansion Offsite Facilities Projects) in the FMP PEIR justify the issuance of an Addendum to the PEIR.

This Addendum to the FMP PEIR includes the changes or additions necessary to make the adopted FMP PEIR adequate under CEQA to support the proposed project modifications. This Addendum incorporates the adopted FMP PEIR, this Addendum document, including technical support documents, and all staff reports and information submitted to the decision-makers regarding environmental issues affected by the proposed implementation of the four proposed offsite projects. This Addendum is intended as an additional information document to provide decision-makers and others, as appropriate, with an objective assessment of potential environmental impacts associated with the revisions to the approved project.

## VII. REVIEW AUTHORITY

The IEUA serves as the CEQA lead agency for this project. It is recommended that an Addendum be adopted as the appropriate CEQA environmental determination for the RP-5 Expansion Offsite Facilities Projects at the locations identified.

## VIII. CERTIFICATION

Manager of Compliance and Sustainability
Inland Empire Utilities Agency

## IX. REFERENCES


A. Environmental Science Associates/Tom Dodson & Associates. Final Program Environmental Impact Report for the Facilities Master Plans. SCH#2016061064, certified February 2017.

B. Tom Dodson & Associates. Addendum to the Final Program Environmental Impact Report for the Facilities Master Plans for the Northeast Recycled Water Expansion Projects. SCH#2002011116. February 2008.

# FIGURES

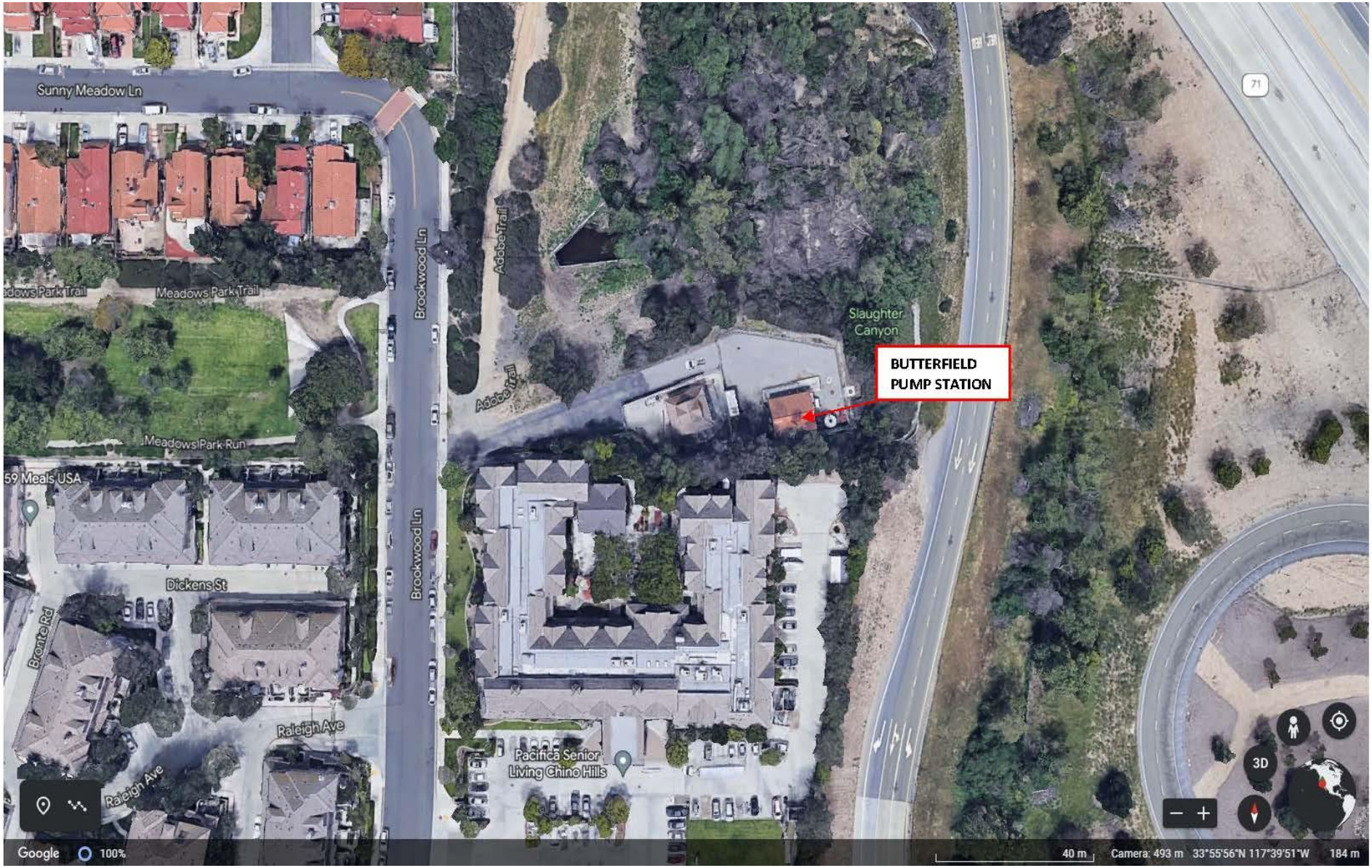



**FIGURE 1**

***Tom Dodson & Associates***
*Environmental Consultants*

**Butterfield Pump Station**

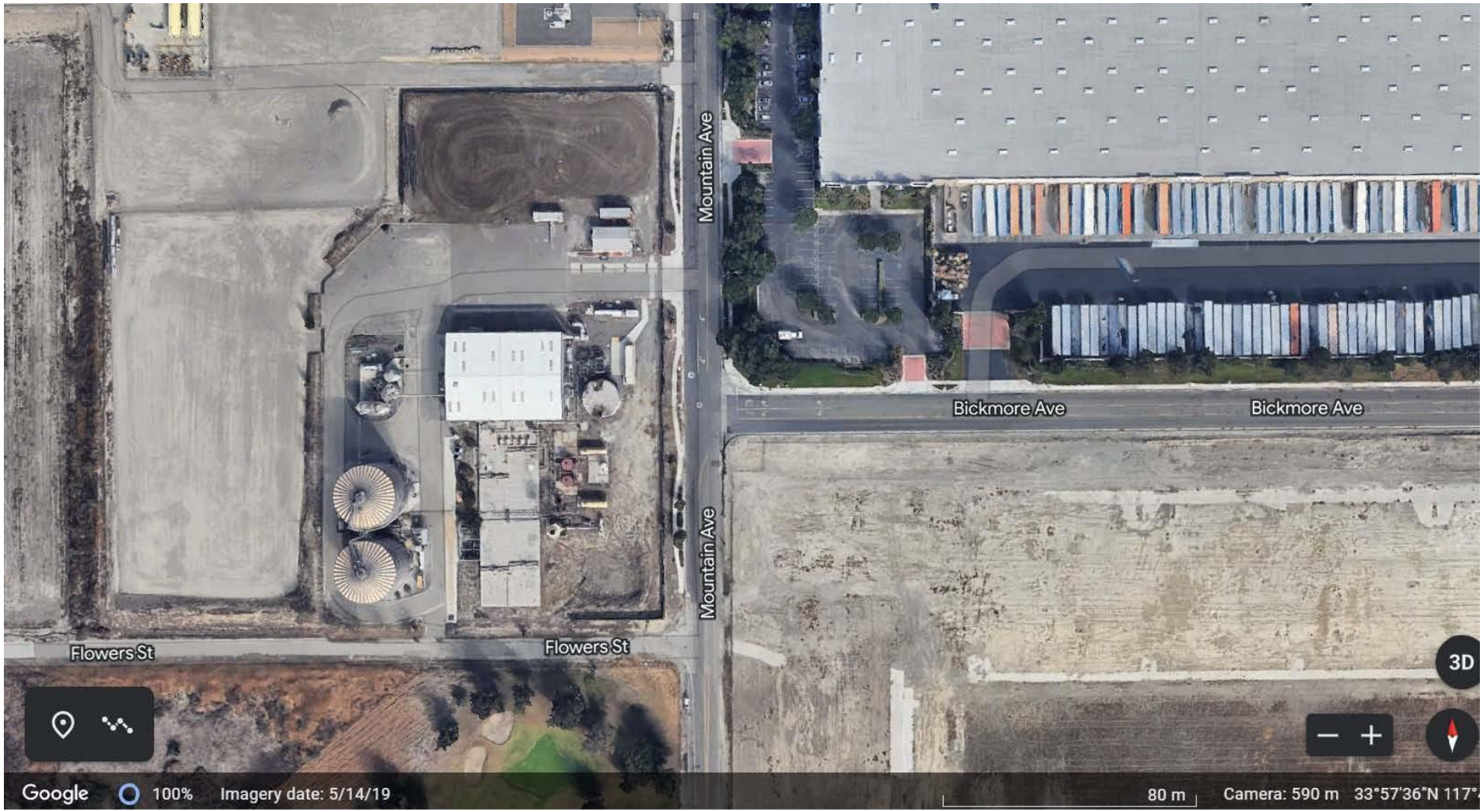



**FIGURE 2**

***Tom Dodson & Associates***
*Environmental Consultants*

**Mountain Ave Lift Station**

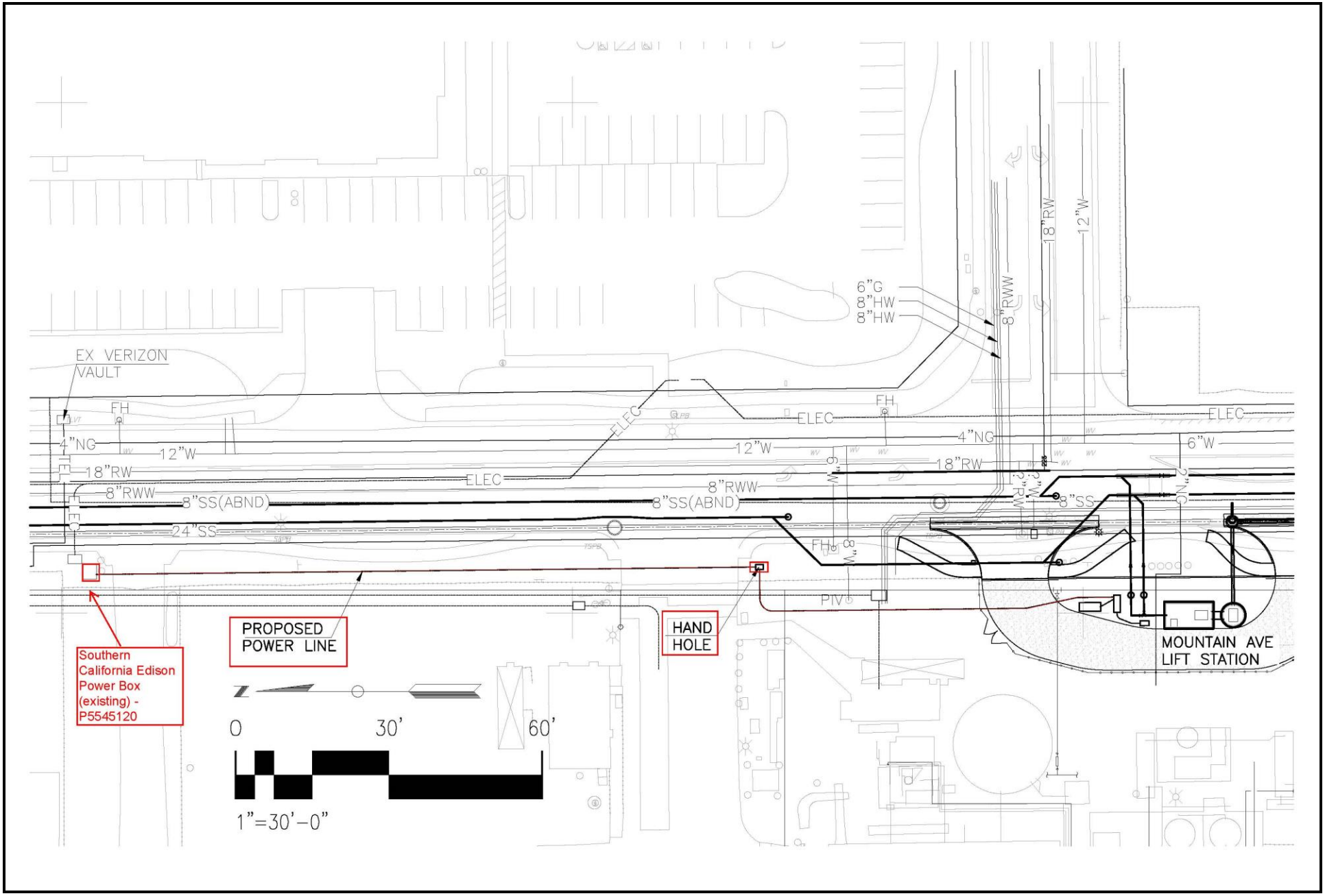



**FIGURE 3**

***Tom Dodson & Associates***
*Environmental Consultants*

**Mountain Ave LS Power Connection**

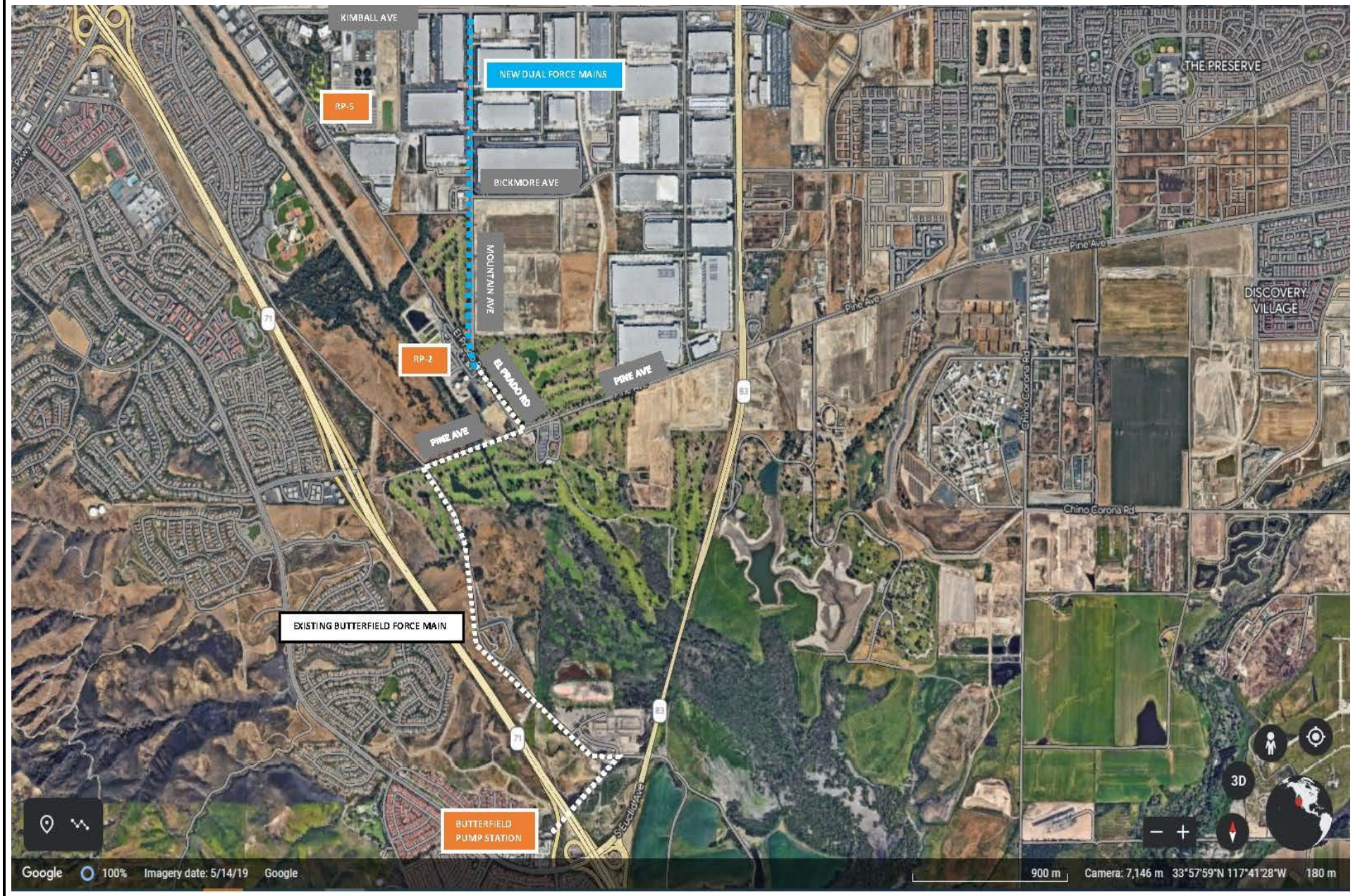



**FIGURE 4**

***Tom Dodson & Associates***
*Environmental Consultants*

**Butterfield Force Main**


**FIGURE 5**

***Tom Dodson & Associates***
*Environmental Consultants*

**RP-2 Lift Station**

# APPENDIX 1

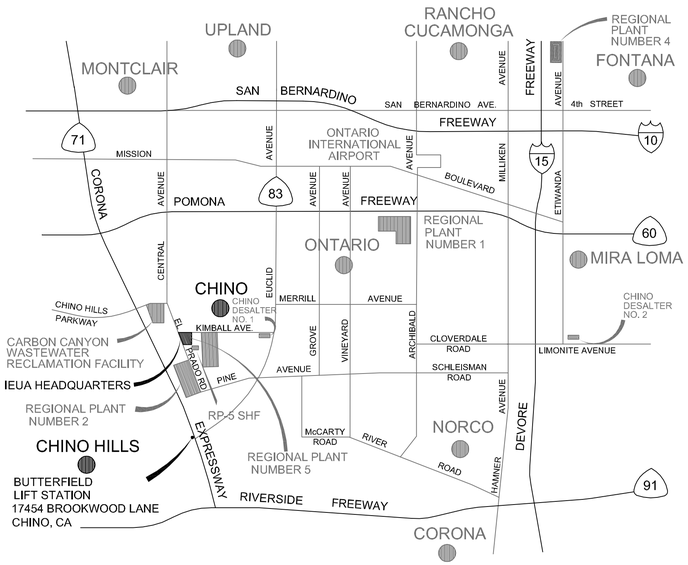
# FMP PEIR
# (original project)

# APPENDIX 2

# ENGINEERING DRAWINGS

ENGINEERING DRAWINGS

BUTTERFIELD – 100%




VICINITY MAP

NOT TO SCALE

Inland Empire Utilities Agency

A MUNICIPAL WATER DISTRICT

# BUTTERFIELD LIFT STATION UPGRADES

PROJECT NO. EN19006

DATE: 10/15/2019

SUBMITTAL 100%

(NOT FOR BID)


PROJECT LOCATION MAP

NOT TO SCALE

Underground Service Alert
Call: TOLL FREE
1-800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | KF | 07/2018 |
| Drawn | KF | 07/2018 |
| Checked | SS | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 10/15/19 | SK | SK | SUBMITTAL 100% |
| D | 05/31/19 | SK | SK | SUBMITTAL 90% |
| C | 05/07/19 | SK | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | SK | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | SK | SK | SUBMITTAL 50% |

RECOMMENDED BY:

DATE

JASON MARSEILLES, PE
PROJECT MANAGER

APPROVED BY:

DATE

JERRY BURKE, P.E. QSD
DEPUTY MANAGER OF ENGINEERING

APPROVED BY:

DATE

SHAUN J. STONE, P.E.
MANAGER OF ENGINEERING

INLAND EMPIRE UTILITIES AGENCY

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

COVER SHEET

SHEET: G-01

SHEET NO.: 1 OF 19

PROJECT NO.

DRAWING NO.

W:\Pasadena_Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3_Detailed Design Phase\3.1_CAD\4.GE\WORK\Butterfield Ranch Package\G-01 COVER SHEET last saved by P0065400 on 10/15/19 plotted 10/15/2019 3:40:51 PM

## GENERAL

| | | |
|---|---|---|
| 1 | G-01 | COVER SHEET |
| 2 | G-02 | DRAWING INDEX |
| 3 | G-03 | SYMBOLS AND GENERAL ABBREVIATIONS |

## MECHANICAL

| | | |
|---|---|---|
| 4 | M-01 | GENERAL NOTES AND EQUIPMENT SCHEDULE |
| 5 | M-10 | PUMP LIFT STATION - GENERAL ARRANGEMENT ISOMETRIC |
| 6 | M-11 | PUMP ROOM - EQUIPMENT AND PIPING DEMOLITION PLAN |
| 7 | M-12 | PUMP ROOM - DEMOLITION SECTIONS AND DETAILS |
| 8 | M-13 | PUMP ROOM - DEMOLITION SECTIONS AND DETAILS |
| 9 | M-14 | PUMP ROOM - EQUIPMENT AND PIPING NEW INSTALLATION PLAN |
| 10 | M-15 | PUMP ROOM - NEW INSTALLATION SECTIONS AND DETAILS |
| 11 | M-16 | PUMP ROOM - NEW INSTALLATION SECTIONS AND DETAILS |

## ELECTRICAL

| | | |
|---|---|---|
| 12 | E-01 | SYMBOLS AND LEGEND |
| 13 | E-02 | GENERAL NOTES & ABBREVIATIONS |
| 14 | E-03 | SINGLE LINE DIAGRAMS |
| 15 | E-04 | POWER AND INSTRUMENT PLAN |
| 16 | E-05 | CONTROL SCHEMATICS, LIFT PUMP |

## INSTRUMENTATION

| | | |
|---|---|---|
| 17 | I-01 | INSTRUMENTATION LEGEND |
| 18 | I-02 | INSTRUMENTATION LEGEND |
| 19 | I-03 | BUTTERFIELD LIFT STATION - P&ID |

W:\Pasadena_Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3_Detailed Design Phase\3.1_CAD\4.GE\WORK\Butterfield Ranch Package\G-02 DRAWING INDEX last saved by P006540D on 9/6/19 plotted 10/15/2019 12:49:12 PM


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | KF | 05/2018 |
| Drawn | KF | 05/2018 |
| Checked | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 10/15/19 | SK | SK | SUBMITTAL 100% |
| D | 05/31/19 | SK | SK | SUBMITTAL 90% |
| C | 05/07/19 | SK | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | SK | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | SK | SK | SUBMITTAL 50% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

DRAWING INDEX

SHEET
G-02

SHEET NO.
2 OF 19

PROJECT NO.

DRAWING NO.

# GENERAL SYMBOLS

- AGGREGATE SURFACE COURSE
- DRAIN ROCK
- PEA GRAVEL
- AGGREGATE BASE
- GRAVEL
- ASPHALT CONCRETE PAVING
- NEW CONCRETE
- MASONRY OR CONCRETE BLOCK
- GRATING
- CHECKER PLATE
- STEEL
- ALUMINUM
- WOOD
- OPENING OR DEPRESSION IN SLAB OR WALL
- 1095 S.46 EG — SURVEYED POINT
- 286 — EXISTING CONTOUR
- 286 — FINISHED GRADE CONTOUR
- GROUND LINE
- BUSHES OR TREE LINE
- SHRUBS OR TREE
- S — EXISTING SEWER LINE
- T — EXISTING TELEMETRY OR TELEPHONE LINE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- SD — EXISTING STORM DRAIN
- E — EXISTING ELECTRICAL CONDUIT OR DUCT BANK
- FLOW LINE
- PL — PROPERTY LINE
- -x-x-x- — EXISTING FENCE
- X-X-X — NEW FENCE
- R-R-R — RIDGE LINE
- CHANGE IN PIPE MATERIAL
- RAILING
- TO BE DEMOLISHED
- TO BE ABANDONED
- TO BE MODIFIED
- TOP / TOE — CUT OR FILL SLOPE TO BE CONSTRUCTED
- ℄ — CENTERLINE
- Ø — DIAMETER
- ∠ — ANGLE
- @ — AT
- Δ — DEFLECTION ANGLE
- 293.90 FG — FINISHED ELEVATION
- 4"-D — PIPE CALLOUT (SEE PIPING SCHEDULE)
- UNION
- REDUCER
- ECCENTRIC REDUCER

- S OR M — S = SOLENOID VALVE; M = MOTOR OPERATED VALVE
- PRESSURE REDUCING VALVE SELF CONTAINED
- PRESSURE REDUCING VALVE W/ EXTERNAL PRESSURE TAP
- PRESSURE SAFETY VALVE
- ANGLE RELIEF VALVE
- C.B. D.I. — CATCH BASIN OR DRAIN INLET
- SB-1 — TEST BORINGS (SB OR B) DRILL HOLE (DH)
- B.M. — BENCH MARK
- HORIZONTAL AND VERTICAL CONTROL POINT
- W.M. — WATER METER
- G.M. — GAS METER
- COTG — COTG — CLEAN OUT TO GRADE
- TP, PP, OR LP — TELEPHONE, POWER OR LIGHT POLE
- GUY — GUY WIRE
- FH — FIRE HYDRANT
- MH — MANHOLE
- CHECK VALVE
- BALL VALVE
- GATE VALVE
- GATE VALVE, BURIED W/ VALVE BOX
- GLOBE VALVE
- BUTTERFLY VALVE OR DAMPER
- BUTTERFLY VALVE, BURIED W/ VALVE BOX
- ECCENTRIC PLUG VALVE
- 3-WAY VALVE
- 4-WAY VALVE
- ANGLE VALVE
- SLUICE OR SLIDE GATE
- AIR RELEASE AND VACUUM RELIEF COMBINATION VALVE
- SLEEVE TYPE FLEXIBLE COUPLING
- GROOVED TYPE COUPLING
- HOSE COUPLING
- HOSE BIBB
- NEW PIPELINE (12"Ø AND LARGER)
- NEW PIPELINE (SMALLER THAN 12"Ø)

# GENERAL ABBREVIATIONS

| | |
|---|---|
| AB | ANCHOR BOLT OR AGGREGATE BASE |
| ABAN | ABANDONED |
| AC | ASPHALT CONCRETE |
| ADDL | ADDITIONAL |
| AL | ALUMINUM |
| APPROX | APPROXIMATE |
| BF | BLIND FLANGE |
| BFV | BUTTERFLY VALVE |
| BC | BEGINNING OF CURVE |
| BLDG | BUILDING |
| BO | BLOWOFF |
| BOS | BOTTOM OF STEEL |
| BET | BETWEEN |
| BOD | BOTTOM OF DUCT BANK |
| BOT | BOTTOM |
| BOW | BACK OF WALL |
| BM | BENCH MARK, OR BEAM |
| BV | BALL VALVE |
| BVC | BEGIN VERTICAL CURVE |
| CAB | CRUSHED AGGREGATE BASE |
| CALTRANS | CALIFORINA DEPARTMENT OF TRANSPORTATION |
| CB | CATCH BASIN, COMMUNICATION BOX |
| CBC | CALIFORNIA BUILDING CODE |
| C/C | CENTER TO CENTER |
| CD | CONDENSATE DRAIN |
| CHKD | CHECKERED |
| CJ | CONSTRUCTION JOINT |
| CI | CAST IRON |
| CIRC | CIRCULAR |
| CL, ℄ | CENTER LINE |
| CL | CLASS OR CHAIN LINK FENCE |
| CLR | CLEAR |
| CLSM | CONTROLLED LOW STRENGTH MATERIAL |
| CML&C | CEMENT MORTAR LINED & COATED |
| CMP | CORRUGATED METAL PIPE |
| CO | CLEAN OUT |
| COL | COLUMN |
| CON | CONCENTRIC |
| CONC | CONCRETE |
| CONN | CONNECTION |
| CONST | CONSTRUCTION |
| CONT | CONTINUOUS |
| CP | CONTROL POINT AND COORDINATE POINT |
| CPLG | COUPLING |
| CTRL | CONTROL |
| CTSK | COUNTERSUNK |
| CU | CUBIC |
| C&G | CURB AND GUTTER |
| CV | CHECK VALVE |
| CYL | CYLINDER |
| DB | DUCT BANK |
| DBD | DEFERRED BOLTING DEVICE |
| DBL | DOUBLE |
| DEPT | DEPARTMENT |
| DET | DETAIL |
| DFU | DRAIN FIXTURE UNITS |
| DH | DRILL HOLE |
| DI | DRAIN INLET |
| DIA | DIAMETER |
| DIP | DUCTILE IRON PIPE |
| DIA | DIAGONAL |
| DISCH | DISCHARGE |
| DMH | DRAIN MAINHOLE |
| DN | DOWN |
| DWG | DRAWING |
| E OR (E) | EAST/EASTING OR EXISTING |
| EA | EACH, EXHAUST AIR |
| EC | END OF CURVE |
| ECC | ECCENTRIC |
| ECMT | ENCASEMENT |
| ED | EQUIPMENT DRAIN |
| EF | EACH FACE |
| EFF | EFFLUENT |
| EL, ELEV | ELEVATION |
| ELEC | ELECTRICAL |
| ELL, ELB | ELBOW |
| EMBED | EMBEDDED |
| EMH | ELECTRICAL MAINHOLE |
| EP | EDGE OF PAVEMENT |
| EQ | EQUAL |
| ES | EACH SIDE |
| EVC | END VERTICAL CURVE |
| EW | EACH WAY |
| EX, EXIST, (E) | EXISTING |
| EXP JT | EXPANSION JOINT |
| FCA | FLANGED COUPLING ADAPTER |
| FCO | FLOOR CLEAN OUT |
| FD | FLOOR DRAIN |
| FDB | FLOW DISTRIBUTION BOX |
| FF | FINISH FLOOR |
| FG | FINISHED GRADE |
| FH | FIRE HYDRANT |
| FIN | FINISH |
| FJB | FLOW JUNCTION BOX |
| FL | FLOW LINE |
| FLEX | FLEXIBLE |
| FLG | FLANGE |
| FLR | FLOOR |
| FM | FORCE MAIN |
| FOW | FRONT OF WALL |
| FRP | FIBERGLASS REINFORCED PLASTIC |
| FS | FINISH SURFACE OR FLOOR SINK |
| FT | FOOT OR FEET |
| FTG | FOOTING |
| G | GAS |
| GA | GAGE |
| GAL | GALLONS |
| GALV | GALVANIZED |
| GB | GRADE BREAK |
| GEN | GENERAL |
| GL | GROUND LINE |
| GPM | GALLONS PER MINUTE |
| GR | GRADE |
| GSP | GALVANIZED STEEL PIPE |
| GV | GATE VALVE |
| HB | HOSE BIBB |
| HDG | HOT-DIPPED GALVANIZED |
| HGL | HYDRAULIC GRADE LINE |
| HH | HANDHOLE |
| HORIZ | HORIZONTAL |
| HP | HORSEPOWER, HIGH PRESSURE, OR HIGH POINT |
| HSS | HOLLOW STRUCTURAL SECTION |
| HWL | HIGH WATER LEVEL |
| HYDRO | HYDROPNEUMATIC |
| IF | INSIDE FACE |
| ID | INSIDE DIAMETER |
| IE | INVERT ELEVATION |
| IN | INCHES |
| INV | INVERT |
| IRR | IRRIGATION |
| JT | JOINT |
| L | LENGTH OF CURVE OR LENGTH |
| LCP | LOCAL CONTROL PANEL |
| LG | LENGTH OR LONG |
| LL/BB | LONG LEGS BACK TO BACK |
| LLH | LONG LEGS HORIZONTAL |
| LLV | LONG LEGS VERTICAL |
| LP | LOW PRESSURE, LOW POINT, OR LIGHT POLE |
| LR | LONG RADIUS |
| LWL | LOW WATER LEVEL |
| MAX | MAXIMUM |
| MB | MACHINED BOLT |
| MGD | MILLION GALLONS PER DAY |
| MTRL | MATERIAL |
| MH | MANHOLE |
| MIN | MINIMUM |
| MFR'S | MANUFACTURER'S |
| MO | MASONRY OPENING |
| N, (N) | NORTH/NORTHING OR NEW |
| NC | NORMALLY CLOSED |
| NG | NATURAL GAS |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN, NUMBER |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| OF | OVERFLOW OR OUTSIDE FACE |
| OPER | OPERATED OR OPERATOR |
| OPNG | OPENING |
| OSA | OUTSIDE AIR |
| PB | PULL BOX, POWER BOX |
| PC | POINT OF CURVE (BEGIN CURVE), PIECE |
| PCC | PORTLAND CEMENT CONRETE |
| PGRM | PROGRAM |
| PL | PLATE OR PROPERTY LINE |
| PI | POINT OF INTERSECTION |
| PLBG | PLUMBING |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PLCS | PLACES |
| POC | POINT OF CONNECTION |
| PP | POWER POLE |
| PRESS | PRESSURE |
| PRV | PRESSURE REGULATING VALVE |
| PSI | POUNDS PER SQUARE INCH |
| PSV | PRESSURE RELIEF VALVE |
| PS | PUMP STATION |
| PT | POINT OF TANGENCY, POINT |
| PW | PLANT WATER, POTABLE WATER |
| PV | PLUG VALVE |
| PVC | POLYVINYL CHLORINE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVMT | PAVEMENT |
| R OR (R) | RADIUS, RETURN OR RIDGE |
| RA | RETURN AIR |
| RAD | RADIUS |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROOF DRAIN |
| REBAR | REINFORCEMENT BARS |
| RED | REDUCER |
| REF | REFERENCE |
| REINF | REINFORCING, REINFORCEMENT |
| REQ'D | REQUIRED |
| RET | RETURN |
| REV | REVISION |
| R/W | RIGHT-OF-WAY |
| S | SOUTH, SLOPE OR SEWER |
| SA | SAMPLE, SUPPLY AIR |
| SAN | SANITARY SEWER |
| SB | SIGNAL PULL BOX |
| SCH | SCHEDULE |
| SD | STORM DRAIN |
| SDMH | STORM DRAIN MANHOLE |
| SECT | SECTION |
| SF | SQUARE FOOT |
| SHT | SHEET |
| SIM | SIMILAR |
| SL/BB | SHORT LEG BACK TO BACK |
| SLV | SHORT LEG VERTICAL |
| SMH | SEWER MANHOLE |
| SOV | SHUT OFF VALVE |
| SP | STATIC PRESSURE |
| SPEC | SPECIFICATIONS OR SPECIAL |
| SQ | SQUARE |
| SS | STAINLESS STEEL OR SANITARY SEWER |
| STA | STATION |
| STD | STANDARD |
| STIFF | STIFFENER |
| STL | STEEL |
| STRUCT | STRUCTURE OR STRUCTURAL |
| SUP | SUPPORT |
| SYM | SYMMETRICAL |
| SW | SEAL WATER SWITCH OR SERVICE WATER |
| SWBD | SWITCHBOARD |
| T | TANGENT LENGTH OR TELEPHONE |
| T&B | TOP & BOTTOM |
| TC | TOP OF CURB |
| TEL | TELEPHONE |
| TEMP | TEMPORARY |
| TG | TOP OF GUTTER OR TOP OF GRATE |
| THK | THICK |
| TOC | TOP OF CONCRETE |
| TOF | TOP OF FILL, TOP OF FLOOR |
| TOG | TOP OF GRATING |
| TOP | TOP OF PIPE |
| TOS | TOP OF STEEL |
| TS | THICKENED SLUDGE, TOP OF SLOPE |
| TW | TOP OF WALL |
| TYP | TYPICAL |
| UON | UNLESS OTHERWISE NOTED |
| UNKN | UNKNOWN |
| V | VENT |
| VAR | VARIOUS, VARIES |
| VLT | VAULT |
| VERT | VERTICAL |
| VPI | VERTICAL POINT OF INFLECTION |
| VTR | VENT THROUGH ROOF |
| W | WEST, WATER, WIDTH, WIDE |
| W/ | WITH (PREFIX) |
| W/O | WITHOUT (PREFIX) |
| WC | WATER COLUMN |
| WCO | WALL CLEAN OUT |
| WH | WATER HEATER |
| WS | WATER SURFACE |
| WP | WORK POINT |
| WS | WATER SURFACE, WATERSTOP |
| WSFU | WATER SUPPLY FIXTURE UNITS |
| WSP | WELDED STEEL PIPE |
| WT | WEIGHT |
| WWF | WELDED WIRE FABRIC |
| XFRM | TRANSFORMER |
| YD | YARD |

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | KF | 05/2018 |
| Drawn | KF | 05/2018 |
| Checked | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 10/15/19 | SK | SK | SUBMITTAL 100% |
| D | 05/31/19 | SK | SK | SUBMITTAL 90% |
| C | 05/07/19 | SK | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | SK | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | SK | SK | SUBMITTAL 50% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

SYMBOLS AND GENERAL ABBREVIATIONS

SHEET G-03
SHEET NO. 3 OF 19
PROJECT NO.
DRAWING NO.

# GENERAL NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCING THE WORK.

2. THE CONTRACTOR SHALL COORDINATE WITH THE DISTRICT TO IDENTIFY, CONFIRM AND ISOLATE THE EXISTING PROCESS AND UTILITY LINES AS WELL AS DE-ENERGIZE THE POWER PRIOR TO COMMENCING THE WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE DISTRICT FOR EQUIPMENT, PROCESS AND UTILITY PIPES ISOLATION, AND DRAINING OF TANKS AND PIPES PRIOR TO COMMENCING THE DEMOLITION AND/OR INSTALLATION WORK. THE CONTRACTOR SHALL DISPOSE OF CHEMICALS WITHIN THE PLANT AS DIRECTED BY THE DISTRICT.

3. THE CONTRACTOR SHALL NOTIFY THE DISTRICT ONE (1) WEEK IN ADVANCE PRIOR TO DISCONNECTION/DEMOLITION OF ANY EXISTING EQUIPMENT.

4. VALVES, PIPES AND FITTINGS END CONNECTIONS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL USE A SUITABLE CONNECTION TYPE, CASE BY CASE, BASED ON THE PIPE SERVICE AND PRESSURE, ROUTING LOCATION (ABOVE/BELOW GRADE), PIPE MATERIAL, PIPE SIZE, CONNECTION ACCESSIBILITY, ETC. (THREADED, WELDED, CEMENT WELDED, FLANGED, RIGID OR FLEXIBLE GROOVED COUPLINGS, COUPLING SUCH AS DEPEND-O-LOK/DRESSER/SMITH BLAIR/EBAA/ROMAC, ETC. ALL COUPLINGS SHALL BE AXIAL RESTRAINED, THRUST BLOCKS ARE NOT ACCEPTABLE. RIGID GROOVED COUPLINGS SHALL BE USED ON ABOVE GRADE APPLICATIONS AND FLEXIBLE GROOVED COUPLINGS ON BURIED APPLICATIONS. FLEXIBLE GROOVED COUPLINGS ON ABOVE GRADE APPLICATION SHALL BE USED ONLY WHERE ANGULAR DEFLECTION/MISALIGNMENT OR THERMAL GROWTH HAS TO BE ACCOMMODATED.

5. THE CONTRACTOR SHALL RECYCLE ALL DEMOLISHED MATERIALS AND DISPOSE OF IN COMPLIANCE WITH CURRENT CITY OF CHINO, COUNTY OF SAN BERNARDINO, STATE AND FEDERAL REGULATIONS.

6. THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS, AS NEEDED, TO PIPES ADJACENT TO DEMOLISHED PIPES. WHEN SUPPORTS ARE BEING REMOVED ALONG WITH PIPE REMOVAL, EVALUATE THE INTEGRITY OF THE REMAINING PIPES AND PROVIDE ADEQUATE SUPPORTS.

7. THE CONTRACTOR SHALL PLUG, CAP OR BLIND FLANGE ALL OPEN PIPE ENDS RESULTING FROM DEMOLITION WITH THE LIKE MATERIAL.

8. THE CONTRACTOR SHALL CUT AND CAP MINIMUM ONE FOOT (1'-0") BELOW GRADE ALL ABANDONED BURIED PIPES AND CONDUITS RESULTING FROM DEMOLITION.

9. THE CONTRACTOR SHALL REMOVE, IF POSSIBLE, OR CUT FLUSH WITH THE CONCRETE SURFACE ALL SUPPORTS AND ANCHOR BOLTS RESULTING FROM DEMOLITION AND SHALL PATCH ANY RESULTING CONCRETE HOLES WITH EPOXY GROUT.

10. THE CONTRACTOR SHALL FIELD ROUTE, INSTALL ISOLATION VALVES, AND ADEQUATELY SUPPORT HOSE BIBB, SEAL WATER, DRAINS, VENT LINES, ETC. ALL DRAINS SHALL BE SLOPED MINIMUM 0.4% AND SHALL BE FIELD ROUTED TO THE NEAREST FLOOR DRAIN.

11. THE CONTRACTOR SHALL INSTALL SEAL WATER FLUSHING TO PUMPS MECHANICAL SEAL AS APPLICABLE, SEAL WATER FLUSHING SHALL BE PROVIDED IN COMPLIANCE WITH PUMP MANUFACTURER RECOMMENDATIONS.

12. PIPE PENETRATIONS SHALL BE PER MECHANICAL DETAILS UNLESS OTHERWISE NOTED ON THE DRAWING.

13. ALL YARD PIPES ENTERING STRUCTURES SHALL BE PROVIDED WITH TWO FLEXIBLE COUPLINGS (MJ IS CONSIDERED A FLEXIBLE COUPLING) ADEQUATELY SPACED, WITHIN 6 FEET OF A STRUCTURE WALL, TO ELIMINATE PIPE STRESSES INDUCED BY SETTLING STRUCTURES WHETHER OR NOT THE FLEXIBLE COUPLINGS ARE SHOWN ON THE DRAWINGS.

14. IN CASE OF CONFLICT BETWEEN THIS DRAWING AND DETAILED EQUIPMENT SPECIFIC DRAWING AND/OR SPECIFICATIONS, THE LATTER WILL TAKE PRECEDENCE.

## PUMP SCHEDULE

| ITEM NO | PUMP TAG NO | PUMP TYPE | LOCATION | DWG. NO | | SERVICE | RATED CAPACITY (GPM) | RATED HEAD OR PRESSURE (FT TDH) | DRIVE | RATED SPEED | POWER | SPECIFICATION SECTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MECH. | P&ID | | | | | | | |
| 1 | PMP-01 | SELF-PRIMING CENTRIFUGAL | PUMP ROOM | M-11 | I-03 | LIFT | 1065 | 120 | BELT | 1750 RPM | 75 HP; 480 V, 3PH, 60 HZ | 11196 |
| 2 | PMP-02 | SELF-PRIMING CENTRIFUGAL | PUMP ROOM | M-11 | I-03 | LIFT | 1065 | 120 | BELT | 1750 RPM | 75 HP; 480 V, 3PH, 60 HZ | 11196 |
| 3 | PMP-03 | SELF-PRIMING CENTRIFUGAL | PUMP ROOM | M-11 | I-03 | LIFT | 650 | 70 | BELT | 1750 RPM | 40 HP; 480 V, 3PH, 60 HZ | NOTE A |
| 4 | PMP-04 | SELF-PRIMING CENTRIFUGAL | PUMP ROOM | M-11 | I-03 | LIFT | 650 | 70 | BELT | 1750 RPM | 40 HP; 480 V, 3PH, 60 HZ | NOTE A |

NOTE A: THE PUMPS PMP-03 AND 04 SHALL BE RETROFIT WITH NEW BELT SHEAVES, NEW BELTS AND NEW 40 HP ELECTRIC MOTORS. THE PUMP SPEED SHALL BE CHANGED TO 1350 RPM. ELECTRIC MOTOR SHALL BE PREMIUM EFFICIENCY, TEFC SUITABLE FOR 480V, 3 PH, 60 HZ IN COMPLIANCE WITH SECTION 16460 REQUIREMENTS. SHEAVES AND BELTS SHALL COMPLY WITH SECTION 11000 REQUIREMENTS.

## VALVE SCHEDULE

| ITEM NO. | VALVE SCHEDULE | | | QTY | DWG. NO. | | OPERATOR TYPE | OPERATING PRESSURE (PSIG) | MAX. PRESSURE (PSIG) | POWER SUPPLY | FLOW | REMOTE HAND CONTROL | VALVE SPEC # | ACTUATOR SPEC # | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | VALVE TAG NO. | SIZE (INCH) | TYPE | | MECH | P&ID | | | | | | | | | |
| 1 | N/A | 3 | VACUUM RELIEF VALVE, AVR1 | 1 | M-10 | I-03 | N/A | 56 | 60 | N/A | 800 CFM | N/A | 15113 | N/A | |
| 1 | N/A | 2 | AIR RELEASE VALVE, ARV2 | 1 | M-10 | I-03 | N/A | 56 | 60 | N/A | 10 CFM | N/A | 15113 | N/A | |



PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | ID | 12/2017 |
| Drawn | RD | 12/2017 |
| Checked | ID | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 10/15/19 | ID | SK | SUBMITTAL 100% |
| D | 05/31/19 | ID | SK | SUBMITTAL 90% |
| C | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | ID | SK | SUBMITTAL 50% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

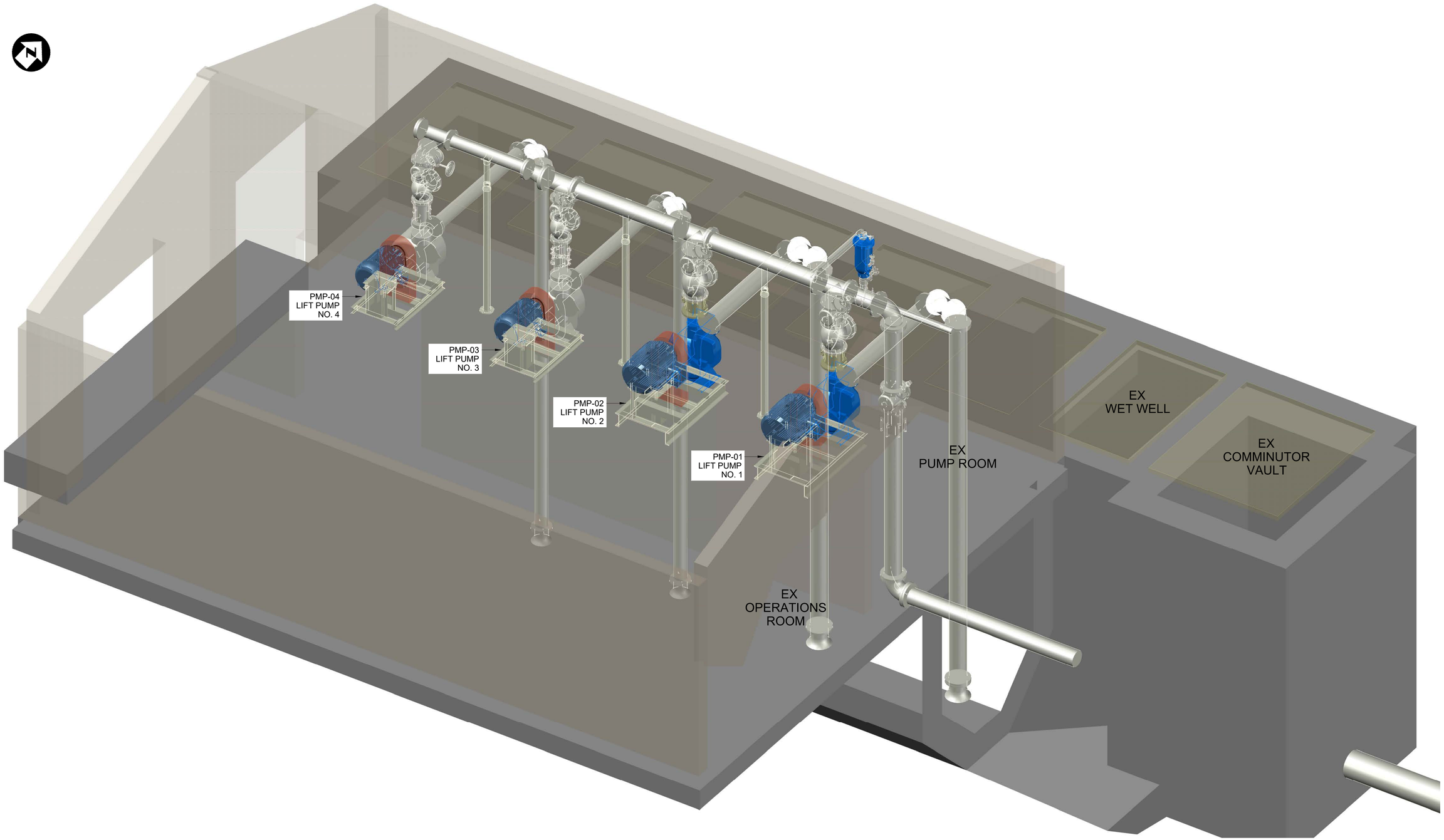
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

GENERAL NOTES AND EQUIPMENT SCHEDULE

SHEET M-01
SHEET NO. 4 OF 19
PROJECT NO.
DRAWING NO.




## ISOMETRIC VIEW

SCALE: NTS

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | DT | 07/2018 |
| Drawn | DT | 07/2018 |
| Checked | ID | 07/2018 Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | ID | SK | SUBMITTAL 90% |
| D | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | ID | SK | SUBMITTAL 50% |
| A | 10/15/19 | ID | SK | SUBMITTAL 100% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

*Inland Empire Utilities Agency*
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

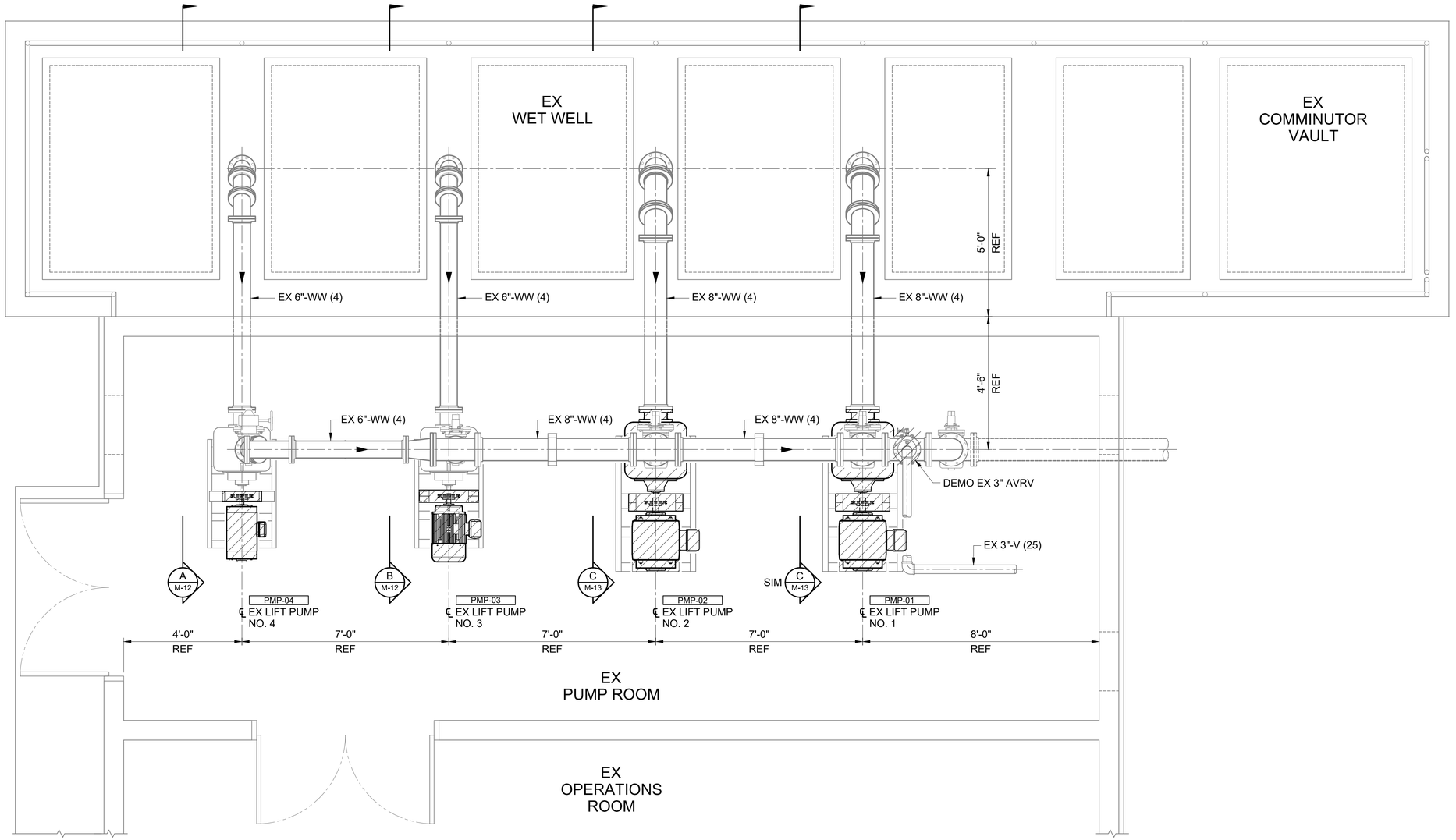
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP LIFT STATION
GENERAL ARRANGEMENT ISOMETRIC

SHEET M-10
SHEET NO. 5 OF 19
PROJECT NO.
DRAWING NO.




PLAN
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.

LEGEND:

DEMOLISH:

2' 1' 0 2' 4'

SCALE: 1/2"=1'-0"

SUBMITTAL 100% - 10/15/2019

SHEET M-11

SHEET NO. 6 OF 19

PROJECT NO.

DRAWING NO.

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP ROOM
EQUIPMENT AND PIPING
DEMOLITION PLAN

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | DT | 07/2018 |
| Drawn | DT | 07/2018 |
| Checked | ID | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | ID | SK | SUBMITTAL 90% |
| D | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | ID | SK | SUBMITTAL 50% |
| A | 10/15/19 | ID | SK | SUBMITTAL 100% |

RECOMMENDED BY:

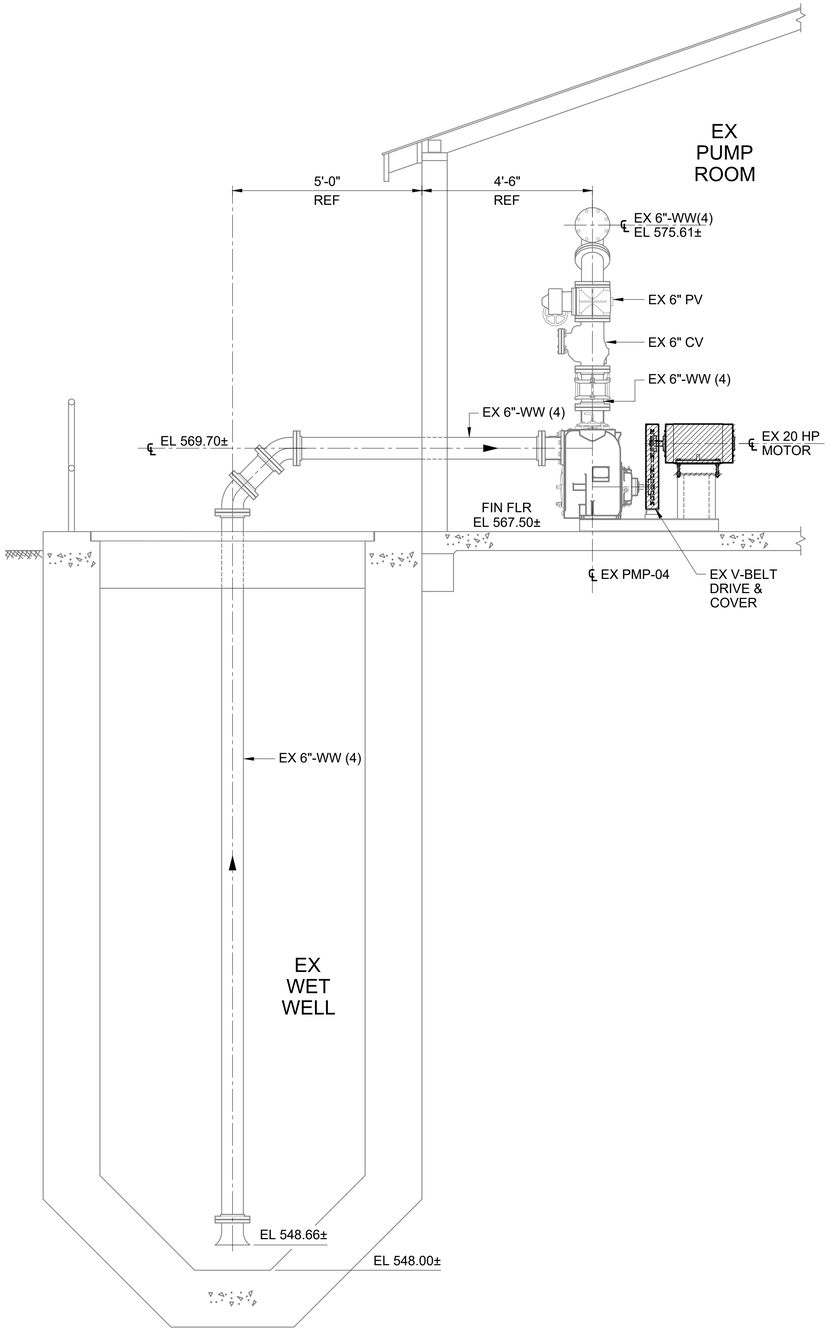
PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

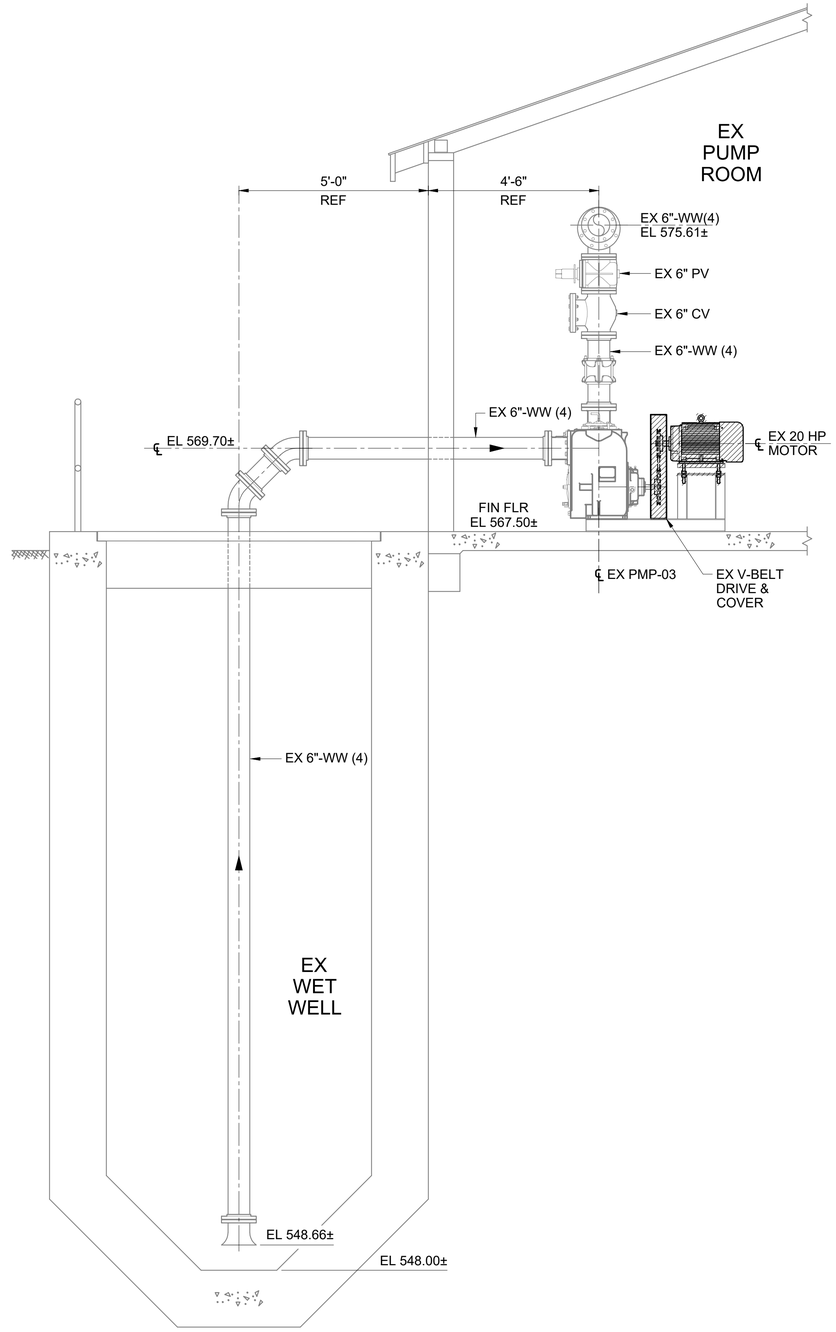
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709




A M-11 SECTION
SCALE: 1/2"=1'-0"




B M-11 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NPOTES, SEE DWG. M-01
2. DEMO EX. 20 HP MOTORS OF EX. PUMPS NO. 3 AND NO. 4, INCLUDING MOTOR ADJUSTMENT/BELT TENSIONING BASES, V-BELTS, SHEAVES, AND BELT DRIVE COVERS.
3. PROTECT ALL REMAINING EQUIPMENT, EQUIPMENT BASES, PIPING, SUPPORTS, INSTRUMENTS, CONDUITS, ETC. IN PLACE DURING DEMOLITIONS AND NEW INSTALLATIONS.

LEGEND:

DEMOLISH:

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

SUBMITTAL 100% - 10/15/2019

SHEET M-12

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

# PUMP ROOM DEMOLITION SECTIONS AND DETAILS

SHEET NO. 7 OF 19

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | DT | 07/2018 |
| Drawn | DT | 07/2018 |
| Checked | ID | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | ID | SK | SUBMITTAL 90% |
| D | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | ID | SK | SUBMITTAL 50% |
| A | 10/15/19 | ID | SK | SUBMITTAL 100% |

RECOMMENDED BY:

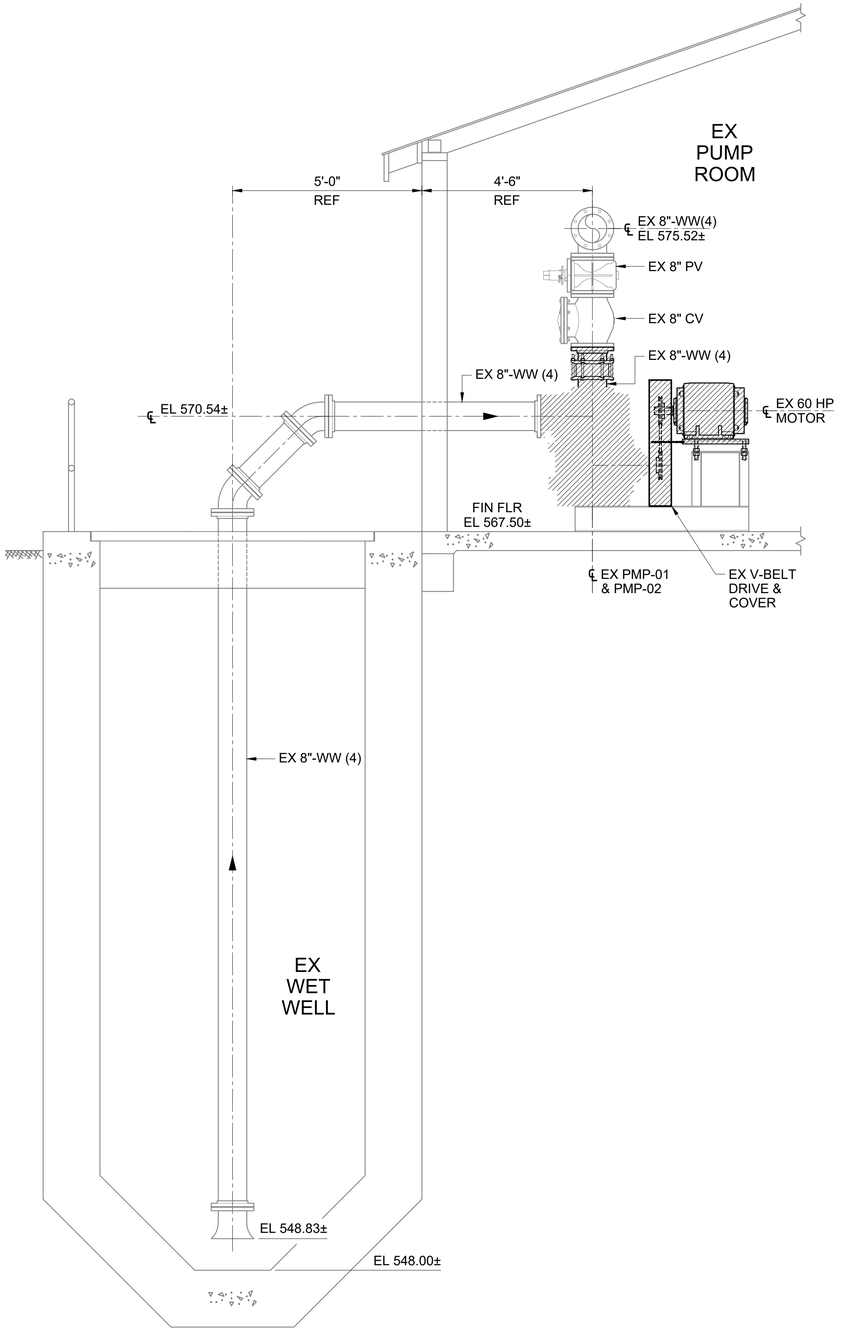
PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709




C / M-11 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.
2. DEMOLISH EXISTING PUMPS NO. 1 AND NO. 2 INCLUDING 60 HP MOTORS, MOTOR ADJUSTMENT/BELT TENSIONING BASES, V-BELTS, SHEAVES, BELT DRIVE COVERS, AND PIPE SPOOLS OF PUMP DISCHARGES.
3. PROTECT ALL REMAINING EQUIPMENT, EQUIPMENT BASES, PIPING, SUPPORTS, INSTRUMENTS, CONDUITS, ETC. IN PLACE DURING DEMOLITIONS AND NEW INSTALLATIONS.

LEGEND:

DEMOLISH:

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | DT | 07/2018 |
| Drawn | DT | 07/2018 |
| Checked | ID | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | ID | SK | SUBMITTAL 90% |
| D | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | ID | SK | SUBMITTAL 50% |
| A | 10/15/19 | ID | SK | SUBMITTAL 100% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

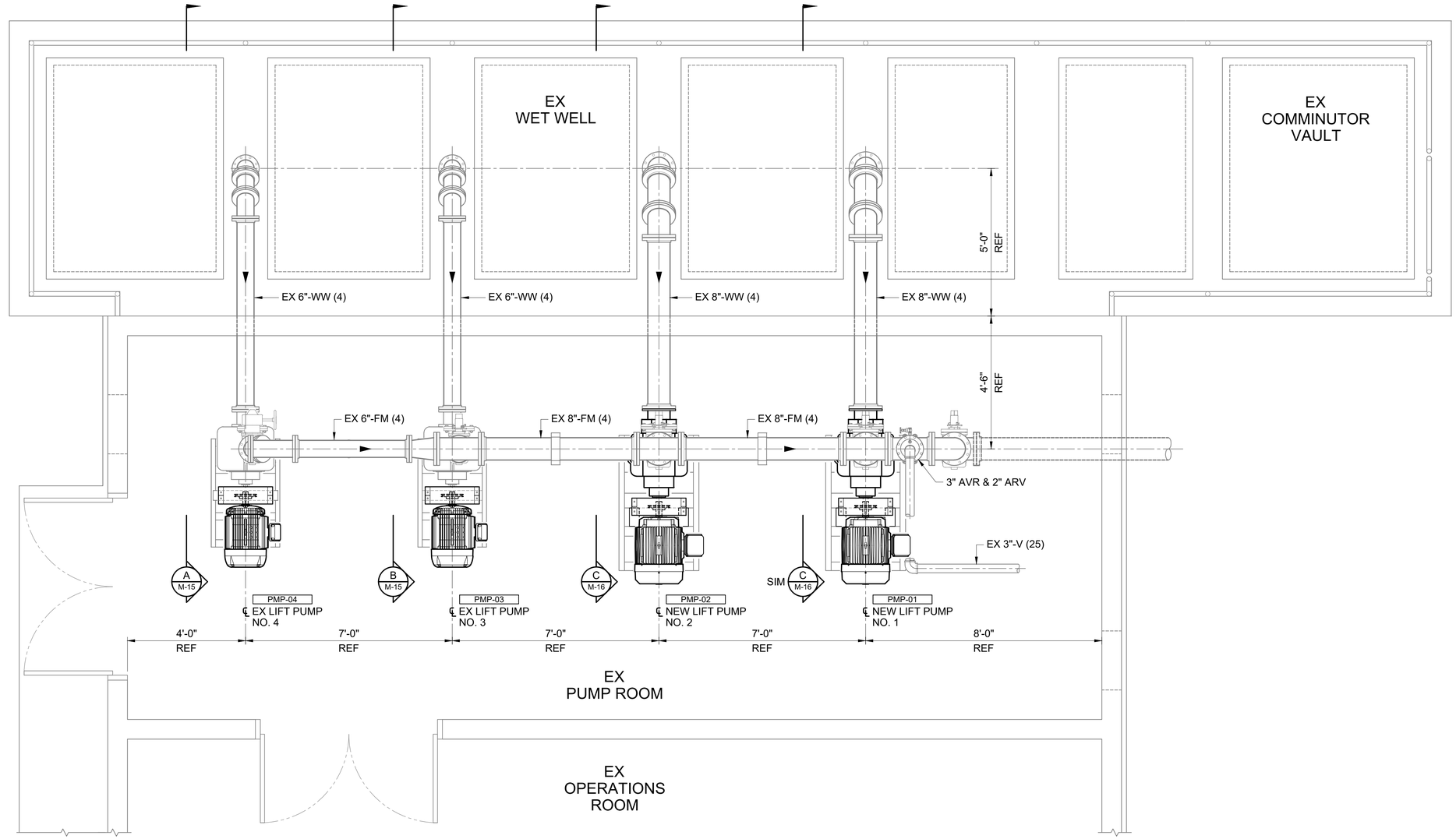
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP ROOM
DEMOLITION SECTIONS AND DETAILS

SHEET M-13
SHEET NO. 8 OF 19
PROJECT NO.
DRAWING NO.




PLAN
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

W:\Pasadena_Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3_Detailed_Design_Phase\3.1_CAD\6.MP\WORK\BRLS\M-14 BRLS last saved by P0045935 on 10/15/19 plotted 10/15/2019 12:55:47 PM

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | DT | 07/2018 |
| Drawn | DT | 07/2018 |
| Checked | ID | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | ID | SK | SUBMITTAL 90% |
| D | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | ID | SK | SUBMITTAL 50% |
| A | 10/15/19 | ID | SK | SUBMITTAL 100% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

*Inland Empire Utilities Agency*
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

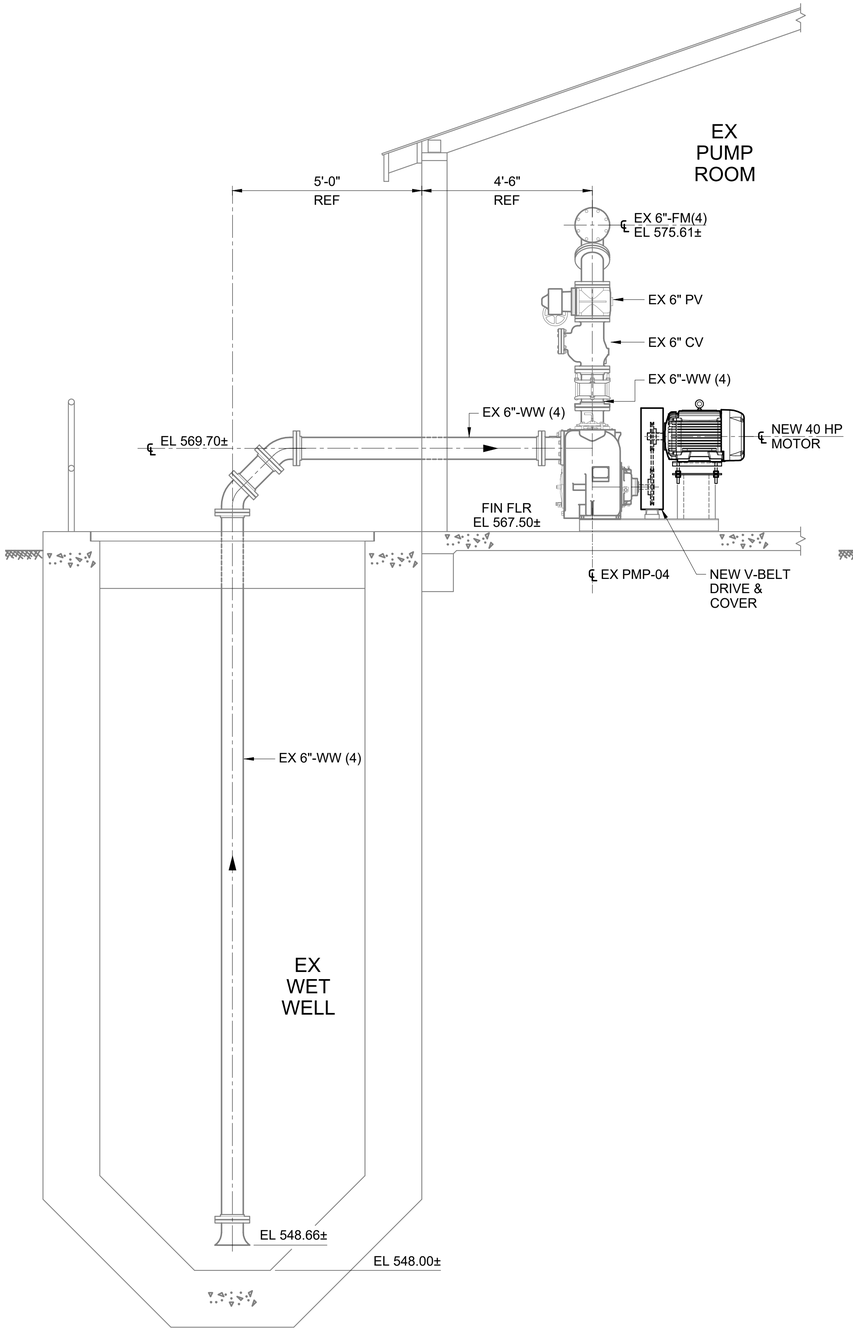
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

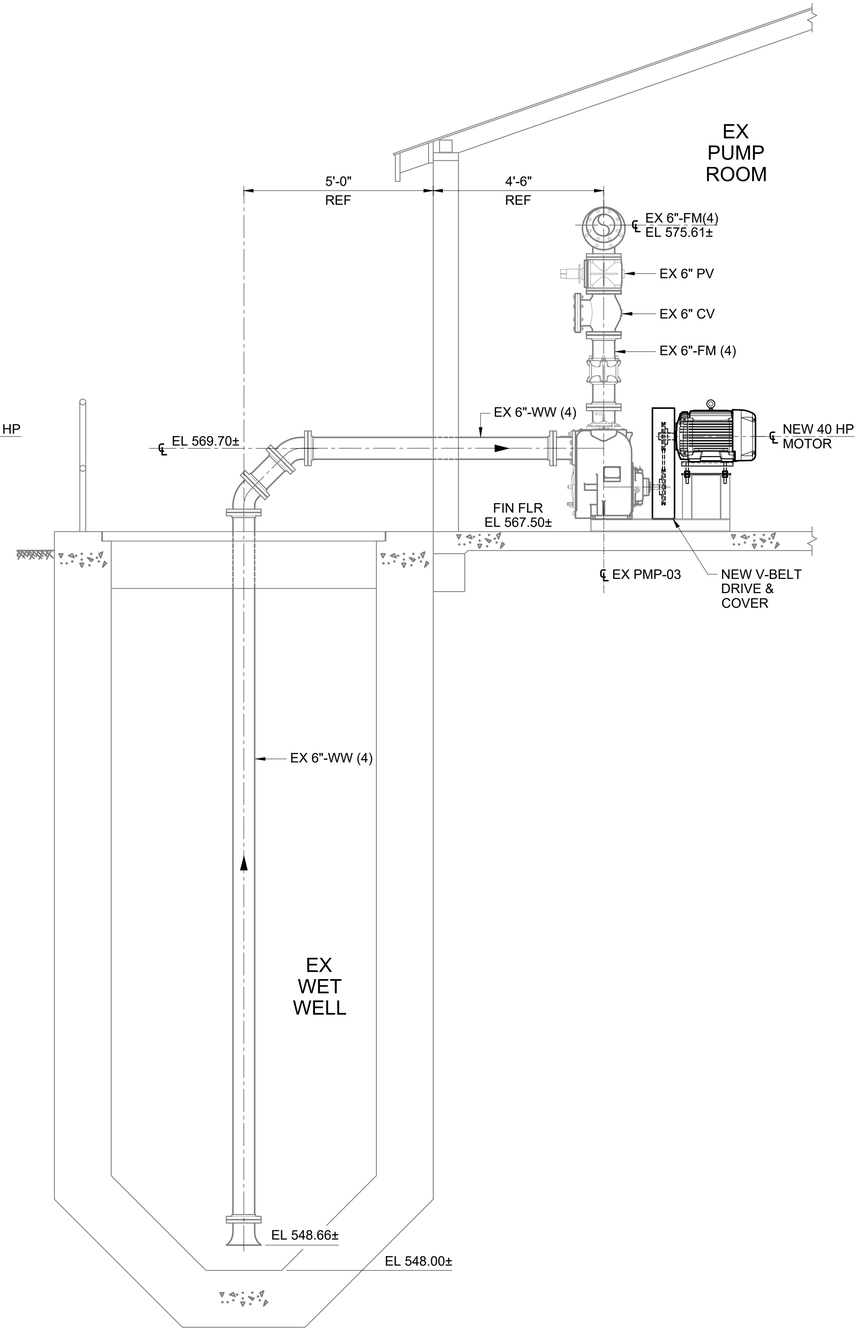
BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP ROOM
EQUIPMENT AND PIPING
NEW INSTALLATION PLAN

SHEET M-14
SHEET NO. 9 OF 19
PROJECT NO.
DRAWING NO.




A M-14 SECTION
SCALE: 1/2"=1'-0"




B M-14 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.
2. PROVIDE NEW 40 HP, FOOT MOUNT ELECTRIC MOTORS FOR EXISTING PUMPS PMP-03 AND PMP-04. MOTORS SHALL BE PREMIUM EFFICIENCY TEFC IN COMPLIANCE WITH SECTION 16460 REQUIREMENTS. PROVIDE NEW MOTOR ADJUSTMENT/BELT TENSIONING BASES TO MATCH EXISTING PUMP FRAMES.
3. PROVIDE NEW SHEAVES WITH OD SUITABLE FOR THE REDUCTION RATIO REQUIRED AND ID HUBS TO MATCH EXISTING PUMP INPUT SHAFT DIAMETER AND NEW MOTOR SHAFT DIAMETER. SHEAVES AND BELTS SHALL COMPLY WITH SECTIONS 11000 AND 11196 REQUIREMENTS.
4. PROVIDE NEW SHEAVE AND BELT APPROVED OSHA COVERS.

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | DT | 07/2018 |
| Drawn | DT | 07/2018 |
| Checked | ID | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | ID | SK | SUBMITTAL 90% |
| D | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | ID | SK | SUBMITTAL 50% |
| A | 10/15/19 | ID | SK | SUBMITTAL 100% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

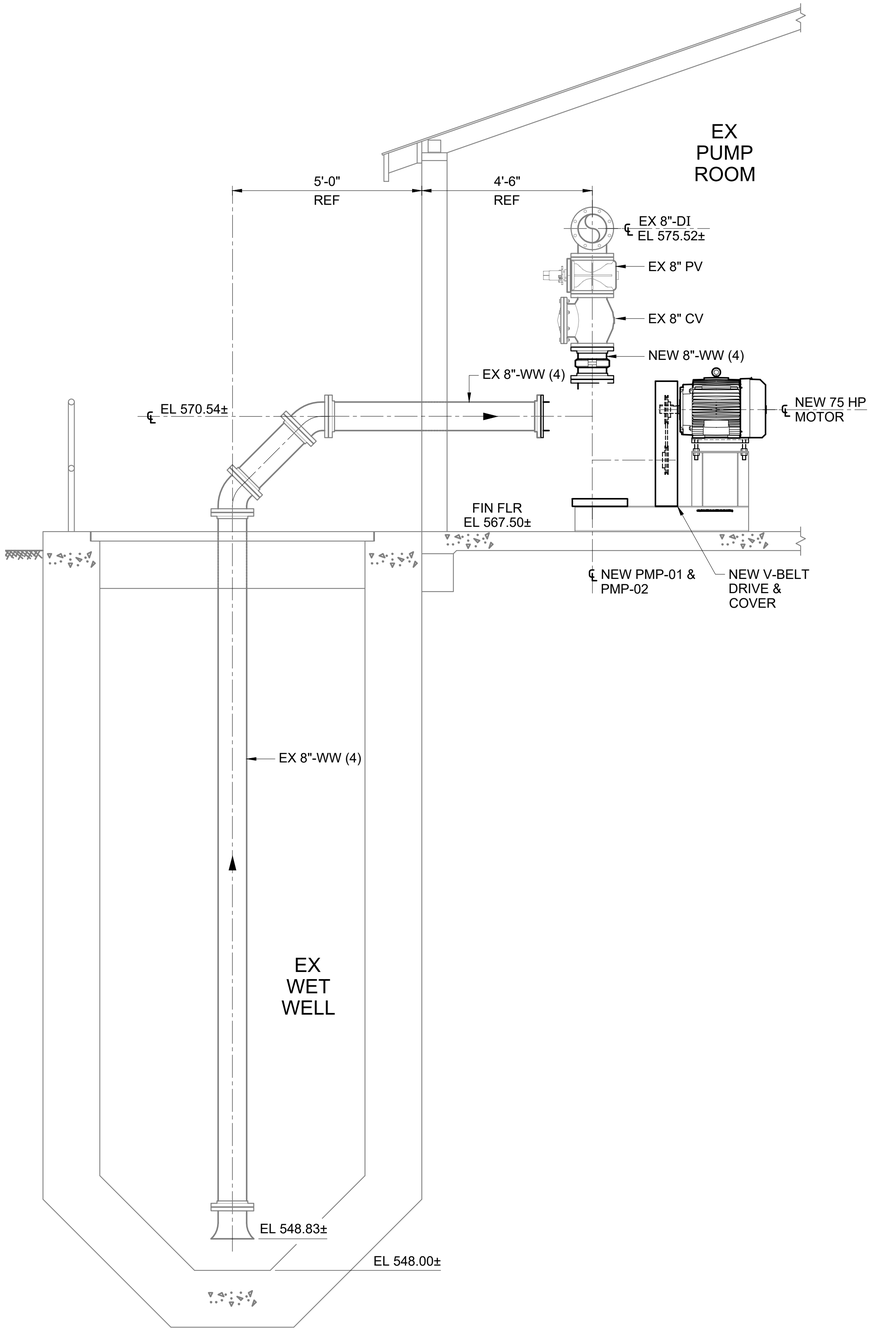
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

# PUMP ROOM
# NEW INSTALLATION
# SECTIONS AND DETAILS

SHEET M-15
SHEET NO. 10 OF 19
PROJECT NO.
DRAWING NO.




C / M-14 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.
2. PROVIDE NEW PUMPS PMP-01 AND PMP-02 WITH 75 HP, FOOT MOUNT ELECTRIC MOTORS. PUMPS SHALL COMPLY WITH SECTIONS 11000, 11175 AND 11196 REQUIREMENTS. MOTORS SHALL BE PREMIUM EFFICIENCY TEFC IN COMPLIANCE WITH SECTION 16460 REQUIREMENTS. PROVIDE NEW MOTOR ADJUSTMENT/BELT TENSIONING BASES TO MATCH EXISTING PUMP FRAMES.
3. SHEAVES AND BELTS SHALL COMPLY WITH SECTIONS 11000 AND 11196 REQUIREMENTS.
4. PROVIDE NEW SHEAVE AND BELT APPROVED OSHA COVERS.

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\6.MP\WORK\BRLS\M-16 BRLS last saved by P0045935 on 10/15/19 plotted 10/15/2019 12:56:08 PM

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | DT | 07/2018 |
| Drawn | DT | 07/2018 |
| Checked | ID | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | ID | SK | SUBMITTAL 90% |
| D | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | ID | SK | SUBMITTAL 50% |
| A | 10/15/19 | ID | SK | SUBMITTAL 100% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

# PUMP ROOM
# NEW INSTALLATION
# SECTIONS AND DETAILS

SHEET M-16
SHEET NO. 11 OF 19
PROJECT NO.
DRAWING NO.

## SINGLE LINE DIAGRAMS

- TRANSFORMER, RATING AS NOTED
- PLUG-IN TYPE EQUIPMENT, CIRCUIT NUMBER AS NOTED
  M = MAIN, GM = GENERATOR MAIN
- FUSE
- AT / AF — LOW VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED
  AF = AMPERE FRAME RATING
  AT = AMPERE TRIP SETTING
- MCC MOUNTED COMBINATION STARTER
- 30A — COMBINATION CONTACTOR, SIZE AS NOTED
- 75 — MOTOR, HORSEPOWER AS NOTED
- GROUND
- VT(3)480/120V — VOLTAGE TRANSFORMER, RATIO AND NUMBER OF VT'S AS NOTED
- 100/5 (3) — CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
- 50/5 (1) — ZERO SEQUENCE CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
- BUS
- ELECTRICAL ENCLOSURE OUTLINE
- G — GENERATOR
- 60A — DISCONNECT SWITCH, SIZE AS NOTED
- FUSED DISCONNECT SWITCH, SIZE AS NOTED
- SOLID-STATE REDUCED VOLTAGE STARTER MOTOR
- A — AMMETER
- V — VOLTMETER
- AS — AMMETER SWITCH
- PM — POWER MONITOR
- VS — VOLTMETER SWITCH
- E — E: ELECTRICAL INTERLOCK
  K: KEY INTERLOCK
- ∅ — PHASE
- G — DENOTES GREEN LIGHT

## PLANS

- CONDUIT RUN EXPOSED UNLESS OTHERWISE NOTED
- CONDUIT RUN UNDERGROUND OR BELOW GRADE UNLESS OTHERWISE NOTED
- BARE COPPER GROUND IN SLAB OR IN UNDERGROUND GROUND GRID, SIZE AS NOTED
- LP1-1/3,7 — HOME RUN TO PANEL "LP1". CIRCUIT NOS 1,3,7. CONDUCTORS SHALL BE #12 UNLESS OTHERWISE NOTED. CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED. RUNS NOT MARKED SHALL BE 3/4" WITH 2#12 & 1#12 GROUND. CONDUIT SHOWN IS 3/4" WITH 5#12 & 1#12 GROUND, CIRCUIT NOS. 1 & 3 WITH COMMON NEUTRAL & CIRCUIT NO. 7 WITH SEPARATE NEUTRAL.
- CONDUIT RUN - CHANGE IN ELEVATION
- CONDUIT UP (OUT TOP OF EQUIPMENT)
- CONDUIT DOWN (OUT BOTTOM OF EQUIPMENT)
- CONDUIT STUBBED OUT AND CAPPED
- FLEXIBLE LIQUID-TIGHT CONDUIT
- WALL / FLOOR — 120V SINGLE RECEPTACLE, NEMA CONFIGURATION 5-20
- 120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20
- JB — RACEWAY BOX, "JB" JUNCTION BOX, "MH" MANHOLE "HH" HANDHOLE, "PB" PULLBOX, "TB" TERMINAL BOX
- J — JUNCTION BOX, SIZE AS REQUIRED BY CODE
- T — THERMOSTAT, T'STAT
- PC — PHOTOCELL
- PS — CONTROL DEVICE
  VLV = VALVE
  PS = PRESSURE SWITCH
  TS = TEMPERATURE SWITCH
  ZS = LIMIT SWITCH
  LE = LEVEL ELEMENT
  LS = AMBIENT LTG. SENSOR
  MS = MOTION SENSOR
- SS — PUSHBUTTON STATION, "SS" START-STOP, "LOS" LOCKOUT-STOP, "HOA" HAND-OFF-AUTO, "LOR" LOCAL-OFF-REMOTE, "E-STOP" EMERGENCY STOP.
- DISCONNECT SWITCH. SIZE AS NOTED

## PLANS

- POWER PANEL, CONTROL PANEL, ETC
- MOTOR CONTROL CENTER
- GROUND CONNECTION BOLTED TYPE OR GROUND INSERT
- GROUND CONNECTION - EXOTHERMIC TYPE
- $S_m$ — MANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION AND RED PILOT LIGHT IN NEMA 1 ENCLOSURE, PAD LOCKABLE IN "OFF" POSITION
- GROUND ROD WITH CADWELDED GROUND WIRE
- GROUND WELL
- FIELD INSTRUMENT
- SV — SOLENOID VALVE
- H — HEATER
- M — MOTOR OPERATED VALVE

## GENERAL

- HEAVY LINES ARE PROPOSED WORK
- LIGHT LINES ARE EXISTING WORK
- LIGHT BROKEN LINES ARE FUTURE WORK OR BY OTHERS
- REMOVE OR DEMOLISH
- 1 — DENOTES REFERENCES TO KEYED NOTE 1
  I.E. - "SEE KEYED NOTE 1"



PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | KL | 12/2017 |
| Drawn | WG | 12/2017 |
| Checked | JK | 12/2017 Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 10/15/19 | SK | SK | SUBMITTAL 100% |
| D | 10/15/19 | JK | SK | SUBMITTAL 100% |
| C | 05/31/19 | JK | SK | SUBMITTAL 90% |
| B | 05/07/19 | JK | SK | SUBMITTAL 90% (QA/QC) |
| A | 07/20/18 | JK | SK | SUBMITTALL 50% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

ELECTRICAL
SYMBOLS AND LEGEND

SHEET E-01
SHEET NO. 12 OF 19
PROJECT NO.
DRAWING NO.

# GENERAL NOTES

RACEWAYS:

1. ALL CONDUITS ARE SHOWN DIAGRAMMATICALLY AND THEY SHALL BE ROUTED TO SUIT THE FIELD CONDITIONS MEETING THE REQUIREMENTS OF NEC AND THE SPECIFICATIONS.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL FITTINGS, JUNCTION BOXES, PULL BOXES, SUPPORTS, AND HARDWARES REQUIRED FOR RACEWAY SYSTEMS.

3. CONNECTION OF RIGID CONDUIT TO DEVICES OR EQUIPMENT WHICH MAY BE SUBJECT TO MOVEMENT, VIBRATION, EXPANSION OR CONTRACTION SHALL BE MADE WITH LIQUID-TIGHT FLEXIBLE CONDUIT, WHERE REQUIRED. FLEXIBLE CONDUIT SHALL HAVE AN INTEGRAL COPPER GROUNDING CONDUCTOR OR GROUNDING JUMPER SHALL BE INSTALLED.

4. ALL STEEL CONDUITS NOT TERMINATING DIRECTLY TO THE ENCLOSURES OF MOTOR CONTROL EQUIPMENTS, CONTROL CABINETS, ETC. SHALL BE PROVIDED WITH GROUNDING BUSHING AND GROUNDED TO THE ENCLOSURES.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SLEEVES AND OPENINGS REQUIRED FOR THE PASSAGE OF RACEWAYS OR CABLES EVEN IF THEY ARE NOT SHOWN ON THE DRAWINGS.

GROUNDING:

1. ALL METALLIC STRUCTURES, METAL ENCLOSURES AND ELECTRICAL EQUIPMENT, SUCH AS STRUCTURAL STEEL, METALLIC RACEWAYS, SWITCHING EQUIPMENT, PANELS, ELECTRICAL EQUIPMENT ENCLOSURES AND CABINETS, MOTORS, TRANSFORMERS, ETC. SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED AND GROUND CONNECTIONS SHALL BE MADE TO THE PLANT GROUND GRIDS. THE BONDING JUMPER CONDUCTORS SHALL BE SIZED PER NEC UNLESS OTHERWISE SHOWN.

2. GROUNDING ELECTRODE SYSTEM FOR EACH SERVICE SHALL BE BONDED TOGETHER TO METAL FRAMES OF BUILDING OR STRUCTURES.

SINGLE LINE DIAGRAMS:

1. SINGLE LINE DIAGRAMS SHOW MAJOR PLANT ELECTRICAL DISTRIBUTION SYSTEMS INCLUDING POWER SOURCES, VOLTAGE LEVELS OF EACH SYSTEMS, MAJOR DISTRIBUTION EQUIPMENT AND THEIR CONNECTIONS, PROTECTION EQUIPMENT AND DEVICES, MAJOR UTILIZATION EQUIPMENT AND DEVICES, AND THEIR CONTROL, ETC.

ELECTRICAL PLANS:

1. WHERE RACEWAYS ARE INDICATED AS HOME RUNS, THE CONTRACTOR SHALL INSTALL ALL RACEWAY REQUIRED. RACEWAY ROUTINGS SHALL BE CONTRACTOR'S CHOICE AND IN STRICT ACCORDANCE WITH THE NEC AND CUSTOMARY INSTALLATION PRACTICES. RACEWAY SHALL BE ENCASED, EXPOSED, CONCEALED, OR UNDER FLOOR AS INDICATED OR REQUIRED.

2. EXACT LOCATIONS OF FIELD DEVICES MAY NOT BE SHOWN IN THE ELECTRICAL PLAN DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE ACTUAL LOCATIONS OF THE FIELD DEVICES AND INSTALL CONDUITS AND WIRES REQUIRED TO MAKE THE SYSTEM COMPLETE.

3. ROUTINGS SHALL BE ADJUSTED TO AVOID OBSTRUCTIONS. COORDINATE WITH ALL OTHER TRADES PRIOR TO INSTALLATION OF RACEWAYS. LACK OF SUCH COORDINATION SHALL NOT BE JUSTIFICATION FOR EXTRA COMPENSATION, AND REMOVAL AND RE-INSTALLATION TO RESOLVE CONFLICTS SHALL BE AT NO EXTRA COST TO THE OWNER.

EQUIPMENT ANCHORING:

1. POST-INSTALLED ANCHOR BOLTS SHALL HAVE AN ACTIVE ICC EVAULATION REPORT AT TIME OF CONSTRUCTION. THEIR CAPACITIES LISTED IN THE REPORT SHALL BE BASED ON TESTING IN CRACKED CONCRETE.

2. 316SS ADHESIVE ANCHORING SYSTEM SHALL BE USED IN CORROSIVE WET, IN DRY, INDOOR OR OUTDOOR AREAS.

3. CONTRACTOR SHALL SUBMIT CALCULATIONS FOR ANCHORING SYSTEM FOR MCC TO CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CALCULATIONS SHALL CONSIDER ALL APPLICABLE LOADS ON ANCHORING AND SHALL INCLUDE ANCHOR BOLT CAPACITIES AS MODIFIED BY SPACING AND EDGED DISTANCE, BASE PLATE STRESSES, AND CONCRETE BEARING STRESSES.

MISCELLANEOUS:

1. CIRCUITS OF DIFFERENT SYSTEM VOLTAGE SHALL BE INSTALLED IN SEPARATE RACEWAYS, AND PULL BOXES. THE SYSTEM VOLTAGE LEVELS ARE:

   a. 120-480 VOLT
   b. INSTRUMENTATION LESS THAN 50 VOLT DC
   c. TELEPHONE AND COMMUNICATION.

# ABBREVIATIONS

| | |
|---|---|
| A | AMPERE |
| AC | ALTERNATING CURRENT |
| AF | AMPERE FRAME RATING |
| AFF | ABOVE FINISHED FLOOR |
| AL | ALUMINUM |
| AMP | AMPERES, AMPERAGE |
| AS | AMMETER SWITCH, ADJUSTABLE SPEED |
| AT | AMPERE TRIP |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AUTO | AUTOMATIC |
| AWG | AMERICAN WIRE GAUGE |
| BC | BARE COPPER |
| BD | BUS DUCT, BUSWAY |
| BKR | BREAKER |
| BLDG | BUILDING |
| C | CONDUIT |
| CAB | CABINET |
| CB | CIRCUIT BREAKER |
| CKT | CIRCUIT |
| CO | CONDUIT ONLY |
| COMPR | COMPRESSOR |
| COMPT | COMPARTMENT |
| CP | CONTROL PANEL |
| CPB | CONTROL PULL BOX |
| CR | CONTROL RELAY |
| CT | CURRENT TRANSFORMER |
| CU | COPPER |
| D | DEPTH |
| DC | DIRECT CURRENT |
| DEG | DEGREE |
| DIA | DIAMETER |
| DISC | DISCONNECT |
| DISTR | DISTRIBUTION |
| DP | DISTRIBUTION PANEL BOARD |
| DPDT | DOUBLE POLE DOUBLE THROW |
| DS | DISCONNECT SWITCH |
| DWG | DRAWING |
| (E)/EXIST | EXISTING |
| EA | EACH |
| EL, ELEV | ELEVATION |
| ELEC/ELECT | ELECTRICAL |
| EMERG | EMERGENCY |
| EMT | ELECTRICAL METALLIC TUBING |
| ENCL | ENCLOSURE |
| EP | EXPLOSION PROOF |
| EQPT | EQUIPMENT |
| ETM | ELAPSE TIME METER |
| EXH | EXHAUST |
| F | FREQUENCY |
| FDR | FEEDER |
| FLA | FULL LOAD AMPS |
| FLEX | FLEXIBLE |
| FUT | FUTURE |
| GALV | GALVANIZED |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| G, GND | GROUND |
| H | HEIGHT |
| HOA | HAND-OFF-AUTO |
| HP | HORSEPOWER |
| HT | HEIGHT |
| HV | HIGH VOLTAGE |
| HZ | HERTZ (CYCLES PER SECOND) |

| | |
|---|---|
| IC | INTERRUPTING CAPACITY |
| IND | INDICATION |
| INFO | INFORMATION |
| INST | INSTANTANEOUS |
| INSTR | INSTRUMENT |
| I/O | INPUT/OUTPUT |
| IPB | INSTRUMENTATION PULL BOX |
| JB, J/B | JUNCTION BOX |
| J BOX | JUNCTION BOX |
| KAIC | KILOAMPERE INTERRUPTING AND WITHSTAND CAPACITY |
| kcmil | THOUSAND CIRCULAR MIL |
| KV | KILOVOLT |
| KVA | KILOVOLT-AMPERES |
| KW | KILOWATTS |
| LC | LIGHTING CONTACTOR |
| LCB | LOCAL CONTROL BOARD |
| LCP | LOCAL CONTROL PANEL |
| LP | LIGHTING PANEL |
| LS | LEVEL SWITCH, LIMIT SWITCH |
| LV | LOW VOLTAGE |
| MA | MILLIAMPS |
| MAN | MANUAL |
| MAX | MAXIMUM |
| MCB | MAIN CIRCUIT BREAKER |
| MCC | MOTOR CONTROL CENTER |
| MECH | MECHANICAL |
| MFGR | MANUFACTURER |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MS | MANUAL MOTOR STARTER |
| MT, MTD | MOUNT, MOUNTED |
| MTG | MOUNTING |
| MTR | MOTOR |
| MTS | MANUAL TRANSFER SWITCH |
| N | NEUTRAL |
| NA | NON-AUTOMATIC OR NOT APPLICABLE |
| NC | NORMALLY CLOSED |
| NEC | NATIONAL ELECTRICAL CODE |
| NEG | NEGATIVE |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN, NUMBER |
| NOS | NUMBERS |
| NP | NAMEPLATE |
| NTS | NOT TO SCALE |
| OC | OPENING COIL, OR ON CENTER |
| O/H | OVERHEAD |
| P | POLE, POWER |
| PB | PUSH BUTTON, POWER PULL BOX |
| PF | POWER FACTOR |
| PH | PHASE |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PNL | PANEL |
| PNLBD | PANELBOARD |
| PP | POWER PANEL |
| PR | PAIR |
| PRI. | PRIMARY |
| PVC | POLYVINYL CHLORIDE |
| PW | PART WINDING |
| PWR | POWER |
| R | TO BE REMOVED |
| REC | RECEPTACLE |
| REQ'D | REQUIRED |
| REF | REFERENCE |
| RGS | RIGID GALVANIZED STEEL |
| SCE | SOUTHERN CALIFORNIA EDISON |
| SCH | SCHEDULE |
| SEC | SECONDS, SECONDARY |
| SECT | SECTION |
| SEL SW | SELECTOR SWITCH |
| SEQ | SEQUENCE |
| SHLD | SHIELDED |
| SHT | SHEET |
| SIG | SIGNAL |
| SP | SPARE |
| SPDT | SINGLE POLE DOUBLE THROW |
| SPEC | SPECIFICATION |
| SRVS | SOLID-STATE REDUCED VOLTAGE STARTER MOTOR |
| STD | STANDARD |
| STL | STEEL |
| STR | STARTER |
| SV | SOLENOID VALVE |
| SW | SWITCH |
| SWBD | SWITCHBOARD |
| SWGR | SWITCHGEAR |
| SYS | SYSTEM |
| TB | TERMINAL BOX |
| TD | TIME DELAY |
| TDR | TIME DELAY RELAY |
| TEMP | TEMPERATURE, OR TEMPORARY |
| TERM | TERMINAL |
| TYP | TYPICAL |
| UG | UNDERGROUND |
| UON | UNLESS OTHERWISE NOTED |
| V | VOLTS, VOLTAGE |
| VA | VOLT AMPERES |
| W | WIDTH |
| WP | WEATHERPROOF |
| XFMR, TX | TRANSFORMER |
| Y | WYE |


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | KL | 12/2017 |
| Drawn | WG | 12/2017 |
| Checked | JK | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 10/15/19 | JK | SK | SUBMITTAL 100% |
| D | 10/15/19 | JK | SK | SUBMITTAL 100% |
| C | 05/31/19 | JK | SK | SUBMITTAL 90% |
| B | 05/07/19 | JK | SK | SUBMITTAL 90% (QA/QC) |
| A | 07/20/18 | JK | SK | SUBMITTAL 50% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT


OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

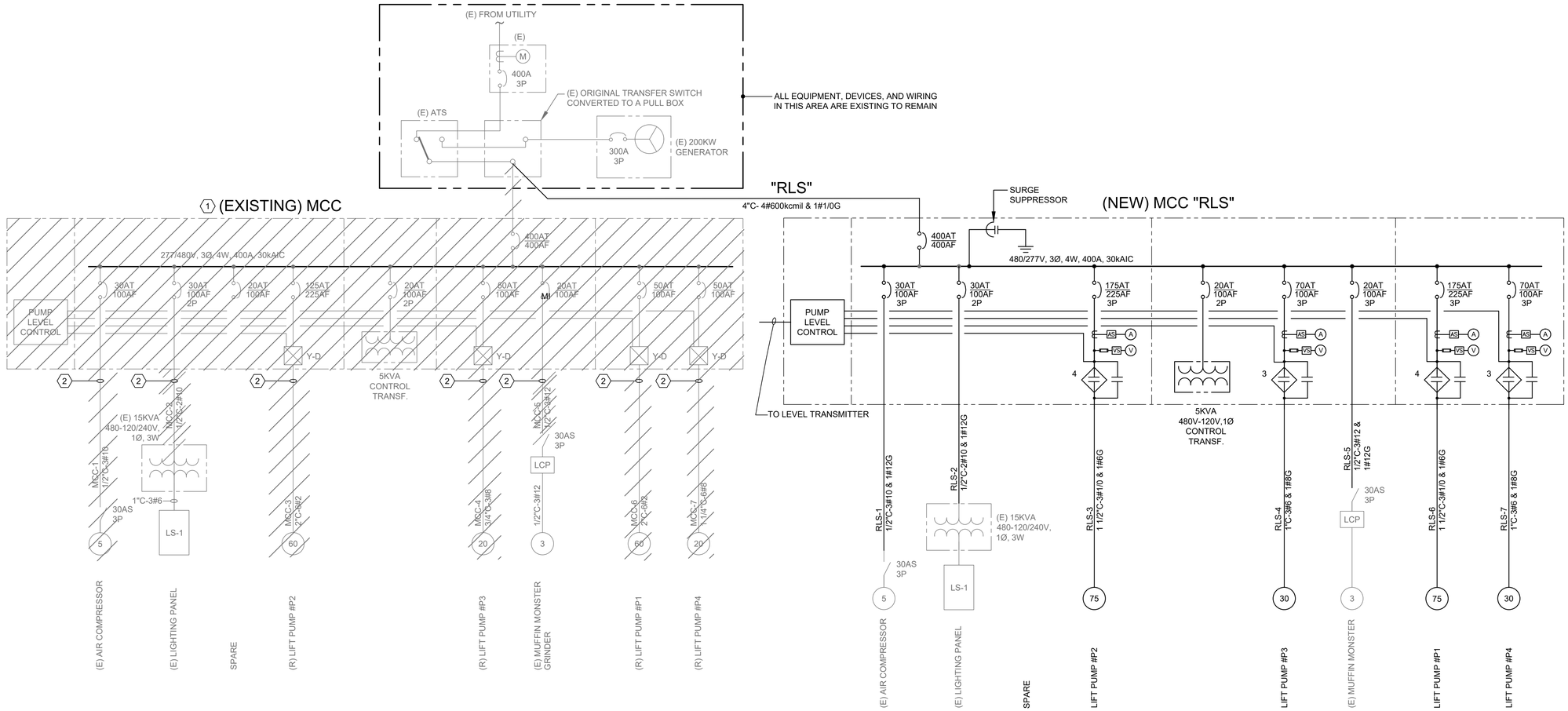
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

ELECTRICAL
GENERAL NOTES & ABBREVIATIONS

SHEET E-02
SHEET NO. 13 OF 19
PROJECT NO.
DRAWING NO.




## DEMOLITION ONE LINE DIAGRAM

NTS

## MCC "RLS" SINGLE LINE DIAGRAM

NTS

### NOTES:

1. SEE DRAWINGS E-01, AND E-02 FOR SYMBOLS & LEGEND AND GENERAL NOTES & ABBREVIATIONS.

### KEY NOTES:

1. EXISTING MCC TO BE REMOVED.
2. REMOVED EXISTING FEEDER CONDUCTORS, CONDUIT TO BE ABANDONED IN PLACE, CUT FLUSH TO THE FLOOR AND CAPPED.

### SEQUENCE OF CONSTRUCTION:

1. INSTALL NEW MCC "RLS".
2. FROM MCC "RLS", INSTALL POWER AND CONTROL CABLES/CONDUCTORS. DO NOT CONNECT UNTIL STEP 4 BELOW.
3. SUBMIT TO IEUA FOR APPROVAL A SHUT DOWN SCHEDULE TWO WEEKS PRIOR TO THE WORK. TURN OFF POWER FROM UTILITY AND GENERATOR, PROVIDE A FEEDER FROM THE LOAD SIDE OF THE TRANSFER SWITCH, AND CONNECT TO "RLS".
4. HAVING ENERGIZED "RLS" AND EXISTING MCC:
   - REMOVE AND REPLACE OLD EQUIPMENT/FEEDER ONE AT A TIME WITH NEW ONE. MAKE CONNECTION WITH NEW FEEDER FROM MCC "RLS".
   - TEST AND THEN ENERGIZE THE EQUIPMENT THE PROCESS IS REPEATED FOR THE NEXT EQUIPMENT.
   - UNTIL ALL EQUIPMENT ARE REPLACED AND CONNECTED TO MCC "RLS".
5. AFTER ALL LOADS ARE TRANSFERRED TO MCC RLS:
   - REMOVE (E) MCC MAIN FEEDER.
   - REMOVE EXISTING MCC AND PUMP LEVEL CONTROL SECTION.

### MAXIMUM DEMAND LOAD FOR MCC - RLS

| | | | |
|---|---|---|---|
| 1. | LIFT PUMP # P1 | = | 77KVA |
| 2. | LIFT PUMP # P2 (STANDBY) | = | 0KVA |
| 3. | LIFT PUMP # P3 | = | 32KVA |
| 4. | LIFT PUMP # P4 (STANDBY) | = | 0KVA |
| 5. | MUFFIN MONSTER | = | 4KVA |
| 6. | AIR COMPRESSOR | = | 6KVA |
| 7. | LIGHTING PANEL | = | 15KVA |
| | 25% OF LARGEST MOTOR LOAD | = | 20KVA |
| | SUB-TOTAL | = | 154KVA |
| | 20% SPARE CAPACITY FOR FUTURE | = | 31KVA |
| | TOTAL | = | 185KVA |
| | 185KVA @ 480/277V | = | 223AMPS |

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | EZ | 12/2017 |
| Drawn | AP | 12/2017 |
| Checked | JK | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 10/15/19 | JK | SK | SUBMITTAL 100% |
| D | 10/15/19 | JK | SK | SUBMITTAL 100% |
| C | 05/31/19 | JK | SK | SUBMITTAL 90% |
| B | 05/07/19 | JK | SK | SUBMITTAL 90% (QA/QC) |
| A | 07/20/18 | JK | SK | SUBMITTAL 50% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

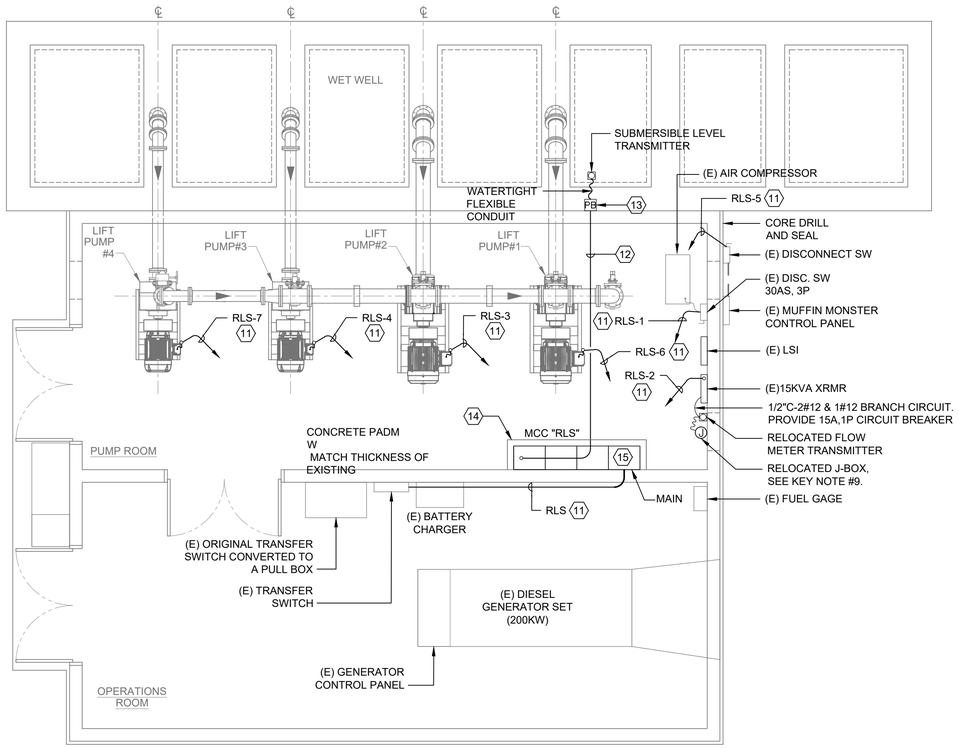
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

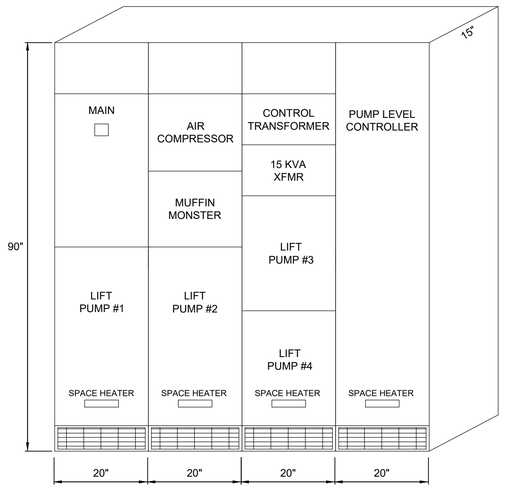
ELECTRICAL
SINGLE LINE DIAGRAMS

SHEET E-03
SHEET NO. 14 OF 19
PROJECT NO.
DRAWING NO.



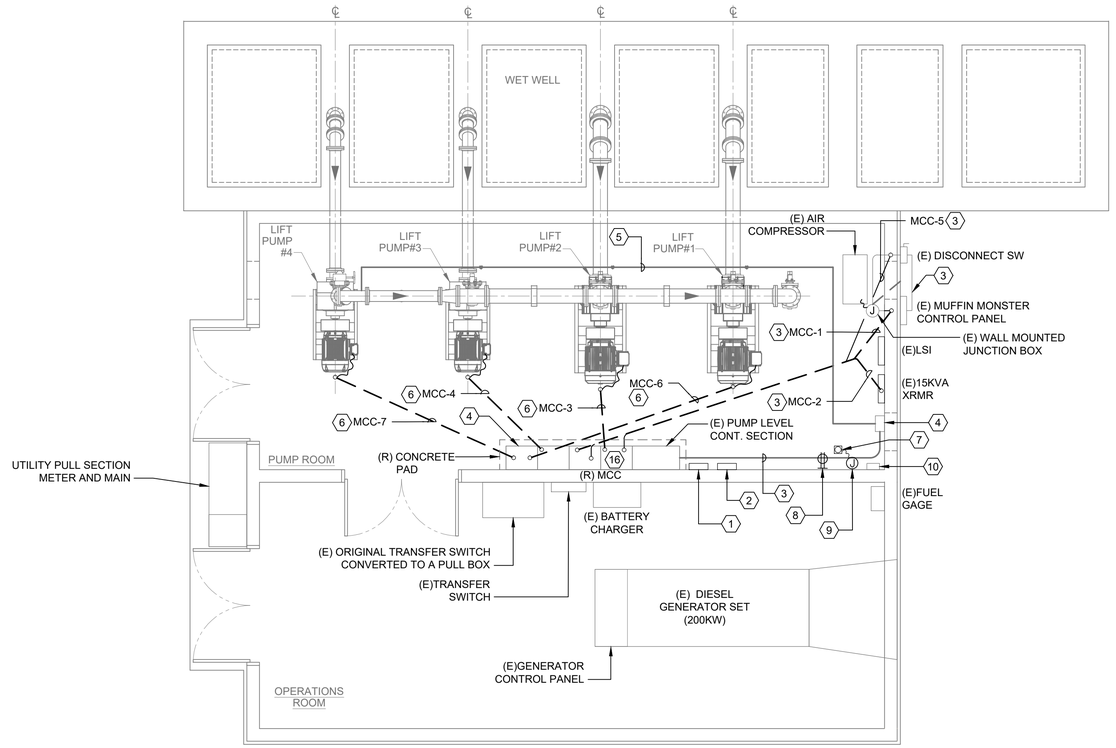

## ELECTRICAL PLAN

SCALE: 1/4=1'-0"




1 / E-04 MCC "RLS" ELEVATION

NOT TO SCALE




## ELECTRICAL DEMOLITION PLAN

SCALE: 1/4=1'-0"

### NOTES:

1. PRIOR TO THE DEMOLITION WORK CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE WITH THE EXISTING POWER/SIGNAL/CONTROL SYSTEMS CONDITIONS/CONNECTIONS IN ORDER TO AVOID CONFLICTS.
2. INFORMATION PROVIDED IS FROM RECORDS DRAWINGS PREPARED BY HALL AND FOREMAN, INC DATED 10/87 AND VISUAL INSPECTION. THIS IS THE BEST INFORMATION AVAILABLE.
3. SEE DRAWING E-03 FOR CONDUIT AND WIRE INFORMATION.

### KEY NOTES:

1. REMOVE ABANDONED FLOW METER AND ASSOCIATED RACEWAYS.
2. REMOVED ABANDONED BATH ACCUMULATOR AND ASSOCIATED RACEWAYS.
3. REMOVE EMPTY WALL MOUNTED RACEWAYS.
4. REMOVE ABANDONED WALL MOUNTED CABINET.
5. REMOVE ABANDONED OVERHEAD RACEWAYS.
6. DISCONNECT CONDUCTORS AT BOTH ENDS AND REMOVE. CUT AND CAP CONDUIT FLUSH TO FLOOR. REFER TO DRAWING E-03 FOR SEQUENCE OF CONSTRUCTION.
7. EXISTING FLOW METER TRANSMITTER TO BE RELOCATED. SEE ELECTRICAL PLAN THIS DRAWING FOR NEW LOCATION.
8. REMOVE RECEPTACLE OUTLET AND ASSOCIATED BRANCH CIRCUIT.
9. EXISTING SURFACE MOUNTED JUNCTION BOX TO BE RELOCATED. SEE ELECTRICAL PLAN THIS DRAWING FOR NEW LOCATION.. PROVIDE BLANK COVER FOR JUNCTION BOX
10. EXISTING FLOOR MOUNTED PULL BOX TO REMAIN.
11. REFER TO DRAWING E-03, MCC "RLS" SINGLE LINE DIAGRAM FOR FEEDER CONDUIT & WIRES SIZES.
12. 1" CONDUIT WITH VENDOR TWISTED PAIR CABLE, VERIFY AND COORDINATE INSTALLATION WITH THE CABLE AND SUBMERSIBLE LEVEL TRANSMITTER VENDOR.
13. 12"X 12"X 6" WP PULL BOX MOUNTED AT 24" AFF.
14. MCC CONCRETE PAD, MATCH THICKNESS OF EXISTING PAD. SEE STRUCTURAL DRAWING FOR MORE INFORMATION.
15. EXTEND EXISTING MCC GROUND WIRE AND CONNECT IT TO NEW MCC GROUND BUS BAR.
16. SAVE EXISTING GROUND WIRE TO BE EXTENDED AND CONNECTED TO NEW MCC.

4' 2' 0 4' 8'

SCALE: 1/4"=1'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | EZ | 12/2017 |
| Drawn | AP | 12/2017 |
| Checked | EZ | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 10/15/19 | JK | SK | SUBMITTAL 100% |
| D | 10/15/19 | JK | SK | SUBMITTAL 100% |
| C | 05/31/19 | JK | SK | SUBMITTAL 90% |
| B | 05/07/19 | JK | SK | SUBMITTAL 90% (QA/QC) |
| A | 0720/18 | JK | SK | SUBMITTAL 50% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

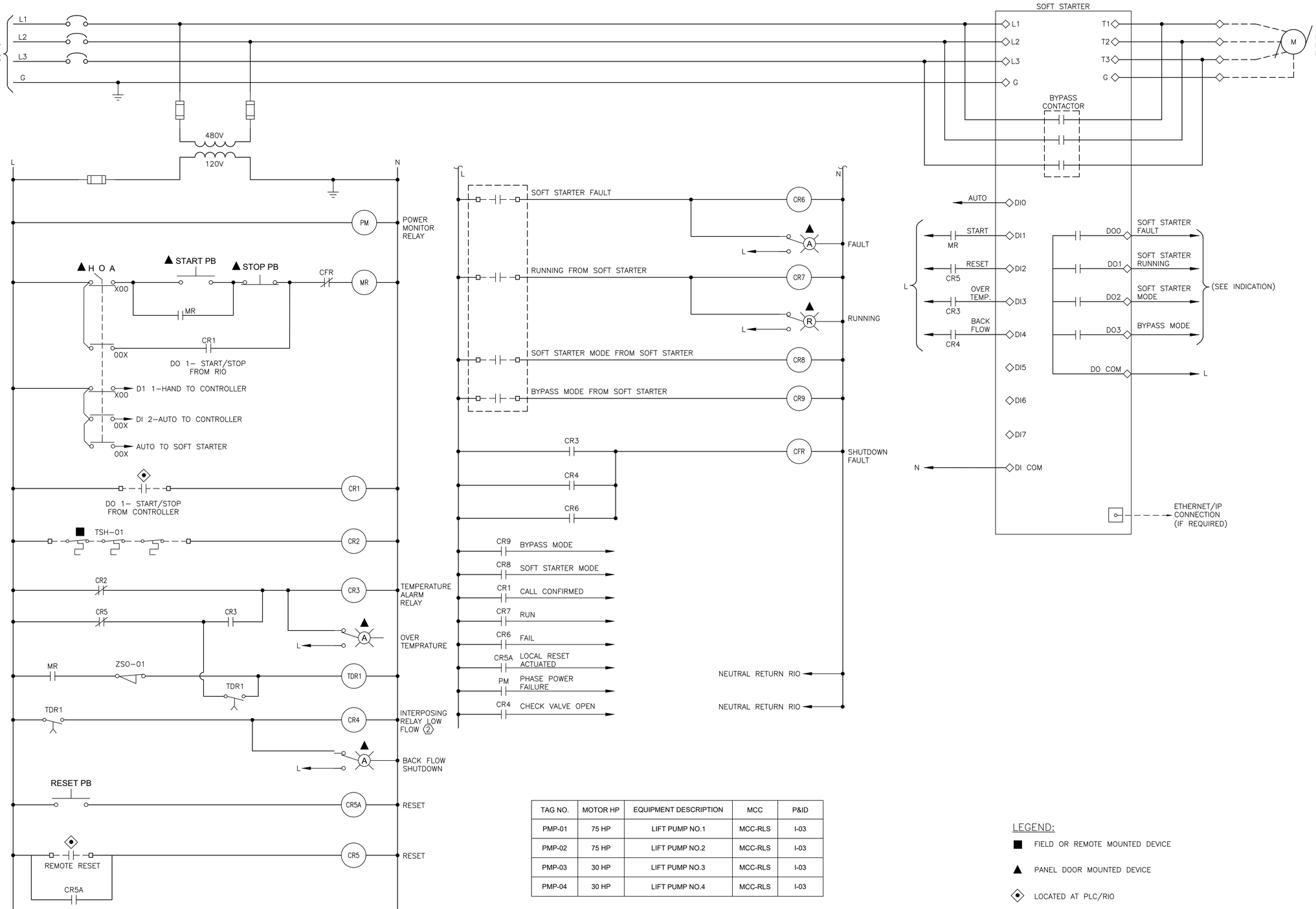
SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

ELECTRICAL
POWER AND INSTRUMENT PLAN

SHEET E-04
SHEET NO. 15 OF 19
PROJECT NO.
DRAWING NO.

W:\Pasadena Sector\Projects\EUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\3.EE\WORK\Butterfield Ranch LS\E-04 last saved by 63969 on 10/7/19 plotted 10/15/2019 1:00:08 PM




## NOTES:

1. SEE DWGS. E-01 THRU E-02 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR TO FILED VERIFY EXISTING PUMP CONTROLS BEFORE STARTING ANY WORK.

## KEY NOTES:

(1) CONTRACTOR SHALL SUBMIT CONTROL DIAGRAMS WITH UNIQUE WIRE NUMBERS AND TERMINAL BLOCK NUMBERS FOR EACH WIRE AND TERMINAL BLOCK, TYPICAL FOR EVERY PUMP.

(2) INTERPOSING RELAY SHALL BE 2-POLE.

| TAG NO. | MOTOR HP | EQUIPMENT DESCRIPTION | MCC | P&ID |
|---|---|---|---|---|
| PMP-01 | 75 HP | LIFT PUMP NO.1 | MCC-RLS | I-03 |
| PMP-02 | 75 HP | LIFT PUMP NO.2 | MCC-RLS | I-03 |
| PMP-03 | 30 HP | LIFT PUMP NO.3 | MCC-RLS | I-03 |
| PMP-04 | 30 HP | LIFT PUMP NO.4 | MCC-RLS | I-03 |

## EMERGENCY OVERFLOW POND PUMP PMP-15411 (1)

TYPICAL TO PUMPS SHOWN IN THE TABLE, EXCEPT RELAY CALLOUTS

## LEGEND:

- ■ FIELD OR REMOTE MOUNTED DEVICE
- ▲ PANEL DOOR MOUNTED DEVICE
- ◈ LOCATED AT PLC/RIO

## INTERPOSING RELAY CABINET


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | PK | 03/14/19 |
| Drawn | AP | 03/14/19 |
| Checked | JK | 03/14/19 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| B | 05/31/19 | JK | SK | SUBMITTAL 90% |
| A | 05/07/19 | JK | SK | SUBMITTAL 90% (QA/QC) |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

ELECTRICAL
CONTROL SCHEMATICS
LIFT PUMP

| | |
|---|---|
| SHEET | E-05 |
| SHEET NO. | 16 OF 19 |
| PROJECT NO. | |
| DRAWING NO. | |

W:\Pasadena Sector\Projects\EUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\3.EE\WORK\Butterfield Ranch LS\E-05 last saved by P006540D on 10/15/19 plotted 10/15/2019 1:00:13 PM

## MECHANICAL EQUIPMENT SYMBOLS

- PUMP: PLUNGER
- COMPRESSOR: RECIPROCATING
- PUMP: VERTICAL TURBINE
- PUMP: PROGRESSIVE CAVITY
- PUMP: RECIPROCATING
- PUMP: DIAPHRAGM
- PUMP: CENTRIFUGAL
- PUMP: ROTARY
- PUMP: SCREW
- PUMP: SUBMERSIBLE
- PUMP: POSITIVE DISPLACEMENT
- PUMP: CHOPPER
- PUMP: PERISTALTIC
- PUMP: METERING
- PUMP: SUBMERSIBLE AXIAL PROPELLER
- BLOWER OR FAN
- MIXER
- ELECTRIC MOTOR (M)
- AIR OR CHEMICAL DIFFUSER
- SILENCER
- GRINDER
- AIR FILTER
- OR
- FLAME ARRESTOR
- SUCTION DIFFUSER
- POSITIVE DISPLACEMENT BLOWER
- CATALYST
- HEAT EXCHANGER
- MEMBRANE CASSETTE
- GAS FILTER

## VALVE AND GATE SYMBOLS

- VALVE: GATE
- VALVE: KNIFE GATE (K)
- VALVE: GLOBE
- VALVE: BALL
- VALVE: THREE WAY
- VALVE: FOUR WAY
- VALVE: DIAPHRAGM
- VALVE: BUTTERFLY
- VALVE: DOUBLE LEAF CHECK
- VALVE: FLAP CHECK
- VALVE: PLUG
- VALVE: PLUG 3-WAY
- VALVE: ANGLE
- VALVE: NEEDLE
- VALVE: BALL CHECK
- VALVE: SWING CHECK
- VALVE: PRESSURE RELIEF
- VALVE: THERMAL SHUTOFF
- VALVE: TELESCOPING
- PRESSURE-REDUCING INTERNAL REGULATING
- BACKPRESSURE REGULATOR INTERNAL
- PRESSURE-REDUCING REGULATOR W/EXTERNAL PRESSURE TAP
- BACKPRESSURE REGULATOR W/EXTERNAL PRESSURE TAP
- GATE: SLIDE
- GATE: SLUICE
- AIR RELEASE VALVE
- VACUUM BREAKER
- AIR RELEASE VALVE/VACUUM BREAKER
- VALVE: MUD
- PRESSURE VACUUM RELIEF VALVE
- PUMP DISCHARGE VALVE

## VALVE AND GATE SYMBOLS

- DIAPHRAGM
- PISTON DOUBLE ACTING CYLINDER
- SOLENOID (S)
- ELECTRIC MOTOR (M)
- ELECTRO-HYDRAULIC (E/H)
- I/P CONVERTER (I/P)
- PISTON SPRING TO OPEN
- PISTON SPRING TO CLOSE
- LINEAR (L)

THE FOLLOWING ADDITIONAL DESIGNATIONS MAY BE UTILIZED ADJACENT TO SOME VALVE OR GATE SYMBOLS.

| | |
|---|---|
| FC | FAILS CLOSED |
| FIP | FAILS IN LAST POSITION |
| FO | FAILS OPEN |
| LC | LOCKS CLOSED |
| LO | LOCKS OPEN |
| NC | NORMALLY CLOSED |
| NO | NORMALLY OPEN |

## PRIMARY ELEMENT SYMBOLS

- BUBBLER TUBE / BUBBLER ASSEMBLY (B)
- LEVEL PROBE
- ORIFICE PLATE
- VENTURI TUBE
- FLUME
- WEIR
- PROPELLER (P) OR TURBINE (T) METER
- AVERAGING PITOT TUBE
- MAGNETIC FLOWMETER (M)
- THERMAL FLOWMETER (T)
- SONIC FLOWMETER
- PADDLE WHEEL FLOWMETER (X)
- ULTRASONIC LEVEL METER
- RADAR LEVEL METER
- ROTAMETER
- FLOAT TYPE LEVEL SWITCH (LS)
- SUBMERSIBLE PRESSURE TYPE

## MISCELLANEOUS SYMBOLS

- HIGH PRESSURE QUICK CONNECTION
- AIR VENT
- SEAL - DIAPHRAGM
- SEAL - ANNULAR
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- PULSATION DAMPENER
- RUPTURE DISK
- DRAIN
- PURGE ASSEMBLY (P)
- INLINE STATIC MIXER
- IA — FIELD DEVICE INSTRUMENT AIR SUPPLY
- HPA — FIELD DEVICE HIGH PRESSURE AIR SUPPLY
- ROTATING BEACON
- CALIBRATION COLUMN
- HORN
- DAMPERS, VANES
- EXPANSION JOINT
- FLEXIBLE CONNECTION
- FLANGE
- Y-STRAINER
- SPRAY NOZZLE
- ES — ELECTRICAL SUPPLY POWER
- HOSE BIBB
- FLOW CONDITIONER
- THERMOWELL

## GENERAL NOTES

1. EXISTING STRUCTURES, EQUIPMENT, PIPING, INSTRUMENTS AND CONTROLS ARE SHOWN IN LIGHTER SHADING (I.E. SCREENED). INFORMATION FOR EXISTING SYSTEMS WERE TAKEN FROM THE EXISTING RECORD DRAWING SET FOR SAN BERNADINO COUNTY WATERWORKS DISTRICT NO. 8 "BUTTERFIELD SEWAGE LIFT STATION" DATED 10/30/87.
2. DATALINK LINES ON THE P&IDs ONLY DEPICT COMMUNICATIONS BETWEEN THE COMPONENTS/EQUIPMENT SHOWN.



PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | RA/ID | 07/2018 |
| Drawn | RA | 07/2018 |
| Checked | IM | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 10/15/19 | RA | SK | SUBMITTAL 100% |
| C | 05/31/19 | RA | SK | SUBMITTAL 90% |
| B | 12/21/18 | RA | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | RA | SK | SUBMITTAL 50% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

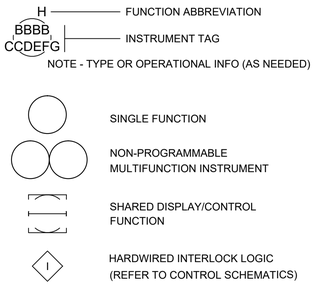
SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

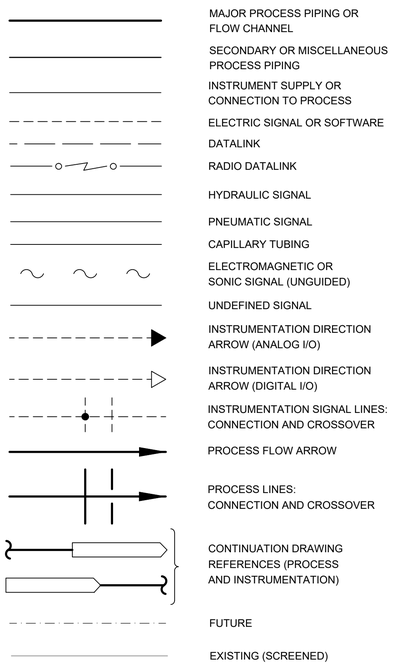
INSTRUMENTATION LEGEND

SHEET I-01
SHEET NO. 17 OF 19
PROJECT NO.
DRAWING NO.

## INSTRUMENT OR FUNCTION SYMBOLS




## LINE SYMBOLS




## EQUIPMENT TAGGING

EQUIPMENT TAGGING GUIDELINE:

BBBB - CC

- BBBB — EQUIPMENT TECHNICAL DESCRIPTOR (SEE TABLE 1)
- CC — SEQUENCE NUMBER

## FUNCTION DESIGNATORS

| | |
|---|---|
| ∆ | DIFFERENCE |
| ÷ | DIVIDING |
| × | MULTIPLYING |
| √ | ROOT EXTRACTION |
| Σ | SUMMING |
| Σ /n | AVERAGING |
| > | HIGH SELECTING |
| < | LOW SELECTING |
| ∄ | HIGH LIMITING |
| ∄ | LOW LIMITING |
| f(x) | NONLINEAR OR UNSPECIFIED FUNCTION |
| REV | REVERSE ACTING |
| SRG | SPLIT-RANGING |
| % | PROPORTIONAL CONTROL ACTION |
| ∫ | INTEGRAL CONTROL ACTION |
| d/dt | DERIVATIVE CONTROL ACTION |
| 1-0 | ON-OFF CONTROL ACTION |
| △1-0 | DIFFERENTIAL GAP CONTROL ACTION |

*/* CONVERT FROM/TO, WHERE:
A= ANALOG I=CURRENT
D= DIGITAL O=ELECTROMAG, SONIC
E= VOLTAGE P=PNEUMATIC
H= HYDRAULIC R=RESISTANCE

## FUNCTION ABBREVIATIONS

| | |
|---|---|
| OSC | OPEN-STOP-CLOSE SELECTOR |
| OPN | OPEN |
| CLS | CLOSE |
| OPLM | OPEN LIMIT |
| CLLM | CLOSED LIMIT |
| OPCM | OPEN COMMAND |
| CLCM | CLOSE COMMAND |
| FAIL | FAIL |
| HHAL | HIGH HIGH ALARM |
| HAL | HIGH ALARM |
| LAL | LOW ALARM |
| LLAL | LOW LOW ALARM |
| STAT | STATUS |
| HOR | HAND-OFF-REMOTE SELECTOR |
| HOA | HAND-OFF-AUTO SELECTOR |
| HAND | HAND |
| AUTO | AUTO |
| ENBL | ENABLE |
| LOR | LOCAL-OFF-REMOTE SELECTOR |
| LOC | LOCAL |
| REM | REMOTE |
| OFF | OFF |
| ON | ON |
| FOR | FORWARD-OFF-REMOTE SELECTOR |
| FWD | FORWARD |
| REV | REVERSE |
| DS | DUTY-STANDBY SELECTOR |
| DUTY | DUTY |
| STBY | STANDBY |
| STRT | START |
| STOP | STOP |
| SLOS | START-LOCKOUT STOP |
| ESTP | EMERGENCY STOP |
| JOG | JOG |
| OUT | OUT |
| IN | IN |
| EXTD | EXTEND |
| RTCT | RETRACT |
| LEAK | LEAK DETECTION |
| PV | PROCESS VARIABLE |
| CV | CONTROL VARIABLE |
| DIFF | DIFFERENTIAL |
| EOT | END OF TRAVEL |
| OL | MOTOR OVERLOAD |
| PWR | POWER ON |
| PMR | PUMP MONITOR RELAY |
| RST | ALARM RESET |
| SIL | ALARM SILENCE |
| CG | COMBUSTIBLE GAS |
| COND | CONDUCTIVITY |
| H2S | SODIUM HYPOCHLORITE |
| NH3 | AMMONIA |
| pH | pH |
| POS | POSITION |
| ALM | ALARM |

## MISCELLANEOUS ABBREVIATIONS

| | |
|---|---|
| HIM | HUMAN INTERFACE MODULE |
| OIT | OPERATOR INTERFACE TERMINAL |

## TABLE 1 - EQUIPMENT/INSTRUMENT TECHNICAL DESCRIPTORS

| EQUIPMENT | | INSTRUMENTS | | CONTROL EQUIPMENT | |
|---|---|---|---|---|---|
| TECHNICAL DESCRIPTOR | DESCRIPTION OF TECHNICAL OBJECT | TECHNICAL DESCRIPTOR | DESCRIPTION OF TECHNICAL OBJECT | TECHNICAL DESCRIPTOR | DESCRIPTION OF TECHNICAL OBJECT |
| ACT | ACTUATOR | AAHH/H/L/LL | ANALYTICAL ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | IANT | ANTENNA |
| AC | AIR CONDITIONER | AIC | ANALYTICAL CONTROL | IAPP | APPLICATION SERVER |
| ARV | AIR RELEASE VALVE | AE | ANALYTICAL ELEMENT | IBB | BROADBAND HARDWARE |
| AVRV | AIR RELEASE / VACUUM RELIEF VALVE | AIT | ANALYTICAL INDICATING TRANSMITTER | ICP | CONTROL PROCESSOR |
| ASPR | AIR SEPARATOR | AI | ANALYTICAL INDICATION | IDAS | DATA SERVER |
| ATS | AUTOMATIC TRANSFER SWITCH | ASHH/H/L/LL | ANALYTICAL SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | IDCP | DISTRIBUTED CONTROL PROCESSOR |
| BFP | BACKFLOW PREVENTER | AT | ANALYTICAL TRANSMITTER | IEWS | ENGINEERING WORKSTATION |
| BSN | BASIN | BE | BURNER ELEMENT | IFOP | FIBER OPTIC PANEL |
| BAT | BATTERY | IAHH/H | CURRENT - OVERCURRENT ALARM HIGH-HIGH / HIGH | IHIS | HISTORIAN SERVER |
| BLDR | BLENDER | IAL/LL | CURRENT - UNDERCURRENT ALARM LOW / LOW-LOW | IHMI | HMI SERVER |
| BO | BLOW OFF | II | CURRENT INDICATION | IINF | INFRASTRUCTURE SERVER |
| BLWR | BLOWER | PDAHH/H/L/LL | DIFFERENTIAL PRESSURE ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW | ILCP | LOCAL CONTROL PANEL |
| BLR | BOILER | PDIC | DIFFERENTIAL PRESSURE INDICATING CONTROL | ILCS | LOCAL CONTROL STATION |
| BCC | BRANCH CIRCUIT CONTROLLER | PDIT | DIFFERENTIAL PRESSURE INDICATING TRANSMITTER | IMCP | MASTER CONTROL PANEL |
| BLDG | BUILDING | PDI | DIFFERENTIAL PRESSURE INDICATION | IMED | MEDIA CONVERTER |
| BNR | BURNER | PDT | DIFFERENTIAL PRESSURE TRANSMITTER | IWAV | MICROWAVE HARDWARE |
| BD | BUS DUCT | YA | FAIL INDICATION | IRTR | NETWORK ROUTER |
| CANN | CANNON | BA | FIRE ALARM | ISEC | NETWORK SECURITY HARDWARE |
| CPS | CATHODIC PROTECTION STATION | FAHH/H/L/LL | FLOW ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW | ISWT | NETWORK SWITCH |
| CNFG | CENTRIFUGE | FE | FLOW ELEMENT | IOIT | OPERATOR INTERFACE TERMINAL |
| CHNL | CHANNEL | FIC | FLOW INDICATING CONTROL | IOWS | OPERATOR WORKSTATION |
| CVLV | CHECK VALVE | FIT | FLOW INDICATING TRANSMITTER | IPLC | PLC |
| CHLR | CHILLER | FI | FLOW INDICATION | IPS | POWER SUPPLY |
| CCB | CHLORINE CONTACT BASIN | FS | FLOW SWITCH | IPRT | PRINTER |
| CHUT | CHUTE | FSHH/H/L/LL | FLOW SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | IRAC | RACO ALARM HARDWARE |
| CLF | CLARIFIER | FQI | FLOW TOTALIZER INDICATION | IRIO | REMOTE I/O PANEL |
| COGN | COGENERATION | FQT | FLOW TOTALIZER TRANSMITTER | IRIR | REMOTE I/O RACK |
| COMP | COMPRESSOR | FT | FLOW TRANSMITTER | IRTU | REMOTE TERMINAL UNIT PANEL |
| COND | CONDENSER | HC | HAND CONTROL | ISCN | SCANNER |
| CVR | CONVEYOR | HS | HAND SWITCH | ITC | THIN CLIENT |
| CRAN | CRANE | HSI | HAND SWITCH STATUS INDICATION | IWFI | WIFI HARDWARE |
| DAM | DAM | LAHH/H/L/LL | LEVEL ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| DMP | DAMPER | LDAHH/H/L/LL | DIFFERENTIAL LEVEL ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| DS | DISCONNECT SWITCH | LDI | DIFFERENTIAL LEVEL INDICATION | | |
| DP | DISTRIBUTION PANELBOARD | LE | LEVEL ELEMENT | | |
| DRV | DRIVE | LIC | LEVEL INDICATING CONTROL | | |
| DRYR | DRYER | LIT | LEVEL INDICATING TRANSMITTER | | |
| ENG | ENGINE | LG | LEVEL SIGHT GLASS | | |
| ECU | EVAPORATIVE COOLING UNIT | LS | LEVEL SWITCH | | |
| EYEW | EYE WASH | LSHH/H/L/LL | LEVEL SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| FAN | FAN | LY | LEVEL SWITCH INTERPOSING RELAY | | |
| FCU | FAN COIL UNIT | LT | LEVEL TRANSMITTER | | |
| FDR | FEEDER | MAHH/H/L/LL | MOISTURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| FLTR | FILTER | MSHH/H/L/LL | MOISTURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| FLAR | FLARE | ZAHH/H/L/LL | POSITION ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| FLCL | FUEL CELL | ZY | POSITION COMMAND | | |
| GATE | GATE | ZT | POSITION FEEDBACK | | |
| GEN | GENERATOR | ZS | POSITION SWITCH | | |
| GNDR | GRINDER | ZSC | POSITION SWITCH CLOSE | | |
| HFLT | HARMONIC FILTER | ZSO | POSITION SWITCH OPEN | | |
| HXGR | HEAT EXCHANGER | JI | POWER INDICATION | | |
| HRS | HEAT RECOVERY SILENCER | JQ | POWER TOTALIZATION | | |
| IWS | INSTANTANEOUS WATER HEATER | PAHH/H/L/LL | PRESSURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| LVL | LEVELER | PE | PRESSURE ELEMENT | | |
| LP | LIGHTING PANEL | PIC | PRESSURE INDICATING CONTROL | | |
| LVR | LOUVER | PIT | PRESSURE INDICATING TRANSMITTER | | |
| LUBS | LUBE OIL SYSTEM | PI | PRESSURE INDICATION | | |
| MH | MANHOLE | PS | PRESSURE SWITCH | | |
| MTS | MANUAL TRANSFER SWITCH | PSHH/H/L/LL | PRESSURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| CASS | MEMBRANE CASSETTE | PT | PRESSURE TRANSMITTER | | |
| MXR | MIXER | YY | PUMP MONITOR RELAY | | |
| MTR | MOTOR | XC | REMOTE RESET | | |
| MCC | MOTOR CONTROL CENTER | XCR | REMOTE START COMMAND | | |
| MCP | MOTOR CONTROL PANEL | XCS | REMOTE STOP COMMAND | | |
| PIPE | PIPE | YI | RUN STATUS | | |
| PRV | PRESSURE RELIEF VALVE | KQI | RUN TIME | | |
| PMP | PUMP | SAHH/H/L/LL | SPEED ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| APMP | AIR PUMP | SC | SPEED COMMAND | | |
| SMP | SAMPLER | SE | SPEED ELEMENT | | |
| SCRN | SCREEN | SI | SPEED INDICATION | | |
| SCR | SELECTIVE CATALYTIC REDUCER | SSL | SPEED SWITCH LOW | | |
| SHWR | SHOWER | TAHH/H/L/LL | TEMPERATURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| SLCR | SILENCER | TE | TEMPERATURE ELEMENT | | |
| SILO | SILO | TIT | TEMPERATURE INDICATING TRANSMITTER | | |
| SOLR | SOLAR | TI | TEMPERATURE INDICATION | | |
| SV | SOLENOID VALVE | TSHH/H/L/LL | TEMPERATURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| STNR | STRAINER | TT | TEMPERATURE TRANSMITTER | | |
| SWBD | SWITCHBOARD | KY | TIMER | | |
| SWGR | SWITCHGEAR | NAHH/H/L/LL | TORQUE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| TNK | TANK | NIT | TORQUE INDICATING TRANSMITTER | | |
| TTR | TIPPING TROUGH | NI | TORQUE INDICATION | | |
| TWR | TOWER | NSHH/H/L/LL | TORQUE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| TX | TRANSFORMER | VAHH/H/L/LL | VIBRATION ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| UPS | UNINTERRUPTIBLE POWER SUPPLY | VE | VIBRATION ELEMENT | | |
| VLV | VALVE | VIT | VIBRATION INDICATING TRANSMITTER | | |
| MVLV | MANUAL VALVE | VI | VIBRATION INDICATION | | |
| VFD | VARIABLE FREQUENCY DRIVE | VSHH/H/L/LL | VIBRATION SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| VRF | VARIABLE REFRIGERANT FLOW | VT | VIBRATION TRANSMITTER | | |
| WSH | WASHER | EAHH/H | VOLTAGE - OVERVOLTAGE ALARM HIGH-HIGH / HIGH | | |
| WFLT | WATER FILTER | EALL/L | VOLTAGE - UNDERVOLTAGE ALARM LOW / LOW-LOW | | |
| WH | WATER HEATER | EI | VOLTAGE INDICATION | | |
| WW | WET WELL | WE | WEIGHT ELEMENT | | |
| WND | WIND TURBINE | WIT | WEIGHT INDICATING TRANSMITTER | | |
| | | WI | WEIGHT INDICATION | | |
| | | WR | WEIGHT RECORDER | | |


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | RA/ID | 07/2018 |
| Drawn | RA | 07/2018 |
| Checked | IM | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 10/15/19 | RA | SK | SUBMITTAL 100% |
| C | 05/31/19 | RA | SK | SUBMITTAL 90% |
| B | 12/21/18 | RA | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | RA | SK | SUBMITTAL 50% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT


OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


SUBMITTAL 100% - 10/15/2019

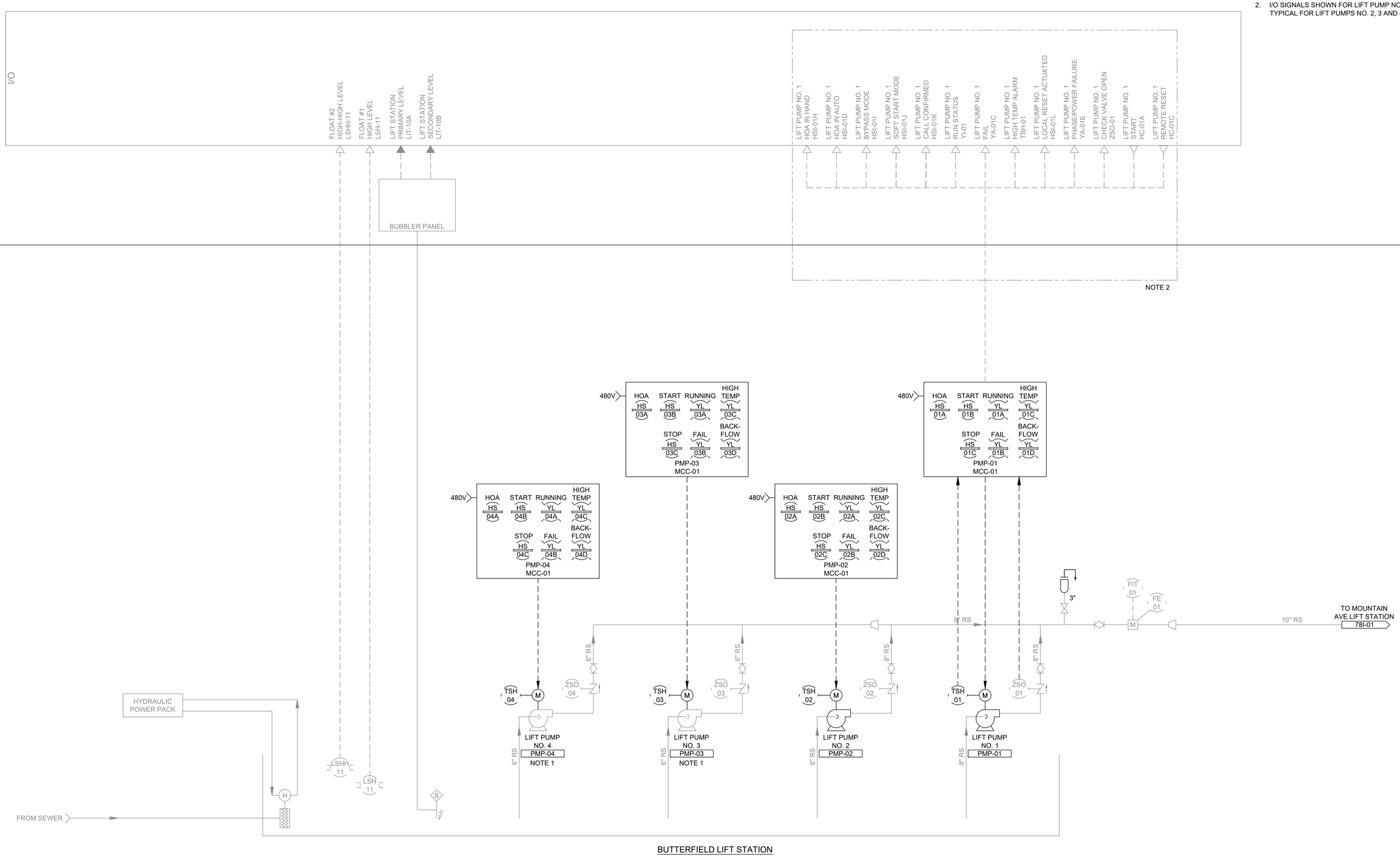
BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

INSTRUMENTATION LEGEND

SHEET I-02
SHEET NO. 18 OF 19
PROJECT NO.
DRAWING NO.

NOTES:

1. THE CONTRACTOR SHALL REPLACE THE IMPELLER ON THE EXISTING PUMP. REFER TO MECHANICAL SPECIFICATIONS FOR DETAILS.
2. I/O SIGNALS SHOWN FOR LIFT PUMP NO. 1 ARE TYPICAL FOR LIFT PUMPS NO. 2, 3 AND 4.




W:\Pasadena Sector\Projects\EUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1-CAD\5.IN\WORK\Butterfield Ranch LS\I-03 last saved by P006540D on 10/15/2019 1:02:21 PM

SUBMITTAL 100% - 10/15/2019

SHEET I-03

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

BUTTERFIELD LIFT STATION
P&I

SHEET NO. 19 OF 19

PROJECT NO.

DRAWING NO.


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | RA/ID | 12/2017 |
| Drawn | RA | 12/2017 |
| Checked | IM | 12/2017 Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 10/15/19 | RA | SK | SUBMITTAL 100% |
| D | 05/31/19 | RA | SK | SUBMITTAL 90% |
| C | 12/21/18 | RA | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | RA | SK | SUBMITTAL 50% |
| A | 12/18/17 | RA | SK | SUBMITTAL 30% |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

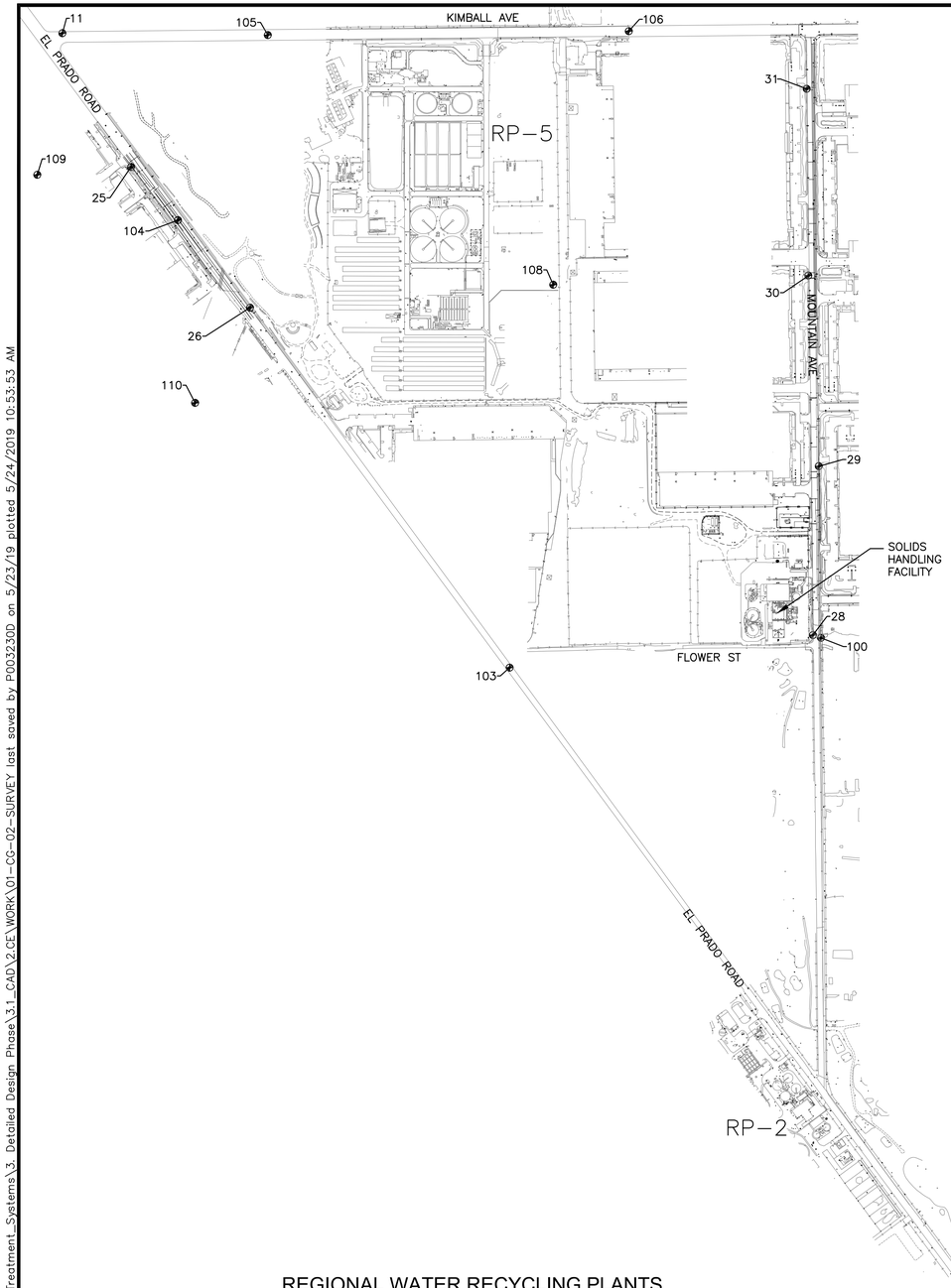
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT


OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

ENGINEERING DRAWINGS

MTN VIEW LIFT STATION – 90%




REGIONAL WATER RECYCLING PLANTS
SCALE: 1" = 400'-0"

0 200' 400' 800' 1200'
SCALE: 1" = 400'-0"

## SURVEY NOTE:

1. THE INFORMATION SHOWN HEREON WAS GATHERED BY A FIELD SURVEY PERFORMED IN JULY AND AUGUST 2017 SURVEY PERFORMED BY BLAIR, CHURCH & FLYNN CONSULTING ENGINEERS ON JULY 12, 2017.
2. THIS SURVEY IS BASED ON THE CALIFORNIA COORDINATE SYSTEM (CCS83), ZONE 5. DISTANCES ARE GRID DISTANCES IN US SURVEY FEET.
3. SHIFT THE RECORD DRAWINGS FROM POINT 24 AS SHOWN IN RP-5 Master Base.dwg FILE TO POINT 209. COORDINATE INFORMATION DISPLAYED BELOW:

POINT #24
NORTHING: 1811007.4417
EASTING: 6658539.2817

POINT #209
NORTHING: 1811009.9929
EASTING: 6658537.3765

## BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM (CCS83), ZONE 5, BASED ON A GPS/GNSS FAST STATIC CONTROL SURVEY TIED TO THE LEICA SMARTNET CORS NETWORK. THE BEARING OF THE CENTERLINE OF KIMBALL AVENUE AS ESTABLISHED BY THESE OBSERVATIONS IS NORTH 89°24'27" EAST. THE BEARING OF SAID LINE, AS SHOWN ON RECORD OF SURVEY 99-0038 FILED FOR RECORD AUGUST 23, 1999 IN BOOK 112 OF RECORD OF SURVEY, AT PAGES 33 AND 34, SAN BERNARDINO COUNTY RECORDS IS NORTH 89°24'28" EAST.

## SITE BENCHMARK:

1. ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ELEVATIONS ARE ESTABLISHED BY A GPS/GNSS FAST STATIC CONTROL SURVEY TIED TO THE LEICA SMARTNET CORS NETWORK.
2. CITY OF CHINO BENCHMARK 157-63 (PT # 237)

PROJECT ELEVATION – 588.182'

PUBLISHED ELEVATION – 588.380'

## RECORD DRAWINGS ELEVATION CONVERSION:

ADD 2.16' TO ELEVATION SHOWN ON RP-5 PROJECT NO. EN95028 AS-BUILT DRAWINGS.

*PRIMARY CONTROL TABLE*

| POINT | NORTHING | EASTING | ELEVATION | DESCRIPTION |
|---|---|---|---|---|
| 11 | 1811029.24 | 6658644.17 | 574.69 | 1" BRASS CAP |
| 12 | 1811105.65 | 6664643.80 | 585.33 | 1" BRASS CAP |
| 13 | 1805348.84 | 6666713.60 | 554.52 | 1" BRASS CAP |
| 17 | 1803477.17 | 6661941.24 | 531.55 | 1" BRASS CAP |
| 25 | 1810316.98 | 6659008.92 | 570.64 | 1" BRASS CAP |
| 26 | 1809569.04 | 6659642.12 | 561.65 | 1" BRASS CAP |
| 28 | 1807827.59 | 6662635.56 | 567.19 | 1" BRASS CAP |
| 29 | 1808725.59 | 6662669.85 | 572.78 | 1" BRASS CAP |
| 30 | 1809740.34 | 6662613.99 | 578.88 | 1" BRASS CAP |
| 31 | 1810733.10 | 6662602.81 | 584.96 | 1" BRASS CAP |

*SECONDARY CONTROL TABLE*

| POINT | NORTHING | EASTING | ELEVATION | DESCRIPTION |
|---|---|---|---|---|
| 100 | 1807812.55 | 6662678.46 | 566.64 | FLIGHT CROSS |
| 101 | 1804254.70 | 6663538.78 | 543.45 | FLIGHT CROSS |
| 102 | 1803994.11 | 6661399.03 | 534.44 | FLIGHT CROSS |
| 103 | 1807654.45 | 6661022.28 | 560.18 | FLIGHT CROSS |
| 104 | 1810034.44 | 6659258.23 | 564.62 | FLIGHT CROSS |
| 105 | 1811019.02 | 6659736.29 | 573.54 | FLIGHT CROSS |
| 106 | 1811039.65 | 6661656.25 | 584.06 | FLIGHT CROSS |
| 107 | 1811061.65 | 6663864.56 | 588.78 | FLIGHT CROSS |
| 108 | 1809691.44 | 6661254.71 | 573.62 | FLIGHT CROSS |
| 109 | 1810276.09 | 6658510.60 | 570.37 | FLIGHT CROSS |
| 110 | 1809062.40 | 6659350.15 | 565.23 | FLIGHT CROSS |

## SURVEYOR'S STATEMENT:

*THIS SURVEY WAS PERFORMED BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT. THE DATA WAS COLLECTED WITH ACCEPTED INDUSTRY STANDARDS AND HORIZONTAL AND VERTICAL MEASUREMENTS ARE TO A TENTH OF A FOOT (0.1')*

*RANDELL SCOTT WEST, CA. P.L.S. #8663* *DATE*

Blair, Church & Flynn
CONSULTING ENGINEERS

CONSULTANT
**Blair, Church & Flynn Consulting Engineers**
**451 Clovis Avenue, Suite 200**
**Clovis, California 93612**
**Tel (559) 326-1400**
**Fax (559) 326-1500**

REF. & REV.

REGIONAL WATER RECYCLING PLANT
CONTROL SURVEY

DR. BY: JRS
CH. BY: RSW
DATE: 10/27/2017
SCALE AS NOTED
SHEET NO. 1
OF 1 SHEETS

SUBMITTAL 90% - 05/31/2019

SHEET CG-02

**PARSONS**
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Designed HS 12/2017
Drawn HS 12/2017
Checked BL 12/2017
Date

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | HS | SK | SUBMITTAL 50% |
| A | 12/18/17 | HS | SK | SUBMITTAL 30% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

*Inland Empire Utilities Agency*
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

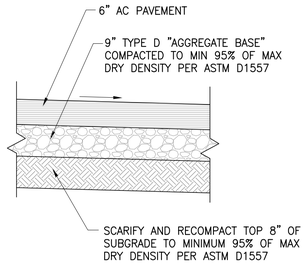
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

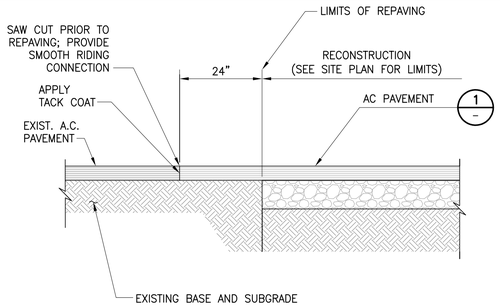
TOPOGRAPHIC SURVEY
CONTROL POINTS

SHEET NO. X OF
PROJECT NO.
DRAWING NO.

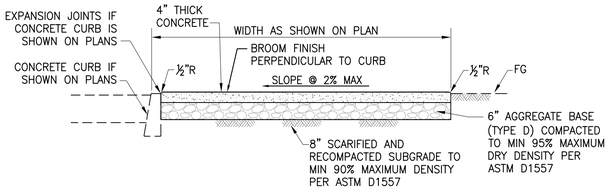
W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3_Detailed Design Phase\3.1_CAD\2.CE\WORK\01-CG-02-SURVEY last saved by P0032300 on 5/23/19 plotted 5/24/2019 10:53:53 AM




## AC PAVEMENT 1 VAR
SCALE: NTS



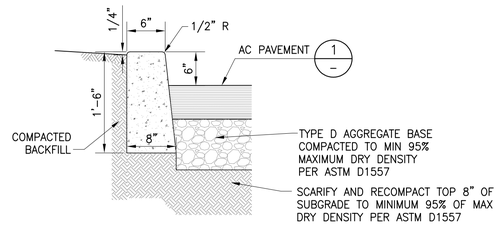

## AC PAVEMENT CONNECTION 2 VAR
SCALE: NTS




NOTE:

1. ALL SIDEWALK WIDTHS SHOWN INCLUDE THE WIDTH OF TOP OF CURB AND THE WIDTH OF CONCRETE SLAB, UNLESS INDICATED OTHERWISE.
2. SIDEWALK JOINTS SHALL BE CONSTRUCTED TO DIVIDE THE SURFACE INTO RECTANGULAR AREAS.
3. TRANSVERSE CONTRACTION JOINTS PER DETAIL 7/CG–11 SHALL BE SPACED AT A DISTANCE EQUAL TO THE SIDEWALK WIDTH OR 5 FEET ON CENTER, WHICHEVER IS LESS, AND SHALL BE CONTINUOUS ACROSS THE SLAB.
4. LONGITUDINAL CONTRACTION JOINTS PER DETAIL 7/CG–11 SHALL BE CONSTRUCTED ALONG THE CENTERLINE OF ALL SIDEWALKS 10 FEET OR MORE IN WIDTH.
5. TRANSVERSE EXPANSION JOINTS PER DETAIL 8/G–11 SHALL BE INSTALLED AT SIDEWALK RETURNS AND OPPOSITE EXPANSION JOINTS IN ADJOINING CURBS.
6. WHERE THE SIDEWALK IS NOT IN CONTACT WITH THE CURB, TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AS INDICATED.
7. EXPANSION JOINTS SHALL BE FORMED ABOUT STRUCTURES AND FEATURES WHICH PROJECT THROUGH OR INTO THE SIDEWALK PAVEMENT, USING JOINT FILLER OF THE TYPE, THICKNESS, AND WIDTH INDICATED.
8. EXPANSION JOINTS SHALL BE CONSTRUCTED BETWEEN SIDEWALKS AND CURBS THAT ABUT THE SIDEWALK LONGITUDINALLY.

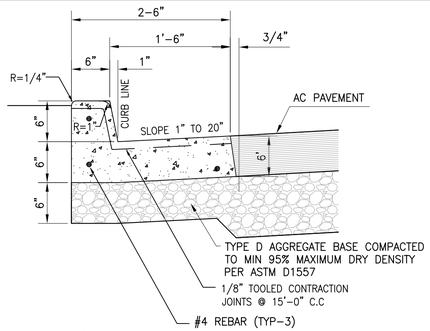
## CONCRETE SIDEWALK 3 VAR
SCALE: NTS




NOTE:

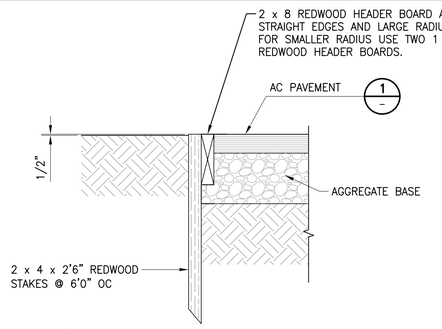
1. PROVIDE TRANSVERSE EXPANSION JOINTS WITH 1½–INCH PRE–MOLDED JOINT FILLER AT BC'S, EC'S AND 60–FOOT MAXIMUM SPACING BETWEEN RETURNS.
2. INSTALL EXPANSION JOINTS WHERE CURBS ARE CONSTRUCTED AGAINST CONCRETE SIDEWALK AND CONCRETE PAVEMENT.
3. EXTEND ALL EXPANSION JOINTS COMPLETELY THROUGH, VERTICALLY AND HORIZONTALLY.
4. CONSTRUCT WEAKENED–PLANE JOINTS (1½–INCH DEEP SCORE) AT MAXIMUM 10–FOOT SPACING BETWEEN CURB RETURNS WITHIN 12 HOURS OF THE PLACEMENT OF THE CONCRETE.
5. CONSTRUCT NEW CURBS ADJACENT TO EXISTING CURBS HAVING A BATTER OTHER THAN SHOWN FOR THE NEW CURBS WITH A TRANSITION SECTION BETWEEN THE CURBS HAVING DIFFERENT BATTERS. THE MINIMUM TRANSITION LENGTH SHALL BE 5.0 FEET.

## CONCRETE CURB 4 VAR
SCALE: NTS



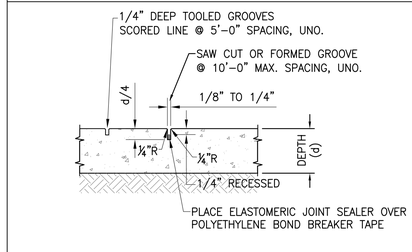

NOTE:
EXPANSION JOINTS SHALL BE 1/4" WIDE @ 60' MAXIMUM SPACING AND AT END OF CURB RETURNS

## CONCRETE CURB AND GUTTER 5 VAR
SCALE: NTS




NOTE:
1. HEADER BOARDS AND STAKES SHALL BE ALL HEART REDWOOD

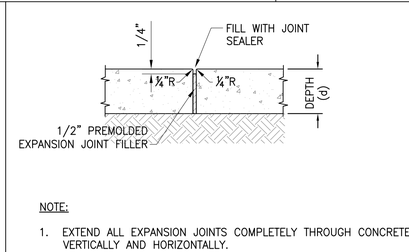
## REDWOOD HEADER 6 VAR
SCALE: NTS




NOTE:

1. CONSTRUCT WEAKENED–PLANE JOINTS WITHIN 12 HOURS OF THE PLACEMENT OF CONCRETE.

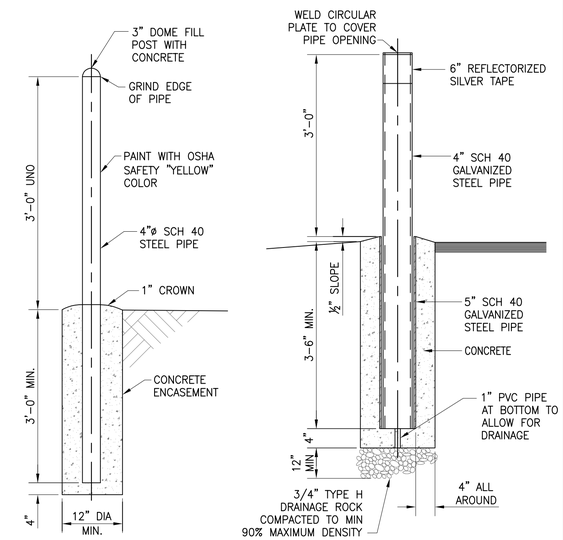
## WEAKENED PLANE JOINT 7 VAR
SCALE: NTS




NOTE:

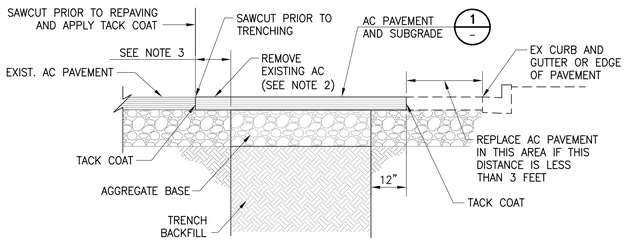
1. EXTEND ALL EXPANSION JOINTS COMPLETELY THROUGH CONCRETE, VERTICALLY AND HORIZONTALLY.

## EXPANSION JOINT 8 VAR
SCALE: NTS




NOTE: PROVIDE TYPE "A" PERMANENT GUARD POST UNLESS OTHERWISE INDICATED.

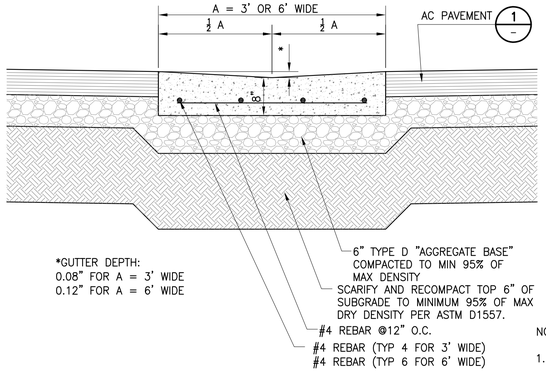
## GUARD POST 9 VAR
SCALE: NTS




TRENCH RESTORATION NOTES:

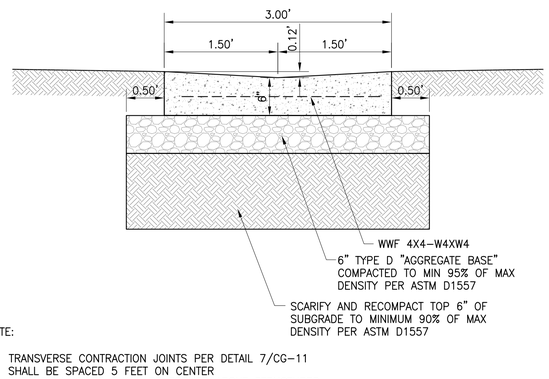
1. PAVEMENT STRUCTURE SHALL BE EQUAL TO OR BETTER THAN EXISTING IN THICKNESS AND QUALITY.
2. THE EXISTING PAVEMENT MAY VARY IN THICKNESS. CONTRACTOR SHALL BE RESPONSIBLE FOR SAWCUTTING, EXCAVATION, DISPOSAL, AND RESTORATION OF AC PAVEMENT AND BASE, REGARDLESS OF ACTUAL PAVEMENT THICKNESS AT NO ADDITIONAL COST TO THE CITY.
3. REPAVING LIMIT IS A MINIMUM OF 12 INCHES FROM EDGE OF TRENCH. COLD MIX MAY BE USED TEMPORARILY FOR A MAXIMUM OF 7 DAYS. KEEP COLD MIX PATCHED/ REPAIRED AT ALL TIMES. IF TEMPORARY PAVEMENT IS NECESSARY FOR MORE THAN 7 DAYS, THE CONTRACTOR SHALL INSTALL 3–INCH THICK AC WITH ¾"–INCH AGGREGATE FULL DEPTH UNTIL PERMANENT PAVING IS INSTALLED.
4. REPLACE ALL OBLITERATED PAVEMENT MARKINGS. PUT IN TEMPORARY PAVEMENT MARKINGS AS NECESSARY. TEMPORARY PAVEMENT MARKINGS SHALL BE MAINTAINED BY THE CONTRACTOR, UNTIL PERMANENT MARKINGS ARE REPLACED.
5. BEFORE SAW CUTTING, DETERMINE IF AC IS UNDERLAYED WITH GEOFABRIC. IF SO, SAW CUT SHALL BE DEEP ENOUGH TO CUT THROUGH FABRIC TO ELIMINATE LAMINATION SEPARATION.
6. FINAL PAVEMENT SHALL HAVE A UNIFORM WIDTH.

## PAVEMENT TRENCH RESTORATION DETAIL 10 VAR
SCALE: NTS




*GUTTER DEPTH:
0.08" FOR A = 3' WIDE
0.12" FOR A = 6' WIDE

## CONCRETE CROSS GUTTER 11 VAR
SCALE: NTS




NOTE:

1. TRANSVERSE CONTRACTION JOINTS PER DETAIL 7/CG–11 SHALL BE SPACED 5 FEET ON CENTER
2. EXPANSION JOINTS SHALL BE FORMED ABOUT STRUCTURES USING JOINT FILLER OF THE TYPE, THICKNESS, AND WIDTH INDICATED

## CONCRETE CENTER GUTTER 12 VAR
SCALE: NTS

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 07/2018 |
| Drawn | HS | 07/2018 |
| Checked | BL | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

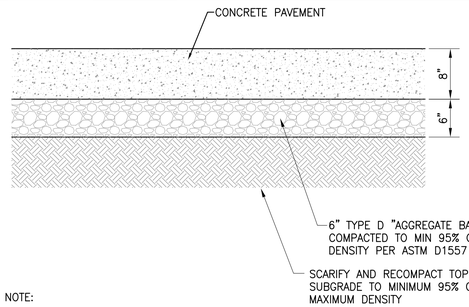
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

# TYPICAL CIVIL DETAILS 1

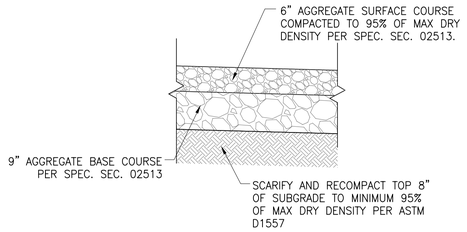
SHEET: SK
SHEET NO.: X OF
PROJECT NO.:
DRAWING NO.:



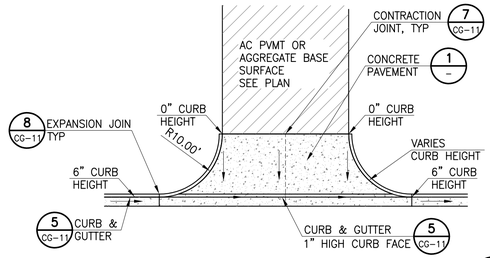

NOTE:

1. DRIVEWAY JOINTS SHALL BE CONSTRUCTED TO DIVIDE THE SURFACE INTO RECTANGULAR AREAS.
2. TRANSVERSE CONTRACTION JOINTS PER DETAIL 7/CG-11 SHALL BE SPACED AT A DISTANCE EQUAL TO THE DRIVEWAY WIDTH OR 5 FEET ON CENTER, WHICHEVER IS LESS, AND SHALL BE CONTINUOUS ACROSS THE SLAB.
3. LONGITUDINAL CONTRACTION JOINTS PER DETAIL 7/CG-11 SHALL BE CONSTRUCTED ALONG THE CENTERLINE OF DRIVEWAY 10 FEET OR MORE IN WIDTH.
4. TRANSVERSE EXPANSION JOINTS PER DETAIL 8/G-11 SHALL BE INSTALLED AT DRIVEWAY RETURNS AND OPPOSITE EXPANSION JOINTS IN ADJOINING CURBS.
5. WHERE THE SIDEWALK IS NOT IN CONTACT WITH THE CURB, TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AS INDICATED.
6. EXPANSION JOINTS SHALL BE FORMED ABOUT STRUCTURES AND FEATURES WHICH PROJECT THROUGH OR INTO THE DRIVEWAY PAVEMENT, USING JOINT FILLER OF THE TYPE, THICKNESS, AND WIDTH INDICATED.
7. EXPANSION JOINTS SHALL BE CONSTRUCTED BETWEEN DRIVEWAY AND CURBS THAT ABUT THE DRIVEWAY LONGITUDINALLY.

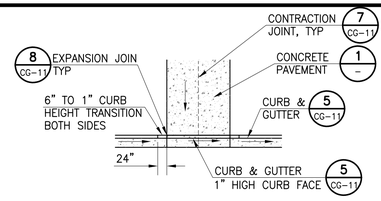
## CONCRETE PAVEMENT/DRIVEWAY SECTION 1 VAR
SCALE: NTS



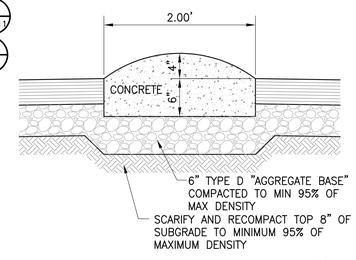

## AGGREGATE SURFACE 2 VAR
SCALE: NTS



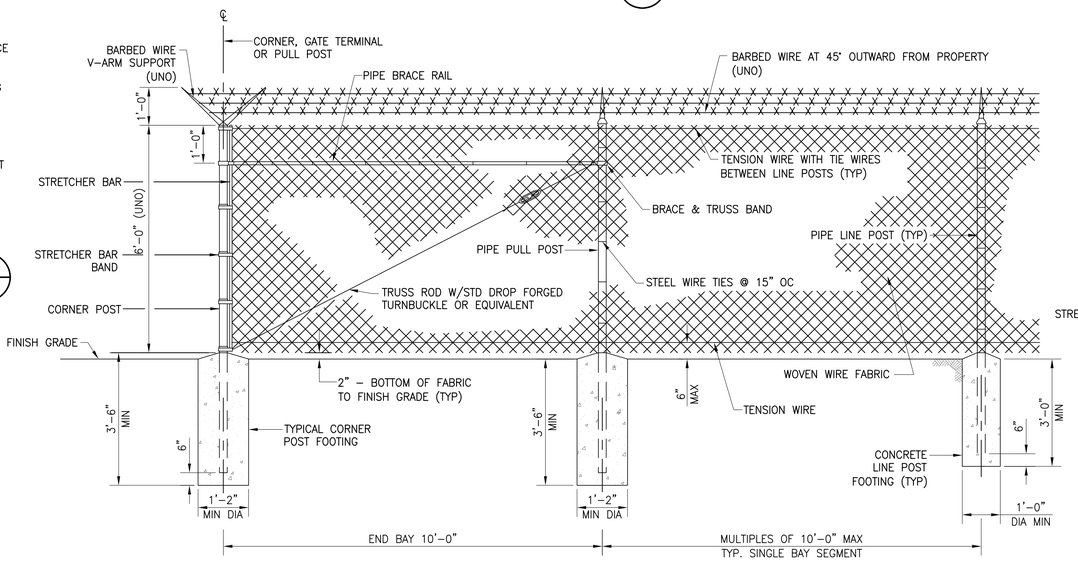

## DRIVEWAY APPROACH 3 VAR
SCALE: NTS



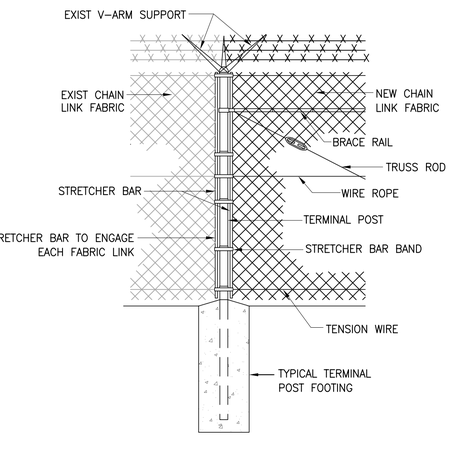

## CONCRETE DRIVEWAY 4 VAR
SCALE: NTS



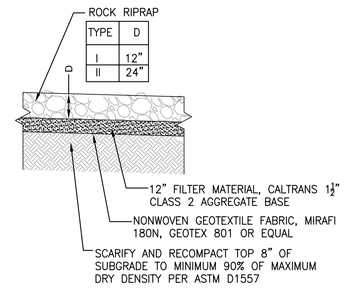

## CONTAINMENT CURB 6 VAR
SCALE: NTS




## CHAIN LINK FENCE 7 VAR
SCALE: NTS



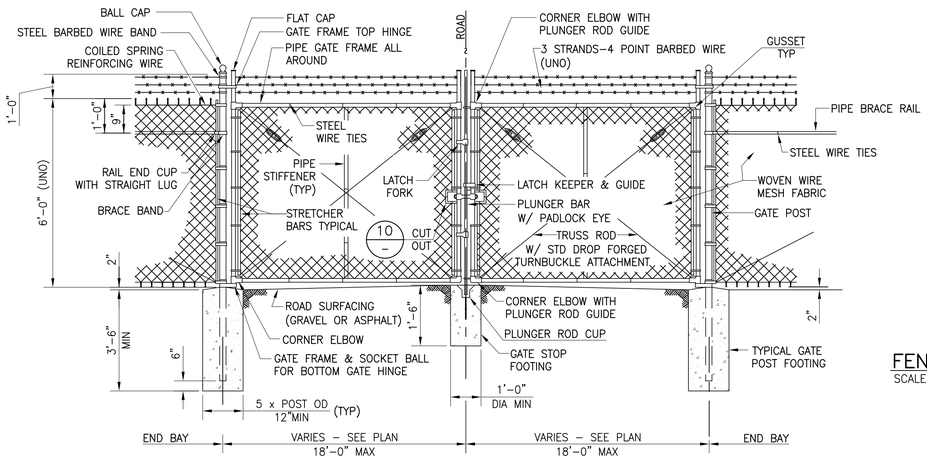

## EXISTING FENCE TIE-IN 9 VAR
SCALE: NTS



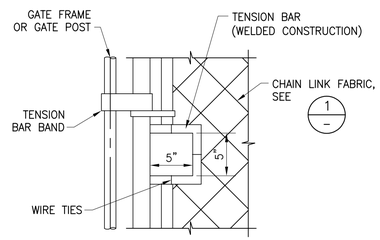

## ROCK RIPRAP 11 VAR
SCALE: NTS



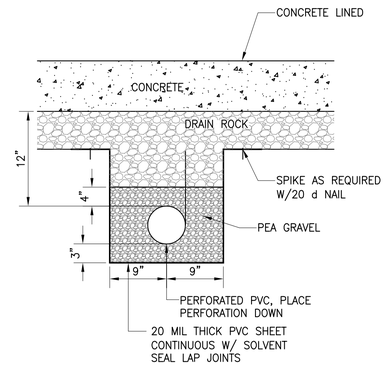

## ROAD INTERSECTION CROSS GUTTER 5 VAR
SCALE: NTS




## DOUBLE SWING GATE 8 VAR
SCALE: NTS




## FENCE CUTOUT FOR CHAIN AND LOCK 10 VAR
SCALE: NTS




## POND UNDERDRAIN 12 VAR
SCALE: NTS

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 07/2018 |
| Drawn | HS | 07/2018 |
| Checked | BL | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

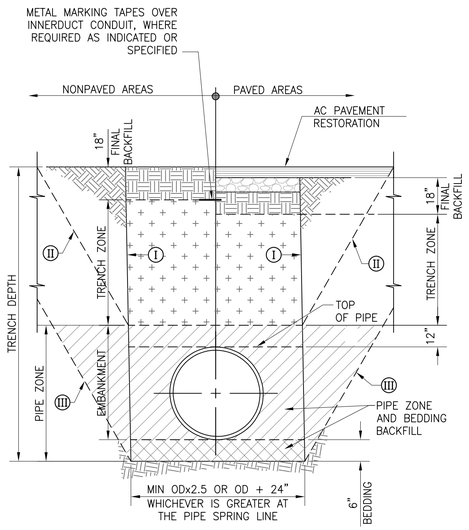
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 2

SHEET CG-12
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



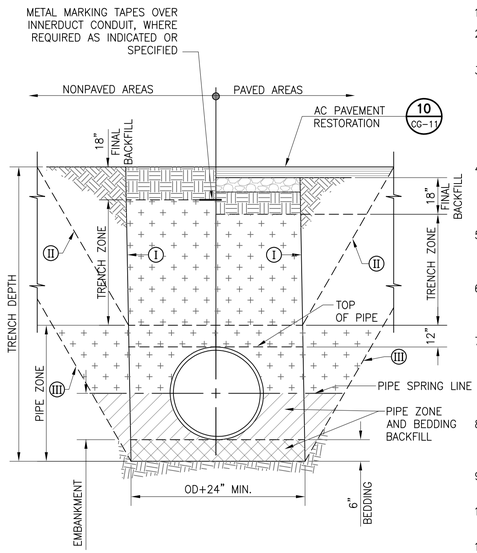

NOTES:

1. FLEXIBLE PIPE REFERS TO ALL STEEL, DUCTILE IRON, AND PLASTIC PIPES.
2. DEFINITIONS OF FINAL BACKFILL, BEDDING, EMBEDMENT, PIPE AND TRENCH ZONES AND PIPE AND UTILITY BACKFILL REQUIREMENTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
3. TYPICAL TRENCH SECTIONS, (I) VERTICAL TRENCH WALLS, (II) COMBINATION OF VERTICAL AND SLOPING TRENCH WALLS, AND (III) SLOPING TRENCH WALLS, ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDER OR LARGE OBSTRUCTIONS ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN; THE ENGINEER SHOULD BE ADVISED SHOULD THIS OCCUR. UNLESS SPECIFICALLY DESIGNATED ON PLANS, SLOPING TRENCH WALL SECTION (III) SHALL NOT BE USED WITHOUT APPROVAL OF THE ENGINEER.
4. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THAT THEY COMPLY WITH APPLICABLE LOCAL, STATE (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND THE PIPE DESIGN CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE ENGINEER.
5. THE NEED FOR TRENCH PROTECTIVE SYSTEMS SHALL BE DETERMINED IN CONSIDERATION OF APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
6. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALLS SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.
7. PROTECTION SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING THE DESIGN OF SHORING, BRACING, SLOPING OR OTHER PROTECTION SYSTEMS AND THEIR COMPLIANCE WITH APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS.
8. A STAIRWAY, LADDER, RAMP OR OTHER SAFE MEANS OF EGRESS SHALL BE LOCATED IN TRENCH EXCAVATIONS 4.0 FEET OR MORE IN DEPTH SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL FOR EMPLOYEES/WORKERS PER CCR, TITLE 8 SECTION 1541.
9. VOIDS LEFT WHEN REMOVING SHEETING AND SHORING SHALL BE FILLED WITH CONTROLLED LOW STRENGTH MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02210.
10. DETECTABLE METALLIC LOCATING TAPE SHALL BE PLACED ABOVE ALL BURIED PLASTIC PIPELINES AND OTHER PIPELINES THAT ARE NOT COMPRISED AT LEAST IN PART OF MAGNETIC COMPONENTS IN ACCORDANCE WITH THE EARTHWORK AND RESPECTIVE PIPING SECTIONS OF THE SPECIFICATIONS.
11. IF OVER-EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS.
12. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM IN ACCORDANCE WITH THE DEWATERING REQUIREMENTS PROVIDED IN THE SPECIFICATIONS. BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS OR AS ORDERED BY THE ENGINEER.

## SECTION: TYPICAL TRENCH FOR FLEXIBLE PIPE

SCALE: NTS

1 / VAR



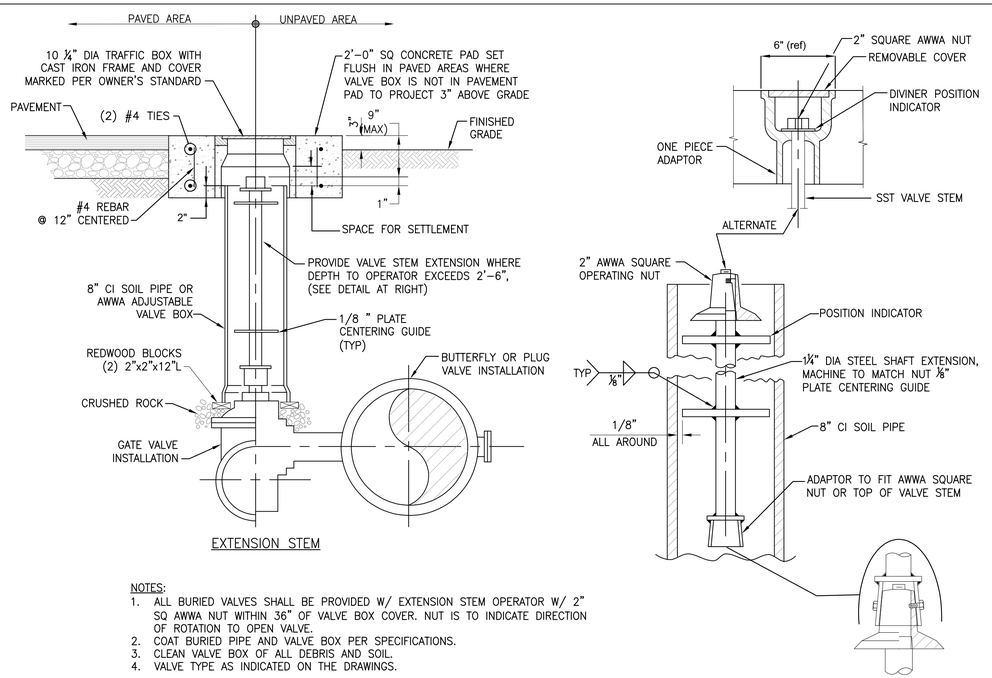

NOTES:

1. RIGID PIPE REFERS TO ALL TYPES OF REINFORCED AND NON-REINFORCED CONCRETE PIPE AND CLAY PIPE.
2. DEFINITIONS OF FINAL BACKFILL, BEDDING, EMBEDMENT, PIPE AND TRENCH ZONES AND PIPE AND UTILITY BACKFILL REQUIREMENTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
3. TYPICAL TRENCH SECTIONS, (I) VERTICAL TRENCH WALLS, (II) COMBINATION OF VERTICAL AND SLOPING TRENCH WALLS, AND (III) SLOPING TRENCH WALLS, ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDER OR LARGE OBSTRUCTIONS ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN; THE ENGINEER SHOULD BE ADVISED SHOULD THIS OCCUR. UNLESS SPECIFICALLY DESIGNATED ON PLANS, SLOPING TRENCH WALL SECTION (III) SHALL NOT BE USED WITHOUT APPROVAL OF THE ENGINEER.
4. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THAT THEY COMPLY WITH APPLICABLE LOCAL, STATE (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND THE PIPE DESIGN CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE ENGINEER.
5. THE NEED FOR TRENCH PROTECTIVE SYSTEMS SHALL BE DETERMINED IN CONSIDERATION OF APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
6. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALLS SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.
7. PROTECTION SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING THE DESIGN OF SHORING, BRACING, SLOPING OR OTHER PROTECTION SYSTEMS AND THEIR COMPLIANCE WITH APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS.
8. A STAIRWAY, LADDER, RAMP OR OTHER SAFE MEANS OF EGRESS SHALL BE LOCATED IN TRENCH EXCAVATIONS 4.0 FEET OR MORE IN DEPTH SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL FOR EMPLOYEES/WORKERS PER CCR, TITLE 8 SECTION 1541.
9. VOIDS LEFT WHEN REMOVING SHEETING AND SHORING SHALL BE FILLED WITH CONTROLLED LOW STRENGTH MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02210.
10. IF OVER-EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS.
11. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM IN ACCORDANCE WITH THE DEWATERING REQUIREMENTS PROVIDED IN THE SPECIFICATIONS. BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS OR AS ORDERED BY THE ENGINEER.

## SECTION: TYPICAL TRENCH FOR RIGID PIPE

SCALE: NTS

2 / VAR



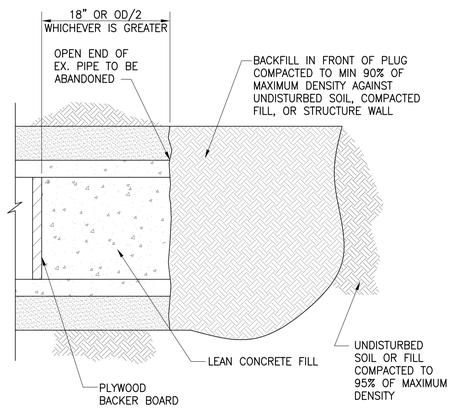

NOTES:

1. ALL BURIED VALVES SHALL BE PROVIDED W/ EXTENSION STEM OPERATOR W/ 2" SQ AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.
2. COAT BURIED PIPE AND VALVE BOX PER SPECIFICATIONS.
3. CLEAN VALVE BOX OF ALL DEBRIS AND SOIL.
4. VALVE TYPE AS INDICATED ON THE DRAWINGS.

## VALVE BOX INSTALLATION

SCALE: NTS

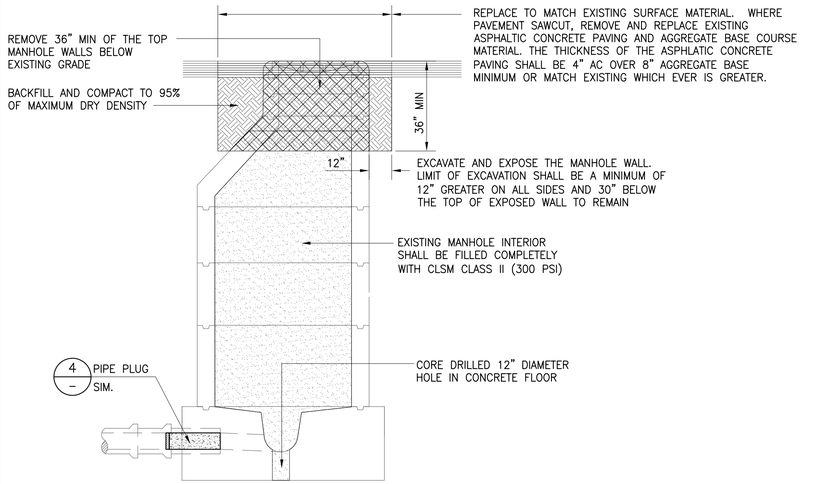
3 / VAR




## ABANDON PIPE PLUG DETAIL

SCALE: NTS

4 / VAR




## ABANDON EXISTING MANHOLE

SCALE: NTS

5 / VAR

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 07/2018 |
| Drawn | HS | 07/2018 |
| Checked | BL | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

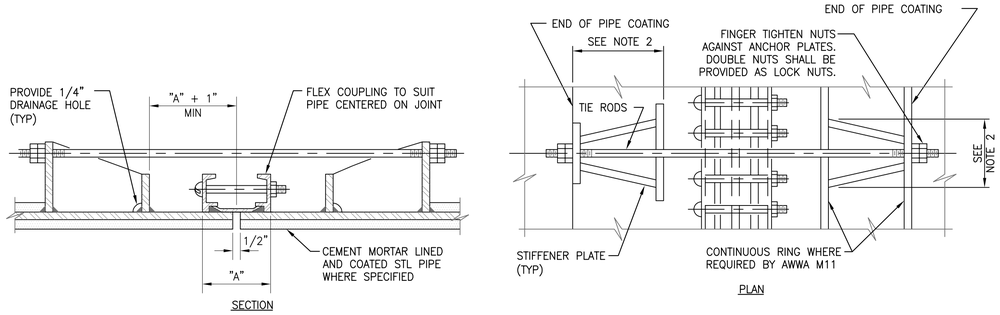
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 3

SHEET: SK
SHEET NO.: X OF
PROJECT NO.:
DRAWING NO.:

W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\2.CE\WORK\01-CG-11-DETAILS last saved by 61677 on 5/30/19 plotted 5/30/2019 11:41:01 AM




NOTES:

1. ALL EXPOSED FLEXIBLE COUPLINGS SHALL HAVE TIE RODS UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.
2. DESIGN SHALL BE BASED ON TEST PRESSURE.
3. ANCHOR LUGS AND TIE RODS FOR STEEL PIPE SHALL BE DESIGNED BY PIPE MANUFACTURER IN ACCORDANCE WITH THE AWWA M11 STEEL WATER PIPE MANUAL.
4. GRIND ALL CORNERS SMOOTH.
5. COAT ALL EXPOSED STEEL SURFACES WITH FUSION-BONDED EPOXY PER SPECIFICATIONS.
6. THE COUPLING SLEEVE SHALL BE 7 INCHES LONG FOR PIPE DIAMETERS UP TO 30 INCHES AND 10 INCHES LONG FOR PIPE DIAMETERS GREATER THAN 30 INCHES.

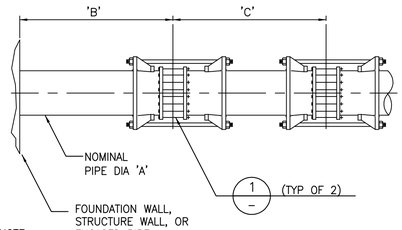
## STEEL PIPE FLEXIBLE COUPLING TIE-DOWN

SCALE: NTS

1 / VAR

| DIMENSIONS IN INCHES | | |
|---|---|---|
| 'A' | 'B' | 'C' |
| 6 | 24 | 60 |
| 8 | 24 | 60 |
| 12 | 26 | 60 |
| 16 | 26 | 60 |
| 18 | 26 | 60 |
| 24 | 26 | 60 |
| 30 | 28 | 66 |
| 36 | 28 | 66 |
| 42 | 32 | 66 |
| 48 | 38 | 78 |
| 54 | 38 | 78 |
| 60 | 38 | 78 |
| 72 | 40 | 96 |
| 84 | 42 | 96 |

FOR 150 PSI OR LESS DESIGN PRESSURE ONLY



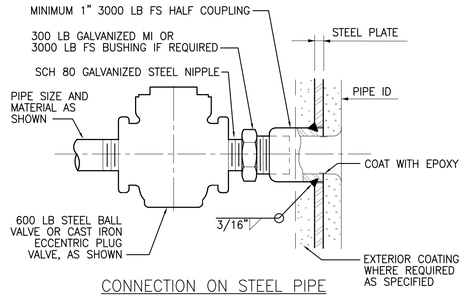

NOTE:

1. FOR PIPE DIA "A" NOT LISTED IN THE ABOVE TABLE, USE NEXT SIZE UP UNLESS OTHERWISE NOTED.
2. PROVIDE "C" DIMENSIONS AS SHOWN IN TABLE ABOVE OR ON THE DRAWINGS WHERE INDICATED WHICHEVER IS GREATER
3. THE MINIMUM LENGTH OF COUPLING SLEEVES SHALL BE 7 INCHES FOR PIPE DIAMETERS UP TO 24 INCHES AND 10 INCHES FOR PIPE DIAMETERS GREATER THAN 24 INCHES.

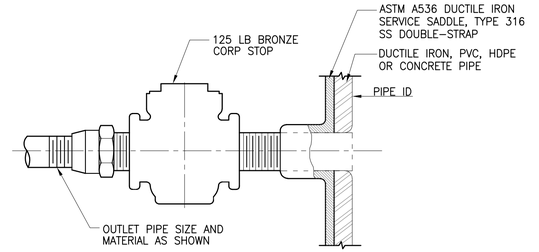
## RESTRAINED DOUBLE COUPLING HARNESS SET

SCALE: NTS

2 / VAR




CONNECTION ON STEEL PIPE




CONNECTION ON DUCTILE IRON, PVC, HDPE AND CONCRETE PIPE

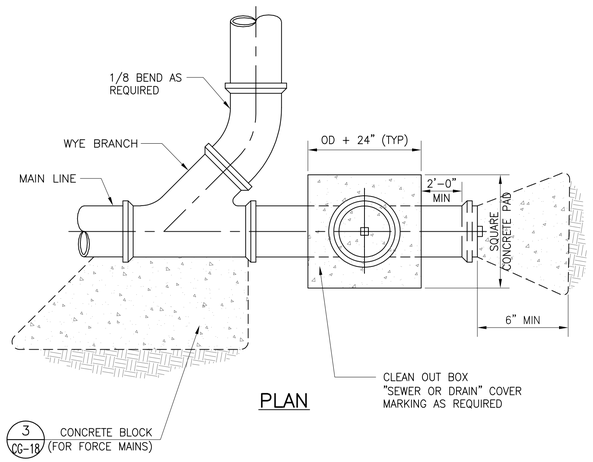
## PIPE CONNECTION FOR 2" AND SMALLER OUTLET PIPE

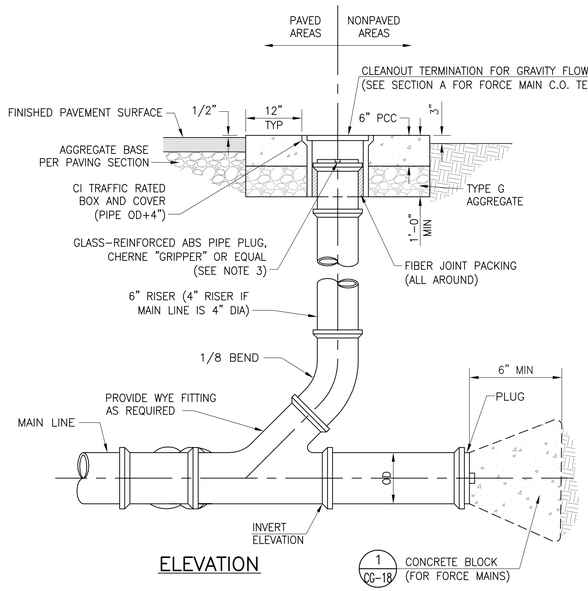
SCALE: NTS

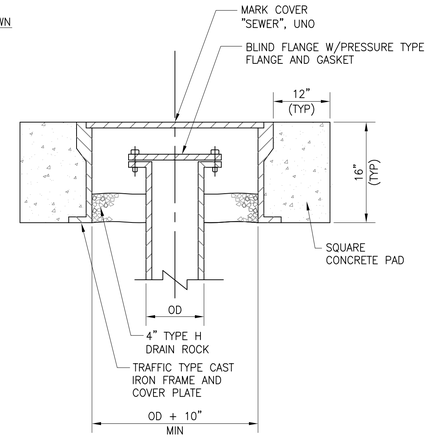
3 / VAR

NOTES:

1. INSTALL FITTINGS AND REDUCERS AS REQUIRED.
2. FOR CLEANOUTS ON FORCE MAINS, PROVIDE CONCRETE BLOCKS, JOINTS AND FITTINGS, SCREW ON BRASS PLUG OR FLANGED END PIPE WITH A BLIND FLANGE CAP TO WITHSTAND THE FIELD TEST PRESSURE.
3. SEE SECTION A FOR ALTERNATE PRESSURE CLEANOUT TERMINATION ON FORCE MAINS.



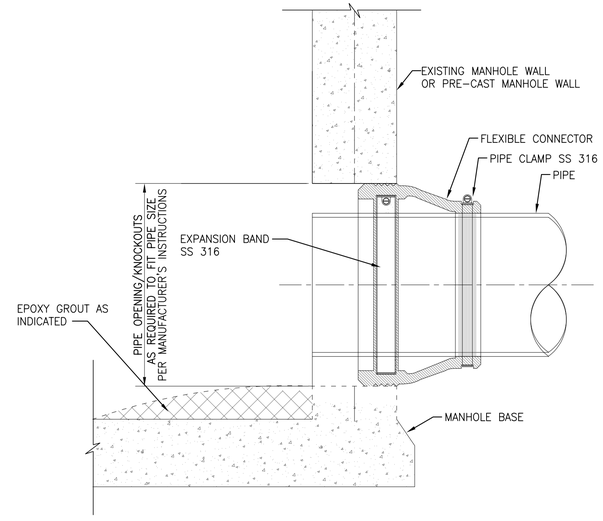




## CLEANOUT TO GRADE (COTG)

SCALE: NTS

4 / VAR




## PIPE TO MANHOLE / CATCH BASIN

SCALE: NTS

5 / VAR


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 07/2018 |
| Drawn | HS | 07/2018 |
| Checked | BL | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT


OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

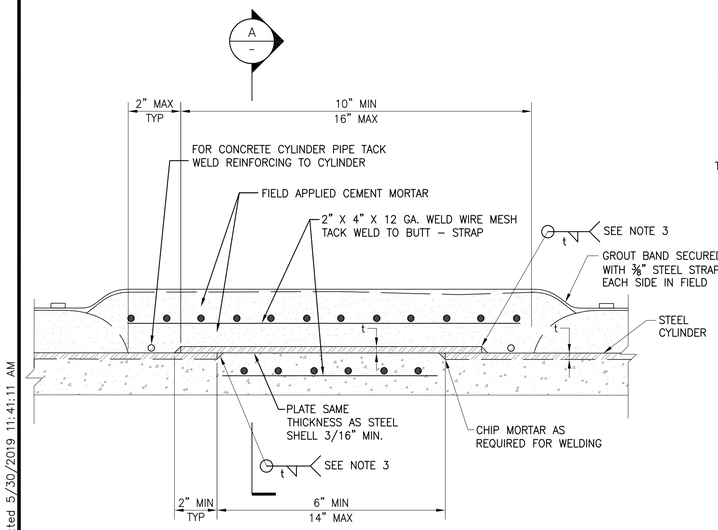
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

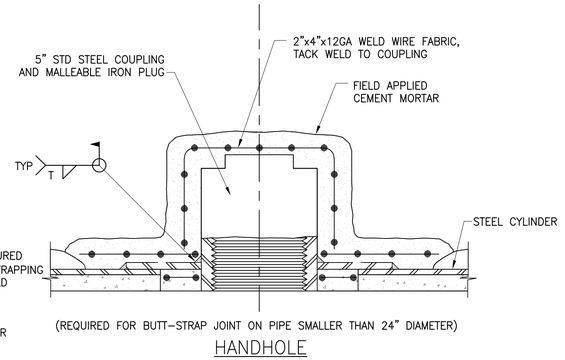

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 4

SHEET: CG-14
SHEET NO.: X OF
PROJECT NO.:
DRAWING NO.:



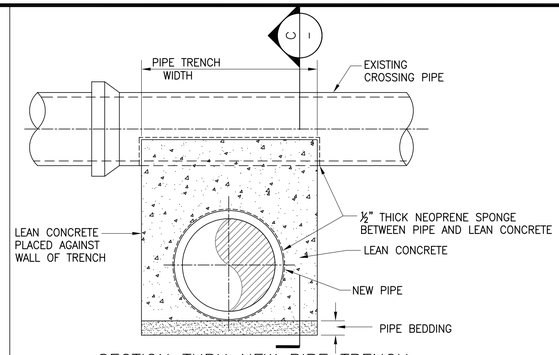




HANDHOLE

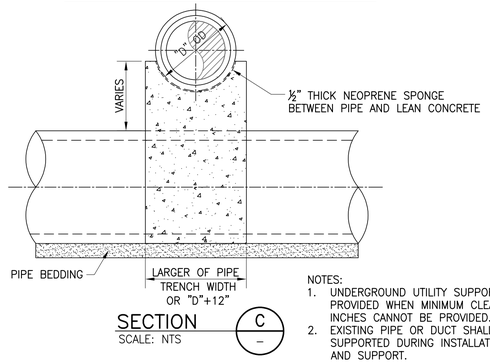
NOTE:

1. BUTT–STRAP JOINTS SHALL BE USED FOR PURPOSE OF CLOSURE ONLY AT LOCATIONS SHOWN.
2. HANDLE DETAIL SHALL BE USED WHENEVER MORTAR NEEDS TO BE APPLIED TO PIPE INTERIOR.
3. WELD OUTSIDE ON PIPES SMALLER THAN 36" DIAMETER. WELD INSIDE ON PIPES GREATER THAN OR EQUAL TO 36" DIAMETER.
4. BUTT–STRAP SHALL BE FURNISHED IN TWO PIECES AND SHIPPED LOOSE FOR FIELD JOINING.

BUTT–STRAP JOINT WITH TYPE A COATING — 1 VAR
SCALE: NTS



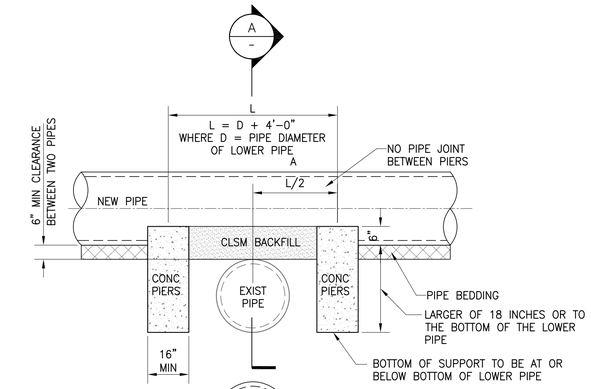

SECTION THRU NEW PIPE TRENCH




SECTION — C –
SCALE: NTS

NOTES:
1. UNDERGROUND UTILITY SUPPORTS SHALL BE PROVIDED WHEN MINIMUM CLEARANCE OF 12 INCHES CANNOT BE PROVIDED.
2. EXISTING PIPE OR DUCT SHALL BE FIRMLY SUPPORTED DURING INSTALLATION OF NEW PIPE AND SUPPORT.

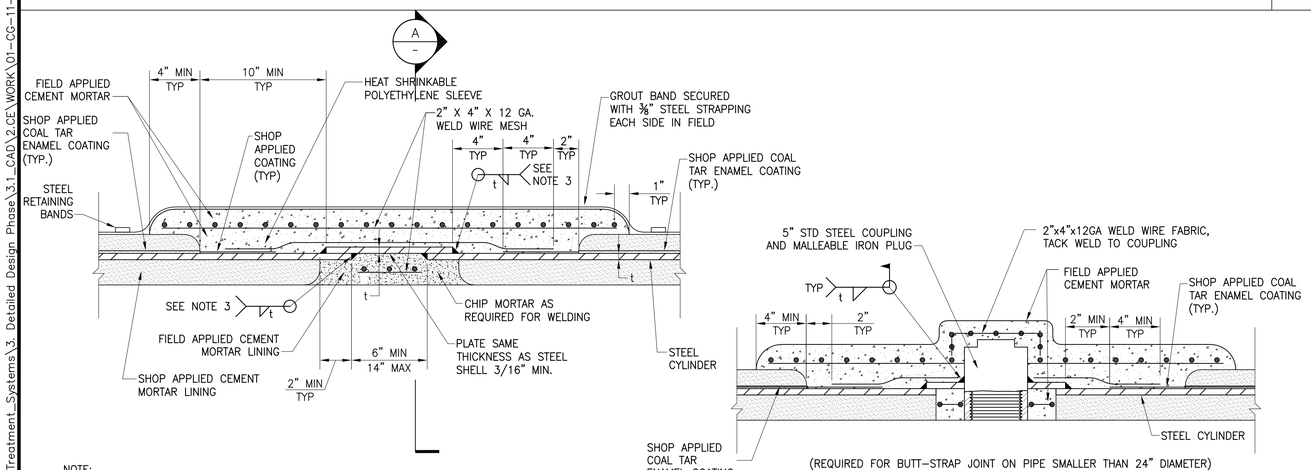
PIPE SUPPORT ACROSS TRENCH — 5 VAR
SCALE: NTS




SECTION — A –
SCALE: NTS

NOTES:
1. PROVIDE PIERS ONLY WHEN LARGE DIAMETER PIPE (15" OR LARGER) CROSSES OVER EXISTING PIPELINE WITH VERTICAL CLEARANCE LESS THAN 12"
2. PIERS SHALL BE CONSTRUCTED ON UNDISTURBED EARTH. CONCRETE SHALL BE LEAN CONCRETE PER SPECIFICATION SECTION 03300

CONC PIERS FOR UTILITY AND PIPE CROSSINGS — 6 VAR
SCALE: NTS





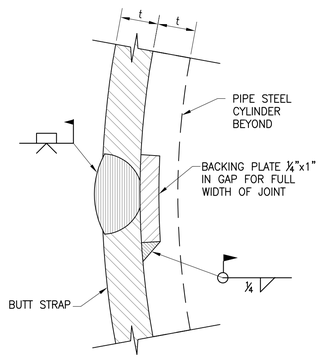


HANDHOLE

NOTE:

1. BUTT–STRAP JOINTS SHALL BE USED FOR PURPOSE OF CLOSURE ONLY AT LOCATIONS SHOWN.
2. HANDLE DETAIL SHALL BE USED WHENEVER MORTAR NEEDS TO BE APPLIED TO PIPE INTERIOR.
3. WELD OUTSIDE ON PIPES SMALLER THAN 36" DIAMETER. WELD INSIDE ON PIPES GREATER THAN OR EQUAL TO 36" DIAMETER.
4. BUTT–STRAP SHALL BE FURNISHED IN TWO PIECES AND SHIPPED LOOSE FOR FIELD JOINING.

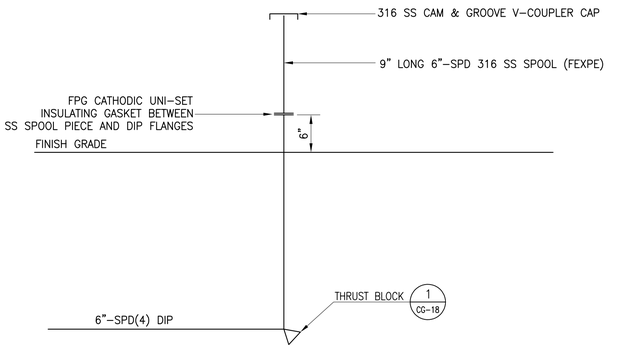
BUTT–STRAP JOINT WITH TYPE B COATING — 2 VAR
SCALE: NTS




BUTT–STRAP SPLICE

(SEE JOINT SECTION FOR COATING AND LINING DETAILS)

SECTION — A –
SCALE: NTS




PIPE RISER PUMP DRAIN CONNECTION — 4 VAR
SCALE: NTS

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 07/2018 |
| Drawn | HS | 07/2018 |
| Checked | BL | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

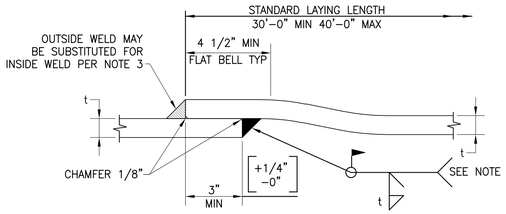
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

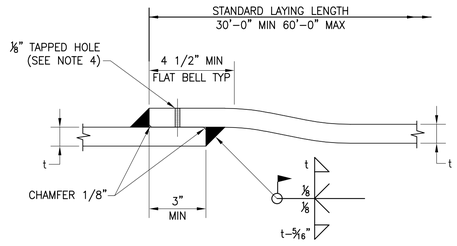
TYPICAL CIVIL DETAILS 5

SHEET CG-15
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

W:\Pasadena Sector\Projects\EUA\RP-1&RP-5_Treatment_Systems\3_Detailed Design Phase\3.1_CAD\2.CE\WORK\01-CG-11-DETAILS last saved by 61677 on 5/30/19 plotted 5/30/2019 11:41:11 AM




## SINGLE WELDED LAP JOINT




## DOUBLE WELDED LAP JOINT

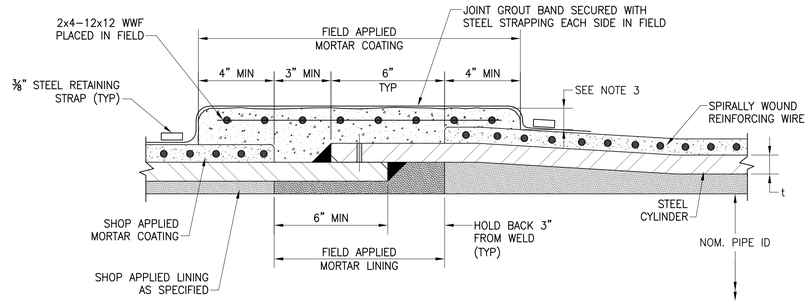
NOTES:

1. ALL FIELD WELDED JOINTS SHALL BE SINGLE WELDED LAP JOINTS UNLESS INDICATED OTHERWISE.
2. SINGLE WELD JOINTS SHALL BE PENETRANT TESTED PER SPECIFICATIONS.
3. WELD OUTSIDE ON PIPE SMALLER THAN 36" DIAMETER. WELD INSIDE ON PIPE GREATER THAN OR EQUAL TO 36" DIAMETER.
4. AFTER FIELD WELDING, PLUG WELD TAPPED HOLES UPON COMPLETION OF TESTS.
5. SEE DETAILS 2 AND 3 FOR JOINT COATING AND LINING REQUIREMENTS.

## FIELD WELDED JOINTS

SCALE: NTS

1 VAR



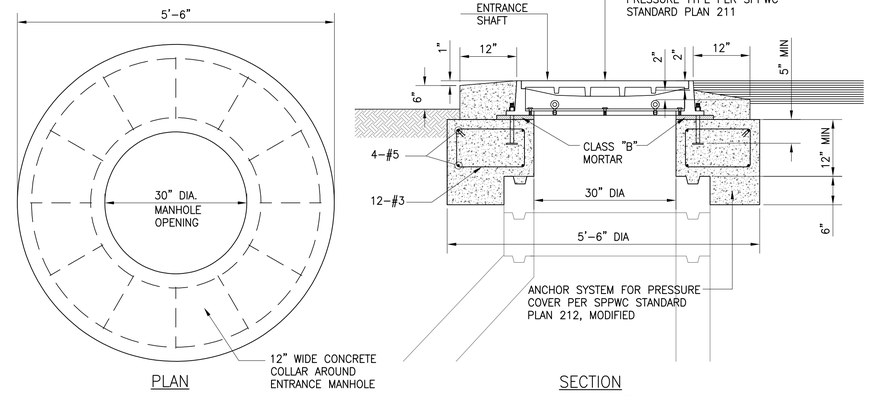

NOTES:

1. DOUBLE-WELDED JOINT SHOWN. SEE DETAIL 1 HEREON FOR DETAILS OF ALTERNATIVE WELDED JOINTS.
2. FOR PIPE SMALLER THAN 24" DIAMETER, DAUB BELL AT END OF LINING BEFORE STABBING AND THEN SWAB SMOOTH. FOR PIPE 24" DIAMETER AND LARGER, POINT AFTER ASSEMBLY.
3. FIELD APPLIED MORTAR SHALL BE 1" MIN THICK IF POUR OR ¾" MIN THICK IF PNEUMATICALLY PLACED.

## FIELD WELDED LAP JOINTS WITH TYPE "A" COATING

SCALE: NTS

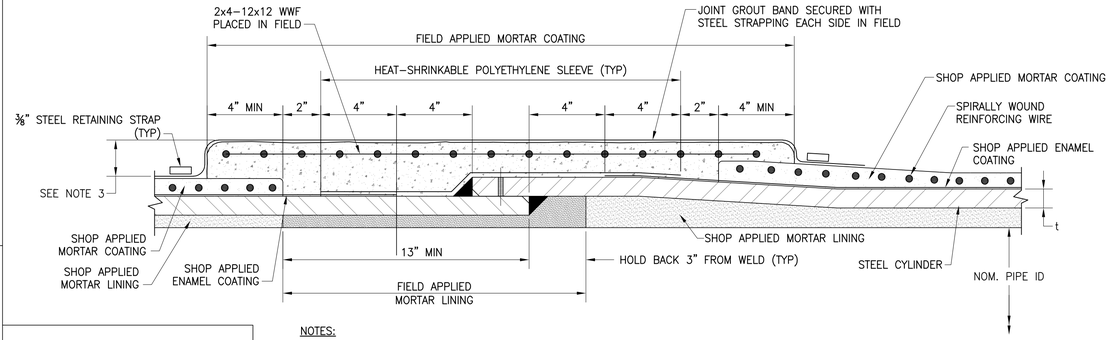
2 VAR




## PRESSURE MANHOLE FRAME ANCHOR

SCALE: NTS

5 VAR



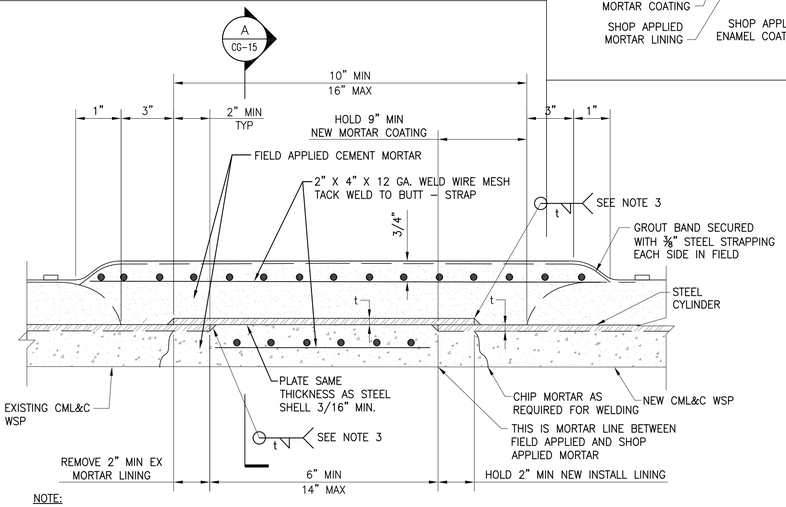

NOTES:

1. DOUBLE-WELDED JOINT SHOWN. SEE DETAIL 1 HEREON FOR DETAILS OF ALTERNATIVE WELDED JOINTS.
2. FOR PIPE SMALLER THAN 24" DIAMETER, DAUB BELL AT END OF LINING BEFORE STABBING AND THEN SWAB SMOOTH. FOR PIPE 24" DIAMETER AND LARGER, POINT AFTER ASSEMBLY.
3. FIELD APPLIED MORTAR SHALL BE 1" MIN. THICKNESS IF POURED OR ¾" MIN. THICKNESS IF PNEUMATICALLY POURED.

## FIELD WELDED LAP JOINTS WITH TYPE "B" COATING

SCALE: NTS

3 VAR



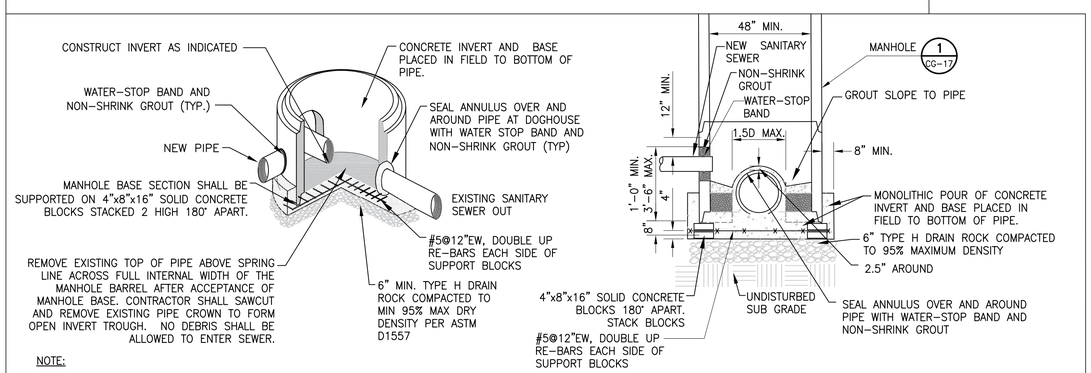

NOTE:

1. BUTT-STRAP JOINTS SHALL BE USED FOR PURPOSE OF CLOSURE ONLY AT LOCATIONS SHOWN.
2. HANDLE DETAIL SHALL BE USED WHENEVER MORTAR NEEDS TO BE APPLIED TO PIPE INTERIOR.
3. WELD OUTSIDE ON PIPES SMALLER THAN 36" DIAMETER. WELD INSIDE ON PIPES GREATER THAN OR EQUAL TO 36" DIAMETER.
4. BUTT-STRAP SHALL BE FURNISHED IN TWO PIECES AND SHIPPED LOOSE FOR FIELD JOINING.

## BUTT-STRAP JOINT AT CONNECTIONS TO EXISTING CML&C STEEL PIPE

SCALE: NTS

4 VAR



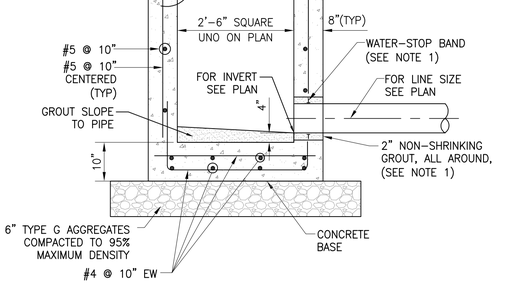

NOTE:

1. APPLY CONCRETE BONDING AGENT TO ALL INTERFACES BETWEEN PRECAST CONCRETE AND CAST-IN-PLACE CONCRETE.
2. DEBRIS SHALL NOT BE ALLOWED TO ENTER SEWER SYSTEM AT ANY TIME DURING CONSTRUCTION.

## DOGHOUSE MANHOLE BASE

SCALE: NTS

7 VAR




NOTES:

1. ALTERNATIVELY, WATERTIGHT FLEXIBLE BOOT CONNECTORS MAY BE PROVIDED PER DETAIL 5 ON SHEET CG-14.

## CATCH BASIN DETAIL

SCALE: NTS

6 VAR

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 07/2018 |
| Drawn | HS | 07/2018 |
| Checked | BL | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

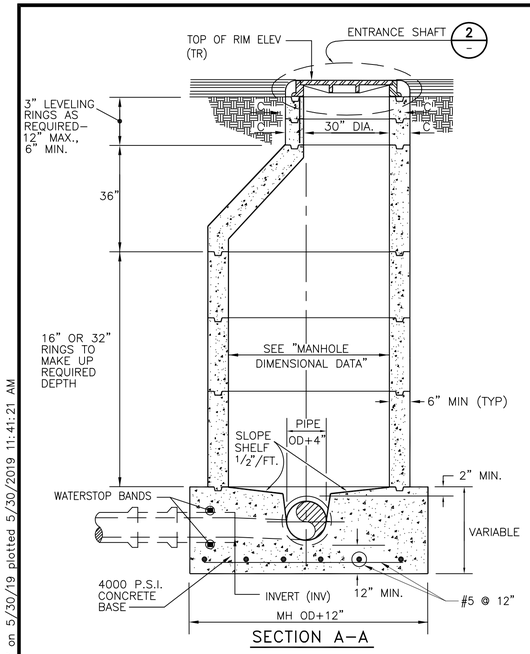
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

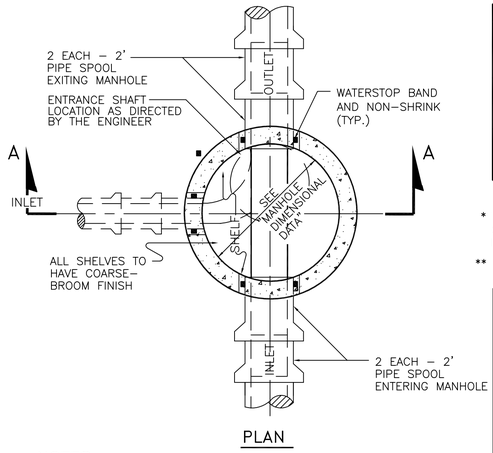
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 6

| | |
|---|---|
| SHEET | CG-16 |
| SHEET NO. | X OF |
| PROJECT NO. | |
| DRAWING NO. | |




SECTION A–A




PLAN

| MANHOLE DIMENSIONAL DATA | | |
|---|---|---|
| MANHOLE DIAMETER | TYPE | MAX PIPE OUTSIDE DIAMETER |
| 48" | PRECAST CONCRETE | 22" |
| 60" | PRECAST CONCRETE | 32" |
| 72" | PRECAST CONCRETE | 38" |
| 84" | PRECAST CONCRETE | 44" |
| 96" | PRECAST CONCRETE | 50" |

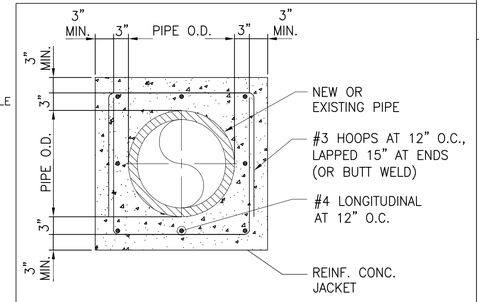
* THE TABLE PROVIDES MINIMUM MANHOLE DIAMETERS REQUIRED FOR CONNECTION OF PIPES TO THE MANHOLE IF MANHOLE DIAMETERS ARE NOT INDICATED ON THE DRAWINGS

** IF CONNECTIONS AND TEES ARE REQUIRED, USE NEXT HIGHER DIAMETER MANHOLE.

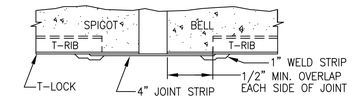
NOTES

1. PRECAST MANHOLE SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE AND SPEC. SEC 02701 AND BE DESIGNED FOR AASHTO H20 LOADING.
2. MATERIALS, EMBEDMENT, PLACEMENT, AND COMPACTION OF GRANULAR EMBEDMENT AND COMPACTED BACKFILL WILL CONFORM TO THE AGENCY'S STANDARD SPECIFICATIONS FOR PIPE BEDDING AND TRENCH BACKFILL.
3. PROVIDE PROTECTIVE LINING ON THE ENTIRE INTERIOR CONCRETE SURFACE PER SPECIFICATION SECTION 02618 – PROTECTIVE LINING FOR SEWER MANHOLE AND WET WELL.

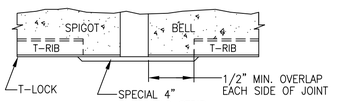
TYPICAL SEWER MANHOLE DETAIL — 1 / VAR
SCALE: NTS



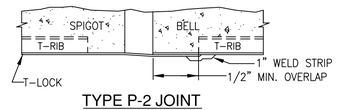

CONCRETE ENCASEMENT — 5 / –
SCALE: NTS




TYPE P–1 JOINT

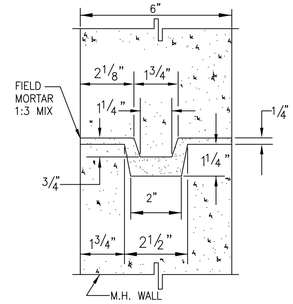



TYPE P-3 JOINT

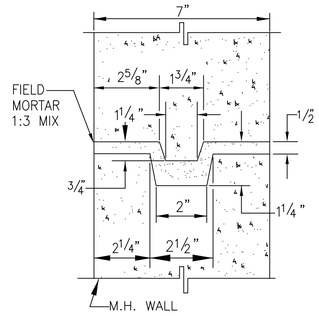



TYPE P-2 JOINT

FIELD JOINTS FOR T–LOCK LINED PIPE — 3 / –
SCALE: NTS

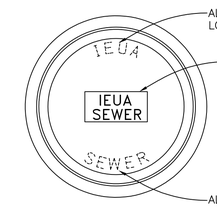



KEY WAY DETAIL FOR 5' OR LESS DIAMETER MANHOLES
NO SCALE



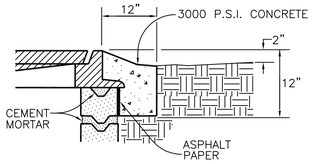

KEY WAY DETAIL FOR 6' OR GREATER DIAMETER MANHOLES
NO SCALE

MANHOLE WALL KEY WAY DETAILS — 4 / –
SCALE: NTS

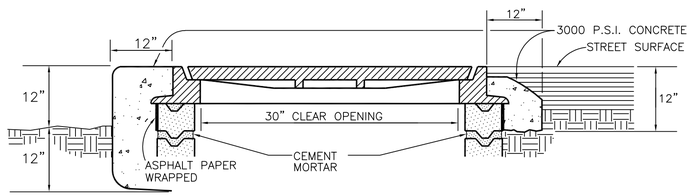



TOP VIEW COVER DETAIL

NOTE:
MANHOLE FRAME & COVER SHALL BE ALHAMBRA FOUNDRY TYPE A–1252 OR LONG BEACH IRON WORKS TYPE X–106 B OR APPROVED EQUAL. FRAME & COVER SHALL BE BITUMINOUS COATED AND WEIGH A MINIMUM OF 430 LBS. THE COVER SHALL HAVE TWO PICK HOLES.

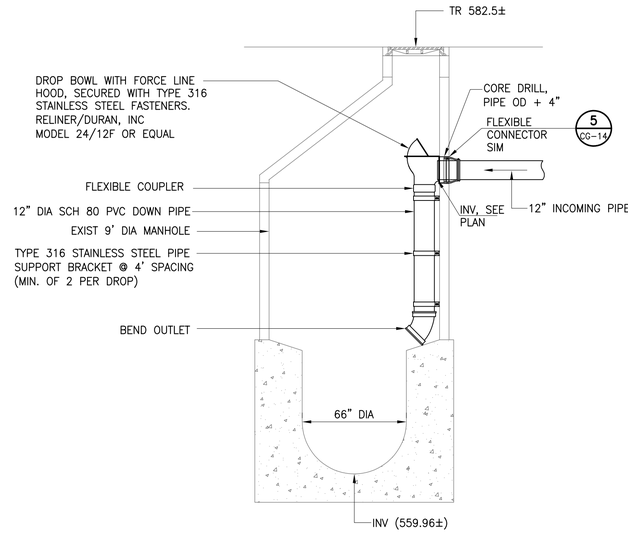



ROADWAY SHOULDER

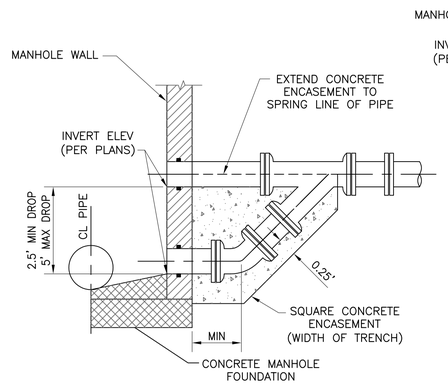


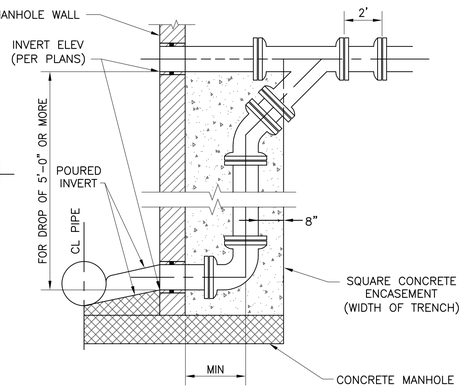

ROADWAY

MANHOLE FRAME AND COVER — 2 / VAR
SCALE: NTS




FORCEMAIN TO MANHOLE CONNECTION — 6 / VAR
SCALE: NTS




DROP MANHOLE DETAILS — 7 / VAR
SCALE: NTS

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 07/2018 |
| Drawn | HS | 07/2018 |
| Checked | BL | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

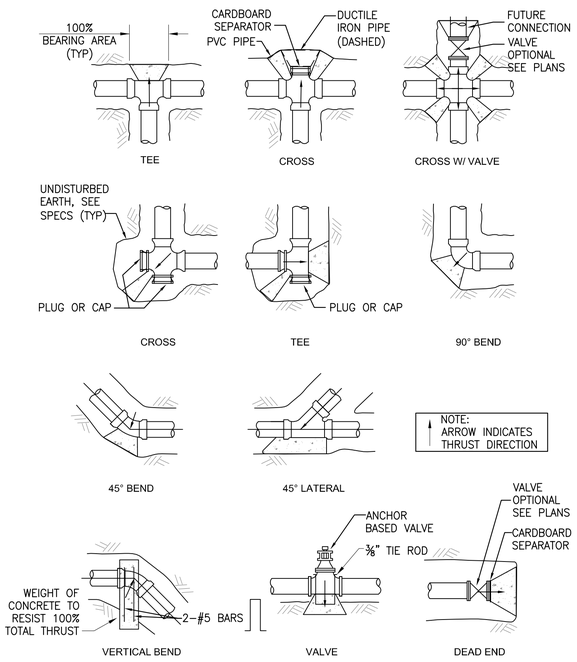
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 7

SHEET CG-17
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3_Detailed Design Phase\3.1_CAD\2.CE\WORK\01-CG-11-DETAILS last saved by 61677 on 5/30/19 plotted 5/30/2019 11:41:21 AM




| THRUST PER PSI OF WATER PRESSURE AT VARIOUS FITTINGS | | | | |
|---|---|---|---|---|
| PIPE SIZE | DEAD END OR TEE | 90° ELBOW | 45° ELBOW | 22½° ELBOW |
| 4 | 19 | 27 | 15 | 7 |
| 6 | 39 | 55 | 30 | 15 |
| 8 | 67 | 94 | 51 | 26 |
| 10 | 109 | 154 | 84 | 43 |
| 12 | 155 | 218 | 119 | 61 |
| 14 | 210 | 296 | 161 | 82 |
| 16 | 275 | 383 | 209 | 106 |
| 18 | 351 | 494 | 269 | 137 |
| 20 | 434 | 611 | 333 | 169 |
| 24 | 623 | 878 | 478 | 244 |

EXAMPLE:

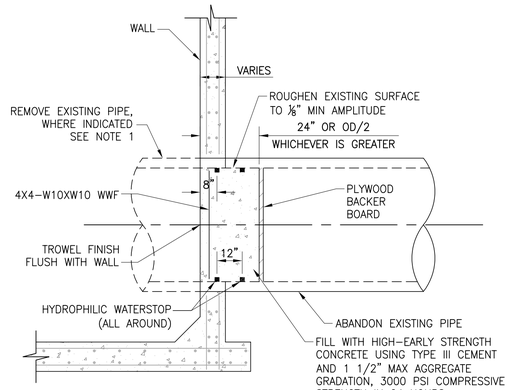
8 INCH 90° ELBOW, PRESSURE = 94 PSI FROM TABLE:
THRUST = 94 X 200 = 18,800 LBS
ASSUMED BEARING STRENGTH OF SOIL (SEE NOTE 2) = 2000 LB/SQ FT
18,800/2,000 = 9.4 SQ FT AREA OF BEARING REQUIRED FOR THRUST BLOCK

NOTES:

1. IN USING THE ABOVE TABLES, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (I.E. HYDROSTATIC TEST PRESSURE, POSSIBLE SURGE PRESSURE DUE TO PUMP SHUT–OFF, ETC.)
2. 2000 LB/SQ FT IS ASSUMED SAFE BEARING LOAD OF SOIL, FOR ACTUAL CALCULATIONS USE SOILS REPORT DEFINITION OF SAFE BEARING LOAD. IF SOILS REPORT NOT AVAILABLE USE AVERAGE SOIL (SAND AND GRAVEL WITH CLAY) WITH AN APPROXIMATE BEARING STRENGTH OF 2000 LB/SQ FT.
3. FITTINGS SHOWN FOR RUBBER GASKETED JOINTS ARE FOR PVC, CAST IRON OR DUCTILE IRON PIPE INSTALLATIONS. THRUST BLOCKS ARE NOT REQUIRED ON PVC PIPE WITH SOLVENT WELD JOINTS, FLANGED JOINTS OR RESTRAINED JOINTS.
4. CONCRETE BEARING SHALL BE 100% AND PLACEMENT OF CONCRETE SHALL NOT INTERFERE OR OBSTRUCT FITTING ASSEMBLY, SEE SPECS
5. FOR FIRE HYDRANT THRUST BLOCKING, SEE FIRE HYDRANT INSTALLATION DETAIL

## CONCRETE THRUST BLOCKS FOR DUCTILE IRON, CAST IRON AND PVC PIPE — 1 VAR

SCALE: NTS

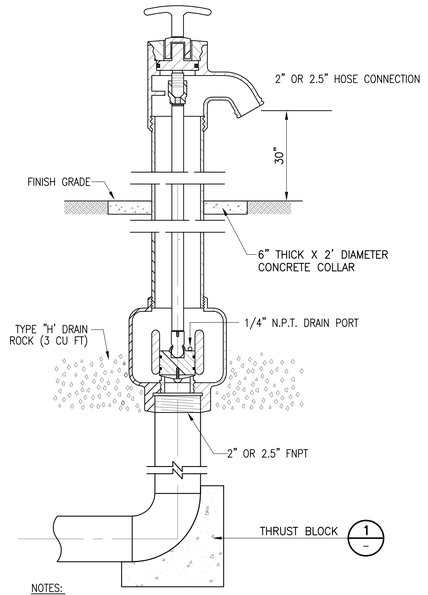



NOTES:

1. REFER TO SPECIFICATION SECTION 02600 FOR CONSTRUCTION OF MANHOLE VAULTS OVER EXISTING PIPELINE.
2. CONTRACTOR MAY SUBMIT AN ALTERNATE DETAIL SUBJECT TO APPROVAL.

## ABANDONMENT SEAL FOR JUNCTION BOX PIPE OPENING — 2 VAR

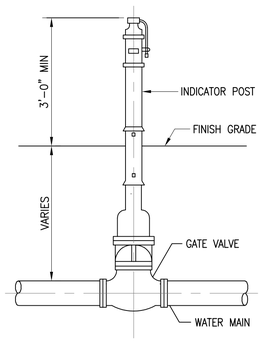
SCALE: NTS




NOTES:
1. PROVIDE CONTROL KEY TO OPERATE VALVE STEM.
2. SEE PLANS FOR SUPPLY LINE AND HOSE CONNECTION SIZES.

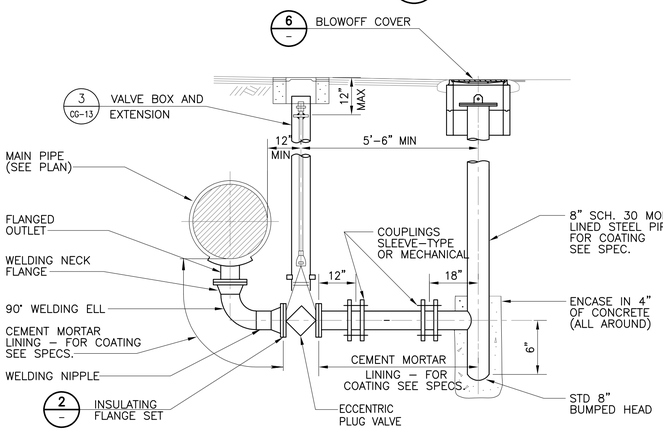
## POST HYDRANT — 3 VAR

SCALE: NTS




## POST INDICATOR VALVE — 4 VAR

SCALE: NTS

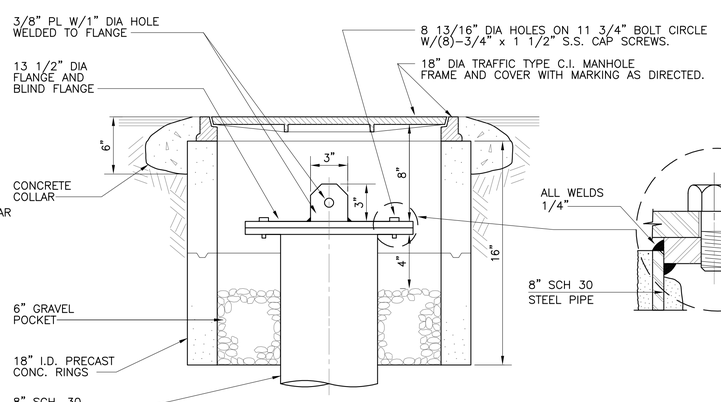



NOTES:

1. FLANGE AND BLIND FLANGE SAME CLASS AS PIPELINE.
2. CEMENT 1/16" THICK FULL COVER GASKET TO FLANGE.
3. ALL EXPOSED FERROUS SURFACES OF BURIED PIPE AND APPURTENANCES TO BE PROVIDED WITH PROTECTIVE COATINGS PER SPECIFICATIONS.
4. PROVIDE STAINLESS STEEL NUTS, BOLTS AND WASHERS TO BURIED FLANGES AND COUPLINGS EXCEPT FOR NON–METALLIC WASHERS AS PART OF INSULATING FLANGE SET.

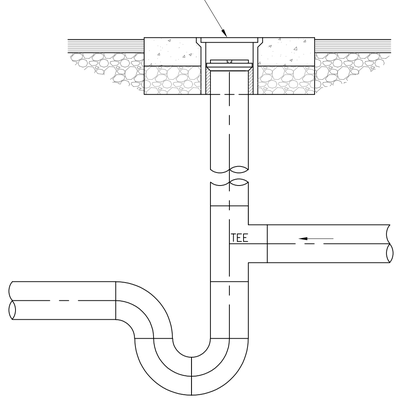
## BLOW–OFF — 5 VAR

SCALE: NTS




## BLOW–OFF COVER — 6 VAR

SCALE: NTS




## P–TRAP WITH CLEAN OUT — 7 VAR

SCALE: NTS

W:\Pasadena Sector\Projects\EUA\RP–1&RP–5_Treatment_Systems\3_Detailed Design Phase\3.1_CAD\2.CE\WORK\01–CG–11–DETAILS last saved by 61677 on 5/30/19 plotted 5/30/2019 11:41:26 AM


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 07/2018 |
| Drawn | HS | 07/2018 |
| Checked | BL | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT


OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

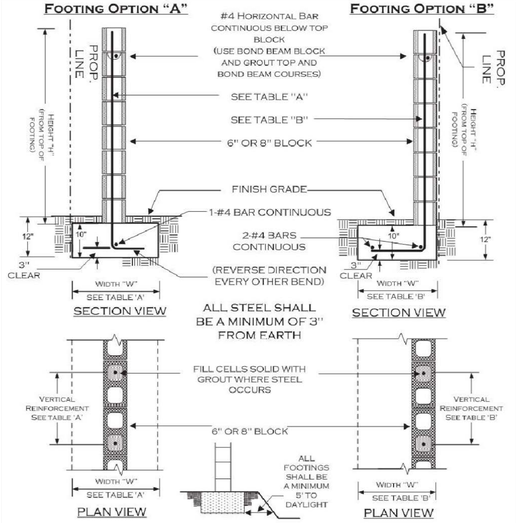

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 8

SHEET CG-18
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

## FOOTING OPTION "A"




## FOOTING OPTION "B"




INSPECTIONS REQUIRED:

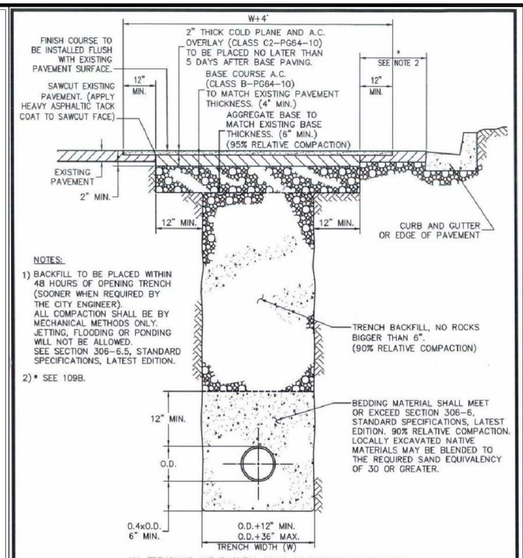
1.) Foundation; Excavation, trench clean with steel in place and supported 3" above and away from the surrounding earth/dirt.
2.) Steel/Pre-grout; Bond beam and vertical steel inspection prior to placing grout.
3.) Final; After grout is place, prior to any decorative cap placement.

| TABLE "A" | | | TABLE "B" | | |
|---|---|---|---|---|---|
| "H" | "W" | VERTICAL REINF. (#5 STEEL BARS) | "H" | "W" | VERTICAL REINF. (#5 STEEL BARS) |
| 3' | 17" | 48" O.C. | 3' | 19" | 48" O.C. |
| 4' | 20" | 48" O.C. | 4' | 22" | 48" O.C. |
| 5' | 23" | 48" O.C. | 5' | 29" | 48" O.C. |
| 6' | 29" | 24" O.C. | 6' | 34" | 24" O.C. |

CITY of CHINO

(909) 334-3251
Fax (909) 334-3729

| CITY of CHINO | |
|---|---|
| MASONRY WALL STANDARD | |
| 13220 Central Avenue, Chino, CA 91710 | |
| 2/5/2015 | 1 of 1 |




ALL TRENCHING AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH SECTION 306, STANDARD SPECIFICATIONS, LATEST EDITION.

| APPROVED | CITY ENGINEER | DATE |
|---|---|---|
| | | 10/25/17 |

**CITY OF CHINO PUBLIC WORKS DEPARTMENT**

| DATE | REVISION | BY |
|---|---|---|
| | | |

| STANDARD DRAWING | No. |
|---|---|
| TRENCH BACKFILL & ROADWAY REPAIR | 109 A |

1) ALL EXISTING STRIPING, RAISED PAVEMENT MARKERS (RPM'S), AND LOOP DETECTORS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REINSTALLED TO THE SATISFACTION OF THE CITY ENGINEER.

2) IF THE OUTER EDGE OF A UTILITY TRENCH CUT IS LESS THAN 4 FEET FROM THE EDGE OF GUTTER, THE CURB WHERE NO GUTTER EXISTS, OR THE EDGE OF PAVEMENT WHERE NO CURB EXISTS, THE REMAINING PORTION OF THE EXISTING PAVEMENT SECTION SHALL BE REMOVED AND REPLACED IN-KIND PRIOR TO THE GRIND AND OVERLAY PORTION OF THE UTILITY TRENCH CUT STREET RESURFACING TO THE SATISFACTION OF THE CITY ENGINEER.

3) IF TWO (2) OR MORE TRENCH OPENINGS ARE LESS THAN FIVE (5) FEET APART, THE REMAINING PORTION OF THE EXISTING PAVEMENT SECTION SHALL BE REMOVED AND REPLACED IN-KIND PRIOR TO THE GRIND AND OVERLAY PORTION OF THE UTILITY TRENCH CUT STREET RESURFACING TO THE SATISFACTION OF THE CITY ENGINEER.

4) IF THE UTILITY TRENCH CUT IS WITHIN EXISTING CONCRETE PAVEMENT, THE ENTIRE CONCRETE PANEL AFFECTED BY THE UTILITY TRENCH CUT SHALL BE RESTORED IN-KIND.

5) ALL ASPHALT CONCRETE PLACED FOR THE UTILITY TRENCH CUT STREET RESURFACING SHALL BE APPLIED BY A PAVING MACHINE IN ORDER TO ELIMINATE THE UNEVEN "WASHBOARD" EFFECT THAT RESULTS FROM THE MANUAL PLACEMENT OF ASPHALT OVERLAY.

6) PAVEMENT SURFACES MADE OF SPECIAL MATERIALS (I.E. PAVERS, STAMPED CONCRETE, RUBBERIZED ASPHALT) SHALL BE RESTORED IN-KIND.

7) PRIOR TO THE PLACEMENT OF PERMANENT PAVING, THE EXISTING PAVEMENT SHALL BE CUT TO A NEAT STRAIGHT LINE. ANY CRACKED PAVEMENT ADJACENT TO THE TRENCH SHALL BE REMOVED.

8) ALL LIQUIDS GENERATED BY SAWCUTTING SHALL BE COLLECTED AND DISPOSED OF OFF-SITE.

9) ALL USA MARKINGS SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF CONSTRUCTION.

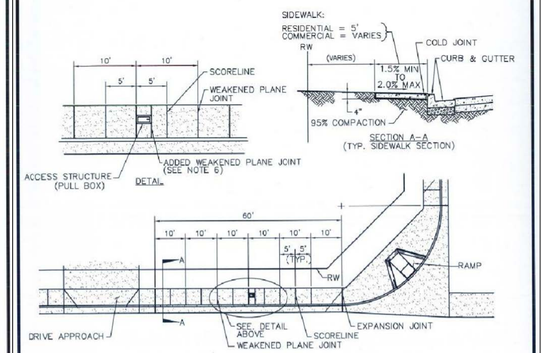
10) THE USE OF CONTROLLED LOW STRENGTH MATERIAL (CLSM) FOR TRENCH BACKFILL SHALL BE SPECIFICALLY APPROVED BY THE CITY ENGINEER.

| APPROVED | CITY ENGINEER | DATE |
|---|---|---|
| | | 10/25/17 |

**CITY OF CHINO PUBLIC WORKS DEPARTMENT**

| DATE | REVISION | BY |
|---|---|---|
| | | |

| STANDARD DRAWING | No. |
|---|---|
| TRENCH BACKFILL & ROADWAY REPAIR | 109 B |




NOTES:

1. PRIOR TO THE REMOVAL OF AN EXISTING SIDEWALK, THE SIDEWALK SHALL BE SAWCUT AT AN EXISTING SCORELINE OR JOINT.
2. A SUITABLE HERBICIDE SHALL BE APPLIED TO THE SUBGRADE WHERE THE SIDEWALK IS TO BE CONSTRUCTED.
3. THE CONCRETE SHALL BE CLASS 520-C-2500 PCC, CURED WITH WHITE PIGMENTED COMPOUND.
4. THE SIDEWALK SHALL HAVE SCORELINES PLACED AT 5' INTERVALS, WEAKENED PLANE JOINTS AT 10' INTERVALS AND 1/2" PAPER EXPANSION JOINTS AT 60' INTERVALS. SIDEWALK JOINTS SHALL ALIGN WITH CURB JOINTS.
5. TREE WELLS SHALL BE PROVIDED IN SIDEWALKS 9' WIDE OR WIDER. (SEE STANDARD DRAWING 600.)
6. PULL BOXES, METER BOXES, VAULTS OR ANY ACCESS STRUCTURE CONSTRUCTED IN A SIDEWALK SHALL BE POSITIONED SO THAT ONE SIDE OF THE ACCESS STRUCTURE IS ADJACENT TO AN EXPANSION JOINT OR A WEAKENED PLANE JOINT. AN ADDITIONAL WEAKENED PLANE JOINT SHALL BE PLACED ADJACENT TO THE OPPOSITE SIDE OF THE STRUCTURE.
7. PROVIDE A MINIMUM OF 3' SIDEWALK CLEARANCE AROUND ANY ABOVE GROUND OBSTRUCTION. 4' MINIMUM CLEARANCE IS REQUIRED WHEN THERE IS SUFFICIENT RIGHT-OF-WAY.
8. SIDEWALK WIDTH LESS THAN 5' WIDE SHALL BE SPECIFICALLY APPROVED BY THE CITY ENGINEER AND WILL REQUIRE 5' X 5' PASSING ZONES AT 200' INTERVALS.

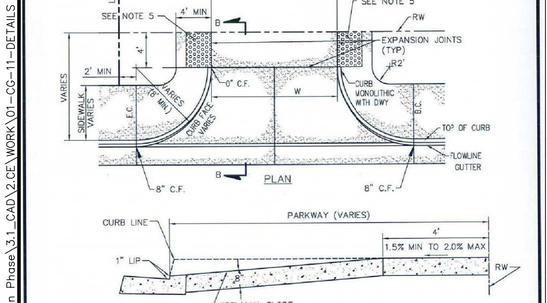
| APPROVED | CITY ENGINEER | DATE |
|---|---|---|
| | | 12/14/17 |

CITY OF CHINO PUBLIC WORKS DEPARTMENT

| DATE | REVISION | BY |
|---|---|---|
| | | |

| STANDARD DRAWING | No. |
|---|---|
| SIDEWALK | 230 |

NOTE:
1. ANCHOR RING SHALL BE THE SAME MATERIAL AS THE ADJOINING PIPE. 5/8"X4" FOR 30"-ALP PIPE, 3/8"X1" FOR 8"-HW OR SMALLER PIPE
2. 30"-ALP: #5 @ 6" OC, EW; 8"-HW OR SMALLER PIPE: #5 @ 12" OC, EW




NOTES:

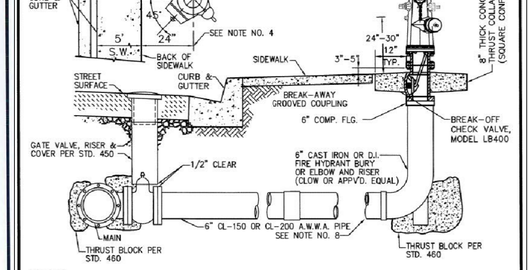
1. ALL EXISTING P.S.C. TO BE REMOVED SHALL BE SAWCUT AT THE JOIN.
2. CONCRETE SHALL BE CLASS 520-C-2500, CURED WITH WHITE PIGMENTED COMPOUND.
3. A 6" MINIMUM OF AGGREGATE BASE SHALL BE PROVIDED UNDER DRIVEWAY APPROACH.
4. THE MINIMUM DRIVEWAY WIDTH SHALL BE 30'. THE MAXIMUM WIDTH MAY BE 40' BUT SHALL NOT EXCEED 50% OF THE LOT FRONTAGE.
5. TRUNCATED DOMES ARE REQUIRED WHEN STOP CONTROLS OR A TRAFFIC SIGNAL IS PRESENT AT THE DRIVEWAY.
6. B.C. OR E.C. SHALL BE A MINIMUM OF 2' FROM LOT LINE PROLONGATION.

| APPROVED | CITY ENGINEER | DATE |
|---|---|---|
| | | 12/14/17 |

CITY OF CHINO PUBLIC WORKS DEPARTMENT

| DATE | REVISION | BY |
|---|---|---|
| | | |

| STANDARD DRAWING | No. |
|---|---|
| INDUSTRIAL/ COMMERCIAL DRIVEWAY APPROACH | 250 |




**NOTES:**

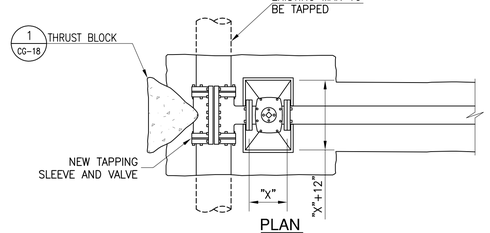
1. THE FIRE HYDRANT OUTLET SHALL BE SET AT 45° TO THE STREET.
2. THE FIRE HYDRANT SHALL BE SET PERPENDICULAR TO THE STREET.
3. MAINTAIN 5' CLEAR DISTANCE BETWEEN THE FIRE HYDRANT AND ALL OBJECTS.
4. INSTALL THE FIRE HYDRANT 24" BEHIND THE CURB-FACE WHERE SIDEWALK DOES NOT EXIST. WHERE THE EXISTING SIDEWALK IS MORE THAN 5' WIDE OR WHERE THE EXISTING SIDEWALK IS NOT CURB-ADJACENT. WHERE THE SIDEWALK IS CURB-ADJACENT AND 5' WIDE OR LESS, INSTALL THE FIRE HYDRANT 24" BEHIND THE EXISTING SIDEWALK.
5. INSTALLATION OF A GATE VALVE FOR "HOT-TAP" MAY BE PERMITTED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
6. ROTATE THE FIRE HYDRANT CLOCKWISE ONLY FOR THE CORRECT ORIENTATION TO THE STREET.
7. CONSULT THE GENERAL NOTES FOR FIRE HYDRANT SPECIFICATIONS.
8. ALL WATER MAINS INSTALLED IN AND SOUTH OF SCHAEFER AVE SHALL BE CLASS 200 AND MEET A.W.W.A. SPECIFICATIONS (REF. "GENERAL NOTES" FOR WATER PLANS).
9. FIRE HYDRANTS SHALL BE FULL BARRELED; CLOW "EL RANCHO" SERIES, HIGH PRESSURE WET BARREL (SERIES 2010), JAMES JONES NO. 3708 OR AVK MODEL 24-42.
10. WHERE BRAND NAMES ARE CALLED OUT, EQUALS MAY BE USED WHEN APPROVED IN WRITING PRIOR TO CONSTRUCTION.
11. EXPOSED AREAS OF THE FIRE HYDRANT SHALL BE PAINTED WITH TWO (2) COATS OF "VISTA NO 999 METAL PRIME" PRIMER AND TWO (2) COATS OF "VISTA CAUTION YELLOW" HIGH-GLOSS ENAMEL (OR APPROVED EQUALS).
12. FOR THE REQUIREMENTS FOR REFLECTIVE MARKERS, SEE THE GENERAL NOTES AND STD DWG NO 445.
13. THE 6" THICK CONCRETE THRUST COLLAR MUST BE INSTALLED PRIOR TO CHARGING THE FIRE HYDRANT ASSEMBLY.
14. FIRE HYDRANT AND BREAK-OFF CHECK VALVE ARE TO BE EIGHT-BOLT PATTERN.

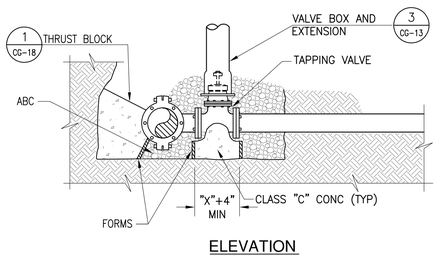
| APPROVED | CITY ENGINEER | DATE |
|---|---|---|
| | | 3/7/17 |

**CITY OF CHINO PUBLIC WORKS DEPARTMENT**

| DATE | REVISION | BY |
|---|---|---|
| | | |

| STANDARD DRAWING | No. |
|---|---|
| FIRE HYDRANT ASSEMBLY (W / BREAK-OFF CHECK VALVE) | 445 A |

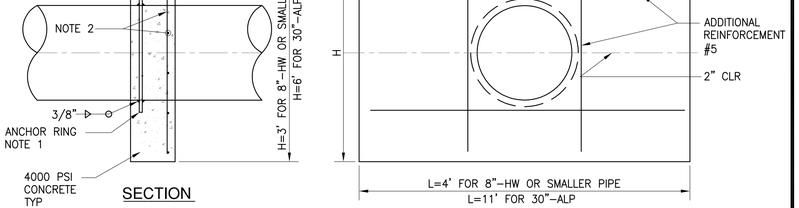


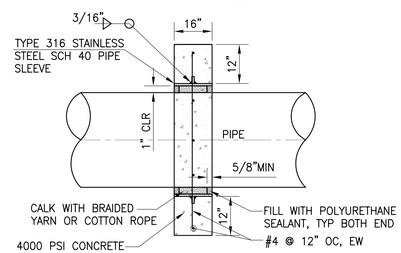

NOTES:

1. INSTALL PERMANENT THRUST BLOCKING UNDER VALVE BEFORE TAP IS MADE. JOINTS AND BOLTS SHALL BE CLEAR OF CONCRETE
2. TAPPING SLEEVE TO BE PLACED 18" MIN FROM ANY BELL, COUPLING, VALVE, OR FITTING.

TAPPING SLEEVE AND VALVE (1 VAR)
SCALE: NTS




CONCRETE ANCHOR BLOCK (2 –)
SCALE: NTS




CONCRETE GUIDE BOX (3 –)
SCALE: NTS

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

Designed HS 07/2018
Drawn HS 07/2018
Checked BL 07/2018
Date

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

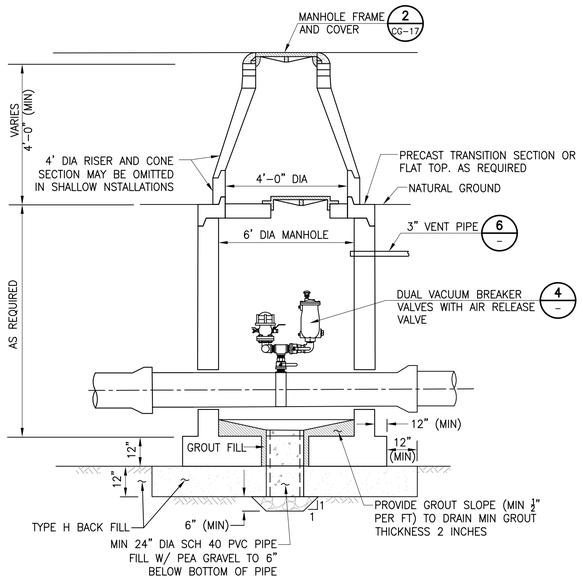
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

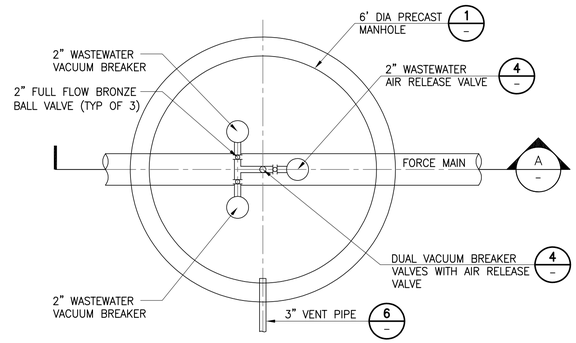
# TYPICAL CIVIL DETAILS 9

SHEET CG-19
SHEET NO. X OF
PROJECT NO.
DRAWING NO.




DUAL VACUUM BREAKERS WITH AIR RELEASE VALVE MANHOLE SECTION

1



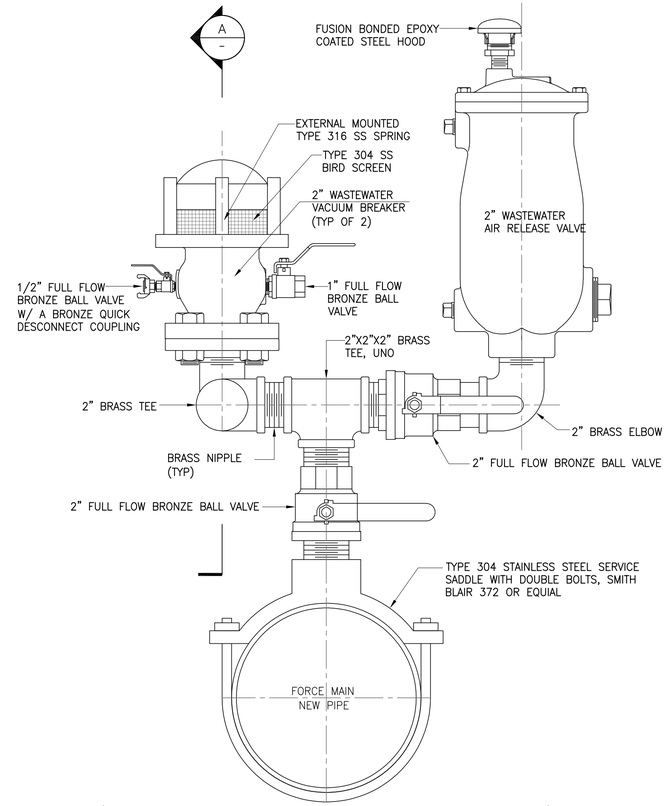

FOR EXISTING FORCE MAIN

1. REMOVE EXISTING 1" AIR VALVE. INSTALL BRASS NIPPLE AND 2"X2"X1" TEE VERTICALLY. SEE SHEET CP-07 AT STA 59+50.
2. REMOVE EXISTING 2" AIR VALVE. INSTALL BRASS NIPPLE AND 2"X2"X2" TEE VERTICALLY. SEE SHEET CP-08 AT STA 108+20.
3. FOR NEW INSTALLATION ON EXISTING FORCE MAIN, INSTALL 2" HOT TAP WITH CORP STOP PER DETAIL 3 ON SHEET CG-14. SEE SHEETS CP-01 & CP-09 AT STA 118+40.

DUAL VACUUM BREAKERS WITH AIR RELEASE VALVE MANHOLE PLAN

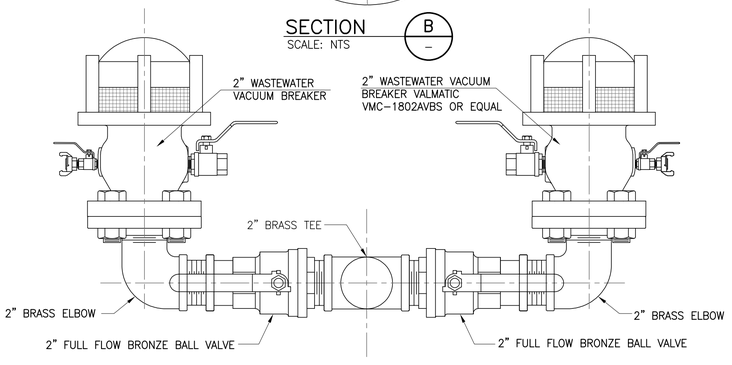
SCALE: NTS

2
VAR




SECTION B

SCALE: NTS



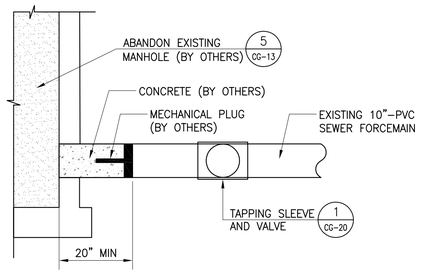

SECTION A

SCALE: NTS

DUAL VACUUM BREAKERS WITH AIR RELEASE VALVE

SCALE: NTS

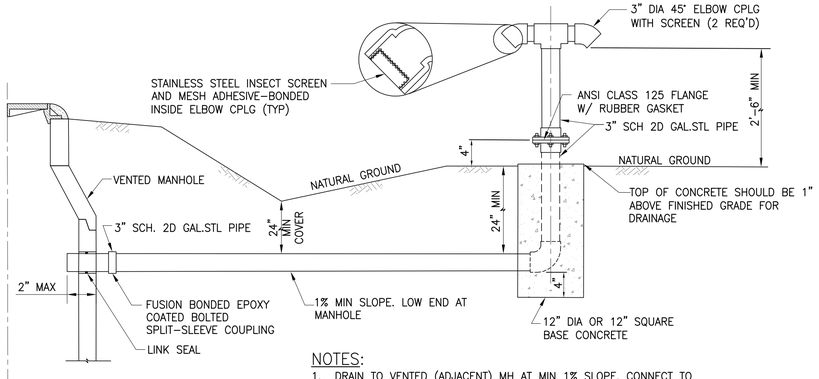
4
–




CONNECTION TO EXISTING SEWER FORCE MAIN

SCALE: NTS

3
VAR




NOTES:

1. DRAIN TO VENTED (ADJACENT) MH AT MIN 1% SLOPE. CONNECT TO MANHOLE WITH SPECIFIED CONNECTOR.
2. WHEN VENT CROSSES DRAINAGE DITCH. PROVIDE CEMENT STABILIZED SAND BEDDING.
3. THE VENT IS TO BE INSTALLED WITHIN THE RIGHT OF WAY.

MANHOLE VENT PIPE

SCALE: NTS

6
–

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 07/2018 |
| Drawn | HS | 07/2018 |
| Checked | BL | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE

AS SHOWN

Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.

0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 10

SHEET CG-20

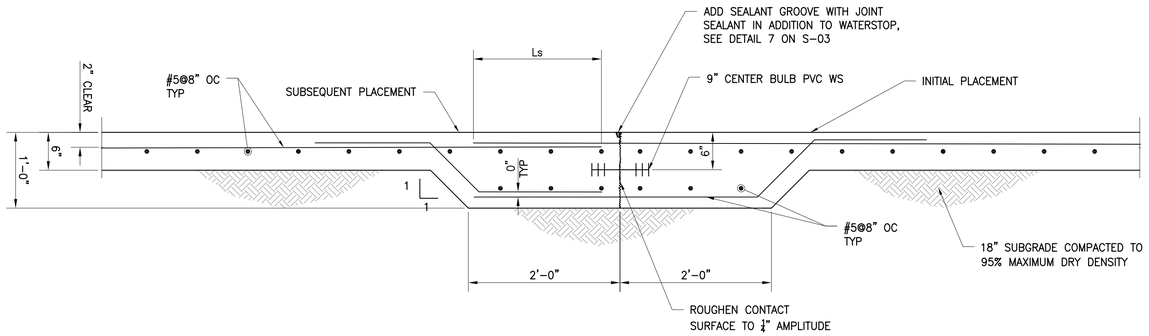
SHEET NO. X OF

PROJECT NO.

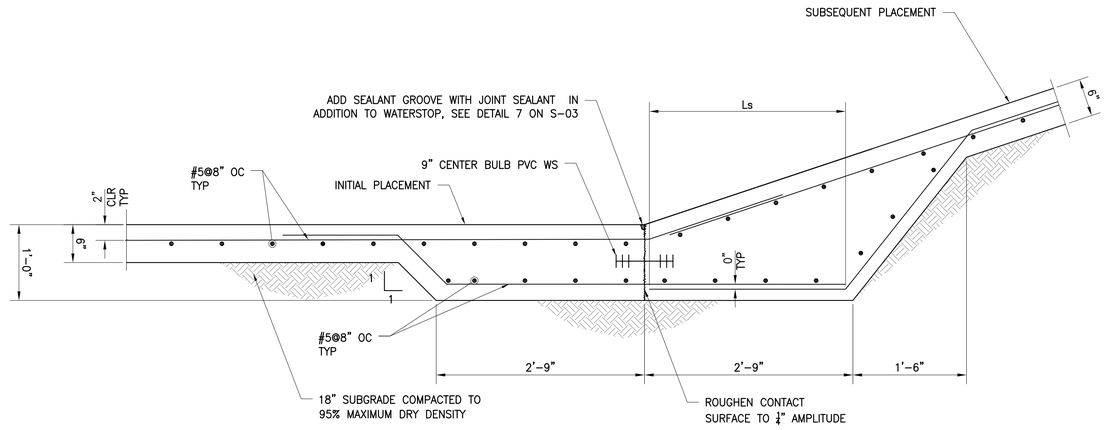
DRAWING NO.

NOTE:

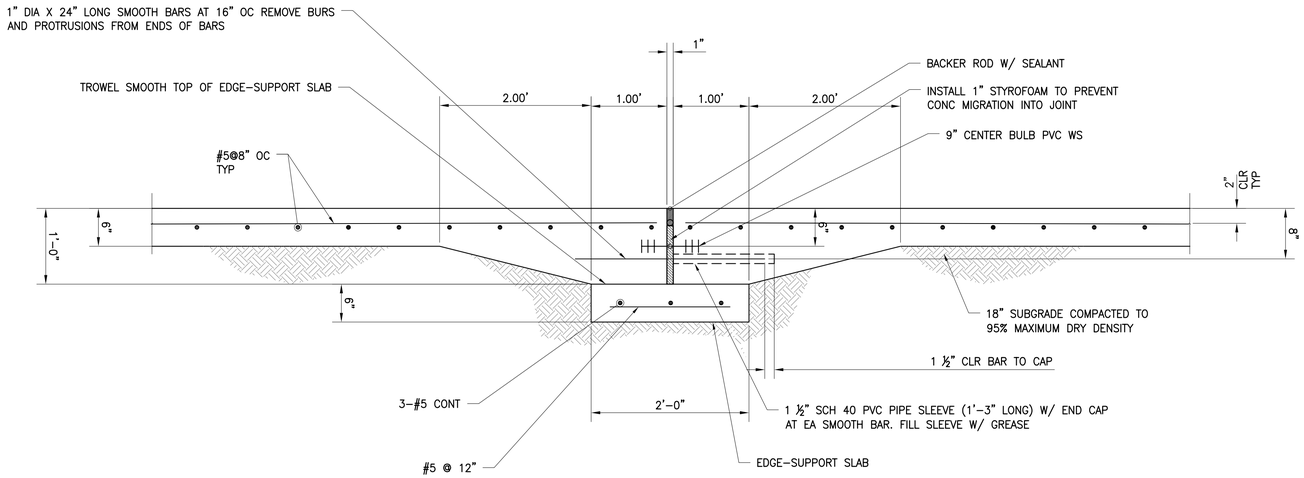
1. FOR STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS, SEE SHEET S-01 THROUGH S-19



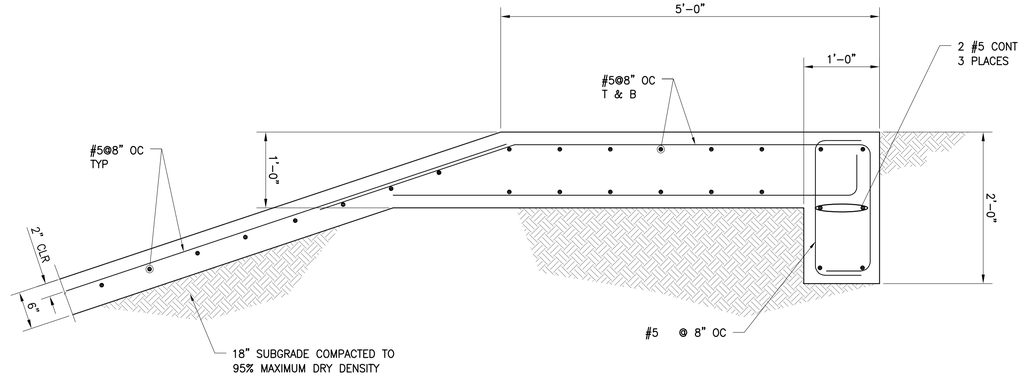

CONSTRUCTION JOINT SECTION AND DETAIL — A, CH-28
SCALE: NTS




CONCRETE DETAIL AT BERM TOE — C, CH-28
SCALE: NTS




EXPANSION JOINT SECTION AND DETAIL — B, CH-28
SCALE: NTS




CONCRETE DETAIL AT BERM CROWN — D, CH-28
SCALE: NTS

W:\Pasadena Sector\Projects\EUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\2.CE\WORK\01-CG-11-DETAILS last saved by 61677 on 5/30/19 plotted 5/30/2019 11:41:41 AM


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | MA | 12/2018 |
| Drawn | JD | 12/2018 |
| Checked | MA | 12/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | MA | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below Is one inch on original drawing. If NOT one Inch on this sheet, adjust scales accordingly.
0" 1"


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

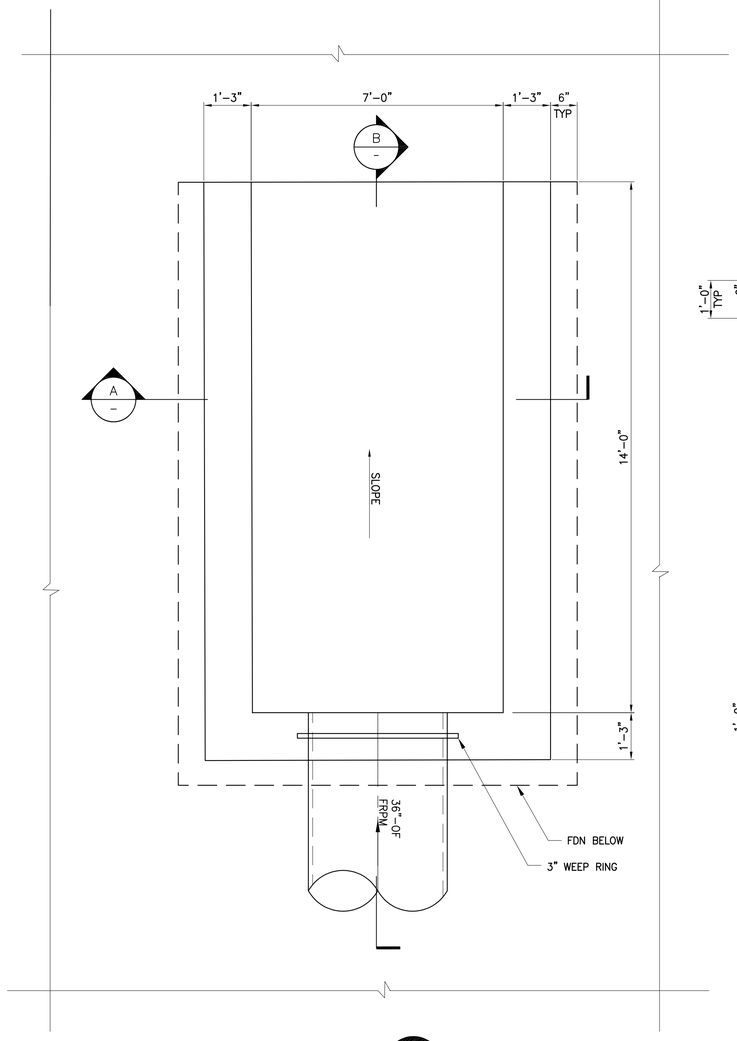
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

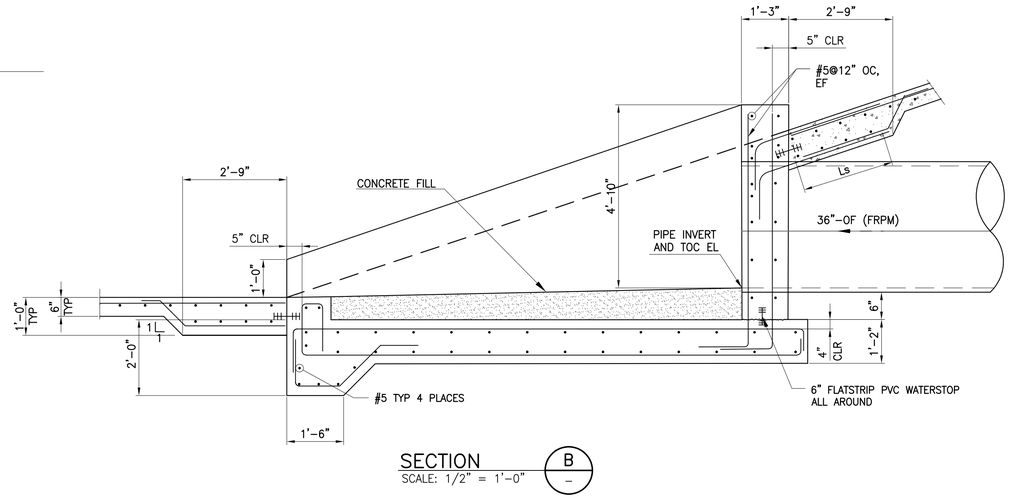
TYPICAL CIVIL DETAILS 11

SHEET CG-21
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

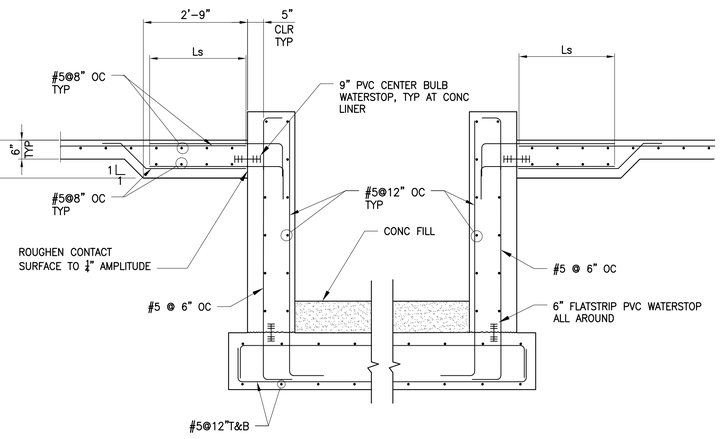



PLAN

36"-OF HEADWALL DETAIL
SCALE: 1/2" = 1'-0"
1 / CH-28




SECTION B
SCALE: 1/2" = 1'-0"




SECTION A
SCALE: 1/2" = 1'-0"

NOTE:

1. FOR STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS, SEE SHEET S-01 THROUGH S-17

W:\Pasadena Sector\Projects\EUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\2.CE\WORK\01-CG-11-DETAILS last saved by 61677 on 5/30/19 plotted 5/30/2019 11:41:46 AM

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | MA | 12/2018 |
| Drawn | JD | 12/2018 |
| Checked | MA | 12/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | MA | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

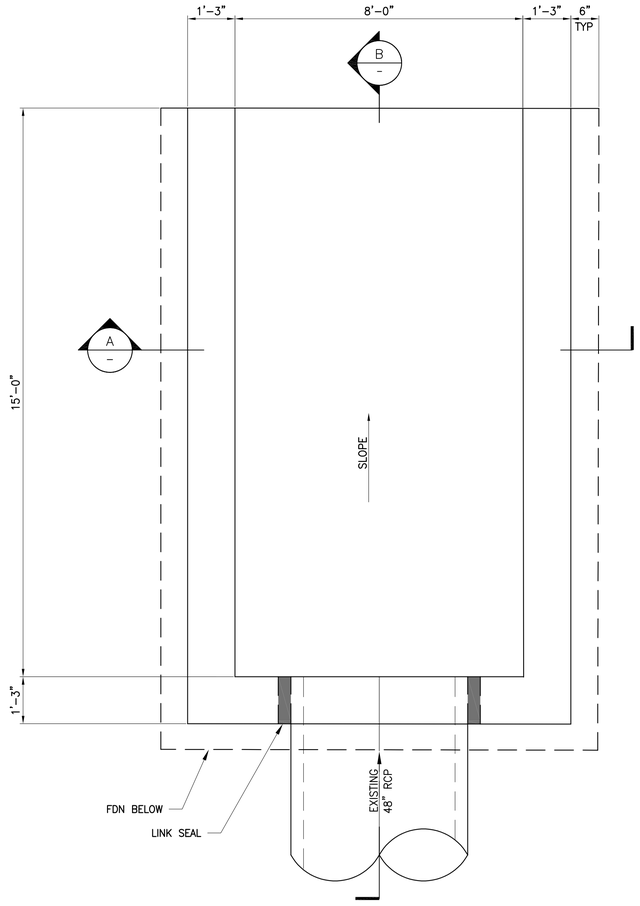
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 12

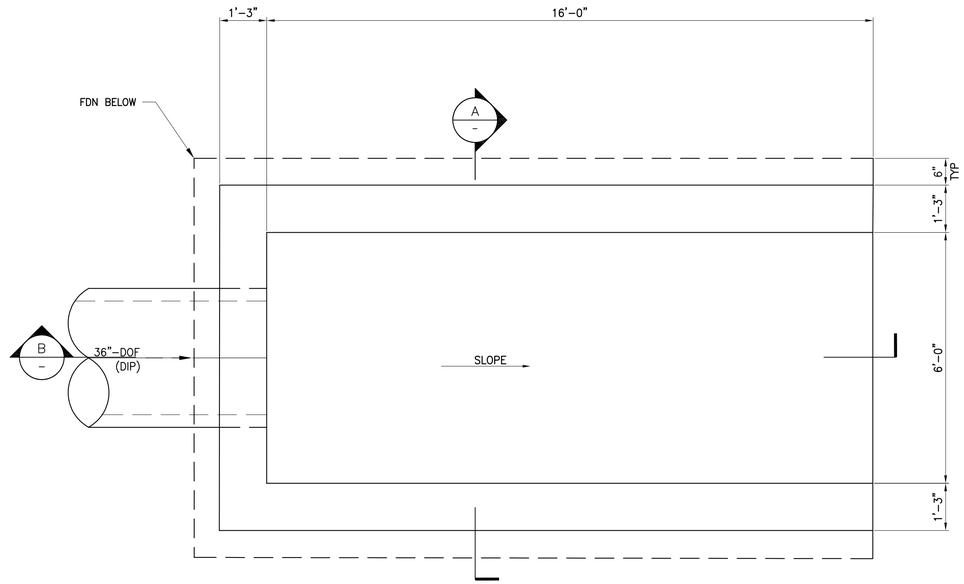
SHEET CG-22
SHEET NO. X OF
PROJECT NO.
DRAWING NO.




PLAN

48"-EQF HEADWALL DETAIL (1 / CH-28)

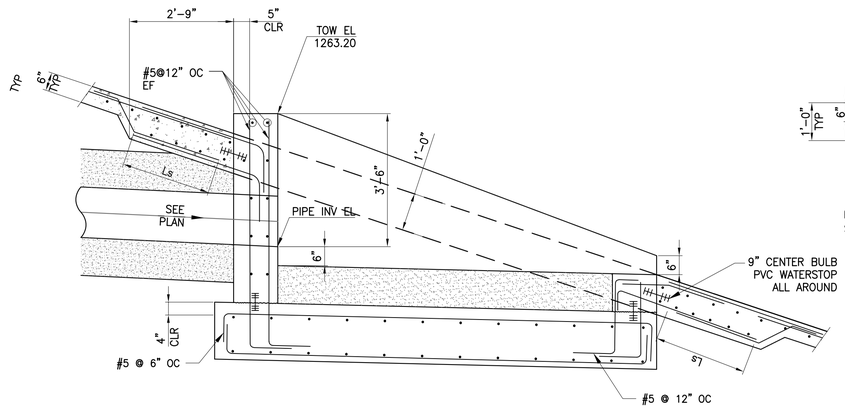
SCALE: 1/2" = 1'-0"




PLAN

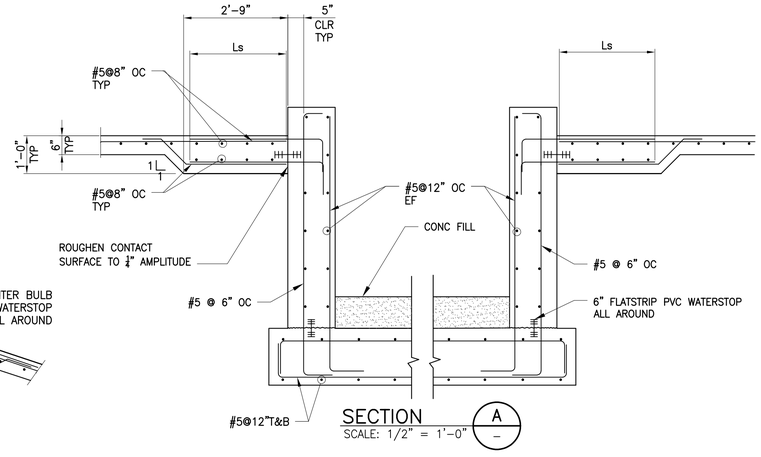
36"-DOF HEADWALL DETAIL (2 / CH-28)

SCALE: 1/2" = 1'-0"




SECTION (B / –)

SCALE: 1/2" = 1'-0"




SECTION (A / –)

SCALE: 1/2" = 1'-0"

NOTE:

1. FOR STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS, SEE SHEET S-01 THROUGH S-17



PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | MA | 12/2018 |
| Drawn | JD | 12/2018 |
| Checked | MA | 12/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | MA | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

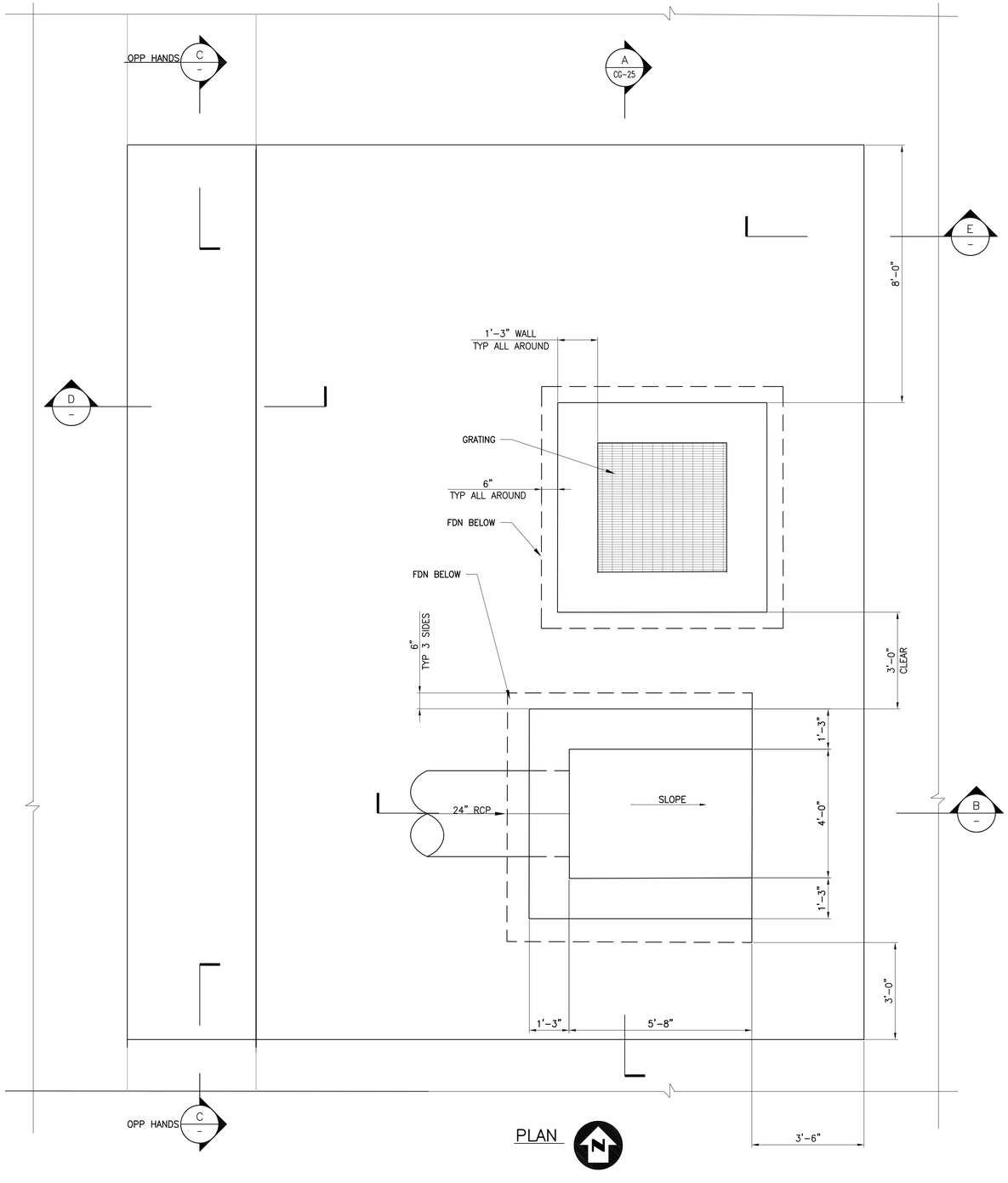
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 13

SHEET CG-23
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

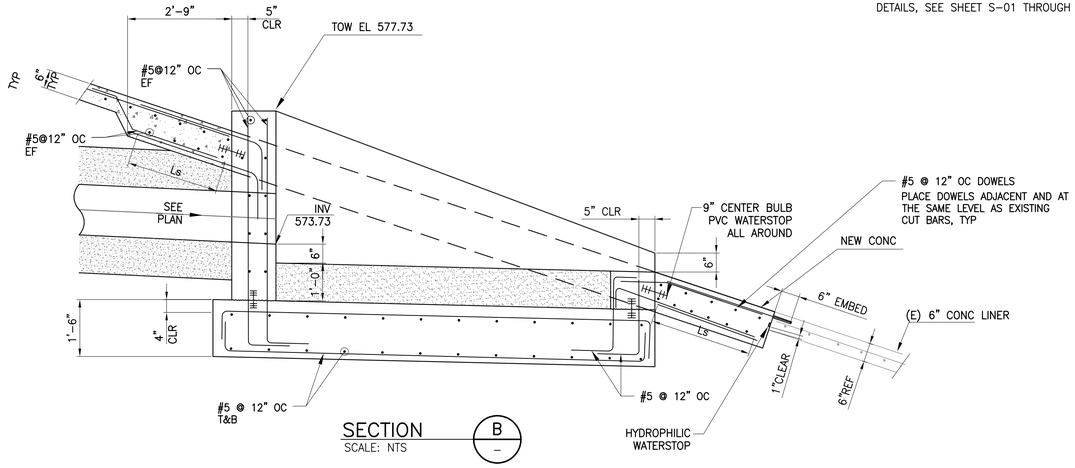
NOTE:

1. FOR STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS, SEE SHEET S-01 THROUGH S-17

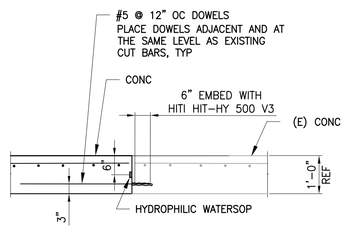



PLAN

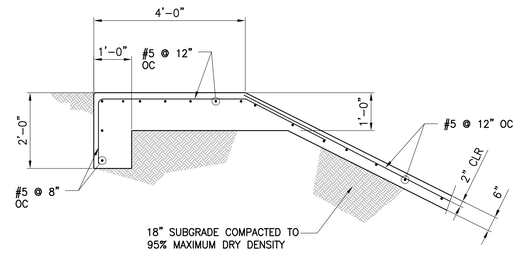
EMERGENCY STORAGE BASIN
SCALE: 1/2" = 1'-0"
1
CY-04



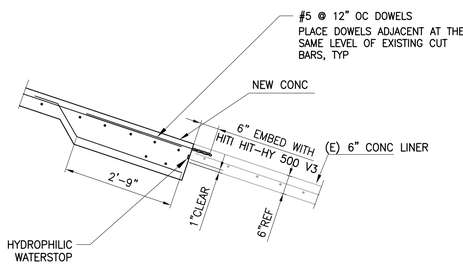

SECTION
SCALE: NTS
B




SECTION
SCALE: NTS
C




SECTION
SCALE: NTS
D




SECTION
SCALE: NTS
E


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | MA | 05/2019 |
| Drawn | AP | 05/2019 |
| Checked | MA | 05/2019 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | MA | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT


OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

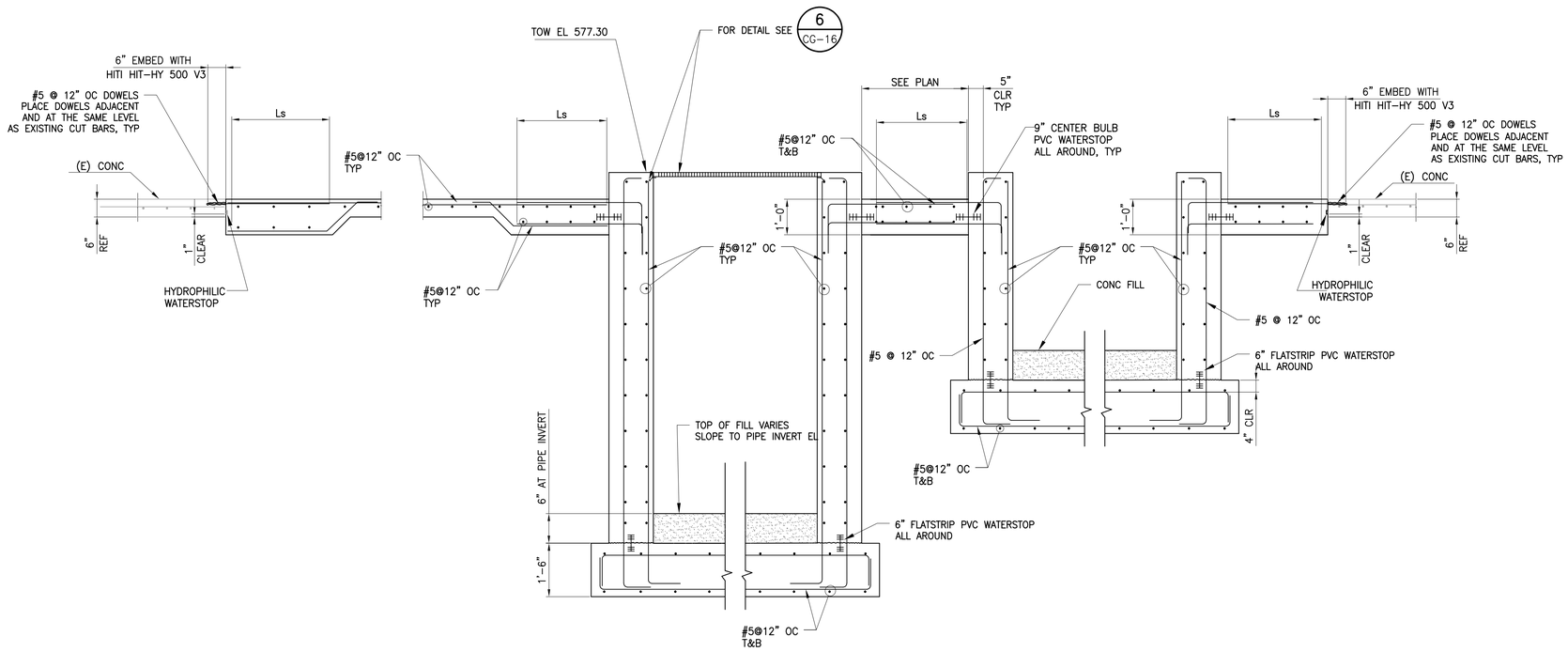
TYPICAL CIVIL DETAILS 14

SHEET
CG-24

SHEET NO.
X OF

PROJECT NO.

DRAWING NO.




SECTION A CG-24
SCALE: NTS

NOTE:

1. FOR STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS, SEE SHEET S-01 THROUGH S-17

W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3_ Detailed Design Phase\3.1_CAD\2.CE\WORK\01-CG-11-DETAILS last saved by 61677 on 5/30/19 plotted 5/30/2019 11:42:01 AM

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | MA | 05/2019 |
| Drawn | AP | 05/2019 |
| Checked | MA | 05/2019 Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | MA | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

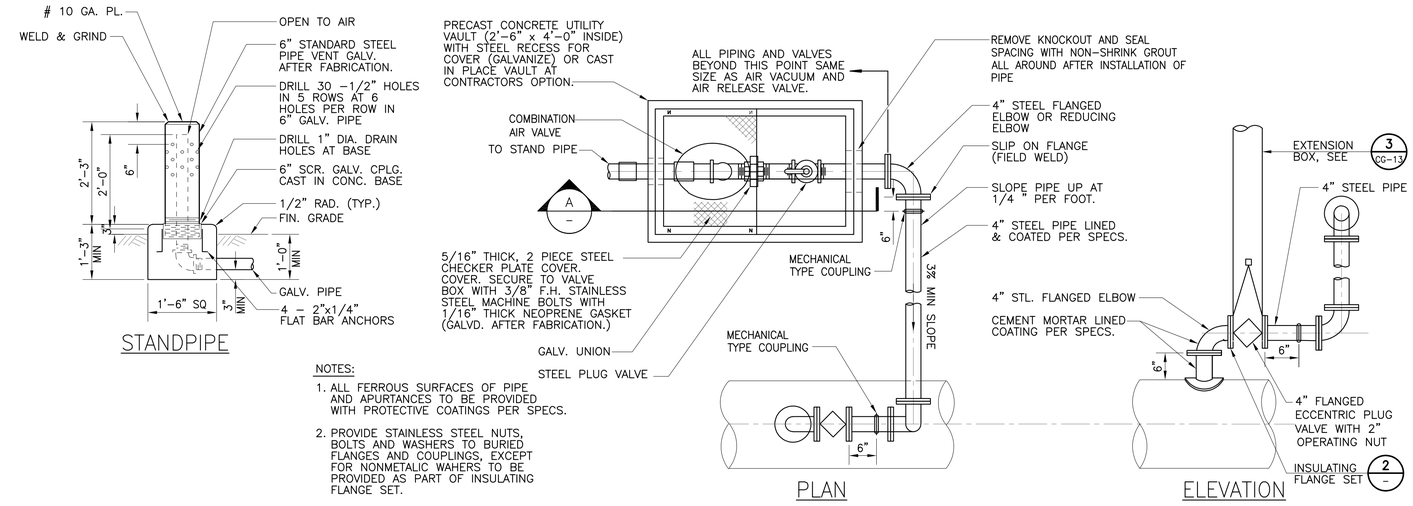
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 15

SHEET CG-25
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

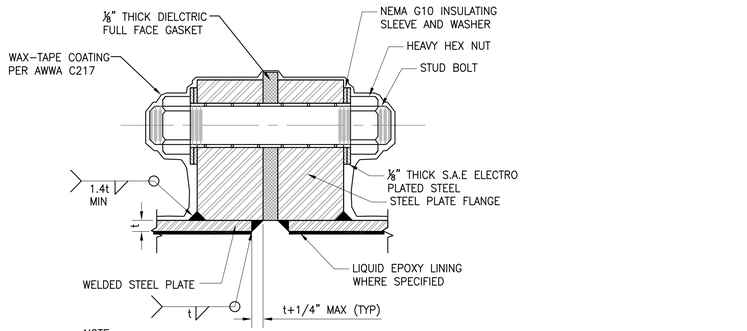



NOTES:

1. ALL FERROUS SURFACES OF PIPE AND APURTANCES TO BE PROVIDED WITH PROTECTIVE COATINGS PER SPECS.
2. PROVIDE STAINLESS STEEL NUTS, BOLTS AND WASHERS TO BURIED FLANGES AND COUPLINGS, EXCEPT FOR NONMETALIC WAHERS TO BE PROVIDED AS PART OF INSULATING FLANGE SET.

## AIR VACUUM AND AIR RELEASE VALVE ASSEMBLY – WATER

SCALE: NTS — 1 / VAR

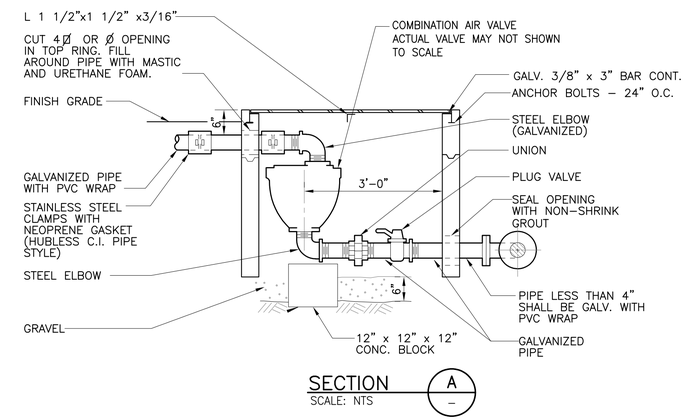



NOTE:

1. NUTS, STUDS AND WASHERS SHALL BE S.S. TYPE 316
2. WELD FLANGES TO PIPE BEFORE EPOXY LINING IS APPLIED

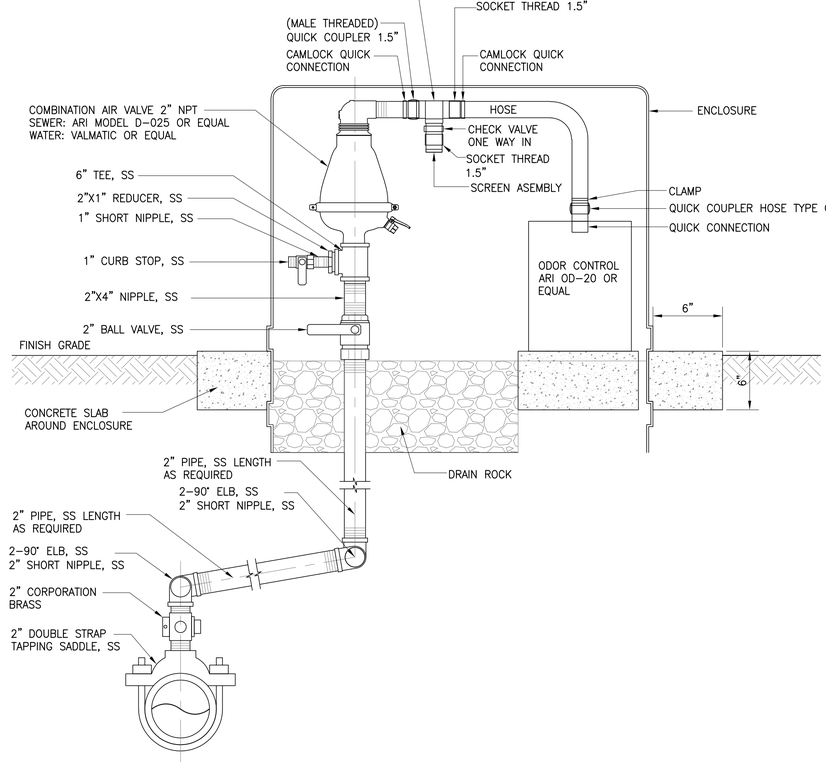
## INSULATING JOINT DETAIL

SCALE: NTS — 2 / VAR




## SECTION

SCALE: NTS — A / –




## AIR VACUUM AND AIR RELEASE VALVE ASSEMBLY – SEWER

SCALE: NTS — 3 / VAR

W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\2.CE\WORK\01-CG-11-DETAILS last saved by 61677 on 5/30/19 plotted 5/31/2019 9:33:42 AM

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 05/2019 |
| Drawn | HS | 05/2019 |
| Checked | BL | 05/2019 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| B | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| A | 07/20/18 | HS | SK | SUBMITTAL 50% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

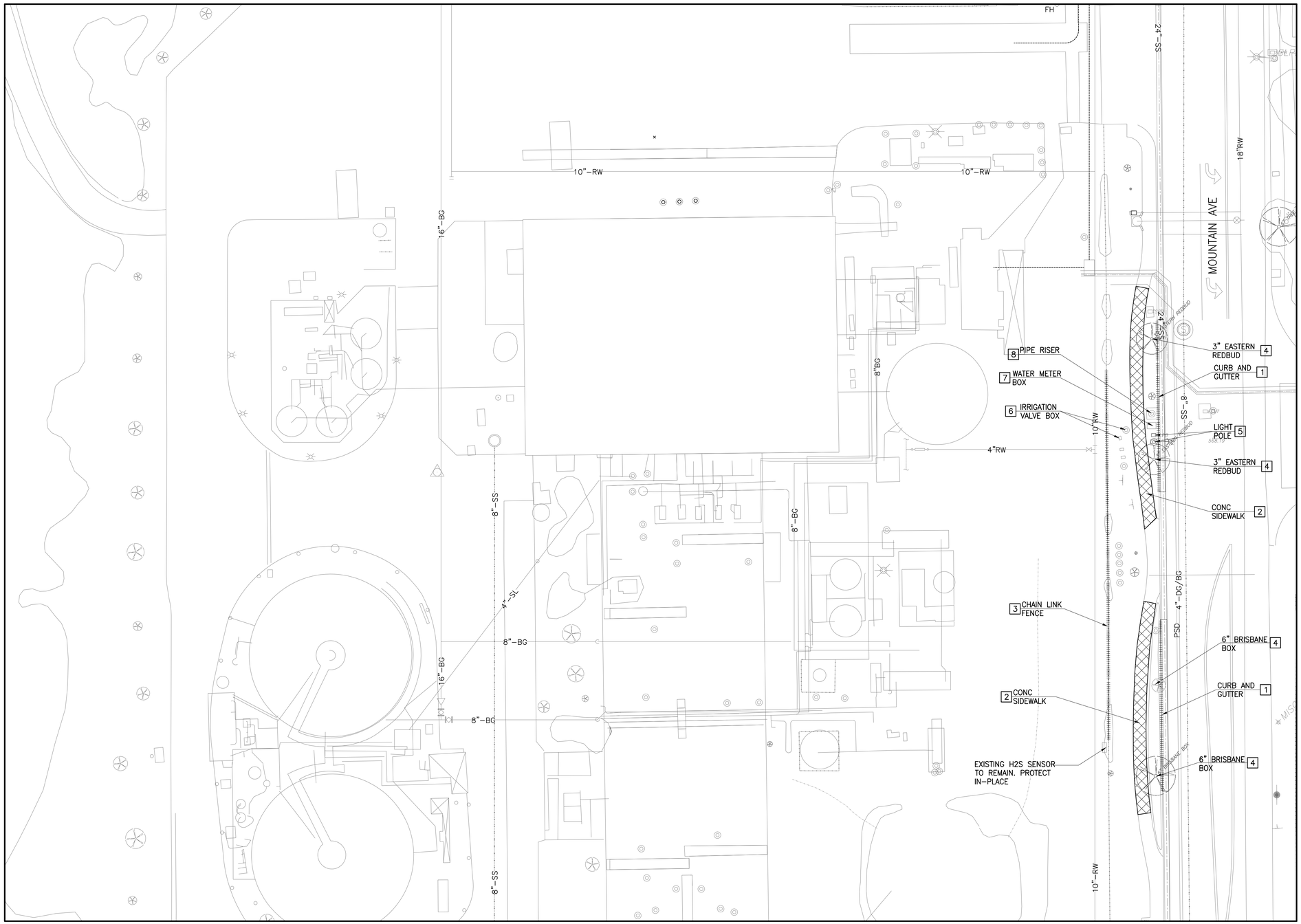
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 13

SHEET CG-24
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

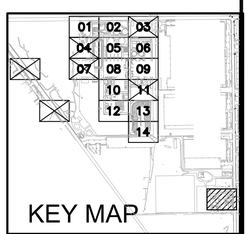



## NOTES

1. SEE SHEET G-04 FOR LEGEND AND ABBREVIATIONS
2. SEE SHEET CG-01 FOR GENERAL NOTES.
3. SEE SHEET CD-00 FOR THE DEMOLITION PLAN DRAWING INDEX.
4. SEE SHEET CH-15 FOR SITE IMPROVEMENT.
5. SEE SHEET CY-15 FOR YARD PIPING PLAN.
6. PROTECT ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON PLANS AT ALL TIMES UNLESS INDICATED TO BE REMOVED OR RELOCATED.
7. PERFORM DEMOLITION IN ACCORDANCE WITH THE REQUIREMENTS OF SPEC. SEC. 02500 – DEMOLITION.
8. REFER TO GRADING AND PIPING PLANS FOR ADDITIONAL INFORMATION ON LIMITS OF DEMOLITION.

## DEMOLITION NOTES

1. DEMOLISH CONCRETE CURB AND GUTTER.
2. DEMOLISH CONCRETE SIDEWALK.
3. DEMOLISH CHAIN LINK FENCE.
4. REMOVE AND RELOCATE TREE, SEE SHEET CH-15 FOR NEW TREE LOCATION.
5. REMOVE AND RELOCATE LIGHT POLE AND PULL BOX. SEE SHEET CH-15 FOR NEW LIGHT POLE LOCATION.
6. RELOCATE IRRIGATION VALVE BOX. NEW LOCATION TO BE DETERMINED ON FIELD.
7. ADJUST TOP ELEVATION OF WATER METER BOX TO DRIVEWAY FINISH GRADE.
8. ADJUST TOP OF EXISTING RECYCLE WATER PIPE RISER TO 3' BELOW FINISH GRADE.




0 10' 20' 40' 60'
SCALE: 1" = 20'-0"

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

MOUNTAIN AVE LIFT STATION
DEMOLITION PLAN

SHEET CD-11
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 12/2017 |
| Drawn | HS | 12/2017 |
| Checked | BL | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | HS | SK | SUBMITTAL 90% |
| D | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | HS | SK | SUBMITTAL 50% |
| A | 12/18/17 | HS | SK | SUBMITTAL 30% |

REVIEWED BY:

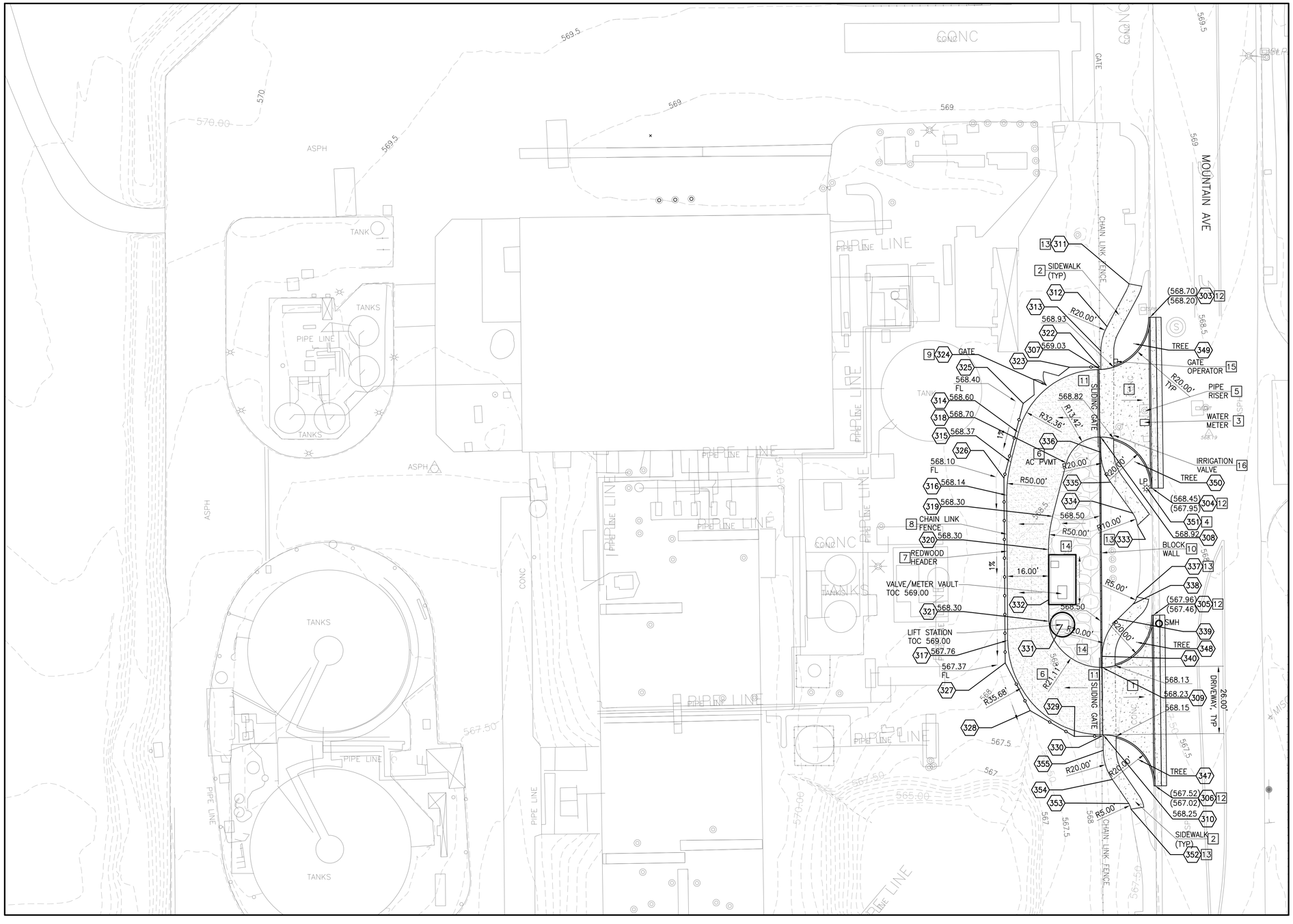
PROJECT MANAGER DATE

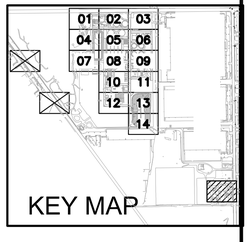
SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709




## NOTES

1. SEE SHEET G-04 FOR LEGEND AND ABBREVIATIONS
2. SEE SHEET CG-01 FOR GENERAL NOTES.
3. SEE SHEET CH-00 FOR THE PAVING AND GRADING DRAWING INDEX.
4. SEE SHEET CD-11 FOR SITE AND YARD PIPING DEMOLITION,
5. FOR PAVING AND GRADING COORDINATES (#) SEE SHEETS CH-26 & CH-27.

## CONSTRUCTION NOTES

1. CONSTRUCT INDUSTRIAL/COMERCIAL DRIVEWAY APPROACH PER CITY OF CHINO STANDARD DRAWING NO. 250. SEE SHEET CG-19.
2. CONSTRUCT 5' WIDE CONCRETE SIDEWALK PER CITY OF CHINO STANDARD DRAWING NO. 230. SEE SHEET CG-19.
3. REMOVE EXISTING WATER METER BOX AND REPLACE WITH TRAFFIC RATED BOX. ADJUST ELEVATION TO PROPOSED DRIVEWAY GRADE.
4. NEW LOCATION OF RELOCATE EXISTING STREET LIGHT.
5. ADJUST ELEVATION OF EXISTING RECYCLE WATER PIPE RISER TO 3' BELOW FINISH GRADE.
6. CONSTRUCT AC PAVEMENT PER DETAIL 1 ON SHEET CG-11.
7. CONSTRUCT REDWOOD HEADER PER DETAIL 6 ON SHEET CG-11.
8. CONSTRUCT 6' HIGH CHAIN LINK FENCE WITH BARB WIRE PER DETAIL 7 ON SHEET CG-12.
9. CONSTRUCT 12' WIDE CHAIN LINK FENCE DOUBLE SWING GATE WITH BARB WIRE PER DETAIL 8 ON SHEET CG-12.
10. CONSTRUCT 6' HIGH BLOCK WALL PER CITY OF CHINO STANDARD DETAIL "MASONRY WALL STANDARD". SEE SHEET CG-19.
11. CONSTRUCT 26' WIDE STEEL TUBULAR SLIDING GATE WITH AUTOMATIC GATE OPENER AND PAVEMENT CENSOR.
12. JOIN EXISTING CONCRETE CURB AND GUTTER, EXPANSION JOINT PER DETAIL 8 ON SHEET CG-11.
13. JOIN EXISTING CONCRETE SIDEWALK, EXPANSION JOINT PER DETAIL 8 ON SHEET CG-11.
14. CONSTRUCT 3" COMPACTED GRAVEL (TYPE E) SURFACE OVER TYPE WF-2 WOVEN GEOTEXTILE.
15. LOCATION OF GATE OPERATOR CONCRETE PAD.
16. IRRIGATION VALVE TO BE FIELD RELOCATED.

0 10' 20' 40' 60'
SCALE: 1" = 20'-0"

SUBMITTAL 90% - 05/31/2019

SHEET CH-15

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

PAVING AND GRADING PLAN
MOUNTAIN AVE LIFT STATION

SHEET NO. X OF

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 12/2017 |
| Drawn | HS | 12/2017 |
| Checked | BL | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | HS | SK | SUBMITTAL 90% |
| D | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | HS | SK | SUBMITTAL 50% |
| A | 12/18/17 | HS | SK | SUBMITTAL 30% |

REVIEWED BY:

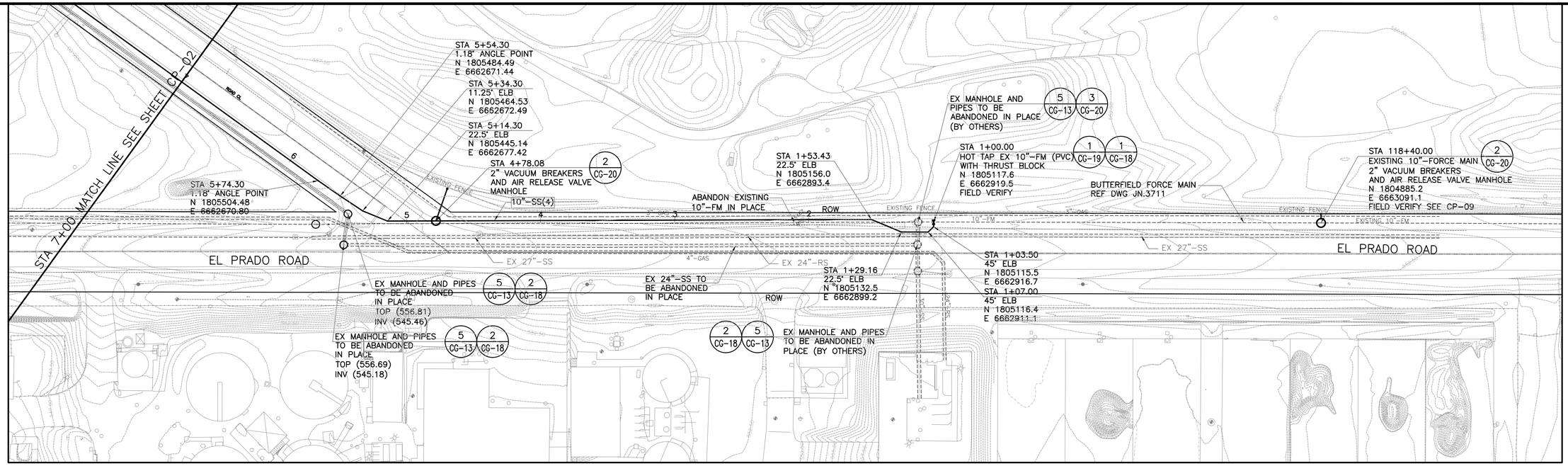
PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

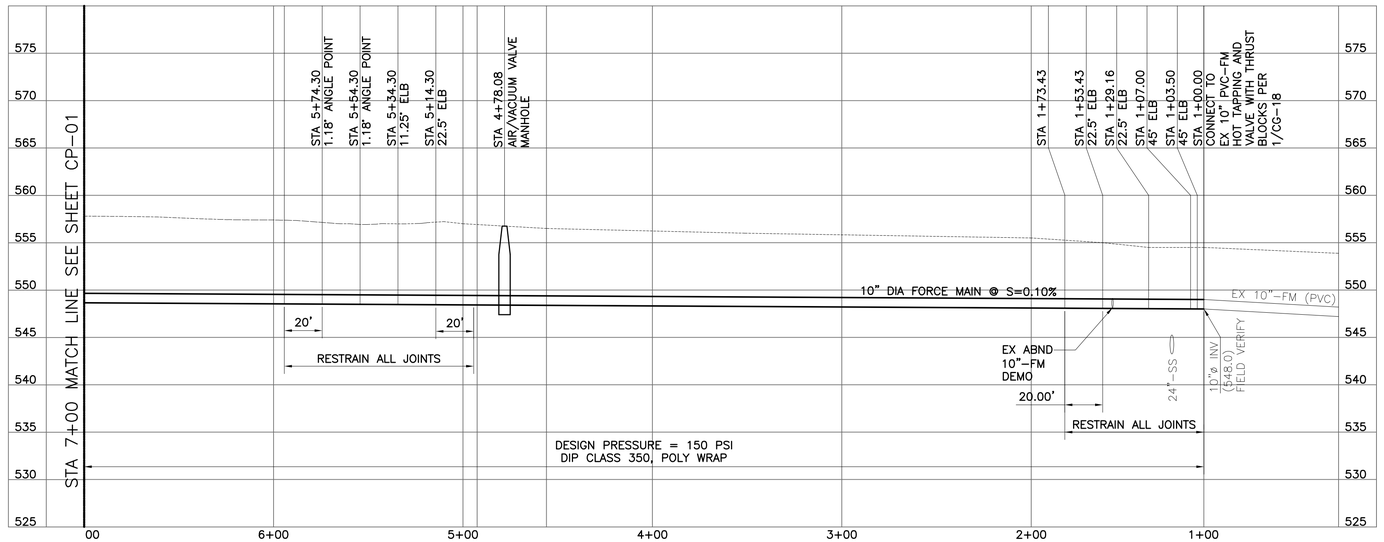
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709




PLAN

SCALE: 1" = 40'-0"




PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

## NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.

KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

SUBMITTAL 90% - 05/31/2019

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 12/2017 |
| Drawn | HS | 12/2017 |
| Checked | BL | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | HS | SK | SUBMITTAL 90% |
| D | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | HS | SK | SUBMITTAL 50% |
| A | 12/18/17 | HS | SK | SUBMITTAL 30% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

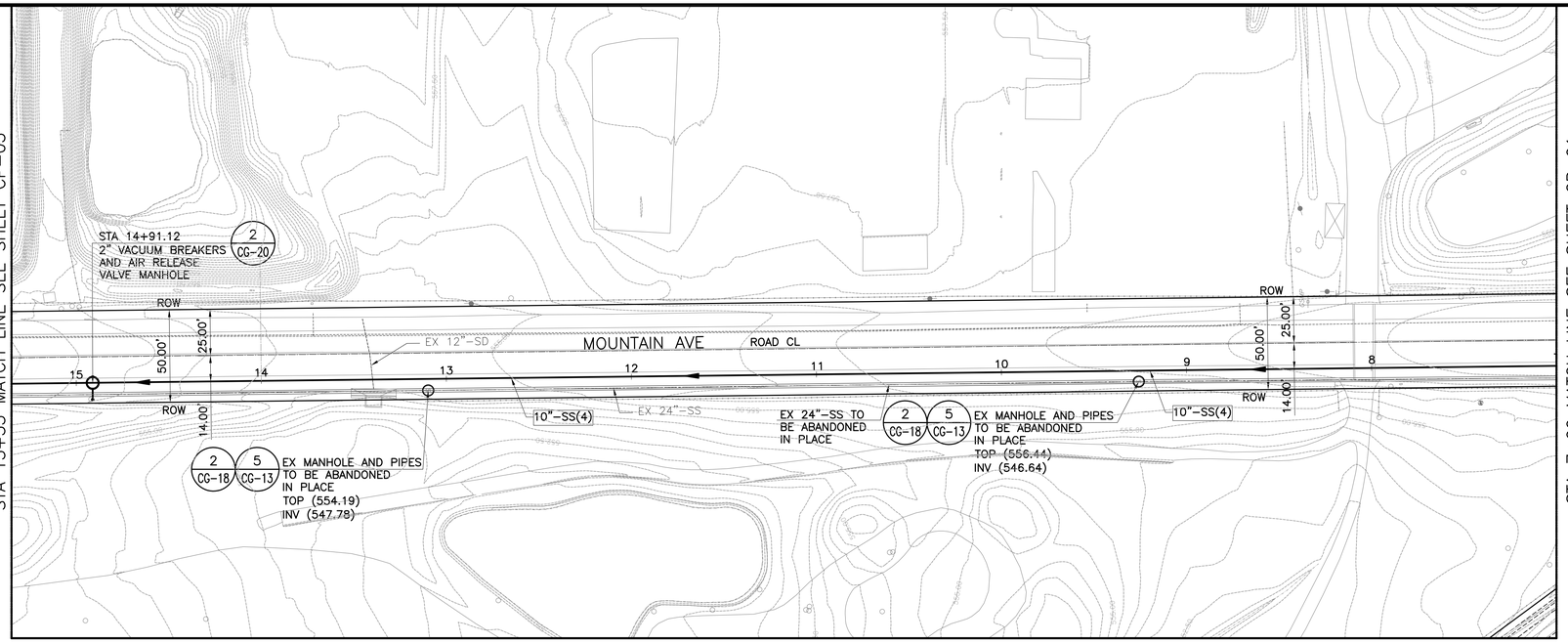
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 1
STA 1+00 TO STA 7+00

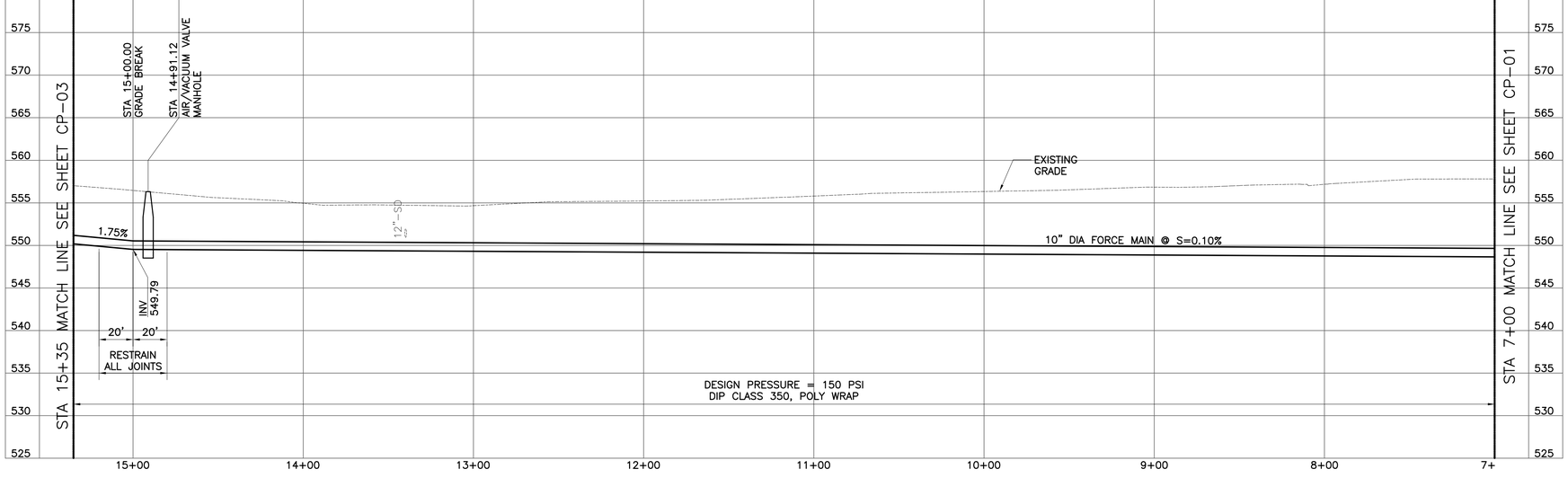
SHEET CP-01
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



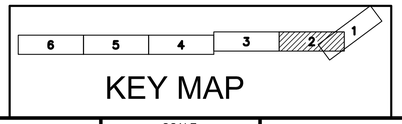

PLAN
SCALE: 1" = 40'-0"

NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.




PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"




KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

SUBMITTAL 90% - 05/31/2019

SHEET CP-02

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 12/2017 |
| Drawn | HS | 12/2017 |
| Checked | BL | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | HS | SK | SUBMITTAL 90% |
| D | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | HS | SK | SUBMITTAL 50% |
| A | 12/18/17 | HS | SK | SUBMITTAL 30% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

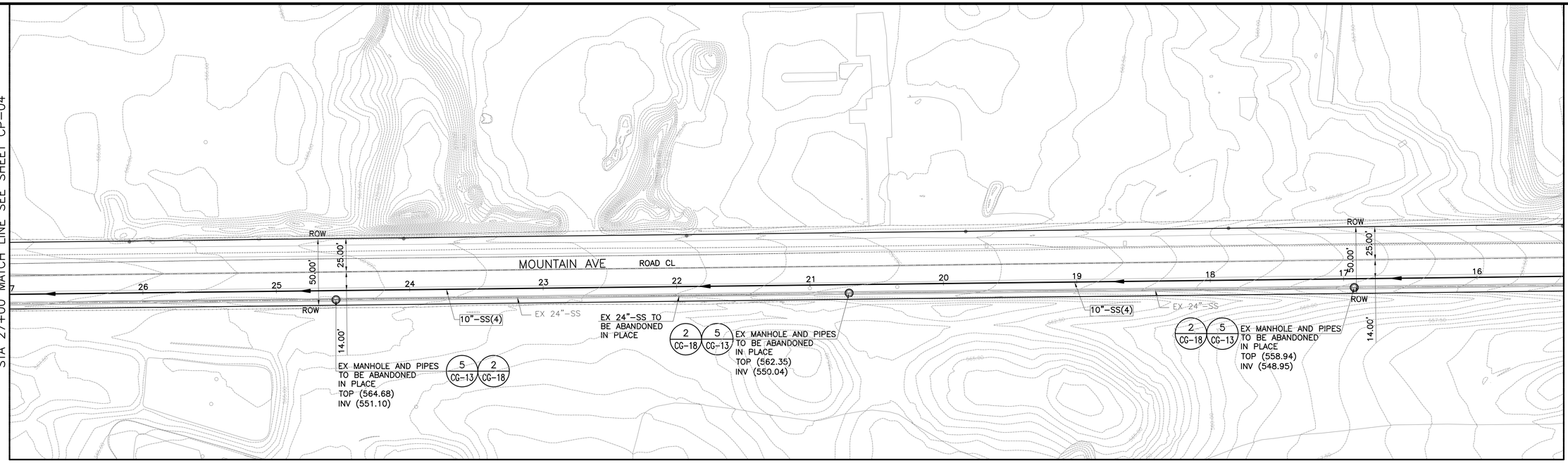
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

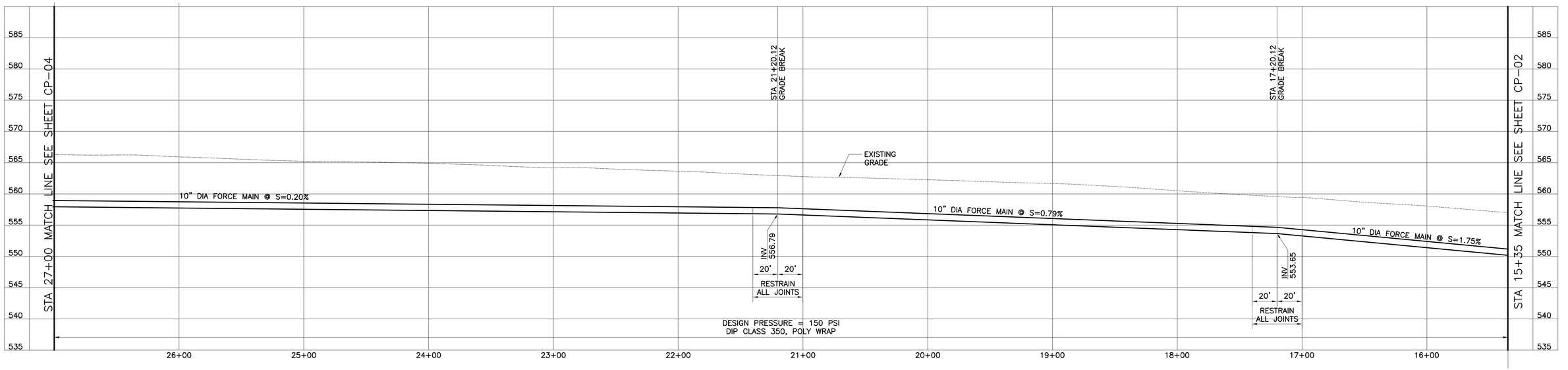
BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 2
STA 7+00 TO STA 15+35

SHEET NO. X OF
PROJECT NO.
DRAWING NO.

W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\2.CE\WORK\05-CP-01-06-MOUNTAIN AVE last saved by P006689D on 5/22/19 plotted 5/23/2019 1:15:04 PM



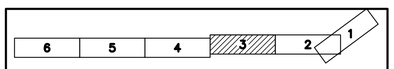

PLAN
SCALE: 1" = 40'-0"




## NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.

PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"




KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"
0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 12/2017 |
| Drawn | HS | 12/2017 |
| Checked | BL | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| D | 05/31/19 | HS | SK | SUBMITTAL 90% |
| C | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | HS | SK | SUBMITTAL 50% |
| A | 12/18/17 | HS | SK | SUBMITTAL 30% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

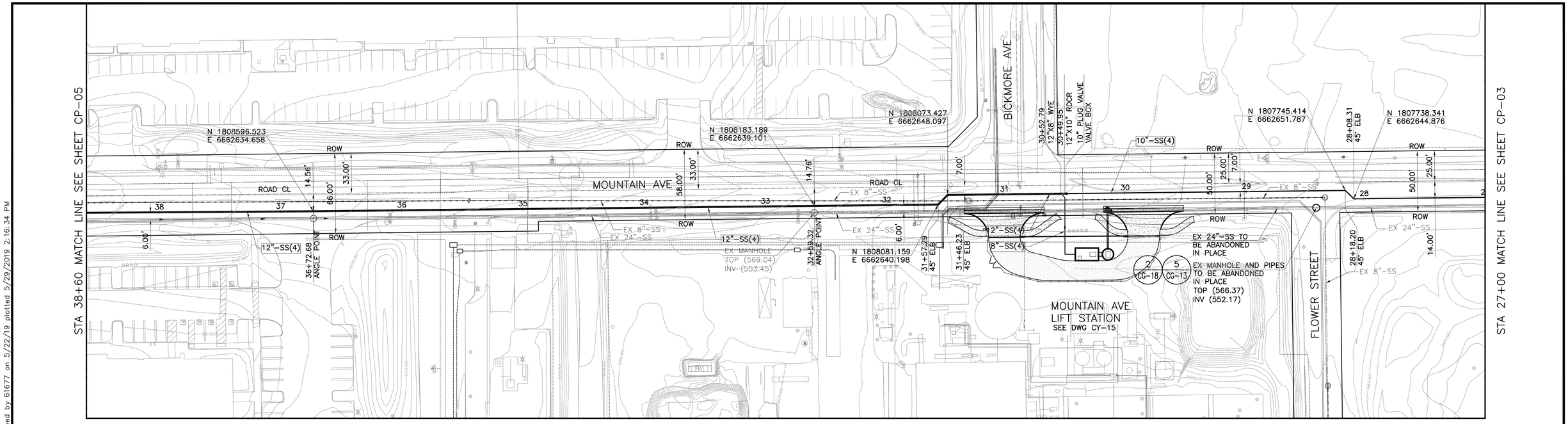
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

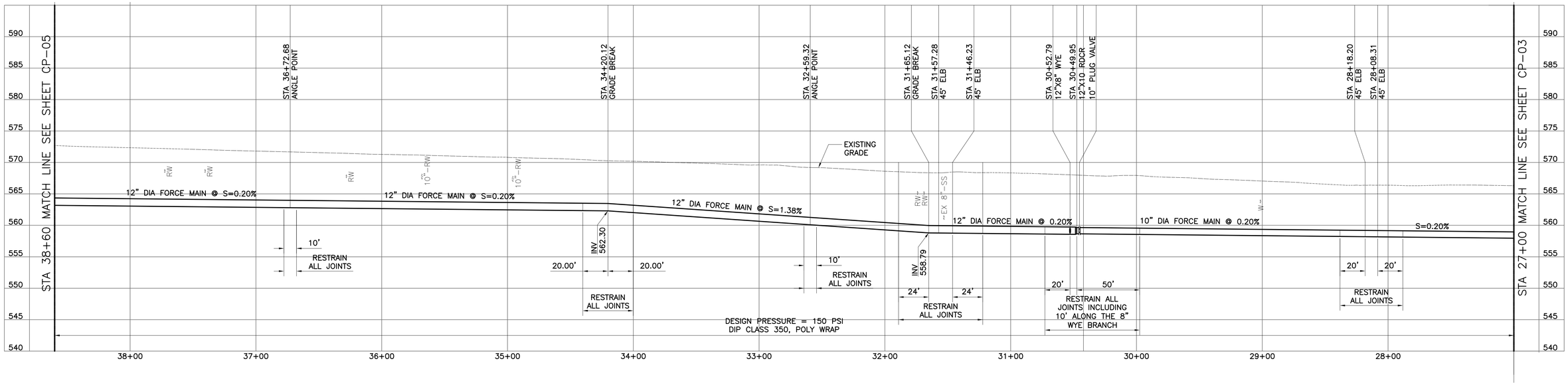
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

# BUTTERFIELD FORCE MAIN PLAN AND PROFILE 3 STA 15+35 TO STA 27+00

SHEET CP-03
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



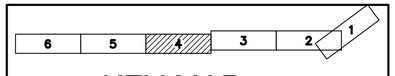

PLAN
SCALE: 1" = 40'-0"




## NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.

PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"




KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

SUBMITTAL 90% - 05/31/2019

SHEET CP-04

SHEET NO. X OF

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 12/2017 |
| Drawn | HS | 12/2017 |
| Checked | BL | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | HS | SK | SUBMITTAL 90% |
| D | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/7/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | HS | SK | SUBMITTAL 50% |
| A | 12/18/17 | HS | SK | SUBMITTAL 30% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

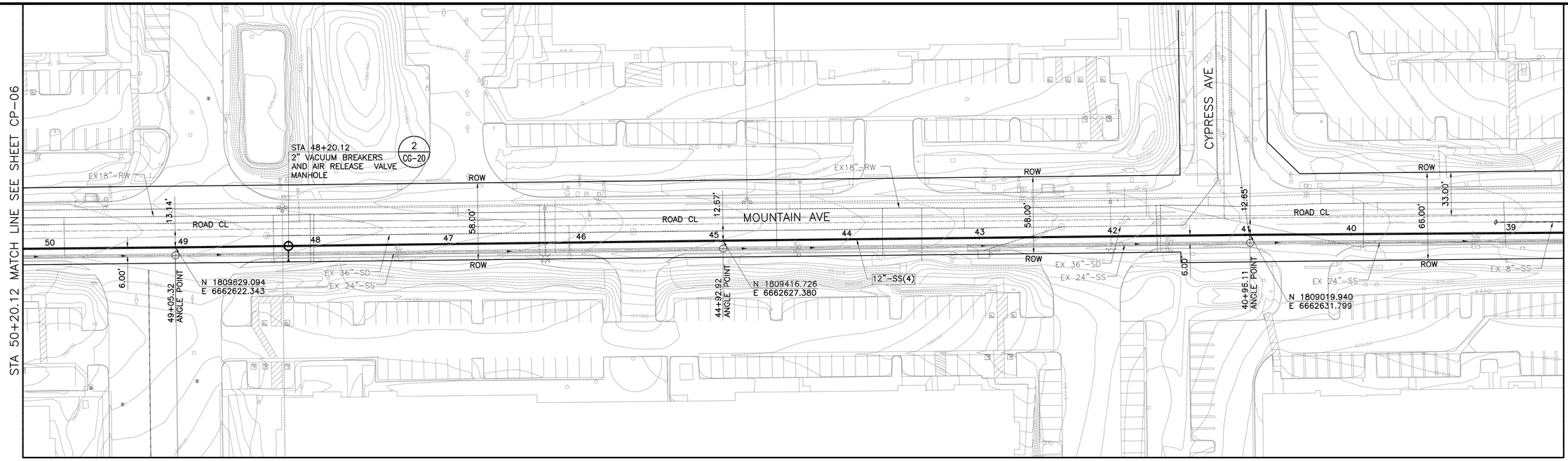
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

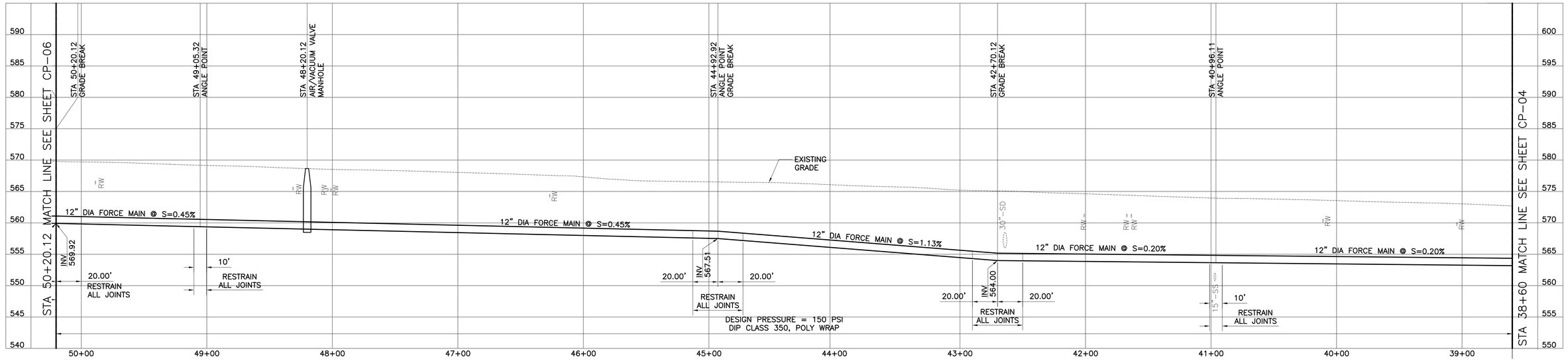
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

# BUTTERFIELD FORCE MAIN PLAN AND PROFILE 4 STA 27+00 TO STA 38+60



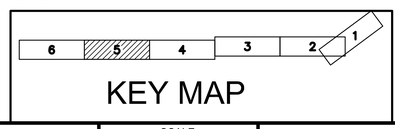

PLAN
SCALE: 1" = 40'-0"




PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

## NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.




KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 12/2017 |
| Drawn | HS | 12/2017 |
| Checked | BL | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | HS | SK | SUBMITTAL 90% |
| D | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | HS | SK | SUBMITTAL 50% |
| A | 12/18/17 | HS | SK | SUBMITTAL 30% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

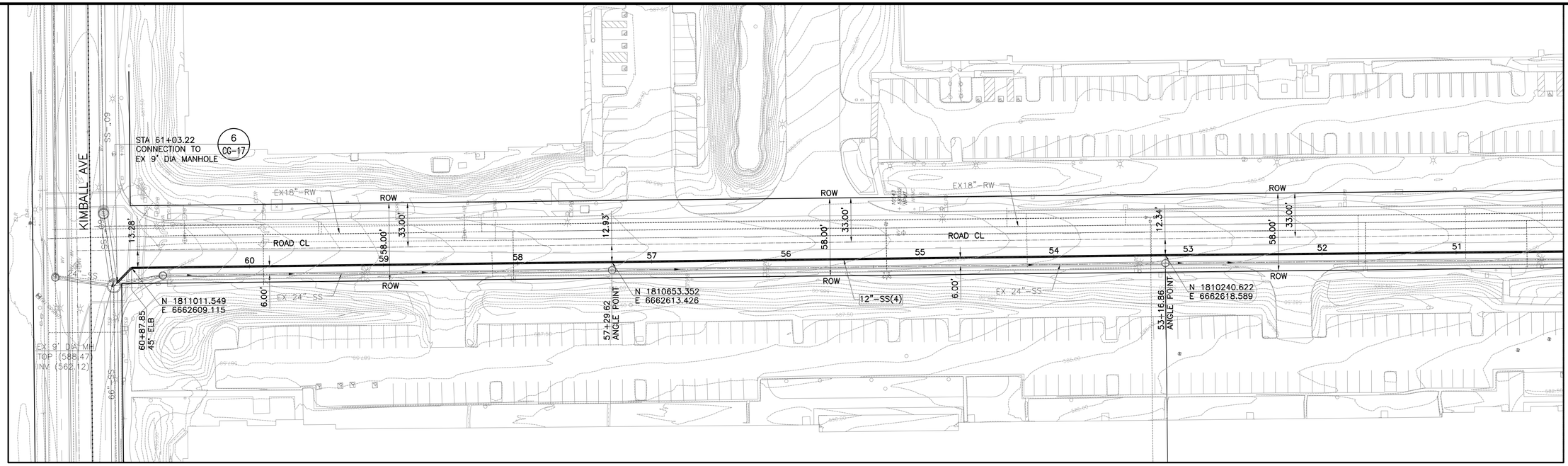
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

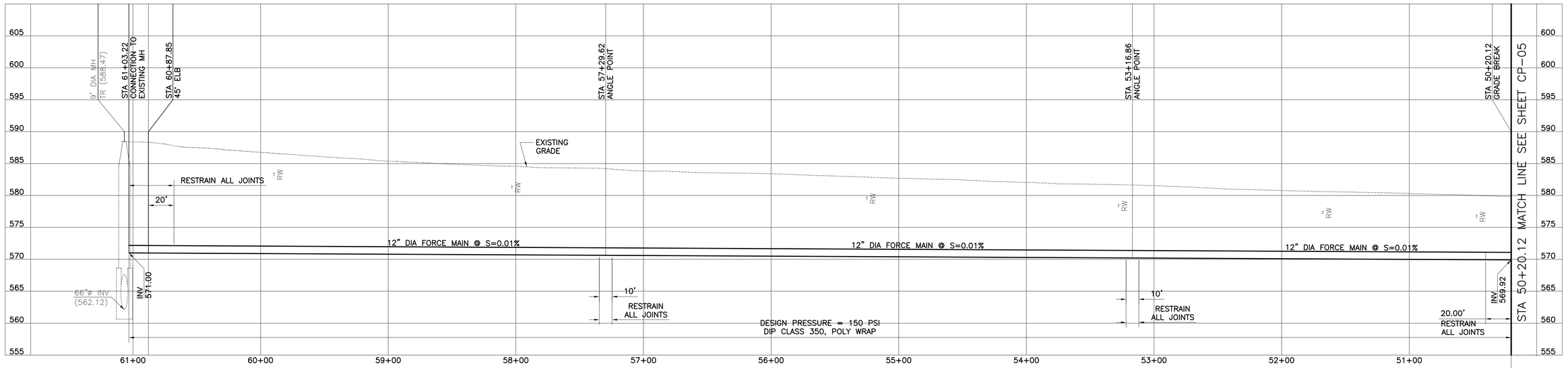
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 5
STA 38+60 TO STA 50+20.12

SHEET CP-05
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



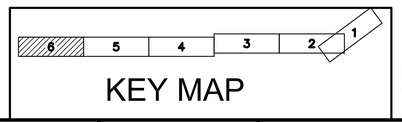

PLAN
SCALE: 1" = 40'-0"




PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

## NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.




KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

SUBMITTAL 90% - 05/31/2019

SHEET CP-06

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | HS | 12/2017 |
| Drawn | HS | 12/2017 |
| Checked | BL | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | HS | SK | SUBMITTAL 90% |
| D | 05/07/19 | HS | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | HS | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | HS | SK | SUBMITTAL 50% |
| A | 12/18/17 | HS | SK | SUBMITTAL 30% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

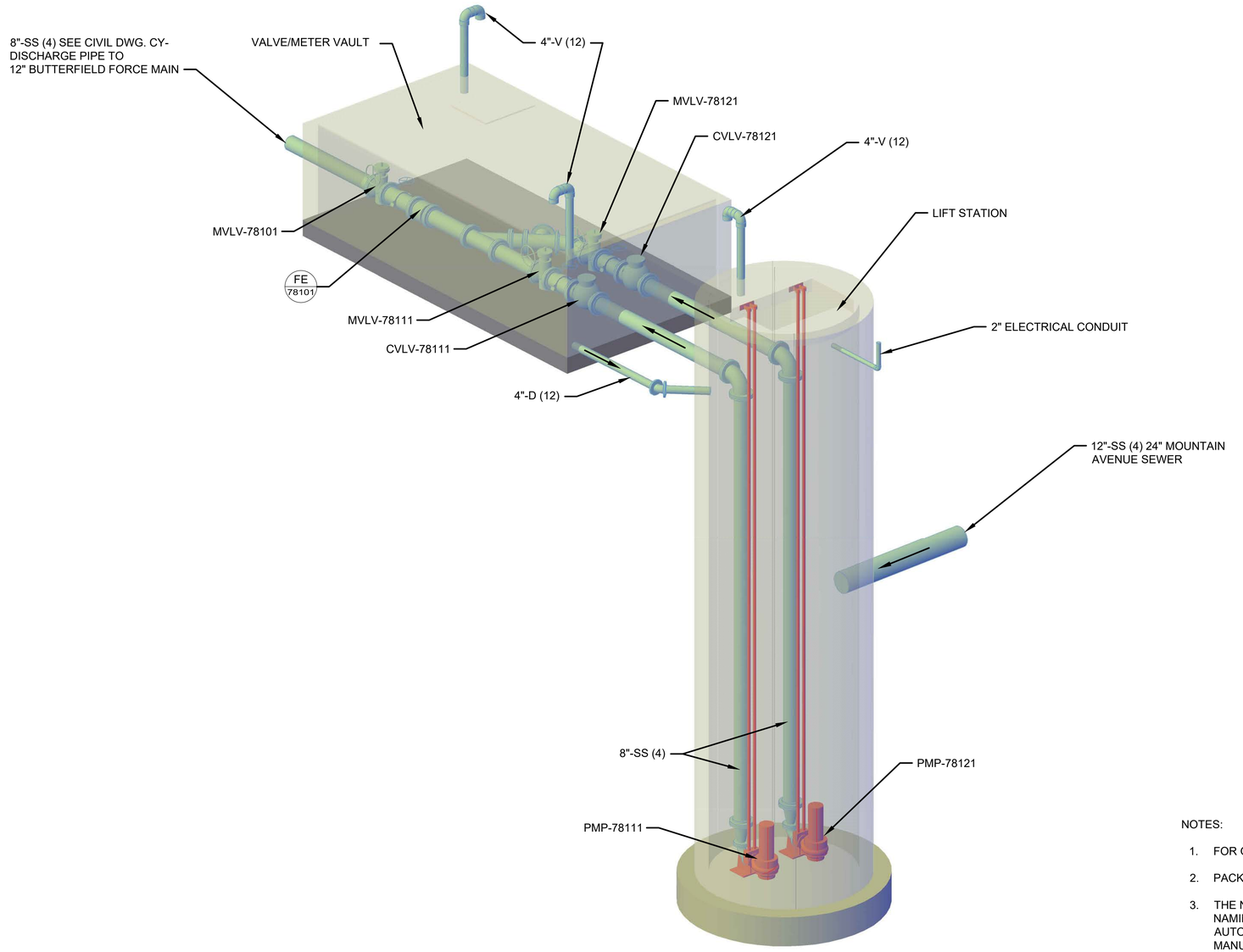
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 6
STA 50+20.12 TO STA 61+03.22

SHEET NO. X OF
PROJECT NO.
DRAWING NO.

W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\2.CE\WORK\05-CP-01-06-MOUNTAIN AVE last saved by P006689D on 5/22/19 plotted 5/23/2019 1:16:17 PM




ISOMETRIC VIEW

SCALE: NTS

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.
2. PACKAGE LIFT STATION DRAWINGS ARE BASED ON JENSEN PRODUCT.
3. THE NAMED PACKAGE LIFT STATION MANUFACTURER IS FOR OUTLINE DESIGN PURPOSE. NAMING THE MANUFACTURER'S PRODUCT ABOVE DOES NOT IMPLY THAT THEIR PRODUCT IS AUTOMATICALLY SELECTED. MANUFACTURERS LISTED UNDER PARAGRAPH "REFERENCE MANUFACTURERS, OR EQUAL" SECTION 11250 AND WHOSE PRODUCTS WILL FULLY COMPLY WITH SPECIFICATION REQUIREMENTS WILL BE CONSIDERED "EQUAL". COST ASSOCIATED WITH ANY DESIGN MODIFICATIONS TO ACCOMMODATE "EQUAL" PRODUCT SHALL BE INCLUDED IN THE CONTRACTOR'S BID. AFTER CONTRACT AWARD, ANY STRUCTURAL/MECHANICAL/ELECTRICAL/I&C MODIFICATION INCURRED TO INSTALL AN "EQUAL" PRODUCT SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.



PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | ID | 07/2018 |
| Drawn | JD | 07/2018 |
| Checked | ID | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | ID | SK | SUBMITTAL 90% |
| D | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | ID | SK | SUBMITTAL 50% |
| A | 12/18/17 | ID | SK | SUBMITTAL 30% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

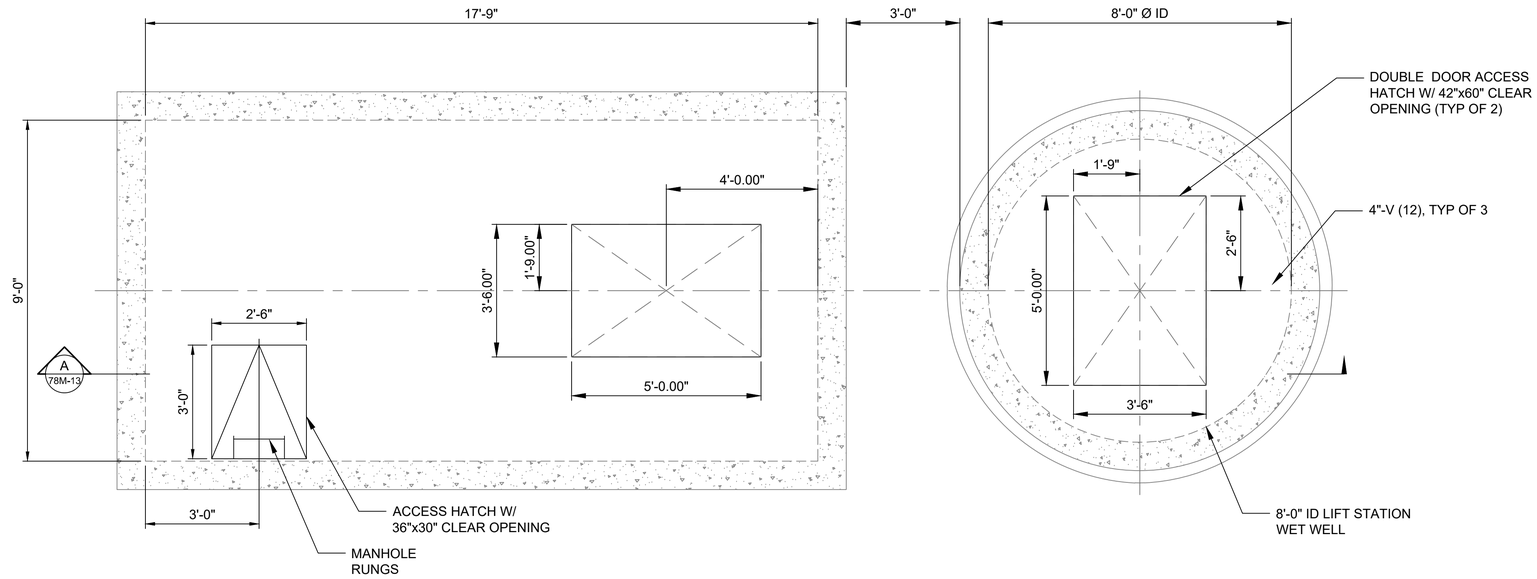
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

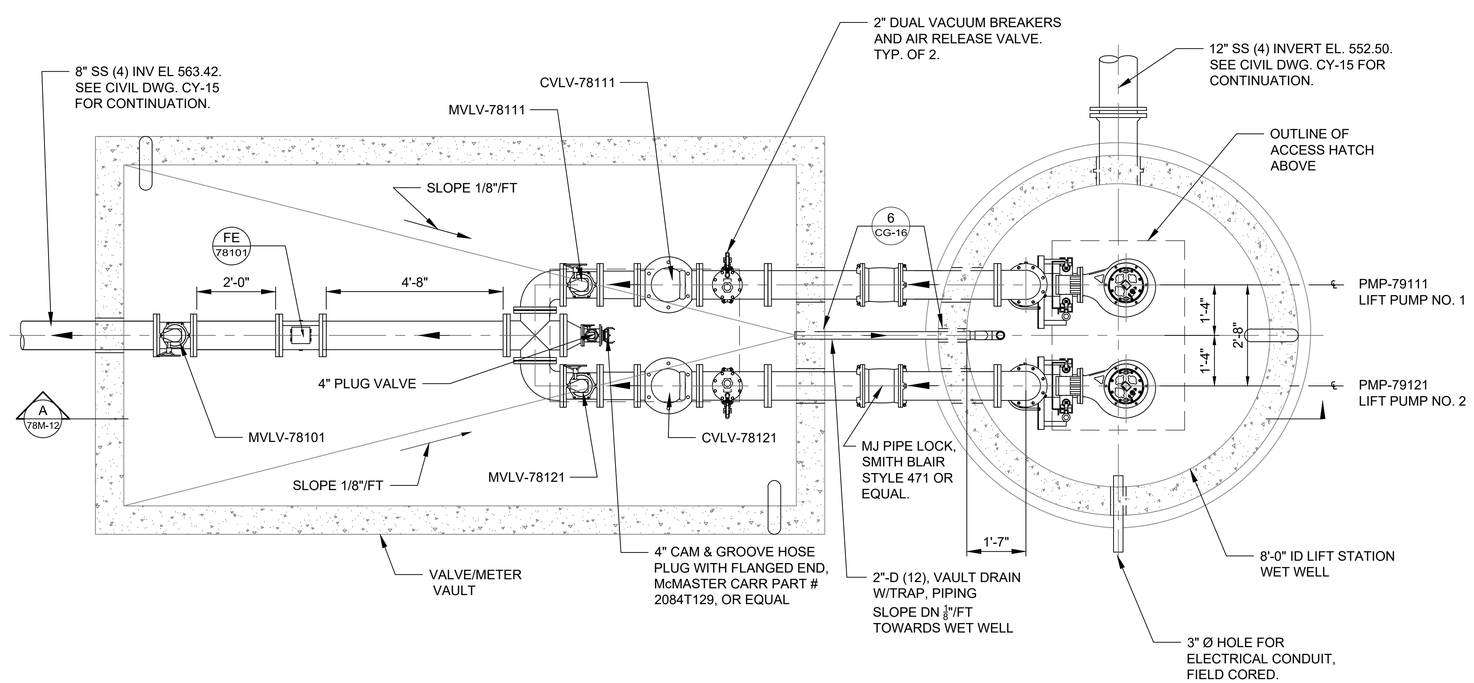
# MOUNTAIN AVE LIFT STATION GENERAL ARRANGEMENT ISOMETRIC

SHEET 78M-10
SHEET NO. X OF
PROJECT NO.
DRAWING NO.




## TOP PLAN

SCALE: 1/2"=1'-0"




## BASE PLAN

SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.

2' 1' 0 2' 4'

SCALE: 1/2"=1'-0"



PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | ID | 07/2018 |
| Drawn | JD | 07/2018 |
| Checked | ID | 07/2018 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| E | 05/31/19 | ID | SK | SUBMITTAL 90% |
| D | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |
| C | 12/21/18 | ID | SK | SUBMITTAL 90% (DRAFT) |
| B | 07/20/18 | ID | SK | SUBMITTAL 50% |
| A | 12/18/17 | ID | SK | SUBMITTAL 30% |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE

AS SHOWN

Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.

0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

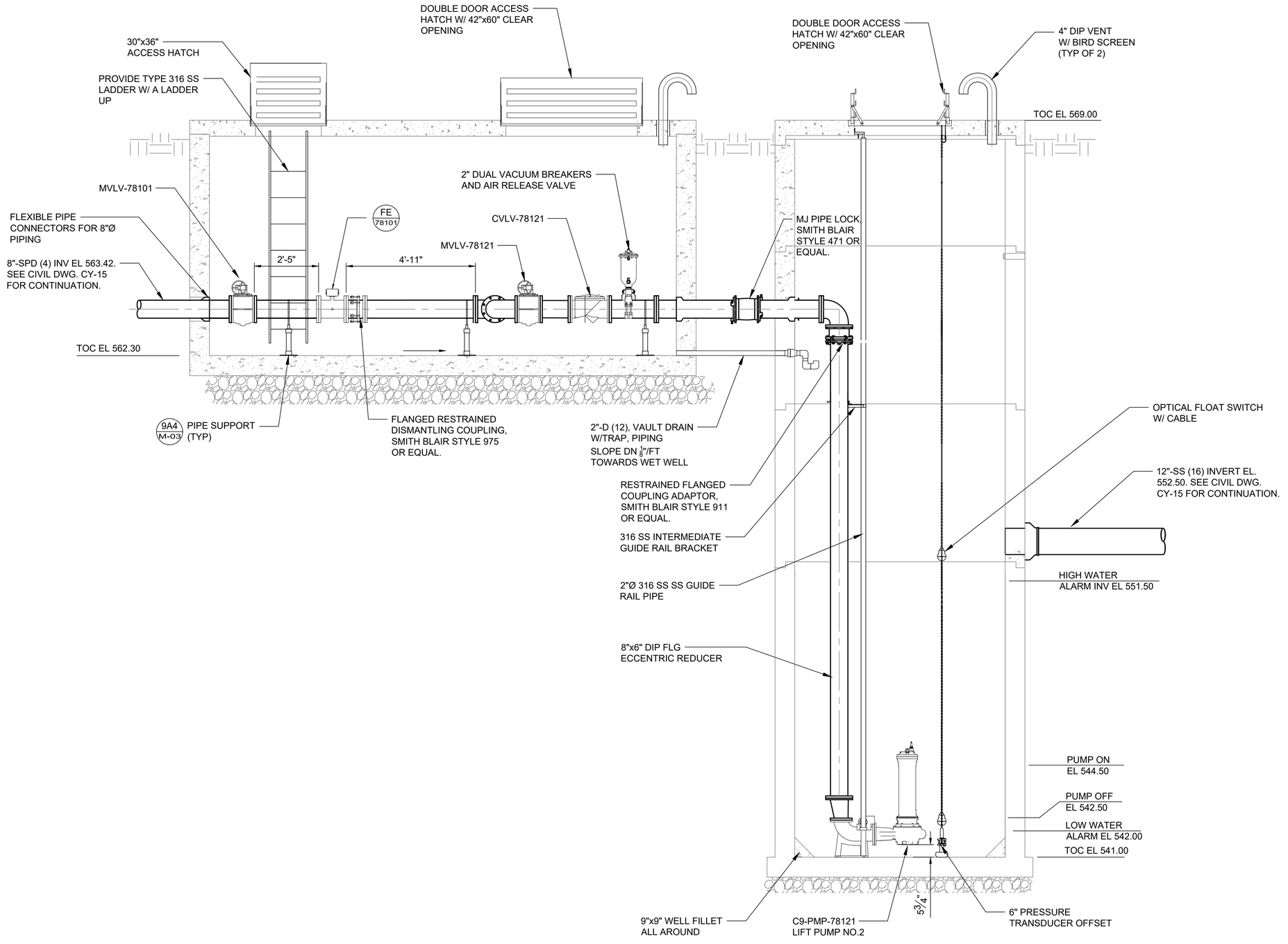
MOUNTAIN AVE LIFT STATION PLANS

SHEET 78M-11

SHEET NO. X OF

PROJECT N0.

DRAWING NO.




A / 78M-12 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\6.MP\WORK\78M-12 last saved by P0020830 on 5/30/2019 plotted 5/30/2019 12:03:04 PM

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

| | | |
|---|---|---|
| Designed | ID | 12/2017 |
| Drawn | RD | 12/2017 |
| Checked | ID | 12/2017 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| B | 05/31/19 | ID | SK | SUBMITTAL 90% |
| A | 05/07/19 | ID | SK | SUBMITTAL 90% (QA/QC) |

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

MOUNTAIN AVE LIFT STATION
SECTION

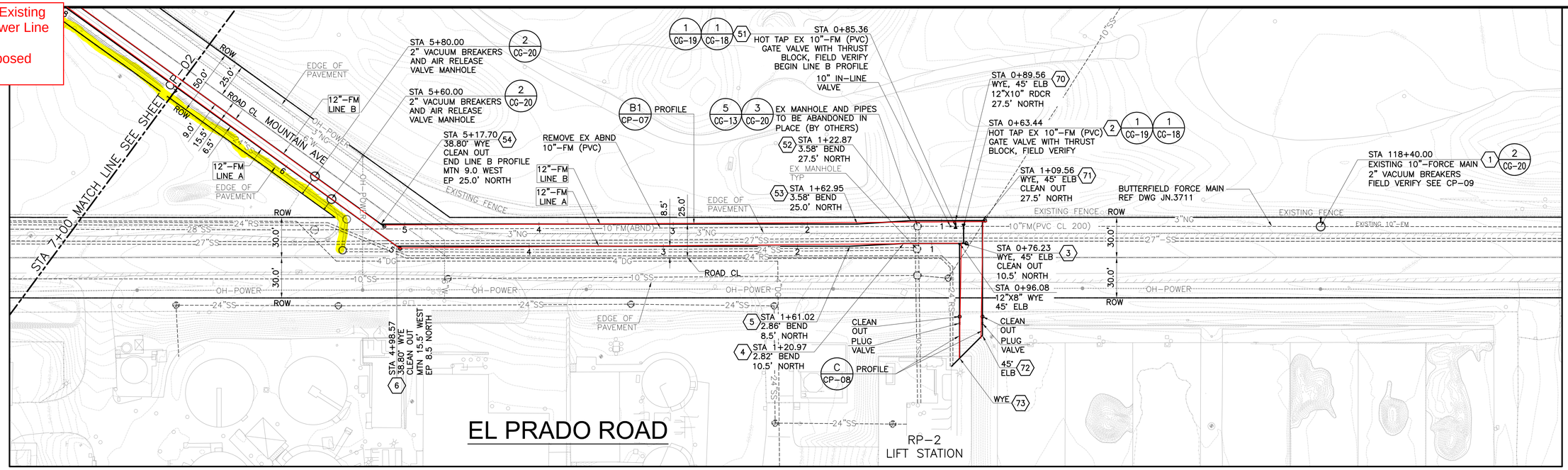
SHEET 78M-12
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

ENGINEERING DRAWINGS

BUTTERFIELD FORCE MAIN – Marked Up

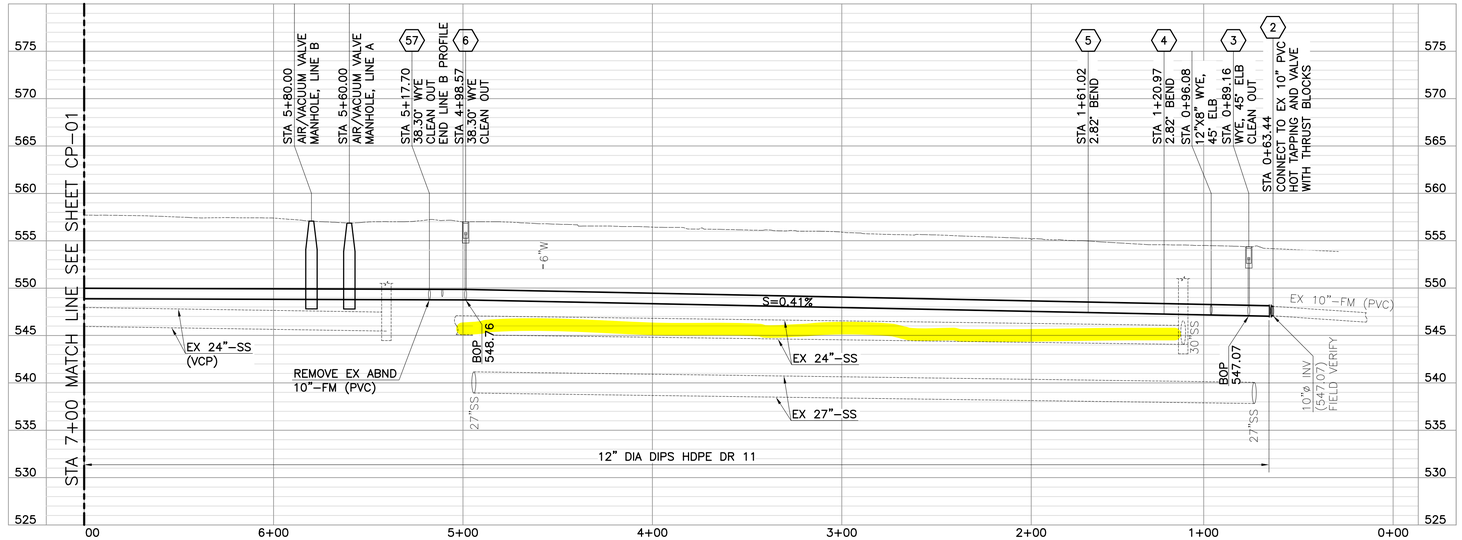
Yellow Highlight = Existing 24-inch Gravity Sewer Line

Red Outline = Proposed Dual Force Main




PLAN

SCALE: 1" = 40'-0"




PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

KEY MAP

6 5 4 3 2 1

SCALE: VERT 1" = 8'-0"

SCALE: HORIZ 1" = 40'-0"

DRAFT - NOT FOR CONSTRUCTION


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | HS | 03/2023 |
| Drawn | HS | 03/2023 |
| Checked | BL | 03/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| | | | | |

RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

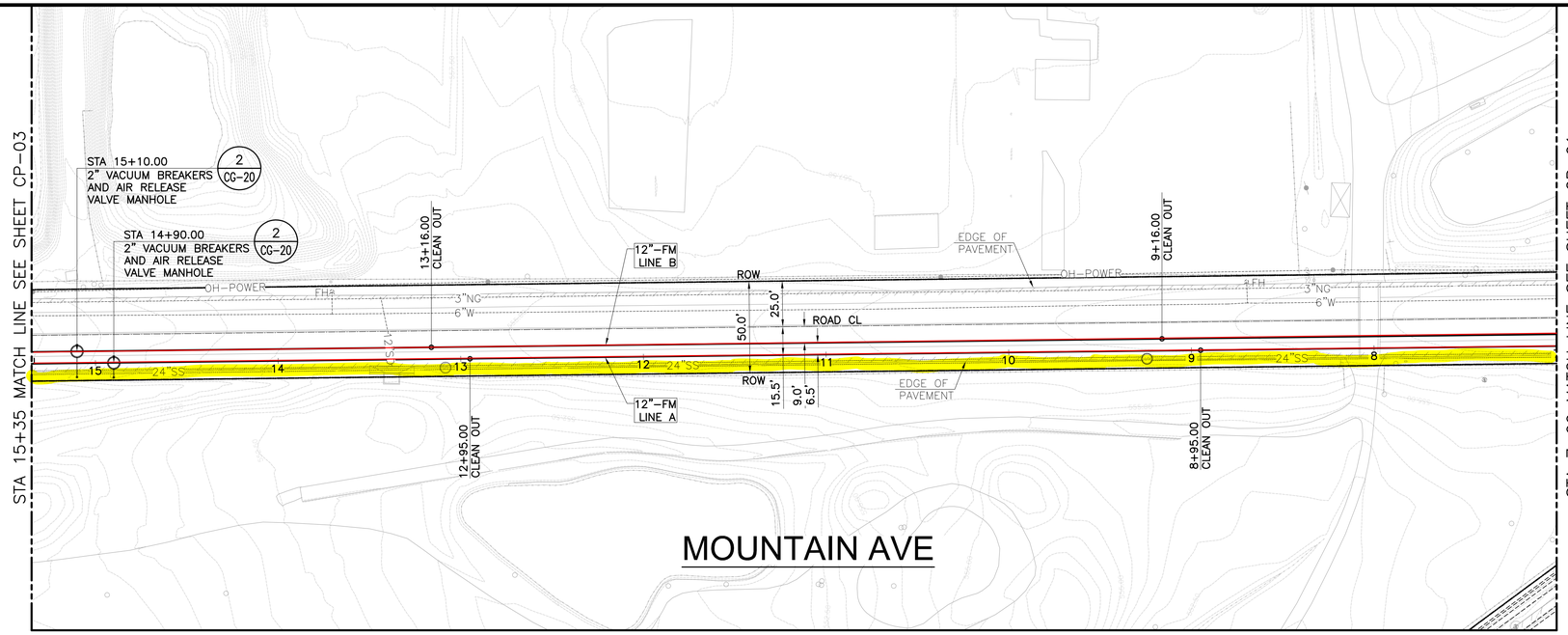
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 1
STA 1+00 TO STA 7+00

SHEET CP-01
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

W:\Pasadena Sector\Projects\EUA\RP-1&RP-5_Treatment_Systems\3. Detailed Design Phase\3.1_CAD\2.CE\WORK\MTN-05-CP-01-08 last saved by 61677 on 3/28/23 plotted 3/28/2023 10:40:48 AM




PLAN

SCALE: 1" = 40'-0"


PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

KEY MAP

6 5 4 3 2 1

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

DRAFT - NOT FOR CONSTRUCTION

SHEET CP-02

SHEET NO. X OF

PROJECT NO.

DRAWING NO.


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | HS | 03/2023 |
| Drawn | HS | 03/2023 |
| Checked | BL | 03/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| | | | | |

RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

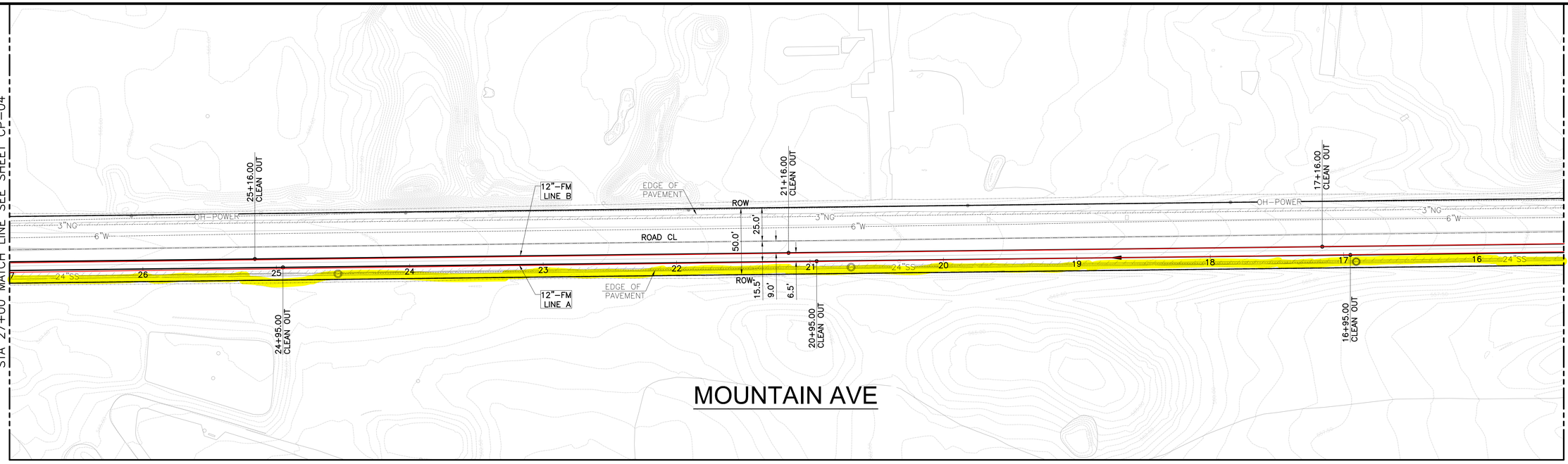

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

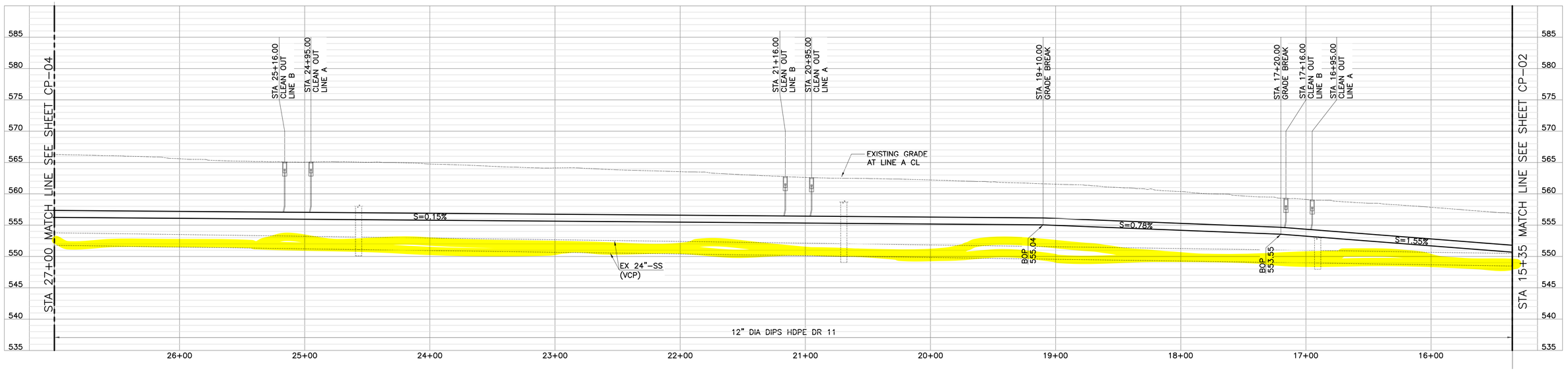
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

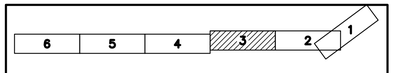
# BUTTERFIELD FORCE MAIN PLAN AND PROFILE 2 STA 7+00 TO STA 15+35




PLAN
SCALE: 1" = 40'-0"




PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"




KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

DRAFT - NOT FOR CONSTRUCTION

SHEET CP-03

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 03/2023 |
| Drawn | HS | 03/2023 |
| Checked | BL | 03/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| | | | | |

RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

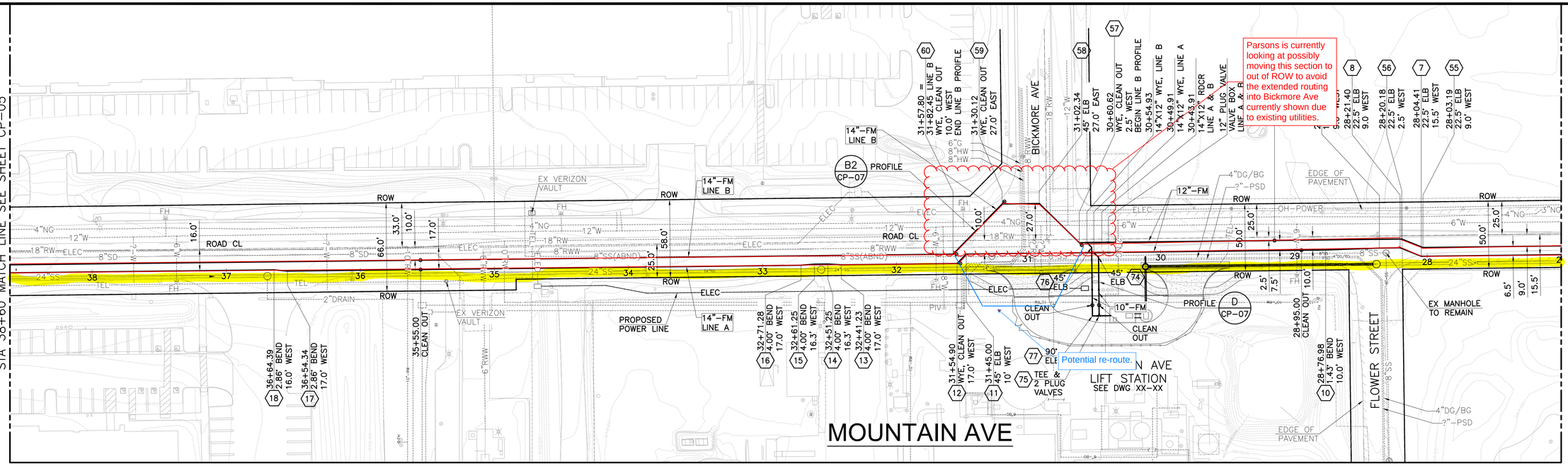
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

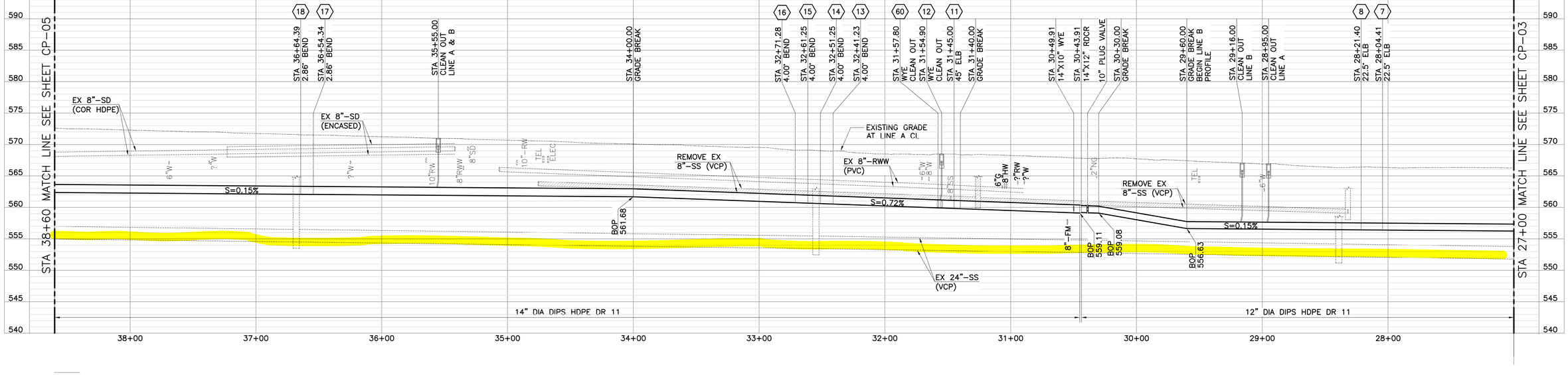
BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 3
STA 15+35 TO STA 27+00

SHEET NO. X OF
PROJECT NO.
DRAWING NO.

W:\Pasadena Sector\Projects\IEUA\RP-1&RP-5_Treatment_Systems\3_Detailed Design Phase\3.1_CADD\2.0E\WORK\MTN-05-CP-01-08 last saved by 61677 on 3/28/23 plotted 3/28/2023 10:42:28 AM




PLAN
SCALE: 1" = 40'-0"




PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

KEY MAP

SCALE: VERT 1" = 8'-0"
SCALE: HORIZ 1" = 40'-0"

DRAFT - NOT FOR CONSTRUCTION

SHEET CP-04
SHEET NO. X OF
PROJECT NO.
DRAWING NO.


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | HS | 03/2023 |
| Drawn | HS | 03/2023 |
| Checked | BL | 03/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| | | | | |

RECOMMENDED BY:

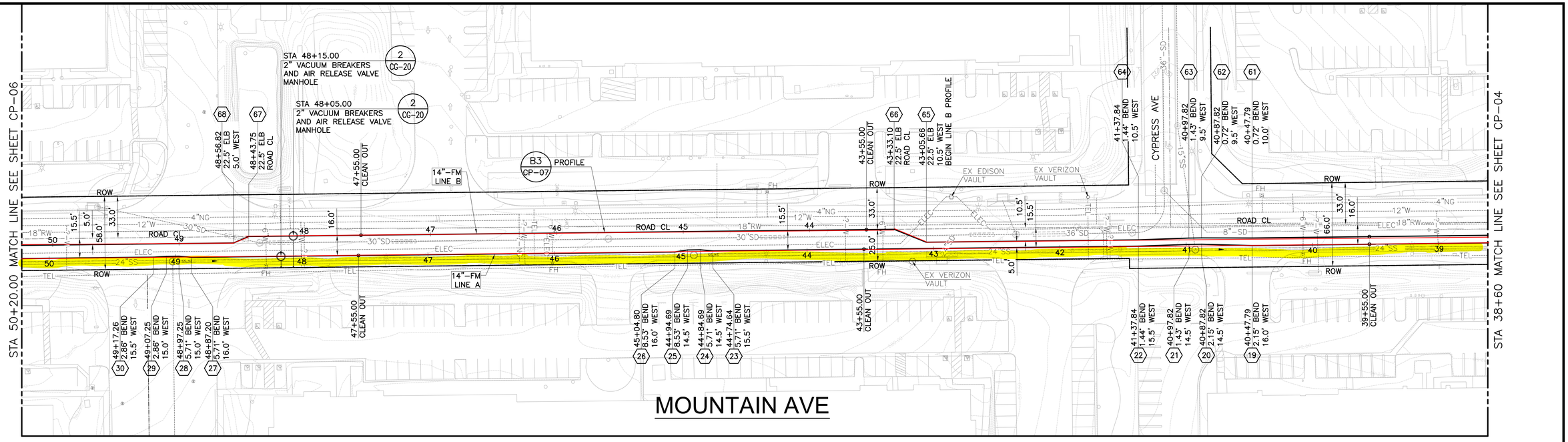
PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

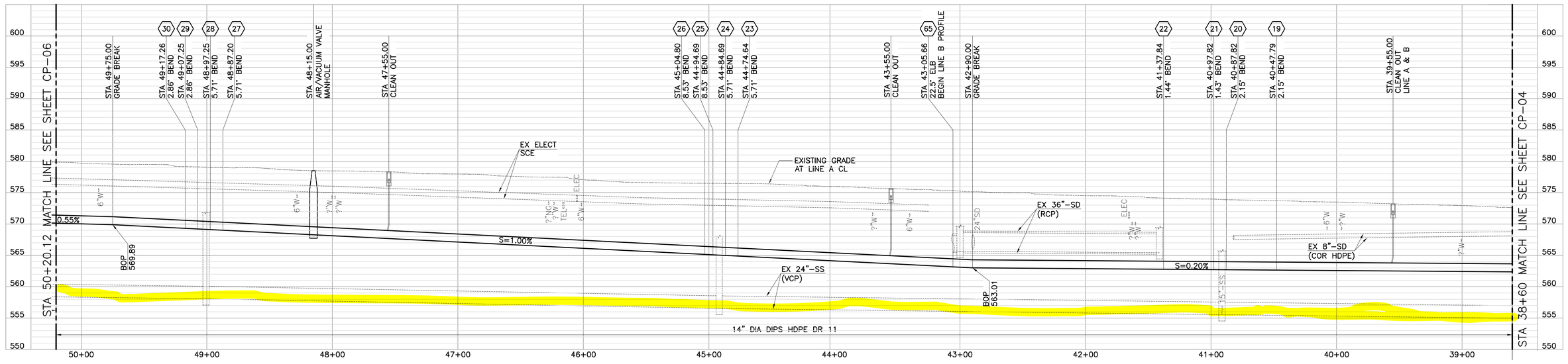

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

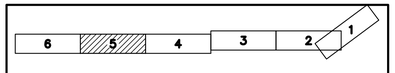
# BUTTERFIELD FORCE MAIN
## PLAN AND PROFILE 4
## STA 27+00 TO STA 38+60




PLAN
SCALE: 1" = 40'-0"




PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"




KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

DRAFT - NOT FOR CONSTRUCTION

SHEET CP-05

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 03/2023 |
| Drawn | HS | 03/2023 |
| Checked | BL | 03/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| | | | | |

RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

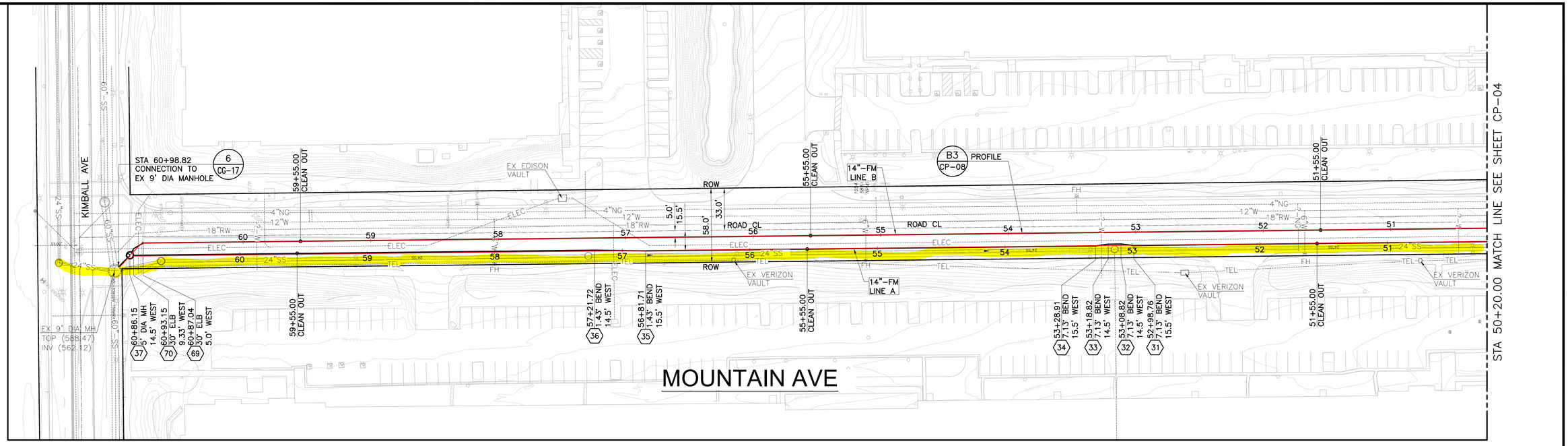
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

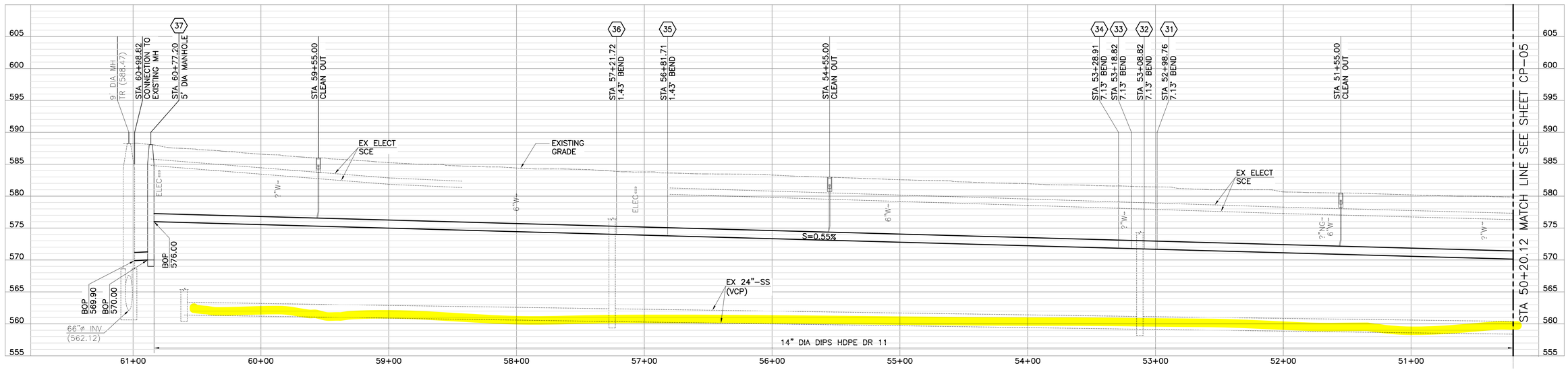
BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 5
STA 38+60 TO STA 50+20.12

SHEET NO. X OF
PROJECT NO.
DRAWING NO.



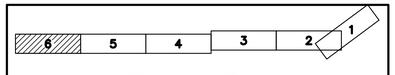

PLAN

SCALE: 1" = 40'-0"




PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"




KEY MAP

0 4' 8' 16' 24'

SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'

SCALE: HORIZ 1" = 40'-0"

DRAFT - NOT FOR CONSTRUCTION

SHEET CP-06

SHEET NO. X OF

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 03/2023 |
| Drawn | HS | 03/2023 |
| Checked | BL | 03/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| | | | | |

RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE

AS SHOWN

Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.

0" 1"

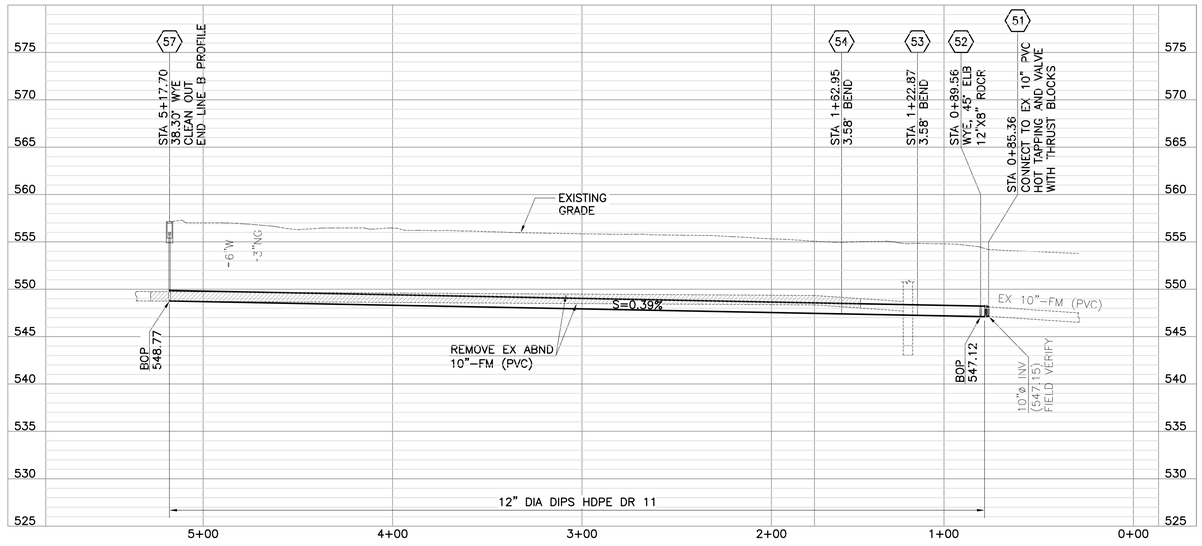
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

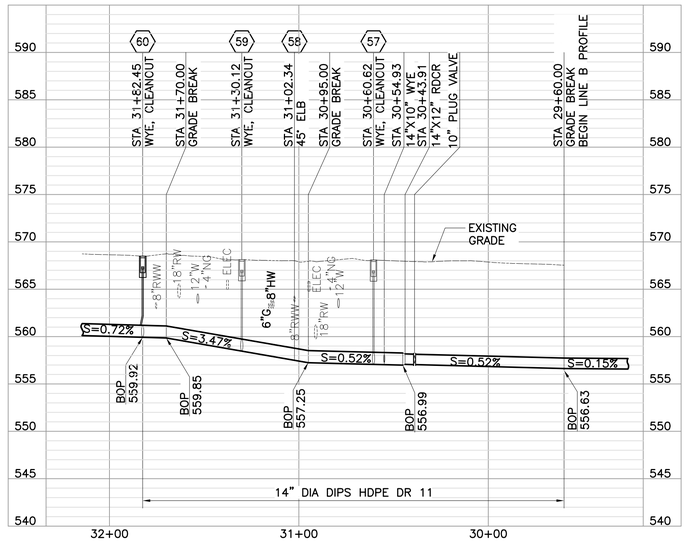
# BUTTERFIELD FORCE MAIN
# PLAN AND PROFILE 6
# STA 50+20.12 TO STA 61+03.22




LINE B 0+85.36 TO 5+17.70 PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

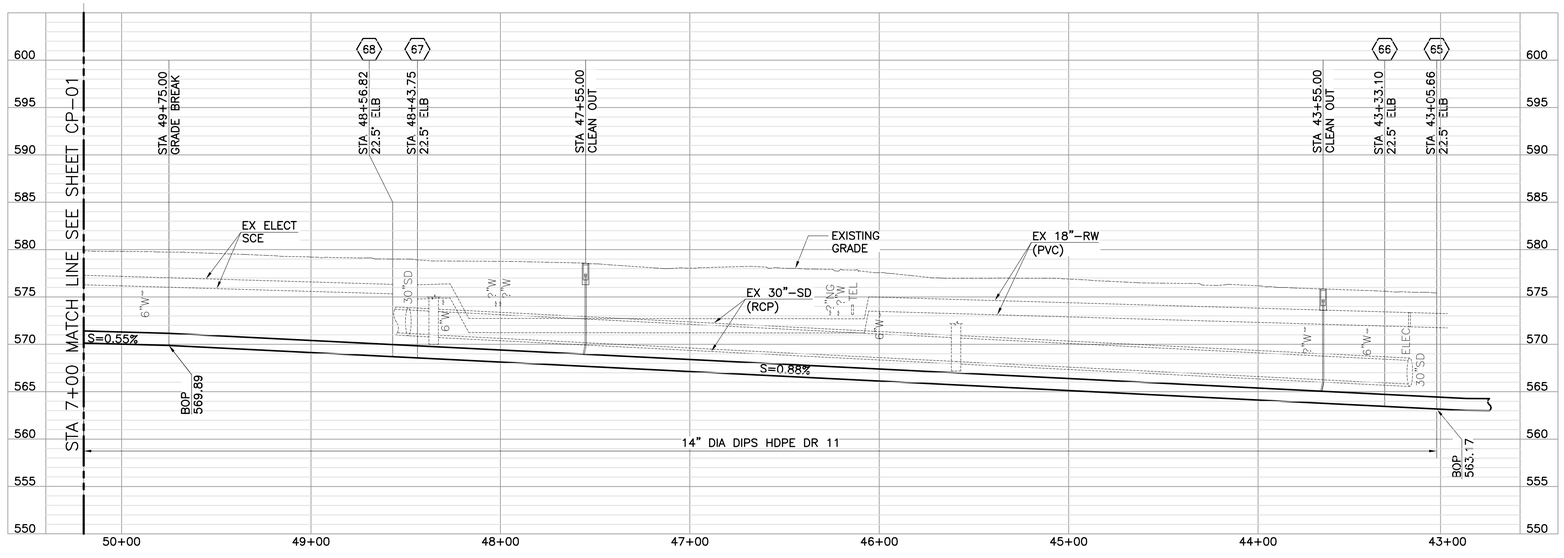
B1
CP-01




LINE B 29+60.00 TO 3+82.45 PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

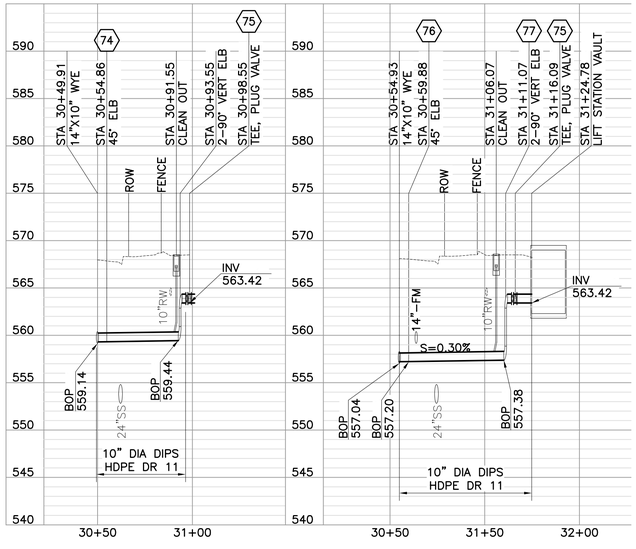
B2
CP-04




LINE B 43+05.66 TO 50+20.00 PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

B3
CP-05




LINE D PROFILES MOUNTAIN AVE LIFT STATION

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

D
CP-04

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

DRAFT - NOT FOR CONSTRUCTION

SHEET CP-07

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 03/2023 |
| Drawn | HS | 03/2023 |
| Checked | BL | 03/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| | | | | |

RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

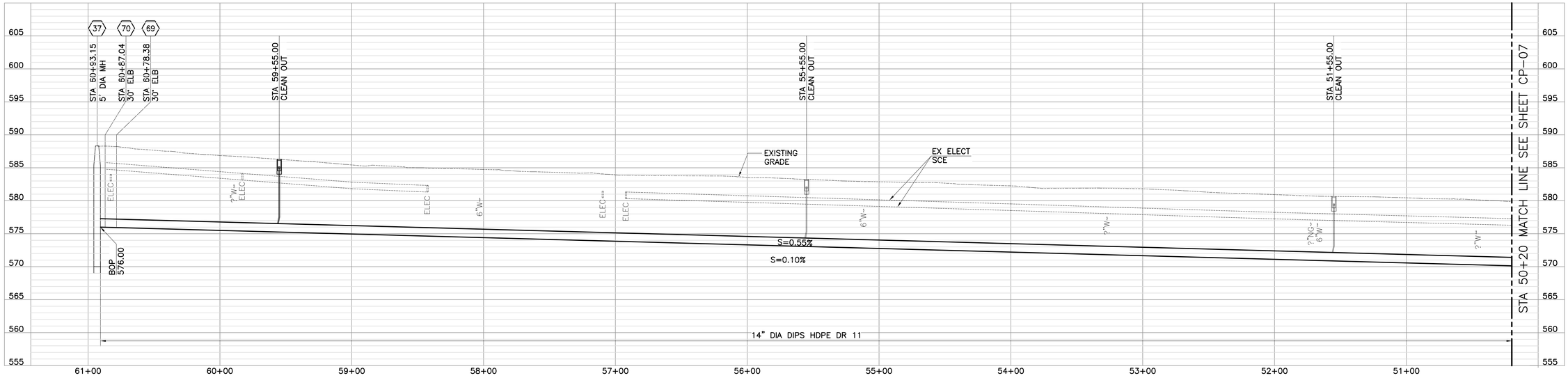
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN PROFILES

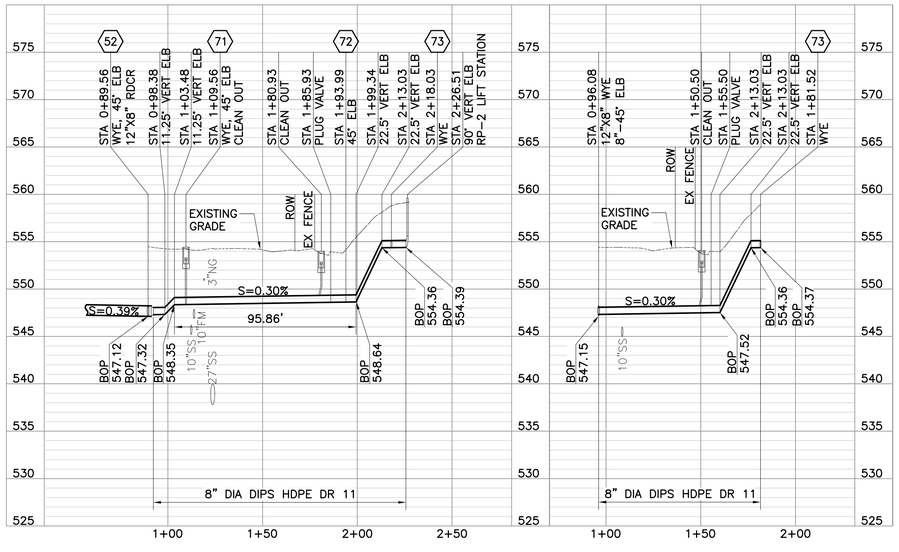
SHEET NO. X OF
PROJECT NO.
DRAWING NO.




## LINE B 50+20 TO 60+93.15 PROFILE

B3 / CP-05

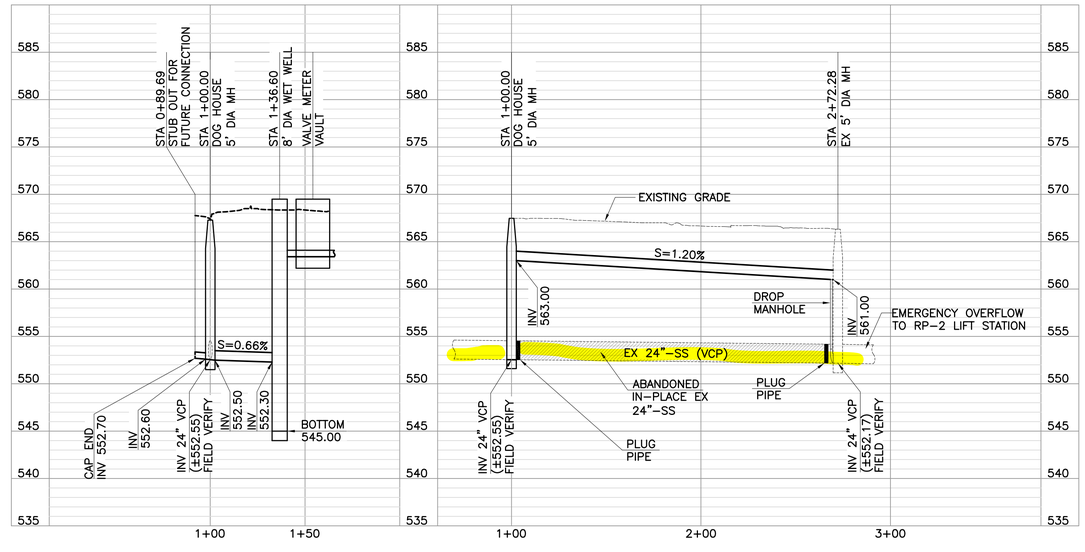
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"




## LINE C PROFILE RP-2 LIFT STATION

C / CP-01

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"




## LINE E1 – 12"-SS PROFILE MOUNTAIN AVE LIFT STATION

E1 / CP-04

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

## LINE E2 – 12"-SS PROFILE EMERGENCY OVERFLOW

E2 / CP-04

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

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

DRAFT - NOT FOR CONSTRUCTION

SHEET CP-08

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN PROFILES

SHEET NO. X OF

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 03/2023 |
| Drawn | HS | 03/2023 |
| Checked | BL | 03/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|

RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

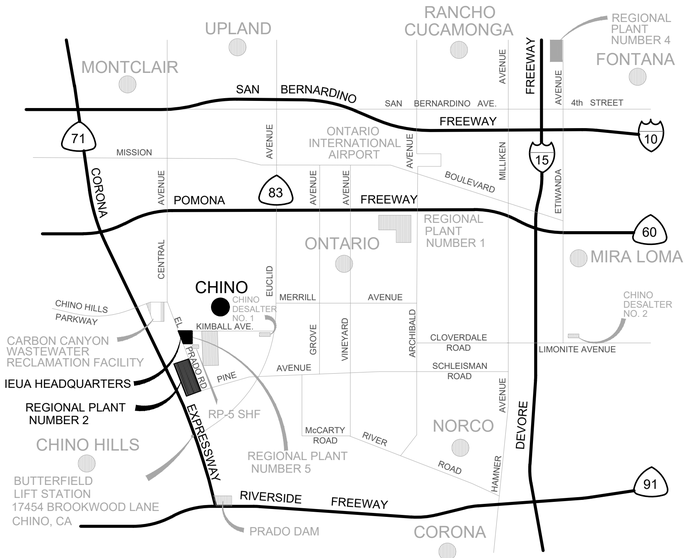
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

# ENGINEERING DRAWINGS

## RP2 LIFT STATION – 60%




N

VICINITY MAP

NOT TO SCALE

Inland Empire Utilities Agency

A MUNICIPAL WATER DISTRICT

# REGIONAL WATER RECYCLING PLANT NO. 5 OFFSITE FACILITIES PROJECTS RP-2

PROJECT NO. EN19001.03

DATE: OCTOBER 2023

60% SUBMITTAL


N

PROJECT LOCATION MAP

NOT TO SCALE

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.1 General\Work\RP-2 Lift Station\G-01 COVER SHEET.dwg
DATE: Oct 18, 2023 12:14pm USER: p0045935
XREFS: IEUA Border

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | GM | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | JLM | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

COVER SHEET

SHEET G-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

## GENERAL

| | |
|---|---|
| G-01 | COVER SHEET |
| G-02 | DRAWING INDEX |
| G-03 | SYMBOLS AND GENERAL ABBREVIATIONS |
| G-04 | PIPE SCHEDULE SHEET 1 |
| G-05 | PIPE SCHEDULE SHEET 2 |

## CIVIL

| | |
|---|---|
| CG-21 | TYPICAL CIVIL DETAILS 1 |
| CG-22 | TYPICAL CIVIL DETAILS 2 |
| CH-02 | RP-2 LIFT STATION PAVING, GRADING AND YARD PIPING PLAN |
| CP-20 | FORCE MAIN PROFILES |

## STRUCTURAL

| | |
|---|---|
| 62SD-01 | RP-2 LIFT STATION EXISTING WET WELL DEMOLITION PLAN |
| 62S-01 | RP-2 LIFT STATION BOTTOM AND TOP PLANS |
| 62S-02 | RP-2 LIFT STATION SECTIONS |
| 62S-03 | RP-2 LIFT STATION SECTIONS |
| 62S-04 | RP-2 LIFT STATION SECTION |
| 62S-10 | RP-2 ELECTRICAL PLATFORM FOUNDATION AND PLATFORM FRAMING PLANS |
| 62S-11 | RP-2 ELECTRICAL PLATFORM SECTIONS |
| 62S-12 | RP-2 ELECTRICAL PLATFORM SECTIONS |

## MECHANICAL

| | |
|---|---|
| M-01 | GENERAL NOTES |
| M-02 | PUMP AND VALVE SCHEDULES |
| M-03 | MECHANICAL STANDARD DETAILS SHEET, 1 |
| M-04 | MECHANICAL STANDARD DETAILS SHEET, 2 |
| M-05 | MECHANICAL STANDARD DETAILS SHEET, 3 |
| M-06 | MECHANICAL STANDARD DETAILS SHEET, 4 |
| 62MD-01 | RP-2 LIFT STATION DEMOLITION PLAN |
| 62MD-02 | RP-2 LIFT STATION DEMOLITION SECTION |
| 62M-01 | RP-2 LIFT STATION PLAN |
| 62M-02 | RP-2 LIFT STATION SECTIONS |

## ELECTRICAL

| | |
|---|---|
| E-01 | ELECTRICAL SYMBOLS AND LEGEND |
| E-02 | ELECTRICAL GENERAL NOTES & ABBREVIATIONS |
| E-03 | RP-2 LIFT STATION ELECTRICAL SINGLE LINE DIAGRAM |
| E-04 | BUTTERFIELD FORCE MAIN PLAN AND PROFILE 4 STA 27+00 TO STA 38+60 |
| E-05 | BUTTERFIELD FORCE MAIN PLAN AND PROFILE 5 STA 38+60 TO STA 50+20.12 |
| E-06 | ELECTRICAL CONTROL SCHEMATICS LIFT PUMP |
| 62E-01 | RP-2 LIFT STATION ELECTRICAL PLAN |
| ED-01 | RP-2 LIFT STATION ELECTRICAL SINGLE LINE DIAGRAM (DEMOLITION) |
| ED-02 | RP-2 LIFT STATION ELECTRICAL DEMOLITION PLAN |

## INSTRUMENTATION

| | |
|---|---|
| I-01 | INSTRUMENTATION LEGEND |
| I-02 | INSTRUMENTATION LEGEND |
| 62I-01 | RP-2 LIFT STATION P&ID |

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.1 General\Work\RP-2 Lift Station\G-02 DRAWING INDEX.dwg USER: p0045935
DATE: Oct 19, 2023 9:50am XREFS: IEUA Border

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | GM | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | JLM | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

DRAWING INDEX

SHEET G-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

# GENERAL SYMBOLS

- AGGREGATE BASE SURFACE
- DRAIN ROCK
- GRAVEL SURFACE PEA GRAVEL
- AGGREGATE BASE
- ASPHALT CONCRETE PAVING
- NEW CONCRETE
- MASONRY OR CONCRETE BLOCK
- GRATING
- CHECKER PLATE
- STEEL
- ALUMINUM
- WOOD
- OPENING OR DEPRESSION IN SLAB OR WALL
- 1095 S.46 E.G — SURVEYED POINT
- 286 — EXISTING CONTOUR
- 286 — FINISHED GRADE CONTOUR
- GROUND LINE
- BUSHES OR TREE LINE
- SHRUBS OR TREE
- S — EXISTING SEWER LINE
- T — EXISTING TELEMETRY OR TELEPHONE LINE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- SD — EXISTING STORM DRAIN
- E — EXISTING ELECTRICAL CONDUIT OR DUCT BANK
- FLOW LINE
- PROPERTY LINE
- EXISTING FENCE
- X — X — X — NEW FENCE
- R — R — R — RIDGE LINE
- CHANGE IN PIPE MATERIAL
- RAILING
- TO BE DEMOLISHED
- TO BE ABANDONED
- TO BE MODIFIED
- TOP / TOE — CUT OR FILL SLOPE TO BE CONSTRUCTED
- ℄ — CENTERLINE
- Ø — DIAMETER
- ∠ — ANGLE
- @ — AT
- Δ — DEFLECTION ANGLE
- 293.90 FG — FINISHED ELEVATION
- 4"-D — PIPE CALLOUT (SEE PIPING SCHEDULE)
- UNION
- REDUCER
- ECCENTRIC REDUCER

- C.B. D.I. — CATCH BASIN OR DRAIN INLET
- SB-1 — TEST BORINGS (SB OR B) DRILL HOLE (DH)
- B.M. — BENCH MARK
- HORIZONTAL AND VERTICAL CONTROL POINT
- W.M. — WATER METER
- G.M. — GAS METER
- COTG — CLEAN OUT TO GRADE
- TP, PP, OR LP — TELEPHONE, POWER OR LIGHT POLE
- GUY — GUY WIRE
- FH — FIRE HYDRANT
- MH — MANHOLE
- SLEEVE TYPE FLEXIBLE COUPLING
- GROOVED TYPE COUPLING
- HOSE COUPLING
- HOSE BIBB
- NEW PIPELINE (12"Ø AND LARGER)
- NEW PIPELINE (SMALLER THAN 12"Ø)

NOTE:

1. SEE DWGS. GH-01, GP-01, AND I-01 FOR ADDITIONAL SYMBOLS.

# GENERAL ABBREVIATIONS

| | |
|---|---|
| AB | ANCHOR BOLT OR AGGREGATE BASE |
| ABAN | ABANDONED |
| AC | ASPHALT CONCRETE |
| ADDL | ADDITIONAL |
| AL | ALUMINUM |
| APPROX | APPROXIMATE |
| BF | BLIND FLANGE |
| BFV | BUTTERFLY VALVE |
| BC | BEGINNING OF CURVE |
| BCR | BEGIN CURB RETURN |
| BLDG | BUILDING |
| BO | BLOWOFF |
| BOS | BOTTOM OF STEEL |
| BET | BETWEEN |
| BOD | BOTTOM OF DUCT BANK |
| BOT | BOTTOM |
| BOW | BACK OF WALL |
| BM | BENCH MARK, OR BEAM |
| BV | BALL VALVE |
| BVC | BEGIN VERTICAL CURVE |
| CAB | CRUSHED AGGREGATE BASE |
| CALTRANS | CALIFORINA DEPARTMENT OF TRANSPORTATION |
| CB | CATCH BASIN, COMMUNICATION BOX |
| CBC | CALIFORNIA BUILDING CODE |
| C/C | CENTER TO CENTER |
| CD | CONDENSATE DRAIN |
| CFM | CUBIC FEET PER MINUTE |
| CHKD | CHECKERED |
| CJ | CONSTRUCTION JOINT |
| CI | CAST IRON |
| CIRC | CIRCULAR |
| CL, ℄ | CENTER LINE |
| CL | CLASS OR CHAIN LINK FENCE |
| CLR | CLEAR |
| CLSM | CONTROLLED LOW STRENGTH MATERIAL |
| CML&C | CEMENT MORTAR LINED & COATED |
| CMP | CORRUGATED METAL PIPE |
| CO | CLEAN OUT |
| COL | COLUMN |
| CON | CONCENTRIC |
| CONC | CONCRETE |
| CONN | CONNECTION |
| CONST | CONSTRUCTION |
| CONT | CONTINUOUS |
| CP | CONTROL POINT AND COORDINATE POINT |
| CPLG | COUPLING |
| CTRL | CONTROL |
| CTSK | COUNTERSUNK |
| CU | CUBIC |
| C&G | CURB AND GUTTER |
| CV | CHECK VALVE |
| CYL | CYLINDER |
| DB | DUCT BANK |
| DBD | DEFERRED BOLTING DEVICE |
| DBL | DOUBLE |
| DEPT | DEPARTMENT |
| DET | DETAIL |
| DFU | DRAIN FIXTURE UNITS |
| DH | DRILL HOLE |
| DI | DRAIN INLET |
| DIA | DIAMETER |
| DIP | DUCTILE IRON PIPE |
| DIA | DIAGONAL |
| DISCH | DISCHARGE |
| DMH | DRAIN MAINHOLE |
| DN | DOWN |
| DWG | DRAWING |
| E OR (E) | EAST/EASTING OR EXISTING |
| EA | EACH, EXHAUST AIR |
| EC | END OF CURVE |
| ECC | ECCENTRIC |
| ECMT | ENCASEMENT |
| ECR | END CURB RETURN |
| ED | EQUIPMENT DRAIN |
| EF | EACH FACE |
| EFF | EFFLUENT |
| EL, ELEV | ELEVATION |
| ELEC | ELECTRICAL |
| ELL, ELB | ELBOW |
| EMBED | EMBEDDED |
| EMH | ELECTRICAL MAINHOLE |
| EP | EDGE OF PAVEMENT |
| EQ | EQUAL |
| ES | EACH SIDE |
| EVC | END VERTICAL CURVE |
| EW | EACH WAY |
| EX, EXIST, (E) | EXISTING |
| EXP JT | EXPANSION JOINT |
| FCA | FLANGED COUPLING ADAPTER |
| FCO | FLOOR CLEAN OUT |
| FD | FLOOR DRAIN |
| FDB | FLOW DISTRIBUTION BOX |
| FF | FINISH FLOOR |
| FG | FINISHED GRADE |
| FH | FIRE HYDRANT |
| FIN | FINISH |
| FJB | FLOW JUNCTION BOX |
| FL | FLOW LINE |
| FLEX | FLEXIBLE |
| FLG | FLANGE |
| FLR | FLOOR |
| FM | FORCE MAIN |
| FOW | FRONT OF WALL |
| FRP | FIBERGLASS REINFORCED PLASTIC |
| FS | FINISH SURFACE OR FLOOR SINK |
| FT | FOOT OR FEET |
| FTG | FOOTING |
| G | GAS |
| GA | GAGE |
| GAL | GALLONS |
| GALV | GALVANIZED |
| GB | GRADE BREAK |
| GEN | GENERAL |
| GL | GROUND LINE |
| GPM | GALLONS PER MINUTE |
| GPD | GALLONS PER DAY |
| GR | GRADE |
| GRTG | GRATING |
| GSP | GALVANIZED STEEL PIPE |
| GV | GATE VALVE |
| HB | HOSE BIBB |
| HDG | HOT-DIPPED GALVANIZED |
| HGL | HYDRAULIC GRADE LINE |
| HH | HANDHOLE |
| HORIZ | HORIZONTAL |
| HP | HORSEPOWER, HIGH PRESSURE, OR HIGH POINT |
| HSS | HOLLOW STRUCTURAL SECTION |
| HWL | HIGH WATER LEVEL |
| HYDRO | HYDROPNEUMATIC |
| IF | INSIDE FACE |
| ID | INSIDE DIAMETER |
| IE | INVERT ELEVATION |
| IN | INCHES |
| INV | INVERT |
| IRR | IRRIGATION |
| JT | JOINT |
| L | LENGTH OF CURVE OR LENGTH |
| LCP | LOCAL CONTROL PANEL |
| LG | LENGTH OR LONG |
| LL/BB | LONG LEGS BACK TO BACK |
| LLH | LONG LEGS HORIZONTAL |
| LLV | LONG LEGS VERTICAL |
| LP | LOW PRESSURE, LOW POINT, OR LIGHT POLE |
| LR | LONG RADIUS |
| LWL | LOW WATER LEVEL |
| MAX | MAXIMUM |
| MB | MACHINED BOLT |
| MGD | MILLION GALLONS PER DAY |
| MTRL | MATERIAL |
| MH | MANHOLE |
| MIN | MINIMUM |
| MFR'S | MANUFACTURER'S |
| MO | MASONRY OPENING |
| N, (N) | NORTH/NORTHING OR NEW |
| NC | NORMALLY CLOSED |
| NG | NATURAL GAS |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN, NUMBER |
| NTS | NOT TO SCALE |
| OA | OUTSIDE AIR |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| OF | OVERFLOW OR OUTSIDE FACE |
| OPER | OPERATED OR OPERATOR |
| OPNG | OPENING |
| PB | PULL BOX, POWER BOX |
| PC | POINT OF CURVE (BEGIN CURVE), PIECE |
| PCC | PORTLAND CEMENT CONRETE |
| PGRM | PROGRAM |
| PL | PLATE OR PROPERTY LINE |
| PI | POINT OF INTERSECTION |
| PIV | POST INDICATOR VALVE |
| PLBG | PLUMBING |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PLCS | PLACES |
| POC | POINT OF CONNECTION |
| PP | POWER POLE |
| PRESS | PRESSURE |
| PRV | PRESSURE REGULATING VALVE |
| PSI | POUNDS PER SQUARE INCH |
| PSV | PRESSURE RELIEF VALVE |
| PS | PUMP STATION |
| PT | POINT OF TANGENCY, POINT |
| PW | POTABLE WATER |
| PV | PLUG VALVE |
| PVC | POLYVINYL CHLORINE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVMT | PAVEMENT |
| R OR (R) | RADIUS, RETURN OR RIDGE |
| RA | RETURN AIR |
| RAD | RADIUS |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROOF DRAIN |
| REBAR | REINFORCEMENT BARS |
| RED | REDUCER |
| REF | REFERENCE |
| REINF | REINFORCING, REINFORCEMENT |
| REQ'D | REQUIRED |
| RET | RETURN |
| REV | REVISION |
| R/W | RIGHT-OF-WAY |
| S | SOUTH, SLOPE OR SEWER |
| SA | SAMPLE, SUPPLY AIR |
| SAN | SANITARY SEWER |
| SB | SIGNAL PULL BOX |
| SCH | SCHEDULE |
| SD | STORM DRAIN |
| SDMH | STORM DRAIN MANHOLE |
| SECT | SECTION |
| SF | SQUARE FOOT |
| SHT | SHEET |
| SIM | SIMILAR |
| SL/BB | SHORT LEG BACK TO BACK |
| SLV | SHORT LEG VERTICAL |
| SMH | SEWER MANHOLE |
| SOV | SHUT OFF VALVE |
| SP | STATIC PRESSURE |
| SPEC | SPECIFICATIONS OR SPECIAL |
| SQ | SQUARE |
| SS | STAINLESS STEEL OR SANITARY SEWER |
| STA | STATION |
| STD | STANDARD |
| STIFF | STIFFENER |
| STL | STEEL |
| STRUCT | STRUCTURE OR STRUCTURAL |
| SUP | SUPPORT |
| SYM | SYMMETRICAL |
| SW | SEAL WATER SWITCH OR SERVICE WATER |
| SWBD | SWITCHBOARD |
| T | TANGENT LENGTH OR TELEPHONE |
| T&B | TOP & BOTTOM |
| TC | TOP OF CURB |
| TEL | TELEPHONE |
| TEMP | TEMPORARY |
| TG | TOP OF GUTTER OR TOP OF GRATE |
| THK | THICK |
| TOC | TOP OF CONCRETE |
| TOF | TOP OF FILL, TOP OF FLOOR |
| TOG | TOP OF GRATING |
| TOP | TOP OF PIPE |
| TOS | TOP OF STEEL |
| TS | THICKENED SLUDGE, TOP OF SLOPE |
| TW | TOP OF WALL |
| TYP | TYPICAL |
| UON | UNLESS OTHERWISE NOTED |
| UNKN | UNKNOWN |
| V | VENT |
| VAR | VARIOUS, VARIES |
| VLT | VAULT |
| VERT | VERTICAL |
| VPI | VERTICAL POINT OF INFLECTION |
| VTR | VENT THROUGH ROOF |
| W | WEST, WATER, WIDTH, WIDE |
| W/ | WITH (PREFIX) |
| W/O | WITHOUT (PREFIX) |
| WC | WATER COLUMN |
| WCO | WALL CLEAN OUT |
| WH | WATER HEATER |
| WS | WATER SURFACE |
| YH | YARD HYDRANT |
| WP | WORK POINT |
| WS | WATER SURFACE, WATERSTOP |
| WSFU | WATER SUPPLY FIXTURE UNITS |
| WSP | WELDED STEEL PIPE |
| WT | WEIGHT |
| WWF | WELDED WIRE FABRIC |
| XFRM | TRANSFORMER |
| YD | YARD |

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.1 General\Work\RP-2 Lift Station\G-03 SYMBOLS AND GENERAL ABBREVIATIONS.dwg USER: p0045935
DATE: Oct 18, 2023 12:53pm XREFS: IEUA Border

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | GM | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | JLM | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL -10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

SYMBOLS AND GENERAL ABBREVIATIONS

SHEET G-03
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

# TABLE 1 - PIPING SCHEDULE

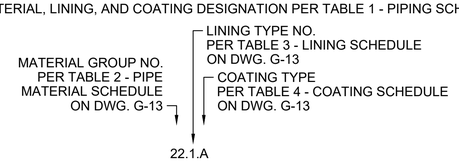
| ITEM NO. | PROCESS FLUID ABBREVIATION | PROCESS FLUID | PIPE MATERIAL (REFER TO PIPE MATERIAL, LINING, AND COATING SCHEDULES ON DWG. G-13) | | | | | | | | FIELD TEST REQUIREMENTS (SEE NOTE 4) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | EXPOSED PIPING | | | | BURIED PIPING | | | | MINIMUM TEST PRESSURE (PSIG) | TEST MEDIUM | LEAKAGE ALLOWANCE |
| | | | 3½" & SMALLER | 4" TO 6" | 8" TO 12" | 14" & LARGER | 3½" & SMALLER | 4" TO 6" | 8" TO 12" | 14" & LARGER | | | |
| 12 | D | DRAIN | 12.1.C | 12.1.C | 12.1.C | 29.1.A | 12.1.A | 32.1.A | 32.1.A | -- | 25 | WATER | NO LEAKAGE |
| 25 | FW | FIRE WATER (NOTE 10) | 21.1.C | 4.1.C | 4.1.C | 4.1.C | 21.1.F | 4.2.D | 4.2.D | 4.2.D | 150 | WATER | NOTE 4 |
| 37 | OF | OVERFLOW | -- | 21.5.C/27.5.C/ 4.5.C | 27.5.C/4.5.C | 27.5.C/4.5.C | -- | 21.5.F/27.5.B/ 4.5.D/32.1.A | 27.5.B/4.5.D/ 31.1.A/12.1.A | 4.6.D | 25 | WATER | NO LEAKAGE |
| 41 | PD | PLANT DRAIN | 12.1.C | 12.1.C | 12.1.C | - | 12.1.A | 32.1.A | 32.1.A | 12.1.A | NOTE 5 | WATER | NOTE 3 |
| 51 | RS | RAW SEWAGE | -- | 4.5.C | 4.5.C | 4.5.C/27.5.C | -- | 4.5.D | 4.5.C | 4.5.D/27.5.B | 50 | WATER | NO LEAKAGE |
| 52 | RW | RECYCLED WATER | 12.1.A | 21.5.C/27.5.C/ 4.5.C | 27.5.C/4.5.C | 27.5.C/4.5.C | -- | 21.5.F/27.5.B/ 4.5.D | 27.5.B/4.5.D | 27.5.B/4.5.D | 50 | WATER | NO LEAKAGE |
| 56 | SD | STORM DRAIN | 11.1.C | 1.1.D/15.1.C | 1.1.D/15.1.C | 1.1.D/15.1.C | 16.1.A | 32.1.A | 32.1.A | 16.1.A/19.1.A | NOTES 3 TO 5 | WATER | NOTES 3 TO 5 |
| 60 | SS | SANITARY SEWER | -- | -- | -- | -- | -- | 4.5.D/32.1.A | 4.5.D/32.1.A | 4.5.D/16.1.A | NOTE 6 | N/A | NOTE 4 |
| 64 | V | VENT | 12.1.C | 12.1.C | 12.1.C | -- | 12.1.C | 12.1.C | 12.1.C | -- | N/A | N/A | N/A |
| 67 | W1 | POTABLE WATER | 3.1.A/12.1.C | 3.1.A/12.1.A/ 4.2.C | 4.2.C/12.1.C | 4.2.C | -- | 32.1.A | 32.1.A | -- | 185 | WATER | NOTE 4/ NOTE 7 |
| 68 | W3 | WATER, NON POTABLE CHLORINATED, PLANT WATER | 30.1.A/12.1.C/ 24.1.A | 4.2.C/12.1.C | 4.2.C/12.1.C | 4.2.C | 12.1.A | 32.1.A | 32.1.A | 15.1.A | 150 | WATER | NOTE 4 |
| 70 | W1* | FIRE WATER (POTABLE WATER) | -- | -- | -- | -- | -- | 32.1.A | 32.1.A | 15.1.A | 150 | WATER | NOTE 4 |

NOTES:

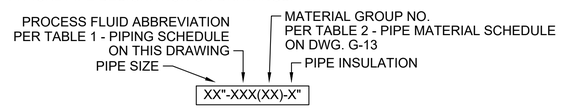
1. UNLESS OTHERWISE NOTED ON THE DRAWINGS, PIPE MATERIALS, FITTINGS, LININGS, AND COATINGS SHALL CONFORM TO THE PIPE SCHEDULES. ALSO SEE DRAWINGS AND SPECIFICATIONS FOR PLUMBING PIPING MATERIAL AND ADDITIONAL REQUIREMENTS.
2. WHERE MORE THAN ONE TYPE OF PIPE MATERIAL, LINING, AND COATING IS LISTED FOR A PARTICULAR PIPING SERVICE, ONLY THE CALLED OUT PIPE MATERIAL SHOWN ON THE CONTRACT DOCUMENTS (CIVIL/MECHANICAL DRAWINGS) SHALL BE USED. THE CONTRACTOR DOES NOT HAVE THE OPTION TO PROVIDE A DIFFERENT PIPE MATERIAL. HOWEVER THE CONTRACTOR MAY SUBMIT A REQUEST FOR PIPE MATERIAL, LINING, AND COATING SUBSTITUTION FOR APPROVAL. PROVIDE REASONING AND CREDIT (AS APPLICABLE) TO THE OWNER FOR EACH SUBSTITUTION. ALL APPROVED SUBSTITUTION SHALL BE AT NO COST TO THE OWNER.
3. WHERE THE PIPE MATERIAL GROUP CALL OUT IS MISSING, THE CONTRACTOR SHALL ALLOW FOR PIPE MATERIAL GROUP AS LISTED BELOW AND SUBMIT A REQUEST FOR PIPE MATERIAL GROUP/LINING AND COATING APPROVAL BEFORE FABRICATION. PIPE LINING AND COATING AS SHOWN IN THE PIPE SCHEDULE AS APPLICABLE FOR PROCESS FLUID IN QUESTION.
   A. PROCESS PIPES WITHIN MBR STRUCTURE:
      - PIPE SIZES ½" TO 3 ½"-GROUP 30;
      - PIPE SIZES 4" AND LARGER-GROUP 29.
   B. PROCESS PIPES OUTSIDE OF MBR STRUCTURE:
      - PIPE SIZES ½" TO 3 ½" GROUP 30;
      - PIPE SIZES 4" TO 6" GROUP 4;
      - PIPE SIZES 8" TO 12" GROUP 4;
      - PIPE SIZES 14" TO 30" GROUP 4;
      - PIPE SIZES 36" AND LARGER GROUP 27.
   C. CHEMICAL PIPES:
      - ALL PIPE SIZES ABOVE GRADE-GROUP 10;
      - ALL PIPE SIZES BELOW GRADE-GROUP 14.
4. LEAKAGE ALLOWANCE SHALL BE AS SPECIFIED IN SPECIFICATION SECTIONS 02762 AND 02763 FOR PRESSURE AND GRAVITY PIPELINES, RESPECTIVELY.
5. SEE SPECIFICATION SECTIONS 02762 AND 02763 FOR FIELD TEST PROCEDURES AND ADDITIONAL TEST REQUIREMENTS.
6. STATIC WATER TEST WITH A TEST HEAD OF A MINIMUM OF 5 FEET ABOVE THE HIGH POINT OF THE PIPELINE UNLESS OTHERWISE SPECIFIED.
7. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE PLUMBING CODE.
8. WHERE A PIPE PENETRATES THROUGH THE WALL OF A STRUCTURE AND EXTENDS INTO THE SOIL OUTSIDE, TWO AXIAL RESTRAINED FLEXIBLE JOINTS SHALL BE PROVIDED AT THE BURIED PORTION OF THE PIPE WHETHER OR NOT SUBJECT JOINTS ARE SPECIFICALLY SHOWN ON THE CONTRACT DRAWINGS.
   a. STEEL PIPES SHALL BE PROVIDED WITH FLEXIBLE COUPLINGS IN COMPLIANCE WITH SECTION 02611, DETAILS 1 & 2 DWG. CG-14 AND AWWA M11 REQUIREMENTS.
   b. DUCTILE IRON PIPES SHALL BE PROVIDED WITH FLEXIBLE JOINTS IN COMPLIANCE WITH SECTION 02630 AND NOTE 54 DWG. CG-01.
   c. PVC/HDPE 12" AND SMALLER AND STEEL PIPES 4" AND SMALLER SHALL BE PROVIDED WITH AXIAL RESTRAINED FLEXIBLE COUPLINGS IN COMPLIANCE WITH DETAILS 5 & 6/CG-19, ROMAC INDUSTRIES ARMORLOCK, OR EQUAL. FLEXIBLE COUPLING SHALL HAVE 316 STAINLESS STEEL HOUSING.
   d. ALL JOINTS/COUPLINGS RESILIENT GASKET/SEALS RESILIENT MATERIAL SHALL BE CHEMICALLY INNERT/RESSISTANT TO THE FLUID CONVEYED THROUGH THE PIPE.
9. FLEXIBLE JOINTS OF BURIED PIPES THAT ARE SUBJECT TO PRESSURE SHALL BE HARNESSED FOR INTERNAL PRESSURES NOT LESS THAN THE TEST PRESSURES SPECIFIED IN TABLE 1. THRUST BLOCKS ARE NOT ACCEPTABLE.
10. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
11. PIPING MATERIAL SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
12. ALL BURIED CHEMICAL CONVEYANCE PIPES SHALL BE DOUBLE CONTAINED IN COMPLIANCE WITH SECTION 15000, PARAGRAPH 2.15 REQUIREMENTS.
13. THE CONTRACTOR MAY PROVIDE EITHER FIBERGLASS DUCT, GROUP 5 WITH FIBERGLASS DAMPERS IN COMNPLIANCE WITH SECTION 11870 REQUIREMENTS OR STAINLESS STEEL DUCT, GROUP 29 WITH STAINLESS STEEL DAMPERS IN COMPLIANCE WITH SECTION 11870 REQUIREMENTS.
14. MAX. RECOMMENDED PRESSURE BY DOUBLE WALL EXHAUST DUCT MANUFACTURER.

1. PIPE MATERIAL, LINING, AND COATING DESIGNATION PER TABLE 1 - PIPING SCHEDULE ON THIS DRAWING:

LEGEND:




2. TYPICAL PIPE DESIGNATION ON DRAWINGS:




DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.1 General\Work\RP-2 Lift Station\G-04 PIPE SCHEDULE - 1.dwg USER: p0045935
DATE: Oct 18, 2023 12:57pm XREFS: IEUA Border


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | GM | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | JLM | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

PIPE SCHEDULE SHEET 1

SHEET G-04
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

## TABLE 2 - PIPE MATERIAL SCHEDULE

| GROUP NO. | PIPE | FITTINGS |
|---|---|---|
| 1 | CAST IRON SOIL, ANSI/ASTM A74, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS. | CAST IRON SOIL, ANSI/ASTM A74, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS. |
| 3 | COPPER TUBE, TYPE K, SOFT TEMPERED WHERE BURIED, HARD TEMPERED WHERE EXPOSED, IN COMPLIANCE WITH SECTION 15010. | WROUGHT COPPER OR CAST BRONZE, SOLDER JOINTS, CLASS 150#, OR COMPRESSION FITTINGS, IN COMPLIANCE WITH SECTION 15010. |
| 4 | DUCTILE IRON<br>EXPOSED - SPECIAL THICKNESS CLASS 53, FOR GROOVED PIPE ENDS, THICKNESS CLASS IN COMPLIANCE WITH SECTION 02630 FOR FLANGED PIPE ENDS.<br>BURIED - ANSI/AWWA C151/AS1.51, BELL AND SPIGOT, MECHANICAL JOINTS, MECHANICAL COUPLINGS OR FLANGED. | DUCTILE IRON<br>EXPOSED - SPECIAL THICKNESS CLASS 53, FOR GROOVED FITTINGS, THICKNESS CLASS IN COMPLIANCE WITH SECTION 02630 FOR FLANGE ADAPTORS.<br>BURIED - ANSI/AWWA C110/A21.10, BELL AND SPIGOT, MECHANICAL JOINTS, MECHANICAL COUPLINGS OR FLANGED, IN COMPLIANCE WITH SECTION 02630. |
| 11 | POLYVINYL CHLORIDE (PVC) SCHEDULE 40, IN COMPLIANCE WITH SECTION 15016. | POLYVINYL CHLORIDE (PVC) SCHEDULE 40, SOLVENT WELDED JOINTS, IN COMPLIANCE WITH SECTION 15016. |
| 12 | POLYVINYL CHLORIDE (PVC) SCHEDULE 80, IN COMPLIANCE WITH SECTION 15016. | POLYVINYL CHLORIDE (PVC) SCHEDULE 80, SOLVENT WELDED JOINTS, IN COMPLIANCE WITH SECTION 15016. |
| 15 | POLYVINYL CHLORIDE (PVC) AWWA C900 BELL AND SPIGOT, RUBBER GASKET JOINTS IN COMPLIANCE WITH SECTION 02646. | AXIAL RESTRAINED DUCTILE IRON AWWA C110, FOR POLYVINYL CHLORIDE PIPE, IN COMPLIANCE WITH SECTIONS 02630 AND 02645. |
| 16 | POLYVINYL CHLORIDE (PVC) ASTM D3034 AND F679 FOR GRAVITY SEWER SYSTEM, BELL AND SPIGOT, IN COMPLIANCE WITH SECTIONS 02644 AND 02645. | POLYVINYL CHLORIDE (PVC) FOR GRAVITY SEWER SYSTEM, BELL AND SPIGOT, IN COMPLIANCE WITH SECTIONS 02644 AND 02645. |
| 19 | REINFORCED CONCRETE, TONGUE AND GROOVE WITH RUBBER GASKET JOINTS, IN COMPLIANCE WITH SECTION 02616. | SAME AS GROUP NO. 27, CERAMIC EPOXY LINING PER LINING TYPE NO. 5, REINFORCED CEMENT MORTAR COATING PER COATING TYPE B. |

## TABLE 2 - PIPE MATERIAL SCHEDULE

| GROUP NO. | PIPE | FITTINGS |
|---|---|---|
| 21 | STEEL, ASTM A53 OR A106, BLACK, SCHEDULE 40, SEAMLESS OR WELDED, IN COMPLIANCE WITH SECTIONS 15000 AND 15010. | 2-1/2" AND SMALLER SIZES - MALLEABLE IRON, BLACK, THREADED PER ANSI B16.3, CLASS 150# FLANGE OR STEEL, BLACK, BUTT WELDED PER ANSI B16.9, SCHEDULE 40, CLASS 150# FLANGE, IN COMPLIANCE WITH SECTIONS 15000 AND 15010.<br>3" AND LARGER SIZES - STEEL, BLACK, BUTT WELDED PER ANSI B16.9, SCHEDULE 40, CLASS 150# FLANGE, IN COMPLIANCE WITH SECTIONS 15000 AND 15010. |
| 24 | STEEL, ASTM A53 OR A106, BLACK, SCHEDULE 80, SEAMLESS, IN COMPLIANCE WITH SECTIONS 15000 AND 15010. | FORGED STEEL, BLACK, SOCKET WELDED OR THREADED PER ANSI B16.11, CLASS 3000# OR STEEL PER ANSI B16.9, BUTT WELDED, SCHEDULE 80. |
| 27 | STEEL, FABRICATED PER AWWA C200, IN COMPLIANCE WITH SECTIONS 02611 AND 02612. | STEEL, FABRICATED PER AWWA C200 AND C208, IN COMPLIANCE WITH SECTION 02611 AND 02612. |
| 29 | STAINLESS STEEL 316L SCHEDULE 10S, IN COMPLIANCE WITH SECTION 15010. | STAINLESS STEEL 316L SCHEDULE 10S, IN COMPLIANCE WITH SECTION 15010. |
| 30 | STAINLESS STEEL 316L SCHEDULE 40S FOR PIPES SIZES 10" AND SMALLER, SCHEDULE STANDARD FOR PIPES SIZES 12" AND LARGER, IN COMPLIANCE WITH SECTION 15010. | STAINLESS STEEL 316L SCHEDULE 40S FOR PIPES SIZES 10" AND SMALLER, SCHEDULE STANDARD FOR PIPES SIZES 12" AND LARGER, IN COMPLIANCE WITH SECTION 15010. |
| 31 | FIBERGLASS REINFORCED POLYMER MORTAR (FRPM) JACKING PIPE, ASTM D3262, IN COMPLIANCE WITH SECTION 02656. | FIBERGLASS REINFORCED POLYMER MORTAR (FRPM) JACKING FITTINGS, ASTM D3262, IN COMPLIANCE WITH SECTION 02656. |
| 32 | HDPE (HIGH DENSITY POLYETHYLENE), AWWA C906, IN COMPLIANCE WITH SECTION 02642, DR 32,5 FOR GRAVITY LINES AND DR 13.5 FOR PRESSURE LINES. | HDPE (HIGH DENSITY POLYETHYLENE), ASTM C906, FUSION WELDED FITTINGS WITH FLANGED ADAPTORS FOR VALVES AND EQUIPMENT CONNECTION, IN COMPLIANCE WITH SECTION 02642 |

## TABLE 3 - LINING SCHEDULE

| TYPE NO. | LINING |
|---|---|
| 1 | BARE UNLINED. |
| 2 | CEMENT MORTAR LINING, DUCTILE IRON PIPES AND FITTINGS, IN COMPLIANCE WITH SECTION 02630.<br>CEMENT MORTAR LINING, STEEL PIPES AND FITTINGS PER AWWA C205, IN COMPLIANCE WITH SECTIONS 02651 AND 02653. |
| 3 | EPOXY LINING PER AWWA C210, IN COMPLIANCE WITH SECTION 09800, SYSTEM 108A. |
| 4 | AMINE EPOXY LINING PER AWWA C203, IN COMPLIANCE WITH SECTION 09800, SYSTEM 103. |
| 5 | CERAMIC EPOXY LINING PER AWWA C210, IN COMPLIANCE WITH SECTION 09800, SYSTEM 109B. |
| 6 | GLASS LINING, IN COMPLIANCE WITH SECTION 15000. |

## TABLE 4 - COATING SCHEDULE

| TYPE | COATING |
|---|---|
| A | BARE UNCOATED. |
| B | LIQUID CERAMIC EPOXY IN COMPLIANCE WITH SECTION 09800, SYSTEM 109B AND AWWA C210, AND REINFORCED CEMENT MORTAR OVERCOAT IN COMPLIANCE WITH AWWA C205 AND SECTIONS 02611 & 02612 FOR STEEL PIPES. |
| C | EPOXY COATING PER SECTION 09800:<br>1. SYSTEM 4 - PVC AND GALVANIZED PIPES.<br>2. SYSTEM 5 AND AWWA C210 - EXPOSED METAL PIPES.<br>3. SYSTEM 12 - FRP PIPES AND DUCTS.<br>4. SYSTEM 100 - PVC PIPES IN CHLORINATED ROOM.<br>5. SYSTEM 108A AND AWWA C210 - BURIED METAL PIPES. |
| D | ZINC COATING WITH BITUMINOUS TOP COAT AND POLYWRAP IN COMPLIANCE WITH SECTION 02630. |
| E | AMINE EPXOY COATING PER AWWA C203 AND SECTION 09800, SYSTEM 103. |
| F | PVC TAPE WRAPPING PER SECTION 09800, SYSTEM 200. |
| G | FIELD INSTALLED INSULATION PER SECTION 15250. |

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed GM 10/2023
Drawn GM 10/2023
Checked JLM 10/2023
Date

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/19/23 | GM | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

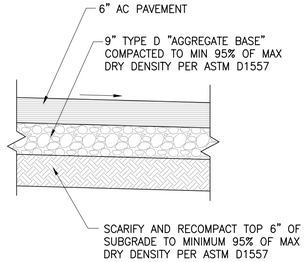
60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

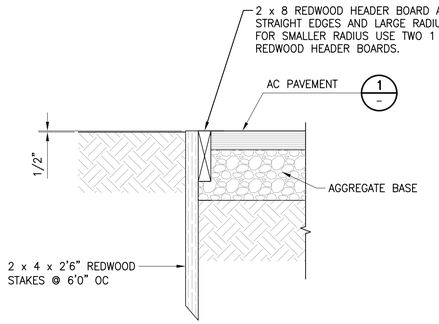
PIPE SCHEDULE SHEET 2

SHEET G-05
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.1 General\Work\RP-2 Lift Station\G-05 PIPE SCHEDULE - 2.dwg USER: p0045935
DATE: Oct 18, 2023 12:58pm XREFS: IEUA Border

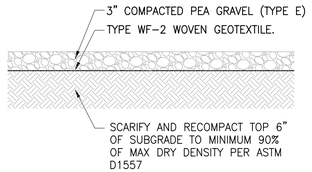



AC PAVEMENT 1 VAR
SCALE: NTS

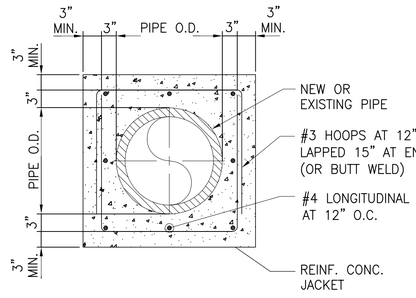



NOTE:
1. HEADER BOARDS AND STAKES SHALL BE ALL HEART REDWOOD

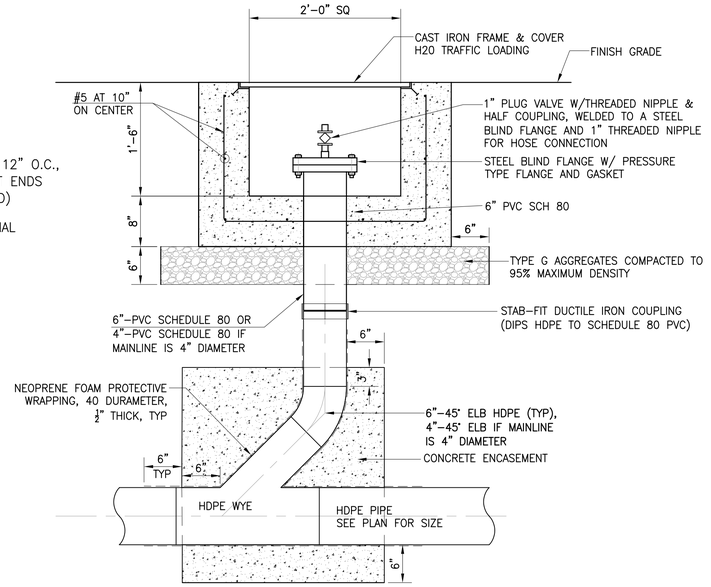
REDWOOD HEADER 2 VAR
SCALE: NTS



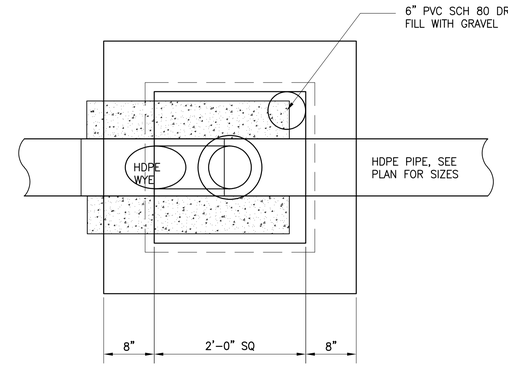

GRAVEL SURFACE 3 VAR
SCALE: NTS




CONCRETE ENCASEMENT 7 VAR
SCALE: NTS

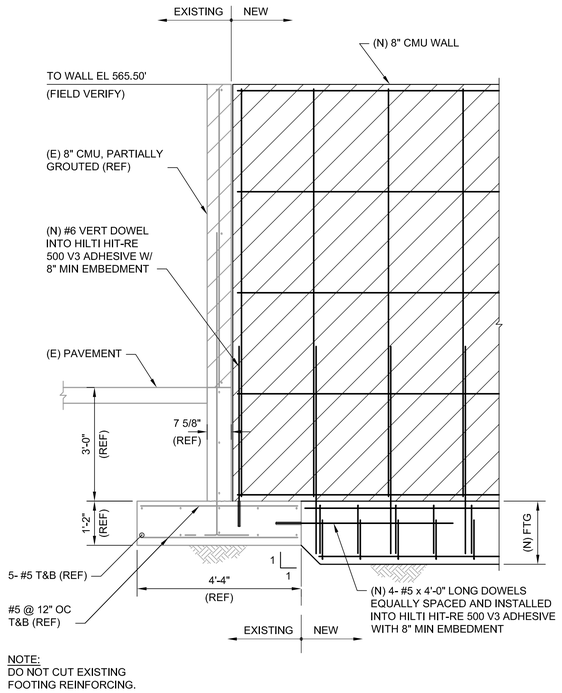



ELEVATION



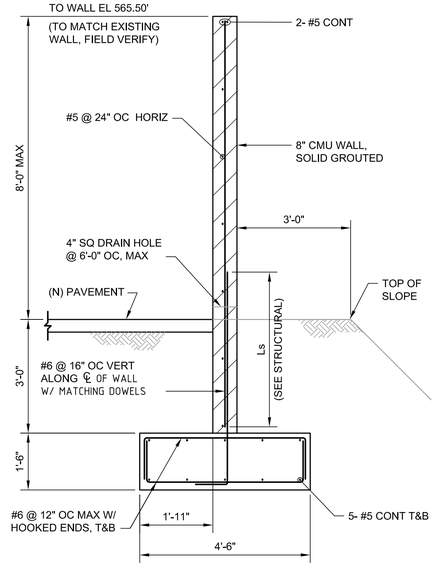

PLAN

IN–LINE PRESSURE CLEANOUT 6 VAR
SCALE: NTS




NOTE:
DO NOT CUT EXISTING FOOTING REINFORCING.

CONNECTION TO EXISTING CMU WALL FENCE 4 VAR
SCALE: NTS




NOTE:
FOR STRUCTURAL NOTES AND TYPICAL DETAILS, SEE STRUCTURAL DRAWINGS

CMU WALL FENCE 5 VAR
SCALE: NTS



PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 10/2023 |
| Drawn | HS | 10/2023 |
| Checked | BL | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | HS | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

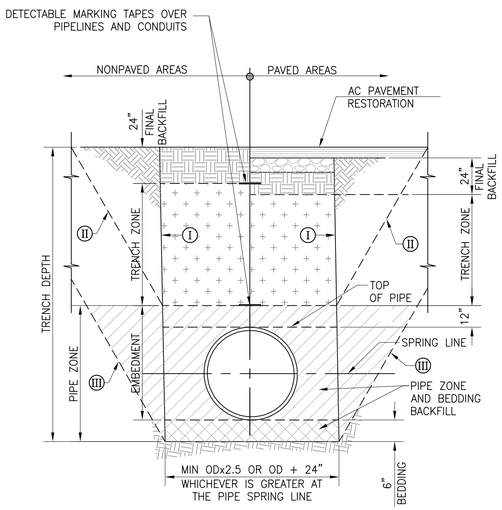
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993–1600
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP–5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

TYPICAL CIVIL DETAILS 1

SHEET CG–21
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.




NOTES:

1. FLEXIBLE PIPE REFERS TO ALL STEEL, DUCTILE IRON, AND PLASTIC PIPES.
2. DEFINITIONS OF FINAL BACKFILL, BEDDING, EMBEDMENT, PIPE AND TRENCH ZONES AND PIPE AND UTILITY BACKFILL REQUIREMENTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
3. TYPICAL TRENCH SECTIONS, (I) VERTICAL TRENCH WALLS, (II) COMBINATION OF VERTICAL AND SLOPING TRENCH WALLS, AND (III) SLOPING TRENCH WALLS, ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDER OR LARGE OBSTRUCTIONS ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN; THE ENGINEER SHOULD BE ADVISED SHOULD THIS OCCUR. UNLESS SPECIFICALLY DESIGNATED ON PLANS, SLOPING TRENCH WALL SECTION (III) SHALL NOT BE USED WITHOUT APPROVAL OF THE ENGINEER.
4. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THAT THEY COMPLY WITH APPLICABLE LOCAL, STATE (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND THE PIPE DESIGN CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE ENGINEER.
5. THE NEED FOR TRENCH PROTECTIVE SYSTEMS SHALL BE DETERMINED IN CONSIDERATION OF APPLICABLE LOCAL, (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
6. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALLS SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.
7. PROTECTION SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE LOCAL, (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING THE DESIGN OF SHORING, BRACING, SLOPING OR OTHER PROTECTION SYSTEMS AND THEIR COMPLIANCE WITH APPLICABLE LOCAL, (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS.
8. A STAIRWAY, LADDER, RAMP OR OTHER SAFE MEANS OF EGRESS SHALL BE LOCATED IN TRENCH EXCAVATIONS 4.0 FEET OR MORE IN DEPTH SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL FOR EMPLOYEES/WORKERS PER CCR, TITLE 8 SECTION 1541.
9. VOIDS LEFT WHEN REMOVING SHEETING AND SHORING SHALL BE FILLED WITH CONTROLLED LOW STRENGTH MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02210.
10. DETECTABLE METALLIC LOCATING TAPE SHALL BE PLACED ABOVE ALL BURIED PLASTIC PIPELINES AND OTHER PIPELINES THAT ARE NOT COMPRISED AT LEAST IN PART OF MAGNETIC COMPONENTS IN ACCORDANCE WITH THE EARTHWORK AND RESPECTIVE PIPING SECTIONS OF THE SPECIFICATIONS.
11. IF OVER–EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS.
12. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM IN ACCORDANCE WITH THE DEWATERING REQUIREMENTS PROVIDED IN THE SPECIFICATIONS. BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS OR AS ORDERED BY THE ENGINEER.

## SECTION: TYPICAL TRENCH FOR FLEXIBLE PIPE

SCALE: NTS

1 / VAR



PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 10/2023 |
| Drawn | HS | 10/2023 |
| Checked | BL | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | HS | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993–1600

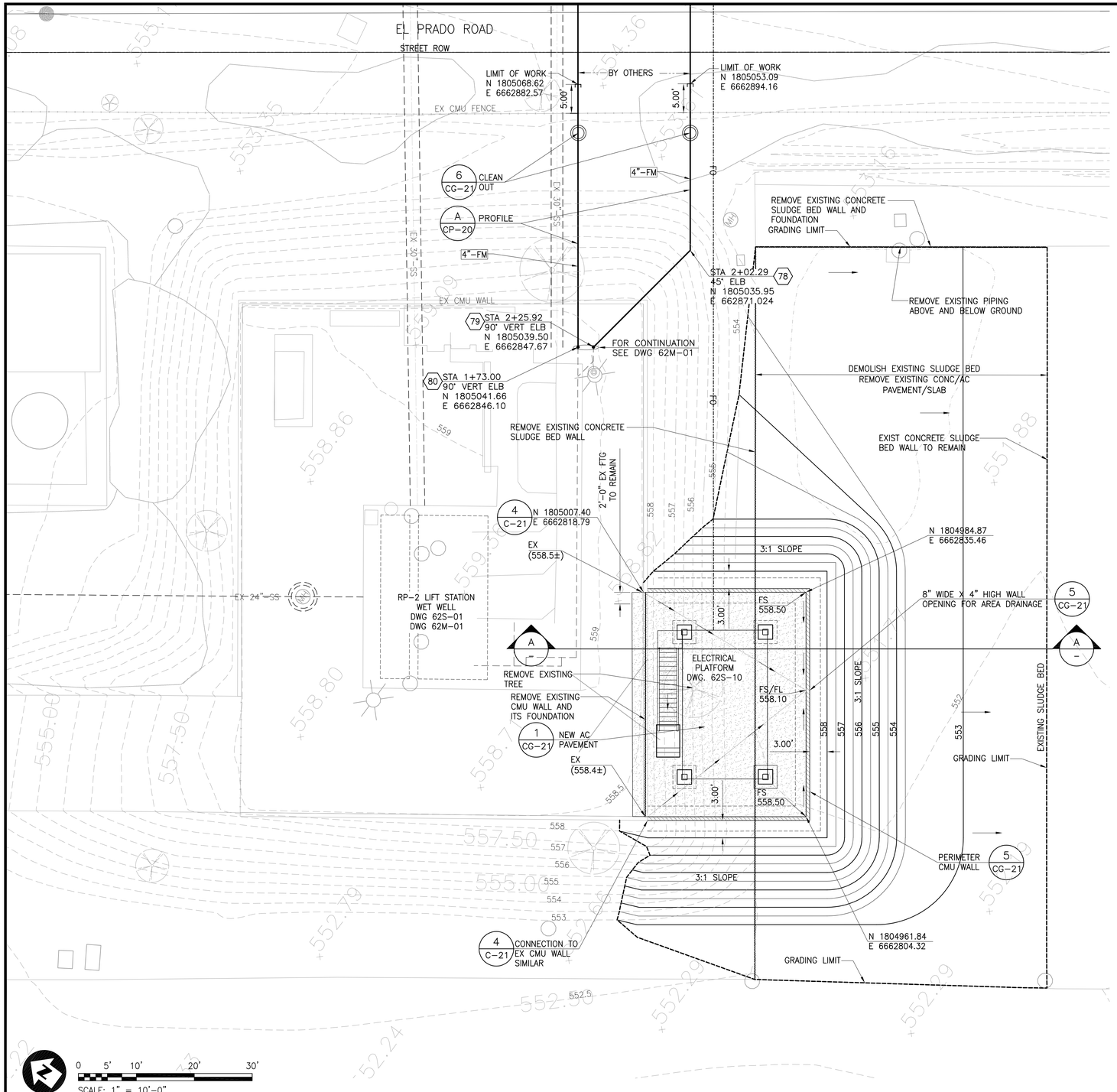
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP–5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

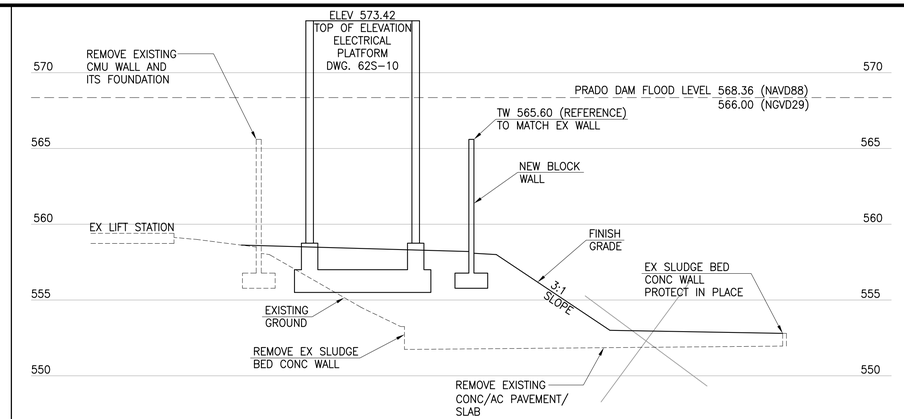
TYPICAL CIVIL DETAILS 2

SHEET CG–22
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



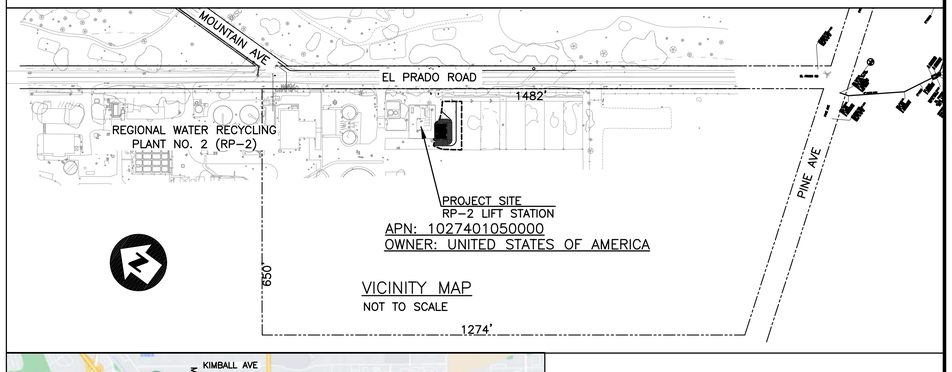

0 5' 10' 20' 30'

SCALE: 1" = 10'-0"



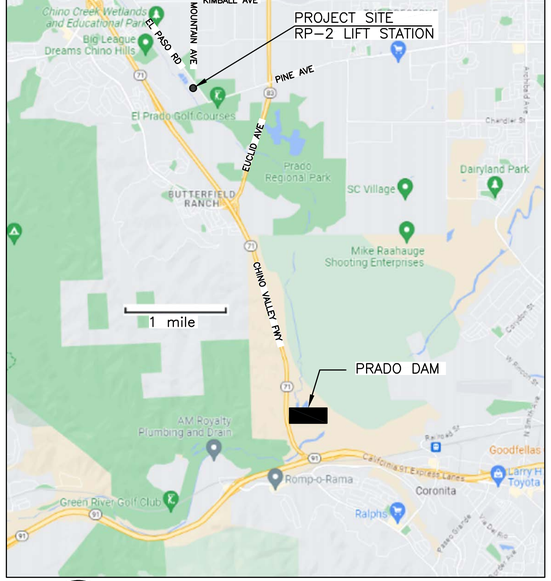

GRADING SECTION A-A

SCALE: HORIZ 1" = 10'-0"
VERT 1" = 5'-0"




VICINITY MAP

NOT TO SCALE




LOCATION MAP

NOT TO SCALE

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.2 Civil\WORK\LS-03-CH-01-PAVING-GRADING.dwg USER: 61677
DATE: Oct 18, 2023 8:26am XREFS: IEUA Border XC-MTN-SITE-EX XC-MTN-SITE-NW XC-MTN-GRADING-NW XCIE5-SITE-EX-PL XC-MTN-UTIL-NW XC-MTN-UTIL-EX XC-IE-GRADING-EX

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 10/2023 |
| Drawn | HS | 10/2023 |
| Checked | BL | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | HS | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

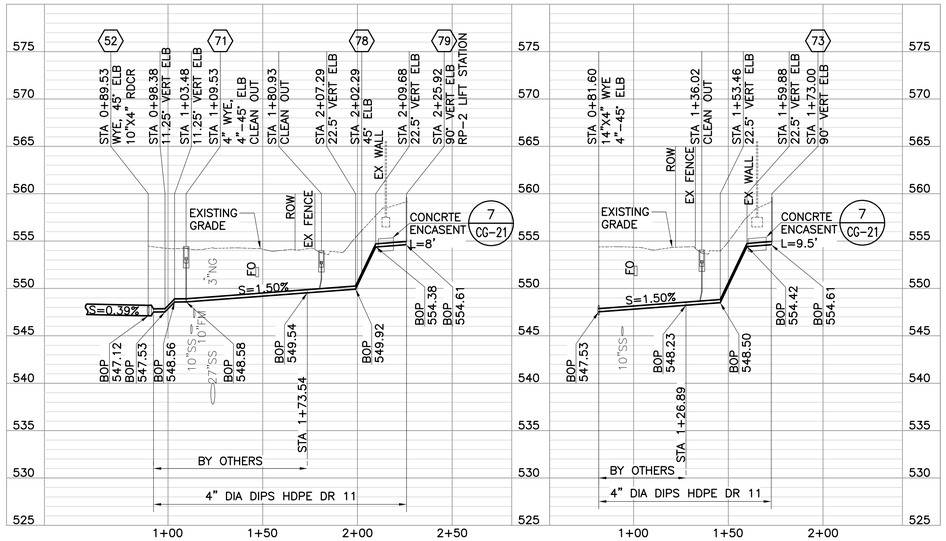
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03
RP-2 LIFT STATION
PAVING, GRADING AND
YARD PIPING PLAN

SHEET CH-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.




## LINE C PROFILE RP-2 LIFT STATION

A / CH-02

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

SCALE: VERT 1" = 8'-0"

0 4' 8' 16' 24'

SCALE: HORIZ 1" = 40'-0"

0 20' 40' 80' 120'

Underground Service Alert 811

TWO WORKING DAYS BEFORE YOU DIG

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.2 Civil\WORK\LS-05-CP-20.dwg USER: 61677
DATE: Oct 18, 2023 8:22am XREFS: IEUA Border XC-MTN-FM-PROF


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | HS | 10/2023 |
| Drawn | HS | 10/2023 |
| Checked | BL | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | HS | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

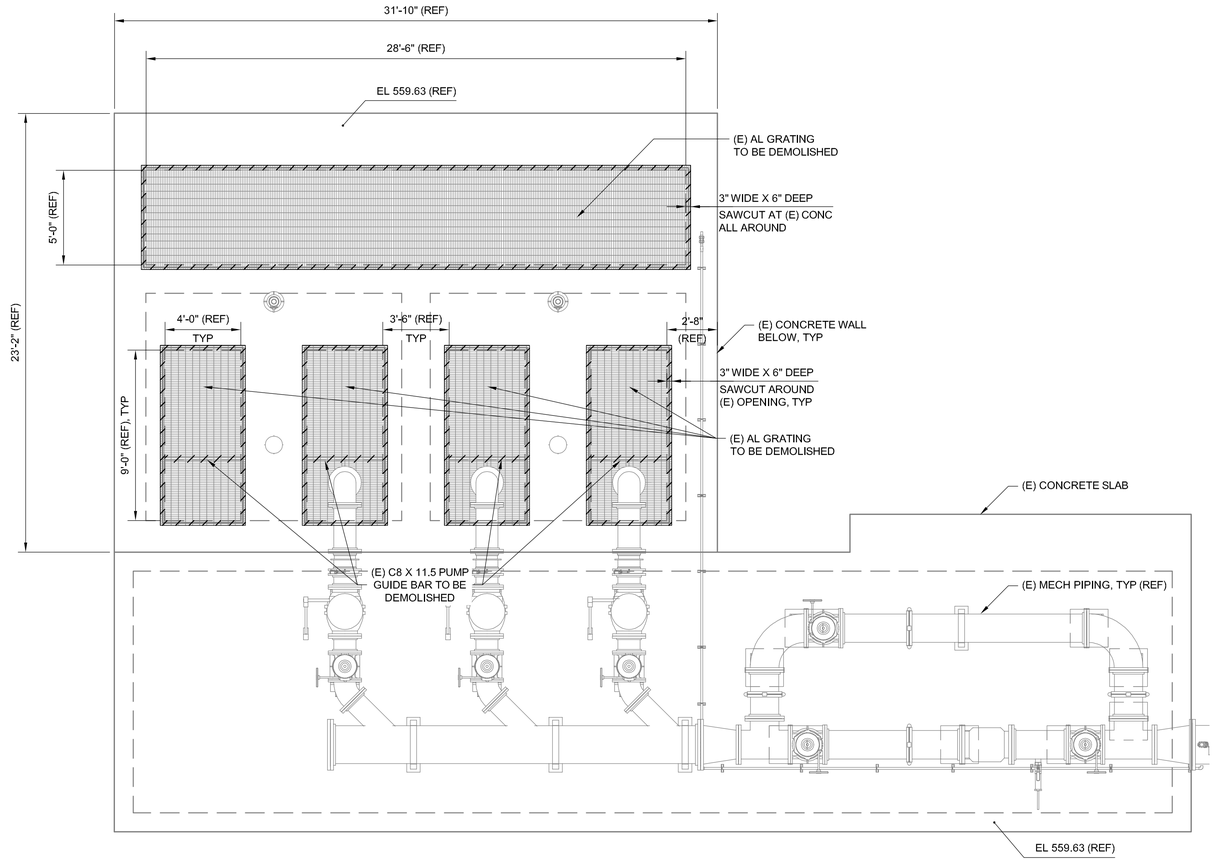
PROFILES

SHEET CP-20
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

LEGEND:

EXISTING INSTALLATIONS TO BE DEMOLISHED

EXISTING ALUMINUM GRATING




TOP DEMOLITION PLAN AT TOC EL 559.63

SCALE : 1/4" = 1'-0"

0' 1' 2' 4' 8' 12'

SCALE : 1/4" = 1'-0"

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 StructuralWork\62SD-01 - DEMOLITION PLANS.dwg USER: p008814D
DATE: Oct 16, 2023 10:50am XREFS: IEUA Border 62SD-01_TOP DEMO PLAN

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | MC | 10/2023 |
| Drawn | SL | 10/2023 |
| Checked | MA | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | MC | MA | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

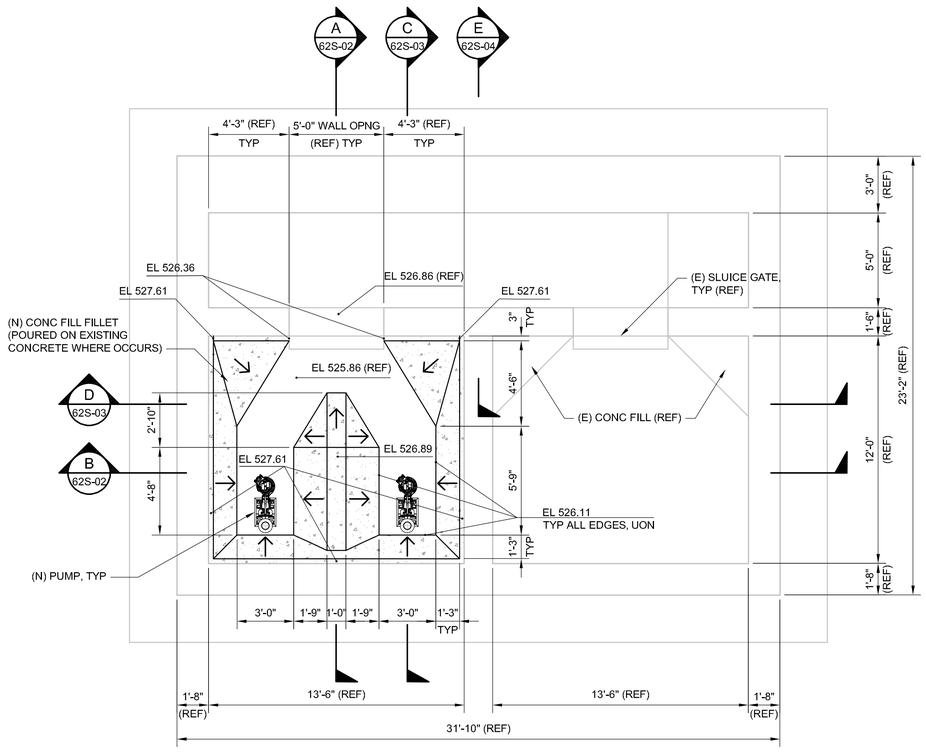
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

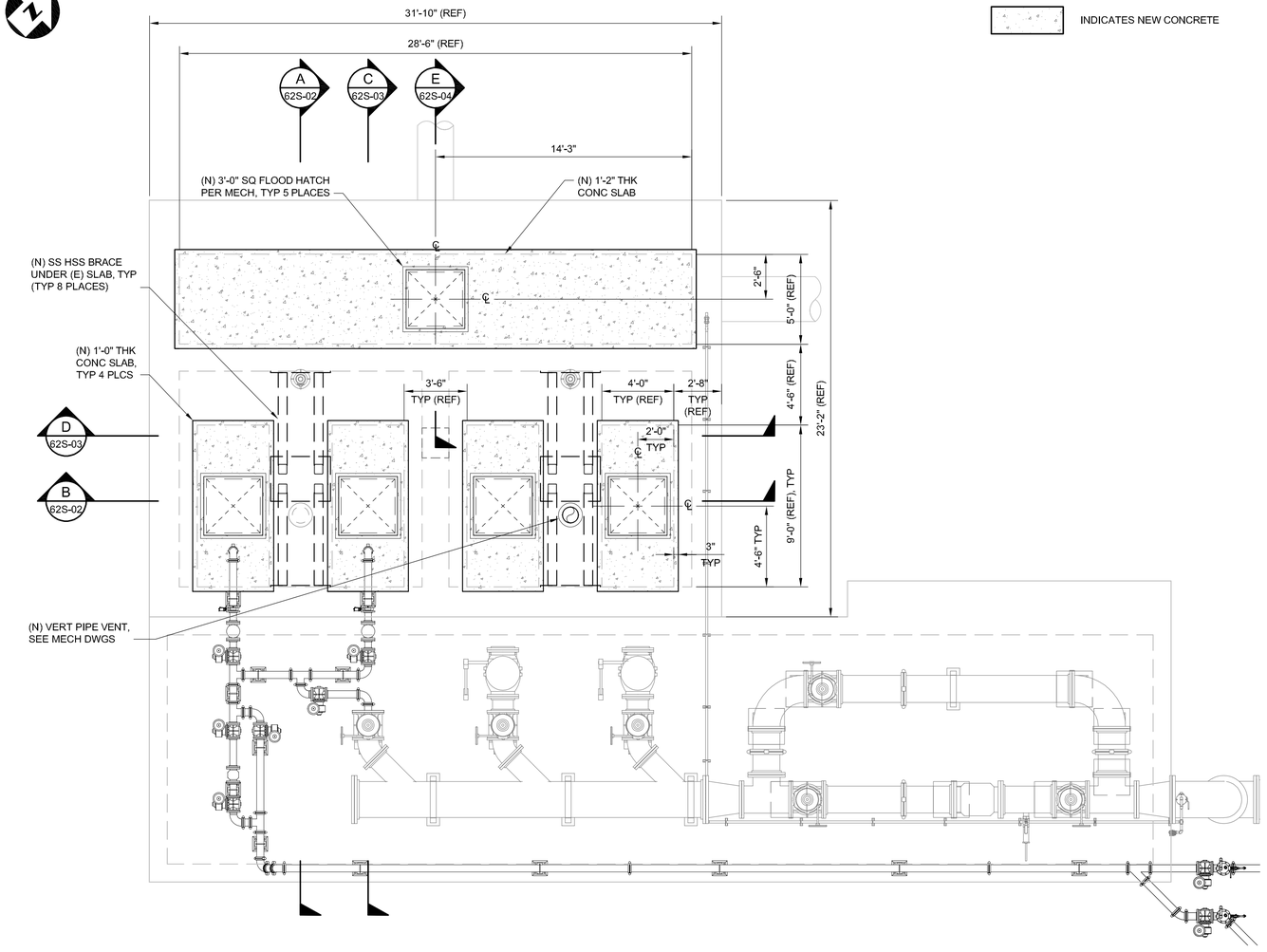
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03
RP-2 LIFT STATION
EXISTING WETWELL
DEMOLITION PLAN

SHEET 62SD-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.




BOTTOM PLAN AT TOC EL 525.86, UON

SCALE : 1/4" = 1'-0"




TOP PLAN AT TOC EL 599.63

SCALE : 1/4" = 1'-0"

LEGEND:

INDICATES NEW CONCRETE

0' 1' 2' 4' 8' 12'

SCALE : 1/4" = 1'-0"

60% SUBMITTAL - 10/2023

SHEET 62S-01

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
BOTTOM AND TOP PLANS

SHEET NO. OF 000

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | MC | 10/2023 |
| Drawn | SL | 10/2023 |
| Checked | MA | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | MC | MA | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

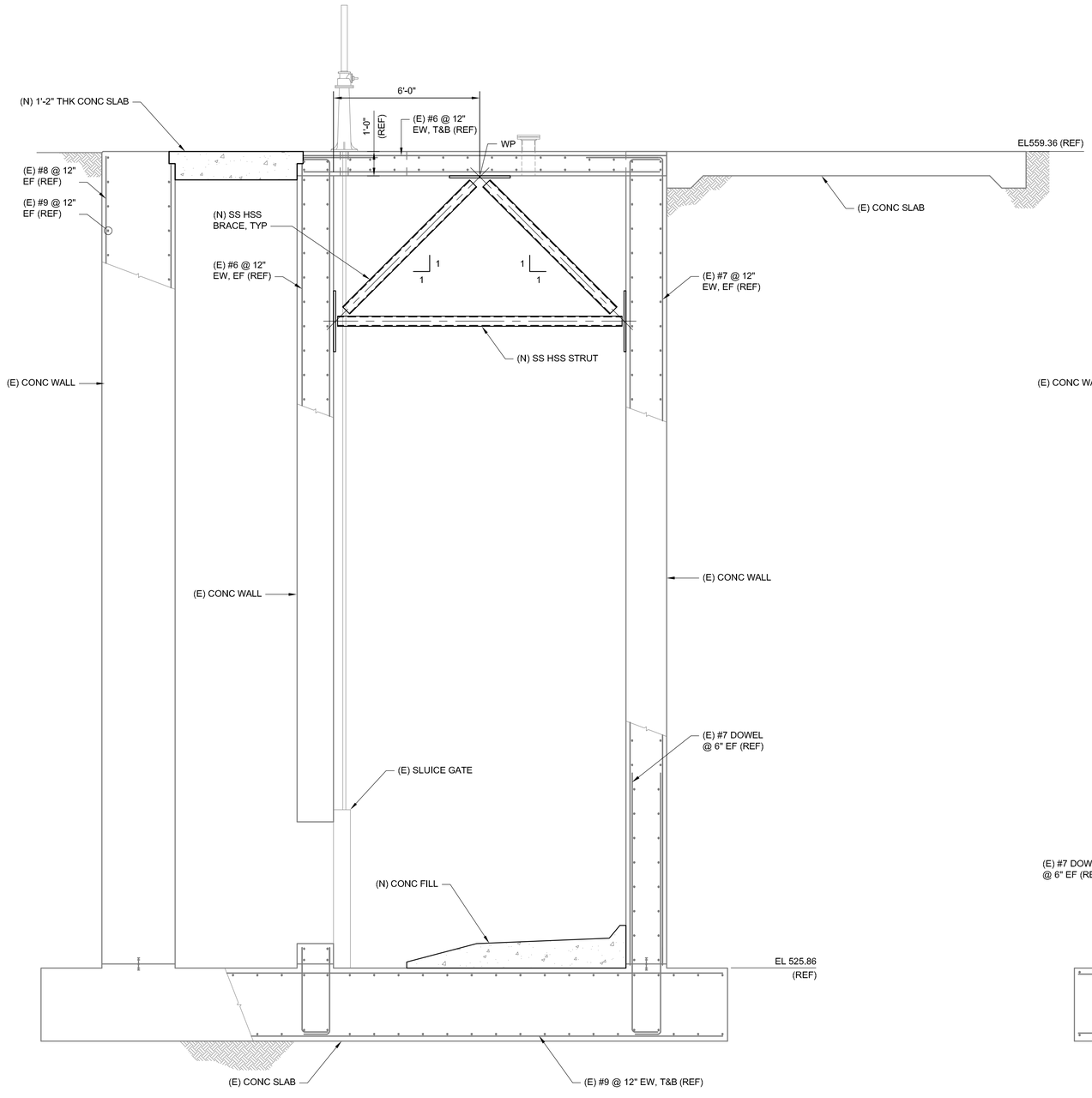
SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

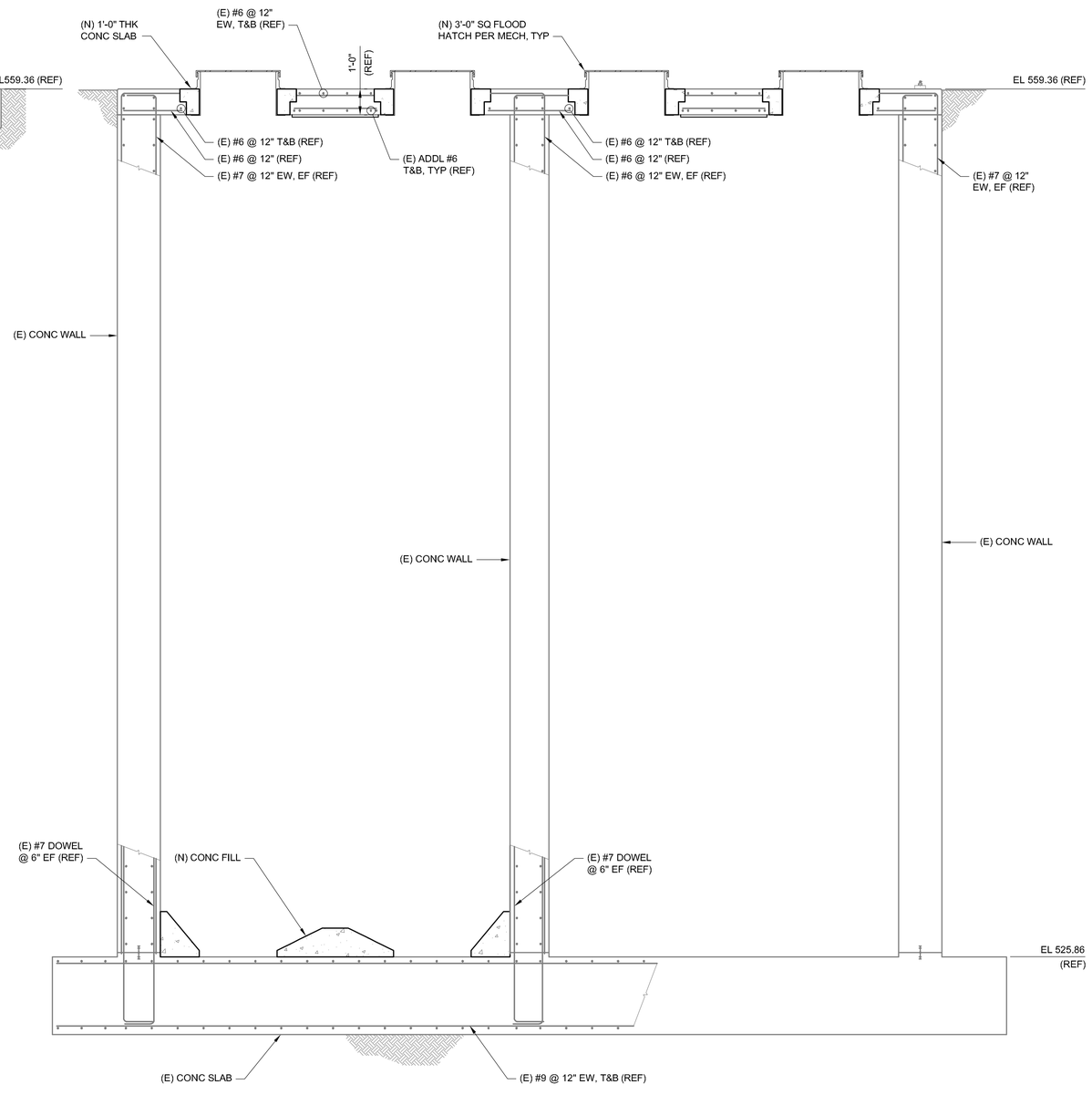
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 StructuralWork\62S-01 - STRUCTURAL PLANS.dwg USER: p008814D
DATE: Oct 19, 2023 3:49pm XREFS: IEUA Border 62S-01_BOTTOM PLAN 62S-01_TOP PLAN




SECTION A
SCALE : 3/8 = 1'-0"
62S-01




SECTION B
SCALE : 3/8 = 1'-0"
62S-01

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

# 60% SUBMITTAL - 10/2023

SHEET 62S-02

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

## RP-2 LIFT STATION SECTIONS

SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | MC | 10/2023 |
| Drawn | SL | 10/2023 |
| Checked | MA | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | MC | MA | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

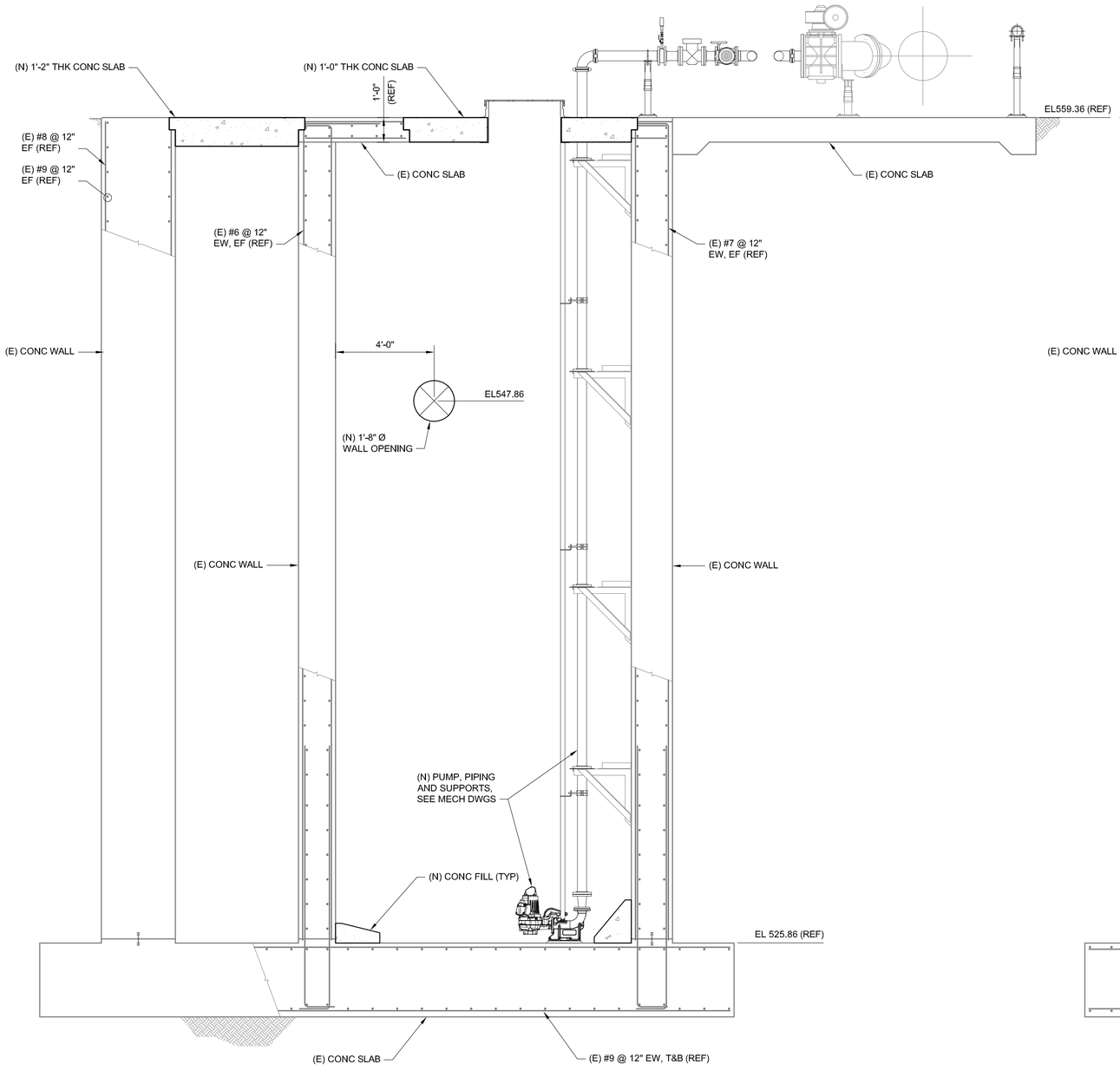
SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

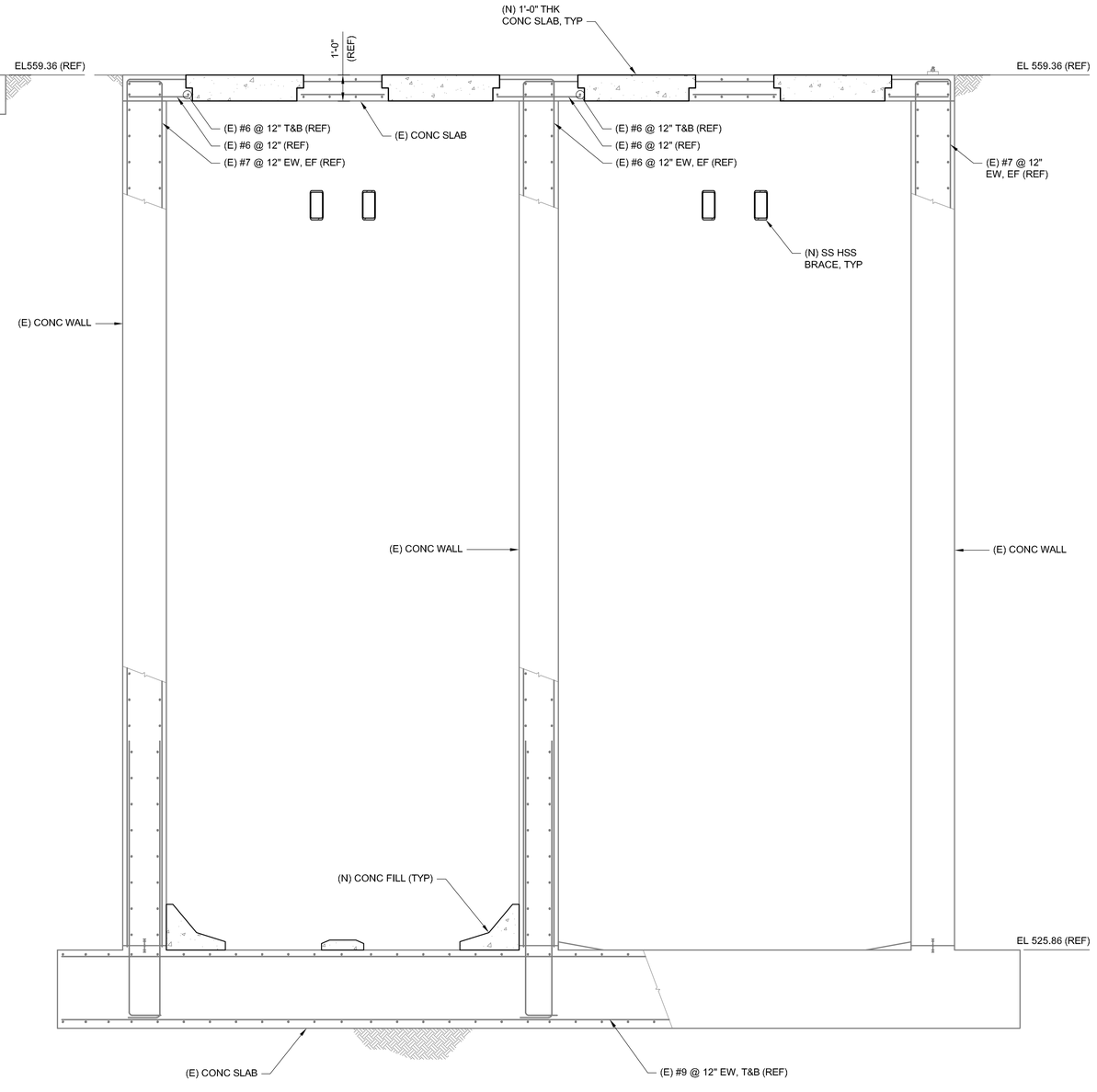
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 StructuralWork\62S-02 - SECTIONS.dwg USER: p008814D
DATE: Oct 19, 2023 3:11pm XREFS: IEUA Border 62S-02_SEC_A 62S-02_SEC_B




SECTION C
SCALE : 3/8 = 1'-0"
62S-01




SECTION D
SCALE : 3/8 = 1'-0"
62S-01

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 StructuralWork\62S-03 - SECTIONS.dwg USER: p008814D
DATE: Oct 16, 2023 1:10pm XREFS: IEUA Border 62S-03_SEC_C 62S-03_SEC_D

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | MC | 10/2023 |
| Drawn | SL | 10/2023 |
| Checked | MA | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | MC | MA | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

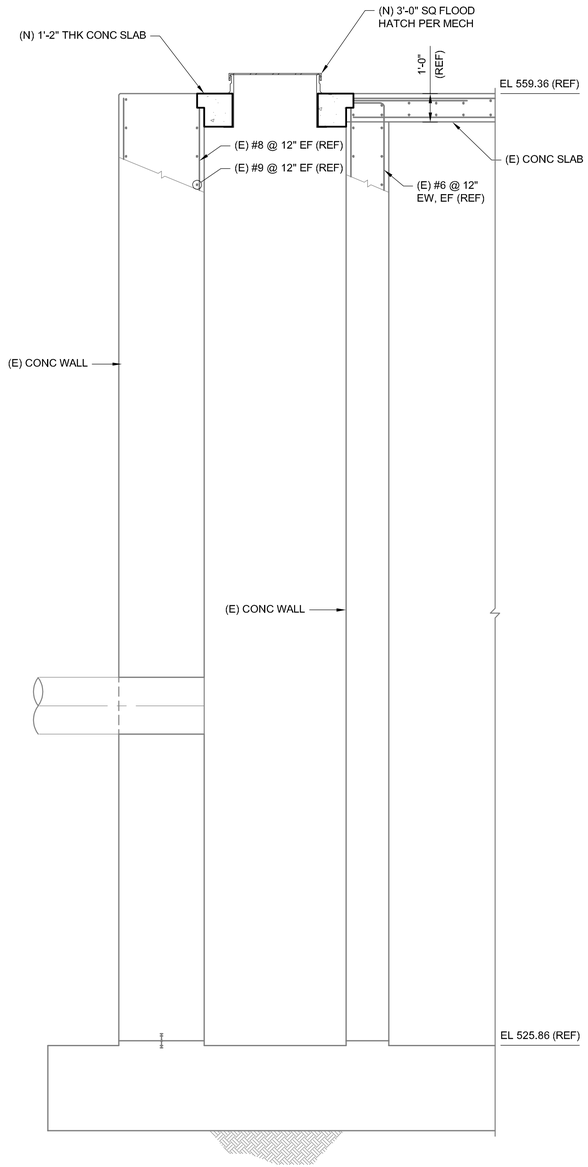
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

# RP-2 LIFT STATION SECTIONS

SHEET 62S-03
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.




SECTION E
SCALE : 3/8 = 1'-0"
62S-01

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 Structural\Work\62S-04 - SECTION.dwg USER: p008814D
DATE: Oct 16, 2023 1:35pm XREFS: IEUA Border 62S-03_SEC_E

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | MC | 10/2023 |
| Drawn | SL | 10/2023 |
| Checked | MA | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | MC | MA | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

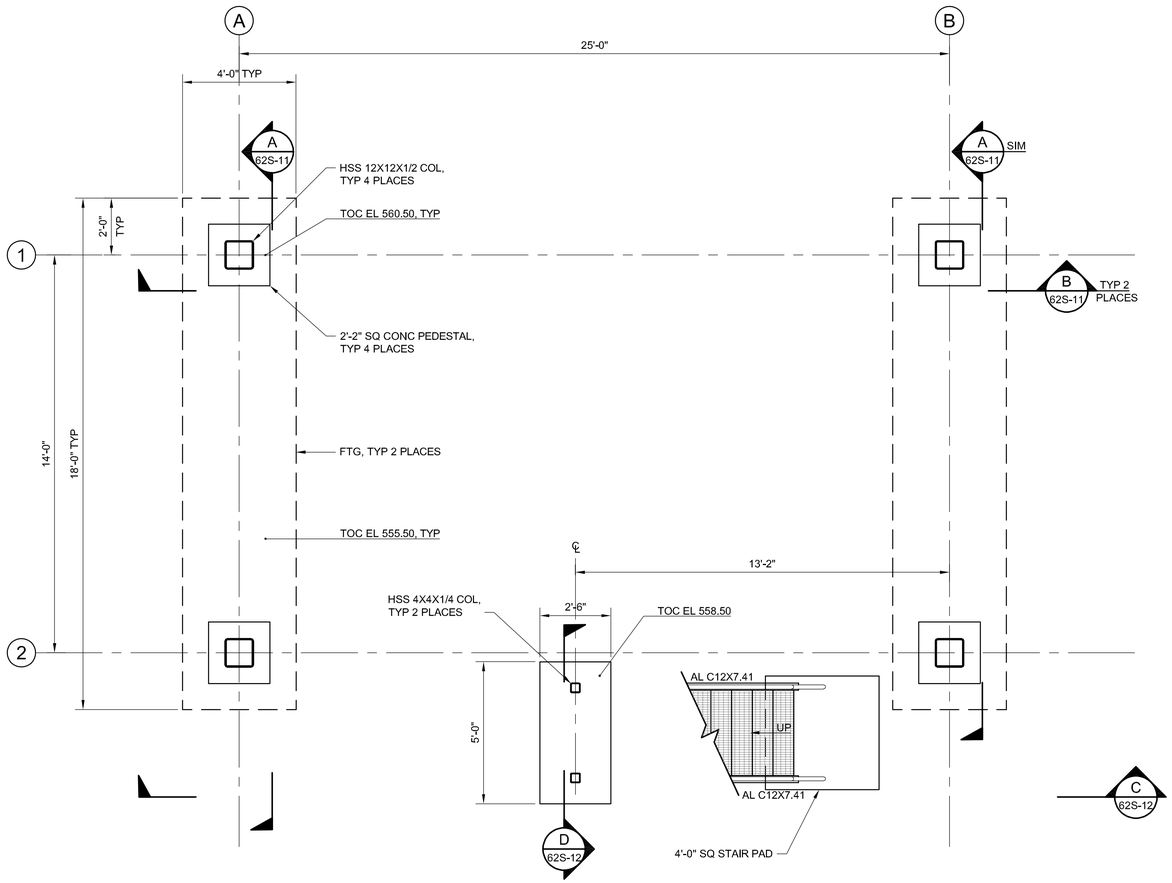
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

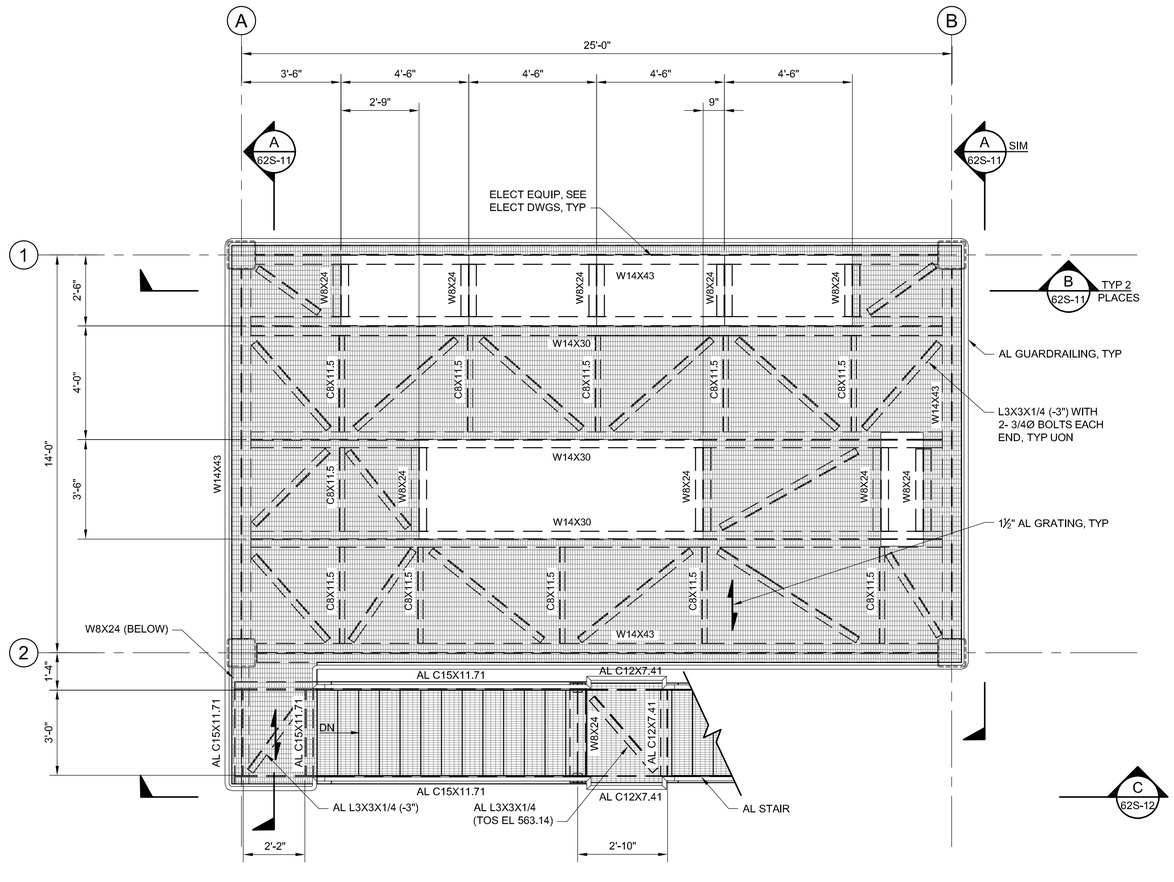
RP-2 LIFT STATION
SECTION

SHEET 62S-04
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.




## FOUNDATION PLAN

SCALE : 3/8" = 1'-0"




## PLATFORM FRAMING PLAN AT TOS EL 573.42, UON

SCALE : 3/8" = 1'-0"

0' 1' 2' 4' 6'

SCALE : 3/8" = 1'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | MC | 10/2023 |
| Drawn | SL | 10/2023 |
| Checked | MA | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | MC | MA | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

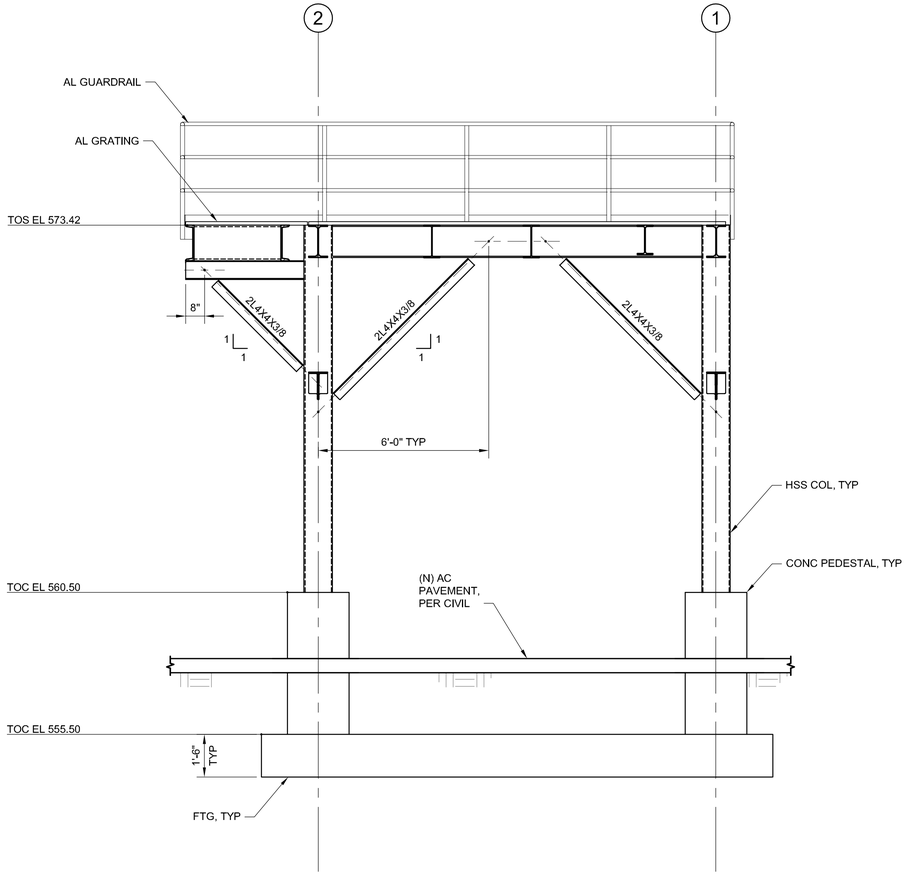
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

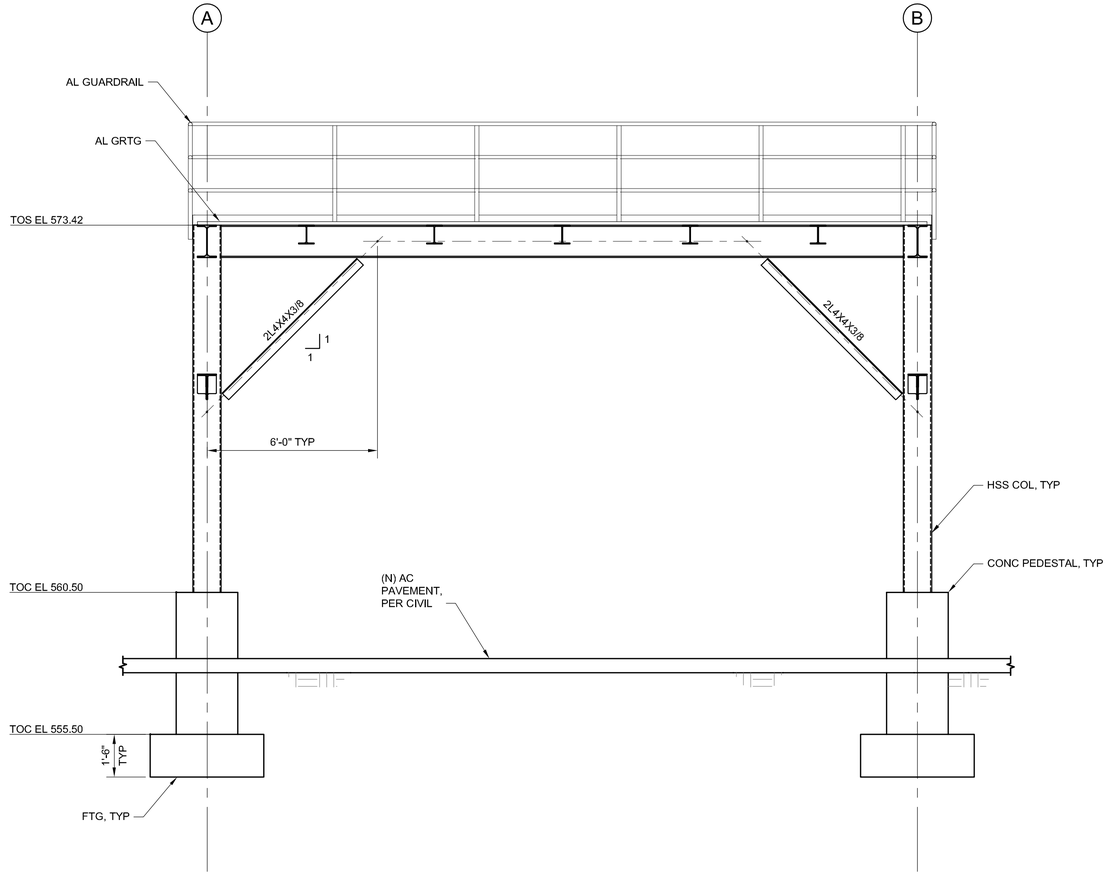
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03
RP-2 ELECTRICAL PLATFORM
FOUNDATION AND PLATFORM
FRAMING PLANS

SHEET 62S-10
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 Structural\Work\62S-10 - STRUCTURAL PLANS.dwg USER: p008814D
DATE: Oct 19, 2023 3:03pm XREFS: IEUA Border 62S-10_FND_EL558-5 62S-10_FRM_EL573-5




SECTION A
SCALE : 3/8 = 1'-0"
62S-10




SECTION B
SCALE : 3/8 = 1'-0"
62S-10

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 Structural\Work\62S-11 - SECTIONS.dwg USER: p008814D
DATE: Oct 16, 2023 2:23pm XREFS: IEUA Border 62S-11_SEC_A 62S-11_SEC_B

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | MC | 10/2023 |
| Drawn | SL | 10/2023 |
| Checked | MA | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | MC | MA | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

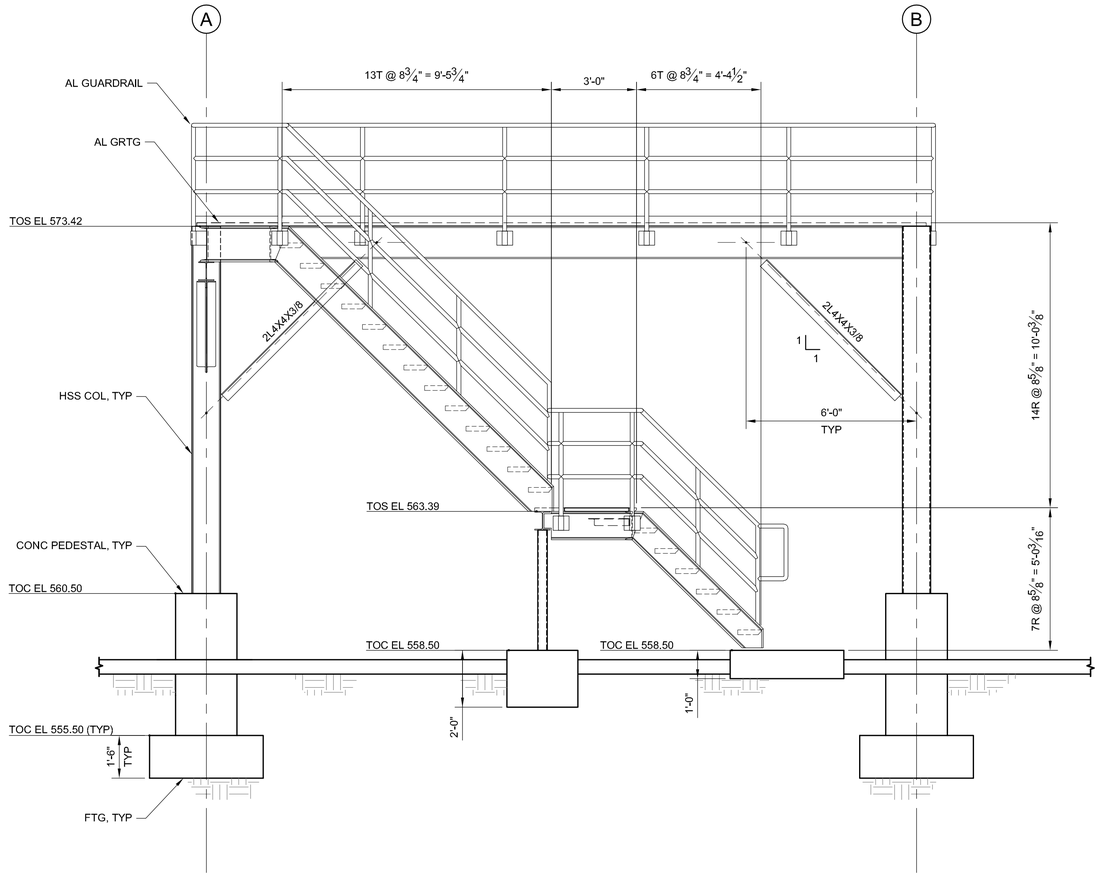
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

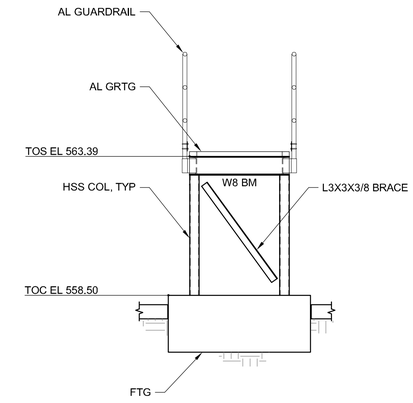
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 ELECTRICAL PLATFORM SECTIONS

SHEET 62S-11
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.




SECTION C
SCALE : 3/8 = 1'-0"
62S-10




SECTION D
SCALE : 3/8 = 1'-0"
62S-10

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 Structural\Work\62S-12 - SECTIONS.dwg USER: p008814D
DATE: Oct 16, 2023 2:31pm XREFS: IEUA Border 62S-12_SEC_C 62S-12_SEC_D

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | MC | 10/2023 |
| Drawn | SL | 10/2023 |
| Checked | MA | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | MC | MA | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 ELECTRICAL PLATFORM SECTIONS

SHEET 62S-12
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

# GENERAL NOTES

A. ALL DIMENSIONS AND ELEVATIONS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCING THE WORK.

B. DEMO OF EXISTING FACILITIES/EQUIPMENT/STRUCTURES SHALL BE SEQUENCED PER SPECIFICATION SECTION 01014 "SEQUENCE OF CONSTRUCTION".

C. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO IDENTIFY, CONFIRM AND ISOLATE THE EXISTING PROCESS AND UTILITY LINES AS WELL AS DE-ENERGIZE THE POWER PRIOR TO COMMENCING THE WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER FOR EQUIPMENT, PROCESS AND UTILITY PIPES ISOLATION AND DRAINING OF TANKS AND PIPES PRIOR TO COMMENCING THE DEMOLITION AND/OR INSTALLATION WORK. THE CONTRACTOR SHALL DISPOSE OF CHEMICALS WITHIN THE PLANT AS DIRECTED BY THE OWNER.

D. THE CONTRACTOR SHALL NOTIFY THE OWNER ONE (1) WEEK IN ADVANCE PRIOR TO DISCONNECTION/DEMOLITION OF ANY EXISTING EQUIPMENT.

E. VALVES, PIPES AND FITTINGS END CONNECTIONS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. PIPING CONNECTIONS SHALL BE PER THE PIPE SCHEDULE. CONTRACTOR DEVIATION REQUESTS FROM PIPE SCHEDULE REQUIREMENTS SHALL BE SUBMITTED ON A CASE BY CASE BASIS FOR ENGINEERS APPROVAL WITH AN RFI. ALL COUPLINGS SHALL BE AXIAL RESTRAINED, THRUST BLOCKS ARE NOT ACCEPTABLE.

F. THE CONTRACTOR SHALL RECYCLE ALL DEMOLISHED MATERIALS AND DISPOSE OF IN COMPLIANCE WITH CURRENT CITY OF CHINO, COUNTY OF SAN BERNARDINO, STATE AND FEDERAL REGULATIONS.

G. THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS, AS NEEDED, TO PIPES ADJACENT TO DEMOLISHED PIPES. WHEN SUPPORTS ARE BEING REMOVED ALONG WITH PIPE REMOVAL, EVALUATE THE INTEGRITY OF THE REMAINING PIPES AND PROVIDE ADEQUATE SUPPORTS.

H. THE CONTRACTOR SHALL PLUG, CAP OR BLIND FLANGE ALL OPEN PIPE ENDS RESULTING FROM DEMOLITION WITH THE LIKE MATERIAL.

I. THE CONTRACTOR SHALL CUT AND CAP MINIMUM ONE FOOT (1'-0") BELOW GRADE ALL ABANDONED BURIED PIPES AND CONDUITS RESULTING FROM DEMOLITION.

J. THE CONTRACTOR SHALL REMOVE, IF POSSIBLE, OR CUT FLUSH WITH THE CONCRETE SURFACE ALL SUPPORTS AND ANCHOR BOLTS RESULTING FROM DEMOLITION AND SHALL PATCH ANY RESULTING CONCRETE HOLES WITH EPOXY GROUT.

K. THE CONTRACTOR SHALL FIELD ROUTE, INSTALL ISOLATION VALVES, AND ADEQUATELY SUPPORT HOSE BIBB, SEAL WATER, DRAINS, VENT LINES, ETC. ALL DRAINS SHALL BE SLOPED MINIMUM 0.4% AND SHALL BE FIELD ROUTED TO THE NEAREST FLOOR DRAIN.

L. PIPE PENETRATIONS SHALL BE PER DWG. M-03, DETAILS 1 TO 7, UNLESS OTHERWISE NOTED ON THE DRAWING:

1. CAST IN PLACE PIPE SPOOL PER DETAIL 3 OR 4/M-03 PENETRATING NEW CONCRETE FLOORS OR CONCRETE WALLS BELOW GRADE AND/OR BELOW WATER LEVEL..
2. PIPE PENETRATION PER DETAIL 5/M-03 PENETRATING NEW CONCRETE FLOORS OR CONCRETE/MASONRY WALL ABOVE GRADE AND/OR NEW CONCRETE WALL MIN. 3 FT ABOVE WATER LEVEL..
3. PIPE PENETRATION PER DETAIL 6A/M-03 PENETRATING EXISTING CONCRETE FLOORS OR WALLS BELOW GRADE AND/OR BELOW WATER LEVEL.
4. PIPE PENETRATION PER DETAIL 6B/M-03 PENETRATING EXISTING CONCRETE FLOORS OR WALLS ABOVE GRADE.
5. PROVIDE PIPE PENETRATION PER DETAIL 7/M-03 PENETRATING EXISTING CONCRETE COVERS, TYP USED FOR FOUL AIR DUCT PENETRATIONS.

M. ALL YARD PIPES ENTERING STRUCTURES SHALL BE PROVIDED WITH TWO FLEXIBLE COUPLINGS ADEQUATELY SPACED, SEE DWG. G-04, NOTE 8 REQUIREMENTS.

N. FOR INSTRUMENT CONNECTION DETAILS, SEE DWGS. XX THROUGH XX.

O. IN CASE OF CONFLICT BETWEEN THIS DRAWING AND DETAILED EQUIPMENT SPECIFIC DRAWING AND/OR SPECIFICATIONS, THE LATTER WILL TAKE PRECEDENCE.

P. FOR ALL EXISTING STRUCTURES, EQUIPMENT AND PIPES LAYOUT SEE IEUA PROJECT NO. EN95028 PLANS.

Q. SEE DWG. XX FOR EQUIPMENT TAGGING GUIDELINES. UNLESS OTHERWISE NOTED, ALL EQUIPMENT TAG NUMBERS ARE PREFIXED BY FACILITY DESIGNATION "C5".

R. RIGID GROOVED COUPLINGS SHALL BE USED ON ABOVE GRADE APPLICATIONS AND FLEXIBLE GROOVED COUPLING ON BURIED APPLICATIONS, TYP. FLEXIBLE GROOVED COUPLINGS ON ABOVE GRADE APPLICATION SHALL BE USED ONLY WHERE ANGULAR DEFLECTION/MISALIGNMENT OR THERMAL GROWTH HAS TO BE ACCOMMODATED.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

GENERAL NOTES

SHEET M-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

# PUMP SCHEDULE

| ITEM NO | PUMP TAG NO | PUMP NAME | LOCATION | DWG. NO | | TYPE | SERVICE | RATED CAPACITY | RATED HEAD OR PRESSURE | RATED SPEED | POWER | SPECIFICATION SECTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MECH. | P&ID | | | | | | | | |
| 1 | PMP-04111 & 04121 | RP-2 LIFT PUMPS | AREA 62, RP-2 PUMP STATION | 62M-01 | 62I-01 | NON CLOG RAIL MOUNT SUBMERSIBLE PUMP | RAW SEWAGE (RS) | 110 GPM | 82 FT TDH | 3600 RPM | 7.5 HP, 480V, 3 PH, 60 HZ | 11227 | |
| 2 | PMP-04111 & 04121 | MOUNTAIN AVENUE LIFT PUMPS | AREA 78, MOUNTAIN AVENUE PUMP STATION | 78M-01 | 78I-01 | NON CLOG RAIL MOUNT SUBMERSIBLE PUMP | RAW SEWAGE (RS) | 620 GPM | 46 FT TDH | 1800 RPM | 15 HP, 480V, 3 PH, 60 HZ | 11227 & 11250 | |
| 3 | PMP-01 & 02 | BUTTERFIELD LIFT STATION | AREA XX, BUTTERFIELD PUMP STATION | XXM-XX | XXI-01 | HORIZONTAL SELF PRIMING CENTRIFUGAL PUMP | RAW SEWAGE (RS) | 1064 GPM | 132 FT TDH | 1550 RPM | 75 HP, 480V, 3 PH, 60 HZ | 11196 | |

# VALVE SCHEDULE

| ITEM NO. | VALVE SCHEDULE | | | QTY | DWG. NO. | | OPERATOR TYPE | OPERATING PRESSURE (PSIG) | MAX. PRESSURE (PSIG) | POWER SUPPLY | FLOW | REMOTE HAND CONTROL | VALVE SPEC # | ACTUATOR SPEC # | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | VALVE TAG NO. | SIZE (INCH) | TYPE | | MECH | P&ID | | | | | | | | | |
| 1 | N/A | 4 | PLUG VALVE PV2 | 8 | | 62I-01 | LEVER | 30 PSIG | 50 PSIG | N/A | 110 GPM | N/A | 15110 | N/A | |
| 2 | N/A | 4 | CHECK VALVE CV1 | 2 | | 62I-02 | N/A | 30 PSIG | 50 PSIG | N/A | 110 GPM | N/A | 15105 | N/A | |
| 3 | N/A | 2 | PLUG VALVE PV2 | 5 | | 62I-02 | LEVER | 30 PSIG | 50 PSIG | N/A | N/A | N/A | 15110 | N/A | AVRV, ARV AND SAMPLE PORT ISOLATION VALVES |
| 4 | N/A | 2 | AIR VACUUM RELEASE VALVES AVRV 2 | 2 | | 62I-03 | N/A | 30 PSIG | 50 PSIG | N/A | 15 SCFM | N/A | 15113 | N/A | |
| 5 | N/A | 3 | AIR RELEASE VALVES ARV 2 | 1 | | 62I-04 | N/A | 30 PSIG | 50 PSIG | N/A | 1 SCFM | N/A | 15113 | N/A | |
| 6 | MVLV-04101, 04111 & 04121 | 8 | PLUG VALVE PV2 | 3 | | 78I-01 | MANUAL GEAR OPERATOR WITH HANDWHEEL | 30 PSIG | 50 PSIG | N/A | 620 GPM | N/A | 15110 | 15101 | |
| 7 | CVLV-04111 & 04121 | 8 | CHECK VALVE CV1 | 2 | | 78I-02 | N/A | 30 PSIG | 50 PSIG | N/A | 620 GPM | N/A | 15105 | N/A | PROVIDE LEVER AND SPRING OR LEVER AND WEIGHT PER VALVE MANUFACTURER RECOMMENDATIONS |
| 8 | MVLV-04102 | 10 | PLUG VALVE PV2 | 1 | | 78I-01 | MANUAL GEAR OPERATOR WITH HANDWHEEL | 30 PSIG | 50 PSIG | N/A | 620 GPM | N/A | 15110 | 15101 | |
| 9 | N/A | 4 | PLUG VALVE PV2 | 1 | | 78I-01 | LEVER | 30 PSIG | 50 PSIG | N/A | N/A | N/A | 15110 | N/A | |
| 10 | N/A | 3 | PLUG VALVE PV2 | 2 | | 78I-01 | LEVER | 30 PSIG | 50 PSIG | N/A | N/A | N/A | 15110 | N/A | AVRV ISOLATION VALVE |
| 11 | N/A | 2 | PLUG VALVE PV2 | 1 | | 78I-01 | LEVER | 30 PSIG | 50 PSIG | N/A | N/A | N/A | 15110 | N/A | ARV ISOLATION VALVE |
| 12 | N/A | 3 | AIR VACUUM RELEASE VALVES AVRV 2 | 2 | | 78I-01 | N/A | 30 PSIG | 50 PSIG | N/A | 90 SCFM | N/A | 15113 | N/A | |
| 13 | N/A | 2 | AIR RELEASE VALVES ARV 2 | 1 | | 78I-01 | N/A | 30 PSIG | 50 PSIG | N/A | 5 SCFM | N/A | 15113 | N/A | |


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

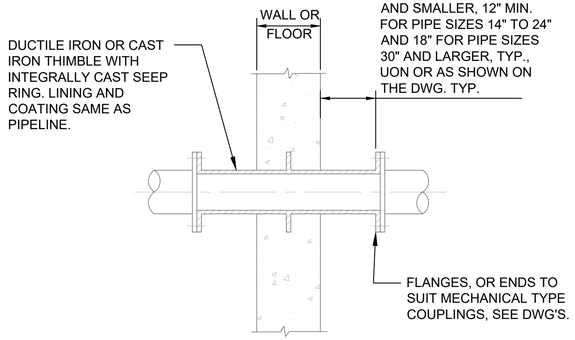

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

PUMP AND VALVE SCHEDULES

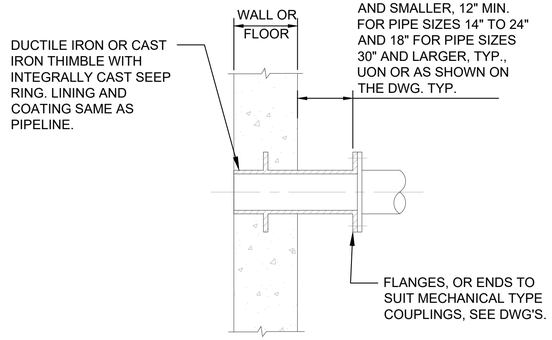
SHEET M-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.


DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK_M-02.dwg USER: p0045935
DATE: Oct 18, 2023 1:24pm XREFS: IEUA Border



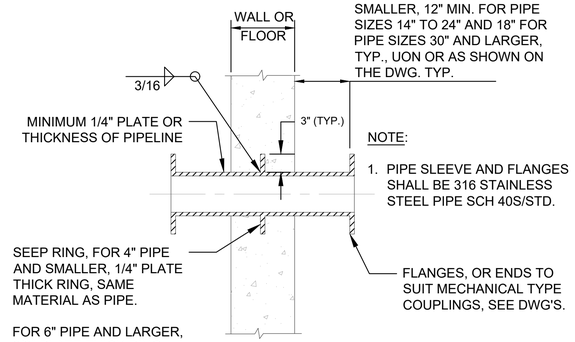

DUCTILE IRON PIPE

1 VAR PIPE PENETRATION DETAIL
SCALE: NTS




DUCTILE IRON PIPE

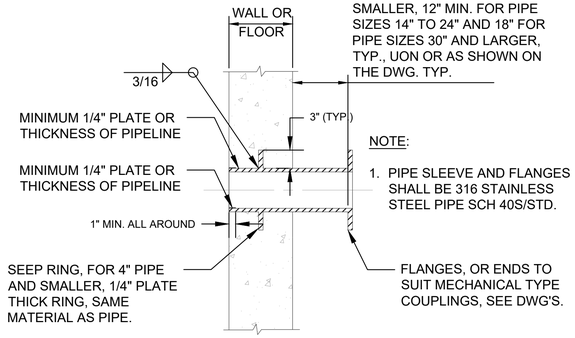
2 VAR PIPE PENETRATION DETAIL
SCALE: NTS




NOTE:
1. PIPE SLEEVE AND FLANGES SHALL BE 316 STAINLESS STEEL PIPE SCH 40S/STD.

FABRICATED PIPE

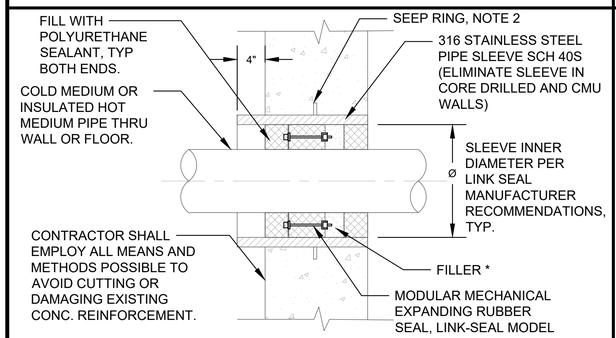
3 VAR PIPE PENETRATION DETAIL
SCALE: NTS




NOTE:
1. PIPE SLEEVE AND FLANGES SHALL BE 316 STAINLESS STEEL PIPE SCH 40S/STD.

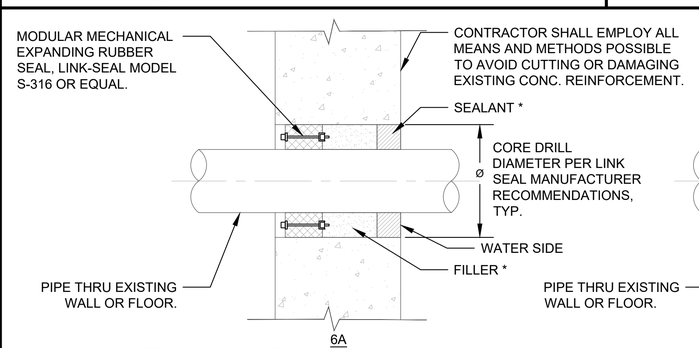
FABRICATED PIPE

4 VAR PIPE PENETRATION DETAIL
SCALE: NTS




NOTES:
1. PROVIDE SQUARE OPENING THROUGH CMU WALL.
2. SEEP RING, FOR 4" PIPE AND SMALLER, 1/4" PLATE THICK RING, SAME MATERIAL AS PIPE. FOR 6" PIPE AND LARGER, 3/8" PLATE THICK RING, SAME MATERIAL AS PIPE.

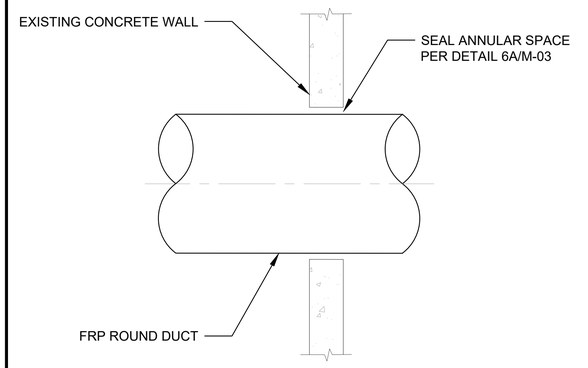
5 VAR PIPE PENETRATION DETAIL
SCALE: NTS



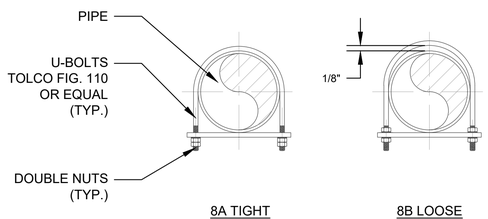

* PER MODULAR RUBBER SEAL MANUFACTURER'S RECOMMENDATION

EXIST WALL OR FLOOR, 6A BELOW & 6B ABOVE WATER SURFACE CONDITION

6 VAR PIPE PENETRATION DETAIL
SCALE: NTS



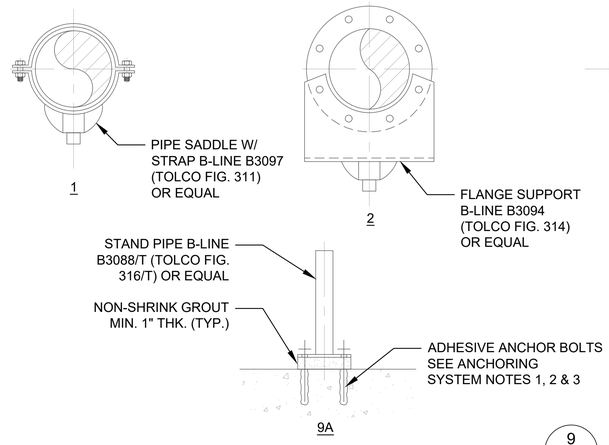

7 VAR FRP DUCT WALL PENETRATION DETAIL
SCALE: NTS




8A TIGHT 8B LOOSE

NOTES:
1. U-BOLTS AND FASTENERS MATERIAL SHALL BE 316 STAINLESS STEEL.
2. PROVIDE 10 GA STAINLESS STEEL SHIELD COMPLETELY AROUND FRP PIPE. LENGTH OF SHIELD SHALL BE 1/3 OF PIPE DIAMETER. WRAP COPPER TUBES WITH 2" WIDE STRIP RUBBER FABRIC.

8 VAR PIPE SUPPORT DETAIL
SCALE: NTS




9 VAR PIPE SUPPORT DETAIL
SCALE: NTS

ANCHORING SYSTEM NOTES:
1. POST-INSTALLED ADHESIVE ANCHOR BOLTS, SHALL BE ADHESIVE TYPE AND SHALL HAVE AN ACTIVE ICC REPORT AT TIME OF CONSTRUCTION. THEIR CAPACITIES LISTED IN THE REPORT SHALL BE BASED ON TESTING IN CRACKED CONCRETE. REFERENCE HILTI HIT RE 500 V3, SIMPSON SET 3G, OR ENGINEER APPROVED EQUAL.
2. USE 316SS ADHESIVE ANCHORING SYSTEM IN ALL AREAS.
3. THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DETAILS FOR ANCHORING SYSTEM TO CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CALCULATIONS SHALL INCLUDE ALL APPLICABLE LOADS ON ANCHORING AND SHALL INCLUDE ANCHOR BOLT CAPACITIES AS MODIFIED BY SPACING AND EDGED DISTANCE, BASE PLATE STRESSES, AND CONCRETE BEARING STRESSES. ALL CALCULATIONS AND DWG'S SHALL BE SIGNED AND STAMPED BY CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER.
4. PIPE SUPPORTS MATERIAL SHALL BE 316L STAINLESS STEEL.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

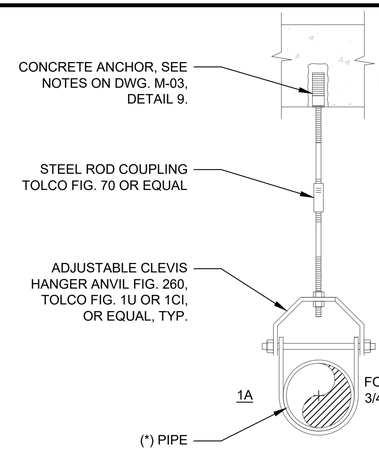
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

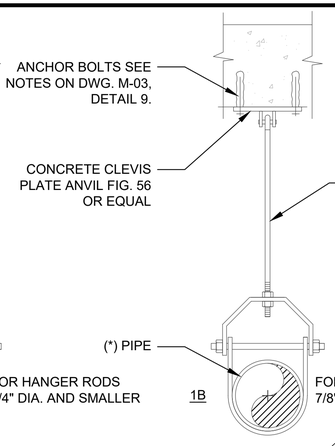
60% SUBMITTAL - 10/2023

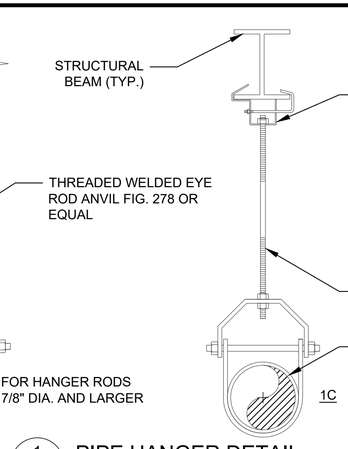
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

MECHANICAL STANDARD DETAILS, SHEET 1

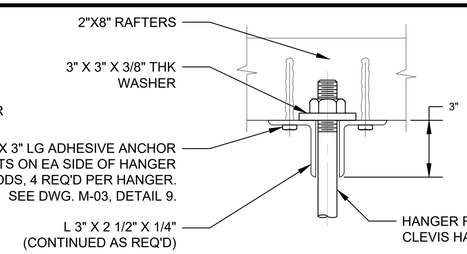
SHEET M-03
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



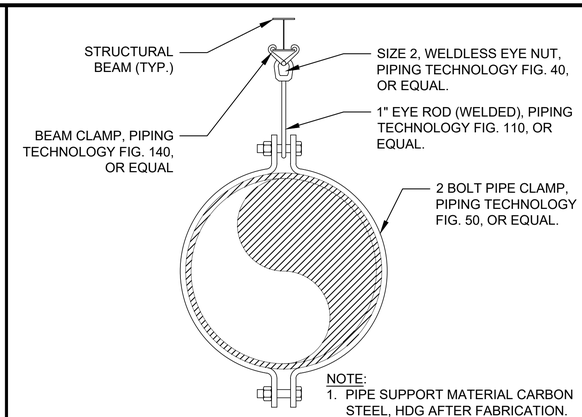




1 VAR **PIPE HANGER DETAIL**
SCALE: NTS



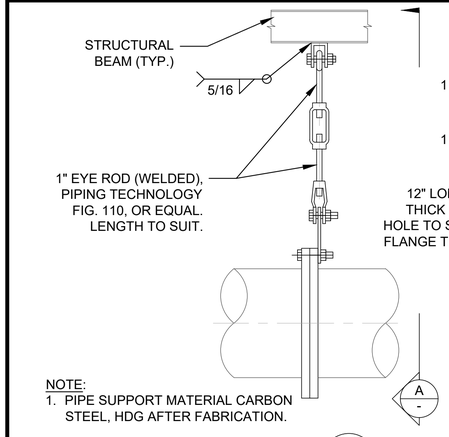

| (*) PIPE SIZE | ROD SIZE | MAX SPACING (STEEL PIPE) |
|---|---|---|
| ≤1" | 3/8" | 6' |
| 1 1/4" to 2" | 3/8" | 8' |
| 2 1/2" to 3 1/2" | 1/2" | 12' |
| 4" | 5/8" | 10' |
| 6" | 3/4" | 10' |
| 8", 10", 12" | 7/8" | 10' |
| 14", 16" | 1" | 10' |

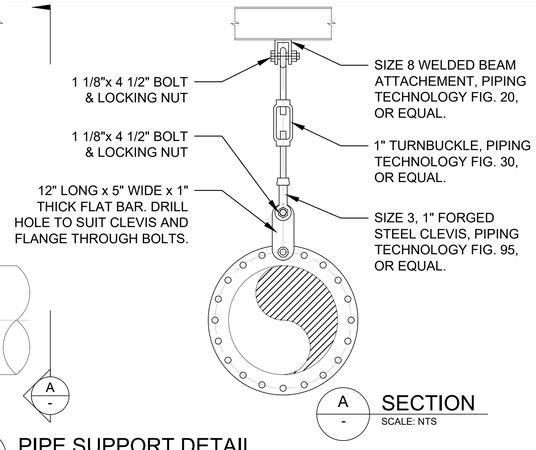
NOTE:
1. PIPE SUPPORTS MATERIAL SHALL BE CARBON STEEL HOT DIP GALVANIZED.




NOTE:
1. PIPE SUPPORT MATERIAL CARBON STEEL, HDG AFTER FABRICATION.

2 VAR **PIPE SUPPORT DETAIL**
SCALE: NTS

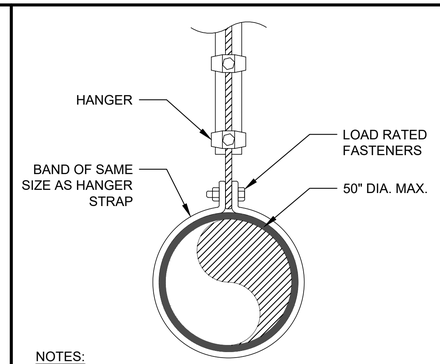


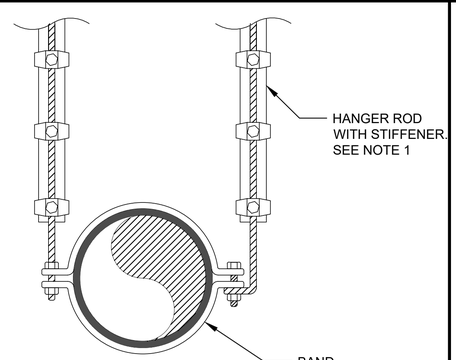

NOTE:
1. PIPE SUPPORT MATERIAL CARBON STEEL, HDG AFTER FABRICATION.

A - **SECTION**
SCALE: NTS

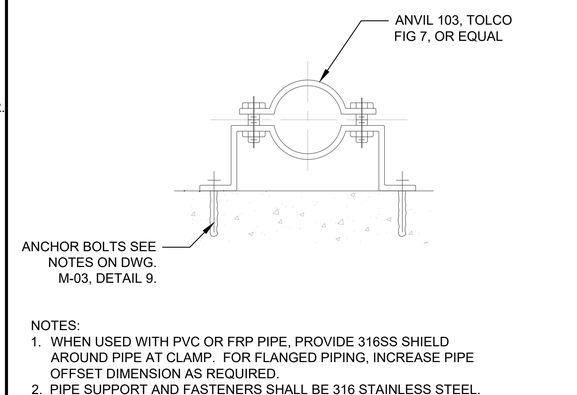
3 VAR **PIPE SUPPORT DETAIL**
SCALE: NTS




NOTES:
1. STIFFENER USED ONLY FOR ROD LENGTH LONGER THAN APPROVED UNBRACED LENGTH.
2. DO NOT EXCEED ALLOWABLE LOAD LIMITS.
3. DUCT SUPPORT MATERIAL CARBON STEEL HDG.

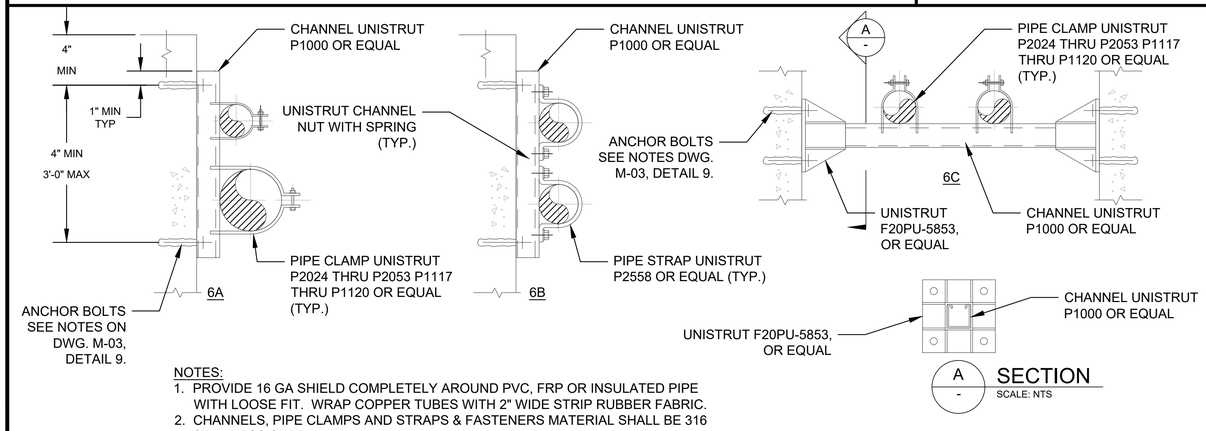



4 VAR **ROUND DUCTWORK DETAIL**
SCALE: NTS




NOTES:
1. WHEN USED WITH PVC OR FRP PIPE, PROVIDE 316SS SHIELD AROUND PIPE AT CLAMP. FOR FLANGED PIPING, INCREASE PIPE OFFSET DIMENSION AS REQUIRED.
2. PIPE SUPPORT AND FASTENERS SHALL BE 316 STAINLESS STEEL.

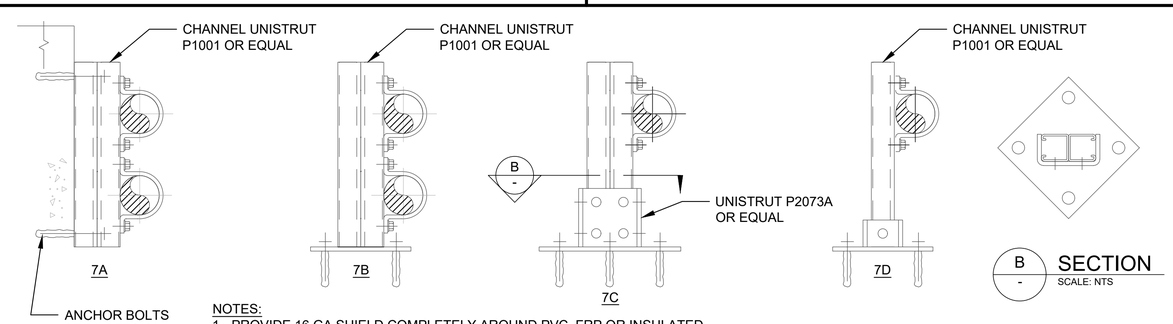
5 VAR **PIPE CLAMP DETAIL**
SCALE: NTS




NOTES:
1. PROVIDE 16 GA SHIELD COMPLETELY AROUND PVC, FRP OR INSULATED PIPE WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" WIDE STRIP RUBBER FABRIC.
2. CHANNELS, PIPE CLAMPS AND STRAPS & FASTENERS MATERIAL SHALL BE 316 STAINLESS STEEL.

A - **SECTION**
SCALE: NTS

6 VAR **FLUSH MOUNTED PIPE SUPPORT DETAIL**
SCALE: NTS




NOTES:
1. PROVIDE 16 GA SHIELD COMPLETELY AROUND PVC, FRP OR INSULATED PIPE WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" WIDE STRIP RUBBER FABRIC.
2. CHANNELS, PIPE CLAMP AND STRAPS & FASTENER MATERIAL SHALL BE 316 STAINLESS STEEL.
3. ANCHORS TO CONCRETE OR MASONRY SHALL COMPLY WITH NOTES DWG. M-03, DETAIL 9.

7 VAR **FLUSH MOUNTED PIPE SUPPORT DETAIL**
SCALE: NTS

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

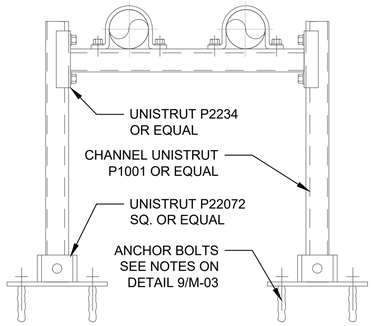
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

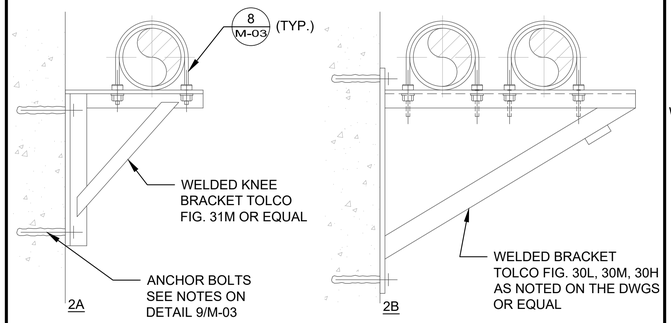
MECHANICAL STANDARD DETAILS, SHEET 2

SHEET M-04
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



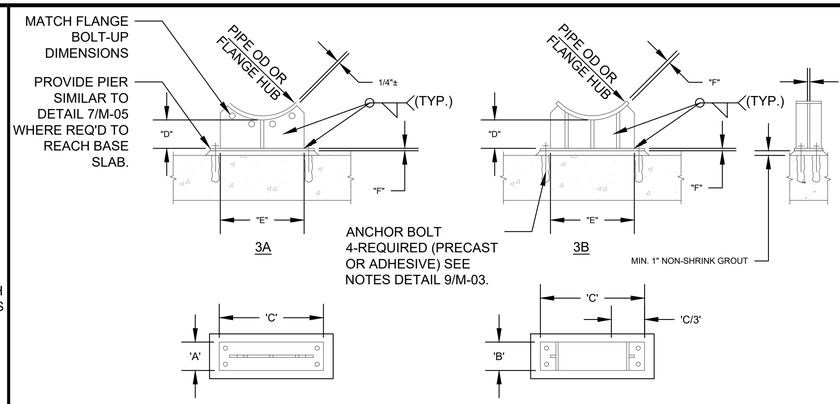

NOTES:
1. PROVIDE 16 GA SHIELD COMPLETELY AROUND PVC, FRP OR INSULATED PIPE WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" WIDE STRIP RUBBER FABRIC.
2. CHANNEL, PIPE STRAP AND FASTENER MATERIAL SHALL BE 316 STAINLESS STEEL.
3. ANCHORS TO CONCRETE OR MASONRY SHALL COMPLY WITH NOTES ON DWG. M-03, DETAIL 9.

## 1 VAR PIPE SUPPORT DETAIL
SCALE: NTS




NOTES:
1. BRACKETS MATERIAL FOR DRY EXPOSED INSTALLATION SHALL BE CARBON STEEL HOT DIP GALVANIZED.
2. BRACKET MATERIAL FOR WET EXPOSED OR SUBMERGED INSTALLATION SHALL BE 316L STAINLESS STEEL.

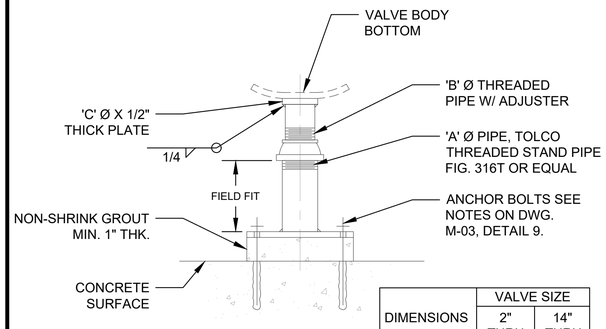
## 2 VAR PIPE BRACKET DETAIL
SCALE: NTS




| PIPE/FLANGE SUPPORT SCHEDULE | | | | | | |
|---|---|---|---|---|---|---|
| PIPE DIA | A | B | C | D | E | F |
| 4 | 6 | 6 | 12 | 6 | 10 | 3/8 |
| 6 TO 8 | 6 | 6 | 16 | 6 | 14 | 3/8 |
| 10 TO 16 | 6 | 6 | 25 | 8 | 22 | 3/8 |
| 18 | 6 | 6 | 27 | 10 | 24 | 3/8 |
| 20 | 8 | 8 | 29 | 10 | 26 | 3/8 |
| 24 | 8 | 8 | 34 | 10 | 30 | 3/8 |
| 30 | 8 | 8 | 34 | 12 | 30 | 3/8 |
| 36 | 8 | 8 | 38 | 12 | 34 | 1/2 |
| 40 | 8 | 8 | 42 | 12 | 38 | 1/2 |
| 42 | 10 | 10 | 42 | 12 | 38 | 1/2 |
| 48 | 10 | 10 | 50 | 14 | 46 | 1/2 |
| 54 | 10 | 10 | 54 | 14 | 50 | 1/2 |

NOTE:
1. VALVE/PIPE SUPPORT MATERIAL CS ASTM A36, HDG AFTER FABRICATIONS.

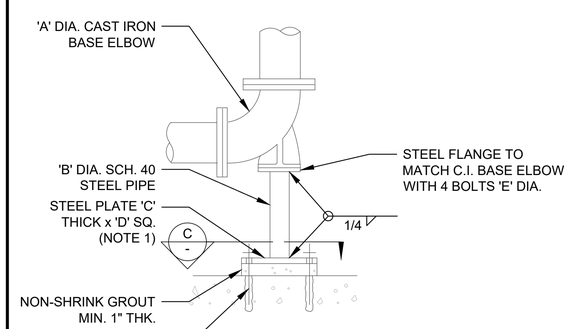
## 3 VAR VALVE/PIPE SUPPORT DETAIL
SCALE: NTS




NOTE:
1. PIPE SUPPORTS MATERIAL CARBON STEEL HOT DIP GALVANIZED.

| DIMENSIONS | VALVE SIZE | |
|---|---|---|
| | 2" THRU 12" | 14" THRU 24" |
| 'A' | 3" | 6" |
| 'B' | 2 1/2" | 4" |
| 'C' | 3 1/2" | 4 1/2" |

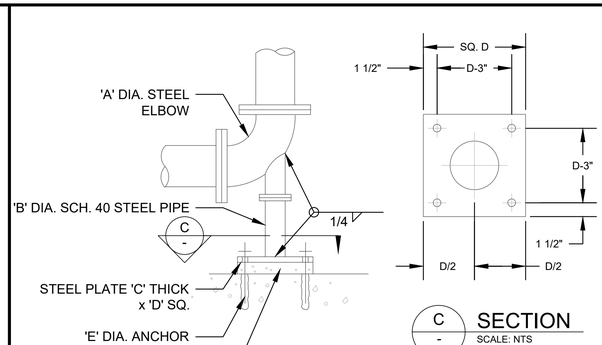
## 4 VAR VALVE SUPPORT DETAIL
SCALE: NTS




| ELBOW | DIMENSIONS IN INCHES | | | |
|---|---|---|---|---|
| 'A' DIA. | 'B' DIA. | 'C' THICK | 'D' SQ. | 'E' DIA. |
| 4 | 2 | 3/8 | 6 | 5/8 |
| 6 | 2 1/2 | 3/8 | 7 | 5/8 |
| 8 | 4 | 1/2 | 9 | 5/8 |
| 10 | 4 | 1/2 | 9 | 5/8 |
| 12 | 6 | 1/2 | 11 | 3/4 |
| 14 | 6 | 1/2 | 11 | 3/4 |
| 16 | 6 | 1/2 | 11 | 3/4 |
| 18 | 8 | 1/2 | 13 1/2 | 3/4 |
| 20 | 8 | 1/2 | 13 1/2 | 3/4 |
| 24 | 8 | 1/2 | 13 1/2 | 3/4 |
| 30 | 10 | 3/4 | 16 | 7/8 |
| 36 | 12 | 3/4 | 19 | 7/8 |
| 42 | 16 | 3/4 | 23 1/2 | 1 |
| 48 | 18 | 3/4 | 25 | 1 1/8 |

NOTES:
1. SEE SECTION C, DWG. M-04, DETAIL 6.
2. PIPE SUPPORT MATERIAL CARBON STEEL HDP.

## 5 VAR DUCTILE IRON PIPE SUPPORT DETAIL
SCALE: NTS

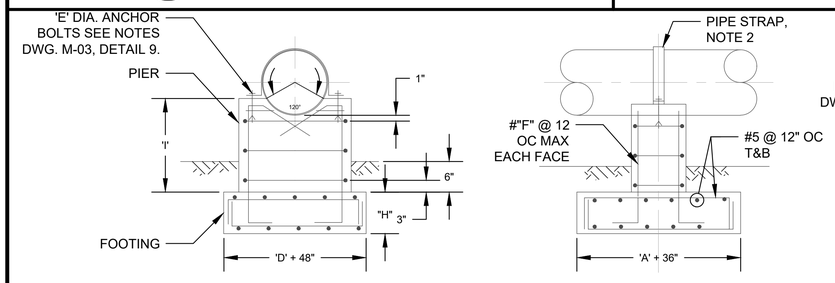



C - SECTION
SCALE: NTS

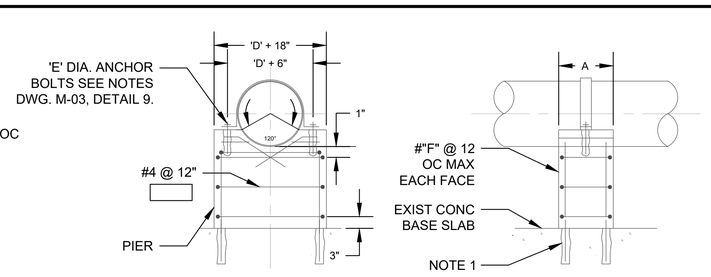
| ELBOW | DIMENSIONS IN INCHES | | | |
|---|---|---|---|---|
| 'A' DIA. | 'B' DIA. | 'C' THICK | 'D' SQ. | 'E' DIA. |
| 4 | 2 | 3/8 | 6 | 5/8 |
| 6 | 2 1/2 | 3/8 | 7 | 5/8 |
| 8 | 4 | 1/2 | 9 | 5/8 |
| 10 | 4 | 1/2 | 9 | 5/8 |
| 12 | 6 | 1/2 | 11 | 3/4 |
| 14 | 6 | 1/2 | 11 | 3/4 |
| 16 | 6 | 1/2 | 11 | 3/4 |
| 18 | 8 | 1/2 | 13 1/2 | 3/4 |
| 20 | 8 | 1/2 | 13 1/2 | 3/4 |
| 24 | 8 | 1/2 | 13 1/2 | 3/4 |
| 30 | 10 | 3/4 | 16 | 7/8 |
| 36 | 12 | 3/4 | 19 | 7/8 |
| 42 | 16 | 3/4 | 23 1/2 | 1 |
| 48 | 18 | 3/4 | 25 | 1 1/8 |

NOTE:
1. PIPE SUPPORTS MATERIAL & FINISH SAME AS BASE PIPE.

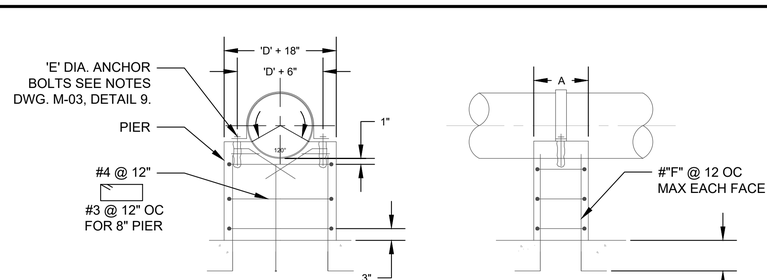
## 6 VAR STEEL PIPE SUPPORT DETAIL
SCALE: NTS




7A NEW PIER ON ISOLATED FOOTING




7B NEW PIER ON EXISTING CONCRETE SLAB




7C NEW PIER ON NEW CONCRETE FLOOR

NOTES:
1. EMBED USING HILTI HIT-RE 500 V3, OR SIMPSON SET 3G ADHESIVE SYSTEM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION TO DEVELOP FULL STRENGTH OF BAR. SUBMIT CALCULATION PER NOTES ON DWG. M-03, DETAIL 9.
2. PIPE STRAP AND FASTENER MATERIAL SHALL BE 316 STAINLESS STEEL. PIPE STRAP MIN. WIDTH 2" FOR PIPES 14 TO 24", 2 1/2" FOR PIPES 30" T O 48", 3" FOR PIPES 54" AND LARGER.
3. FOR ANCHOR PIPE SUPPORT STRAP SHALL BE TIGHTENED AROUND THE PIPE, FOR GUIDE PIPE SUPPORT STRAP SHALL BE LOOSE (⅛" CLEARANCE) RESPECTIVELY.
4. ON All GUIDES, PROVIDE 1/8" TEFLON SHEET BETWEEN PIPE AND CONCRETE PEDESTAL COVERING THE ENTIRE CONTACT AREA.

| PIPE SIZE (D) | A | E | F | G | H | I (MAX) |
|---|---|---|---|---|---|---|
| 14" TO 20" | 10" | ¾" | #5 | 10" | 1'-6" | 4'-6" |
| 24" TO 36" | 12" | ¾" | #6 | 12" | 2'-0" | 4'-6" |
| 42" TO 60" | 16" | ¾" | #6 | 12" | 2'-6" | 4'-6" |

## 7 VAR PIPE SUPPORT ON CONCRETE PEDESTAL DETAIL
SCALE: NTS

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

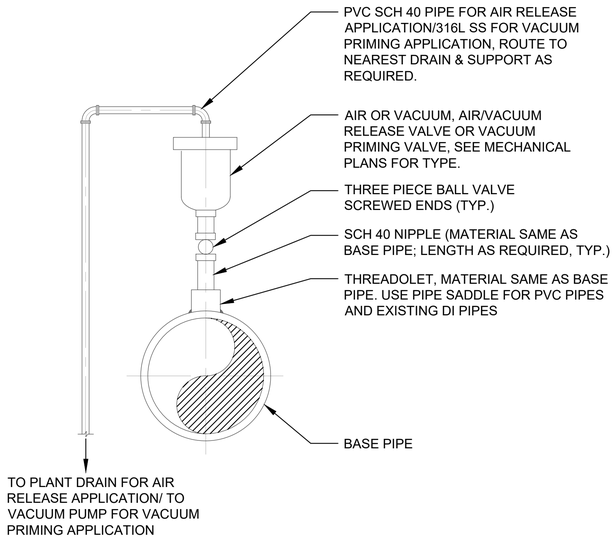
60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

# MECHANICAL STANDARD DETAILS, SHEET 3

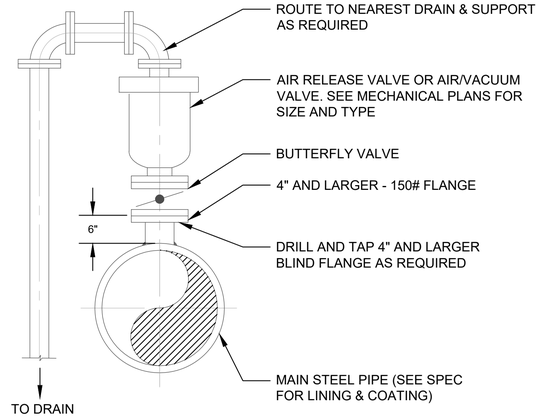
SHEET M-05
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK_M-05.dwg USER: p0045935
DATE: Oct 18, 2023 1:28pm XREFS: IEUA Border



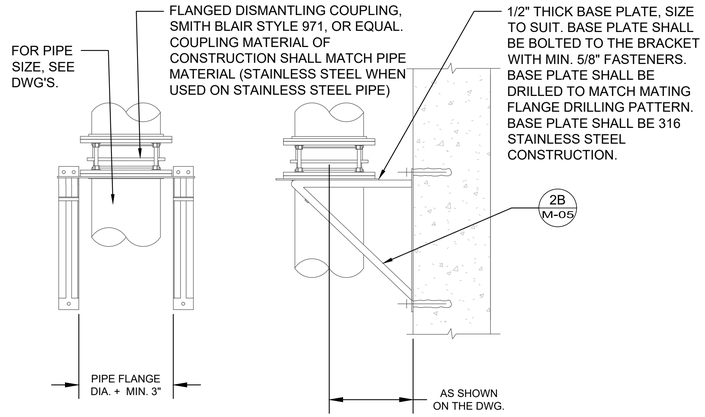

1 VAR AIR VACUUM AND AIR RELIEF VALVE (3" AND SMALLER) DETAIL

SCALE: NTS




2 VAR AIR VACUUM AND AIR RELIEF VALVE (4" AND LARGER) DETAIL

SCALE: NTS




9 VAR VERTICAL PIPE SUPPORT

SCALE: NTS

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK_M-06.dwg USER: p0045935
DATE: Oct 18, 2023 1:30pm XREFS: IEUA Border

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

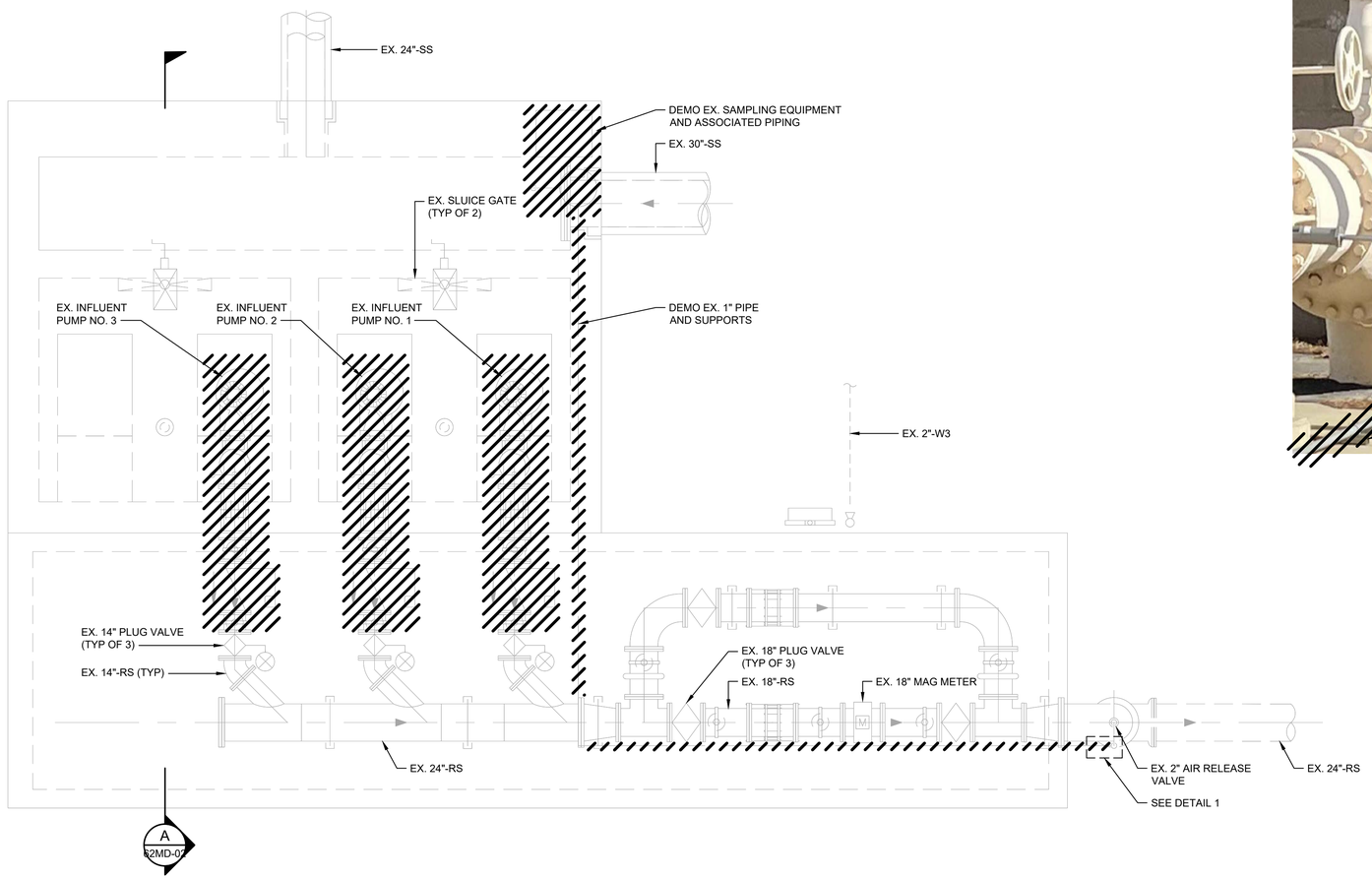
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

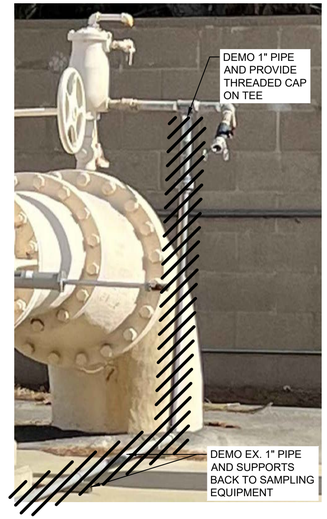
MECHANICAL STANDARD DETAILS, SHEET 4

SHEET M-06
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.




## DEMOLITION PLAN

SCALE : 1/4" = 1'-0"




## DETAIL 1

SCALE : N.T.S.

## NOTES

1. FOR GENERAL NOTES, SEE DWG. M-01.

LEGEND:

DEMO:

0' 1' 2' 4' 8' 12'

SCALE : 1/4" = 1'-0"

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK\62MD-01.dwg USER: p0045935
DATE: Oct 18, 2023 2:35pm XREFS: IEUA Border m-62pp01 S-62FP01

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

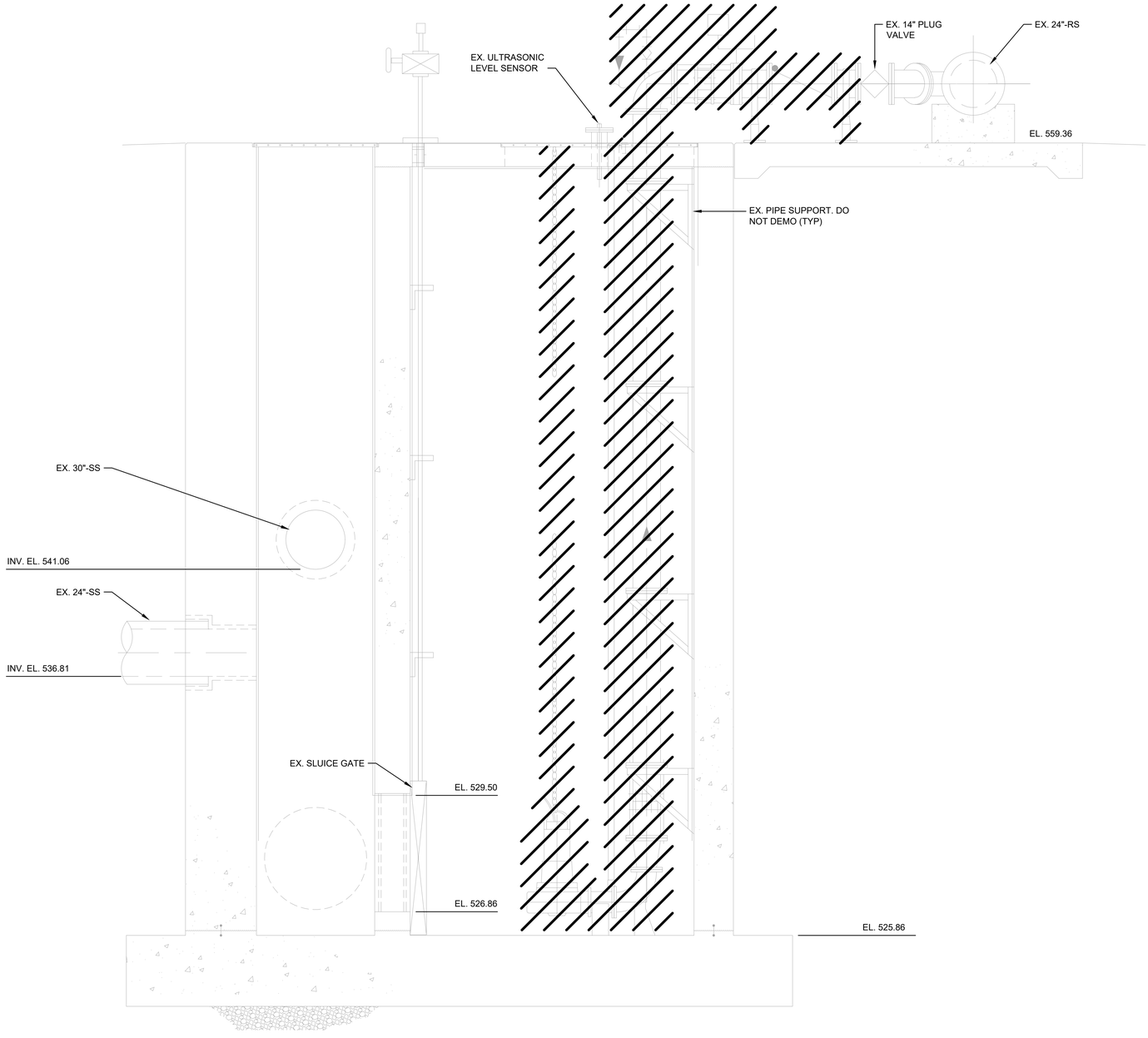
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
DEMOLITION PLAN

SHEET 62MD-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.




SECTION A
SCALE : 3/8" = 1'-0"
62MD-01

## NOTES

1. FOR GENERAL NOTES, SEE DWG. M-01.

LEGEND:

DEMO:

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK\62MD-02.dwg USER: p0045935
DATE: Oct 18, 2023 2:38pm XREFS: IEUA Border M-62PS01 S-62SC01

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

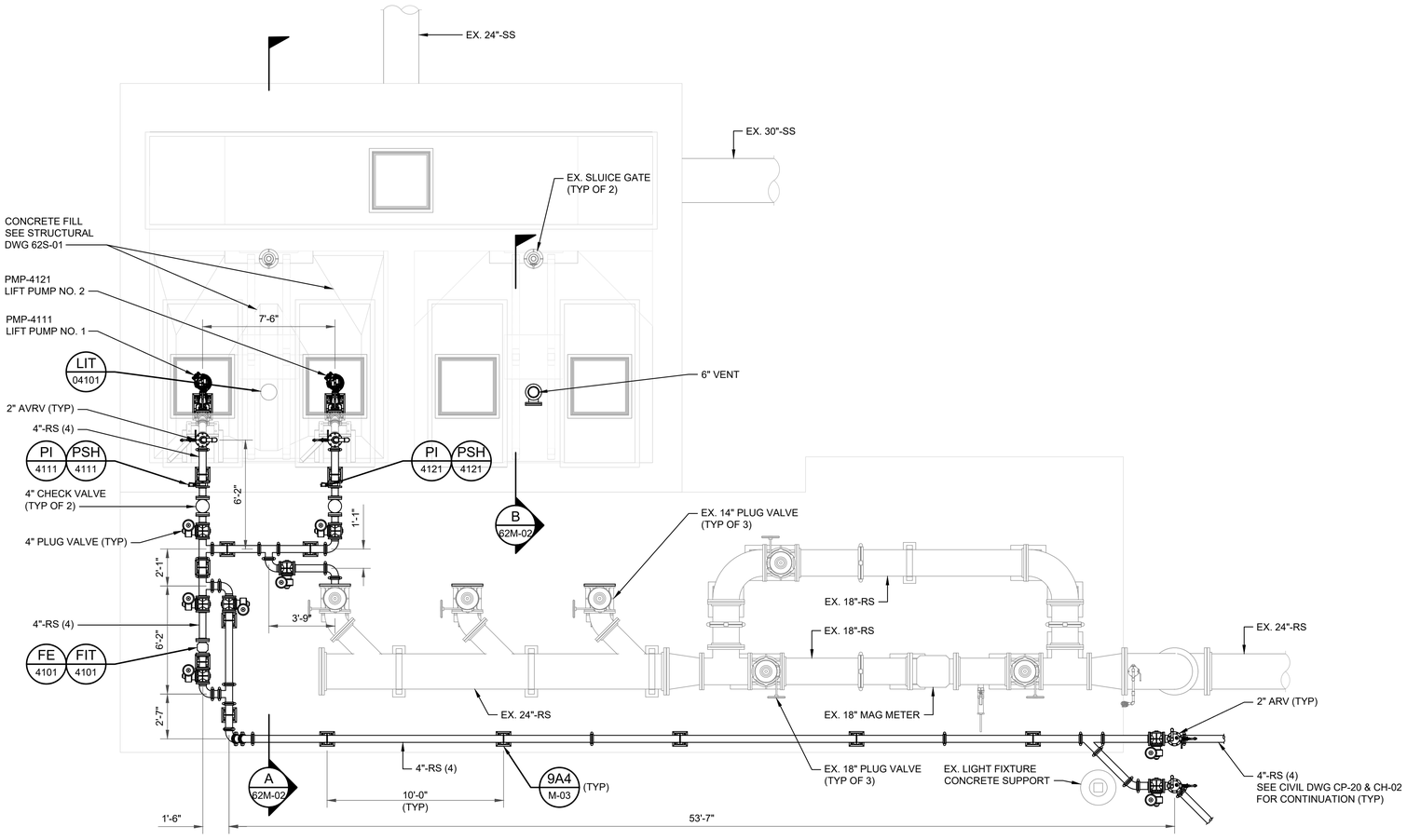
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL -10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

# RP-2 LIFT STATION DEMOLITION SECTION

SHEET 62MD-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.




PLAN

SCALE : 1/4" = 1'-0"

## NOTES

1. FOR GENERAL NOTES, SEE DWG. M-01.

0' 1' 2' 4' 8' 12'

SCALE : 1/4" = 1'-0"

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK\62M-01.dwg USER: p0045935
DATE: Oct 18, 2023 1:32pm XREFS: IEUA Border RP-2 LS PLAN

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

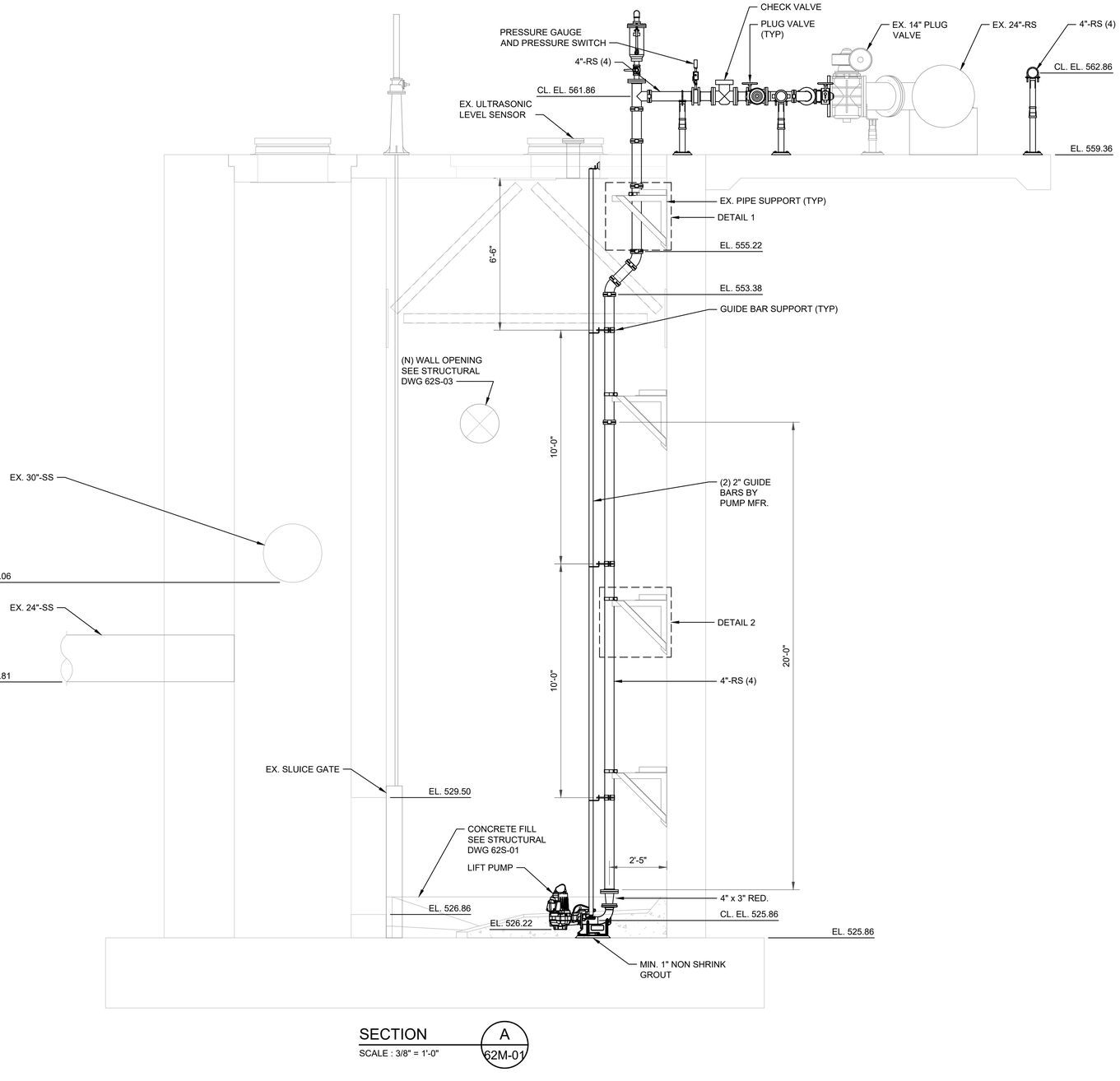
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

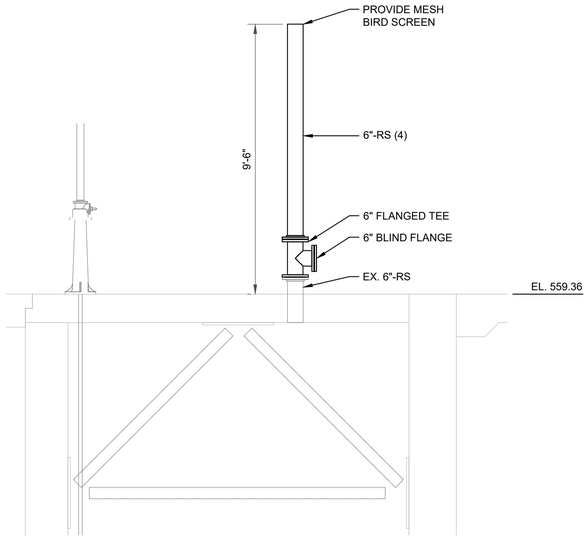
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
PLAN

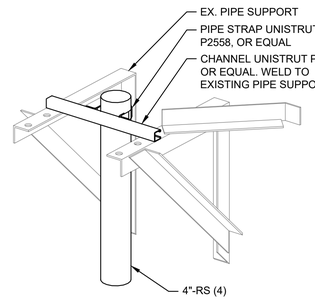
SHEET 62M-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



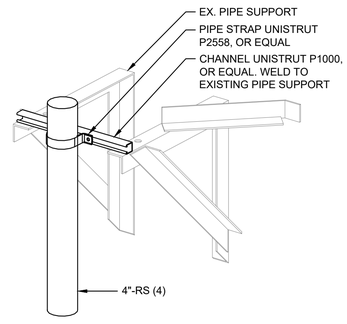

SECTION A
SCALE : 3/8" = 1'-0"
62M-01




SECTION B
SCALE : 3/8" = 1'-0"
62M-01




DETAIL 1
SCALE : N.T.S.




DETAIL 2
SCALE : N.T.S.

## NOTES

1. FOR GENERAL NOTES, SEE DWG. M-01.

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | ID | 10/2023 |
| Drawn | GM | 10/2023 |
| Checked | ID | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | GM | ID | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

# RP-2 LIFT STATION SECTIONS

SHEET 62M-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK\62M-02.dwg USER: p0045935
DATE: Oct 18, 2023 2:20pm XREFS: IEUA Border RP-2 LS SECTION A RP-2 LS SECTION B RP-2 LS DETAIL 1 RP-2 LS DETAIL 2

## SINGLE LINE DIAGRAMS

- TRANSFORMER, RATING AS NOTED
- PLUG-IN TYPE EQUIPMENT, CIRCUIT NUMBER AS NOTED
  M = MAIN, GM = GENERATOR MAIN
- FUSE
- LOW VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED
  AF = AMPERE FRAME RATING
  AT = AMPERE TRIP SETTING
- MCC MOUNTED COMBINATION STARTER
- 30A — COMBINATION CONTACTOR, SIZE AS NOTED
- 75 — MOTOR, HORSEPOWER AS NOTED
- GROUND
- VT(3)480/120V — VOLTAGE TRANSFORMER, RATIO AND NUMBER OF VT'S AS NOTED
- 100/5 (3) — CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
- 50/5 (1) — ZERO SEQUENCE CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
- BUS
- ELECTRICAL ENCLOSURE OUTLINE
- GENERATOR
- 60A — DISCONNECT SWITCH, SIZE AS NOTED
- FUSED DISCONNECT SWITCH, SIZE AS NOTED
- SOLID-STATE REDUCED VOLTAGE STARTER MOTOR
- A — AMMETER
- V — VOLTMETER
- AS — AMMETER SWITCH
- PM — POWER MONITOR
- VS — VOLTMETER SWITCH
- E — E: ELECTRICAL INTERLOCK, K: KEY INTERLOCK
- Ø — PHASE
- G — DENOTES GREEN LIGHT

## PLANS

- CONDUIT RUN EXPOSED UNLESS OTHERWISE NOTED
- CONDUIT RUN UNDERGROUND OR BELOW GRADE UNLESS OTHERWISE NOTED
- BARE COPPER GROUND IN SLAB OR IN UNDERGROUND GROUND GRID, SIZE AS NOTED
- LP1-1/3,7 — HOME RUN TO PANEL "LP1". CIRCUIT NOS 1,3,7. CONDUCTORS SHALL BE #12 UNLESS OTHERWISE NOTED. CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED. RUNS NOT MARKED SHALL BE 3/4" WITH 2#12 & 1#12 GROUND. CONDUIT SHOWN IS 3/4" WITH 5#12 & 1#12 GROUND, CIRCUIT NOS. 1 & 3 WITH COMMON NEUTRAL & CIRCUIT NO. 7 WITH SEPARATE NEUTRAL.
- CONDUIT RUN - CHANGE IN ELEVATION
- CONDUIT UP (OUT TOP OF EQUIPMENT)
- CONDUIT DOWN (OUT BOTTOM OF EQUIPMENT)
- CONDUIT STUBBED OUT AND CAPPED
- FLEXIBLE LIQUID-TIGHT CONDUIT
- WALL / FLOOR — 120V SINGLE RECEPTACLE, NEMA CONFIGURATION 5-20
- 120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20
- JB — RACEWAY BOX, "JB" JUNCTION BOX, "MH" MANHOLE "HH" HANDHOLE, "PB" PULLBOX, "TB" TERMINAL BOX
- J — JUNCTION BOX, SIZE AS REQUIRED BY CODE
- T — THERMOSTAT, T'STAT
- PC — PHOTOCELL
- PS — CONTROL DEVICE
  VLV = VALVE
  PS = PRESSURE SWITCH
  TS = TEMPERATURE SWITCH
  ZS = LIMIT SWITCH
  LE = LEVEL ELEMENT
  LS = AMBIENT LTG. SENSOR
  MS = MOTION SENSOR
- SS — PUSHBUTTON STATION, "SS" START-STOP, "LOS" LOCKOUT-STOP, "HOA" HAND-OFF-AUTO, "LOR" LOCAL-OFF-REMOTE, "E-STOP" EMERGENCY STOP.
- DISCONNECT SWITCH. SIZE AS NOTED

## PLANS

- POWER PANEL, CONTROL PANEL, ETC
- MOTOR CONTROL CENTER
- GROUND CONNECTION BOLTED TYPE OR GROUND INSERT
- GROUND CONNECTION - EXOTHERMIC TYPE
- $S_m$ — MANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION AND RED PILOT LIGHT IN NEMA 1 ENCLOSURE, PAD LOCKABLE IN "OFF" POSITION
- GROUND ROD WITH CADWELDED GROUND WIRE
- GROUND WELL
- FIELD INSTRUMENT
- SV — SOLENOID VALVE
- H — HEATER
- M — MOTOR OPERATED VALVE

## GENERAL

- HEAVY LINES ARE PROPOSED WORK
- LIGHT LINES ARE EXISTING WORK
- LIGHT BROKEN LINES ARE FUTURE WORK OR BY OTHERS
- REMOVE OR DEMOLISH
- 1 — DENOTES REFERENCES TO KEYED NOTE 1
  I.E. - "SEE KEYED NOTE 1"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | KL | 10/2023 |
| Drawn | GC | 10/2023 |
| Checked | MH | 10/2023 Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | KL | MH | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

ELECTRICAL
SYMBOLS AND LEGEND

SHEET E-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

# GENERAL NOTES

RACEWAYS:

1. ALL CONDUITS ARE SHOWN DIAGRAMMATICALLY AND THEY SHALL BE ROUTED TO SUIT THE FIELD CONDITIONS MEETING THE REQUIREMENTS OF NEC AND THE SPECIFICATIONS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL FITTINGS, JUNCTION BOXES, PULL BOXES, SUPPORTS, AND HARDWARES REQUIRED FOR RACEWAY SYSTEMS.
3. CONNECTION OF RIGID CONDUIT TO DEVICES OR EQUIPMENT WHICH MAY BE SUBJECT TO MOVEMENT, VIBRATION, EXPANSION OR CONTRACTION SHALL BE MADE WITH LIQUID-TIGHT FLEXIBLE CONDUIT, WHERE REQUIRED. FLEXIBLE CONDUIT SHALL HAVE AN INTEGRAL COPPER GROUNDING CONDUCTOR OR GROUNDING JUMPER SHALL BE INSTALLED.
4. ALL STEEL CONDUITS NOT TERMINATING DIRECTLY TO THE ENCLOSURES OF MOTOR CONTROL EQUIPMENTS, CONTROL CABINETS, ETC. SHALL BE PROVIDED WITH GROUNDING BUSHING AND GROUNDED TO THE ENCLOSURES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SLEEVES AND OPENINGS REQUIRED FOR THE PASSAGE OF RACEWAYS OR CABLES EVEN IF THEY ARE NOT SHOWN ON THE DRAWINGS.

GROUNDING:

1. ALL METALLIC STRUCTURES, METAL ENCLOSURES AND ELECTRICAL EQUIPMENT, SUCH AS STRUCTURAL STEEL, METALLIC RACEWAYS, SWITCHING EQUIPMENT, PANELS, ELECTRICAL EQUIPMENT ENCLOSURES AND CABINETS, MOTORS, TRANSFORMERS, ETC. SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED AND GROUND CONNECTIONS SHALL BE MADE TO THE PLANT GROUND GRIDS. THE BONDING JUMPER CONDUCTORS SHALL BE SIZED PER NEC UNLESS OTHERWISE SHOWN.
2. GROUNDING ELECTRODE SYSTEM FOR EACH SERVICE SHALL BE BONDED TOGETHER TO METAL FRAMES OF BUILDING OR STRUCTURES.

SINGLE LINE DIAGRAMS:

1. SINGLE LINE DIAGRAMS SHOW MAJOR PLANT ELECTRICAL DISTRIBUTION SYSTEMS INCLUDING POWER SOURCES, VOLTAGE LEVELS OF EACH SYSTEMS, MAJOR DISTRIBUTION EQUIPMENT AND THEIR CONNECTIONS, PROTECTION EQUIPMENT AND DEVICES, MAJOR UTILIZATION EQUIPMENT AND DEVICES, AND THEIR CONTROL, ETC.

ELECTRICAL PLANS:

1. WHERE RACEWAYS ARE INDICATED AS HOME RUNS, THE CONTRACTOR SHALL INSTALL ALL RACEWAY REQUIRED. RACEWAY ROUTINGS SHALL BE CONTRACTOR'S CHOICE AND IN STRICT ACCORDANCE WITH THE NEC AND CUSTOMARY INSTALLATION PRACTICES. RACEWAY SHALL BE ENCASED, EXPOSED, CONCEALED, OR UNDER FLOOR AS INDICATED OR REQUIRED.
2. EXACT LOCATIONS OF FIELD DEVICES MAY NOT BE SHOWN IN THE ELECTRICAL PLAN DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE ACTUAL LOCATIONS OF THE FIELD DEVICES AND INSTALL CONDUITS AND WIRES REQUIRED TO MAKE THE SYSTEM COMPLETE.
3. ROUTINGS SHALL BE ADJUSTED TO AVOID OBSTRUCTIONS. COORDINATE WITH ALL OTHER TRADES PRIOR TO INSTALLATION OF RACEWAYS. LACK OF SUCH COORDINATION SHALL NOT BE JUSTIFICATION FOR EXTRA COMPENSATION, AND REMOVAL AND RE-INSTALLATION TO RESOLVE CONFLICTS SHALL BE AT NO EXTRA COST TO THE OWNER.

EQUIPMENT ANCHORING:

1. POST-INSTALLED ANCHOR BOLTS SHALL HAVE AN ACTIVE ICC EVAULATION REPORT AT TIME OF CONSTRUCTION. THEIR CAPACITIES LISTED IN THE REPORT SHALL BE BASED ON TESTING IN CRACKED CONCRETE.
2. 316SS ADHESIVE ANCHORING SYSTEM SHALL BE USED IN CORROSIVE WET, IN DRY, INDOOR OR OUTDOOR AREAS.
3. CONTRACTOR SHALL SUBMIT CALCULATIONS FOR ANCHORING SYSTEM FOR MCC TO CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CALCULATIONS SHALL CONSIDER ALL APPLICABLE LOADS ON ANCHORING AND SHALL INCLUDE ANCHOR BOLT CAPACITIES AS MODIFIED BY SPACING AND EDGED DISTANCE, BASE PLATE STRESSES, AND CONCRETE BEARING STRESSES.

MISCELLANEOUS:

1. CIRCUITS OF DIFFERENT SYSTEM VOLTAGE SHALL BE INSTALLED IN SEPARATE RACEWAYS, AND PULL BOXES. THE SYSTEM VOLTAGE LEVELS ARE:
   a. 120-480 VOLT
   b. INSTRUMENTATION LESS THAN 50 VOLT DC
   c. TELEPHONE AND COMMUNICATION.

# ABBREVIATIONS

| | |
|---|---|
| A | AMPERE |
| AC | ALTERNATING CURRENT |
| AF | AMPERE FRAME RATING |
| AFF | ABOVE FINISHED FLOOR |
| AL | ALUMINUM |
| AMP | AMPERES, AMPERAGE |
| AS | AMMETER SWITCH, ADJUSTABLE SPEED |
| AT | AMPERE TRIP |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AUTO | AUTOMATIC |
| AWG | AMERICAN WIRE GAUGE |
| BC | BARE COPPER |
| BD | BUS DUCT, BUSWAY |
| BKR | BREAKER |
| BLDG | BUILDING |
| C | CONDUIT |
| CAB | CABINET |
| CB | CIRCUIT BREAKER |
| CKT | CIRCUIT |
| CO | CONDUIT ONLY |
| COMPR | COMPRESSOR |
| COMPT | COMPARTMENT |
| CP | CONTROL PANEL |
| CPB | CONTROL PULL BOX |
| CR | CONTROL RELAY |
| CT | CURRENT TRANSFORMER |
| CU | COPPER |
| D | DEPTH |
| DC | DIRECT CURRENT |
| DEG | DEGREE |
| DIA | DIAMETER |
| DISC | DISCONNECT |
| DISTR | DISTRIBUTION |
| DP | DISTRIBUTION PANEL BOARD |
| DPDT | DOUBLE POLE DOUBLE THROW |
| DS | DISCONNECT SWITCH |
| DWG | DRAWING |
| (E)/EXIST | EXISTING |
| EA | EACH |
| EL, ELEV | ELEVATION |
| ELEC/ELECT | ELECTRICAL |
| EMERG | EMERGENCY |
| EMT | ELECTRICAL METALLIC TUBING |
| ENCL | ENCLOSURE |
| EP | EXPLOSION PROOF |
| EQPT | EQUIPMENT |
| ETM | ELAPSE TIME METER |
| EXH | EXHAUST |
| F | FREQUENCY |
| FDR | FEEDER |
| FLA | FULL LOAD AMPS |
| FLEX | FLEXIBLE |
| FUT | FUTURE |
| GALV | GALVANIZED |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| G, GND | GROUND |
| H | HEIGHT |
| HOA | HAND-OFF-AUTO |
| HP | HORSEPOWER |
| HT | HEIGHT |
| HV | HIGH VOLTAGE |
| HZ | HERTZ (CYCLES PER SECOND) |

| | |
|---|---|
| IC | INTERRUPTING CAPACITY |
| IND | INDICATION |
| INFO | INFORMATION |
| INST | INSTANTANEOUS |
| INSTR | INSTRUMENT |
| I/O | INPUT/OUTPUT |
| IPB | INSTRUMENTATION PULL BOX |
| JB, J/B | JUNCTION BOX |
| J BOX | JUNCTION BOX |
| KAIC | KILOAMPERE INTERRUPTING AND WITHSTAND CAPACITY |
| kcmil | THOUSAND CIRCULAR MIL |
| KV | KILOVOLT |
| KVA | KILOVOLT-AMPERES |
| KW | KILOWATTS |
| LC | LIGHTING CONTACTOR |
| LCB | LOCAL CONTROL BOARD |
| LCP | LOCAL CONTROL PANEL |
| LP | LIGHTING PANEL |
| LS | LEVEL SWITCH, LIMIT SWITCH |
| LV | LOW VOLTAGE |
| MA | MILLIAMPS |
| MAN | MANUAL |
| MAX | MAXIMUM |
| MCB | MAIN CIRCUIT BREAKER |
| MCC | MOTOR CONTROL CENTER |
| MECH | MECHANICAL |
| MFGR | MANUFACTURER |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MS | MANUAL MOTOR STARTER |
| MT, MTD | MOUNT, MOUNTED |
| MTG | MOUNTING |
| MTR | MOTOR |
| MTS | MANUAL TRANSFER SWITCH |
| N | NEUTRAL |
| NA | NON-AUTOMATIC OR NOT APPLICABLE |
| NC | NORMALLY CLOSED |
| NEC | NATIONAL ELECTRICAL CODE |
| NEG | NEGATIVE |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN, NUMBER |
| NOS | NUMBERS |
| NP | NAMEPLATE |
| NTS | NOT TO SCALE |
| OC | OPENING COIL, OR ON CENTER |
| O/H | OVERHEAD |
| P | POLE, POWER |
| PB | PUSH BUTTON, POWER PULL BOX |
| PF | POWER FACTOR |
| PH | PHASE |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PNL | PANEL |
| PNLBD | PANELBOARD |
| PP | POWER PANEL |
| PR | PAIR |
| PRI. | PRIMARY |
| PVC | POLYVINYL CHLORIDE |
| PW | PART WINDING |
| PWR | POWER |
| R | TO BE REMOVED |
| REC | RECEPTACLE |
| REQ'D | REQUIRED |
| REF | REFERENCE |
| RGS | RIGID GALVANIZED STEEL |
| SCE | SOUTHERN CALIFORNIA EDISON |
| SCH | SCHEDULE |
| SEC | SECONDS, SECONDARY |
| SECT | SECTION |
| SEL SW | SELECTOR SWITCH |
| SEQ | SEQUENCE |
| SHLD | SHIELDED |
| SHT | SHEET |
| SIG | SIGNAL |
| SP | SPARE |
| SPDT | SINGLE POLE DOUBLE THROW |
| SPEC | SPECIFICATION |
| SRVS | SOLID-STATE REDUCED VOLTAGE STARTER MOTOR |
| STD | STANDARD |
| STL | STEEL |
| STR | STARTER |
| SV | SOLENOID VALVE |
| SW | SWITCH |
| SWBD | SWITCHBOARD |
| SWGR | SWITCHGEAR |
| SYS | SYSTEM |
| TB | TERMINAL BOX |
| TD | TIME DELAY |
| TDR | TIME DELAY RELAY |
| TEMP | TEMPERATURE, OR TEMPORARY |
| TERM | TERMINAL |
| TYP | TYPICAL |
| UG | UNDERGROUND |
| UON | UNLESS OTHERWISE NOTED |
| V | VOLTS, VOLTAGE |
| VA | VOLT AMPERES |
| W | WIDTH |
| WP | WEATHERPROOF |
| XFMR, TX | TRANSFORMER |
| Y | WYE |

DWG: \\capas01fs01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\E-02.dwg USER: p0014446
DATE: Oct 20, 2023 10:57am XREFS: IEUA Border

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | KL | 10/2023 |
| Drawn | GC | 10/2023 |
| Checked | MH | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | KL | MH | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

ELECTRICAL
GENERAL NOTES & ABBREVIATIONS

SHEET E-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

| MOUNTING: INSIDE MCC LS | PANEL: 62LP | TYPE: NEMA 1 | LOCATION: RP-2 |
|---|---|---|---|
| VOLTAGE: 120/240 Volts, 1Ø, 3W | AIC SYM: 18,000 | | 100 AMP BUS 50A AMP MAIN CB |

| DESCRIPTION | VOLT-AMPERES PHASE A | VOLT-AMPERES PHASE B | LTG | REC | MISC | POLE | BKR | CIR | CIR | BKR | POLE | MISC | REC | LTG | VOLT-AMPERES PHASE A | VOLT-AMPERES PHASE B | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C5-ILCP-04100 | 300 | | | | 1 | 1 | 20 | 1 | 2 | 20 | 1 | 1 | | | 300 | | C5-ILCP-04100 |
| FIT-04100 | | 100 | | | 1 | 1 | 20 | 3 | 4 | 20 | 1 | | | | | | SPARE |
| POLE LIGHT | 50 | | | | | 1 | 20 | 5 | 6 | 20 | 1 | | | 2 | 290 | | LIGHTS |
| GEN BATTERY CHARGER | | 100 | | | 1 | 1 | 20 | 7 | 8 | 20 | 1 | | 2 | | | 360 | RECEPTACLES |
| GENERATOR HEATER | 250 | | | | | 1 | 20 | 9 | 10 | 20 | 1 | 1 | | | 200 | | LY-27101 |
| SPARE | | | | | | 1 | 20 | 11 | 12 | 20 | 1 | | | | | | SPARE |
| SPACE | | | | | | | | 13 | 14 | | | | | | | | SPACE |
| SPACE | | | | | | | | 15 | 16 | | | | | | | | SPACE |
| SPACE | | | | | | | | 17 | 18 | | | | | | | | SPACE |
| SPACE | | | | | | | | 19 | 20 | | | | | | | | SPACE |
| SPACE | | | | | | | | 21 | 22 | | | | | | | | SPACE |
| SPACE | | | | | | | | 23 | 24 | | | | | | | | SPACE |
| VA PER PHASE | 600 | 200 | | | | | | | | | | | | | 790 | 360 | VA PER PHASE |
| | | | | | | | | | | TOTAL VA PER PHASE | | | | | 1390 | 560 | |
| | | | | | | | | | | TOTAL CONNECTED VA | | | | | 1950 | | |

CONTINUOUS LOAD 290 x1.25 = 362.5 VA
+ OTHER = 1660.0 VA
TOTAL LOAD = 2022.5 VA

8.43 AMPS @ 120/240 Volts, 1Ø, 3W

NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

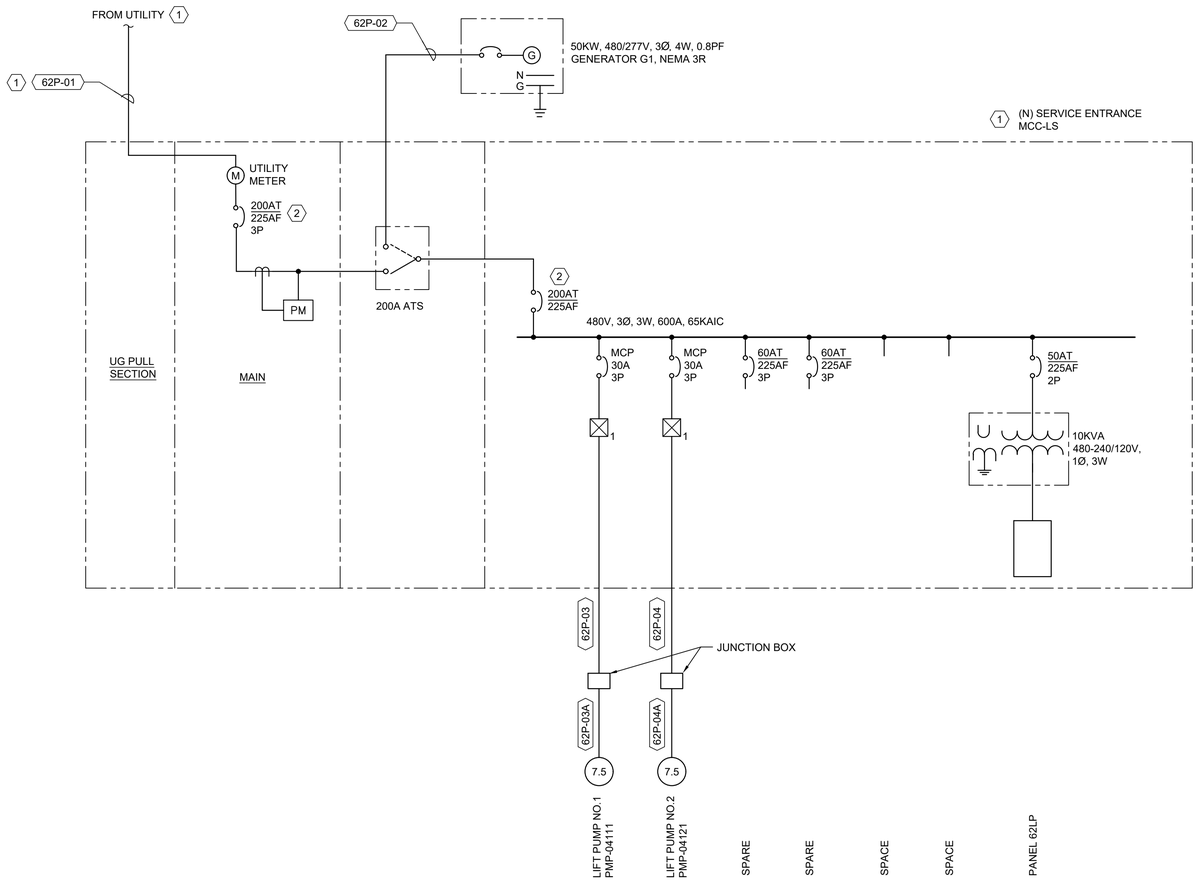
KEY NOTES:

(1) PER UTILITY'S REQUIREMENTS.

(2) WITH ELECTRONIC TRIP UNIT.

MAXIMUM LOAD FOR MCC-LS:

| | | |
|---|---|---|
| 1. LIFT PUMP # P1 | = | 9KVA |
| 2. LIFT PUMP # P2 | = | 0KVA |
| 3. LIGHTING PANEL | = | 10KVA |
| 25% OF LARGEST MOTOR LOAD | = | 3KVA |
| SUB-TOTAL | = | 22KVA |
| 20% SPARE CAPACITY FOR FUTURE | = | 5KVA |
| TOTAL | = | 27KVA |
| 27KVA@480V | = | 33A |




MCC LS SINGLE LINE DIAGRAM

SCALE: NTS

| CABLE NO. | VOLTAGE CLASS VOLT, UON | CONDUIT SIZE | CONDUCTORS SIZE | FROM | TO | ELECTRICAL DWGS | INSTR DWGS | REMARK |
|---|---|---|---|---|---|---|---|---|
| F-01 | | 2" | (1) FO CABLE | (E) PC-3 | C5-ILCP-78100 | E-04, E-05 | 78I-05 | REFER TO MOUNTAIN AVE LIFT STATION PROJECT |
| F-02 | | 2" | (1) FO CABLE | (E) PC-3 | C5-ILCP-04100 | 62E-01, E-04, E-05 | 62I-01 | 24 STRAND MM |
| | | | | | | | | |
| 62P-01 | 480V | PER UTILITY REQ. | PER UTILITY REQ. | SCE XFMR | MCC LS | E-04, E-05, 62E-01 | | CONDUCTOR TO BE PROVIDED BY UTILITY COMPANY |
| 62P-02 | 480V | 2" | 4#4 & 1#8G | GENERATOR | MCC LS (ATS) | 62E-01 | | |
| 62P-03 | 480V | 1" | 3#12, 1#12G & 2#12 | MCC LS | JUNCTION BOX | 62E-01 | 62I-01 | PUMP MONITOR RELAY LOCATED INSIDE JB |
| 62P-03A | 480V | 1" | VENDOR CABLE | JUNCTION BOX | LIFT PUMP NO.1 PMP-04111 | 62E-01 | 62I-01 | |
| 62P-04 | 480V | 1" | 3#12, 1#12G & 2#12 | MCC LS | JUNCTION BOX | 62E-01 | 62I-01 | PUMP MONITOR RELAY LOCATED INSIDE JB |
| 62P-04A | 480V | 1" | VENDOR CABLE | JUNCTION BOX | LIFT PUMP NO.2 PMP-04121 | 62E-01 | 62I-01 | |
| | | | | | | | | |
| 62L-01 | 120V | 1" | 4#12 & 1#12G | PANEL 62LP | C5-ILCP-04100 | 62E-01 | 62I-01 | CKT # 1,2 |
| 62L-02 | 120V | 1" | 2#12 & 1#12G | PANEL 62LP | FIT-04101 | 62E-01 | 62I-01 | CKT # 3 |
| 62L-03 | 120V | 1" | (2) 2#12 & 1#12G | PANEL 62LP | GENERATOR HEATER & BATTERY CHARGER | 62E-01 | 62I-01 | CKT # 7,9 |
| 62L-04 | 120V | 1" | 2#12 & 1#12G | PANEL 62LP | INTERPOSING RELAY LY-27101 | 62E-01 | 62I-01 | CKT # 10 |
| | | | | | | | | |
| 62C-01 | | 1" | 4/C #14 | PUMP MONITOR RELAY | MCC LS (PMP-04111) | 62E-01 | 62I-01 | |
| | | | | | | | | |
| 62C-03 | | 1" | 4/C #14 | PUMP MONITOR RELAY | MCC LS (PMP-04121) | 62E-01 | 62I-01 | |
| | | | | | | | | |
| 62C-05 | | 1" | 2/C #14 | PSH-04111 | MCC LS | 62E-01 | 62I-01 | |
| 62C-06 | | 1" | 2/C #14 | PSH-04121 | MCC LS | 62E-01 | 62I-01 | |
| 62C-07 | | 1" | 2/C #14 | LSLL-04102 | LY-27101 | 62E-01 | 62I-01 | |
| 62C-08 | | 1" | (2) 10/C #14 | MCC-LS | C5-ILCP-04100 | 62E-01 | 62I-01 | FOR PMP-04111 & PMP-04121 |
| 62C-09 | | 1" | 2/C #14 | LY-27101 | MCC LS (PMP-04111) | 62E-01 | 62I-01 | |
| 62C-10 | | 1" | 2/C #14 | LY-27101 | MCC LS (PMP-04121) | 62E-01 | 62I-01 | |
| 62C-11 | | 1" | 2/C #14 | LY-27102 | C5-ILCP-04100 | 62E-01 | 62I-01 | |
| | | | | | | | | |
| 62S-01 | | 1" | 2/C #16 SHLD | LIT-04101 | C5-ILCP-04100 | 62E-01 | 62I-01 | |
| 62S-02 | | 1" | 2/C #16 SHLD | FIT-04101 | C5-ILCP-04100 | 62E-01 | 62I-01 | |
| 62S-02A | | 1" | VENDOR CABLE | FE-04101 | FIT-04101 | 62E-01 | 62I-01 | |
| 62S-03 | | 1" | (1) CAT 6 CABLE | MCC LS | C5-ILCP-04100 | 62E-01 | 62I-01 | |
| 62S-04 | | 1-1/2" | (4) 2/C #16 SHLD | MCC LS (PMP-04111) | C5-ILCP-04100 | 62E-01 | 62I-01 | |
| 62S-05 | | 1-1/2" | (4) 2/C #16 SHLD | MCC LS (PMP-04121) | C5-ILCP-04100 | 62E-01 | 62I-01 | |


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | KL | 10/2023 |
| Drawn | GC | 10/2023 |
| Checked | MH | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | KL | MH | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

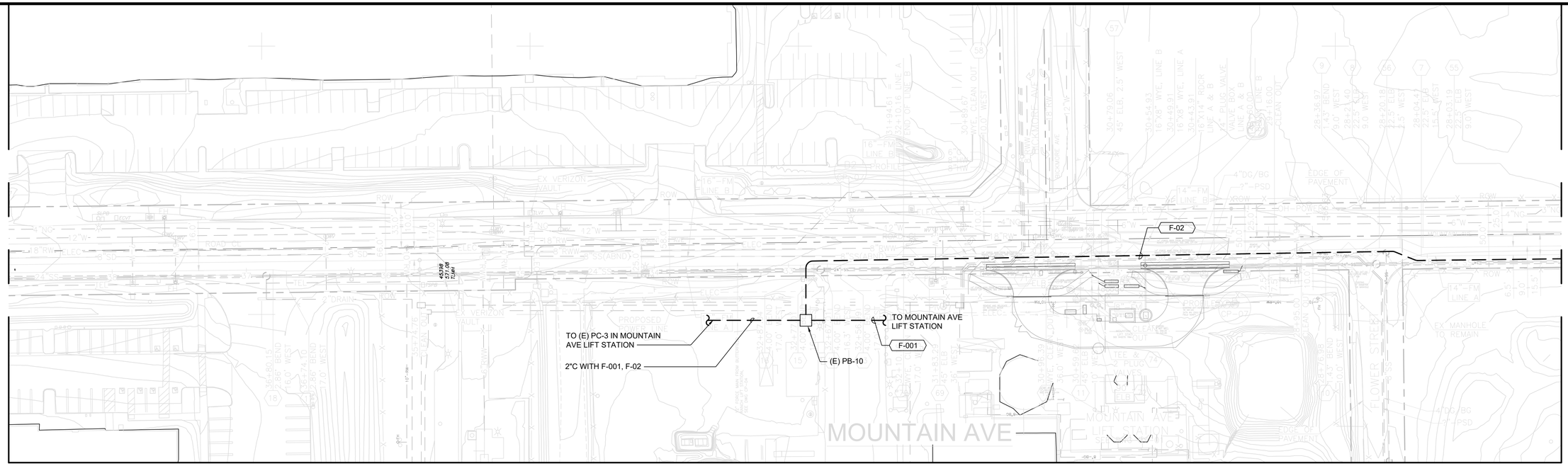

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
ELECTRICAL
SINGLE LINE DIAGRAM

SHEET E-03
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.


DWG: \\capas01fs01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\E-03.dwg USER: p0014446
DATE: Oct 20, 2023 10:47am XREFS: IEUA Border




PLAN
SCALE: 1" = 40'-0"


PLAN
SCALE: 1" = 40'-0"

KEY NOTES:

1 24" X 36" UNDERGROUND PULL BOX, TRAFFIC RATED.

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

DWG: \\capas015s01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\E-04.dwg USER: p0014446
DATE: Oct 20, 2023 11:08am XREFS: XC-MTN-SITE-NW IEUA Border XCIE-MTN-CTR-EX XC-MTN-SITE-EX XC-MTN-FM-PROF XCIE5-SITE-EX-PL XC-MTN-UTIL-NW XC-MTN-UTIL-EX

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 10/2023 |
| Drawn | HS | 10/2023 |
| Checked | BL | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | KL | MH | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

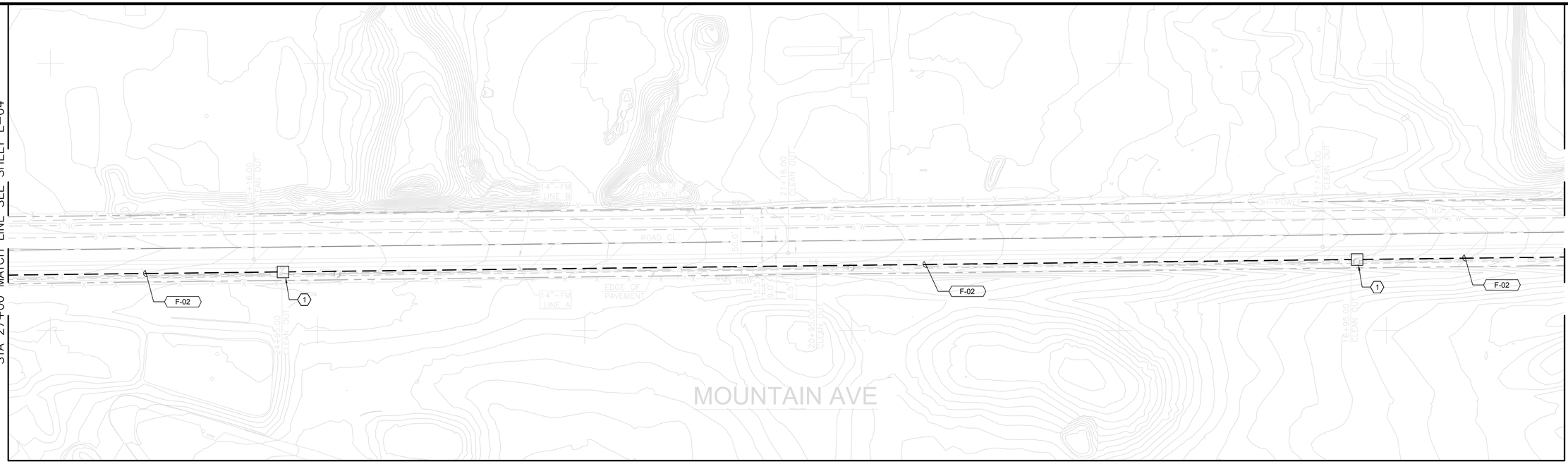
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

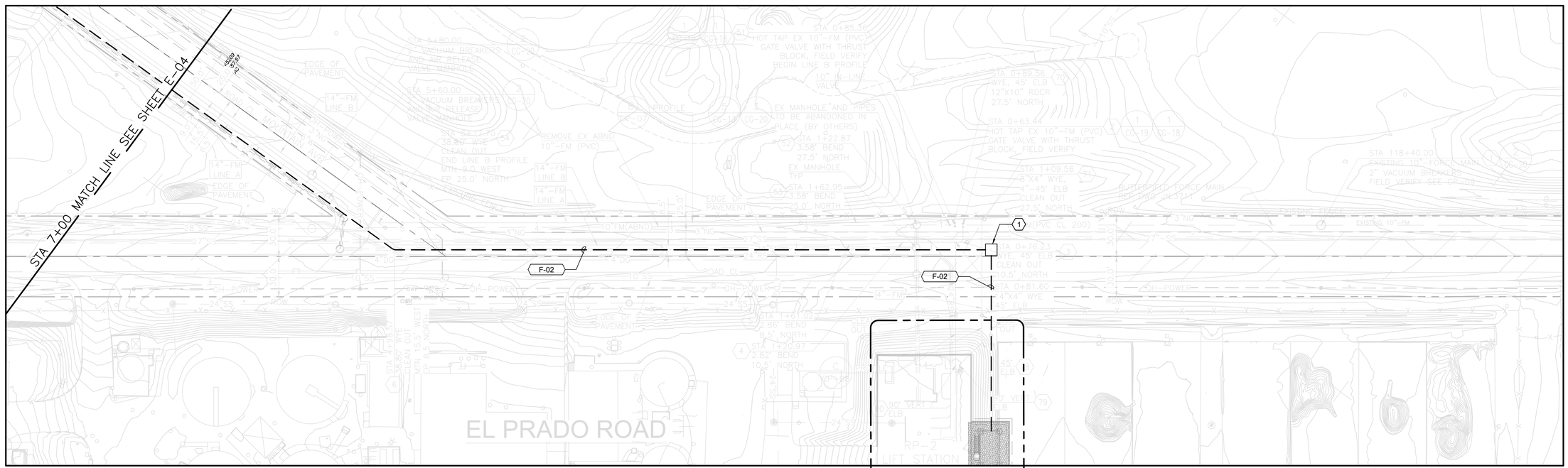
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 4
STA 27+00 TO STA 38+60

SHEET E-04
SHEET NO. x OF 000
PROJECT NO.
DRAWING NO.




PLAN
SCALE: 1" = 40'-0"




PLAN
SCALE: 1" = 40'-0"

SEE DWG. 62E-01 FOR RP-2 LIFT STATION ELECTRICAL PLAN

KEY NOTES:

(1) 24" X 36" UNDERGROUND PULL BOX, TRAFFIC RATED.

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

DWG: \\capas01fs01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\E-05.dwg USER: p0014446
DATE: Oct 20, 2023 11:11am XREFS: XC-MTN-SITE-NW IEUA Border XCIE-MTN-CTR-EX XC-MTN-SITE-EX XC-MTN-FM-PROF XCIE5-SITE-EX-PL XC-MTN-UTIL-NW XC-MTN-UTIL-EX

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | HS | 10/2023 |
| Drawn | HS | 10/2023 |
| Checked | BL | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | KL | MH | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

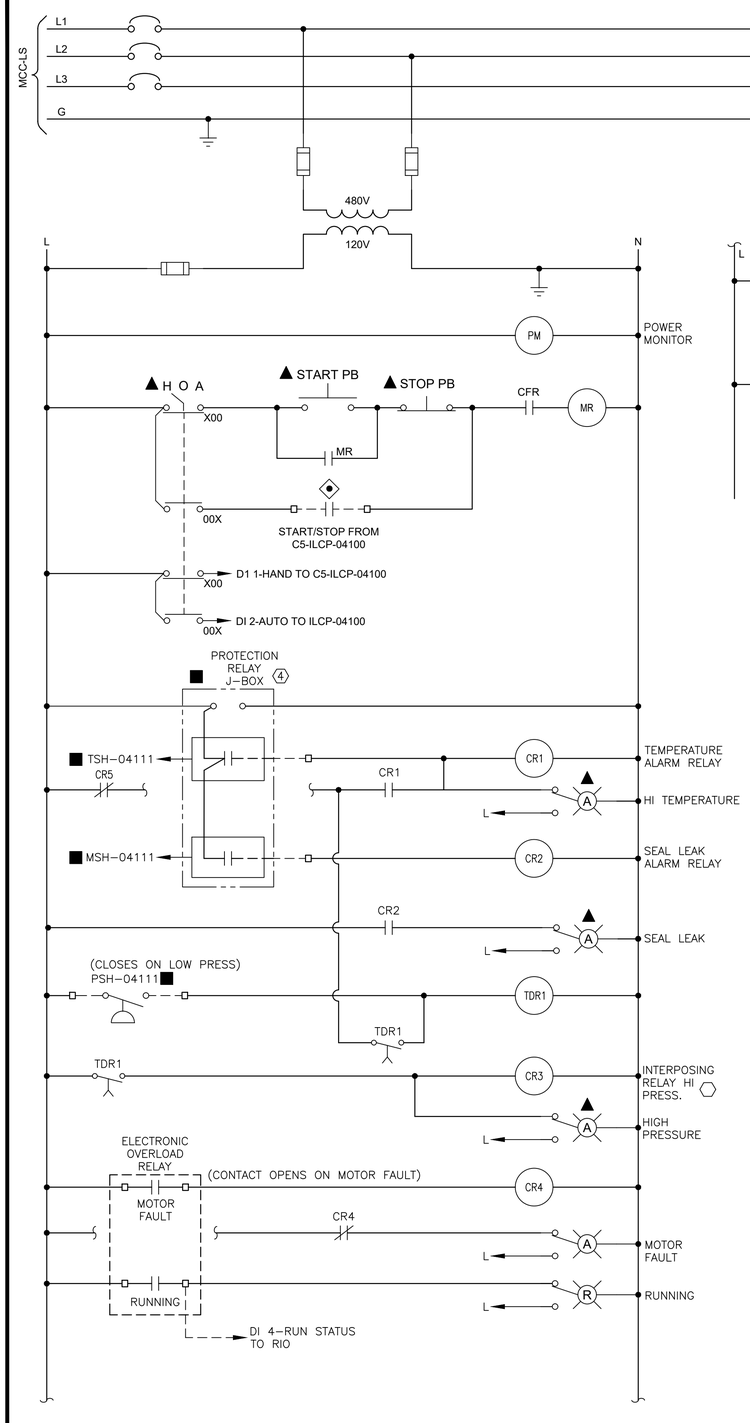
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

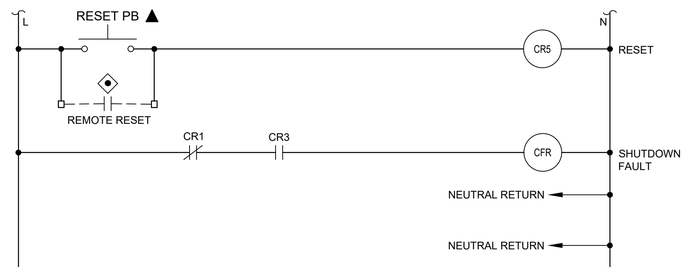
60% SUBMITTAL - 10/2023

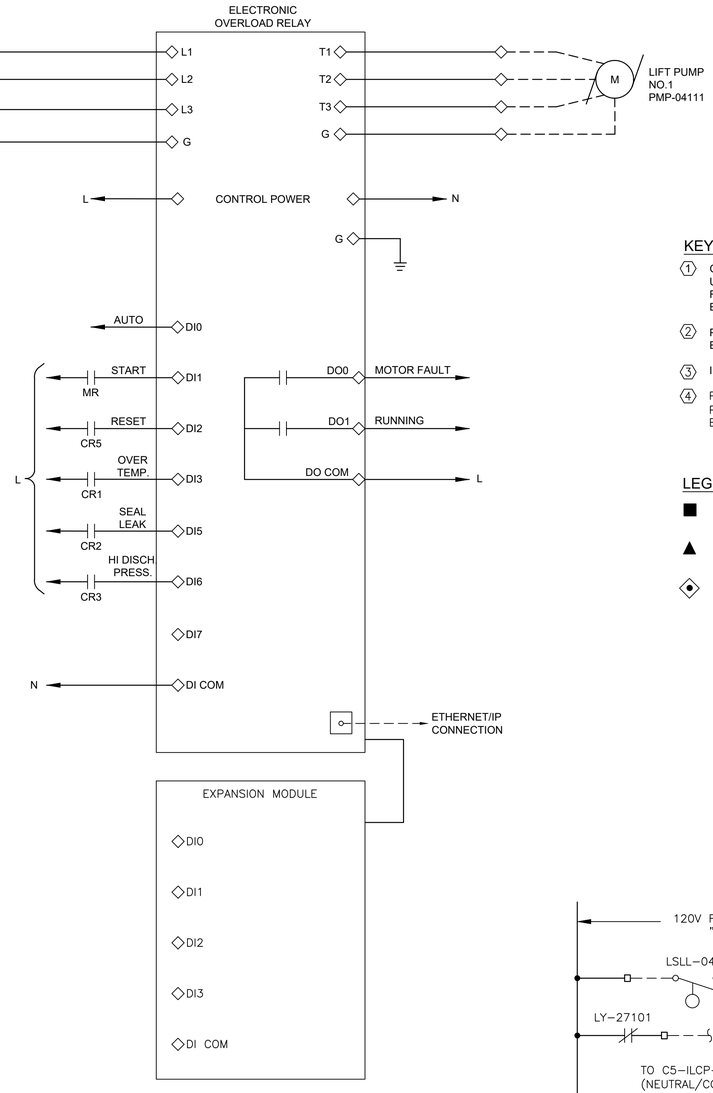
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 5
STA 38+60 TO STA 50+20.12

| | |
|---|---|
| SHEET | E-05 |
| SHEET NO. | OF 000 |
| PROJECT NO. | |
| DRAWING NO. | |




## NOTES:

1. SEE DWGS. E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR TO FIELD VERIFY EXISTING PUMP CONTROLS BEFORE STARTING ANY WORK.

## KEY NOTES:

1. CONTRACTOR SHALL SUBMIT CONTROL DIAGRAMS WITH UNIQUE WIRE NUMBERS AND TERMINAL BLOCK NUMBERS FOR EACH WIRE AND TERMINAL BLOCK, TYPICAL FOR EACH PUMP.
2. PROVIDE MINIMUM OF 1-SPARE RELAY CONTACT FOR EACH INTERPOSING RELAY.
3. INTERPOSING RELAY SHALL BE 2-POLE.
4. PROTECTION RELAY SHALL BE INSTALLED IN THE PROTECTION RELAY/SPLICE BOX AS SHOWN ON ELECTRICAL PLAN DWGS.

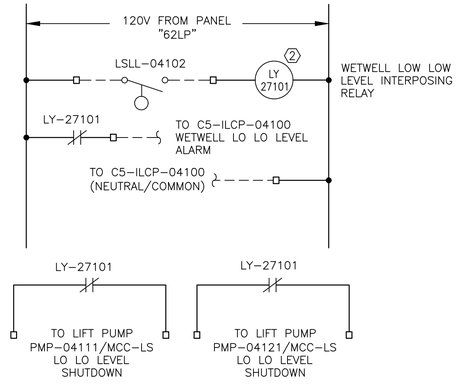
## LEGEND:

- ■ FIELD OR REMOTE MOUNTED DEVICE
- ▲ PANEL DOOR MOUNTED DEVICE
- ◆ LOCATED AT SCADA CONTROL PANEL

| TAG NO. | MOTOR HP | EQUIPMENT DESCRIPTION | MCC | P&ID |
|---|---|---|---|---|
| PMP-04111 | 7.5 HP | LIFT PUMP NO.1 | MCC-LS | 62I-01 |
| PMP-04121 | 7.5 HP | LIFT PUMP NO.2 | MCC-LS | 62I-01 |

LIFT PUMP PMP-04111 (1)

TYPICAL TO PUMPS SHOWN IN THE TABLE, EXCEPT RELAY CALLOUTS




INTERPOSING RELAY CABINET

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | KL | 10/2023 |
| Drawn | GC | 10/2023 |
| Checked | MH | 10/2023 Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | KL | MH | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

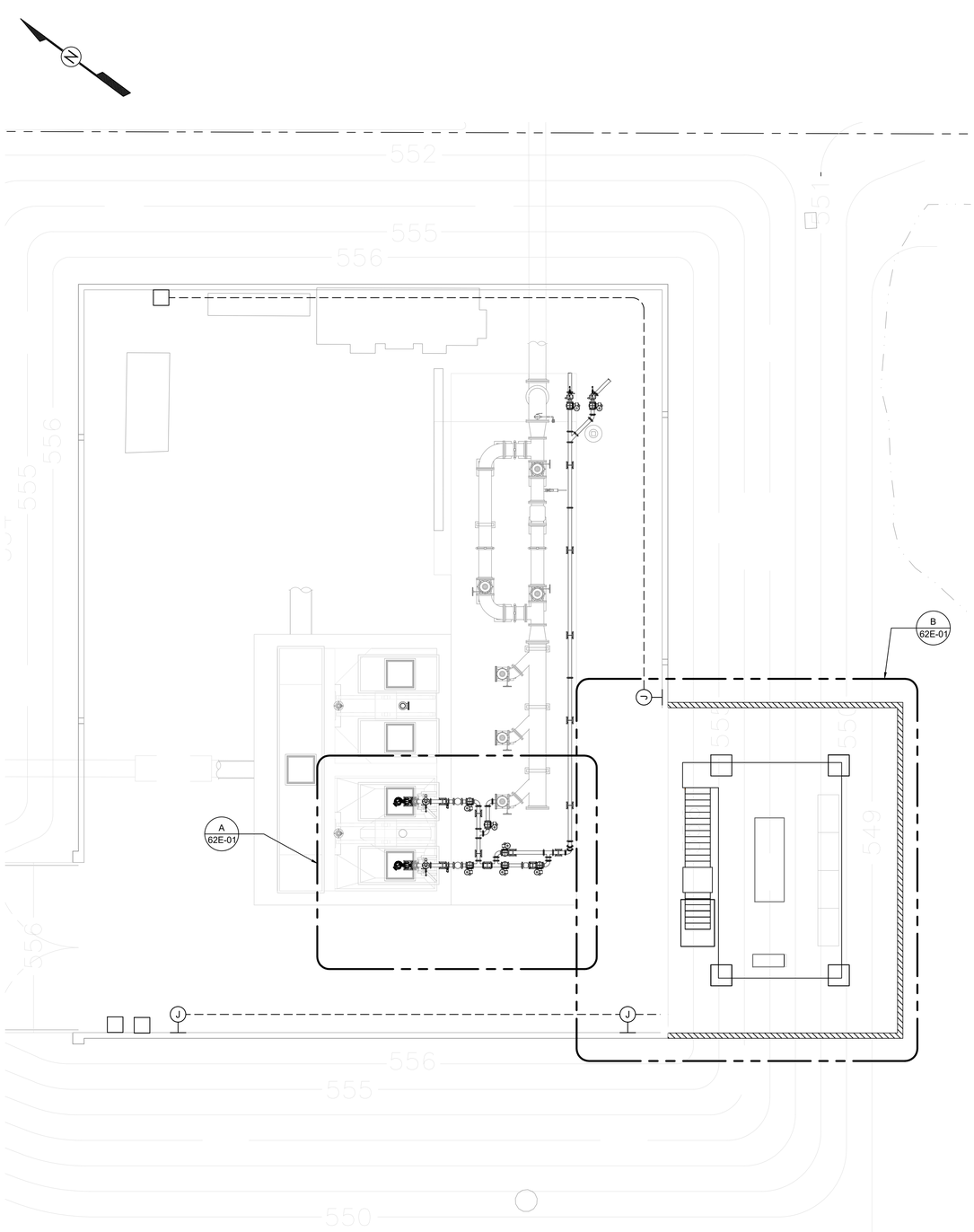
60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

ELECTRICAL
CONTROL SCHEMATICS
LIFT PUMPS

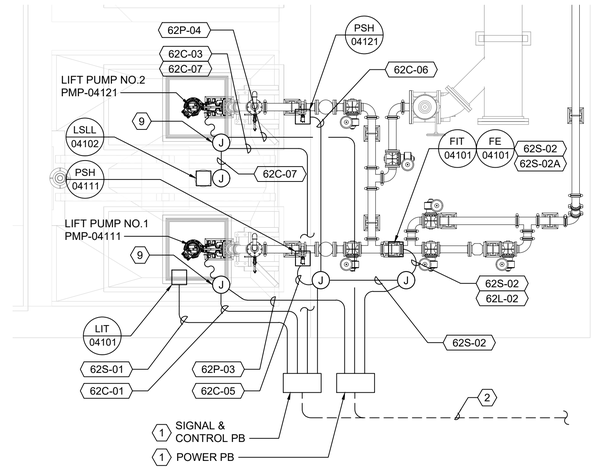
SHEET E-06
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: \\capas01fs01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\E-06.dwg USER: p0014446
DATE: Oct 20, 2023 10:02am XREFS: IEUA Border



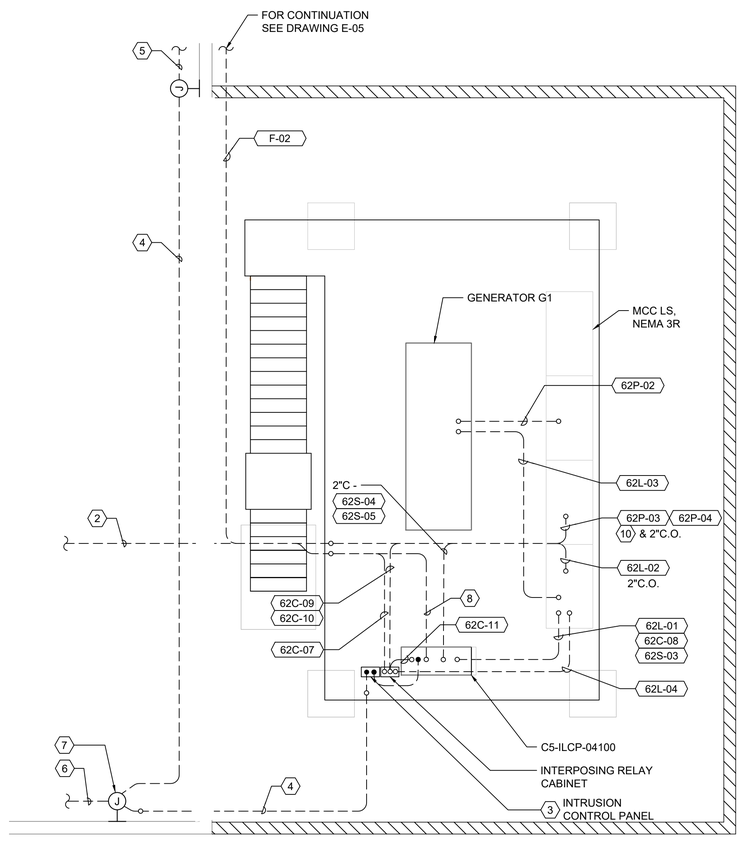

## RP2 LIFT STATION PLAN

SCALE: 1-1/2" = 1'-0"




## DETAIL "A"

SCALE: 3" = 1'-0"




## DETAIL "B"

SCALE: 3" = 1'-0"

### GENERAL NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

### KEY NOTES:

1. 18" x 18" PULL BOX, NEMA 3R.
2. 2"C W/ 62S-01 & 62S-02.
   2"C W/ 62C-01, 62C-02, 62C-03, 62C-04, 62C-05, 62C-06 & 62C-07.
   62P-03
   62P-04
   62L-02
   (3) 2"C.O.
3. NEW LOCATION OF RELOCATED INTRUSION CONTROL PANEL IN PLATFORM. PROVIDE NEMA 3R ENCLOSURE AND RELOCATE CIRCUIT BOARD, BATTERY, ETC. FROM EXISTING ENCLOSURE TO NEW ENCLOSURE. SIZE OF NEW ENCLOSURE SHALL MATCH EXISTING ENCLOSURE.
4. 1"C W/ NEW INTRUSION CABLES.
5. SURFACE MOUNTED 3/4" WITH NEW INTRUSION CABLES.
6. INSTALL NEW INTRUSION CABLES IN EXISTING 3/4"C.
7. PROVIDE J-BOX TO INTERCEPT EXISTING 3/4"C. FIELD VERIFY BEST LOCATION OF INTERCEPTION.
8. 2"C W/ 62S-01 & 62S-02.
   F-02
   2"C.O.
9. PUMP MONITOR RELAY LOCATED INSIDE JUNCTION BOX.
10. 2"C W/ 62C-01, 62C-02, 62C-03, 62C-04, 62C-05, 62C-06, 62C-09, 62C-10
    2"C W/ 62S-04, 62S-05

0 5' 10'

SCALE: 3" = 1'-0"

0 10' 20'

SCALE: 1 1/2" = 1'-0"

DWG: \\capas015r01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 ElectricalWork\RP-2 Lift Station\62E-01.dwg USER: p0014446
DATE: Oct 20, 2023 10:49am XREFS: IEUA Border 20kopo C-xutil C-01UP03 legalot m-62pp01 S-62FP01 20COGRID XC-MTN-SITE-EX XC-MTN-SITE-NW RP-2 LS PLAN IEUA_S-RP2 - Structural Plan

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | KL | 10/2023 |
| Drawn | GC | 10/2023 |
| Checked | MH | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | KL | MH | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

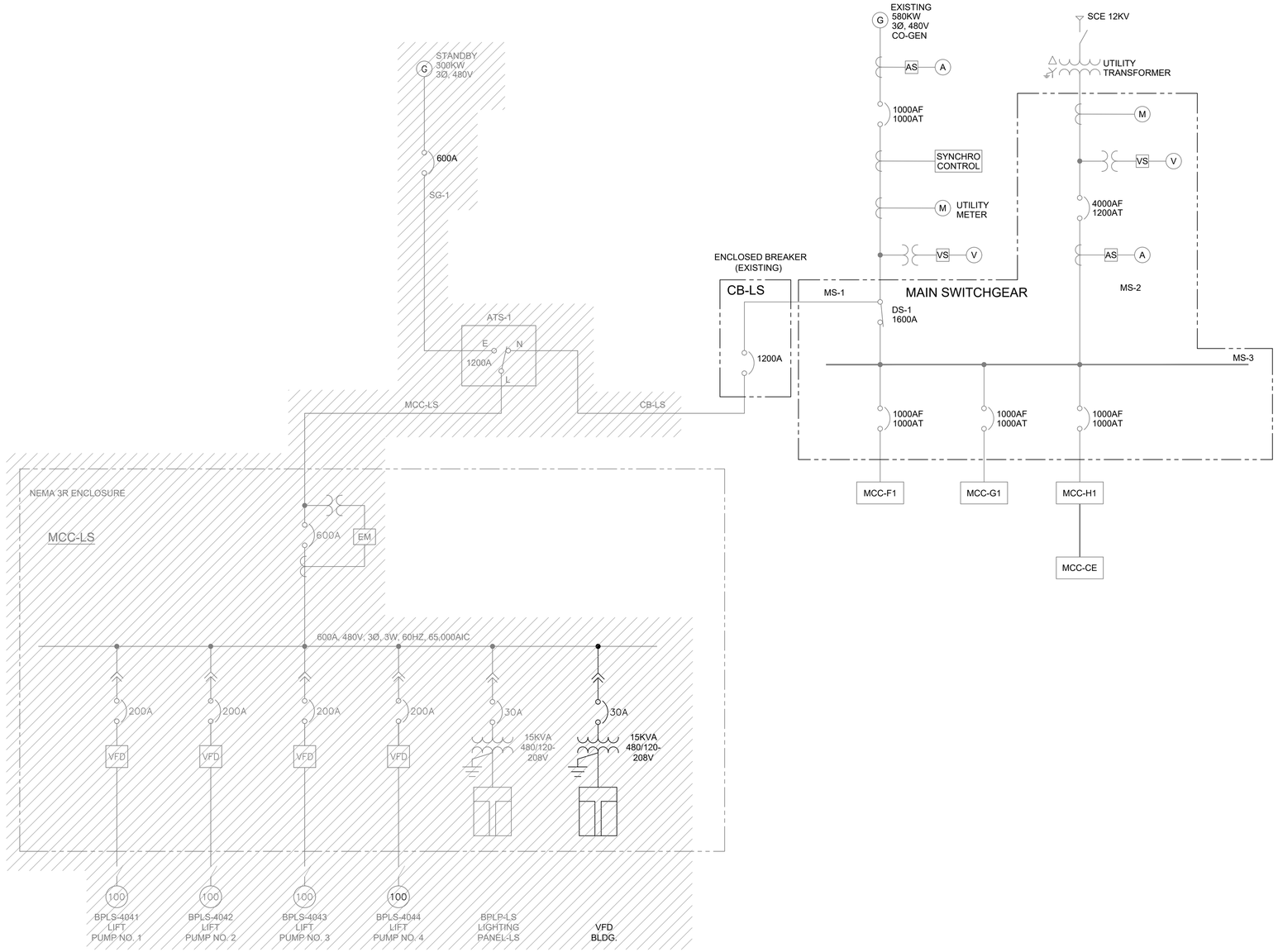
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
ELECTRICAL PLAN

| | |
|---|---|
| SHEET | 62E-01 |
| SHEET NO. | OF 000 |
| PROJECT NO. | |
| DRAWING NO. | |

## GENERAL NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.




## RP-2 LIFT PUMP STATION SINGLE LINE DIAGRAM


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | KL | 10/2023 |
| Drawn | GC | 10/2023 |
| Checked | MH | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | KL | MH | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT


OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

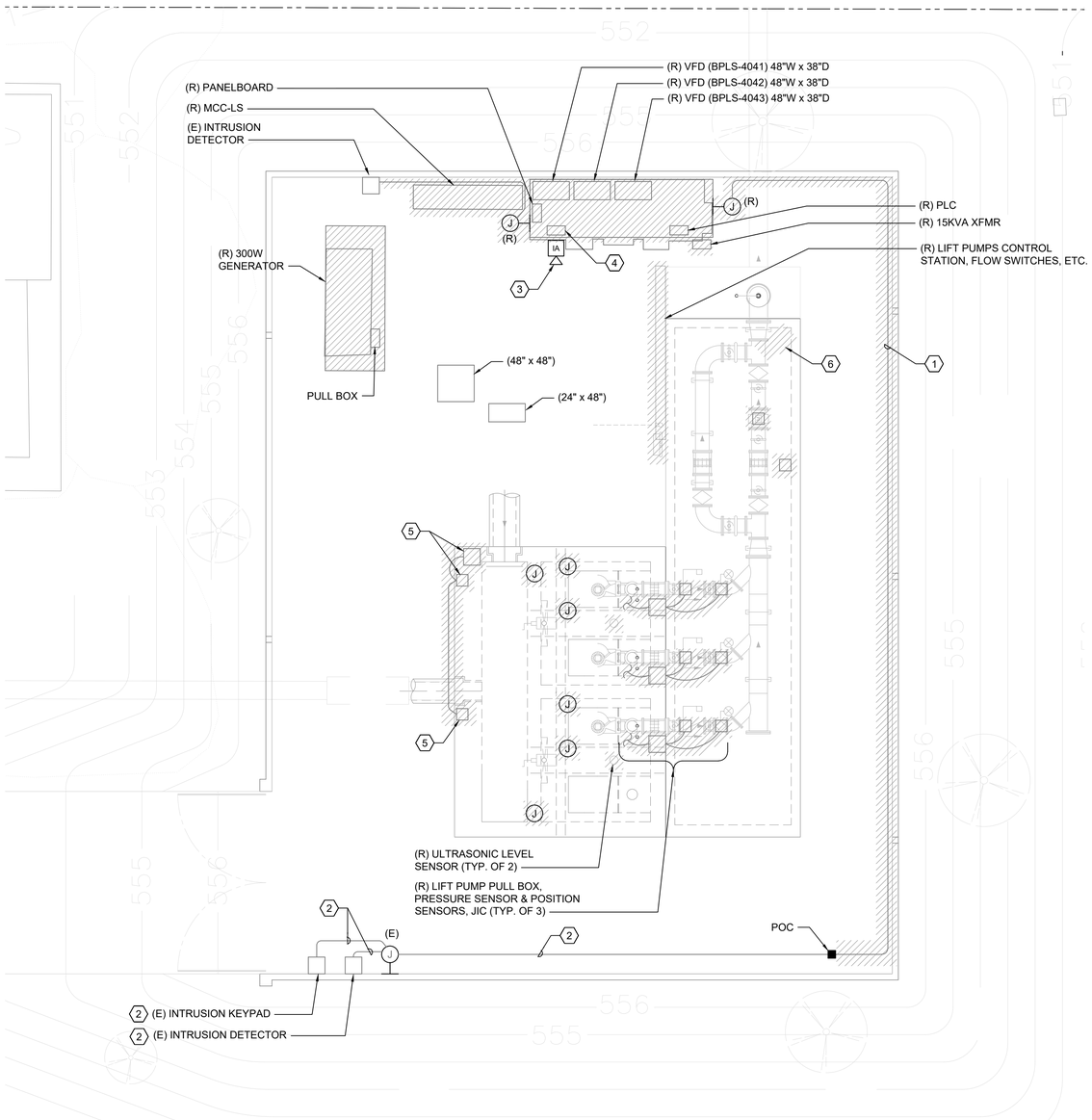

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
ELECTRICAL SINGLE LINE
DIAGRAM (DEMOLITION)

SHEET ED-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.


DWG: \\capas015r01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7 6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\ED-01.dwg USER: p0014446
DATE: Oct 20, 2023 11:17am XREFS: IEUA Border 20topo C-xuld C-01UP03 legalot m-62pp01 S-62FP01 20COGRID XC-MTN-SITE-EX XC-MTN-SITE-NW RP-2 LS PLAN IEUA_S-RP2 - Structural Plan




## RP-2 LIFT STATION ELECTRICAL DEMOLITION PLAN

SCALE: 1-1/2" = 1'-0"

## GENERAL NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

## KEY NOTES:

1. (R) 3/4"C WITH INTRUSION CABLES.
2. (E) 3/4"C WITH INTRUSION CABLES. REMOVE INTRUSION CABLES. RE-USE 3/4"C FOR NEW CABLES.
3. (E) INTRUSION ALARM HORN/STROBE TO BE RELOCATED.
4. (E) INTRUSION CONTROL PANEL TO BE RELOCATED.
5. (R) EXISTING SAMPLING STATION AND ITS ASSOCIATED TRANSMITTER, RACEWAY, WIRINGS, ETC..
6. DISCONNECT AND REMOVE POLE LIGHT BRANCH CIRCUIT.

0 1' 2'

SCALE: 1 1/2" = 1'-0"

DWG: \\capas016d01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 ElectricalWork\RP-2 Lift StationED-02.dwg USER: p0014446
DATE: Oct 20, 2023 11:21am XREFS: IEUA Border 20topo C-xutil C-01UP03 legalot m-62ppd01 S-62FP01 20COGRID XC-MTN-SITE-EX

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | KL | 10/2023 |
| Drawn | GC | 10/2023 |
| Checked | MH | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | KL | MH | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION ELECTRICAL DEMOLITION PLAN

SHEET ED-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

## MECHANICAL EQUIPMENT SYMBOLS

- PUMP: PLUNGER
- COMPRESSOR: RECIPROCATING
- COMPRESSOR: ROTARY SCREW
- PUMP: VERTICAL TURBINE
- PUMP: PROGRESSIVE CAVITY
- PUMP: RECIPROCATING
- PUMP: DIAPHRAGM
- PUMP: CENTRIFUGAL
- PUMP: ROTARY LOBE
- PUMP: GEAR
- PUMP: SCREW
- PUMP: SUBMERSIBLE
- PUMP: POSITIVE DISPLACEMENT
- PUMP: CHOPPER
- PUMP: PERISTALTIC
- PUMP: METERING
- PUMP: SUBMERSIBLE AXIAL PROPELLER
- BLOWER
- MIXER
- ELECTRIC MOTOR (M)
- FAN
- AIR OR CHEMICAL DIFFUSER
- SILENCER
- GRINDER
- AIR FILTER
- OR
- FLAME ARRESTOR
- POSITIVE DISPLACEMENT BLOWER
- CATALYST
- HEAT EXCHANGER
- MEMBRANE CASSETTE
- GAS FILTER
- DEMISTER
- SUCTION DIFFUSER
- LUBRICATOR

## VALVE AND GATE SYMBOLS

- VALVE: GATE
- VALVE: KNIFE GATE (K)
- VALVE: GLOBE
- VALVE: BALL
- VALVE: THREE WAY
- VALVE: FOUR WAY
- VALVE: DIAPHRAGM
- VALVE: BUTTERFLY
- VALVE: DOUBLE LEAF CHECK
- VALVE: FLAP CHECK
- VALVE: PLUG
- VALVE: PLUG 3-WAY
- VALVE: ANGLE
- VALVE: NEEDLE
- VALVE: BALL CHECK
- VALVE: SWING CHECK
- BACKFLOW PREVENTER
- VALVE: PRESSURE RELIEF
- VALVE: THERMAL SHUTOFF
- VALVE: TELESCOPING
- VALVE: SEISMIC (S)
- PRESSURE-REDUCING INTERNAL REGULATING
- BACKPRESSURE REGULATOR INTERNAL
- PRESSURE-REDUCING REGULATOR W/EXTERNAL PRESSURE TAP
- BACKPRESSURE REGULATOR W/EXTERNAL PRESSURE TAP
- GATE: SLIDE
- GATE: SLUICE
- STOP LOG
- AIR RELEASE VALVE
- VACUUM BREAKER
- AIR RELEASE VALVE/VACUUM BREAKER
- VALVE: MUD
- PRESSURE VACUUM RELIEF VALVE
- PUMP DISCHARGE VALVE

## VALVE AND GATE SYMBOLS

- DIAPHRAGM
- PISTON DOUBLE ACTING CYLINDER
- SOLENOID (S)
- ELECTRIC MOTOR (M)
- ELECTRO-HYDRAULIC (E/H)
- I/P CONVERTER (I/P)
- PISTON SPRING TO OPEN
- PISTON SPRING TO CLOSE
- LINEAR (L)

THE FOLLOWING ADDITIONAL DESIGNATIONS MAY BE UTILIZED ADJACENT TO SOME VALVE OR GATE SYMBOLS.

| | |
|---|---|
| FC | FAILS CLOSED |
| FIP | FAILS IN LAST POSITION |
| FO | FAILS OPEN |
| LC | LOCKS CLOSED |
| LO | LOCKS OPEN |
| NC | NORMALLY CLOSED |
| NO | NORMALLY OPEN |

## PRIMARY ELEMENT SYMBOLS

- BUBBLER TUBE BUBBLER ASSEMBLY (B)
- LEVEL PROBE
- ORIFICE PLATE
- VENTURI TUBE
- FLUME
- WEIR
- PROPELLER (P) OR TURBINE (T) METER
- AVERAGING PITOT TUBE
- MAGNETIC FLOW ELEMENT (M)
- THERMAL FLOW ELEMENT (T)
- SONIC FLOW ELEMENT
- PADDLE WHEEL FLOW ELEMENT (X)
- ULTRASONIC LEVEL ELEMENT
- RADAR LEVEL ELEMENT
- GUIDED WAVE RADAR LEVEL ELEMENT
- ROTAMETER
- FLOAT TYPE LEVEL SWITCH (LS)
- SUBMERSIBLE PRESSURE TYPE
- TSS ELEMENT (D)

## MISCELLANEOUS SYMBOLS

- HIGH PRESSURE QUICK CONNECTION
- AIR VENT
- SEAL - DIAPHRAGM
- SEAL - ANNULAR
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- PULSATION DAMPENER
- RUPTURE DISK
- DRAIN
- PURGE ASSEMBLY (P)
- INLINE STATIC MIXER
- IA — FIELD DEVICE INSTRUMENT AIR SUPPLY
- HPA — FIELD DEVICE HIGH PRESSURE AIR SUPPLY
- BEACON
- CALIBRATION COLUMN
- HORN
- DAMPERS, VANES
- EXPANSION JOINT
- FLEXIBLE CONNECTION
- FLANGE
- Y-STRAINER
- SPRAY NOZZLE
- ES — ELECTRICAL SUPPLY POWER
- HOSE BIBB
- FLOW CONDITIONER
- THERMOWELL
- DT — DRIP TRAP
- FLOAT DRAIN
- STATIC MIXER
- STRAINER
- P TRAP
- SSE — SAFETY SHOWER AND EYEWASH STATION

## GENERAL NOTES

1. EXISTING STRUCTURES, EQUIPMENT, PIPING, INSTRUMENTS AND CONTROLS ARE SHOWN IN LIGHTER SHADING (I.E. SCREENED). INFORMATION FOR EXISTING SYSTEMS WERE TAKEN FROM THE EXISTING RECORD DRAWING SET FOR IEUA "REGIONAL PLANT 5 WATER RECLAMATION FACILITY PROJECT NO. EN95028", DATED 7/05.
2. DATALINK LINES ON THE P&IDs ONLY DEPICT COMMUNICATIONS BETWEEN THE COMPONENTS/EQUIPMENT SHOWN. REFERENCE THE APPLICABLE SCADA NETWORK ARCHITECTURE DRAWINGS.
3. REFERENCE ELECTRICAL SINGLE LINE DIAGRAMS FOR POWER FEED INFORMATION.
4. ONLY CRITICAL ETHERNET/IP INTERFACE SIGNALS BETWEEN PLANT SCADA AND VENDOR-SUPPLIED CONTROLLERS ARE SHOWN. ALL CONTROL, STATUS AND ALARM SIGNALS SHOWN ON THE VENDOR-SUPPLIED OIT SCREENS SHALL BE AVAILABLE TO THE PLANT SCADA SYSTEM VIA DIRECT ADDRESSING.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

| | | |
|---|---|---|
| Designed | RA | 10/2023 |
| Drawn | RA | 10/2023 |
| Checked | IM | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | RA | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

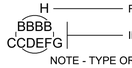
60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

INSTRUMENTATION LEGEND

SHEET I-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

# INSTRUMENT OR FUNCTION SYMBOLS




H — FUNCTION ABBREVIATION

BBBB / CCDEFG — INSTRUMENT TAG

NOTE - TYPE OR OPERATIONAL INFO (AS NEEDED)

SINGLE FUNCTION

NON-PROGRAMMABLE MULTIFUNCTION INSTRUMENT

SHARED DISPLAY/CONTROL FUNCTION


HARDWIRED INTERLOCK LOGIC (REFER TO CONTROL SCHEMATICS)

BARS DIVIDING ABOVE SYMBOLS

NONE — FIELD LOCATION



AUXILIARY LOCATION, OPERATOR ACCESSIBLE



AUXILIARY LOCATION, OPERATOR INACCESSIBLE



PRIMARY LOCATION, OPERATOR ACCESSIBLE



PRIMARY LOCATION, OPERATOR INACCESSIBLE

# LINE SYMBOLS



MAJOR PROCESS PIPING OR FLOW CHANNEL



SECONDARY OR MISCELLANEOUS PROCESS PIPING



INSTRUMENT SUPPLY OR CONNECTION TO PROCESS



ELECTRIC SIGNAL OR SOFTWARE



DATALINK



RADIO DATALINK



HYDRAULIC SIGNAL



PNEUMATIC SIGNAL



CAPILLARY TUBING



ELECTROMAGNETIC OR SONIC SIGNAL (UNGUIDED)



UNDEFINED SIGNAL



INSTRUMENTATION DIRECTION ARROW (ANALOG/INTEGER I/O)



INSTRUMENTATION DIRECTION ARROW (DIGITAL/BOOLEAN I/O)



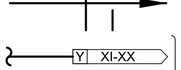
INSTRUMENTATION SIGNAL LINES: CONNECTION AND CROSSOVER



PROCESS FLOW ARROW



PROCESS LINES: CONNECTION AND CROSSOVER




CONTINUATION DRAWING REFERENCES (PROCESS AND INSTRUMENTATION)



FUTURE



EXISTING (SCREENED)

# EQUIPMENT TAGGING

EQUIPMENT TAGGING GUIDELINE:

PART 1 PART 2 PART 3

AA - BBBBB - CC D EE F G

- AA — FACILITY
- BBBBB — EQUIPMENT/INSTRUMENT (SEE TABLE 2)
- CC — PROCESS SYSTEM
- D — SERIES NUMBER OR EQUIPMENT GROUP
- EE — ELEMENT
- F — SUB-ELEMENT AS NEEDED
- G — SIGNAL SUB-ELEMENT AS NEEDED

EXAMPLES:

W5-FIT-2C411 - TAG NUMBER
W5 - RP-5
FIT - FLOW TRANSMITTER
2C - SECONDARY - MBR
4 - SERIES "4"
1 - SUBGROUP "1"
1 - ELEMENT "1"

W5-HS-02361E - TAG NUMBER
W5 - RP-5
HS - HAND SWITCH
02 - PRELIMINARY - INFLUENT PUMPING
3 - SERIES "3"
6 - SUBGROUP "6"
1 - ELEMENT "1"
E - SUB-ELEMENT "E"

# FUNCTION DESIGNATORS

| | |
|---|---|
| Δ | DIFFERENCE |
| ÷ | DIVIDING |
| × | MULTIPLYING |
| √ | ROOT EXTRACTION |
| Σ | SUMMING |
| Σ /n | AVERAGING |
| > | HIGH SELECTING |
| < | LOW SELECTING |
| ⊣ | HIGH LIMITING |
| ⊢ | LOW LIMITING |
| f(x) | NONLINEAR OR UNSPECIFIED FUNCTION |
| REV | REVERSE ACTING |
| SRG | SPLIT-RANGING |
| % | PROPORTIONAL CONTROL ACTION |
| ∫ | INTEGRAL CONTROL ACTION |
| d/dt | DERIVATIVE CONTROL ACTION |
| 1-0 | ON-OFF CONTROL ACTION |
| △1-0 | DIFFERENTIAL GAP CONTROL ACTION |
| */* | CONVERT FROM/TO, WHERE: A= ANALOG, D= DIGITAL, E= VOLTAGE, H= HYDRAULIC, I=CURRENT, O=ELECTROMAG, SONIC, P=PNEUMATIC, R=RESISTANCE |

# FUNCTION ABBREVIATIONS

| | |
|---|---|
| ALM | ALARM |
| AUTO | AUTO |
| CG | COMBUSTIBLE GAS |
| CLCM | CLOSE COMMAND |
| CLLM | CLOSED LIMIT |
| CLS | CLOSE |
| COND | CONDUCTIVITY |
| CV | CONTROL VARIABLE |
| DS | DUTY-STANDBY SELECTOR |
| DIFF | DIFFERENTIAL |
| DUTY | DUTY |
| ENBL | ENABLE |
| EOT | END OF TRAVEL |
| E-STOP | EMERGENCY STOP |
| EXTD | EXTEND |
| FAIL | FAIL |
| FOR | FORWARD-OFF-REMOTE SELECTOR |
| FWD | FORWARD |
| JOG | JOG |
| JR | JOG REVERSE |
| H2S | HYDROGEN SULFIDE |
| HAL | HIGH ALARM |
| HAND | HAND |
| HHAL | HIGH HIGH ALARM |
| HOA | HAND-OFF-AUTO SELECTOR |
| HOR | HAND-OFF-REMOTE SELECTOR |
| IN | IN |
| LAL | LOW ALARM |
| LEAK | LEAK DETECTION |
| LLAL | LOW LOW ALARM |
| LOC | LOCAL |
| LOR | LOCAL-OFF-REMOTE SELECTOR |
| OCA | OPEN-CLOSE-AUTO SELECTOR |
| OFF | OFF |
| OL | MOTOR OVERLOAD |
| ON | ON |
| OP | OPERATION (MODE) |
| OPCM | OPEN COMMAND |
| OPLM | OPEN LIMIT |
| OPN | OPEN |
| OSC | OPEN-STOP-CLOSE SELECTOR |
| OUT | OUT |
| NaOCl | SODIUM HYPOCHLORITE |
| NH3 | AMMONIA |
| pH | pH |
| PMR | PUMP MONITOR RELAY |
| POS | POSITION |
| PV | PROCESS VARIABLE |
| PWR | POWER ON |
| REM | REMOTE |
| REV | REVERSE |
| RST | ALARM RESET |
| RTCT | RETRACT |
| RX | RECEIVER |
| SIL | ALARM SILENCE |
| SLOS | START-LOCKOUT STOP |
| STAT | STATUS |
| STBY | STANDBY |
| STRT | START |
| STOP | STOP |
| TX | TRANSMITTER |

# MISCELLANEOUS ABBREVIATIONS

| | |
|---|---|
| DC | DISTRIBUTED CONTROLS |
| HIM | HUMAN INTERFACE MODULE |
| MM | MULTIMODE (FO) |
| MPR | MOTOR PROTECTION RELAY |
| OIT | OPERATOR INTERFACE TERMINAL |
| PEM | PUMP ELECTRONIC MODULE |
| POT | POTENTIOMETER |
| SM | SINGLE-MODE (FO) |
| VFD | VARIABLE FREQUENCY DRIVE |

# TABLE 2 - EQUIPMENT/INSTRUMENT TECHNICAL DESCRIPTORS

| EQUIPMENT | | INSTRUMENTS | | CONTROL EQUIPMENT | |
|---|---|---|---|---|---|
| TECHNICAL DESCRIPTOR | DESCRIPTION OF TECHNICAL OBJECT | TECHNICAL DESCRIPTOR | DESCRIPTION OF TECHNICAL OBJECT | TECHNICAL DESCRIPTOR | DESCRIPTION OF TECHNICAL OBJECT |
| ACT | ACTUATOR | AAHH/H/L/LL | ANALYTICAL ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | VAHH/H/L/LL | VIBRATION ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW |
| AC | AIR CONDITIONER | AIC | ANALYTICAL CONTROL | VE | VIBRATION ELEMENT |
| ARV | AIR RELEASE VALVE | AE | ANALYTICAL ELEMENT | VIT | VIBRATION INDICATING TRANSMITTER |
| AVRV | AIR RELEASE / VACUUM RELIEF VALVE | AIT | ANALYTICAL INDICATING TRANSMITTER | VI | VIBRATION INDICATION |
| ASPR | AIR SEPARATOR | AI | ANALYTICAL INDICATION | VSHH/H/L/LL | VIBRATION SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW |
| ATS | AUTOMATIC TRANSFER SWITCH | ASHH/H/L/LL | ANALYTICAL SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | VT | VIBRATION TRANSMITTER |
| BFP | BACKFLOW PREVENTER | AT | ANALYTICAL TRANSMITTER | VAT | VIBRATION TRANSMITTER FAILURE |
| BSN | BASIN | AAT | ANALYTICAL TRANSMITTER FAILURE | EAHH/H | VOLTAGE - OVERVOLTAGE ALARM HIGH-HIGH / HIGH |
| BAT | BATTERY | YX | AVAILABLE | EALL/L | VOLTAGE - UNDERVOLTAGE ALARM LOW / LOW-LOW |
| BLDR | BLENDER | BE | BURNER ELEMENT | EI | VOLTAGE INDICATION |
| BO | BLOW OFF | IAHH/H | CURRENT - OVERCURRENT ALARM HIGH-HIGH / HIGH | WE | WEIGHT ELEMENT |
| BLWR | BLOWER | IAL/LL | CURRENT - UNDERCURRENT ALARM LOW / LOW-LOW | WIT | WEIGHT INDICATING TRANSMITTER |
| BLR | BOILER | II | CURRENT INDICATION | WI | WEIGHT INDICATION |
| BCC | BRANCH CIRCUIT CONTROLLER | PDAHH/H/L/LL | DIFFERENTIAL PRESSURE ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW | WR | WEIGHT RECORDER |
| BLDG | BUILDING | PDIC | DIFFERENTIAL PRESSURE INDICATING CONTROL | WT | WEIGHT TRANSMITTER |
| BNR | BURNER | PDIT | DIFFERENTIAL PRESSURE INDICATING TRANSMITTER | WAT | WEIGHT TRANSMITTER FAILURE |
| BD | BUS DUCT | PDI | DIFFERENTIAL PRESSURE INDICATION | | |
| CANN | CANNON | PDT | DIFFERENTIAL PRESSURE TRANSMITTER | | |
| CAU | CARBON ADSORPTION UNIT | PDAT | DIFFERENTIAL PRESSURE TRANSMITTER FAILURE | | |
| CPS | CATHODIC PROTECTION STATION | YA | FAIL INDICATION | | |
| CNFG | CENTRIFUGE | YAQ | FAIL COUNTER | | |
| CHNL | CHANNEL | BA | FIRE ALARM | | |
| CVLV | CHECK VALVE | FAHH/H/L/LL | FLOW ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| CHLR | CHILLER | FE | FLOW ELEMENT | | |
| CCB | CHLORINE CONTACT BASIN | FIC | FLOW INDICATING CONTROL | | |
| CHUT | CHUTE | FIT | FLOW INDICATING TRANSMITTER | | |
| CLF | CLARIFIER | FI | FLOW INDICATION | | |
| COGN | COGENERATION | FS | FLOW SWITCH | | |
| COMP | COMPRESSOR | FSHH/H/L/LL | FLOW SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| COND | CONDENSER | FQI | FLOW TOTALIZER INDICATION | | |
| CVR | CONVEYOR | FQT | FLOW TOTALIZER TRANSMITTER | | |
| CRAN | CRANE | FT | FLOW TRANSMITTER | | |
| DAM | DAM | FAT | FLOW TRANSMITTER FAILURE | | |
| DMP | DAMPER | RAL | FREQUENCY - UNDER-FREQUENCY | | |
| DS | DISCONNECT SWITCH | HC | HAND CONTROL | | |
| DP | DISTRIBUTION PANELBOARD | HS | HAND SWITCH | | |
| DRV | DRIVE | HSI | HAND SWITCH STATUS INDICATION | | |
| DRYR | DRYER | LAHH/H/L/LL | LEVEL ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| ENG | ENGINE | LDAHH/H/L/LL | DIFFERENTIAL LEVEL ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| ECU | EVAPORATIVE COOLING UNIT | LDI | DIFFERENTIAL LEVEL INDICATION | | |
| EYEW | EYE WASH | LE | LEVEL ELEMENT | | |
| FAN | FAN | LIC | LEVEL INDICATING CONTROL | | |
| FCU | FAN COIL UNIT | LIT | LEVEL INDICATING TRANSMITTER | | |
| FDR | FEEDER | LG | LEVEL SIGHT GLASS | | |
| FLTR | FILTER | LS | LEVEL SWITCH | | |
| FLAR | FLARE | LSHH/H/L/LL | LEVEL SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| FLCL | FUEL CELL | LY | LEVEL SWITCH INTERPOSING RELAY | | |
| GATE | GATE | LT | LEVEL TRANSMITTER | | |
| GEN | GENERATOR | LAT | LEVEL TRANSMITTER FAILURE | | |
| GNDR | GRINDER | YL | LIGHT - INDICATION LIGHT | | |
| HFLT | HARMONIC FILTER | MAHH/H/L/LL | MOISTURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| HXGR | HEAT EXCHANGER | MSHH/H/L/LL | MOISTURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| HRS | HEAT RECOVERY SILENCER | KS | NUMBER OF STARTS | | |
| IWS | INSTANTANEOUS WATER HEATER | ZAHH/H/L/LL | POSITION ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| LVL | LEVELER | ZY | POSITION COMMAND | | |
| LP | LIGHTING PANEL | ZT | POSITION FEEDBACK | | |
| LCS | LOCAL CONTROL STATION | ZS | POSITION SWITCH | | |
| LVR | LOUVER | ZSC | POSITION SWITCH CLOSE | | |
| LUBS | LUBE OIL SYSTEM | ZSO | POSITION SWITCH OPEN | | |
| MH | MANHOLE | JI | POWER INDICATION | | |
| MTS | MANUAL TRANSFER SWITCH | JQ | POWER TOTALIZATION | | |
| CASS | MEMBRANE CASSETTE | PAHH/H/L/LL | PRESSURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| MXR | MIXER | PE | PRESSURE ELEMENT | | |
| MTR | MOTOR | PIC | PRESSURE INDICATING CONTROL | | |
| MCC | MOTOR CONTROL CENTER | PIT | PRESSURE INDICATING TRANSMITTER | | |
| MCP | MOTOR CONTROL PANEL | PI | PRESSURE INDICATION | | |
| PIPE | PIPE | PS | PRESSURE SWITCH | | |
| PRV | PRESSURE RELIEF OR REGULATING VALVE | PSHH/H/L/LL | PRESSURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| PMP | PUMP | PT | PRESSURE TRANSMITTER | | |
| APMP | AIR PUMP | PAT | PRESSURE TRANSMITTER FAILURE | | |
| SMP | SAMPLER | YY | PUMP MONITOR RELAY | | |
| SCRN | SCREEN | XC | REMOTE RESET | | |
| SCR | SELECTIVE CATALYTIC REDUCER | XCR | REMOTE START COMMAND | | |
| SHWR | SHOWER | XCS | REMOTE STOP COMMAND | | |
| SLCR | SILENCER | YI | RUN STATUS | | |
| SILO | SILO | KQI | RUN TIME | | |
| SOLR | SOLAR | SAHH/H/L/LL | SPEED ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| SV | SOLENOID VALVE | SC | SPEED COMMAND | | |
| STNR | STRAINER | SE | SPEED ELEMENT | | |
| SWBD | SWITCHBOARD | SI | SPEED INDICATION | | |
| SWGR | SWITCHGEAR | SSL | SPEED SWITCH LOW | | |
| TNK | TANK | TAHH/H/L/LL | TEMPERATURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| TTR | TIPPING TROUGH | TE | TEMPERATURE ELEMENT | | |
| TWR | TOWER | TIT | TEMPERATURE INDICATING TRANSMITTER | | |
| TX | TRANSFORMER | TI | TEMPERATURE INDICATION | | |
| UPS | UNINTERRUPTIBLE POWER SUPPLY | TSHH/H/L/LL | TEMPERATURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| VLV | VALVE | TT | TEMPERATURE TRANSMITTER | | |
| MVLV | MANUAL VALVE | TAT | TEMPERATURE TRANSMITTER FAILURE | | |
| VFD | VARIABLE FREQUENCY DRIVE | KY | TIMER | | |
| VRF | VARIABLE REFRIGERANT FLOW | NAHH/H/L/LL | TORQUE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW | | |
| WSH | WASHER | NIT | TORQUE INDICATING TRANSMITTER | | |
| WFLT | WATER FILTER | NI | TORQUE INDICATION | | |
| WH | WATER HEATER | NSHH/H/L/LL | TORQUE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW | | |
| WW | WET WELL | NT | TORQUE TRANSMITTER | | |
| WND | WIND TURBINE | NAT | TORQUE TRANSMITTER FAILURE | | |

CONTROL EQUIPMENT

| TECHNICAL DESCRIPTOR | DESCRIPTION OF TECHNICAL OBJECT |
|---|---|
| IANT | ANTENNA |
| IAPP | APPLICATION SERVER |
| IBB | BROADBAND HARDWARE |
| ICP | CONTROL PROCESSOR |
| IDAS | DATA SERVER |
| IDCP | DISTRIBUTED CONTROL PROCESSOR |
| IEWS | ENGINEERING WORKSTATION |
| IFOP | FIBER OPTIC PANEL |
| IHIS | HISTORIAN SERVER |
| IHMI | HMI SERVER |
| IINF | INFRASTRUCTURE SERVER |
| ILCP | LOCAL CONTROL PANEL |
| ILCS | LOCAL CONTROL STATION |
| IMCP | MASTER CONTROL PANEL |
| IMED | MEDIA CONVERTER |
| IWAV | MICROWAVE HARDWARE |
| INIP | NETWORK INTERFACE PANEL |
| IRTR | NETWORK ROUTER |
| ISEC | NETWORK SECURITY HARDWARE |
| ISWT | NETWORK SWITCH |
| IOIT | OPERATOR INTERFACE TERMINAL |
| IOWS | OPERATOR WORKSTATION |
| IPLC | PLC |
| IPS | POWER SUPPLY |
| IPRT | PRINTER |
| IRAC | RACO ALARM HARDWARE |
| IRIO | REMOTE I/O PANEL |
| IRIR | REMOTE I/O RACK |
| IRTU | REMOTE TERMINAL UNIT PANEL |
| ISCN | SCANNER |
| ITC | THIN CLIENT |
| IWFI | WIFI HARDWARE |


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | RA | 10/2023 |
| Drawn | RA | 10/2023 |
| Checked | IM | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | RA | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709


60% SUBMITTAL - 10/2023

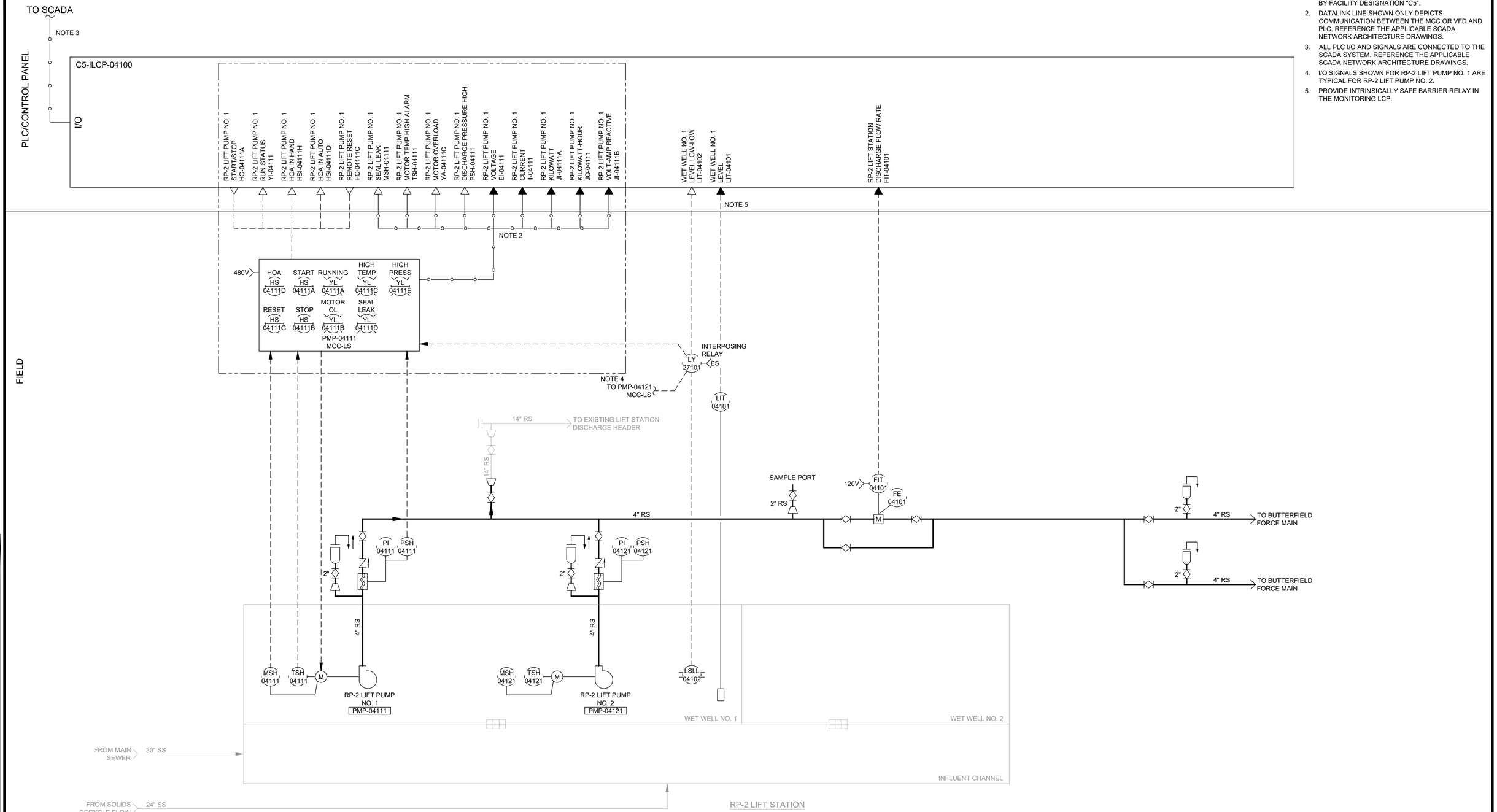
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

INSTRUMENTATION LEGEND

SHEET I-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

NOTES:

1. UNLESS OTHERWISE NOTED, ALL INSTRUMENTS, EQUIPMENT AND I/O TAG NUMBERS ARE PREFIXED BY FACILITY DESIGNATION "C5".
2. DATALINK LINE SHOWN ONLY DEPICTS COMMUNICATION BETWEEN THE MCC OR VFD AND PLC. REFERENCE THE APPLICABLE SCADA NETWORK ARCHITECTURE DRAWINGS.
3. ALL PLC I/O AND SIGNALS ARE CONNECTED TO THE SCADA SYSTEM. REFERENCE THE APPLICABLE SCADA NETWORK ARCHITECTURE DRAWINGS.
4. I/O SIGNALS SHOWN FOR RP-2 LIFT PUMP NO. 1 ARE TYPICAL FOR RP-2 LIFT PUMP NO. 2.
5. PROVIDE INTRINSICALLY SAFE BARRIER RELAY IN THE MONITORING LCP.




60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
P&ID

SHEET 62I-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.


PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000


| | | |
|---|---|---|
| Designed | RA | 10/2023 |
| Drawn | RA | 10/2023 |
| Checked | IM | 10/2023 |
| | | Date |

| REV. NO. | DATE | BY | APRVD | DESCRIPTION |
|---|---|---|---|---|
| 0 | 10/2023 | RA | SK | 60% SUBMITTAL |

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"


Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

# APPENDIX 3

# BIOLOGY SURVEY

# BIOLOGICAL SURVEY
# FOR THE
# RECYCLED WATER PLANT NO. 5
# LIQUID EXPANSION PROJECT

Prepared for:

**Inland Empire Utilities Agency**
6075 Kimball Avenue
Chino, California 91708

Prepared by:

**Tom Dodson & Associates**
2150 North Arrowhead Avenue
San Bernardino, California 92405

**OCTOBER 2023**

**Certification:** I hereby certify that the statements furnished herein and in the attached exhibits present data and information required for this Biological Survey to the best of my ability, and the facts, statements and information presented are true and correct to the best of my knowledge and belief.

_____
Lisa M. Patterson

# TABLE OF CONTENTS



**TABLES**

## FIGURES



## SITE PHOTOGRAPHS



## APPENDICES

# 1.0 INTRODUCTION AND SUMMARY OF FINDINGS

The purpose of this report is to assess the biological resources and the potential impacts associated with the Inland Empire Utility Agencies (IEUA) proposal to expand the liquid treatment capabilities in Recycling Plant No. 5 (RP-5) located in the City of Chino, San Bernardino County, California. See Figure 1 and Figure 2 for Regional and Site Location maps.

The following is a summary of the proposed new onsite and offsite facilities at and in the vicinity of RP-5. These facilities will expand the treatment of liquid wastewater treatment process to Membrane Bioreactor (MBR) technology. The RP-5 Liquids Treatment Facility will be expanded from 15 million gallons per day (MGD) average capacity to 30 MGD average capacity and 60 MGD peak capacity. The outline below briefly describes all improvements, modifications, system expansions, and off-site improvements required to achieve 30 MGD capacity. There are no natural habitats occurring within the treatment plant site.

The following list of projects are proposed to facilitate the RP5 Liquids Treatment Expansion Project:

**1) City of Chino Hills Butterfield Ranch Pump Station Modifications:**
This subproject will modify the pumps and MCC at the existing Butterfield Ranch pump station.

**2) Mountain Avenue Lift Station**
This subproject will construct a new lift station off Mountain Ave., in the area where Solids Handling Facility is currently located. The new lift station will have two pumps with a 560-gpm total capacity.

3) **Butterfield Force Main**:
This subproject will construct a new dual force main from El Prado Rd. to Kimball Ave., along Mountain Ave. This force main is needed to convey flows to RP-5 now that flows generated outside of the Prado Basin will be pumped directly to RP-5, with the primary flow being from the Butterfield Ranch pump Station. All three lift stations mentioned identified in this project will feed into this new force main.

4) **RP-2 Lift Station Modifications**:
The purpose of this project is to convey wastewater flows discharged by gravity below the flood inundation level of the upgraded Prado Dam to the RP-5 treatment plant, as all other wastewater conveyed through the basin will be pumped directly from outside the basin RP-5.

**5) RP-5 New Radio Tower:**
This subproject is for the design and construction of a new Radio Tower at RP-5. The project includes a new structural tower, radio link package (i.e., radio, antenna, cabling), and electrical components to power the new radio tower.

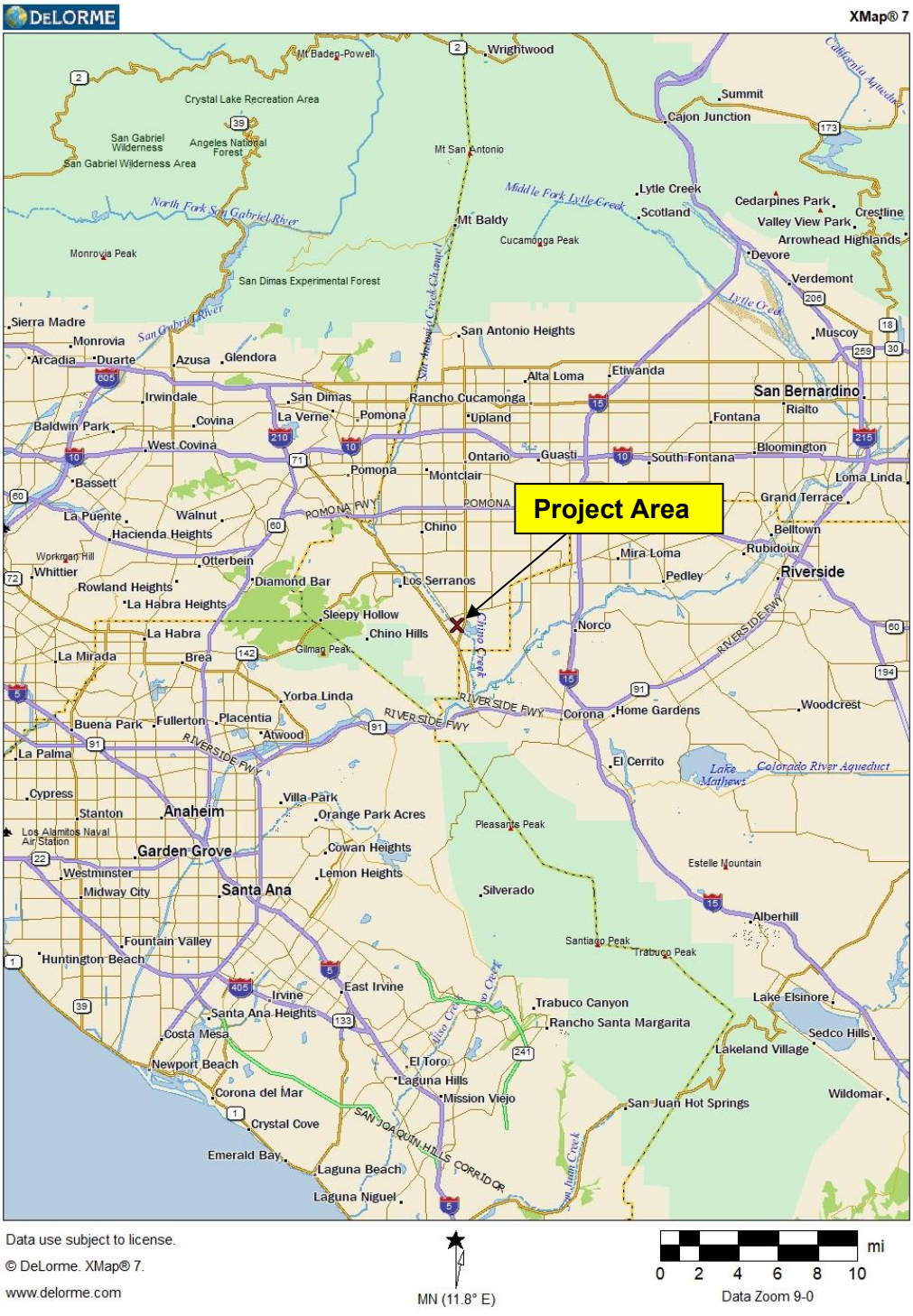
The Area of Potential Effect (APE) is delineated to encompass the maximum extent of ground disturbance or construction areas required for the proposed expansion project, and geographically coincides with the existing limits of RP5, Mountain Avenue Lift Station, RP2, Butterfield Pump Station, and a proposed sewer main along Mountain Avenue between Kimball

Avenue and El Prado Road. The proposed project occurs entirely within the developed facilities and roads, and on a completely sites. The sites are all mapped on the USGS 7.5-minute quadrangle “Prado Dam”, all but Butterfield Pump State, Section 7, are situated in an unsectioned area of T2S R7W, San Bernardino Baseline and Meridian.

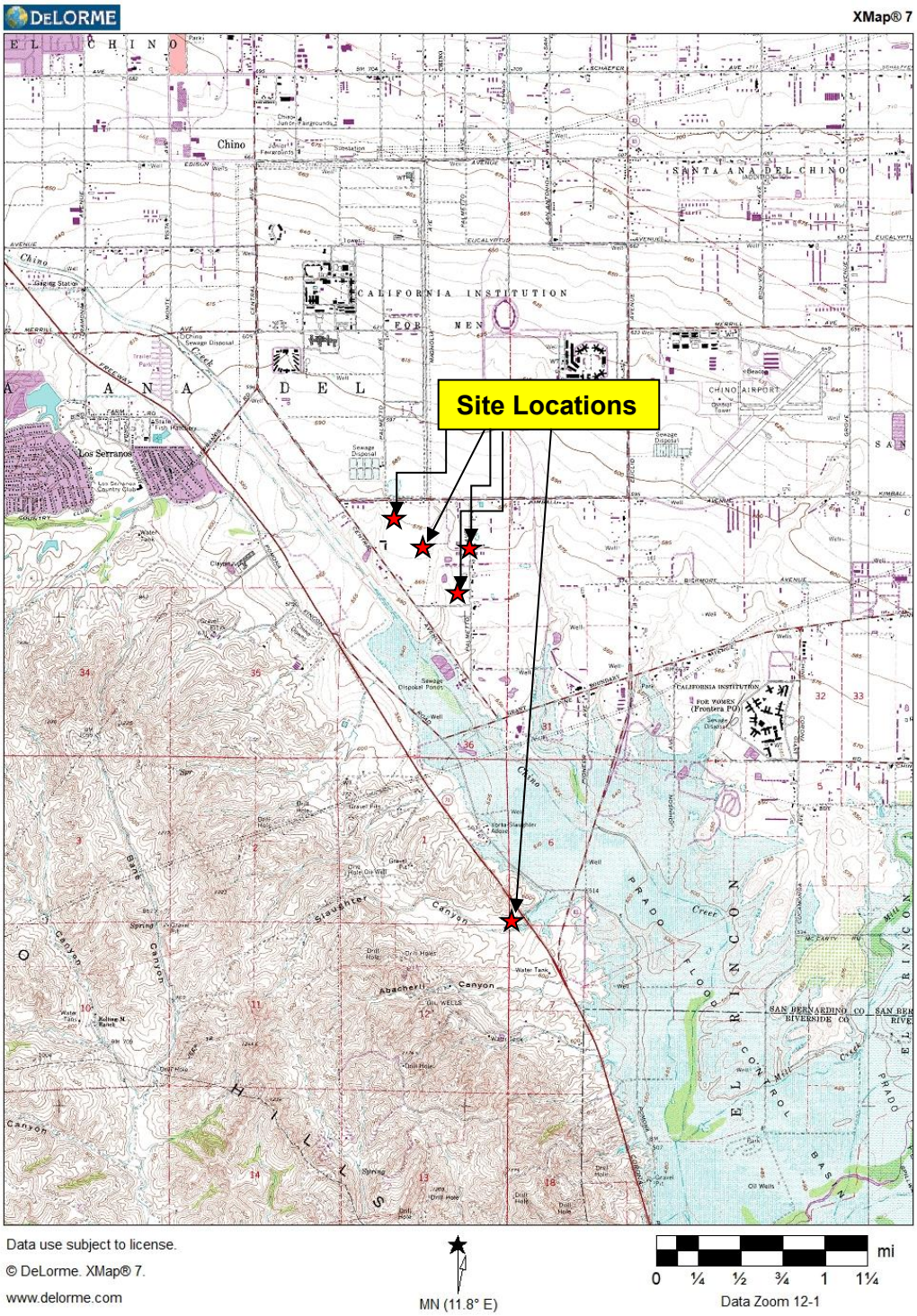
The project area no longer supports native plant communities, and the site does not provide suitable habitat for any of these sensitive plant and wildlife species identified in the state and federal data bases as having potential to occur in the general vicinity of the proposed project site. Finally, the project areas occur in or within 1,200-feet or less f designated critical habitat for the least Bell’s vireo. There are no primary constituent habitat elements within the project APE that would support this species, and the project will not adversely modify designated critical habitat.

There are no streams, channels, or wetland habitat associated with the project APE. Therefore, no regulatory permitting from the U.S. Army Corps of Engineers, Regional Water Quality Control Board, or California Department of Fish and Wildlife will be required for this project.

# FIGURE 1 – Regional Location Map



# FIGURE 2 – Site Location Map



## FIGURE 3– Impact Areas Location Map

## FIGURE 4– Temporary Laydown Areas Location Map

# 2.0 REGULATORY SETTING AND STUDY METHODS

This chapter presents the methods used to identify biological resources on the project site. In addition, this chapter provides an overview of the various regulatory requirements, definitions of terms used, background review conducted, field surveys, post-field data processing, personnel and survey dates, and coordination efforts with agency and professional contacts. It also summarizes the study limitations and how they may influence the results presented in this report.

Before conducting field surveys, existing background information was reviewed to identify the locations of jurisdictional waters, special-status plant and wildlife species, special-status plant communities, natural lands, and federally designated or proposed critical habitat units recorded or potentially occurring in the proposed infrastructure improvement areas. This section summarizes the background information that was reviewed.

## 2.1 Regulatory Requirements

### 2.1.1 Federal

#### 2.1.1.1 Clean Water Act

The purpose of the Clean Water Act (CWA) (1977) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from the United States Army Corps of Engineers (USACE). The definition of waters of the United States was amended on September 8, 2023, and includes the following definition of Waters of the U.S:

The USACE has authority to permit the discharge of dredged or fill material in WOTUS under Section 404 of the CWA. According to the EPA and the Department of the Army's January 18, 2023 (amendment effective September 8, 2023) "Amended 2023 Waters Rule: Definition of 'Waters of the United States,'" WOTUS are defined as: "

(a)(1) Waters which are:

i) Currently used or were used in the past or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
ii) The territorial seas; or
iii)Interstate waters

(a)(2) Impoundments of Jurisdictional Waters

(a)(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water.

(a)(4) Adjacent Wetlands: Wetlands adjacent to the following waters: Areas meeting all three wetland parameters (i.e., hydrophitic vegetation, hydric soils and wetland hydrology) and are adjacent to other jurisdictional waters would be designated as USACE wetlands, and are adjacent to the following:

i) Waters identified in paragraph (a); or

ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters.

(a)(5) Additional Waters: Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing ponds of water with continuous surface connection to waters identified in paragraph (a)(1) or (a)(3) of this section.

There are no wetland or non-wetland WOTUS within the Project Area. Therefore, the Project will not result in any permanent or temporary impacts to WOTUS as defined above. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] 328.3 7b). The U.S. Environmental Protection Agency (EPA) also has authority over wetlands and may override a USACE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; in California this certification or waiver is issued by the RWQCB.

#### 2.1.1.2 Section 10 of the Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable waters of the United States.

#### 2.1.1.3 Endangered Species Act

The Federal Endangered Species Act (FESA) (1973) protects plants and wildlife that are listed by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) as endangered or threatened. Section 9 of FESA (USA) prohibits the taking of endangered wildlife, where taking is defined as any effort to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 United States Code [USC] 1538). Under Section 7 of FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided the action will not jeopardize the continued existence of the species. FESA specifies that the USFWS designate habitat for a species at the time of its listing in which are found the physical or biological features "essential to the conservation of the species," or which may require "special Management consideration or protection..." (16 USC § 1533[a][3].2; 16 USC § 1532[a]). This designated Critical Habitat is then afforded the same protection under the FESA as individuals of the species itself, requiring issuance of an Incidental Take Permit prior to any activity that results in "the destruction or adverse modification of habitat determined to be critical" (16 USC § 1536[a][2]).

Interagency Consultation and Biological Assessments

Section 7 of ESA provides a means for authorizing the "take" of threatened or endangered species by federal agencies, and applies to actions that are conducted, permitted, or funded by a federal agency. The statute requires federal agencies to consult with the USFWS or NMFS, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. If a proposed project "may affect" a listed species or destroy or modify critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the potential effect.

Habitat Conservation Plans

Section 10 of the federal ESA requires the acquisition of an Incidental Take Permit (ITP) from the USFWS by non-federal landowners for activities that might incidentally harm (or "take") endangered or threatened wildlife on their land. To obtain a permit, an applicant must develop a Habitat Conservation Plan that is designed to offset any harmful impacts the proposed activity might have on the species.

#### 2.1.1.4 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C. Sections 661 to 667e et seq.) applies to any federal project where any body of water is impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with the USFWS and the appropriate state wildlife agency.

#### 2.1.1.5 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. Section 1801 et seq.) requires all federal agencies to consult with the NMFS on all actions or proposed actions (permitted, funded, or undertaken by the agency) that may adversely affect fish habitats. It also requires cooperation among NMFS, the councils, fishing participants, and federal and state agencies to protect, conserve, and enhance essential fish habitat, which is defined as those waters and substrates needed by fish for spawning, breeding, feeding, and growth to maturity.

#### 2.1.1.6 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (The Eagle Act) (1940), amended in 1962, was originally implemented for the protection of bald eagles (*Haliaeetus leucocephalus*). In 1962, Congress amended the Eagle Act to cover golden eagles (*Aquila chrysaetos*), a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. This act makes it illegal to import, export, take (molest or disturb), sell, purchase, or barter any bald eagle or golden eagle or part thereof. The golden eagle, however, is accorded somewhat lighter protection under the Eagle Act than that of the bald eagle.

#### 2.1.1.7 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (1918) implements international treaties between the United States and other nations created to protect migratory birds, any of their parts, eggs, and nests from activities, such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor

propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code (CFGC).

#### 2.1.1.8 Executive Orders (EO)

##### 2.1.1.8.1 Invasive Species—Executive Order 13112 (1999)

Issued on February 3, 1999, promotes the prevention and introduction of invasive species and provides for their control and minimizes the economic, ecological, and human health impacts that invasive species cause through the creation of the Invasive Species Council and Invasive Species Management Plan.

##### 2.1.1.8.2 Protection of Wetlands—Executive Order 11990 (1977)

Issued on May 24, 1977, helps avoid the long-term and short-term adverse impacts associated with destroying or modifying wetlands and avoiding direct or indirect support of new construction in wetlands when there is a practicable alternative.

##### 2.1.1.8.3 Migratory Bird—EO 13186 (2001)

Issued on January 10, 2001, promotes the conservation of migratory birds and their habitats and directs federal agencies to implement the Migratory Bird Treaty Act. Protection and Enhancement of Environmental Quality—EO 11514 (1970a), issued on March 5, 1970, supports the purpose and policies of the National Environmental Policy Act (NEPA) and directs federal agencies to take measures to meet national environmental goals.

*Migratory Bird Treaty Reform Act:* The Migratory Bird Treaty Reform Act (Division E, Title I, Section 143 of the Consolidated Appropriations Act, 2005, PL 108–447) amends the Migratory Bird Treaty Act (16 U.S.C. Sections 703 to 712) such that nonnative birds or birds that have been introduced by humans to the United States or its territories are excluded from protection under the Act. It defines a native migratory bird as a species present in the United States and its territories as a result of natural biological or ecological processes. This list excluded two additional species commonly observed in the United States, the rock pigeon (*Columba livia*) and domestic goose (*Anser domesticus*).

### 2.1.2 State

#### 2.1.2.1 California Fish and Game Code (CFGC)

##### 2.1.2.1.1 Sections 1600 through 1606 of the CFGC

This section requires that a Streambed Alteration Application be submitted to the CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” The CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife

resources. The final proposal that is mutually agreed upon by the Department and the applicant is the Streambed Alteration Agreement. Often, projects that require a Streambed Alteration Agreement also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Streambed Alteration Agreement may overlap.

#### 2.1.2.1.2 California Endangered Species Act

The California Endangered Species Act (CESA) (Sections 2050 to 2085) establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats by protecting “all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation.” Animal species are listed by the CDFW as threatened or endangered, and plants are listed as rare, threatened, or endangered. However, only those plant species listed as threatened or endangered receive protection under the California ESA.

CESA mandates that state agencies do not approve a project that would jeopardize the continued existence of these species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. There are no state agency consultation procedures under the California ESA. For projects that would affect a species that is federally and state listed, compliance with ESA satisfies the California ESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with the California ESA under Section 2080.1. For projects that would result in take of a species that is state listed only, the project sponsor must apply for a take permit, in accordance with Section 2081(b).

#### 2.1.2.1.3 Fully Protected Species

Four sections of the California Fish and Game Code (CFGC) list 37 fully protected species (CFGC Sections 3511, 4700, 5050, and 5515). These sections prohibit take or possession "at any time" of the species listed, with few exceptions, and state that "no provision of this code or any other law will be construed to authorize the issuance of permits or licenses to ‘take’ the species,” and that no previously issued permits or licenses for take of the species "shall have any force or effect" for authorizing take or possession.

#### 2.1.2.1.4 Bird Nesting Protections

Bird nesting protections (Sections 3503, 3503.5, 3511, and 3513) in the CFGC include the following:

- Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.
- Section 3503.5 prohibits the take, possession, or needless destruction of any nests, eggs, or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys, and falcons, among others), or Strigiformes (owls).
- Section 3511 prohibits the take or possession of fully protected birds.
- Section 3513 prohibits the take or possession of any migratory nongame bird or part thereof, as designated in the MBTA. To avoid violation of the take provisions, it is generally

required that project-related disturbance at active nesting territories be reduced or eliminated during the nesting cycle.

#### 2.1.2.1.5 Native Plant Protection Act

The Native Plant Protect Act (NPPA) (1977) (CFGC Sections 1900-1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as endangered or rare and to protect endangered and rare plants from take. CESA (CFGC 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the Fish and Game Code.

#### 2.1.2.1.6 Natural Communities Conservation Planning Act

This act was enacted to encourage broad-based planning to provide for effective protection and conservation of the state's wildlife resources while continuing to allow appropriate development and growth (CFGC Sections 2800 to 2835). Natural Community Conservation Plans (NCCP) may be implemented, which identify measures necessary to conserve and manage natural biological diversity within the planning area, while allowing compatible and appropriate economic development, growth, and other human uses.

#### 2.1.2.1.7 Senate Concurrent Resolution No. 17 – Oak Woodlands

State Senate Concurrent Resolution No. 17 is legislation that requests state agencies having land use planning duties and responsibilities to assess and determine the effects of their decisions or actions within any oak woodlands containing Blue, Engleman, Valley, or Coast Live Oak. The measure requests those state agencies to preserve and protect native oak woodlands to the maximum extent feasible or provide replacement plantings where designated oak species are removed from oak woodlands. The mitigation measures, as described above, will ensure that impacts to oak woodlands are less than significant.

### 2.1.3 Local

General, Specific, or Rural Community Plans or Municipal Codes for each local jurisdiction through which the Project passes were reviewed for regulations pertaining to biological resources. Most of the local jurisdictions have few regulations relating to biological resources due to the low-density population nature of the land. Local regulations are listed below:

#### 2.1.3.1 San Bernardino

#### 2.1.3.1.1 Adopted Ordinance 4011 (2007); Amended Ordinance 4067 (2009) Development Code 88.01.010

This Ordinance provides regulations and guidelines for the management of plant resources in the unincorporated areas of the County on property or combinations of property under public ownership. The intent is to:

(a) Promote and sustain the health, vigor and productivity of plant life and aesthetic values within the County through appropriate management techniques.

(b) Conserve the native plant life heritage for the benefit of all, including future generations.
(c) Protect native trees and plants from indiscriminate removal and to regulate removal activity.
(d) Provide a uniform standard for appropriate removal of native trees and plants in public and private places and streets to promote conservation of these valuable natural resources.
(e) Protect and maintain water productivity and quality in local watersheds.

(f) Preserve habitats for rare, endangered, or threatened plants and to protect animals with limited or specialized habitats.

## 2.2 Studies Required

Prior to beginning the field surveys, available information was reviewed from resource management plans and other relevant documents to determine locations and types of biological resources that have the potential to exist within and adjacent to the APE.

The 2023 California Natural Diversity Database (CDFW, 2023), U.S. Fish and Wildlife Service Quad lists and IPac (USFWS, 2023 Attached), California Native Plant Society Electronic Inventory of Rare and Endangered Plants of California, and National Wetlands Inventory (USFWR, 2015) were queried for occurrence of special status species and habitats within the Rp-5 Plant site. CDFW Bios database was also queried for general habitat types and potential features subject to environmental regulations (e.g., Clean Water Act [CWA], Porter-Cologne Water Quality Control Act [Porter-Cologne] and California Department of Fish and Wildlife's Fish and Game Code 1600 et seq. jurisdictional features) that may exist within or adjacent to the APE.
In addition to the aforementioned literature reviews, field surveys of the APE were performed to assess general and dominant vegetation types, habitat types, and the potential for special status wildlife and plant species to occur within the project area. Community types were based on observed dominant vegetation composition and density. Vegetation classifications of plant communities in the APE were derived from the criteria and definitions of Holland (1986). The result of this survey is that no follow-on or focused surveys are warranted.

## 2.3 Personnel and Survey Dates

The biological analysis for this site included in this section is based on a field survey conducted by Lisa Patterson on September 20, 2023 between 0800 and 1000. The weather condition was partly cloudy to cloudy with winds of 5 to 7 miles per hour and 85 degrees Fahrenheit.

## 2.4 Habitat Assessment

The APE was also assessed in the field for the potential to support special-status plant and animal species based on habitat suitability comparisons with reported occupied habitats. The following potential for occurrences definitions were utilized to assess the Project-related effects to species with the Project's footprint. Potential for occurrence designations were derived from Caltrans' standard environmental reference (Caltrans 2005):

**Absent [A]** - Species distribution is restricted by substantive habitat requirements, which do not occur or are negligible within the Project's physical disturbance footprint, and no further survey or study is necessary to derermine the likely presence or absence of this species.

**Habitat Prsent [HP]** - Species distribution is restricted by substantive habitat requirements, which occur within the Project's physical disturbance footprint, and further survey or study may be necessary to determine the likely presence or absence of this species.

**Present [P]** - Species or species sign were observed within the Project's physical disturbance footprint.

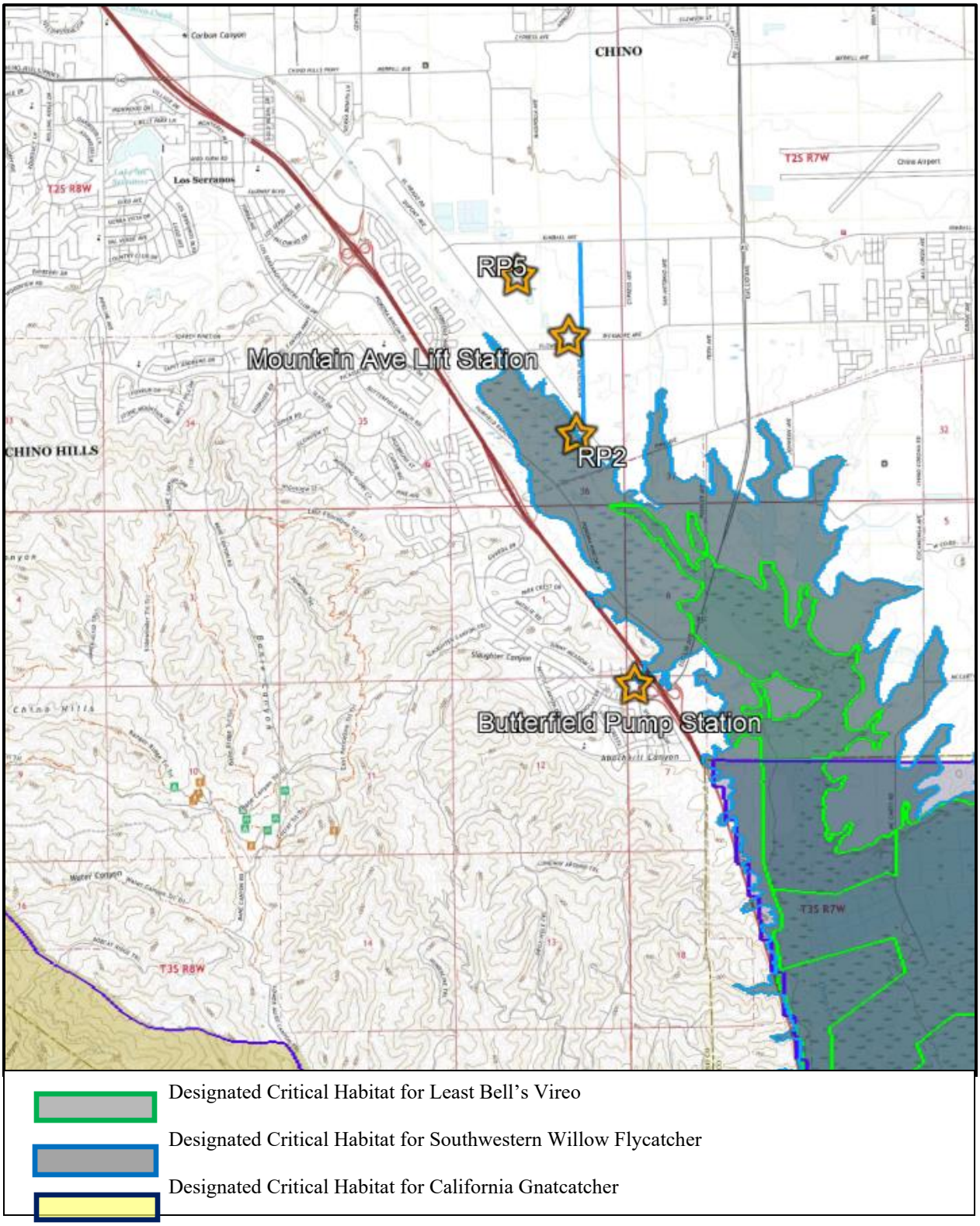
**Critical Habitat [CH]** - The Project's footprint is located within a designated critical habitat unit.

No focused Endangered Species Surveys were conducted.

## 2.5 Limitations That May Influence Results

Surveys were conducted during the appropriate time of year and conditions to detect any sensitive or listed species within the APE. Typically, biological surveys are valid for one year. Estimations and assumptions regarding the potential for jurisdictional waters and special-status species were based on assessments from previous projects, and existing IEUA permits and resource information.

## FIGURE 5– Designated Critical Habitat Map



# 3.0 ENVIRONMENTAL SETTING

The general City of Chino area lies within the northern/northwestern portion of the Peninsular Geomorphic Province of southern California, which is characterized by northwest-southwest-trending faults, folds, and mountain ranges. The Site is situated on a broad alluvial fan, which extends from the southern flank of the San Gabriel Mountains and dips gradually southward to the confluence of San Antonio Channel, Cucamonga Channel/Mill Creek, and the Santa Ana River at the Prado Dam Flood Control Basin in Riverside County. Elevation ranges from 1,150 feet above mean sea level (amsl) in the northwest portion to 650 feet amsl in the south-central portion of the City (USGS 1978).

**Climate**
The City of Chino is located in the Transverse Ranges geomorphic province, which is characterized by an east-west trending series of steep mountain ranges and valleys (Jenkins 1980). It lies on the gentle, south-facing slope of an alluvial fan extending from the foothills of the San Gabriel Mountains to the Santa Ana River, the main natural waterway in the San Bernardino Valley. The Mediterranean climate of the region is typical of inland southern California lowlands, featuring hot, dry summers and mild, wet winters. The average annual rainfall in the region is approximately 12 inches, most of which typically falls between January and April.

**Geology**
Recent (quaternary) alluvium underlies the entire valley. The western portion of the proposed Project area is underlain by young alluvial-fan deposits. The eastern portion is primarily underlain with young eolian (wind driven) deposits with small areas of young alluvial-fan deposits, artificial fill, and young alluvial-valley deposits.

**Soils**
The Site is located in a region that is made of the alluvial valley floors, fans, and terraces that cover broad areas of southwest San Bernardino County, extending eastward from Chino to the general vicinity of Yucaipa. The Soil Conservation Service Soil Survey of San Bernardino County, Southwestern Part (USDA 1980) identifies four soil types mapped for the City area include:

- Chino Silt Loam (Cb) A Parent material: Alluvium derived from mixed silt loam and clay loam within flood plains.

- Chualar clay loam (CkA). This soil series consists of well drained, nearly level to moderately sloping soils formed on alluvial fans in granitic alluvium. These soils are rapidly permeable and are used mainly for irrigated citrus and dry farmed seeded pasture.

## 3.1 Description of the Existing Biological and Physical Conditions

The proposed project occurs entirely within the developed facility, and on a completely disturbed parcel (a closed wastewater treatment plant site). The project area no longer supports native plant communities, and the site does not provide suitable habitat for any of the sensitive plant and wildlife species identified in the state and federal data bases as having potential to occur in the general vicinity of the proposed project site. Further, based on habitat requirements for sensitive species identified in these database searches; and the availability and quality of habitats needed by each of the identified sensitive plant and wildlife species; it is determined that the project site

does not provide suitable habitat that would support any of the listed species. However, burrowing owl does occur along the southern boundary of the site and within the emergency overflow pond on the southeast corner of the parcel.

### 3.1.1 Vegetation Communities

#### 3.1.1.1 Urban/ Disturbed

All of the facilities are completely hardscaped and do not support any vegetation communities. The proposed pipeline down Mountain Avenue is a busy asphalt road. The northern potion of this road is developed with commercial building sidewalks and andscaped parkways. The southern portion of the road is a developed and maintained golfcourse. With disturbed shoulders. There are no natural vegetative communities. This that does occur is characterized by storksbill (*Erodium cicutarium*), foxtail chess (*Bromus madritensis*), wild oats (*Avena barbata*), ripgut brome grass (*Bromus diandris*), and foxtail fescue (*Vulpia myuros*). Other species occurring in this community are short-pod mustard (*Brassica geniculata*), barley (*Hordium vulgare*), *Amsinkia sp*., and star thistle (*Centaurea melitensis*).

Due to the urban environment as well as the developed treatment facilities and pump stations, this area does not support a diverse fauna. The most common animal species observed on the site were dogs (*Canis lupus familularis*) and beachy ground squirrels (O*tospermophilus beecheyi*). Other common species include western meadowlark (*Sturnella magna*), and mourning doves (*Zenaida macroura*.

### 3.1.2 Animals

Due to the chronic disturbances, surrounding industrial uses, major arterial and highway road features, and adjacent construction, this area does not support a diverse fauna. The most common species observed on the site were dogs (Canis lupus familularis) and beachy ground squirrels (*Otospermophilus beecheyi*). Other common species include western meadowlark (*Sturnella magna*), and mourning doves (*Zenaida macroura*). A complete list of species observed on site is included as Appendix A

### 3.1.3 Disturbances

The level of disturbance within the Project APE is severe, and there are no natural habitats within the project APE. The majority of the areas adjacent the APE along the proposed facilities range from landscaped gardens, commercial building and facilities, to compacted unvegetated dirt pads, channel, basins, and roads.

### 3.1.4 Jurisdictional Determination

The result of the jurisdictional determination is that no features subject to jurisdiction by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act; the State Water Quality Control Board under Section 401 of the Clean Water Act, and California Department of Fish and Wildlife under Section 1600 of the Fish and Game Code occur within the APE. Further, no regulatory permitting is required.

## 3.2 Potentially Occurring Listed or Protected Species within the APE

California Department of Fish and Wildlife's CNDDB for the “Prado Dam” USGS 7.5 Minute Quadrangles, and the U.S. Fish and Wildlife Service’s IPac were reviewed, The following is a discussion of the species listed by the databases as occurring within the vicinity of the Project. Note the Species on the U.S. Fish and Wildlife Service's list are in bolded text.

**TABLE 1: SPECIAL STATUS PLANT AND ANIMAL SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCUR WITHIN THE PROJECT AREA (USGS PRADO DAM QUADRANGLE)**

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| *Abronia Villosa* var. *aurita*<br><br>Chaparral sand-verbena | N / N | Grows in sandy, bare areas of chaparral and coastal sage scrub. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Accipiter cooperi* (nesting3)<br><br>Cooper’s hawk | N/N | Oak and riparian woodlands, windrows, open fields. Known to use urban areas, occupying trees among residential and commercial uses. | No Suitable foraging habitat occurs within the APE, Observed on site during field surveys. |
| Accipiter striatus (nesting)<br><br>sharp-shinned hawk | N/N | Variety of residential, chaparral, grassland, sage scrub, crop land, riparian, and oak woodland, windrows, open fields. | Marginally Suitable foraging habitat, however uncommon in the area. Probability of occurrence is low to moderate. |
| ***Agelaius tricolor***<br><br>***Tricolored blackbird*** | **N/N** | **Marshes and grasslands. Breeding colonies requires nearby water, nesting substrate, and open range foraging habitat of natural grassland, woodland, or agricultural cropland.** | No Suitable foraging habitat occurs within the APE, Observed on site during field surveys. |
| *Aimophila ruficeps canescens*<br><br>southern California rufous-crowned sparrow | N / N | Inhabits steep rocky hillsides with grass and forb patches in coastal sage scrub and sparse chaparral. | No Suitable foraging habitat occurs within the APE, Observed on site during field surveys. |
| ***Anaxyrus californicus***<br><br>**Arroyo Toad** | **E/N** | **Anaxyrus californicus prefers sandy or cobbly washes with swift currents and associated upland and riparian habitats, in Southern California and Baja California. An arroyo is also called a wash; it is a dry creek or stream bed. It fills and flows after sufficient rain, but only temporarily during specific seasons. The arroyo toad inhabits these areas alongside rivers with shallow pebble-like rocks near sandy terrains.** | **No suitable habitat for this species occurs within the APE. Therefore probability of occurrence is zero.** |
| *Antrozous pallidus* pallid bat | N/N | Oak and grassland ecotones. Prefers foraging in the open Roosts in attics or rock cracks; in the open, near foliage at night.. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| *Aquila chrysaetos*<br><br>golden eagle | N / DFG fully protected species | Nests in cliff-walled canyons or large trees and nests and winters in rolling foothills mountain areas, sage-juniper flats and desert. | There is no suitable nesting substrate within the project APE, further there is no potential foraging within the APE |
| Ardea alba [Casmerodius albus] (rookery)<br><br>great egret | N/N | Wet areas, fields, margins of open water. | No Suitable foraging habitat occurs within the APE, Observed on site during field surveys.5. |
| *Ardea herodias (rookery)*<br><br>great blue heron | N/N | Wet areas, fields, margins of open water. | No Suitable foraging habitat occurs within the APE, Observed on site during field surveys. |
| ***Asio flammeus* short-eared owl** | **N / N** | **Nests in riparian bottomlands of tall willows and cotton- woods and in belts of live oak paralleling stream courses. Requires adjacent open lands for foraging and the presence of old nests of crows, hawks, or magpies for nests.** | **No suitable habitat occurs within the project APE, therefore, occurrence potential is low.** |
| *Aspidoscelis tigris stejnegeri [Cnemidophorus tigris multiscutatus]*<br><br>coastal (western) whiptail | N/N | Open, often rocky areas with little vegetation or sunny microhabitats within shrub or grassland associations | Limited to no suitable habitat. Probability of this species occurring within the APE is low.. |
| ***Astragalus brauntonii***<br><br>**Braunton's Milk-vetch** | **E/N** | **Astragalus brauntonii is a plant of the coastal prairie grasslands, coastal sage scrub, and chaparral plant communities of the region. It is often found growing in disturbed areas, especially in carbonate soils areas.[** | **The 16 known remaining populations are found in the southwestern Transverse Ranges (eastern Santa Monica Mountains, east end Simi Hills, south base San Gabriel Mountains), northern Peninsular Ranges (northwest side Santa Ana Mountains) — within Los Angeles, Orange, and Ventura Counties The site is outside the known range of this species and there are no suitable soils within the APE. Therefore the probability occurrence is zero.** |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| ***Athene cunicularia*** **burrowing owl** | **N/N** | **Subterranean nester, dependent upon burrowing animals such as ground squirrels and desert tortoise for burrow sites. Inhabits open, dry annual or perennial grasslands as well as deserts and scrublands characterized by low-growing vegetation. Shortgrass prairies, grasslands lowland scrub, agricultural lands, coastal dunes, desert floors, and some artificial open areas. Uses abandoned ground squirrel burrows and artificial structures such as berms, culverts, and underpasses.** | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Atriplex coulteri* Coulter's saltbush | N / N | Grows on ocean bluffs, dunes and ridgetops, as well as in alkaline low places in coastal scrub, valley and foothill grassland between 10 and 440 meters. | No Suitable foraging habitat occurs within the APE, Observed on site during field surveys. |
| *Baeolophus inornatus* *Oak Titmouse* | N/N | It prefers open woodlands of warm, dry oak and oak-pine at low to mid-elevations but can also be found in forests as long as adequate oak trees are present. | No suitable habitat for this species occurs within the APE. Therefore probability of occurrence is zero. |
| Buteo regalis (wintering) ferruginous hawk | N/N | Grasslands and other open terrain of the plains and foothills. Wintering species. Primarily open fields with low vegetation. | No Suitable foraging habitat occurs within the APE, Observed on site during field surveys. |
| *Buteo swainsoni* *Swainson's Hawk* | N/N | Grasslands and other open terrain. | No Suitable foraging habitat occurs within the APE, Observed on site during field surveys.. |
| California Walnut Woodland | N / N | | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur.. |
| *Calochortus weedii* var. *intermedius* intermediate mariposa lily | N / N | Grows on dry, rocky open slopes and rock outcrops between 120-850meters in coastal scrub, chaparral, valley and foothill grassland. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Carduelis lawrencei* Lawrence's Goldfinch | N/N | The typical nesting habitat is dry and open woods that are near both brushy areas and fields of tall annual weeds, usually within 0.5 mi (0.80 km) of a small body of water. It may nest in other habitats, including rural residential areas, but not in deserts or dense forests. Outside the nesting season it occurs in many open habitats including deserts, suburbs, and city parks | This species in not likely to occur during nesting season, however may utilize the area during migration or in winter. Probability of occurrence within the APE is low to moderate. |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| *Carpodacus cassinii*<br><br>*Cassin's Finch* | N/N | Their breeding habitat is coniferous forest in mountains of western North America as far south as northern New Mexico and Arizona; also Southern California near Baja California. They nest in large conifers. They move to lower elevations in winter. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Calypte costae*<br>*Costa's Hummingbird* | N/N | Arid brushy deserts and any nearby gardens of the Southwestern United States and the Baja California Peninsula of Mexico. | Marginally Suitable foraging habitat, however uncommon in the area. Probability of occurrence is low to moderate. |
| *Catostomus santaanae*<br><br>Santa Ana sucker | T / SC | This species is typically fund in small to medium sized streams with width less than 7 meters and depths of a few centimeters to over a meter. Suckers prefer clear water but can tolerate seasonal turbidity and sever periodic flooding. Adults prefer gravel and cobble substrates, but may tolerate sand. Juveniles may prefer sandy substrates. They appear intolerant of highly polluted or highly modified streams. It is endemic to Los Angeles basin south coastal streams. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Chaetodipus [Perognathus] fallax fallax*<br><br>northwestern San Diego pocket mouse | None/None | Coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities Moderately gravelly and rocky substrates, disturbed grassland and open sage scrub vegetation with sandy-loam to loam soils. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Charadrius montanus*<br><br>mountain plover | N/N | Dry upland prairies and plains, semi-desert, bare dirt fields. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Circus cyaneus (nesting)*<br>northern harrier | N/N | Grasslands and other open terrain. Soars over open fields, low perches. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Clemmys marmorata pallida*<br>southwestern pond turtle | SC / SC | This species inhabits permanent or nearly permanent bodies of water in many habitat types below 6000 ft elevation. Requires basking sites such as partially submerged logs, vegetation mats, or open mud banks and suitable nesting sites. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Cnemidophorus hyperythrus*<br><br>orange-throated whiptail | N / SC | Inhabits washes and other sandy areas with patches of brush and rocks with sufficient perennial plants to sustain termite populations in low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| *Coccyzus americanus occidentalis*<br><br>western yellow-billed cuckoo | C / E | Nests in riparian thickets of willow and cottonwood with blackberry, nettles, or wild grape understory along the broad, lower flood-bottoms of larger river systems. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Contopus cooperi*<br><br>*Olive-sided Flycatcher* | N/N | Breeding habitat is coniferous woods across Canada, Alaska and the northeastern and western United States, and other types of wooded area in California. Olive-sided flycatchers are abundant in early post fire landscapes that have burned at high severity.<br><br>This species migrates to Central America and the Andes region of South America. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Corynorhinus townsendii* Townsend's big-eared bat | N/N | A wide variety of habitats including woodlands and arid grasslands. Roosts in mines and caves. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Dendroica petechia brewsteri*<br><br>yellow warbler | N / SC | Most often nests in riparian areas with willows, cotton- woods, aspens, sycamores and alders but also in montane shrubbery in open conifer forests. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Diadophus punctatus modestus*<br><br>San Bernardino ringneck snake | N/N | Chaparral, coastal sage scrub, grassland, riparian, and woodlands | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| ***Dodechahema leptoceras***<br><br>**Slendar-horned Spineflower** | **E/E** | **This plant grows in the silt-rich floodplains and washes of the foothills of the Transverse Ranges and the Peninsular Ranges of southern California. It is known from fewer than 40 reported sightings, many of which were in locations that have since been claimed for development or otherwise altered. About 19 occurrences are believed to exist now.[1] This plant has been recorded in only a few general areas, including Tujunga Wash and the flood lands surrounding the Santa Ana and San Jacinto Rivers** | **There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE** |
| *Dudleya multicaulis*<br><br>many-stemmed dudleya | N/N | Grows in heavy, often clayey soil in chaparral, coastal scrub, valley and foothill grassland between 0 and 790 meters. Endemic to Southern California. | No suitable habitat occurs on the site. Occurrence potential is very low. |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| ***Dipodomys merriammi parvus*** ***San Bernardino kangaroo rat*** | **E/N** | **Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. Prefers sandy loam substrates. Santa Ana River, Cajon Creek Wash, Lytle Creek Wash, City Creek, and upper Etiwanda Wash in San Bernardino County, and sites in western Riverside County** | **There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE** |
| *Egretta thula (rookery)* snowy egret | N/N | Wet areas, fields, margins of open water. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Elanus leucurus (nesting)* white-tailed kite | N/N | Open woodlands and grasslands, windrows. Hovers over open fields. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE. |
| ***Empidonax traillii*** **willow flycatcher** | **E / E** | **Inhabits extensive thickets of low, dense willows on edges of wet meadows, ponds, or backwaters between 2000-8000 elevation.** | **There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE** |
| *Eremophila alpestris actia* California horned lark | N/N | Variety of open habitats, usually where trees and large shrubs are absent. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| ***Eriastrum densifolium*** **ssp.** ***sanctorum*** **Santa Ana River woollystar** | **E / E** | **Grows on sandy soils of riparian floodplains and terraced fluvial deposits between 150 and 610 meters. Formerly known from Orange and San Bernardino Counties but has been extirpated by much of its former range.** | **The site does not contain flood deposited terraces, and therefore, no suitable habitat occurs on the site. There is no potential for this species to occur on the site.** |
| *Euderma maculatum* spotted bat | N/N | Arid deserts, grasslands, and mixed conifer forests. Roosts in rock crevices. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Eumops perotis californicus* California mastiff bat | N/N | Open areas with high cliffs. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Falco columbarius (wintering)* merlin | N/N | Grasslands, coastal sage scrub and estuaries, windrows, open fields. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| *Falco mexicanus (nesting)* prairie falcon | N/N | Grasslands, coastal sage scrub and estuaries. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Falco peregrinus anatum (nesting* peregrine falcon*)* | Delisted/SE | Estuaries, wetlands, and coastal bluffs. Breeding habitat in high cliffs along the coast. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Gila orcutti*<br><br>Arroyo chub | N / N | Inhabits slow moving streams with mud or sand bottoms and emergent vegetation. Feeds on aquatic vegetation and associated invertebrates. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| ***Gymnogyps Californianus***<br><br>***California Condor*** | **E/E** | **Its range includes rocky, open-country scrubland, coniferous forest and oak savanna. Cliffs, rocky outcrops or large trees are used as nest sites (USFWS 1996). It scavenges on the carcasses of large mammals and also feeds on the carcasses of small mammals, but perhaps only where there are sufficient numbers at one site (L. Kiff in litt. 2009). Released birds have become increasingly independent in finding food and may range more than 400 km from release sites (Anon. 1998).** | **Although the APE is within 400 Km of foraging Condors, none have been observed in the area. Further there is no suitable sized carrion for forage within the urbanized area of the project site. The probability of this species occurring within the project APE is zero.** |
| ***Haliaeetus leucocephalus***<br><br>***Bald Eagle*** | **Delisted/N** | **The bald eagle typically requires old-growth and mature stands of coniferous or hardwood trees for perching, roosting, and nesting. Tree species reportedly is less important to the eagle pair than the tree's height, composition and location.[29] Perhaps of paramount importance for this species is an abundance of comparatively large trees surrounding the body of water.** | **There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE** |
| *Icteria virens*<br><br>Yellow-breasted chat | N / N | A summer resident that nests in low, dense riparian growth consisting of willow, black- berry and wild grape. It forages and nests within 10 feet of the ground. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Ixobrychus exilis*<br><br>*Least Bittern* | N/N | These birds nest in large marshes with dense vegetation from southern Canada to northern Argentina. The nest is a well-concealed platform built from cattails and other marsh vegetation. | There is no suitable habitat for this species within the APE. Further the APE is outside the known range for this species. There is no potential for this species to occur within the project APE |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| *Lanius ludovicianus* loggerhead shrike | N/N | Grasslands and open scrub. Forages in open country, using low perches (fences etc.) for scanning, and nests in dense scrub and brush. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Larus californicus (nesting colony* California gull*)* | N/N | Nearly all types of fresh and salt water, cropland, landfills, refuse areas, open lawns. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Lasiurus xanthinus* western yellow bat | N/N | Desert regions of the southwestern U.S., southern California. Capture sites are often associated with water features; open grassy areas and scrub, canyons and riparian areas, orchards. Particular association with palms in oases and ornamental palms in landscaping. | There is no suitable habitat for this species within the APE. Further the APE is outside the known range for this species. There is no potential for this species to occur within the project APE |
| *Lepus californicus bennettii* San Diego black-tailed jackrabbit | N/N | Coastal sage scrub and on the margins between shrub and herbaceous areas. Also know to occur in agricultural and ruderal areas. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Melanerpes lewis Lewis's Woodpecker* | N/N | Three principal habitats are open ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest Breeding: From interior southern British Columbia and southwestern Alberta south to Lewis's Woodpecker range: Arizona and New Mexico, and from coastal California east to Colorado. Virtually the entire Canadian population occurs in British Columbia. Winter: Interior southern British Columbia (casually) south through the western states to northern Mexico, but mainly in the southwestern United Sta | The site is outside the known range of this species and there are no suitable soils within the APE. Therefore the probability occurrence is zero. |
| *Myotis ciliolabrum* small-footed myotis | N/N | Feeds among trees or over brush. Roosts in caves, mines, and in cliff or rock openings. | Probability of this species occurring within the APE is moderate to high. |
| *Myotis yumanensis* Yuma myotis | N/N | Water and wooded canyon bottoms. Roosts in caves and abandoned buildings. | Probability of this species occurring within the APE is moderate. |
| *Neotoma lepida intermedia* San Diego desert woodrat | N/N | Riversidean and coastal sage scrub, chaparral and nonnative grasslands. Shrub and desert habitats, primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| *Nolina cismontana*<br><br>chaparral nolina | N / N | Grows primarily on sand- stone and shale and occasionally gabbro substrates in chaparral and coastal scrub habitats between 140 and 1,275 meters. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Numenius americanus*<br>long-billed curlew | N/N | Coastal estuaries, upland herbaceous areas, croplands, wet areas, open fields, shores of open water. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Nyctinomops Macrotis*<br><br>big free-tailed bat | N/N | Desert habitats. Roosts in rock crevices in cliffs. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Nyctinomops Femorosaccus*<br><br>pocketed free-tailed bat | N/N | Desert habitats. Roosts in rock crevices in cliffs. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Otus flammeolus*<br><br>*Flammulated Owl* | N/N | This species is generally associated with montane forested habitats often with brushy understory. This owl may also occur in forests with mixes of oak, Douglas Fir, white fir, incense cedar, or sugar pine. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Passerella iliaca*<br><br>*Fox Sparrow* | N/N | Fox sparrows commonly breed in coniferous or mixed forests, which have dense undergrowth and shrub. They also breed in woodland thickets, scrub, chaparral, and riparian woodland. During the winter months, fox sparrows are commonly found in forests, forest edges, woodlots, and other woodland habitats that have dense undergrowth | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur.. |
| *Perognathus longimembris brevinasus*<br><br>Los Angeles pocket mouse | N/N | Inhabits open ground of fine sandy composition. Probably prefers sparsely vegetated habitats. | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| *Phalacrocorax auritus*<br>double-crested cormorant | N/N | Lakes, fresh, salt, and estuarine waters | No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur. |
| ***Picoides albolarvatus***<br><br>***White headed woodpecker*** | **N/N** | **Found on mountaintops of the San Gabriel Mountains to San Diego County** | **No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur.** |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| ***Picoides nuttalli***<br><br>***Nuttall's Woodpecker*** | **N/N** | **Preferred habitat is arid to mesic woodlands. In particular, these woodpeckers prefer oak woodlands, although they also occur in riparian sites and chaparral in the most southern parts of its range because of the decrease in oak abundance.** | **No suitable habitat for this species occurs on the site. Probability of occurrence adjacent to the APE is very low.** |
| *Plegadis chihi (rookery site)* white-faced ibis | N/N | Freshwater marshes and brackish areas. | There is no suitable habitat for this species within the APE. There is no potential for this species to occur within the project APE |
| *Pipilo chlorurus* Green-tailed Towhee | N/N | Breeding range covers most of the interior Western United States, with a winter range in Mexico and the southern edge of the Southwestern United States. | The site is outside the known range of this species and there are no suitable soils within the APE. Therefore the probability occurrence is zero |
| ***Polioptila californica californica***<br><br>**Coastal California gnatcatcher** | **T / N** | **Inhabits various successional stages of the sage scrub communities characterized by Artemisia californica, Eriogonum fasciculatum, Encelia farinosa, Salvia spp., and Opuntia spp. CAGN will also utilize chaparral, grassland, and riparian plant communities where they occur adjacent to or intermixed with sage scrub.** | **The site is not within proposed or designated critical habitat for this species. Focused Protocol Survey was conducted for CAGN. The result of this survey it there CAGN is absent from the site.** |
| *Rhaphiomidas terminatus abdominalis*<br><br>Delhi Sands flower- loving fly. | E/N | Wholly or partially consolidated dunes (Delhi soils series), open sand. Fine, sandy soils with sparse vegetation cover of California buckwheat, croton, deerweed, and evening primrose | No Suitable habitat occurs within the Project APE. Therefore the probability of occurrence is zero |
| ***Rana muscosa***<br><br>***Mountain Yellow-legged frog*** | **E/E** | **The frog occurs in mountain creeks, lakes and lakeshores, streams, and pools, preferring sunny areas. It rarely strays far from water. The tadpoles require a permanent water habitat for at least two years while they develop. The frog has been noted at elevations of between about 1,214 and 7,546 feet (370 and 2,300 meters) in Southern California** | **No suitable habitat for this species occurs on the site. Therefore there is no potential for this species to occur.** |
| *Sidalcea neomexicana*<br><br>Salt Spring Checkerbloom | N / N | Grows in alkali springs and marshes in alkali playas, brackish marshes, chaparral, coastal scrub, lower montane coniferous forest and Mojavean desert scrub between 0-1500 meters in elevation. | No Suitable habitat occurs within the Project APE. Therefore the probability of occurrence is zero |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| *Spea [Scaphiopus] hammondi*<br><br>western spadefoot toad | N/N | Seasonal pools in coastal sage scrub, chaparral, and grasslands. | Marginally suitable habitat occurs within the APE. Therefore the probability of occurrence is low. |
| *Sphyrapicus thyroideus*<br><br>*Williamson's Sapsucker* | N/N | Breeding habitat is open forested areas with conifers, mainly ponderosa pine, douglas fir, and grand fir. Subalpine fir and western larch may also be important components of good habitat for these birds.[2] Partially migratory, they breed in western North America from northern Mexico as far north as British Columbia | No Suitable habitat occurs within the Project APE. Therefore the probability of occurrence is zero |
| *Spizella atrogularis*<br><br>Black-chinned Sparrow | N/N | Common in open chaparral in the mountain and foothills of Los Angeles and Santa Barbara Counties. Transient in San Bernardino County. | The APE is outside the typical range for this species. Probability of occurrence is very low. |
| *Spizella breweri*<br><br>Brewer's Sparrow | N/N | This species breeds on sagebrush flats and other open scrubby areas. It winters from just south of the breeding range in south-western USA to central Mexico | The APE is outside the typical range for this species. Probability of occurrence is very low. |
| *Stellula calliope*<br><br>Calliope Hummingbird | N/N | The breeding habitat of calliope hummingbird is varied among open shrub habitats and altitudes. Nesting usually occurs at higher altitudes in the Rocky Mountains. Nests have been observed from as low as 300 m (980 ft) in Washington elevation to the tree line at over 3,000 m (9,800 ft). In Montana, the minimum elevation observed for breeding is 1,200 m (3,900 ft).[4][5] Open montane forest, mountain meadows, and willow and alder thickets may variously serve as breeding grounds. During migration and winter, they also occur in chaparral, lowland brushy areas, deserts and semi-desert regions | The APE is outside the typical range for this species. Probability of occurrence is very low. |

| Scientific and Common Name | Status Federal/State | Typical Habitat | Occurrence Potential |
|---|---|---|---|
| *Strix occidentalis occidentalis*<br><br>California Spotted Owl | Review/N | California spotted owls occur in hardwood, coniferous, and coniferous-hardwood forests. Occupied coniferous habitats include mixed coniferous forests. California red fir and eastside pine forests which are composed of ponderosa pine and/or Jeffrey pine (Pinus jeffreyi). Redwood/California bay (Umbellularia californica), ponderosa pine/hardwood,[20] and live oak-bigcone Douglas-fir (Quercus chrysolepis or Q. agrifolia-Pseudotsuga macrocarpa) are hardwood-mixed coniferous forests used by California spotted owls. They also occur in hardwood habitats including riparian and oak (Quercus sp.) woodlands. For example, in the Tehachapi Mountains of southern California they occurred in stands dominated by canyon live oak (Q. chrysolepis).[ | No suitable habitat for this species occurs on the site. Therefore there is no potential for this species to occur. |
| *Toxostoma lecontei*<br><br>Le Conte's Thrasher | N/N | The typical desert habitat consists of dunes, alluvial fans, and flat to gently rolling hills with shallow washes with sparse vegetation. The vegetation that it may utilize includes low vegetation such as saltbush, creosote, cholla cacti, and Mojave yucca. The range of altitude spans as low as 80 m below sea level (in Death Valley) to as high as 1,600 m, although 500 m above sea level is the average | No suitable habitat for this species occurs on the site. Therefore there is no potential for this species to occur. |
| ***Vireo bellii pusillus***<br><br>**least Bell's vireo** | **E / E** | **Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite. In low riparian, in vicinity of water or in dry river bottoms below 2000 ft.** | **No suitable habitat for this species occurs on the site. Due to the highly disturbed nature of the site, there is no potential for this species to occur.** |

Bold Indicates the species occurs on the U.S. Fish and Wildlife Service's List

# 4.0 RESULTS

The purpose of this report is to assess the biological resources and the potential impacts associated with the Inland Empire Utility Agencies (IEUA) proposed RP5 Liquids Expansion Projects. The Area of Potential Effect (APE) is delineated to encompass the maximum extent of ground disturbance or construction areas required for the proposed projects.

The proposed project occurs entirely within the developed facility, and on a completely disturbed parcel (i.e., closed wastewater treatment plant sites, roads, and pumpstations). The project area no longer supports native plant communities, and the site does not provide suitable habitat for any of the sensitive plant and wildlife species identified in the state and federal data bases as having potential to occur in the general vicinity of the proposed project site. Further, based on habitat requirements for sensitive species identified in these database searches; and the availability and quality of habitats needed by each of the identified sensitive plant and wildlife species; it is determined that the project site does not provide suitable habitat that would support any of the listed species.

The biological analysis for this site included in this section is based on a field reconnaissance visit conducted by Tom Dodson and a (Jacobs) biologist, Lisa Patterson, conducted on September 18, 2023 between 0800 and 1000.

A preliminary jurisdictional delineation was assessed using the Sackett Guideline in order to determine what areas on the project sites will likely be subject to jurisdiction under Sections 404 and 401 of the Clean Water Act. The U.S. Army Corps of Engineers has authority in conjunction with EPA to determine jurisdiction. Additionally, a Jurisdictional Assessment was conducted to determine if project areas would be subject to a Section 1600 Agreement of the Fish and Game Code. The result of this preliminary determination is that there are features withing the project APE that would be subject to the Clean Water Act, and State Lakes and Streambed program.

A list of sensitive species which occur within the USGS – El Prado quadrangle per the California Natural Diversity Data Base (CNDDB), the U.S. Fish and Wildlife and the Service IPaC report. This table includes a discussion of the probability to occur within the project area, and a discussion of their occurrence potential is provided in Appendix B

# 5.0 CONCLUSIONS AND RECOMMENDATIONS

According to protocol and standard practices, the results of this survey will remain valid for the period of one year, or until October 2024, after which time, if the site has not been disturbed in the interim, another survey may be required to determine the persisting absence the above referenced species. Regardless of survey results and conclusions given herein, these species are protected by applicable State and/or federal laws, including but not exclusive to the California Endangered Species Act and Federal Endangered Species Act. As such, if a one is subsequently found on-site or at the time of construction, all activities likely to affect the animal(s) should cease immediately and regulatory agencies should be contacted to determine appropriate management actions. Importantly, nothing given in this report, including recommended mitigation measures, is intended to authorize the incidental take of any listed species during project construction. Such authorization must come from the appropriate regulatory agencies, including CDFG (i.e., authorization under section 2081 of the Fish and Game Code) and USFWS.

Due to either the lack of suitable habitat, or the absence of observations during any of the field surveys, none of the special-status species reported from the CNDDB or the IPAC will be adversely affected by the proposed project.

Finally, there are no streams or drainage features within the project APE that would be subject to Clean Water act or the California Fish & Game Code.

# 6.0 PROPOSED AVOIDANCE AND MINIMIZATION MEASURES

## 6.1 Nesting Birds

The State of California prohibits the “take” of active bird nests. To avoid an illegal take of active bird nests, any grubbing, brushing or tree removal should be conducted outside of the State identified nesting season (nesting season is February 15 through September 1). Alternatively, the site can be evaluated by a qualified biologist prior to initiation of ground disturbance to determine the presence or absence of nesting birds. Active bird nests MUST be avoided during the nesting season. If an active nest is located in the project construction area it will be flagged and a 300-foot buffer placed around it. No activity will occur within the 300 foot buffer until the young have fledged the nest.

# 7.0 REFERENCES

AOU (American Ornithologists'' Union). 1998. Check-List of North American Birds. Seventh Edition. American Ornithologists'' Union, Washington, D.C. 829pp.

Bent, A.C. 1938. Life histories of North American birds of prey. Part 2. U.S. Natl. Mus. Bull. 170. 482pp.

Best, T.L. 1996. Lepus californicus, Mammalian Species, Publication of the American Society of Mammalogists, pp. 1-10.

Blus, L.J. 1996. Effects of pesticides on owls in North America. J. Raptor Research 30: 198-206.

Botelho, E.S. and P.C. Arrowood. 1998. The effect of burrow site use on the reproductive success of a partially migratory population of western burrowing owls (Speotyto cunicularia hypugaea). J. Raptor Research 32: 233-240.

Bronson, F.H. and O.W. Tiemeir. 1958. Reproduction and age distribution of black-tailed jack rabbits in Kansas. Journal of Wildlife Management 22:409-414.

Brown, J.H. and B.A. Harney. 1993. Population and community ecology of heteromyid rodents in temperate habitats. In H.H. Genoways and J.H. Brown (eds.) Biology of the Heteromyidae, Special Publication No. 10 of the American Society of Mammalogists, pages 618-651.

Brylski, P., L. Barkley, B. McKernan, S.J. Montgomery, R. Minnich, and M. Price. 1993. Proceedings of the Biology and Management of Rodents in Southern California Symposium. San Bernardino County Museum, Redlands, California, June 26, 1993. Presented by the Southern California Chapter of the Wildlife Society.

Butts, K.O. 1973. Life history and habitat requirements of burrowing owls in western Oklahoma. Unpublished MS thesis, Oklahoma State University, Stillwater. 188 pp. California Science and Engineering Associates. 1996. Final threatened and endangered species survey, March Air Reserve Base, Riverside County, California.

California Department of Fish and Game
1998. Endangered and Threatened Animals of California, 7pp.

1998. Endangered, Threatened and Rare Plants of California, 13pp.

1995. Staff Report on Burrowing owl mitigation. State of California.

1984. Guidelines for assessing effects of proposed developments on rare and endangered plants and plant communities, 2pp.

1992. Natural communities. (Update of Holland, R., 1986)

CDFG (California Department of Fish and Game). 2005. California's Plants and Animals. Habitat Conservation Planning Branch Web Page. www.dfg.ca.gov/hcpb/species. Sacramento, CA.

California Natural Diversity Data Base (NDDB). 2017 Annotated record search for special animals, plants and natural communities – Guasti, California.

CNPS (California Native Plant Society). 2001. Inventory of Rare and Endangered Plants of California – sixth edition. Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, CA.

Clayton, K.M and J.K. Schmutz. 1999. Is the decline of burrowing owls, Speotyto cunicularia in prairie Canada linked to changes in the Great Plains ecosystems? Bird Conservation International 9: 163-185.

Coulombe, H.N. 1971. Behavior and population ecology of the burrowing owl, Speotyto cunicularia, in the Imperial Valley of California. Condor 73: 162-176.

Coulombe, H.N. 1970. Physiological and physical aspects of temperature regulation in the burrowing owl Speotyto cunicularia. Comp. Biochem. Physiol. 35: 307-337.

DeSante, D.F. and E.D. Ruhlen. 1995. (Draft) A census of burrowing owls in California, 1991-1993.

Edmonds, V.W. 1973. Longevity of the pocket mouse. The Southwestern Naturalist 17:300-301.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1992. *Birds in Jeopardy*. Stanford University Press, Stanford, California.

Eng, L.L., D. Belk and C.H. Eriksen. 1990. California Anostraca: distribution, habitat and status. Journal of Crustacean Biology 10: 247 - 277.

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

Green, G.A. 1983. Ecology of breeding burrowing owls in the Columbia basin, Oregon. M.Sc. Thesis. Oregon State University, Corvallis.

Green, G.A. 1983. Ecology of breeding burrowing owls in the Columbia Basin, Oregon. Unpublished MS thesis, Oregon State University, Corvallis. 51 pp

Green, G.A., R.G. Anthony. 1989. Nesting success and habitat relationships of burrowing owls in the Columbia Basin, Oregon. Condor 91: 347

Grinnell, J. and A.H. Miller. 1944. The Distribution of the Birds of California. Pacific Coast Avifauna Number 27. Copper Ornithological Club, Berkeley, California. Reprinted by Artemisia Press, Lee Vining, California; April 1986. 617 pp.

Hall, E.R. 1981. The Mammals of North America. John Wiley and Sons, New York. 2 Vol. 1181 pp.

Hathaway, S.A. and M.A. Simovich. 1996. Factors affecting the distribution and co-occurrence of two southern Californian anostracans (Branchiopoda), Branchinecta sandiegonensis and Streptocephalus wootonii. Journal of Crustacean Biology 16(4): 669 - 677.

Haug, E.A., B.A. Millsap, and M.S. Martell. 1993. Burrowing Owl (Speotyto cunicularia). In The Birds of North America, No. 130 (A. Poole and F. Gill, Eds.) . Philadelphia: The Academy of Natural Sciences; Washington, D.C.: The American Ornithologists'' Union.

Hayden, P., J.J. Gambino, and R.G. Lindberg. 1966. Laboratory breeding of the little pocket mouse, Perognathus longimembris. Journal of Mammalogy 47:412-423.

Hickman, James C., Ed. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, California.

Hjertaas, D.G. 1997. Recovery plan for the burrowing owl in Canada. Journal of Raptor Research Report 9:107-111.

Holland, Robert F., Ph.D. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game Nongame Heritage Program (now Natural Heritage Division), Sacramento. October.

Holland, V.L. and Keil, David J. 1990. *California Vegetation*, 4th ed. El Corral Publications, San Luis Obispo, California.

James, P.C. and R.H.M. Espie. 1997. Current status of the burrowing owl in North America: an agency survey. Journal of Captor Research Report 9:3-5.

James, P.C., and T.J. Ethier. 1989. Trends in the winter distribution and abundance of burrowing owls in North America. American Birds 43:1224-1225.

Jameson, E.W. Jr. and H.J. Peeters. 1988. California Mammals. University of California Berkeley Press. 403 pp.

Jennings, M. and M. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California* (draft). California Department of Fish and Game.

Kennard, J.H. 1975. Longevity records of North American birds. Bird-banding 46: 55-73.

Lincer, J.L. and K. Steenhof [eds]. 1997. The burrowing owl, its biology and management: including the Proceedings of the First International Symposium. Raptor Research Report Number 9.

Lutz, R.S. and D.L. Plumpton. 1999. Philopatry and nest site reuse by burrowing owls: implications for productivity. J. Raptor Research 33: 149-153.

MacCracken, J.G., D.W. Uresk, and R.M. Hansen. 1985. Vegetation and soils of burrowing owl nest sites in Conata Basin, South Dakota. Condor 87:152-154.

Millsap, B.A. and C. Bear. 1992. Connector-brooding by Florida Burrowing Owls. Wilson Bull. 102: 313-317.

National Geographic Society. 1983. *Field Guide to the Birds of North America*. National Geographic Society, Washington, D.C.

Pacific Southwest Biological Services. 1991. Western Riverside County Multi-species Habitat Conservation Plan.

Patten, M.A., S.J. Myers, C. McGaugh, and J.R. Easton. ca 1992. Los Angeles pocket mouse (Perognathus longimembris brevinasus). Unpublished report by Tierra Madre Consultants, Riverside, California.

Price, M.V. and S.H. Jenkins. 1986. Rodents as seed consumers and dispersers. In Seed Dispersal, Academic Press, Australia, pp. 191-235.

Reichman, O.J. and M.V. Price. 1993. Ecological aspects of heteromyid foraging. In H.H. Genoways and J.H. Brown (eds.) Biology of the Heteromyidae, Special Publication No. 10 of the American Society of Mammalogists, pages 539-574.

Remsen, J.V., Jr. 1978. Bird species of special concern in California. Calif. Dept. Fish and Game, Sacramento. Wildl. Manage. Admin. Rep. No. 78-1. 54pp.

Sawyer, J.O. and Keeler-Wolf, T. 1995. A Manual of California Vegetation. California Native Plant Society. Sacramento, CA.

Sibley, D. 2000. National Audubon Society The Sibley Guide to Birds. Published by Alfred A. Knopf, Inc., New York, NY.

Simovich, M.A. and S.A. Hathaway. 1997. Diversified bet-hedging as a reproductive strategy of some ephemeral pool anostracans (Branchiopoda). Journal of Crustacean Biology 17(1): 38 - 44.

Skinner, M.W. and B. M. Pavlik, eds. 1994. *Inventory of Rare and Endangered Vascular Plants of California,* 5th edition. California Native Plant Society, Sacramento, California.

Stebbins, Robert C. 1985. *A Field Guide to Western Reptiles and Amphibians*. Houghton Mifflin, Boston, Massachusetts.

Terres, John K. 1980. *The Audubon Society Encyclopedia of North American Birds*. Knopf. New York, New York.

Thomsen, L. 1971. Behavior and ecology of burrowing owls on the Oakland Municipal airport. Condor 73: 177-192.

Trulio, L. 1997. Burrowing owl demography and habitat use at two urban sites in Santa Clara County, California. Journal of Raptor Research Report 9:84-89.

Trulio, L.A. 1995. Passive relocation: a method to preserve burrowing owls on disturbed sites. J. Field Ornithology 66: 99-106.

U.S. Department of Agriculture. 1971. *Soil Survey of Contra Costa Area, California*. Soil Conservation Service, Washington, D.C. / USDA-SCS (U.S. Department of Agriculture-Soil Conservation Service). 1980. Soil Survey of Contra Costa County, California. In cooperation with University of California Agricultural Experiment Station.

U.S. Fish and Wildlife Service). 1988. National List of Plant Species That Occur in Wetlands: 1988 National Summary. U.S. Government Printing Office.

Wellicome, T.I. 1997. Reproductive performance of burrowing owls (Speotyto cunicularia): effects of supplemental food. Journal of Raptor Research Report 9: 68-73.

Whitaker, J.O. Jr., W.J. Wrenn, and R.E. Lewis. 1993. Parasites. In H.H. Genoways and J.H. Brown (eds.) Biology of the Heteromyidae, Special Publication No. 10 of the American Society of Mammalogists, pages 386-478.

Zarn, M. 1974. Burrowing Owl, Report No. 11. Habitat management series for unique or endangered species. Bureau of Land Management, Denver. 25 pp.

Zeiner, D.C., W.,F. Laudenslayer, Jr., K.E. Mayer, M. White. Editors. 1990. California's Wildlife. Volume 2. Birds. State of California, Department of Fish and Game. Sacramento, California. 731 pp.

Zeiner, D.C., W.R. Laudenslayer, Jr., K.E. Mayer and M. White. 1990b. California's Wildlife, Volume 3. Mammals. State of California, Department of Fish and Game. Sacramento, California.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. *California's Wildlife.* Volumes I, II, III. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game. Sacramento, CA.

2003. List of California Terrestrial Natural Communities Recognized by The California Natural Diversity Database. Wildlife and Data Analysis Branch, The Vegetation Classification and Mapping Program, Sacramento, CA.

2017. Online Inventory of Rare Plants. http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi.

1995. Hydric Soils of California.

California Fish and Game Code 3503 and 3503.5 state:

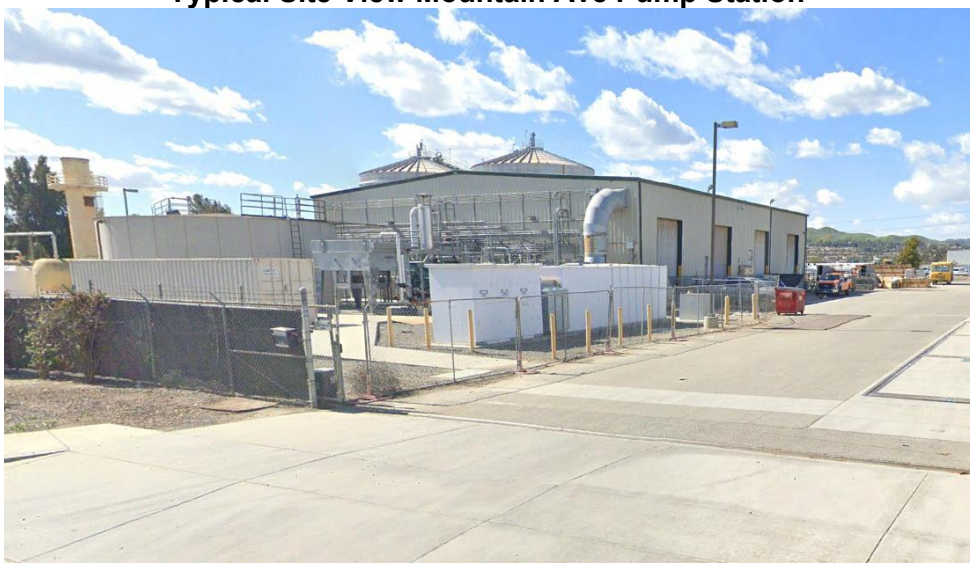
**3503:** *It is unlawful to take, possess or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation made pursuant thereto.*

**3503.5:** *It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.*

# SITE PHOTOGRAPHS

# SITE PHOTOGRAPHS

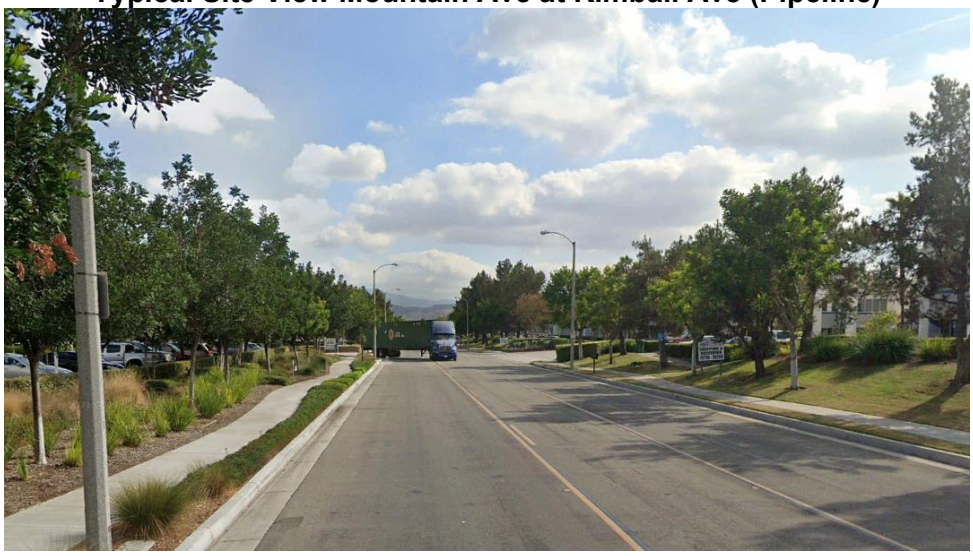
**Typical Site View Mountain Ave Pump Station**



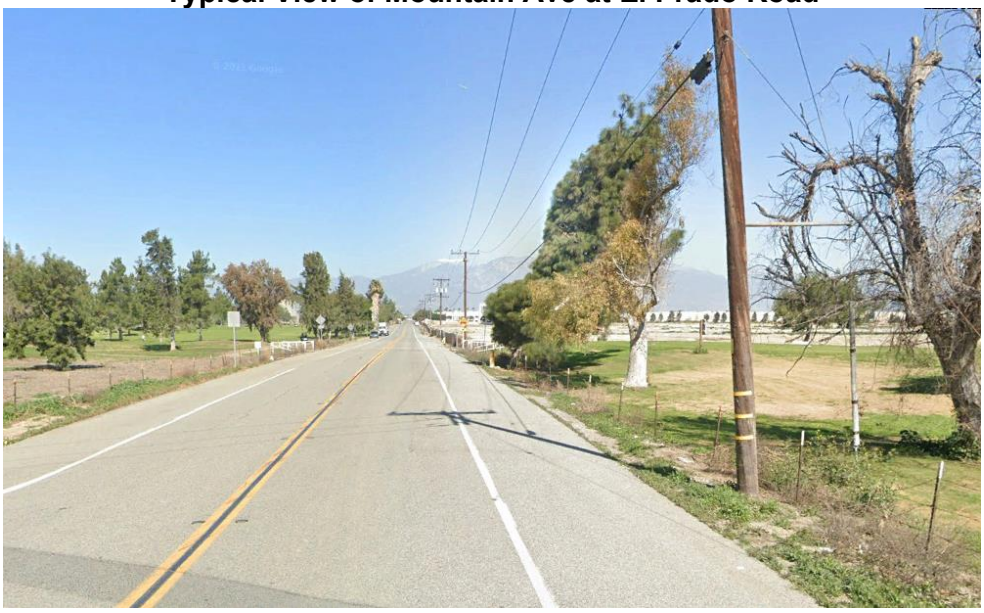
**View of RP#2 Facility**

## SITE PHOTOGRAPHS

**Typical Site View Mountain Ave at Kimball Ave (Pipeline)**



**Typical View of Mountain Ave at El Prado Road**



# APPENDIX A

# SPECIES LIST

# APPENDIX A
# SPECIES LIST

## ANIMAL SPECIES LIST

**Aves Birds**

| | |
|---|---|
| Columbidae | |
| *Columba fasciata* | Pigeon |
| *Zenaida macroura* | Mourning Dove |
| Corvidae | |
| *Corvus brachyrhynchos* | Crow |
| Emberizidae | Sparrow, Warblers, Tanangers |
| *Melospiza melodia* | Song sparrow |
| Fringillidae | |
| *Carpodacus mexicanus* | House Finch |
| Mimidae | |
| *Mimus polyglottos* | Mockingbird |
| Mammals: | |
| Canis lupis familarus | Dog |
| Otospermopholus beacheyi | California Ground Squirrel |

# APPENDIX B

# CNDDB and IPaC Reports

# Selected Elements by Scientific Name

## California Department of Fish and Wildlife

## California Natural Diversity Database

**Query Criteria:** Quad IS (Prado Dam (3311786))

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Abronia villosa var. aurita*** chaparral sand-verbena | PDNYC010P1 | None | None | G5T2? | S2 | 1B.1 |
| ***Accipiter cooperii*** Cooper's hawk | ABNKC12040 | None | None | G5 | S4 | WL |
| ***Agelaius tricolor*** tricolored blackbird | ABPBXB0020 | None | Threatened | G1G2 | S2 | SSC |
| ***Aimophila ruficeps canescens*** southern California rufous-crowned sparrow | ABPBX91091 | None | None | G5T3 | S4 | WL |
| ***Ammodramus savannarum*** grasshopper sparrow | ABPBXA0020 | None | None | G5 | S3 | SSC |
| ***Aquila chrysaetos*** golden eagle | ABNKC22010 | None | None | G5 | S3 | FP |
| ***Asio otus*** long-eared owl | ABNSB13010 | None | None | G5 | S3? | SSC |
| ***Aspidoscelis hyperythra*** orange-throated whiptail | ARACJ02060 | None | None | G5 | S2S3 | WL |
| ***Astragalus brauntonii*** Braunton's milk-vetch | PDFAB0F1G0 | Endangered | None | G2 | S2 | 1B.1 |
| ***Athene cunicularia*** burrowing owl | ABNSB10010 | None | None | G4 | S2 | SSC |
| ***Atriplex coulteri*** Coulter's saltbush | PDCHE040E0 | None | None | G3 | S1S2 | 1B.2 |
| ***Bombus crotchii*** Crotch bumble bee | IIHYM24480 | None | Candidate Endangered | G2 | S2 | |
| ***Bombus pensylvanicus*** American bumble bee | IIHYM24260 | None | None | G3G4 | S2 | |
| ***Buteo swainsoni*** Swainson's hawk | ABNKC19070 | None | Threatened | G5 | S4 | |
| ***California Walnut Woodland*** California Walnut Woodland | CTT71210CA | None | None | G2 | S2.1 | |
| ***Calochortus weedii var. intermedius*** intermediate mariposa-lily | PMLIL0D1J1 | None | None | G3G4T3 | S3 | 1B.2 |
| ***Calystegia felix*** lucky morning-glory | PDCON040P0 | None | None | G1Q | S1 | 1B.1 |
| ***Campylorhynchus brunneicapillus sandiegensis*** coastal cactus wren | ABPBG02095 | None | None | G5T3Q | S2 | SSC |
| ***Catostomus santaanae*** Santa Ana sucker | AFCJC02190 | Threatened | None | G1 | S1 | |
| ***Centromadia pungens ssp. laevis*** smooth tarplant | PDAST4R0R4 | None | None | G3G4T2 | S2 | 1B.1 |

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Coccyzus americanus occidentalis*** western yellow-billed cuckoo | ABNRB02022 | Threatened | Endangered | G5T2T3 | S1 | |
| ***Coturnicops noveboracensis*** yellow rail | ABNME01010 | None | None | G4 | S2 | SSC |
| ***Crotalus ruber*** red-diamond rattlesnake | ARADE02090 | None | None | G4 | S3 | SSC |
| ***Dudleya multicaulis*** many-stemmed dudleya | PDCRA040H0 | None | None | G2 | S2 | 1B.2 |
| ***Elanus leucurus*** white-tailed kite | ABNKC06010 | None | None | G5 | S3S4 | FP |
| ***Empidonax traillii extimus*** southwestern willow flycatcher | ABPAE33043 | Endangered | Endangered | G5T2 | S3 | |
| ***Emys marmorata*** western pond turtle | ARAAD02030 | None | None | G3G4 | S3 | SSC |
| ***Eriastrum densifolium ssp. sanctorum*** Santa Ana River woollystar | PDPLM03035 | Endangered | Endangered | G4T1 | S1 | 1B.1 |
| ***Eumops perotis californicus*** western mastiff bat | AMACD02011 | None | None | G4G5T4 | S3S4 | SSC |
| ***Icteria virens*** yellow-breasted chat | ABPBX24010 | None | None | G5 | S4 | SSC |
| ***Laterallus jamaicensis coturniculus*** California black rail | ABNME03041 | None | Threatened | G3T1 | S2 | FP |
| ***Lepidium virginicum var. robinsonii*** Robinson's pepper-grass | PDBRA1M114 | None | None | G5T3 | S3 | 4.3 |
| ***Monardella australis ssp. jokerstii*** Jokerst's monardella | PDLAM18112 | None | None | G4T1? | S1? | 1B.1 |
| ***Oncorhynchus mykiss irideus pop. 10*** steelhead - southern California DPS | AFCHA0209J | Endangered | Candidate Endangered | G5T1Q | S1 | |
| ***Phrynosoma blainvillii*** coast horned lizard | ARACF12100 | None | None | G4 | S4 | SSC |
| ***Polioptila californica californica*** coastal California gnatcatcher | ABPBJ08081 | Threatened | None | G4G5T3Q | S2 | SSC |
| ***Pseudognaphalium leucocephalum*** white rabbit-tobacco | PDAST440C0 | None | None | G4 | S2 | 2B.2 |
| ***Sidalcea neomexicana*** salt spring checkerbloom | PDMAL110J0 | None | None | G4 | S2 | 2B.2 |
| ***Southern California Arroyo Chub/Santa Ana Sucker Stream*** Southern California Arroyo Chub/Santa Ana Sucker Stream | CARE2330CA | None | None | GNR | SNR | |
| ***Southern Cottonwood Willow Riparian Forest*** Southern Cottonwood Willow Riparian Forest | CTT61330CA | None | None | G3 | S3.2 | |
| ***Southern Sycamore Alder Riparian Woodland*** Southern Sycamore Alder Riparian Woodland | CTT62400CA | None | None | G4 | S4 | |

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| ***Southern Willow Scrub*** | CTT63320CA | None | None | G3 | S2.1 | |
| Southern Willow Scrub | | | | | | |
| ***Spea hammondii*** | AAABF02020 | None | None | G2G3 | S3S4 | SSC |
| western spadefoot | | | | | | |
| ***Symphyotrichum defoliatum*** | PDASTE80C0 | None | None | G2 | S2 | 1B.2 |
| San Bernardino aster | | | | | | |
| ***Vireo bellii pusillus*** | ABPBW01114 | Endangered | Endangered | G5T2 | S3 | |
| least Bell's vireo | | | | | | |

**Record Count: 45**

# IPaC resource list

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

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



## Location

San Bernardino County, California


## Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

# Endangered species

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

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

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

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

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

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

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



1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

## Birds

| NAME | STATUS |
|---|---|
| Coastal California Gnatcatcher *Polioptila californica californica*<br>Wherever found<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/8178 | Threatened |
| Least Bell's Vireo *Vireo bellii pusillus*<br>Wherever found<br>There is **final** critical habitat for this species. Your location overlaps the critical habitat.<br>https://ecos.fws.gov/ecp/species/5945 | Endangered |
| Southwestern Willow Flycatcher *Empidonax traillii extimus*<br>Wherever found<br>There is **final** critical habitat for this species. Your location overlaps the critical habitat.<br>https://ecos.fws.gov/ecp/species/6749 | Endangered |

## Fishes

| NAME | STATUS |
|---|---|
| Santa Ana Sucker *Catostomus santaanae*<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/3785 | Threatened |

## Insects

| NAME | STATUS |
|---|---|
| Monarch Butterfly Danaus plexippus<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/9743 | Candidate |

## Flowering Plants

| NAME | STATUS |
|---|---|
| San Diego Ambrosia Ambrosia pumila<br>Wherever found<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/8287 | Endangered |
| Slender-horned Spineflower Dodecahema leptoceras<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/4007 | Endangered |
| Thread-leaved Brodiaea Brodiaea filifolia<br>Wherever found<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/6087 | Threatened |



## Critical habitats

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

This location overlaps the critical habitat for the following species:

| NAME | TYPE |
|---|---|
| Least Bell's Vireo Vireo bellii pusillus<br>https://ecos.fws.gov/ecp/species/5945#crithab | Final |
| Southwestern Willow Flycatcher Empidonax traillii extimus<br>https://ecos.fws.gov/ecp/species/6749#crithab | Final |

# Bald & Golden Eagles

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

**There are bald and/or golden eagles in your project area.**

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|

Bald Eagle *Haliaeetus leucocephalus*
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds Jan 1 to Aug 31

Golden Eagle *Aquila chrysaetos*
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Breeds Jan 1 to Aug 31

# Probability of Presence Summary



The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence (■)**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

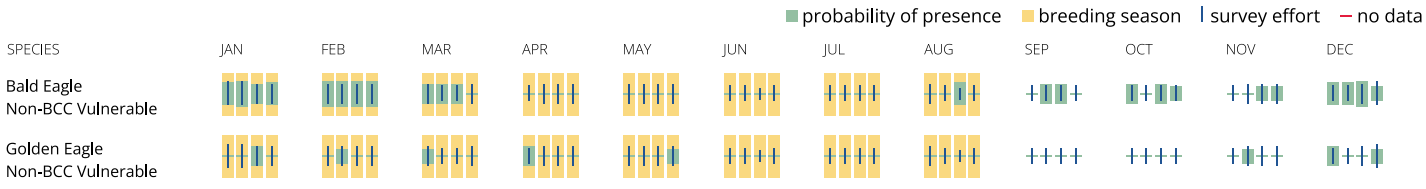
**Breeding Season (■)**
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort (|)**
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**No Data (–)**
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.




**What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?**

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?**

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.



# Migratory birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

**The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location.** To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|
| Allen's Hummingbird Selasphorus sasin<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9637 | Breeds Feb 1 to Jul 15 |
| Bald Eagle Haliaeetus leucocephalus<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. | Breeds Jan 1 to Aug 31 |
| Belding's Savannah Sparrow Passerculus sandwichensis beldingi<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/8 | Breeds Apr 1 to Aug 15 |
| Black Skimmer Rynchops niger<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/5234 | Breeds May 20 to Sep 15 |

| | |
|---|---|
| **Black Tern** *Chlidonias niger*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/3093 | Breeds May 15 to Aug 20 |
| **Bullock's Oriole** *Icterus bullockii*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds Mar 21 to Jul 25 |
| **California Gull** *Larus californicus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Mar 1 to Jul 31 |
| **California Thrasher** *Toxostoma redivivum*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Jan 1 to Jul 31 |
| **Clark's Grebe** *Aechmophorus clarkii*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Jun 1 to Aug 31 |
| **Common Yellowthroat** *Geothlypis trichas sinuosa*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/2084 | Breeds May 20 to Jul 31 |
| **Golden Eagle** *Aquila chrysaetos*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br>https://ecos.fws.gov/ecp/species/1680 | Breeds Jan 1 to Aug 31 |
| **Lawrence's Goldfinch** *Carduelis lawrencei*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9464 | Breeds Mar 20 to Sep 20 |
| **Nuttall's Woodpecker** *Picoides nuttallii*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/9410 | Breeds Apr 1 to Jul 20 |
| **Oak Titmouse** *Baeolophus inornatus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9656 | Breeds Mar 15 to Jul 15 |
| **Olive-sided Flycatcher** *Contopus cooperi*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/3914 | Breeds May 20 to Aug 31 |
| **Western Grebe** *aechmophorus occidentalis*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/6743 | Breeds Jun 1 to Aug 31 |
| **Wrentit** *Chamaea fasciata*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Mar 15 to Aug 10 |



# Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence (■)**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

**Breeding Season** (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

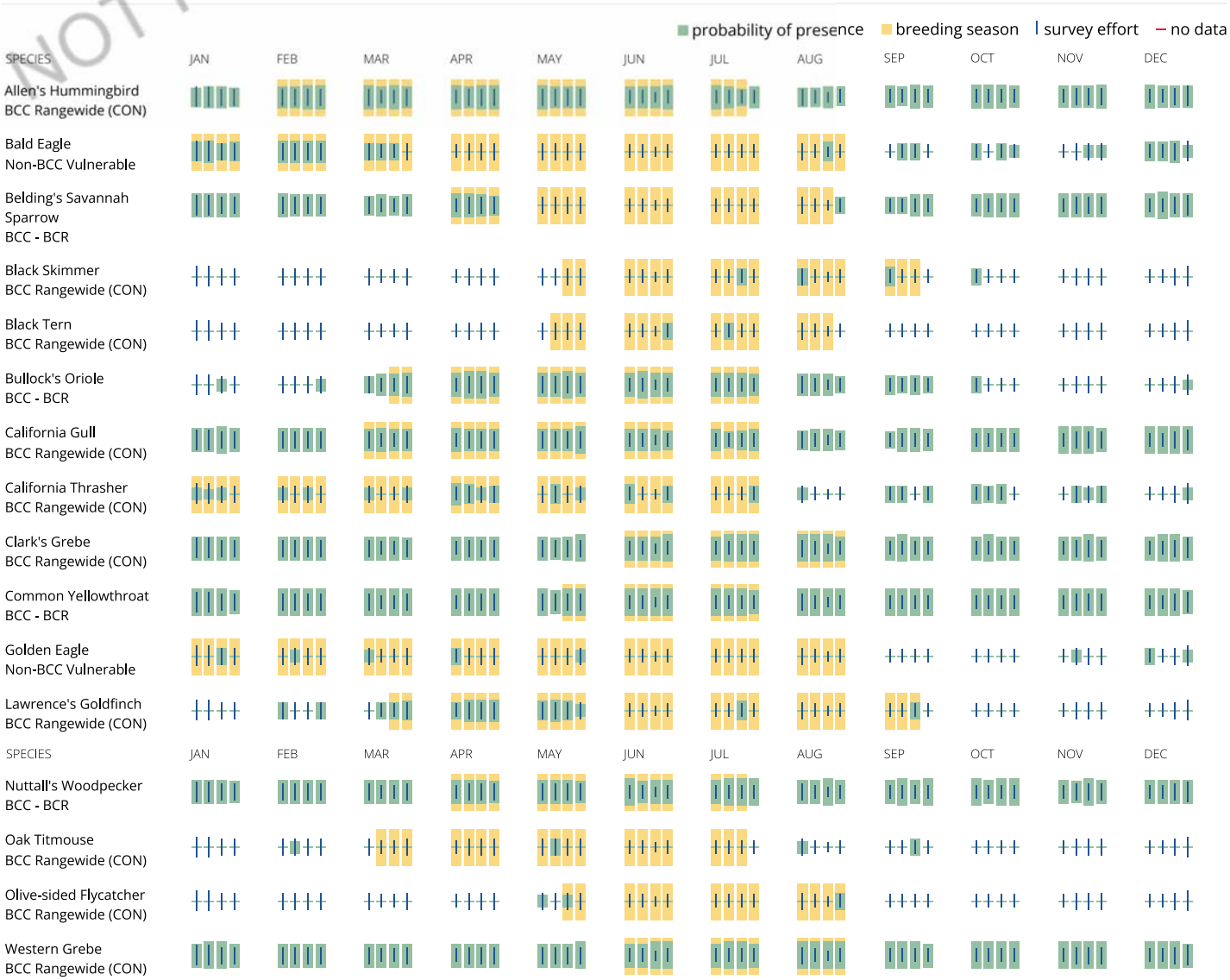
**Survey Effort** (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**No Data** (–)
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Wrentit
BCC Rangewide (CON)

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

**Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

**What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

**Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence

of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

# Facilities

## National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

## Fish hatcheries

There are no fish hatcheries at this location.



# Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

- PEM1/SSCh
- PEM1Ah
- PEM1A
- PEM1Ax
- PEM1Cx
- PEM1Ch

FRESHWATER FORESTED/SHRUB WETLAND

- PFOCh
- PFOC
- PFO/SSCh
- PSSCx
- PSSC
- PFOCx
- PFOAx

FRESHWATER POND

- PUBKx
- PUBFx
- PUBHx
- PUSCx
- PUSAx
- PUS/EM1Ax
- PUSCr
- PUBHr

RIVERINE

- R2UBHx

R4SBAx
R4SBA
R4SBCx
R4SBJ

A full description for each wetland code can be found at the National Wetlands Inventory website

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

**Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

**Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# APPENDIX 4

# CULTURAL REPORT

**IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES**

# RP-5 LIQUIDS TREATMENT EXPANSION (EN19001) OFF-SITE FACILITY PROJECTS

**Cities of Chino and Chino Hills**
**San Bernardino County, California**

**For Submittal to:**

Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91710
*and*
State Water Resources Control Board
1001 I Street/P.O. Box 944212
Sacramento, CA 94244

**Prepared for:**

Tom Dodson & Associates
2150 N. Arrowhead Avenue
San Bernardino, CA 92405

**Prepared by:**

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Bai "Tom" Tang, Principal Investigator, History/Architectural History
Michael Hogan, Principal Investigator, Archaeology
Nicole Raslich, Archaeologist/Report Writer
Sal Boites, Archaeologist

November 3, 2023

CRM TECH Project No. 4035
USGS Prado Dam, Calif., 7.5' (1:24,000) quadrangle
Santa Ana del Chino land grant; T2-3S R7-8W, San Bernardino Baseline and Meridian
**Keywords:** western San Bernardino Valley; Phase I survey; no "historic properties" or "historical resources" affected

## EXECUTIVE SUMMARY

Between June and October 2023, at the request of Tom Dodson & Associates, CRM TECH performed a Phase I cultural resources survey on the Area of Potential Effects (APE) for the proposed Inland Empire Utilities Agency (IEUA) RP-5 Liquids Treatment Expansion (EN19001) Off-Site Facility Projects in the Cities of Chino and Chino Hills, San Bernardino County, California. The undertaking entails the installation of approximately 1.15 linear miles of dual force main pipeline, the construction of a new lift station along the pipeline alignment, and modifications to the existing RP-2 Lift Station and Butterfield Ranch Pump Station.

The APE for the undertaking is delineated to encompass the maximum extent of ground disturbance required by the project design, both horizontally and vertically. Horizontally, the APE consists of the proposed pipeline right-of-way, which coincides with the Mountain Avenue (formerly Palmetto Avenue) right-of-way from Kimball Avenue to El Prado Road, and three small areas within the boundaries of the Solids Handling Facility at 16168 Mountain Avenue, Regional Plant No. 2 (RP-2) at 16400 El Prado Road, and the Butterfield Ranch Pump Station at 17454 Brookwood Lane. The vertical extent of the APE will not exceed ten feet below ground surface except for a wet well at the new lift station that may reach up to 30 feet in depth. The entire APE lies in a portion of the Santa Ana del Chino land grant as well as various sections of Townships 2-3 South, Ranges 7-8 West, San Bernardino Baseline and Meridian.

The study is a part of the environmental review process for the undertaking, as required by the IEUA pursuant to the California Environmental Quality Act (CEQA). As the undertaking may require federal funding administered by the State Water Resources Control Board (SWRCB), the study was designed to comply with both CEQA and Section 106 of the National Historic Preservation Act (NHPA). The purpose of the study is to provide the SWRCB and the IEUA with the necessary information and analysis to determine whether the undertaking would have an adverse effect on any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Calif. Title 14 CCR §15064.5(a)(1)-(3), that may exist within the APE.

In order to accomplish this objective, CRM TECH conducted a cultural resources records search, pursued historical and geoarchaeological background research, contacted Native American representatives, and carried out a systematic field survey. The records search results indicate that four sites from the historic period, designated 36-025445, 36-033081, 36-033112, and 36-033113 in the California Historical Resources Inventory, were previously recorded as lying adjacent to the proposed pipeline route. The field survey reveals that Site 36-025445, a former dairy farm, has since been removed during a recent redevelopment project.

Sites 36-033112 and 36-033113, consisting of the archaeological remains of two other dairy farms, may survive as recorded on adjacent land, and Site 36-033081, encompassing the entire 1,500-acre area of the California Institution for Men, was confirmed to be extant adjacent to the northern end of the pipeline route. However, none of the buildings or other features recorded at Site 36-033081 is located within a half-mile of the undertaking, while Sites 36-033112 and 36-033113, being archaeological remains, are not subject to visual, atmospheric, or other indirect effects from the undertaking. Because the undertaking has no potential for any effect on their current condition and character, either directly or indirectly, these three sites are excluded from the APE.

No other potential "historic properties"/"historical resources" were encountered throughout the course of the study, and the extensively disturbed subsurface sediments in the vertical APE are considered to be relatively low in archaeological sensitivity. Based on these findings, and pursuant to 36 CFR 800.4(d)(1) and Calif. PRC §21084.1, CRM TECH recommends to the SWRCB and the IEUA a conclusion that *no "historic properties" or "historical resources" will be affected by the proposed undertaking*. No further cultural resources investigation is recommended for the undertaking unless project plans undergo such changes as to include areas not covered by this study. However, if buried cultural materials are encountered during earth-moving operations associated with the undertaking, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

## TABLE OF CONTENTS



## LIST OF FIGURES

## INTRODUCTION

Between June and October 2023, at the request of Tom Dodson & Associates, CRM TECH performed a Phase I cultural resources survey on the Area of Potential Effects (APE) for the proposed Inland Empire Utilities Agency (IEUA) RP-5 Liquids Treatment Expansion (EN19001) Off-Site Facility Projects in the Cities of Chino and Chino Hills, San Bernardino County, California (Figs. 1-3). The undertaking entails the installation of approximately 1.15 linear miles of dual force main pipeline, the construction of a new lift station along the pipeline alignment, and modifications to the existing RP-2 Lift Station and Butterfield Ranch Pump Station.

The APE for the undertaking is delineated to encompass the maximum extent of ground disturbance required by the project design, both horizontally and vertically (Figs. 2, 3). Horizontally, the APE consists of the proposed pipeline right-of-way, which coincides with the Mountain Avenue (formerly Palmetto Avenue) right-of-way from Kimball Avenue to El Prado Road, and three small areas within the boundaries of the Solids Handling Facility at 16168 Mountain Avenue, Regional Plant No. 2 (RP-2) at 16400 El Prado Road, and the Butterfield Ranch Pump Station at 17454 Brookwood Lane (Fig. 3). The vertical extent of the APE will not exceed ten feet below ground surface except for a wet well at the new lift station that may reach up to 30 feet in depth. The entire APE lies in a portion of the Santa Ana del Chino land grant as well as various sections of Townships 2-3 South, Ranges 7-8 West, San Bernardino Baseline and Meridian (Fig. 2).

The study is a part of the environmental review process for the undertaking, as required by the IEUA pursuant to the California Environmental Quality Act (CEQA). As the undertaking may require

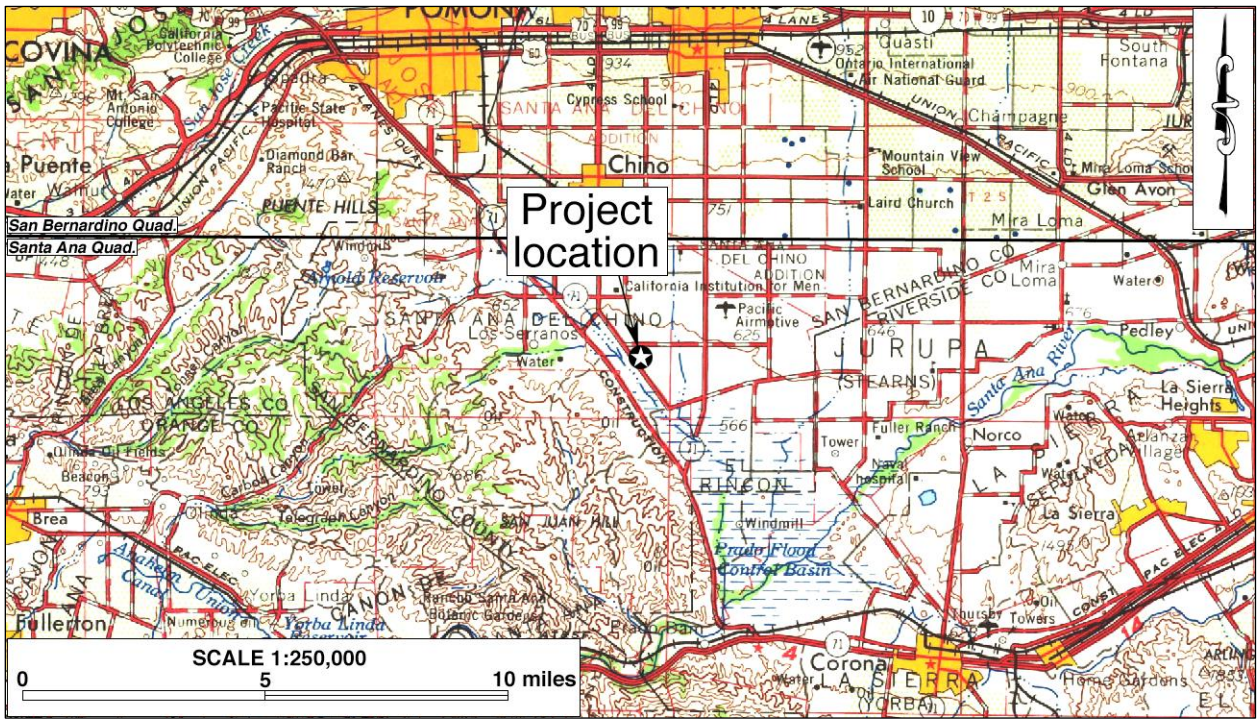



Figure 1. Project location. (Based on USGS San Bernardino and Santa Ana, Calif., 120'x60' quadrangles [USGS 1969; 1979])

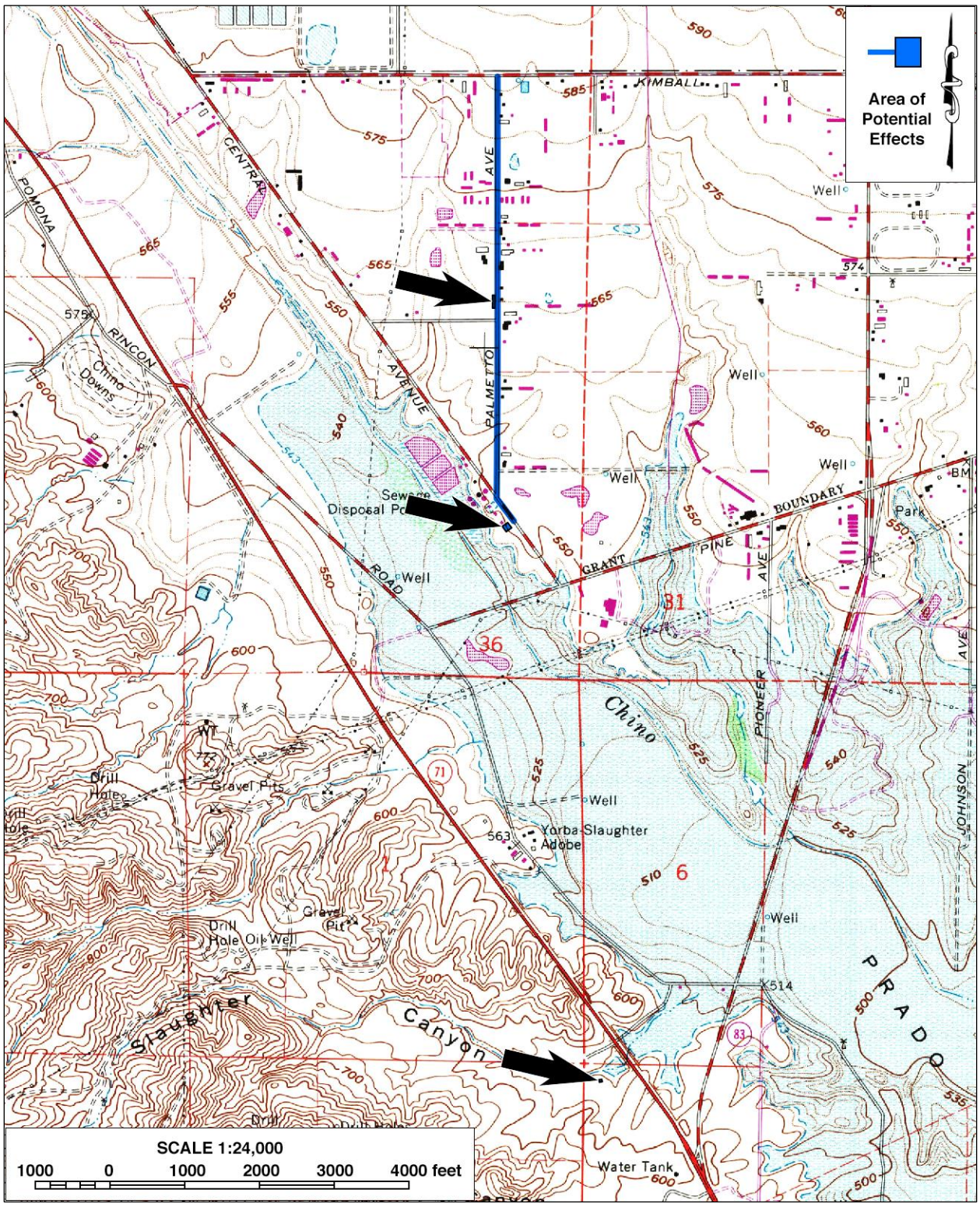



Figure 2. Area of Potential Effects. (Based on Prado Dam, Calif., 7.5' quadrangle [USGS 1981])


Figure 3. Recent satellite image of the project vicinity. (Based on Google Earth imagery)

federal funding administered by the State Water Resources Control Board (SWRCB), the study was designed to comply with both CEQA and Section 106 of the National Historic Preservation Act (NHPA). The purpose of the study is to provide the SWRCB and the IEUA with the necessary information and analysis to determine whether the undertaking would have an adverse effect on any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Calif. Title 14 CCR §15064.5(a)(1)-(3), that may exist within the APE.

In order to accomplish this objective, CRM TECH conducted a cultural resources records search, pursued historical and geoarchaeological background research, contacted Native American representatives, and carried out a systematic field survey. The following report is a complete account of the methods, results, and conclusion of the study. Personnel who participated in the study are named in the appropriate sections below, and their qualifications are provided in Appendix 1.

## SETTING

### CURRENT NATURAL SETTING

The Cities of Chino and Chino Hills are located on the southwestern rim of the San Bernardino Valley, a broad inland valley surrounded by the San Gabriel and San Bernardino mountain ranges on the north and a series of low rocky hills on the southeast and the southwest, including the Chino Hills (Fig. 1). Geographically, the San Bernardino Valley comprises a gently sloping alluvial fan extending from the foothills of the mountain ranges to the Santa Ana River, the main natural waterway across the valley. The Mediterranean climate of the region is typical of the inland southern California lowlands, featuring hot, dry summers and mild, wet winters. The average annual rainfall in the Chino-Chino Hills area is approximately 12 inches, most of which occurs typically between November and April.

The APE lies on the southern outskirts of Chino and Chino Hills, straddling the city boundary, and near the Prado Reservoir. All four components of the APE are situated on extensively disturbed soils, with little vestige of the native landscape remaining. The pipeline route, as mentioned above, is confined within the existing right-of-way for Mountain Avenue, a paved public road. The portions of the APE at the RP-2 Lift Station and the Butterfield Ranch Pump Station, measuring approximately 90x90 feet and 38x32 feet in size respectively, are both occupied by existing pumping equipment. In the latter case, all project activities will occur inside a cinderblock pumphouse. The proposed site of the new lift station on Mountain Avenue consists of an approximately 175x28-foot strip of vacant land at the Solids Handling Facility. While evidently least disturbed among the different components, this portion of the APE has clearly also been leveled in the past and is now covered with imported gravel (Fig. 4).

The surrounding land uses were historically dominated by agriculture, especially dairy farming, but are characteristic of its suburban setting today. The PR-2 facility is adjacent to the El Prado Golf Courses and open space along the Chino Creek, the Butterfield Ranch Pump Station is on the edge of a residential neighborhood, while the pipeline alignment is flanked by the same golf courses to the south of the Mountain Avenue lift station site and industrial/commercial properties of recent vintage to its north, with the grounds of the California Institution for Men, a state prison compound, lying

Figure 4. Typical landscape at the proposed lift station site on Mountain Avenue, view to the north. (Photograph taken on September 8, 2023)

further to the north (Fig. 3). Elevations in the APE range approximately 550 feet above mean sea level at the RP-2 Lift Station to 585 feet at the northern end of the pipeline route. The remnants of the native vegetation in and near the APE belong to the Coastal Sage Scrub Plant Community, including sagebrush, sage, mule fat, coyote brush, buckwheat, sycamore, willow, and white and coast live oaks.

## CULTURAL SETTING

### Prehistoric Context

The earliest evidence of human occupation in inland southern California, or the Inland Empire, was discovered below the surface of an alluvial fan in the northern portion of the Lakeview Mountains, overlooking the San Jacinto Valley, with radiocarbon dates clustering around 9,500 B.P. (Horne and McDougall 2008). Another site found near the shoreline of Lake Elsinore, close to the confluence of Temescal Wash and the San Jacinto River, yielded radiocarbon dates between 8,000 and 9,000 B.P. (Grenda 1997). Additional sites with isolated Archaic dart points, bifaces, and other associated lithic artifacts from the same age range have been found in the nearby Cajon Pass area of the San Bernardino Mountains, typically atop knolls with good viewsheds (Basgall and True 1985; Goodman and McDonald 2001; Goodman 2002; Milburn et al. 2008).

The cultural history of southern California has been summarized into numerous chronologies, including those developed by Chartkoff and Chartkoff (1984), Warren (1984), and others. Specifically, the prehistory of the Inland Empire has been addressed by O'Connell et al. (1974),

McDonald et al. (1987), Keller and McCarthy (1989), Grenda (1993), Goldberg (2001), and Horne and McDougall (2008). Although the beginning and ending dates of the recognized cultural horizons vary among different parts of the region, the general framework of the prehistory of the Inland Empire can be broken into three primary periods:

- Paleoindian Period (ca. 18,000-9,000 B.P.): Native peoples of this period created fluted spearhead bases designed to be hafted to wooden shafts. The distinctive method of thinning bifaces and spearhead preforms, by removing long, linear flakes, leaves diagnostic Paleoindian markers at tool-making sites. Other artifacts associated with the Paleoindian toolkit include choppers, cutting tools, retouched flakes, and perforators. Sites from this period are very sparse across the landscape and most are deeply buried.
- Archaic Period (ca. 9,000-1,500 B.P.): Archaic sites are characterized by abundant lithic scatters of considerable size with many biface thinning flakes, bifacial preforms broken during manufacture, and well-made groundstone bowls and basin metates. As a consequence of making dart points, many biface thinning waste flakes were generated at individual production stations, which is a diagnostic feature of Archaic sites.
- Late Prehistoric Period (ca. 1,500 B.P.-contact): Sites from this period typically contain small lithic scatters from the manufacture of small arrow points, expedient groundstone tools such as tabular metates and unshaped manos, wooden mortars with stone pestles, acorn or mesquite bean granaries, ceramic vessels, shell beads suggestive of extensive trading networks, and steatite implements such as pipes and arrow shaft straighteners.

**Ethnohistoric Context**

The Chino-Chino Hills area is situated on the eastern edge of the traditional territory of the Gabrielino, a Takic-speaking people who were considered among the most populous and powerful ethnic group in aboriginal southern California (Bean and Smith 1978:538). The Gabrielino's territory spanned from San Clemente Island along the coast to the present-day San Bernardino-Riverside area and south into southern Orange County, and their influence spread as far as the San Joaquin Valley, the Colorado River, and Baja California. The leading ethnographic sources on Gabrielino culture and history include Bean and Smith (1978), Miller (1991), and McCawley (1996). The following summary is based mainly on these sources.

Prior to European contact, native subsistence practices were defined by the varying surrounding landscape and primarily based on the cultivating and gathering of wild foods, hunting, and fishing, exploiting nearly all the resources available in a highly developed seasonal mobility system. In inland areas, the predominant food sources included acorns, piñon nuts, other seeds, roots, wild fruits/berries, and wild onions. Medicinal and ceremonial plants such as yerba buena, elderberry, and sage were typically cultivated near villages. Common game animals included deer, antelope, rabbits, wood rats, fish, and waterfowl. Coastal Gabrielino utilized marine resources and had an advanced maritime navigation technology with an emphasis on the *ti'at*, the plank canoe used by only a handful of groups in North America (Gamble 2002).

Both inland and coastal Gabrielino populations had a variety of technological skills that they used to acquire subsistence, shelter, and medicine or to create ornaments and decorations. Common tools included manos and metates, mortars and pestles, hammerstones, fire drills, awls, arrow

straighteners, stone knives and scrapers. These lithic tools were made from locally sourced material as well as those procured through trade or travel. They also used wood, horn, and bone spoons and stirrers, as well as baskets for winnowing, leaching, grinding, transporting, parching, storing, and cooking. However, much of this material cultural, elaborately decorated, does not survive in the archaeological record. As usual, the main items found archaeologically relate to subsistence activities.

The intricacies of Gabrielino social organization are not well known, although evidence suggests the existence of a moiety system in which various clans belonged to one or the other of two main social/ cultural divisions. There also seems to have existed at least three hierarchically ordered social classes, topped with an elite class, consisting of the chiefs, their immediate families, and the very rich. Some individuals owned land, and property boundaries were marked by the owner's personalized symbol. Villages were politically autonomous, composed of nonlocalized lineages, each with its own leader. The dominant lineage's leader was usually the village chief, whose office was generally hereditary through the male line. Often several villages were allied under the leadership of a single chief. The villages did engage in warfare against one another, resulting in what some consider to be a state of enmity between coastal and inland Gabrielino groups.

As early as 1542, the Gabrielino were in contact with the Spanish during the historic expedition of Juan Rodríguez Cabrillo, but it was not until 1769 that the Spaniards took steps to colonize Gabrielino territory. Shortly afterwards, most of the Gabrielino people were incorporated into Mission San Gabriel and other missions in southern California. Due to forced labor, dietary deficiencies, introduced diseases, and forceful reduction, Gabrielino population dwindled rapidly. By 1900, they had almost ceased to exist as a culturally identifiable group (Bean and Smith 1978:540). In recent decades, however, there has been a renaissance of Native American activism and cultural revitalization among groups of Gabrielino descendants, including the reconstruction and utilization of *ti'at* and incorporating the ethnographic names *Kizh* and *Tongva* into official documentation (Stickel 2016).

**Historic Context**

The present-day State of California, known historically as Alta California, was claimed by Spain in the late 18th century, and the first European explorers traveled through the area as early as the 1770s (Beck and Haase 1974:15). For more than half a century afterwards, however, the arid inland region of the remote province received little attention from the Spanish colonizers, who concentrated their efforts in the coastal regions. Following the establishment of Mission San Gabriel in 1771, the Chino area became one of the mission's 24 principal cattle ranches, known as Rancho Santa Ana del Chino at least by 1834 (Gunther 1984:111), but no Europeans are known to have settled in the area until the late 1830s.

After gaining independence from Spain in 1821, the Mexican government began to dismantle the mission system in 1834 in Alta California through the process of secularization. During the next 12 years, former mission ranchos throughout Alta California were surrendered to the Mexican government, and subsequently divided and granted to various prominent citizens of the province. In 1841, Rancho Santa Ana del Chino was granted to Antonio Maria Lugo, an influential figure in the pueblo of Los Angeles at the time. By 1856, Lugo's son-in-law Isaac Williams, a Yankee-turned

*ranchero*, had acquired all interest in the rancho, and developed it into a prosperous agricultural empire. In addition to cattle raising, Williams' ranch also boasted wheat fields, vineyards, fruit orchards, a flour mill, and a soap factory (Schuiling 1984:34).

The American annexation of Alta California in 1848 brought waves of American immigrants into the once sparsely populated territory. In the 1880s, spurred by the completion of the Southern Pacific Railroad and the competing Santa Fe Railroad, a land boom swept through much of southern California. A large number of towns, surrounded by irrigated farmland, were laid out in the San Bernardino Valley before the end of the 19th century. The townsite of Chino was laid out in 1887 by Richard Gird, who had purchased the former Williams ranch in 1881 (Schuiling 1984:84). In the meantime, Gird built up a herd of 200 dairy cows on the ranch, and thus started the Chino area's long history as the dairy center of southern California (*ibid.*). Around the turn of the century, however, the area was better known for the cultivation of sugar beets and the industrial production of sugar (Slawson 1998:8-9). In the wake of the financial failure of Gird's enterprises in the 1890s, the Chino ranch was gradually subdivided into smaller farms and ranches. With increased population from new settlers, the town of Chino became an incorporated city in 1910.

During the post-WWII years, with the metropolis of Los Angeles embarking on a rapid expansion, displaced dairy farmers flocked into the Chino area in the 1940s-1950s, greatly contributing to the establishment of milk as the leading agricultural product in both San Bernardino and Riverside Counties. In recognition of the importance of its agricultural economy, the County of San Bernardino officially designated the Chino Basin as an agricultural reserve. Immediately to the west of the Chino Basin, the principal land use in the rugged Chino Hills remained cattle ranching, much as it had been during earlier periods. Starting in the 1990s, the Chino Basin agricultural reserve was incrementally dismantled, losing the majority of its dairies and other agricultural enterprises to an ever-increasing demand for affordable housing. As elsewhere in southern California, urban expansion and residential development have now assumed a dominant role in regional growth. The City of Chino Hills, which began as a bedroom community in the mid-1970s, was incorporated in 1991. Since then, Chino Hills has been one of the fastest growing urban centers in the San Bernardino Valley.

## RESEARCH METHODS

### CULTURAL RESOURCES RECORDS SEARCH

Due to the location of the APE near the San Bernardino-Riverside county line, the records search for this study was conducted at both the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, and the Eastern Information Center (EIC) at the University of California, Riverside, which are the designated cultural resource records repositories for the two counties. Nina Gallardo, CRM TECH archaeologist, completed the recorded search between August 16 and 31, 2023. The purpose of the records search was to compile a complete inventory of previously identified cultural resources and existing cultural resources reports within a one-mile radius of the APE. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or local historical landmarks, as well

as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

## NATIVE AMERICAN PARTICIPATION

On July 7, 2023, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission's Sacred Lands File. Following the NAHC's recommendations and previously established consultation protocol, CRM TECH further contacted 14 tribal representatives in the region in writing on August 14 and by telephone on September 6-13 for additional information on potential Native American cultural resources in or near the APE. The correspondence between CRM TECH and the Native American representatives is attached to this report in Appendix 2.

## HISTORICAL BACKGROUND RESEARCH

Historical background research for this study was conducted by CRM TECH principal investigator/ historian Bai "Tom" Tang on the basis of published literature in local and regional history, U.S. Geological Survey (USGS) topographic maps dated 1902-1981, and aerial/satellite photographs taken in 1938-2023. The maps are accessible in digital format at the website of the USGS, while the aerial and satellite photographs are available at the Nationwide Environmental Title Research (NETR) Online website and through the Google Earth software.

## FIELD SURVEY

On September 8, 2023, CRM TECH archaeologist Sal Boites carried out the field survey of the APE. The portions of the APE within the existing facility sites were surveyed on foot at an intensive level. In light of the limited sizes of these three areas, a regular transect system was not necessary for the survey. The proposed pipeline alignment was surveyed mostly at a reconnaissance level by driving along Mountain Avenue and visually inspecting the surrounding ground surface for any indication of cultural resources, with various spots along the project route inspected more closely on foot.

Using these methods, the ground surface in the APE was systematically examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years or older). Visibility of the native ground surface was generally poor (0-10%) due to the presence of pavement, gravel, or existing equipment. In light of the heavily disturbed condition of the surface soil at all locations in the APE and the reduced archaeological sensitivity, the survey methods and the ground visibility were deemed adequate for this study.

## GEOARCHAEOLOGICAL ANALYSIS

As a part of the research procedures, Nicole Raslich conducted a geoarchaeological analysis to assess the APE's potential to contain subsurface cultural deposits from the prehistoric period, which cannot be detected through a standard surface archaeological survey alone. Sources consulted for this purpose included primarily topographic, geologic, and soil maps and reports pertaining to the surrounding area. Findings from these sources were used to develop a geomorphologic profile of the area and to address the archaeological sensitivity of the vertical APE.

## RESULTS AND FINDINGS

### CULTURAL RESOURCES RECORDS SEARCH

The records search results indicate that the various portions of the APE were included in as many as 12 past cultural resources studies completed between 1975 and 2013 (Fig. 5). These studies ranged from large-scale overviews consisting solely of archival research with no field inspection to standard Phase I surveys involving the existing facilities in or near the APE or redevelopment projects on adjacent properties. Together, these past studies evidently covered the entire APE, but none of them included a systematic survey of the APE as a whole (Fig. 5).

Within the one-mile scope of the records search, SCCIC and EIC records identify more than 70 other studies on various tracts of land and linear features, collectively covering approximately 75% of the land. As a result of these and other similar studies in the vicinity, 67 cultural resources, including 10 prehistoric (i.e., Native American) sites, 53 historic-period sites, 3 prehistoric isolates (i.e., localities with fewer than three artifacts), and 1 historic-period isolate, have been identified within the one-mile radius (see App. 3 for locations). Four of the historic-period sites were recorded as lying adjacent to the proposed pipeline route, as listed below in Table 1.

**Table 1. Previously Recorded Cultural Resources Adjacent to the APE**
(See App. 3 for Locations)

| Primary No. | Recorded by/Date | Description |
|---|---|---|
| 36-025445 | Dice 2012 | Former dairy farm, ca 1950s |
| 36-033081 | Cunningham 2016 | California Institution for Men, ca. 1938-1941 |
| 36-033112 | Stropes et al. 2019 | Remains of dairy farm, ca 1950s |
| 36-033113 | Stropes et al. 2019 | Remains of dairy farm, ca 1920s-1930s |

The rest of the historic-period cultural resources recorded within the records search scope included buildings, structural remains, refuse deposits, roads, and irrigation features, all of them typical of the San Bernardino Valley region, while the prehistoric sites and isolates consisted mainly of flaked-stone and groundstone artifacts and, in one case, fire-affected soil and rocks. Other than the four sites listed above in Table 1, none of these localities was found in the immediate vicinity of the APE, the prehistoric resources being concentrated along the base of the Chino Hills and along the Chino Creek (see App. 3). Therefore, none of them require further consideration during this study.

### NATIVE AMERICAN PARTICIPATION

In response to CRM TECH's inquiry, the NAHC reported in the letter dated August 7, 2023, that the Sacred Lands File identified no Native American cultural resources in or near the APE but recommended that local Native American groups be contacted for further information. For that purpose, the NAHC provided a list of potential contacts in the region (see App. 2). Upon receiving the NAHC's response, CRM TECH contacted all 14 of the tribal organizations on the referral list in writing as well as by telephone, as mentioned above. For some of the tribes, the designated spokespersons on cultural resources issues were contacted in lieu of the tribal political leaders on the referral list, as recommended in the past by the tribal government staff. The 14 tribal representatives contacted during this study are listed below:

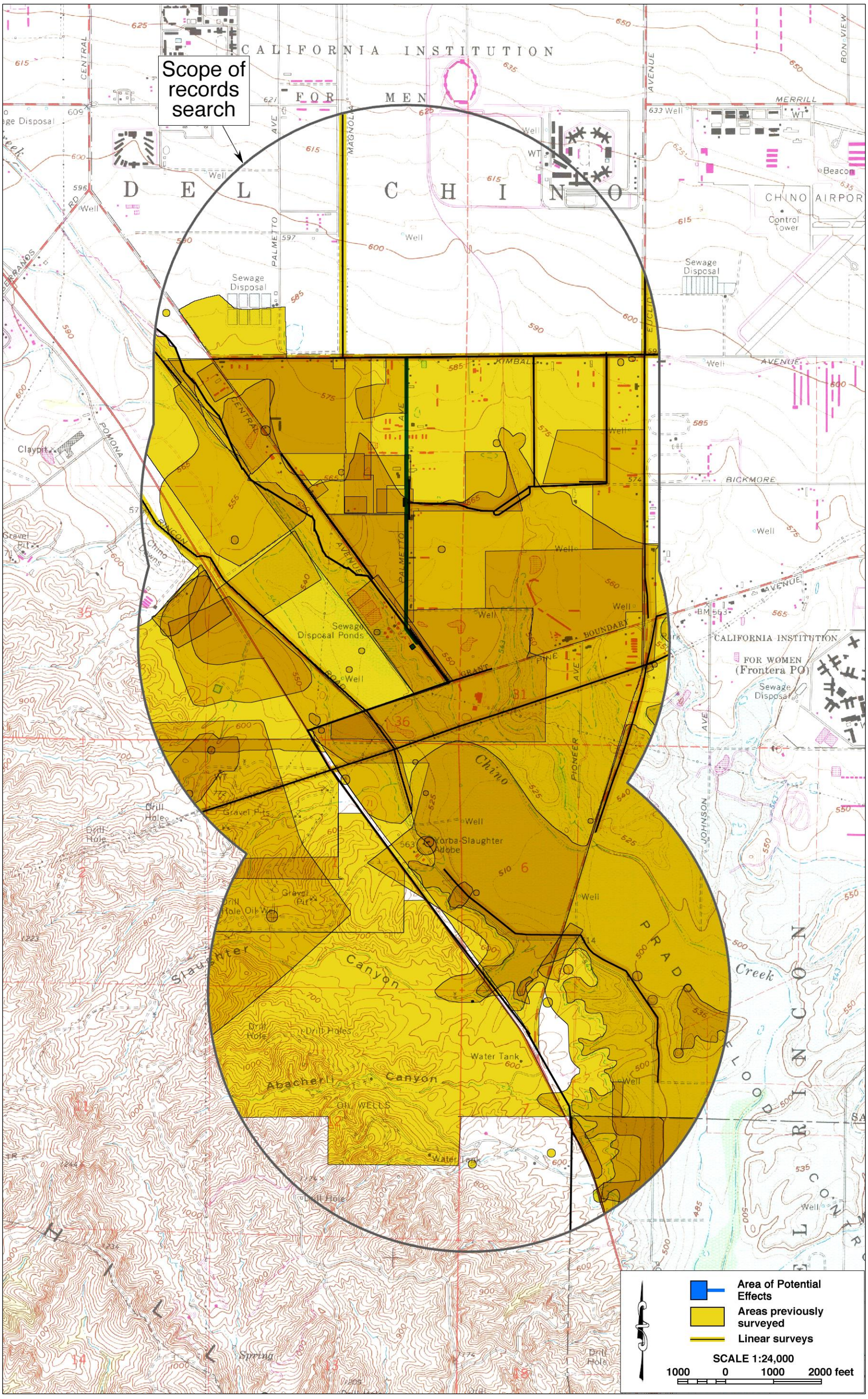



Figure 5. Previous study coverage in the project vicinity. (See App. 3 for locations of known cultural resources)

- Patricia Garcia-Plotkin, Tribal Historic Preservation Officer, Agua Caliente Band of Cahuilla Indians;
- Jill McCormich, Tribal Historic Preservation Officer, Fort Yuma Quechan Indian Tribe;
- Andrew Salas, Chairperson, Gabrieleno Band of Mission Indians-Kizh Nation;
- Christina Conley, Tribal Consultant, Gabrieleno Tongva Indians of California Tribal Council;
- Anthony Morales, Chairperson, Gabrieleno/Tongva San Gabriel Band of Mission Indians;
- Sandonne Goad, Chairperson, Gabrielino/Tongva Nation;
- Charles Alvarez, Chairperson, Gabrielino Tongva Tribe;
- Heidi Lucero, Chairperson, Juaneño Band of Mission Indians Acjachemen Nation 84A;
- Joyce Perry, Cultural Resources Director, Juaneño Band of Mission Indians Acjachemen Nation Belardes;
- Ann Brierty, Tribal Historic Preservation Officer, Morongo Band of Mission Indians;
- Vanessa Minott, Tribal Administrator, Santa Rosa Band of Cahuilla Indians;
- Mark Cochrane, Chairperson, Serrano Nation of Mission Indians;
- Joseph Ontiveros, Tribal Historic Preservation Officer, Soboba Band of Luiseño Indians;
- Alexandra McCleary, Cultural Lands Manager, Yuhaaviatam of San Manuel Nation (formerly known as the San Manuel Band of Mission Indians).

As of this time, six of the tribes have responded to the inquiry by telephone or via electronic mail (see App. 2). Among them, the Agua Caliente Band and the Yuhaaviatam stated that the APE was outside their Traditional Use Areas, and the Agua Caliente Band deferred to other tribes located in closer proximity. Similarly, the Gabrieleno Tongva Tribal Council deferred to the Gabrielino/ Tongva Nation, while the Soboba Band deferred to Gabrieleno/Tongva San Gabriel Band. The Gabrieleno Band-Kizh Nation requested contact information for the lead agencies, which was provided to the tribe during a telephone call. The Gabrieleno/Tongva San Gabriel Band identified the project vicinity as a culturally and spiritually sensitive area for the Gabrielino people. Therefore, the tribe recommended Native American and archaeological monitoring during ground-disturbing activities and requested to participate.

## HISTORICAL BACKGROUND RESEARCH

Historical sources consulted during this study indicate that the segments of Mountain Avenue (historically a part of Palmetto Avenue), El Prado Road, and Kimball Avenue (known in the 1930s as Robles Road) within or adjacent to the APE were in place at least by the 1890s, but the other features in the APE, at the existing facility sites, are all modern in origin. Prior to the 21st century, these rural roads were lined by widely scattered buildings, including the dairy farms previously recorded nearby, and the surrounding land featured primarily farmlands and large agricultural buildings (Figs. 6-9; NETR Online 1938-2002).

Transformation of the area from its agricultural past began in the 1960s-1970s, when a large tract of farmlands near the southern end of the pipeline route was developed into the El Prado Golf Courses (NETR Online 1967; 1980). Meanwhile, RP-2 began operation in 1960 (IEUA n.d.). After 1999, the construction of office complexes and large warehouses along Mountain Avenue completely altered the landscape around the APE (NETR Online 1980-2020; Google Earth 1994-2023). By 2017, all agricultural operations near the APE had ceased, and almost all associated buildings had been removed, although some of the properties remained vacant during the ensuing years (*ibid*.).

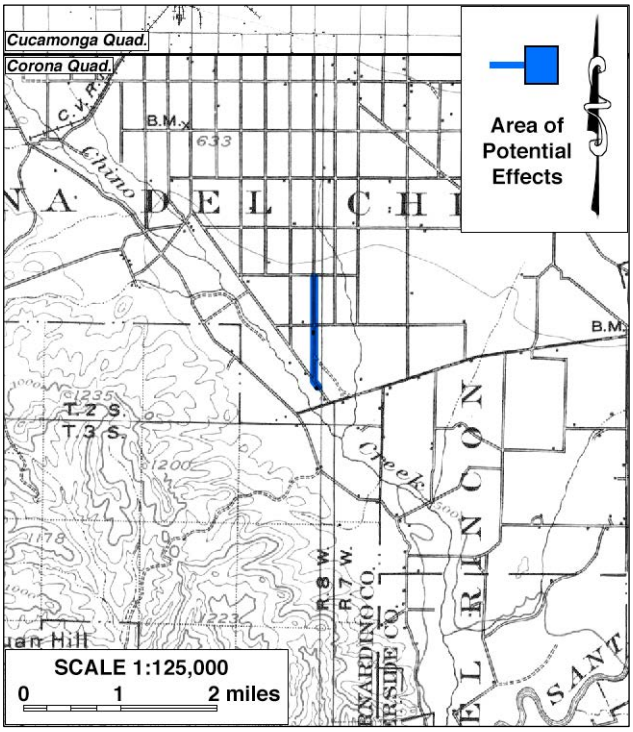



Figure 6. The APE and vicinity in 1894-1899. (Source: USGS 1902; 1903)

Among the three existing facilities that contain portions of the APE, the Butterfield Ranch Pump Station was built around 1987, together with the adjacent Butterfield Ranch residential neighborhood, and the Solids Handling Facility on Mountain Avenue was built between 1999 and 2002 (NETR Online 1987-2002). The beginning of RP-2 dates to circa 1960, as mentioned above, but the lift station in the APE was built in 2002-2003 (Google Earth 2002-2004). None of the features currently extant in the APE at these locations, therefore, is historical in age.

## FIELD SURVEY

The field survey encountered no potential "historic properties"/"historical resources" within the APE. As noted above, none of the existing features within the APE boundaries at the three facility sites meets the 50-year age threshold for potential "historic properties"/ "historical resources." The segments of Mountain Avenue, El Prado Road, and Kimball Avenue within or adjacent to the APE traces their history at least to the 1890s, but the current appearance and character of these roads clearly reflect the results of repeated upgrading and constant maintenance in the modern era. Mountain Avenue and Kimball Avenue, in particular, are now mostly lined with curbs, sidewalks, and landscaping of recent vintage, evidently the results of adjacent development during the current century. Consequently, they are essentially modern in appearance. As working components of the modern transportation infrastructure, none of them demonstrates sufficient historical character to be to be considered a potential "historic property"/"historical resource."

Immediately outside the APE boundaries, four historic-period sites were previously recorded as lying adjacent to the proposed pipeline route, as mentioned above (see Table 1). Among these, Site 36-025445, a dairy farm near the southeastern corner of Mountain Avenue and Kimball Avenue, is no longer extant, and its former site is now occupied by warehouses constructed in recent years. Sites 36-033112 and 36-033113, consisting of the archaeological remains of two other dairy farms on the eastern side of Mountain Avenue, may survive as recorded on the adjacent properties, and Site 36-033081, encompassing the entire 1,500-acre area of the California Institution for Men, was confirmed to be extant adjacent to the northern end of the pipeline route. However, none of the buildings or other features recorded at Site 36-033081 is located within a half-mile of the undertaking, while Sites 36-033112 and 36-033113, being archaeological remains, are not subject to visual, atmospheric, or other indirect effects from the undertaking. Because the undertaking has no potential for any effect on their current condition and character, either directly or indirectly, these three sites are excluded from the APE.

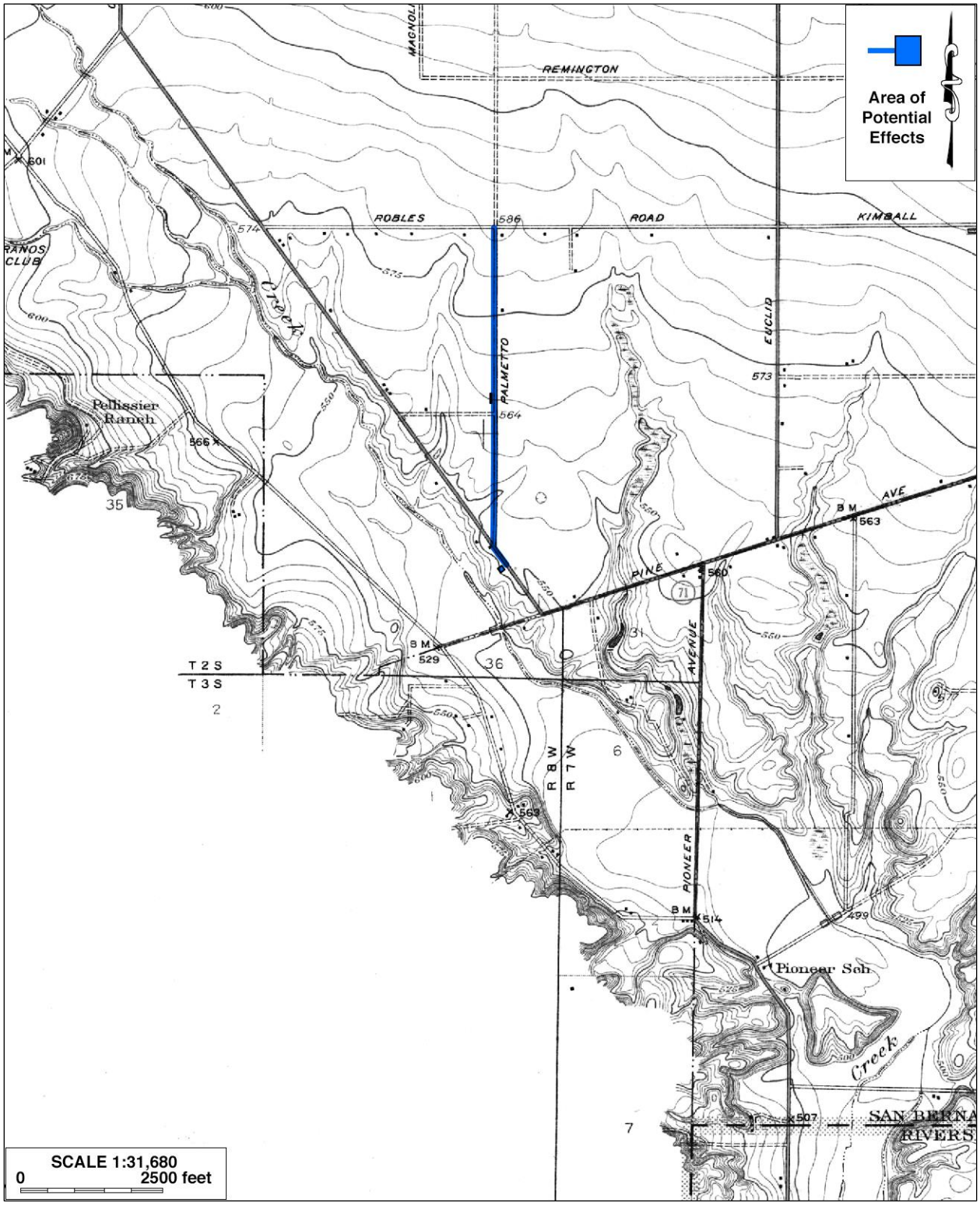



Figure 7. The APE and vicinity in 1933. (Source: USGS 1941)

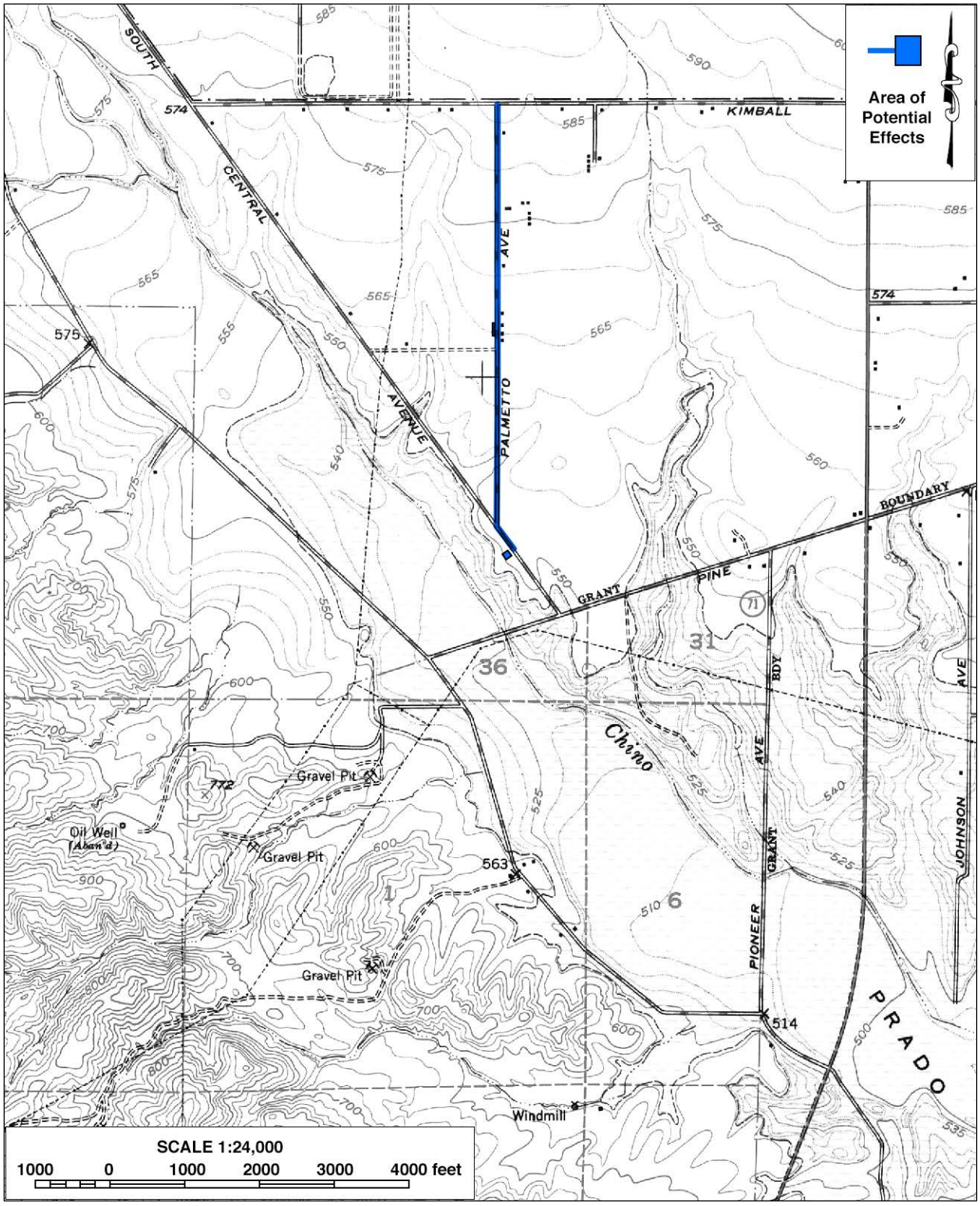



Figure 8. The APE and vicinity in 1946. (Source: USGS 1950)

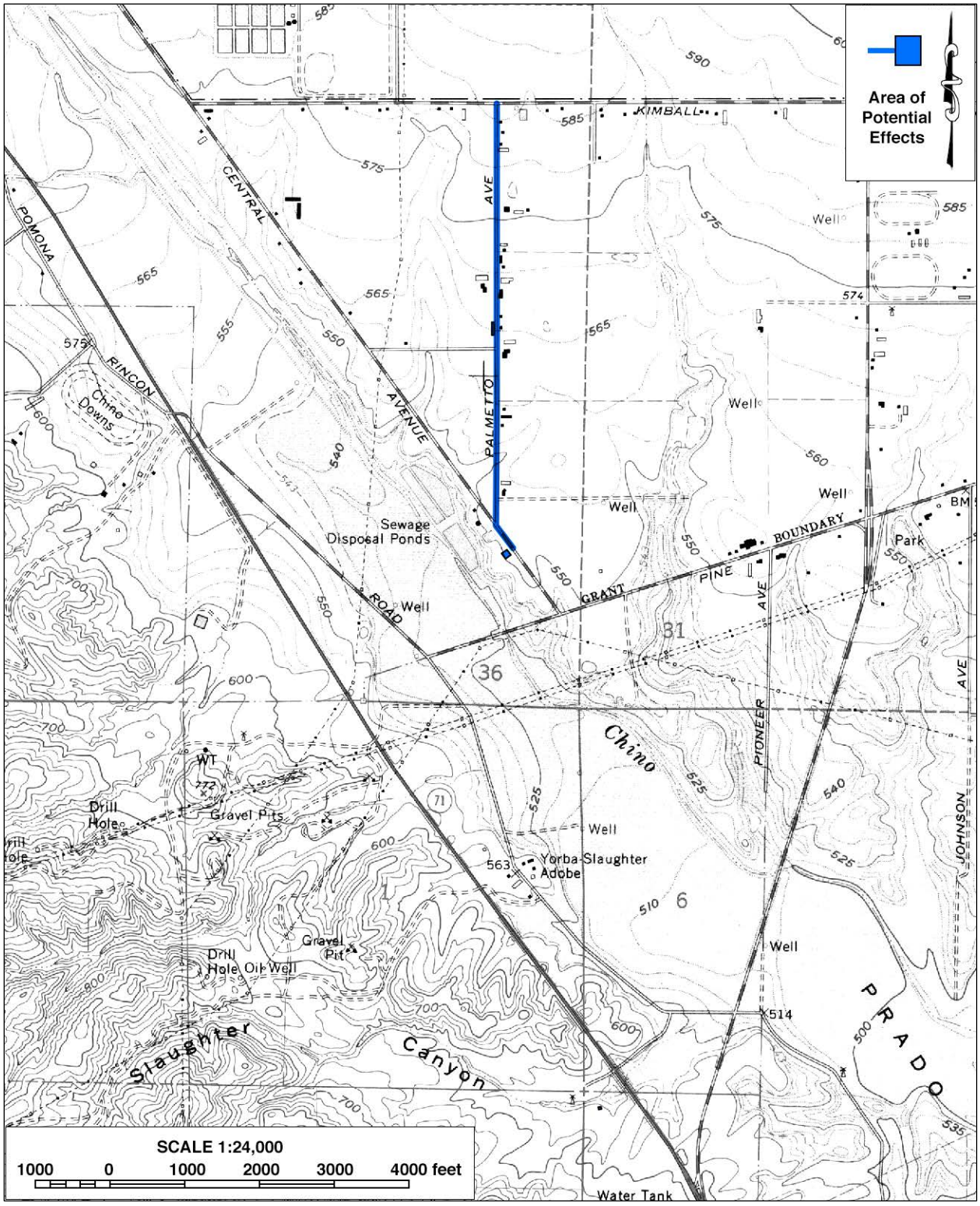



Figure 9. The APE and vicinity in 1966-1967. (Source: USGS 1967)

## GEOARCHAEOLOGICAL ANALYSIS

The surface sediments within the APE have been mapped by Morton (2004) as *Qvof*$_a$, namely very old alluvial fan deposits of middle to early Pleistocene age, which are described as "sandy alluvium; reddish-brown, well-indurated, fan surfaces well-dissected." Geologically, the APE lies within the pre-channelization flood plain of Chino Creek (*ibid*.), in a setting that is subject to occasional flooding. The area likely would have been used for subsistence purposes but would not have been desirable for long-term habitation by the aboriginal population in prehistoric times. Furthermore, the Pleistocene-age alluvium on the surface in and near the APE, deposited prior to human occupation in this part of southern California, suggests that the APE is relatively unlikely to contain deeply buried archaeological remains.

Current archaeological records indicate that prehistoric archaeological resources in the vicinity are mostly found at higher elevations in foothills, including the Chino Hills, or along natural waterways, such as Chino Creek (see App. 3). The commonly accepted prehistoric settlement-subsistence models for inland southern California suggest that the more substantial sites among them, such as long-term settlements, are more likely to occur on elevated terraces, hills, and finger ridges near such waterways but not immediately adjacent to them. More importantly, the surface and near-surface soils in the entire APE have been extensively disturbed by past construction activities associated with the roadways and the existing facilities as well as installation of underground utilities. In light of their geoarchaeological profile and the extent of past ground disturbances, the subsurface sediments within the vertical APE appear to be relatively low in sensitivity for intact, potentially significance archaeological deposits of prehistoric or early historic origin.

## MANAGEMENT CONSIDERATIONS

The purpose of this study is to identify any "historic properties" or "historical resources" that may exist within or adjacent to the APE. "Historic properties," as defined by the Advisory Council on Historic Preservation, include "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior" (36 CFR 800.16(l)). The eligibility for inclusion in the National Register is determined by applying the following criteria, developed by the National Park Service as per provision of the NHPA:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
> (b) that are associated with the lives of persons significant in our past; or
> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> (d) that have yielded, or may be likely to yield, information important in prehistory or history. (36 CFR 60.4)

For CEQA-compliance considerations, the State of California Public Resources Code (PRC) establishes the definitions and criteria for "historical resources," which require similar protection to what NHPA Section 106 mandates for "historic properties." "Historical resources," according to PRC §5020.1(j), "includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California."

More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the lead agency (Title 14 CCR §15064.5(a)(1)-(3)). Regarding the proper criteria of historical significance, CEQA guidelines mandate that "generally a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

In summary of the research results outlined above, no potential "historic properties" or "historical resources" have been identified within the APE. Four historic-period sites were previously recorded as lying adjacent to the APE boundaries, but one of them, 36-025445, has since been removed, and the proposed undertaking has no potential for any effect on the current condition and character of the other three, 36-033081, 36-033112, and 36-033113, either directly or indirectly. Based on these findings, and in light of the criteria listed above, this study concludes that no "historic properties" or "historical resources" are present within the APE for this undertaking.

## CONCLUSION AND RECOMMENDATIONS

Section 106 of the National Historic Preservation Act mandates that federal agencies take into account the effects of their undertakings on historic properties and seek ways to avoid, minimize, or mitigate any adverse effects on such properties (36 CFR 800.1(a)). Similarly, CEQA establishes that "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired."

As stated above, the results of this study indicate that no "historic properties" or "historical resources" are known to be present within the APE, and the extensively disturbed subsurface sediments in the vertical APE are considered to be relatively low in archaeological sensitivity.

Therefore, CRM TECH presents the following recommendations to the SWRCB and the IEUA pursuant to 36 CFR 800.4(d)(1) and PRC §21084.1:

- No "historic properties" or "historical resources" will be affected by the proposed undertaking.
- No further cultural resources investigation will be necessary for the undertaking unless project plans undergo such changes as to include areas not covered by this study.
- If buried cultural materials are inadvertently discovered during earth-moving operations associated with the undertaking, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the find.

## REFERENCES


Basgall, Mark E., and D.L. True
1985 Archaeological Investigations in Crowder Canyon, 1973-1984: Excavations at Sites SBR-421B, SBR-421C, SBR-421D, and SBR-713, San Bernardino County, California. On file, South Central Coastal Information Center, California State University, Fullerton.

Bean, Lowell John, and Charles R. Smith
1978 Gabrielino. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 538-549. Smithsonian Institution, Washington, D.C.

Beck, Warren A., and Ynez D. Haase
1974 *Historical Atlas of California*. University of Oklahoma Press, Norman.

Chartkoff, Joseph L., and Kerry Kona Chartkoff
1984 *The Archaeology of California*. Stanford University Press, Stanford, California.

Cunningham, Alta
2016 California Institution for Men Historic Resources Survey and Evaluation, City of Chino, California. On file, South Central Coastal Information Center, California State University, Fullerton.

Dice, M.H.
2012 Phase 1 Cultural Resource Survey of the Watson Chino III Project, City of Chino, California, San Bernardino County, California. On file, South Central Coastal Information Center, California State University, Fullerton.

Gamble, Lynn H.
2002 Archaeological Evidence for the Origin of the Plank Canoe in North America. *American Antiquity* 67(2):301-315.

Goldberg, Susan K. (ed.)
2001 Metropolitan Water District of Southern California Eastside Reservoir Project: Final Report of Archaeological Investigations. On file, Eastern information Center, University of California, Riverside.

Goodman, John D., II
2002 Archaeological Survey of the Charter Communications Cable Project, Mountaintop Ranger District, San Bernardino National Forest, California. San Bernardino National Forest Technical Report 05-12-BB-102. San Bernardino, California.

Goodman, John D., II, and Meg McDonald
2001 Archaeological Survey of the Southern California Trials Association Event Area, Little Pine Flats, Mountaintop Ranger District, San Bernardino National Forest, California. San Bernardino National Forest Technical Report 05-12-BB-106. San Bernardino, California.

Google Earth
1994-2023 Aerial/satellite photographs of the project vicinity, taken in 1994, 2002-2007, 2009, 2011, and 2013-2023. Available from the Google Earth software.
Grenda, Donn
1993 Archaeological Treatment Plan for CA-RIV-2798/H, Lake Elsinore, Riverside County, California. On file, Eastern Information Center, University of California, Riverside.
1997 Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore. Statistical Research Technical Series 59. Statistical Research, Inc., Tucson, Arizona.
Gunther, Jane Davies
1984 *Riverside County, California, Place Names: Their Origins and Their Stories*. Jane Davies Gunther, Riverside.
Horne, Melinda C., and Dennis P. McDougall
2008 CA-RIV-6069: Early Archaic Settlement and Subsistence in the San Jacinto Valley, Western Riverside County, California. On file, Eastern Information Center, University of California, Riverside.
IEUA (Inland Empire Utilities Agency)
n.d. Regional Water Recycling Plant No. 2. https://www.ieua.org/regional-water-recycling-plant-no-2/.
Keller, Jean S., and Daniel F. McCarthy
1989 Data Recovery at the Cole Canyon Site (CA-RIV-1139), Riverside County, California. *Pacific Coast Archeological Society Quarterly* 25.
McCawley, William
1996 *The First Angelinos: The Gabrielino Indians of Los Angeles*. Malki Museum Press, Banning, California, and Ballena Press, Novato, California.
McDonald, Meg, Philip J. Wilke, and Andrea Kauss
1987 McCue: An Elko Site in Riverside County. *Journal of California and Great Basin Anthropology* 9(1):46-73.
Milburn, Doug, U.K. Doan, and John D. Goodman, II
2008 Archaeological Investigation at Baldy Mesa-Cajon Divide for the Baldy Mesa Off-Highway-Vehicle Recreation Trails Project San Bernardino National Forest, San Bernardino County, California. On file, San Bernardino National Forest (ARR #05-12-53-091), San Bernardino.
Miller, Bruce W.
1991 *The Gabrielino*. Sand River Press, Los Osos, California.
Morton, Douglas M.
2004 Preliminary Digital Geologic Map of the Santa Ana 30'x60' Quadrangle, Southern California; Version 2.0. United States Geological Survey Open-File Report 99-172.
NETR (Nationwide Environmental Title Research) Online
1938-2020 Aerial/satellite photographs of the project vicinity; taken in 1938, 1946, 1948, 1959, 1963, 1966, 1967, 1972, 1980, 1985, 1987, 1994, 1998, 1999, 2002, 2005, 2009, 2010, 2012, 2014, 2018, and 2020. http://www.historicaerials.com.
O'Connell, James F., Philip J. Wilke, Thomas F. King, and Carol L. Mix (editors)
1974 Perris Reservoir Archaeology: Late Prehistoric Demographic Change in Southeastern California. Report on file, Eastern Information Center, University of California, Riverside.

Schuiling, Walter C.
1984 *San Bernardino County: Land of Contrast*. Windsor Publications, Woodland Hills, California.
Slawson, Dana
1998 Cultural Resources Survey for the Proposed Inland Empire Utilities Agency Wastewater Treatment Plant-Regional Plant Number 5. On file, South Central Coastal Information Center, California State University, Fullerton.
Stickel, E. Gary
2016 *Why the Original Indian Tribe of the Greater Los Angeles Area Is Called Kizh Not Tongva*. http://gabrielenoindians.net/ewExternalFiles/KizhnotTongva.pdf.
Stropes, Tracy A. and others.
2019 A Section 106 (NHPA) Historic Resources Study for the Majestic Chino Heritage Project. On file, South Central Coastal Information Center, California State University, Fullerton.
USGS (United States Geological Survey, U.S. Department of the Interior)
1902 Map: Corona, Calif. (30', 1:125,000); surveyed in 1894-1899.
1903 Map: Cucamonga, Calif. (15', 1:62,500); surveyed in 1894.
1941 Map: Prado, Calif. (1:31,680); surveyed in 1933.
1950 Map: Prado Dam, Calif. (7.5', 1:24,000); aerial photographs taken in 1946.
1967 Map: Prado Dam, Calif. (7.5', 1:24,000); aerial photographs taken in 1966, field-checked in 1967.
1969 Map: San Bernardino, Calif. (120'x60', 1:250,000); 1958 edition revised.
1979 Map: Santa Ana, Calif. (120'x60', 1:250,000); 1959 edition revised.
1981a Map: Corona North, Calif. (7.5', 1:24,000); 1967 edition photorevised in 1978.
1981b Map: Prado Dam, Calif. (7.5', 1:24,000); 1967 edition photorevised in 1978.
Warren, Claude N.
1984 The Desert Region. In Michael J. Moratto (ed.): *California Archaeology*; pp. 339-430. Academic Press, Orlando, Florida.

## APPENDIX 1
## PERSONNEL QUALIFICATIONS

### PRINCIPAL INVESTIGATOR, HISTORY/ARCHITECTURAL HISTORY
### Bai "Tom" Tang, M.A.

**Education**

| | |
|---|---|
| 1988-1993 | Graduate Program in Public History/Historic Preservation, University of California, Riverside. |
| 1987 | M.A., American History, Yale University, New Haven, Connecticut. |
| 1982 | B.A., History, Northwestern University, Xi'an, China. |
| 2000 | "Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno. |
| 1994 | "Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno. |

**Professional Experience**

| | |
|---|---|
| 2002- | Principal Investigator, CRM TECH, Riverside/Colton, California. |
| 1993-2002 | Project Historian/Architectural Historian, CRM TECH, Riverside, California. |
| 1993-1997 | Project Historian, Greenwood and Associates, Pacific Palisades, California. |
| 1991-1993 | Project Historian, Archaeological Research Unit, University of California, Riverside. |
| 1990 | Intern Researcher, California State Office of Historic Preservation, Sacramento. |
| 1990-1992 | Teaching Assistant, History of Modern World, University of California, Riverside. |
| 1988-1993 | Research Assistant, American Social History, University of California, Riverside. |
| 1985-1988 | Research Assistant, Modern Chinese History, Yale University. |
| 1985-1986 | Teaching Assistant, Modern Chinese History, Yale University. |
| 1982-1985 | Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China. |

**Cultural Resources Management Reports**

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (with Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

**PRINCIPAL INVESTIGATOR, ARCHAEOLOGY**
**Michael Hogan, Ph.D., RPA (Registered Professional Archaeologist)**

## Education

| | |
|---|---|
| 1991 | Ph.D., Anthropology, University of California, Riverside. |
| 1981 | B.S., Anthropology, University of California, Riverside; with honors. |
| 1980-1981 | Education Abroad Program, Lima, Peru. |
| 2002 | "Section 106—National Historic Preservation Act: Federal Law at the Local Level," UCLA Extension Course #888. |
| 2002 | "Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist. |
| 2002 | "Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals. |
| 1992 | "Southern California Ceramics Workshop," presented by Jerry Schaefer. |
| 1992 | "Historic Artifact Workshop," presented by Anne Duffield-Stoll. |

## Professional Experience

| | |
|---|---|
| 2002- | Principal Investigator, CRM TECH, Riverside/Colton, California. |
| 1999-2002 | Project Archaeologist/Field Director, CRM TECH, Riverside, California. |
| 1996-1998 | Project Director and Ethnographer, Statistical Research, Inc., Redlands, California. |
| 1992-1998 | Assistant Research Anthropologist, University of California, Riverside. |
| 1992-1995 | Project Director, Archaeological Research Unit, U.C. Riverside. |
| 1993-1994 | Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C. Riverside, Chapman University, and San Bernardino Valley College. |
| 1991-1992 | Crew Chief, Archaeological Research Unit, U.C. Riverside. |
| 1984-1998 | Project Director, Field Director, Crew Chief, and Archaeological Technician for various southern California cultural resources management firms. |

## Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

## Cultural Resources Management Reports

Principal investigator for, author or co-author of, and contributor to numerous cultural resources management study reports since 1986.

## Memberships

Society for American Archaeology; Society for California Archaeology; Pacific Coast Archaeological Society; Coachella Valley Archaeological Society.

**PROJECT ARCHAEOLOGIST/REPORT WRITER**
**Nicole A. Raslich, M.A.**

## Education

| | |
|---|---|
| 2017- | Ph.D. candidate, Michigan State University, East Lansing. |
| 2011 | M.A., Anthropology, Michigan State University, East Lansing. |
| 2005 | B.A., Natural History of Biology and Anthropology, University of Michigan, Flint. |
| | |
| 2022 | Adult First Aid/CPR/AED Certification, American Red Cross. |
| 2019 | Grant and Research Proposal Writing for Archaeologists; SAA Online Seminar. |
| 2014 | Bruker Industries Tracer S1800 pXRF Training; presented by Dr. Bruce Kaiser, Bruker Scientific. |
| 2013 | Introduction to ArcGIS, Michigan State University, East Lansing. |

## Professional Experience

| | |
|---|---|
| 2022- | Project Archaeologist/Report Writer, CRM TECH, Colton, California. |
| 2022 | Archaeological Technician, Agua Caliente Band of Cahuilla Indians, Palm Springs, California. |
| 2008-2021 | Archaeological Consultant, Saginaw Chippewa Indian Tribe of Michigan. |
| 2019 | Archaeologist, Sault Tribe of Chippewa Indians and Little Traverse Bay Band of Odawa Indians |
| 2018 | Teaching Assistant, Michigan State University, East Lansing. |
| 2017 | Adjunct Professor, University of Michigan, Flint. |
| 2015-2016 | Graduate Fellow, Michigan State University Campus Archaeology Program, East Lansing. |
| 2015 | Archaeologist, Michigan State University, Illinois State Museum, and Dickson Mounds Museum. |
| 2013-2015 | Curation Research Assistant, Michigan State University Museum, East Lansing. |
| 2008-2014 | Research Assistant, Intellectual Property Issues in Cultural Heritage, Simon Frasier University, British Columbia, Canada. |
| 2009-2012 | Editorial Assistant/Copy Editor, *American Antiquity*. |
| 2009-2011 | Archaeologist/Crew Chief, Saginaw Chippewa Indian Tribe of Michigan. |

## Publications

| | |
|---|---|
| 2017 | Preliminary Results of a Handheld X-Ray Fluorescence (pXRF) Analysis on a Marble Head Sarcophagus Sculpture from the Collection of the Kresge Art Center, Michigan State University. Submitted to Jon M. Frey, Department of Art, Art History, and Design. Michigan State University, East Lansing. |
| 2016 | Preserving Sacred Sites: Arctic Indigenous Peoples as Cultural Heritage Rights Holders (L. Heinämäki, T.M. Herrmann, and N.A. Raslich). University of Lapland Printing Centre, Rovaniemi, Finland. |

**PROJECT ARCHAEOLOGIST/NATIVE AMERICAN LIAISON**
**Nina Gallardo, B.A.**

**Education**

2004 B.A., Anthropology/Law and Society, University of California, Riverside.

**Professional Experience**

2004- Project Archaeologist, CRM TECH, Riverside/Colton, California.

**Cultural Resources Management Reports**

Co-author of and contributor to numerous cultural resources management reports since 2004.

**PROJECT ARCHAEOLOGIST**
**Salvadore Z. Boites, M.A.**

**Education**

2013 M.A., Applied Anthropology, California State University, Long Beach.
2003 B.A., Anthropology/Sociology, University of California, Riverside.
1996-1998 Archaeological Field School, Fullerton Community College, Fullerton, California.

**Professional Experience**

2014- Project Archaeologist, CRM TECH, Colton, California.
2010-2011 Adjunct Instructor, Anthropology, Everest College, Anaheim, California.
2003-2008 Project Archaeologist, CRM TECH, Riverside/Colton, California.
2001-2002 Teaching Assistant, Moreno Elementary School, Moreno Valley, California.
1999-2003 Research Assistant, Anthropology Department, University of California, Riverside.

**Research Interests**

Cultural Resource Management, Applied Archaeology/Anthropology, Indigenous Cultural Identity, Poly-culturalism.

## APPENDIX 2

# CORRESPONDENCE WITH NATIVE AMERICAN REPRESENTATIVES

# SACRED LANDS FILE & NATIVE AMERICAN CONTACTS LIST REQUEST

**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916)373-3710
(916)373-5471 (Fax)
nahc@nahc.ca.gov

**Project:** Proposed RP-5 Liquids Treatment Expansion (EN19001): Off-Site Facility Projects (CRM TECH No. 4035)

**County:** San Bernardino

**USGS Quadrangle Name:** Prado Dam, Calif.

**Township** 2-3 South **Range** 7-8 West SB **BM; Section(s)**: Santa Ana del Chino land grant

**Company/Firm/Agency:** CRM TECH

**Contact Person:** Nina Gallardo

**Street Address:** 1016 E. Cooley Drive, Suite A/B

**City:** Colton, CA **Zip:** 92324

**Phone:** (909) 824-6400 **Fax:** (909) 824-6405

**Email:** ngallardo@crmtech.us

**Project Description:** The primary component of the project is to install approximately 1.15 linear miles water main pipeline within the existing Mountain Avenue right-of-way from Kimball Avenue to El Prado Road, along with the construction of a new lift station along the alignment at the Solids Handling Facility and improvements and modifications to the Butterfield Ranch Pump Station and RP-2 Lift Station, with all three stations ultimately connecting to the new mainline. The Area of Potential Effects is in the City of Chino Hills, San Bernardino County, California.

*July 7, 2023*

STATE OF CALIFORNIA — Gavin Newsom, *Governor*

# NATIVE AMERICAN HERITAGE COMMISSION



**NAHC HEADQUARTERS**
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

August 7, 2023

Nina Gallardo
CRM TECH

Via Email to: ngallardo@crmtech.us

**Re: Proposed RP-5 Liquids Treatment Expansion (EN19001): Off-Site Facility Projects (CRM TECH No. 4035), San Bernardino County**

Dear Ms. Gallardo:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

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

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

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst
Attachment

**Native American Heritage Commission**
**Native American Contact List**
**San Bernardino County**
**8/7/2023**

| Tribe Name | Fed (F) Non-Fed (N) | Contact Person | Contact Address | Phone # | Fax # | Email Address | Cultural Affiliation | Counties |
|---|---|---|---|---|---|---|---|---|
| Agua Caliente Band of Cahuilla Indians+B4:K17 | F | Patricia Garcia, Director of Historic Preservation | 5401 Dinah Shore Drive<br>Palm Springs, CA, 92264 | (760) 699-6907 | (760) 699-6919 | pagarcia@aguacaliente.net | Cahuilla | Imperial,Riverside,San Bernardino, San Diego |
| Gabrieleno Band of Mission Indians - Kizh Nation | N | Christina Swindall Martinez, Secretary | P.O. Box 393<br>Covina, CA, 91723 | (626) 926-4131 | | admin@gabrielenoindians.org | Gabrieleno | Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura |
| Gabrieleno Band of Mission Indians - Kizh Nation | N | Andrew Salas, Chairperson | P.O. Box 393<br>Covina, CA, 91723 | (626) 926-4131 | | chairman@gabrielenoindians.org | Gabrieleno | Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura |
| Gabrieleno/Tongva San Gabriel Band of Mission Indians | N | Anthony Morales, Chairperson | P.O. Box 693<br>San Gabriel, CA, 91778 | (626) 483-3564 | (626) 286-1262 | GTTribalcouncil@aol.com | Gabrieleno | Los Angeles,Orange,Riverside,San Bernardino,Ventura |
| Gabrielino/Tongva Nation | N | Sandonne Goad, Chairperson | 106 1/2 Judge John Aiso St., #231<br>Los Angeles, CA, 90012 | (951) 807-0479 | | sgoad@gabrielino-tongva.com | Gabrielino | Los Angeles,Orange,Riverside,San Bernardino,Ventura |
| Gabrielino Tongva Indians of California Tribal Council | N | Christina Conley, Cultural Resource Administrator | P.O. Box 941078<br>Simi Valley, CA, 93094 | (626) 407-8761 | | christina.marsden@alumni.usc.edu | Gabrielino | Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura |
| Gabrielino Tongva Indians of California Tribal Council | N | Robert Dorame, Chairperson | P.O. Box 490<br>Bellflower, CA, 90707 | (562) 761-6417 | (562) 761-6417 | gtongva@gmail.com | Gabrielino | Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura |
| Gabrielino-Tongva Tribe | N | Charles Alvarez, Chairperson | 23454 Vanowen Street<br>West Hills, CA, 91307 | (310) 403-6048 | | Chavez1956metro@gmail.com | Gabrielino | Los Angeles,Orange,Riverside,San Bernardino,Ventura |
| Gabrielino-Tongva Tribe | N | Sam Dunlap, Cultural Resource Director | P.O. Box 3919<br>Seal Beach, CA, 90740 | (909) 262-9351 | | tongvatcr@gmail.com | Gabrielino | Los Angeles,Orange,Riverside,San Bernardino,Ventura |
| Juaneno Band of Mission Indians Acjachemen Nation - Belardes | N | Joyce Perry, Cultural Resource Director | 4955 Paseo Segovia<br>Irvine, CA, 92603 | (949) 293-8522 | | kaamalam@gmail.com | Juaneno | Los Angeles,Orange,Riverside,San Bernardino,San Diego |
| Juaneno Band of Mission Indians Acjachemen Nation 84A | N | Heidi Lucero, Chairperson, THPO | 31411-A La Matanza Street<br>San Juan Capistrano, CA, 92675 | (562) 879-2884 | | jbmian.chairwoman@gmail.com | Juaneno | Los Angeles,Orange,Riverside,San Bernardino,San Diego |
| Morongo Band of Mission Indians | F | Ann Brierty, THPO | 12700 Pumarra Road<br>Banning, CA, 92220 | (951) 755-5259 | (951) 572-6004 | abrierty@morongo-nsn.gov | Cahuilla Serrano | Imperial,Los Angeles,Riverside,San Bernardino,San Diego |
| Morongo Band of Mission Indians | F | Robert Martin, Chairperson | 12700 Pumarra Road<br>Banning, CA, 92220 | (951) 755-5110 | (951) 755-5177 | abrierty@morongo-nsn.gov | Cahuilla Serrano | Imperial,Los Angeles,Riverside,San Bernardino,San Diego |
| Quechan Tribe of the Fort Yuma Reservation | F | Jordan Joaquin, President, Quechan Tribal Council | P.O.Box 1899<br>Yuma, AZ, 85366 | (760) 919-3600 | | executivesecretary@quechantribe.com | Quechan | Imperial,Kern,Los Angeles, Riverside,San Bernardino,San Diego |
| Quechan Tribe of the Fort Yuma Reservation | F | Manfred Scott, Acting Chairman - Kw'ts'an Cultural Committee | P.O. Box 1899<br>Yuma, AZ, 85366 | (928) 210-8739 | | culturalcommittee@quechantribe.com | Quechan | Imperial,Kern,Los Angeles, Riverside,San Bernardino,San Diego |
| Quechan Tribe of the Fort Yuma Reservation | F | Jill McCormick, Historic Preservation Officer | P.O. Box 1899<br>Yuma, AZ, 85366 | (928) 261-0254 | | historicpreservation@quechantribe.com | Quechan | Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego |
| San Manuel Band of Mission Indians | F | Alexandra McCleary, Cultural Lands Manager | 26569 Community Center Drive<br>Highland, CA, 92346 | (909) 633-0054 | | alexandra.mccleary@sanmanuel-nsn.gov | Serrano | Kern,Los Angeles,Riverside,San Bernardino |
| Santa Rosa Band of Cahuilla Indians | F | Lovina Redner, Tribal Chair | P.O. Box 391820<br>Anza, CA, 92539 | (951) 659-2700 | (951) 659-2228 | lsaul@santarosa-nsn.gov | Cahuilla | Imperial,Los Angeles,Orange, Riverside,San Bernardino,San Diego |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Serrano Nation of Mission Indians | N | Mark Cochrane, Co-Chairperson | P. O. Box 343<br>Patton, CA, 92369 | (909) 528-9032 | | serranonation1@gmail.com | Serrano | Los Angeles,Riverside,San Bernardino |
| Serrano Nation of Mission Indians | N | Wayne Walker, Co-Chairperson | P. O. Box 343<br>Patton, CA, 92369 | (253) 370-0167 | | serranonation1@gmail.com | Serrano | Los Angeles,Riverside,San Bernardino |
| Soboba Band of Luiseno Indians | F | Jessica Valdez, Cultural Resource Specialist | P.O. Box 487<br>San Jacinto, CA, 92581 | (951) 663-6261 | (951) 654-4198 | jvaldez@soboba-nsn.gov | Cahuilla<br>Luiseno | Imperial,Los Angeles,Orange, Riverside,San Bernardino,San Diego |
| Soboba Band of Luiseno Indians | F | Joseph Ontiveros, Tribal Historic Preservation Officer | P.O. Box 487<br>San Jacinto, CA, 92581 | (951) 663-5279 | (951) 654-4198 | jontiveros@soboba-nsn.gov | Cahuilla<br>Luiseno | Imperial,Los Angeles,Orange, Riverside,San Bernardino,San Diego |

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed RP-5 Liquids Treatment Expansion (EN19001): Off-Site Facility Projects (CRM TECH No. 4035), San Bernardino County.

Record: PROJ-2023-003929
Report Type: List of Tribes
Counties: San Bernardino
NAHC Group: All

August 14, 2023

RE: Proposed RP-5 Liquids Treatment Expansion (EN19001): Off-Site Facility Projects
Approximately 1.15 Linear Miles of Pipeline Installation and Five Acres of Facilities
In the City of Chino Hills, San Bernardino County, California
CRM TECH Contract #4035

Dear Tribal Representative:

I am writing to bring your attention to an ongoing CEQA-Plus study for the project referenced above. The undertaking entails the installation of approximately 1.15 linear miles of new main water pipeline alignment, construction of a new lift station, and improvements and modifications to existing pump and lift stations. The Area of Potential Effects (APE) for the projects include the existing Mountain Avenue right-of-way from Kimball Avenue to El Prado Road and areas within the Solids Handling Facility, the Butterfield Ranch Pump Station, and the RP-2 Lift Station. The accompanying maps, based on the USGS Prado Dam Calif., 7.5' quadrangle, depict the APE lying within T2-3S and R7-8W, SBBM, and a portion of the Santa Ana del Chino land grant.

The Native American Heritage Commission reports in a letter dated August 7, 2023, that the Sacred Lands File search results were negative for tribal cultural resources in the vicinity but recommends contacting local Native American groups for any additional information (see attached). Therefore, as part of the cultural resources study for this project, I am writing to request your input on potential Native American cultural resources in or near the APE. Any information or concerns may be forwarded to CRM TECH by telephone, e-mail, facsimile, or standard mail. Requests for documentation or information we cannot provide will be forwarded to our client and/or the lead agencies, namely the Inland Empire Utilities Agency. The State Water Resource Control Board will also be overseeing the proposed undertaking.

We would also like to clarify that, as the cultural resources consultant for the project, CRM TECH is not involved in the AB 52-compliance process or in government-to-government consultations. The purpose of this letter is to seek any information that you may have to help us determine if there are cultural resources in or near the project area that we should be aware of and to help us assess the sensitivity of the APE. Thank you for your time and effort in addressing this important matter.

Respectfully,

Nina Gallardo
CRM TECH Project Archaeologist/Native American Liaison
Email: ngallardo@crmtech.us

Encl.: NAHC response letter and project location map

**From:** Alexandra Mc Cleary <Alexandra.McCleary@sanmanuel-nsn.gov>
**Sent:** Monday, August 14, 2023 4:03 PM
**To:** ngallardo@crmtech.us
**Subject:** RE: NA Scoping Letter for the Proposed RP-5 Liquids Treatment Expansion (EN19001) Off-Site Facility Projects in the City of Chino Hills, San Bernardino County (CRM TECH #4035)

Dear Nina,

Thank you for contacting San Manuel regarding the above-referenced project. The proposed project is located outside of Serrano ancestral territory and, as such, the tribe will not be requesting to receive consulting party status with the lead agency or to participate in the scoping, development, or review of documents created pursuant to legal and regulatory mandates.

Best,
Alexandra

---

**From:** Xitlaly Madrigal <xmadrigal@aguacaliente.net>
**Sent:** Tuesday, August 15, 2023 8:33 AM
**To:** ngallardo@crmtech.us
**Subject:** RE: NA Scoping Letter for the Proposed RP-5 Liquids Treatment Expansion (EN19001) Off-Site Facility Projects in the City of Chino Hills, San Bernardino County (CRM TECH #4035)

Greetings,

A records check of the Tribal Historic Preservation Office's cultural registry revealed that this project is not located within the Tribe's Traditional Use Area. Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Thank you,

Xitlaly Madrigal
Cultural Resources Analyst
xmadrigal@aguacaliente.net
C: (760) 423-3485 | D: (760) 883-6829
5401 Dinah Shore Drive, Palm Springs, CA 92264

---

**From:** Christina Marsden Conley <christina.marsden@alumni.usc.edu>
**Sent:** Wednesday, September 6, 2023 4:46 PM
**To:** ngallardo@crmtech.us
**Subject:** Re: NA Scoping Letter for the Proposed RP-5 Liquids Treatment Expansion (EN19001) Off-Site Facility Projects in the City of Chino Hills, San Bernardino County (CRM TECH #4035)

Good afternoon,
We will defer our comment to

Sandonne Goad
Tribal Council Chairwoman
Gabrielino/Tongva Nation
sgoad@gabrielino-tongva.com

tehoovet taamet

C H R I S T I N A  C O N L E Y
- Native American Monitor - Caretaker of our Ancestral Land and Water
- Cultural Resource Administrator Under Tribal Chair, Robert Dorame (Most Likely Descendant) of Pimugna (Catalina Island), Carson, Huntington Beach, Long Beach, Marina del Rey, Playa Vista, Studio City
- Native American Heritage Commission Contact
- Fully qualified as a California State Recognized Native American Tribe fulfilling SB18, AB52 Compliance Regulations
- HAZWOPER Certified
- 626.407.8761

---

**From:** Gabrieleno Administration <admin@gabrielenoindians.org>
**Sent:** Wednesday, September 13, 2023 4:17 PM
**To:** ngallardo@crmtech.us
**Subject:** Re: NA Scoping Letter for the Proposed RP-5 Liquids Treatment Expansion (EN19001) Off-Site Facility Projects in the City of Chino Hills, San Bernardino County (CRM TECH #4035)

Hello Nina

Thank you for your email and your call today. Can you please provide the lead agencies contact information regarding the above project?

Thank you

Brandy Salas
Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation PO Box 393 Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

*The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino*

*counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area ." "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."*

**TELEPHONE LOG**

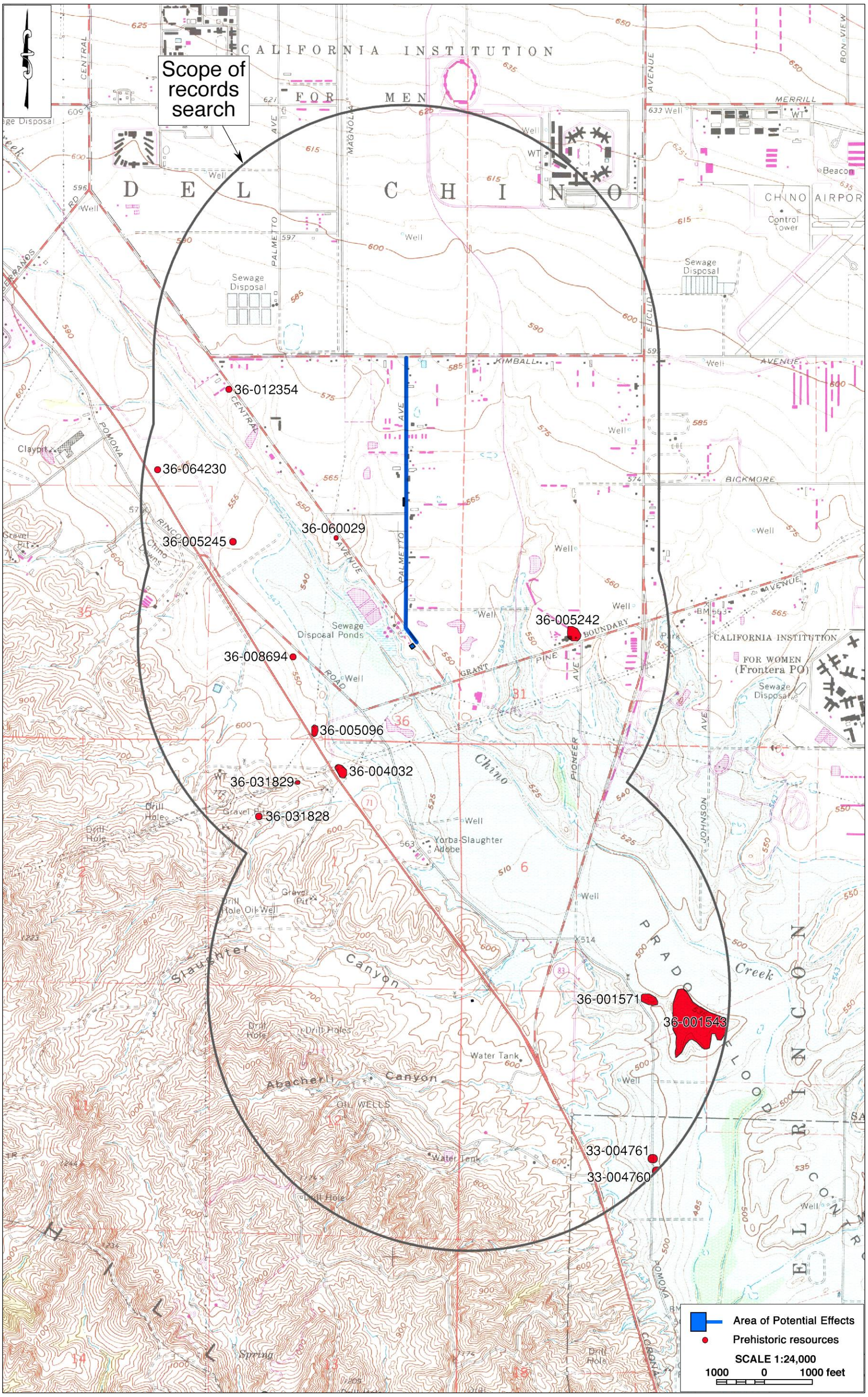
| Name | Tribe/Affiliation | Telephone/Email | Note |
|---|---|---|---|
| Patricia Garcia-Plotkin, Tribal Historic Preservation Officer | Agua Caliente Band of Cahuilla Indians | None | Xitlaly Madrigal, Cultural Resources Analyst for the tribe, responded by e-mail on August 18, 2023 (copy attached). |
| Andrew Salas, Chairperson | Gabrieleño Band of Mission Indians– Kizh Nation | 2:36 pm, September 6, 2023;<br>11:38 am, September 13, 2023 | Brandy Salas, Tribal Administrator, requested contact information for the lead agencies because Chairperson Salas would like to send confidential information directly to the agencies. The contact information was provided to the tribe during the call. |
| Anthony Morales, Chairperson | Gabrieleno/Tongva San Gabriel Band of Mission Indians | 2:39 pm, September 6, 2023;<br>11:18 am. September 13, 2023 | Mr. Morales believes that the APE is located in a culturally and spiritually sensitive area for the Gabrieleno people. He recommended Native American and archaeological monitoring during ground-disturbing activities and stated that the tribe would like to participate in Native American monitoring. |
| Sandonne Goad, Chairperson | Gabrielino/Tongva Nation | 2:42 pm, September 6, 2023;<br>3:33 pm, September 13, 2023 | Left messages; no response to date. |
| Christina Conley, Tribal Consultant and Administrator | Gabrieleno Tongva Indians of California Tribal Council | 2:46 pm, September 6, 2023 | Ms. Conley responded by e-mail on September 6, 2023 (copy attached). |
| Charles Alvarez, Chairperson | Gabrielino-Tongva Tribe | 2:56 pm, September 6, 2023;<br>3:42 pm, September 13, 2023 | Left messages; no response to date. |
| Joyce Perry, Cultural Resources Director | Juaneño Band of Mission Indians Acjachemen Nation Belardes | 2:57 pm, September 6, 2023;<br>3:44 pm, September 13, 2023 | Left messages; no response to date. |
| Heidi Lucero, Chairperson | Juaneño Band of Mission Indians Acjachemen Nation 84A | 2:59 pm, September 6, 2023;<br>3:47 pm, September 13, 2023 | Left messages; no response to date. |

| | | | |
|---|---|---|---|
| Ann Brierty, Tribal Historic Preservation Officer | Morongo Band of Mission Indians | 3:05 pm, September 6, 2023;<br>3:50 pm, September 13, 2023 | Ms. Brierty stated that she would respond in writing if the tribe had any comments. No further response to date. |
| Jill McCormick, Tribal Historic Preservation Officer | Fort Yuma Quechan Indian Tribe | 3:08 pm, September 6, 2023;<br>3:53 pm, September 13, 2023 | Left messages; no response to date. |
| Alexandra McCleary, Cultural Lands Manager | Yuhaaviatam of San Manuel Nation | None | Ms. McCleary responded by e-mail on August 14, 2023 (copy attached). |
| Vanessa Minott, Tribal Administrator | Santa Rosa Band of Cahuilla Indians | 3:12 pm, September 6, 2023;<br>3:56 pm, September 13, 2023 | Left messages; no response to date. |
| Mark Cochrane, Co-Chairperson | Serrano Nation of Mission Indians | 3:15 pm, September 6, 2023;<br>4:00 pm, September 13, 2023 | Left messages; no response to date. |
| Joseph Ontiveros, Tribal Historic Preservation Officer | Soboba Band of Luiseño Indians | 3:20 pm, September 6, 2023 | Jessica Valdez, Cultural Resource Specialist for the tribe, stated that they would defer to Mr. Anthony Morales of the Gabrieleno/Tongva San Gabriel Band of Mission Indians for this undertaking. |

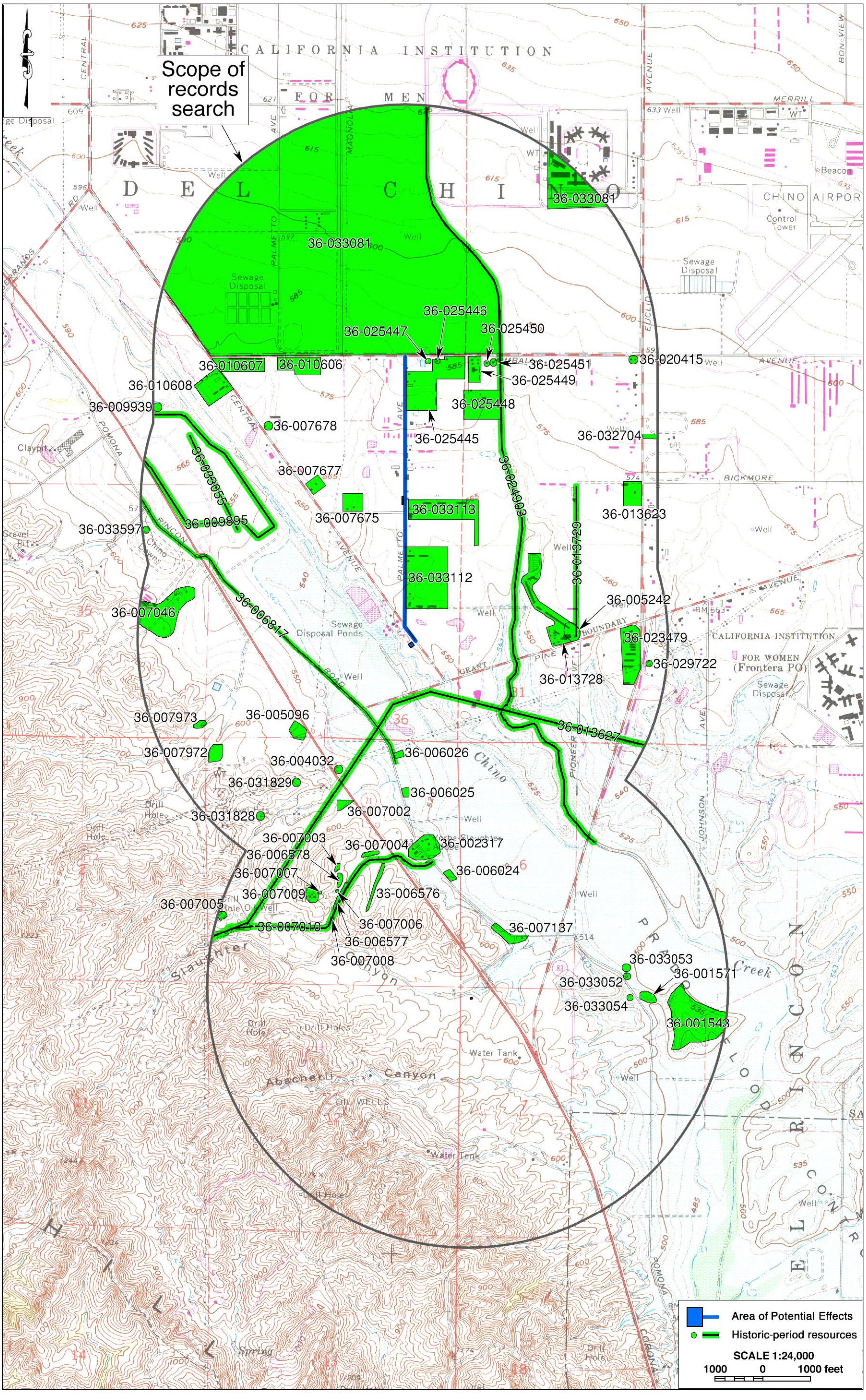
**APPENDIX 3**

# LOCATIONS OF RECORDED CULTURAL RESOURCES WITHIN THE RECORDS SEARCH SCOPE

**(Confidential)**




Prehistoric cultural resources previously recorded in the project vicinity




Historic-period cultural resources previously recorded in the project vicinity

# APPENDIX 5

# AIR QUALITY / GREENHOUSE GAS

# AIR QUALITY and GHG IMPACT ANALYSES

# IE-375 OFFSITE PROJECTS

# CHINO, CALIFORNIA

Prepared by:

Sara Friedman Gerrick
Gerrick Environmental

Prepared for:

Tom Dodson & Associates
Attn: Tom Dodson
PO Box 2307
San Bernardino, CA 92406-2307

Date:

September 24, 2023

Project No.: P23-037 CEQA NEPA

# METEOROLOGICAL SETTING

The climate of the Chino area, as with all of Southern California, is governed largely by the strength and location of the semi-permanent high-pressure center over the Pacific Ocean and the moderating effects of the nearby vast oceanic heat reservoir. Local climatic conditions are characterized by very warm summers, mild winters, infrequent rainfall, moderate daytime onshore breezes, and comfortable humidities. Unfortunately, the same climatic conditions that create such a desirable living climate combine to severely restrict the ability of the local atmosphere to disperse the large volumes of air pollution generated by the population and industry attracted in part by the climate.

Chino is situated in an area where the pollutants generated in coastal portions of the Los Angeles basin undergo photochemical reactions and then move inland across the project site during the daily sea breeze cycle. The resulting smog at times gives western San Bernardino County some of the worst air quality in all of California. Despite dramatic improvement in air quality in the local area throughout the 1980s, the project site is, nevertheless, expected to continue to experience some unhealthful air quality for at least the next decade.

Temperatures in the project vicinity average 62 degrees Fahrenheit annually with summer afternoons in the low 90s and winter mornings in the low 40s. Temperatures much above 100 or below 30 degrees occur infrequently only under unusual weather conditions and even then, these limits are not far exceeded.

In contrast to the slow annual variation of temperature, precipitation is highly variable seasonally. Rainfall in the far western portions of San Bernardino County averages 17 inches annually and falls almost exclusively from late October to early April. Summers are almost completely dry with frequent periods of 4-5 months of no precipitation. Because much of the rainfall comes from the fringes of mid-latitude storms, a shift in the storm track of a few hundred miles can mean the difference between a very wet year and a year with drought conditions.

Winds across the project area are an important meteorological parameter because they control both the initial rate of dilution of locally generated air pollutant emissions as well as their regional trajectory. Wind across Chino, as determined from long-term wind data at Ontario Airport, show a very unidirectional daytime onshore flow from the SW-NW with a very weak offshore return flow from the NE that is strongest on winter nights when the land is cooler than the ocean. The onshore winds during the day average 6-8 mph, while the offshore flow is often calm or drifts slowly westward at 1-3 mph.

During the daytime, any locally generated air emissions are thus transported eastward toward San Bernardino and Cajon Pass without generating any localized air quality impacts. The drainage winds which move slowly across the area have some potential for localized stagnation. Fortunately, these winds have their origin in the San Gabriel Mountains where background pollution levels are low such that any localized contributions do not create any unhealthful impacts. The wind distribution is such that nominal project-related air quality impacts occur more on a regional scale rather than in the immediate Chino area.

One other important wind condition may occur when a high-pressure center forms over the western United States with sinking air forced seaward through local canyons and mountain passes. The air warms by compression and relative humidities drop dramatically. The dry, gusty winds from the N-NE create dust nuisance potential around areas of soil disturbance such as construction sites and sometimes create serious visibility and safety problems for vehicles on area freeways.

In conjunction with the two dominant wind regimes that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. The summer onshore flow is capped by a massive dome of warm, sinking air which caps a shallow layer of cooler ocean air. These marine/ subsidence inversions act like a giant lid over the basin. They allow for local mixing of emissions, but they confine the entire polluted air mass within the basin until it escapes into the desert or along thermal chimneys formed along heated mountain slopes.

In winter, when the air near the ground cools while the air aloft remains warm, radiation inversions are formed that trap low-level emissions such as automobile exhaust near their source. As background levels of primary vehicular exhaust rise during the seaward return flow, the combination of rising non-local baseline levels plus the emissions trapped locally by these radiation inversions creates micro-scale air pollution "hot spots" near freeways, shopping centers and other traffic concentrations. Because the incoming air draining off the mountains during nocturnal radiation inversion conditions is relatively clean, the summer subsidence inversions are a far more critical factor in determining Chino area air quality than the wintertime local trapping inversions.

# AIR QUALITY SETTING

## AMBIENT AIR QUALITY STANDARDS (AAQS)

In order to gauge the significance of the air quality impacts of the proposed project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 1. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

## Table 1

# Ambient Air Quality Standards

| Pollutant | Averaging Time | California Standards [1] | | National Standards [2] | | |
|---|---|---|---|---|---|---|
| | | Concentration [3] | Method [4] | Primary [3,5] | Secondary [3,6] | Method [7] |
| Ozone ($O_3$)[8] | 1 Hour | 0.09 ppm (180 µg/m$^3$) | Ultraviolet Photometry | — | Same as Primary Standard | Ultraviolet Photometry |
| | 8 Hour | 0.070 ppm (137 µg/m$^3$) | | 0.070 ppm (137 µg/m$^3$) | | |
| Respirable Particulate Matter (PM10)[9] | 24 Hour | 50 µg/m$^3$ | Gravimetric or Beta Attenuation | 150 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 20 µg/m$^3$ | | — | | |
| Fine Particulate Matter (PM2.5)[9] | 24 Hour | — | — | 35 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 12 µg/m$^3$ | Gravimetric or Beta Attenuation | 12.0 µg/m$^3$ | 15 µg/m$^3$ | |
| Carbon Monoxide (CO) | 1 Hour | 20 ppm (23 mg/m$^3$) | Non-Dispersive Infrared Photometry (NDIR) | 35 ppm (40 mg/m$^3$) | — | Non-Dispersive Infrared Photometry (NDIR) |
| | 8 Hour | 9.0 ppm (10 mg/m$^3$) | | 9 ppm (10 mg/m$^3$) | — | |
| | 8 Hour (Lake Tahoe) | 6 ppm (7 mg/m$^3$) | | — | — | |
| Nitrogen Dioxide ($NO_2$)[10] | 1 Hour | 0.18 ppm (339 µg/m$^3$) | Gas Phase Chemiluminescence | 100 ppb (188 µg/m$^3$) | — | Gas Phase Chemiluminescence |
| | Annual Arithmetic Mean | 0.030 ppm (57 µg/m$^3$) | | 0.053 ppm (100 µg/m$^3$) | Same as Primary Standard | |
| Sulfur Dioxide ($SO_2$)[11] | 1 Hour | 0.25 ppm (655 µg/m$^3$) | Ultraviolet Fluorescence | 75 ppb (196 µg/m$^3$) | — | Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method) |
| | 3 Hour | — | | — | 0.5 ppm (1300 µg/m$^3$) | |
| | 24 Hour | 0.04 ppm (105 µg/m$^3$) | | 0.14 ppm (for certain areas)[11] | — | |
| | Annual Arithmetic Mean | — | | 0.030 ppm (for certain areas)[11] | — | |
| Lead[12,13] | 30 Day Average | 1.5 µg/m$^3$ | Atomic Absorption | — | — | High Volume Sampler and Atomic Absorption |
| | Calendar Quarter | — | | 1.5 µg/m$^3$ (for certain areas)[12] | Same as Primary Standard | |
| | Rolling 3-Month Average | — | | 0.15 µg/m$^3$ | | |
| Visibility Reducing Particles[14] | 8 Hour | See footnote 14 | Beta Attenuation and Transmittance through Filter Tape | No National Standards | | |
| Sulfates | 24 Hour | 25 µg/m$^3$ | Ion Chromatography | | | |
| Hydrogen Sulfide | 1 Hour | 0.03 ppm (42 µg/m$^3$) | Ultraviolet Fluorescence | | | |
| Vinyl Chloride[12] | 24 Hour | 0.01 ppm (26 µg/m$^3$) | Gas Chromatography | | | |

**See footnotes on next page …**

**For more information please call ARB-PIO at (916) 322-2990**

**California Air Resources Board (5/4/16)**

# Table 1 (continued)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour $SO_2$ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 $SO_2$ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

## Table 2
## Health Effects of Major Criteria Pollutants

| Pollutants | Sources | Primary Effects |
|---|---|---|
| Carbon Monoxide (CO) | • Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust.<br>• Natural events, such as decomposition of organic matter. | • Reduced tolerance for exercise.<br>• Impairment of mental function.<br>• Impairment of fetal development.<br>• Death at high levels of exposure.<br>• Aggravation of some heart diseases (angina). |
| Nitrogen Dioxide ($NO_2$) | • Motor vehicle exhaust.<br>• High temperature stationary combustion.<br>• Atmospheric reactions. | • Aggravation of respiratory illness.<br>• Reduced visibility.<br>• Reduced plant growth.<br>• Formation of acid rain. |
| Ozone ($O_3$) | • Atmospheric reaction of organic gases with nitrogen oxides in sunlight. | • Aggravation of respiratory and cardiovascular diseases.<br>• Irritation of eyes.<br>• Impairment of cardiopulmonary function.<br>• Plant leaf injury. |
| Lead (Pb) | • Contaminated soil. | • Impairment of blood function and nerve construction.<br>• Behavioral and hearing problems in children. |
| Respirable Particulate Matter (PM-10) | • Stationary combustion of solid fuels.<br>• Construction activities.<br>• Industrial processes.<br>• Atmospheric chemical reactions. | • Reduced lung function.<br>• Aggravation of the effects of gaseous pollutants.<br>• Aggravation of respiratory and cardio respiratory diseases.<br>• Increased cough and chest discomfort.<br>• Soiling.<br>• Reduced visibility. |
| Fine Particulate Matter (PM-2.5) | • Fuel combustion in motor vehicles, equipment, and industrial sources.<br>• Residential and agricultural burning.<br>• Industrial processes.<br>• Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics. | • Increases respiratory disease.<br>• Lung damage.<br>• Cancer and premature death.<br>• Reduces visibility and results in surface soiling. |
| Sulfur Dioxide ($SO_2$) | • Combustion of sulfur-containing fossil fuels.<br>• Smelting of sulfur-bearing metal ores.<br>• Industrial processes. | • Aggravation of respiratory diseases (asthma, emphysema).<br>• Reduced lung function.<br>• Irritation of eyes.<br>• Reduced visibility.<br>• Plant injury.<br>• Deterioration of metals, textiles, leather, finishes, coatings, etc. |

Source: California Air Resources Board, 2002.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide ($NO_{2)}$ that is more stringent than the corresponding federal standard, and strengthened the state one-hour $NO_2$ standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5-to-10-micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted. In December 2012, the federal annual standard for PM-2.5 was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of the basin's non-attainment status for PM-2.5 may be increased by this action and thus require accelerated planning for future PM-2.5 attainment.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA had proposed a further strengthening of the 8-hour standard. A new 8-hour ozone standard was adopted in 2015 after extensive analysis and public input. The adopted national 8-hour ozone standard is 0.07 ppm which matches the current California standard. It will require three years of ambient data collection, then 2 years of non-attainment findings and planning protocol adoption, then several years of plan development and approval. Final air quality plans for the new standard are likely to be adopted around 2022. Ultimate attainment of the new standard in ozone problem areas such as Southern California might be after 2025.

In 2010 a new federal one-hour primary standard for nitrogen dioxide ($NO_2$) was adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in the South Coast Air Basin, the California Air Resources Board has requested the EPA to designate the basin as being in attainment for this standard. The federal standard for sulfur dioxide ($SO_2$) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, $SO_2$ is typically not a problem pollutant.

## BASELINE AIR QUALITY

Existing and probable future levels of air quality in the project area can be best inferred from ambient air quality measurements conducted by the South Coast Air Quality Management District (SCAQMD) at its Central San Bernardino monitoring station. This station measures both regional pollution levels such as dust (particulates) and smog, as well as levels of primary vehicular pollutants such as carbon monoxide. Table 3 summarizes the last four years of the published data from the Central San Bernardino monitoring station.

Ozone and particulates are seen to be the two most significant air quality concerns. Ozone is the primary ingredient in photochemical smog. Slightly more than 19 percent of all days exceed the California one-hour standard. The 8-hour state ozone standard has been exceeded an average of 29 percent of all days in the past four years. The federal 8-hour standard is exceeded 22 percent of all days. For the last four years, ozone levels have neither improved nor gotten noticeably worse. While ozone levels are still high, they are much lower than 10 to 20 years ago. Attainment of all clean air standards in the project vicinity is not likely to occur soon, but the severity and frequency of violations is expected to continue to slowly decline during the current decade.

In addition to gaseous air pollution concerns, San Bernardino experiences frequent violations of standards for 10-micron diameter respirable particulate matter (PM-10). High dust levels occur during Santa Ana wind conditions, as well as from the trapped accumulation of soot, roadway dust and byproducts of atmospheric chemical reactions during warm season days with poor visibility. Table 3 shows that almost 17 percent of all days in the last four years experienced a violation of the State PM-10 standard. However, the three-times less stringent federal standard has not been exceeded in the same period.

A substantial fraction of PM-10 is comprised of ultra-small diameter particulates capable of being inhaled into deep lung tissue (PM-2.5). Peak annual PM-2.5 levels are sometimes almost as high as PM-10, which includes PM-2.5 as a sub-set. Only one day in the past four years has experienced a violation of the 24-hour standard of 35 $\mu g/m^3$.

While many of the major ozone precursor emissions (automobiles, solvents, paints, etc.) have been substantially reduced, most major PM-10 sources (construction dust, vehicular turbulence along roadway shoulders, truck exhaust, etc.) have not been as effectively reduced. The prospects of ultimate attainment of ozone standards are better than for particulate matter.

More localized pollutants such as carbon monoxide, nitrogen oxides, etc. are very low near the project site because background levels never approach allowable levels. There is substantial excess dispersive capacity to accommodate localized vehicular air pollutants such as NOx or CO without any threat of violating applicable AAQS.

**Table 3**
**Air Quality Monitoring Summary (2018-2021)**
**(Estimated Number of Days Standards Were Exceeded)**

| **Pollutant/Standard** | **2018** | **2019** | **2020** | **2021** |
|---|---|---|---|---|
| **Ozone** | | | | |
| 1-Hour > 0.09 ppm (S) | 63 | 63 | 89 | 66 |
| 8-Hour > 0.07 ppm (S) | 102 | 96 | 128 | 98 |
| 8- Hour > 0.075 ppm (F) | 71 | 73 | 110 | 74 |
| Max. 1-Hour Conc. (ppm) | 0.138 | 0.127 | 0.162 | 0.142 |
| Max. 8-Hour Conc. (ppm) | 0.116 | 0.114 | 0.122 | 0.112 |
| **Carbon Monoxide** | | | | |
| 8- Hour > 9. ppm (S,F) | 0 | 0 | 0 | 0 |
| Max 8-hour Conc. (ppm) | 2.7 | 1.3 | 1.9 | 2.0 |
| **Nitrogen Dioxide** | | | | |
| 1-Hour > 0.18 ppm (S) | 0 | 0 | 0 | 0 |
| Max. 1-Hour Conc. (ppm) | 0.057 | 0.059 | 0.054 | 0.056 |
| **Respirable Particulates (PM-10)** | | | | |
| 24-Hour > 50 $\mu g/m^3$ (S) | 25/335 | 36/269 | 81/320 | 79/364 |
| 24-Hour > 150 $\mu g/m^3$ (F) | 0/335 | 0/269 | 0/320 | 0/364 |
| Max. 24-Hr. Conc. ($\mu g/m^3$) | 129. | 112. | 80. | 111. |
| **Fine Particulates (PM-2.5)** | | | | |
| 24-Hour > 35 $\mu g/m^3$ (F) | 0/114 | 0/97 | 0/115 | 1/120 |
| Max. 24-Hr. Conc. ($\mu g/m^3$) | 30.1 | 34.8 | 25.7 | 57.9 |

S=State Standard
F=Federal Standard

Source: Central San Bernardino SCAQMD Air Monitoring Summary (5203)
data: www.arb.ca.gov/adam/

## AIR QUALITY PLANNING

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The SCAB could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with air-sheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Substantial reductions in emissions of ROG, NOx and CO are forecast to continue throughout the next several decades. Unless new particulate control programs are implemented, PM-10 and PM-2.5 are forecast to slightly increase.

The Air Quality Management District (AQMD) adopted an updated clean air "blueprint" in August 2003. The 2003 Air Quality Management Plan (AQMP) was approved by the EPA in 2004. The AQMP outlined the air pollution measures needed to meet federal health-based standards for ozone by 2010 and for particulates (PM-10) by 2006. The 2003 AQMP was based upon the federal one-hour ozone standard which was revoked late in 2005 and replaced by an 8-hour federal standard. Because of the revocation of the hourly standard, a new air quality planning cycle was initiated.

With re-designation of the air basin as non-attainment for the 8-hour ozone standard, a new attainment plan was developed. This plan shifted most of the one-hour ozone standard attainment strategies to the 8-hour standard. As previously noted, the attainment date was to "slip" from 2010 to 2021. The updated attainment plan also includes strategies for ultimately meeting the federal PM-2.5 standard.

Because Projected attainment by 2021 required control technologies that did not exist yet, the SCAQMD requested a voluntary "bump-up" from a "severe non-attainment" area to an "extreme non-attainment" designation for ozone. The extreme designation was to allow a longer time period for these technologies to develop. If attainment cannot be demonstrated within the specified deadline without relying on "black-box" measures, EPA would have been required to impose sanctions on the region had the bump-up request not been approved. In April 2010, the EPA approved the change in the non-attainment designation from "severe-17" to "extreme." This reclassification set a later attainment deadline (2024), but also required the air basin to adopt even more stringent emissions controls.

In other air quality attainment plan reviews, EPA had disapproved part of the SCAB PM-2.5 attainment plan included in the AQMP. EPA stated that the current attainment plan relied on PM-2.5 control regulations that had not yet been approved or implemented. It was expected that several rules that were pending approval would remove the identified deficiencies. If these issues were not resolved within the next several years, federal funding sanctions for transportation Projects could

result. The 2012 AQMP included in the current California State Implementation Plan (SIP) was expected to remedy identified PM-2.5 planning deficiencies.

The federal Clean Air Act requires that non-attainment air basins have EPA approved attainment plans in place. This requirement includes the federal one-hour ozone standard even though that standard was revoked almost ten years ago. There was no approved attainment plan for the one-hour federal standard at the time of revocation. Through a legal quirk, the SCAQMD is now required to develop an AQMP for the long since revoked one-hour federal ozone standard. Because the current SIP for the basin contains a number of control measures for the 8-hour ozone standard that are equally effective for one-hour levels, the 2012 AQMP was believed to satisfy hourly attainment planning requirements.

AQMPs are required to be updated at regular intervals. The 2012 AQMP was adopted in early 2013. An updated 2016 AQMP was adopted by the SCAQMD Board in March 2017. The 2016 AQMD demonstrated the emissions reductions shown in Table 4 compared to the 2012 AQMP.

**Table 4**
**Comparison of Emissions by Major Source Category From 2012 AQMP**

| Pollutant | Stationary Sources | Mobile Sources |
|---|---|---|
| VOC | -12% | -3% |
| NOx | -13% | -1% |
| SOx | -34% | -23% |
| PM2.5 | -9% | -7% |

*source 2016 AQMP

SCAQMD has initiated the development of the 2022 AQMP to address the attainment of the 2015 8-hour ozone standard (70 ppb) for South Coast Air Basin and Coachella Valley which will focus on attaining the 70 ppb 8-hour ozone National Ambient Air Quality Standard (NAAQS) by 2037. On-road vehicles and off-road mobile sources represent the largest categories of NOx emissions. Accomplishment of attainment goals requires an approximate 70% reduction in NOx emissions. Large scale transition to zero emission technologies is a key strategy. To this end, Governor Executive Order N-79-20 requires 100 percent EV sales by 2035 for automobiles and short haul drayage trucks. A full transition to EV buses and heavy-duty long-haul trucks is required by 2045.

The proposed project does not directly relate to the AQMP in that there are no specific air quality programs or regulations governing wastewater improvement projects. Conformity with adopted plans, forecasts and programs relative to population, housing, employment and land use is the primary yardstick by which impact significance of planned growth is determined. The SCAQMD, however, while acknowledging that the AQMP is a growth-accommodating document, does not favor designating regional impacts as less-than-significant just because the proposed development is consistent with regional growth projections. Air quality impact significance for the project has therefore been analyzed on a project-specific basis.

# AIR QUALITY IMPACT

## STANDARDS OF SIGNIFICANCE

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following four tests of air quality impact significance. A Project would have a potentially significant impact if it:

a) Conflicts with or obstructs implementation of the applicable air quality plan.

b) Results in a cumulatively considerable net increase of any criteria pollutants for which the Project region is non-attainment under an applicable federal or state ambient air quality standard.
c) Exposes sensitive receptors to substantial pollutant concentrations.

d) Creates objectionable odors affecting a substantial number of people.

### Primary Pollutants

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM-10, an aggressive dust control program is required to control fugitive dust during Project construction.

### Secondary Pollutants

Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based upon a specified number of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

Because of the chemical complexity of primary versus secondary pollutants, the SCAQMD has designated significant emissions levels as surrogates for evaluating regional air quality impact significance independent of chemical transformation processes. Projects with daily emissions that

exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant under CEQA guidelines.

**Table 5**
**Daily Emissions Thresholds**

| Pollutant | Construction | Operations |
|---|---|---|
| ROG | 75 | 55 |
| NOx | 100 | 55 |
| CO | 550 | 550 |
| PM-10 | 150 | 150 |
| PM-2.5 | 55 | 55 |
| SOx | 150 | 150 |
| Lead | 3 | 3 |

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

## CONSTRUCTION ACTIVITY IMPACTS

In May 2023 the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of CalEEMod2022.1. CalEEMod provides a model by which to calculate both construction emissions and operational emissions from a variety of land use projects. It calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions.

The project proposes four components as follows:

1 Butterfield Ranch Pump Station: Replace equipment at an existing pump station.

2. Mtn. Avenue Lift Station: Construct a new lift station.

3. Butterfield Force Main: Install dual force mains, approximately 12,400 linear feet in length.

4. RP-2 Lift Station: Modify the existing lift station with new pumps and a new platform for electrical gear and replace the generator.

The equipment and durations used in modeling are shown in Table 6.

**Table 6**
**Construction Equipment and Durations**

| Phase Name | Activity and Duration | Equipment |
|---|---|---|
| Butterfield Ranch Pump Station | Construction 5 days | 1 Forklift |
| | | 1 Generator |
| | | 2 Welders |
| Mtn. Avenue Lift Station | Grading 5 days | 1 Loader/Backhoe |
| | | 1 Excavator |
| | Construction 55 days | 1 Crane |
| | | 1 Forklift |
| | | 1 Loader/Backhoe |
| Butterfield Force Main Linear | Grading and Excavation 20 days | 3 Loader/Backhoes |
| | | 2 Trenchers |
| | | 2 Concrete Saws |
| | | 1 Excavators |
| | Pipe Installation 80 days | 2 Forklifts |
| | | 2 Loader/Backhoes |
| | | 1 Other Material Handling Equip |
| | Backfill and Paving 40 days | 2 Rollers |
| | | 2 Loader/Backhoes |
| | | 1 Paver |
| | | 1 Paving Equipment |
| 1RP-2 Lift Station | Construction 40 days | 1 Crane |
| | | 1 Forklift |
| | | 2 Loader/Backhoes |
| | | 2 Welders |

Utilizing this indicated equipment fleet and durations shown in Table 6 the following worst-case daily construction emissions are calculated by CalEEMod as provided in Table 7.

**Table 7**
**Construction Activity Emissions**
**2024 Maximal Daily Emissions (lbs/day)**

| Maximal Construction Emissions | ROG | NOx | CO | $SO_2$ | PM-10 | PM-2.5 |
|---|---|---|---|---|---|---|
| Butterfield Ranch Pump Station | 0.4 | 3.3 | 3.7 | <0.1 | 0.1 | 0.1 |
| Mtn. Avenue Lift Station | 0.8 | 6.9 | 10.0 | <0.1 | 0.6 | 0.3 |
| Butterfield Force Main | 2.7 | 23.7 | 35.3 | 0.1 | 1.5 | 1.0 |
| RP-2 Lift Station | 0.8 | 7.1 | 8.7 | <0.1 | 0.3 | 0.3 |
| **Total** | **4.7** | **41.0** | **57.7** | **0.1** | **2.5** | **1.7** |
| SCAQMD Thresholds | 75 | 100 | 550 | 150 | 150 | 55 |

Peak daily construction activity emissions are estimated to be below SCAQMD CEQA daily thresholds even if all projects overlapped, without the need for any mitigation.

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. The SCAQMD does not generally require the analysis of construction-related diesel emissions relative to health risk due to the short period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-, 30-, or 70-year timeframe and not over a relatively brief construction period due to the lack of health risk associated with such a brief exposure.

## LOCALIZED SIGNIFICANCE THRESHOLDS

The SCAQMD has developed analysis parameters to evaluate ambient air quality on a local level in addition to the more regional emissions-based thresholds of significance. These analysis elements are called Localized Significance Thresholds (LSTs). LSTs were developed in response to Governing Board's Environmental Justice Enhancement Initiative 1-4 and the LST methodology was provisionally adopted in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005.

Use of an LST analysis for a project is optional. For the proposed project, the only source of possible LST impact would be during construction. LSTs are applicable for a sensitive receptor where it is possible that an individual could remain for 24 hours such as a residence, hospital or convalescent facility.

LSTs are only applicable to the following criteria pollutants: oxides of nitrogen (NOx), carbon monoxide (CO), and particulate matter (PM-10 and PM-2.5). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor.

LST screening tables are available for 25, 50, 100, 200 and 500 meter source-receptor distances. For this project distances the most stringent 25-meter distance was selected for analysis.

Screening level concentration data is currently published for 1-, 2- and 5-acre sites. The most stringent standards for a 1-acre site were used.

The following thresholds and emissions in Table 8 are therefore determined (pounds per day).

**Table 8**
**LST and Project Emissions (pounds/day)**

| **LST 1.0 acres/25 meters Southwest San Bernardino Valley** | **CO** | **NOx** | **PM-10** | **PM-2.5** |
|---|---|---|---|---|
| **LST Significance Threshold** | 863 | 118 | 5 | 4 |
| Butterfield Ranch Pump Station | 4 | 3 | 1 | 1 |
| Mtn. Avenue Lift Station | 10 | 7 | 1 | 1 |
| Butterfield Force Main | 35 | 23 | 2 | 1 |
| RP-2 Lift Station | 9 | 7 | 1 | 1 |

Since each activity takes place at a unique location, the projects are individually compared to the LST maximum daily construction activities. As seen in Table 8, emissions meet the LST for construction thresholds without mitigation. LST impacts are less-than-significant.

## NEPA CONFORMITY

### Thresholds of Significance

The U.S. Environmental Protection Agency published "Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule," in the November 30, 1995, Federal Register (40 CFR Parts 6, 51, and 93). The 40 CFR Part 1 51.850(a) states that no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license to permit, or approve any activity which does not conform to an applicable state implementation plan (SIP). It is the responsibility of the Federal agency to determine whether a federal action conforms to the applicable implementation plan, before the action is taken. If the proposed project includes any federal funding, or if the project requires any federal permits, federal participation is not allowed unless a conformity determination has been made.

Conformity analysis under EPA guidelines can be undertaken to demonstrate that the combined emissions from direct and indirect (transportation, etc.) project-related emissions have been accurately incorporated into the applicable SIP. A simpler test, as outlined in 40CFR Part 93.153, is to demonstrate that these emissions are less than the *de minimis* thresholds which depend upon the seriousness of the current level of non-attainment for federal clean air standards.

The SCAB is designated as an "extreme" non-attainment area for the federal 8-hour ozone standard. The basin is a "serious" non-attainment area for PM-2.5, and a maintenance area for PM-10. Sulfur Dioxide and Carbon Monoxide are maintenance areas. Based upon these designations, the following emissions levels are presumed evidence of SIP conformity:

| | | |
|---|---|---|
| VOC/ROG | - | 10 tons/year |
| NOx | - | 10 tons/year |
| PM-2.5 | - | 70 tons/year |
| PM-10 | - | 100 tons/year |
| CO | - | 100 tons/year |
| $SO_2$ | - | 100 tons/year |
| Lead | - | 25 tons/year |

If the project-related emissions from construction and operations are less than the specified "*de minimis*" levels, the project is considered to be in conformance with the applicable SIP.

**NEPA Analysis**

Annual emissions were run with the same assumptions as used for daily emissions. The calculated maximum annual emissions were then compared to the EPA *de minimis* emission thresholds that would allow for a federal conformity finding with Section 176c of the Clean Air Act.

**Table 9**
**2024 Total Annual Construction Emissions**
**(tons/year)**

| 2025 | ROG | NOx | CO | $SO_2$ | PM-10 | PM-2.5 |
|---|---|---|---|---|---|---|
| Butterfield Ranch Pump Station | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Mtn. Avenue Lift Station | 0.02 | 0.15 | 0.20 | 0.01 | 0.01 | 0.01 |
| Butterfield Force Main | 0.05 | 0.48 | 0.79 | 0.01 | 0.03 | 0.02 |
| RP-2 Lift Station | 0.02 | 0.14 | 0.17 | 0.01 | 0.01 | 0.01 |
| **Total** | **0.10** | **0.78** | **1.17** | **0.04** | **0.06** | **0.05** |
| NEPA Threshold | 10 | 10 | 100 | 100 | 100 | 70 |

As shown in Table 9, and summarized below, maximum annual emissions for the combined total of all projects are much less than their associated *de minimis* thresholds. A formal SIP consistency analysis is not required.

| Pollutant | Threshold | Project Emissions |
|---|---|---|
| VOC/ROG | 10 tons/year | 0.10 tons/year |
| NOx | 10 tons/year | 0.78 tons/year |
| PM-2.5 | 70 tons/year | 0.05 tons/year |
| PM-10 | 100 tons/year | 0.06 tons/year |
| CO | 100 tons/year | 1.17 tons/year |
| $SO_2$ | 100 tons/year | 0.04 tons/year |

## OPERATIONAL IMPACTS

There are no operational impacts associated with a pipeline installation or lift station improvements.

# CONSTRUCTION EMISSIONS MINIMIZATION

Construction activities are not anticipated to cause dust emissions to exceed SCAQMD CEQA thresholds. Nevertheless, emissions minimization through enhanced dust control measures is recommended for use because of the non-attainment status of the air and proximity of residential uses. Recommended measures include:

## Fugitive Dust Control

- Apply soil stabilizers or moisten inactive areas.
- Water exposed surfaces as needed to avoid visible dust leaving the construction site (typically 2-3 times/day).
- Cover all stock piles with tarps at the end of each day or as needed.
- Provide water spray during loading and unloading of earthen materials.
- Minimize in-out traffic from construction zone
- Cover all trucks hauling dirt, sand, or loose material and require all trucks to maintain at least two feet of freeboard
- Sweep streets daily if visible soil material is carried out from the construction site

Similarly, ozone precursor emissions (ROG and NOx) are calculated to be below SCAQMD CEQA thresholds. However, because of the regional non-attainment for photochemical smog, the use of reasonably available control measures for diesel exhaust is recommended. Combustion emissions control options include:

## Exhaust Emissions Control

- Utilize well-tuned off-road construction equipment.
- Establish a preference for contractors using Tier 3 or better rated heavy equipment.
- Enforce 5-minute idling limits for both on-road trucks and off-road equipment.

# GREENHOUSE GAS EMISSIONS

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation in some parts of the infrared spectrum. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. For purposes of planning and regulation, Section 15364.5 of the California Code of Regulations defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. GHG statues and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, to be achieved by 2020.
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementation regulations for AB 32 is under way. Maximum GHG reductions are expected to derive from increased vehicle fuel efficiency, from greater use of renewable energy and from increased structural energy efficiency. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been

developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

## THRESHOLDS OF SIGNIFICANCE

In response to the requirements of SB97, the State Resources Agency developed guidelines for the treatment of GHG emissions under CEQA. These new guidelines became state laws as part of Title 14 of the California Code of Regulations in March, 2010. The CEQA Appendix G guidelines were modified to include GHG as a required analysis element. A Project would have a potentially significant impact if it:

- Generates GHG emissions, directly or indirectly, that may have a significant impact on the environment, or,

- Conflicts with an applicable plan, policy or regulation adopted to reduce GHG emissions.

Section 15064.4 of the Code specifies how significance of GHG emissions is to be evaluated. The process is broken down into quantification of Project-related GHG emissions, making a determination of significance, and specification of any appropriate mitigation if impacts are found to be potentially significant. At each of these steps, the new GHG guidelines afford the lead agency substantial flexibility.

Emissions identification may be quantitative, qualitative, or based on performance standards. CEQA guidelines allow the lead agency to "select the model or methodology it considers most appropriate." The most common practice for transportation/combustion GHG emissions quantification is to use a computer model such as CalEEMod, as was used in the ensuing analysis.

The significance of those emissions then must be evaluated; the selection of a threshold of significance must take into consideration what level of GHG emissions would be cumulatively considerable. The guidelines are clear that they do not support a zero net emissions threshold. If the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

On December 5, 2008, the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial Projects where the SCAQMD is the lead agency (e.g., stationary source permit Projects, rules, plans, etc.) of 10,000 Metric Tons (MT) $CO_2$ equivalent/year. This 10,000 MT/year recommendation has been used as a guideline for this analysis.

## PROJECT RELATED GHG EMISSIONS GENERATION

During project construction, CalEEMod predicts that the construction activities will generate the $CO_2$(e) emissions identified in Table 10. Because the SCAQMD GHG emissions policy from

construction activities is to amortize emissions over a 30-year lifetime, the amortized annual total is also presented.

**Table 10**
**Construction Emissions (Metric Tons $CO_2(e)$)**

| **Year 2024** | **MT $CO_2(e)$** |
|---|---|
| Butterfield Ranch Pump Station | 1.2 |
| Mtn. Avenue Lift Station | 36.0 |
| Butterfield Force Main | 115.0 |
| RP-2 Lift Station | 27.4 |
| **Total** | **179.6** |
| 30 Year Annual Amortized Rate | 6.0 |

GHG impacts from construction are considered less-than-significant.

## Consistency with GHG Plans, Programs and Policies

The City of Chino updated their existing Climate Action Plan on November 17, 2020. Through the Climate Action Plan (CAP) update, the City has established goals and policies that incorporate environmental responsibility into the everyday management of its community operations.

The CAP outlines local reduction measures meant to encourage energy efficiency, water conservation, alternative transportation, solid waste reduction, and clean energy. The only measure applicable to wastewater is as follows:

- Wastewater-3: Promote Usage of Recycled Water

This measure is not applicable to this project. The main GHG project impacts are related to construction. As shown, construction GHG is minimal. The project is also growth accommodating and ensures wastewater is efficiently transported to a water treatment facility to eliminate the possibility of environmental hazards such as spillage or overflow. The project is in compliance with GHG plans and policies.

# CALEEMOD2022.1 COMPUTER MODEL OUTPUT

- Butterfield Ranch Pump Station
- Mtn. Avenue Lift Station
- Butterfield Force Main
- RP-2 Lift Station

# Butterfield Ranch Pump Station Summary Report

## Table of Contents

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Butterfield Ranch Pump Station |
| Construction Start Date | 1/9/2024 |
| Operational Year | 2024 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.60 |
| Precipitation (days) | 18.8 |
| Location | Butterfield Ranch, Chino Hills, CA 91709, USA |
| County | San Bernardino-South Coast |
| City | Chino Hills |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 5206 |
| EDFZ | 10 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.19 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| User Defined Industrial | 1.00 | User Defined Unit | 0.00 | 0.00 | 0.00 | — | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.52 | 0.43 | 3.27 | 3.67 | 0.01 | 0.13 | 0.00 | 0.13 | 0.12 | 0.00 | 0.12 | — | 503 | 503 | 505 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.01 | 0.01 | 0.04 | 0.05 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | — | 6.90 | 6.90 | 6.92 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | — | 1.14 | 1.14 | 1.15 |

### 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 6. Climate Risk Detailed Report

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 0 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 0 | 0 | 0 | N/A |
| Wildfire | 0 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 1 | 1 | 1 | 2 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

# 7. Health and Equity Details

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 52.0 |
| Healthy Places Index Score for Project Location (b) | 71.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

# Mtn Ave Lift Station Summary Report

## Table of Contents

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Mtn Ave Lift Station |
| Construction Start Date | 1/9/2024 |
| Operational Year | 2024 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.60 |
| Precipitation (days) | 18.8 |
| Location | Mountain Ave & Flowers St, Chino, CA 91708, USA |
| County | San Bernardino-South Coast |
| City | Chino |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 5206 |
| EDFZ | 10 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.19 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| User Defined Industrial | 1.00 | User Defined Unit | 0.10 | 300 | 50.0 | — | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.65 | 0.55 | 5.12 | 7.08 | 0.01 | 0.22 | 0.15 | 0.37 | 0.20 | 0.04 | 0.24 | — | 1,397 | 1,406 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.92 | 0.77 | 6.87 | 9.95 | 0.01 | 0.29 | 0.28 | 0.57 | 0.27 | 0.07 | 0.33 | — | 1,878 | 1,889 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.10 | 0.09 | 0.80 | 1.08 | < 0.005 | 0.03 | 0.02 | 0.06 | 0.03 | 0.01 | 0.04 | — | 216 | 217 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.02 | 0.02 | 0.15 | 0.20 | < 0.005 | 0.01 | < 0.005 | 0.01 | 0.01 | < 0.005 | 0.01 | — | 35.7 | 36.0 |

### 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | < 0.005 | 0.01 | < 0.005 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 0.06 | 0.06 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.01 | 0.01 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | < 0.005 | 0.01 | < 0.005 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 0.04 | 0.04 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 0.01 | 0.01 |

# 6. Climate Risk Detailed Report

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 0 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 0 | 0 | 0 | N/A |
| Wildfire | 0 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 1 | 1 | 1 | 2 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

# 7. Health and Equity Details

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 52.0 |
| Healthy Places Index Score for Project Location (b) | 71.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

# Butterfield Force Main Detailed Report

## Table of Contents

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Butterfield Force Main |
| Construction Start Date | 1/9/2024 |
| Lead Agency | — |
| Land Use Scale | Plan/community |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.60 |
| Precipitation (days) | 18.8 |
| Location | Mountain Ave & El Prado Rd, Chino, CA 91708, USA |
| County | San Bernardino-South Coast |
| City | Chino |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 5206 |
| EDFZ | 10 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.19 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| User Defined Linear | 2.36 | Mile | 0.60 | 0.00 | — | — | — | — |

## 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

## 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.71 | 0.60 | 5.98 | 11.6 | 0.01 | 0.20 | 0.28 | 0.48 | 0.19 | 0.07 | 0.25 | 1,908 | 1,920 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 3.24 | 2.73 | 23.2 | 35.3 | 0.05 | 0.96 | 0.54 | 1.50 | 0.88 | 0.13 | 1.01 | 5,472 | 5,498 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.35 | 0.29 | 2.66 | 4.33 | 0.01 | 0.10 | 0.07 | 0.18 | 0.10 | 0.02 | 0.11 | 691 | 695 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.06 | 0.05 | 0.48 | 0.79 | < 0.005 | 0.02 | 0.01 | 0.03 | 0.02 | < 0.005 | 0.02 | 114 | 115 |

## 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.71 | 0.60 | 5.98 | 11.6 | 0.01 | 0.20 | 0.28 | 0.48 | 0.19 | 0.07 | 0.25 | 1,908 | 1,920 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 3.24 | 2.73 | 23.2 | 35.3 | 0.05 | 0.96 | 0.54 | 1.50 | 0.88 | 0.13 | 1.01 | 5,472 | 5,498 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.35 | 0.29 | 2.66 | 4.33 | 0.01 | 0.10 | 0.07 | 0.18 | 0.10 | 0.02 | 0.11 | 691 | 695 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.06 | 0.05 | 0.48 | 0.79 | < 0.005 | 0.02 | 0.01 | 0.03 | 0.02 | < 0.005 | 0.02 | 114 | 115 |

# 3. Construction Emissions Details

## 3.1. Linear, Grading & Excavation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.47 | 1.23 | 9.91 | 13.0 | 0.02 | 0.41 | — | 0.41 | 0.38 | — | 0.38 | 1,846 | 1,852 |
| Dust From Material Movement | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.08 | 0.07 | 0.54 | 0.71 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | 101 | 101 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.10 | 0.13 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 16.7 | 16.8 |
| Dust From Material Movement | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.11 | 0.10 | 0.11 | 1.28 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | 264 | 267 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.07 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | 14.7 | 14.9 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | 2.43 | 2.46 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.3. Linear, Drainage, Utilities, & Sub-Grade (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.59 | 0.49 | 5.81 | 9.88 | 0.01 | 0.20 | — | 0.20 | 0.19 | — | 0.19 | 1,557 | 1,562 |
| Dust From Material Movement | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.59 | 0.49 | 5.81 | 9.88 | 0.01 | 0.20 | — | 0.20 | 0.19 | — | 0.19 | 1,557 | 1,562 |
| Dust From Material Movement | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.13 | 0.11 | 1.27 | 2.17 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | 341 | 342 |
| Dust From Material Movement | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.23 | 0.40 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | 56.5 | 56.7 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.11 | 0.10 | 0.10 | 1.69 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | 288 | 292 |
| Vendor | 0.01 | < 0.005 | 0.07 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | 62.7 | 65.8 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.11 | 0.10 | 0.11 | 1.28 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | 264 | 267 |
| Vendor | 0.01 | < 0.005 | 0.07 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | 62.7 | 65.6 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.03 | 0.29 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | 58.7 | 59.5 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 13.7 | 14.4 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | 9.71 | 9.85 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 2.28 | 2.38 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.5. Linear, Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.96 | 0.81 | 7.23 | 9.86 | 0.01 | 0.35 | — | 0.35 | 0.32 | — | 0.32 | 1,478 | 1,483 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11 | 0.09 | 0.79 | 1.08 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | 162 | 163 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.14 | 0.20 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | 26.8 | 26.9 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 4. Operations Emissions Details

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Linear, Grading & Excavation | Linear, Grading & Excavation | 1/10/2024 | 2/6/2024 | 5.00 | 20.0 | — |
| Linear, Drainage, Utilities, & Sub-Grade | Linear, Drainage, Utilities, & Sub-Grade | 1/11/2024 | 5/1/2024 | 5.00 | 80.0 | — |
| Linear, Paving | Linear, Paving | 1/12/2024 | 3/7/2024 | 5.00 | 40.0 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Linear, Grading & Excavation | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 8.00 | 84.0 | 0.37 |
| Linear, Grading & Excavation | Trenchers | Diesel | Average | 2.00 | 8.00 | 40.0 | 0.50 |
| Linear, Grading & Excavation | Excavators | Diesel | Average | 1.00 | 4.00 | 36.0 | 0.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Linear, Grading & Excavation | Concrete/Industrial Saws | Diesel | Average | 2.00 | 8.00 | 33.0 | 0.73 |
| Linear, Drainage, Utilities, & Sub-Grade | Rough Terrain Forklifts | Diesel | Average | 2.00 | 8.00 | 96.0 | 0.40 |
| Linear, Drainage, Utilities, & Sub-Grade | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Linear, Drainage, Utilities, & Sub-Grade | Other Material Handling Equipment | Diesel | Average | 1.00 | 6.00 | 93.0 | 0.40 |
| Linear, Paving | Rollers | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Linear, Paving | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Linear, Paving | Pavers | Diesel | Average | 1.00 | 8.00 | 81.0 | 0.42 |
| Linear, Paving | Paving Equipment | Diesel | Average | 1.00 | 8.00 | 89.0 | 0.36 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Linear, Grading & Excavation | — | — | — | — |
| Linear, Grading & Excavation | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Linear, Grading & Excavation | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Linear, Grading & Excavation | Hauling | 0.00 | 20.0 | HHDT |
| Linear, Grading & Excavation | Onsite truck | 0.00 | 0.00 | HHDT |
| Linear, Drainage, Utilities, & Sub-Grade | — | — | — | — |
| Linear, Drainage, Utilities, & Sub-Grade | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Linear, Drainage, Utilities, & Sub-Grade | Vendor | 2.00 | 10.2 | HHDT,MHDT |
| Linear, Drainage, Utilities, & Sub-Grade | Hauling | 0.00 | 20.0 | HHDT |
| Linear, Drainage, Utilities, & Sub-Grade | Onsite truck | 0.00 | 0.00 | HHDT |
| Linear, Paving | — | — | — | — |

| | | | | |
|---|---|---|---|---|
| Linear, Paving | Worker | 0.00 | 18.5 | LDA,LDT1,LDT2 |
| Linear, Paving | Vendor | 0.00 | 10.2 | HHDT,MHDT |
| Linear, Paving | Hauling | 0.00 | 20.0 | HHDT |
| Linear, Paving | Onsite truck | 0.00 | 0.00 | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (cy) | Material Exported (cy) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Linear, Grading & Excavation | — | — | 0.60 | 0.00 | — |
| Linear, Drainage, Utilities, & Sub-Grade | — | — | 0.60 | 0.00 | — |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 3 | 74% | 74% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|

| | | |
|---|---|---|
| User Defined Linear | 0.60 | 100% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2024 | 0.00 | 532 | 0.03 | < 0.005 |

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 17.8 | annual days of extreme heat |
| Extreme Precipitation | 3.00 | annual days with precipitation above 20 mm |
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 9.13 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 0 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 0 | 0 | 0 | N/A |
| Wildfire | 0 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 1 | 1 | 1 | 2 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 72.8 |
| AQ-PM | 91.2 |
| AQ-DPM | 74.4 |

| | |
|---|---|
| Drinking Water | 99.2 |
| Lead Risk Housing | 7.81 |
| Pesticides | 79.6 |
| Toxic Releases | 64.9 |
| Traffic | 71.3 |
| Effect Indicators | — |
| CleanUp Sites | 53.4 |
| Groundwater | 44.8 |
| Haz Waste Facilities/Generators | 90.3 |
| Impaired Water Bodies | 58.7 |
| Solid Waste | 80.1 |
| Sensitive Population | — |
| Asthma | 16.3 |
| Cardio-vascular | 40.9 |
| Low Birth Weights | 49.9 |
| Socioeconomic Factor Indicators | — |
| Education | 23.7 |
| Housing | 14.2 |
| Linguistic | 58.6 |
| Poverty | 28.4 |
| Unemployment | 0.47 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | 80.70062877 |

| | |
|---|---|
| Employed | 93.12203259 |
| Median HI | 90.26049018 |
| Education | — |
| Bachelor's or higher | 84.51174131 |
| High school enrollment | 10.47093545 |
| Preschool enrollment | 26.78044399 |
| Transportation | — |
| Auto Access | 59.70742974 |
| Active commuting | 1.039394328 |
| Social | — |
| 2-parent households | 63.51854228 |
| Voting | 68.83100218 |
| Neighborhood | — |
| Alcohol availability | 67.98408828 |
| Park access | 81.35506224 |
| Retail density | 29.462338 |
| Supermarket access | 29.26985756 |
| Tree canopy | 17.3232388 |
| Housing | — |
| Homeownership | 87.19363531 |
| Housing habitability | 48.54356474 |
| Low-inc homeowner severe housing cost burden | 92.10830232 |
| Low-inc renter severe housing cost burden | 13.83292699 |
| Uncrowded housing | 85.268831 |
| Health Outcomes | — |
| Insured adults | 50.62235339 |
| Arthritis | 97.3 |

| | |
|---|---|
| Asthma ER Admissions | 90.5 |
| High Blood Pressure | 97.3 |
| Cancer (excluding skin) | 77.2 |
| Asthma | 97.7 |
| Coronary Heart Disease | 96.0 |
| Chronic Obstructive Pulmonary Disease | 99.1 |
| Diagnosed Diabetes | 95.7 |
| Life Expectancy at Birth | 47.1 |
| Cognitively Disabled | 52.2 |
| Physically  Disabled | 50.9 |
| Heart Attack ER Admissions | 72.6 |
| Mental Health Not Good | 93.4 |
| Chronic Kidney Disease | 97.1 |
| Obesity | 92.0 |
| Pedestrian Injuries | 19.6 |
| Physical Health Not Good | 98.2 |
| Stroke | 96.9 |
| Health Risk Behaviors | — |
| Binge Drinking | 4.0 |
| Current Smoker | 91.5 |
| No Leisure Time for Physical Activity | 95.1 |
| Climate Change Exposures | — |
| Wildfire Risk | 0.0 |
| SLR Inundation Area | 0.0 |
| Children | 36.4 |
| Elderly | 91.2 |
| English Speaking | 63.3 |

| | |
|---|---|
| Foreign-born | 59.8 |
| Outdoor Workers | 91.6 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 72.3 |
| Traffic Density | 51.4 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 8.8 |
| Other Decision Support | — |
| 2016 Voting | 82.9 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 52.0 |
| Healthy Places Index Score for Project Location (b) | 71.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Construction: Construction Phases | sewer force main project |
| Construction: Off-Road Equipment | install in disturbed ROW |
| Construction: Trips and VMT | 20 one way worker trips per day |

# RP-2 Lift Station Summary Report

## Table of Contents

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | RP-2 Lift Station |
| Construction Start Date | 1/9/2024 |
| Operational Year | 2024 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.60 |
| Precipitation (days) | 18.8 |
| Location | Mountain Ave & El Prado Rd, Chino, CA 91708, USA |
| County | San Bernardino-South Coast |
| City | Chino |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 5206 |
| EDFZ | 10 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.19 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| User Defined Industrial | 1.00 | User Defined Unit | 0.10 | 300 | 50.0 | — | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

# 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.95 | 0.79 | 7.07 | 8.70 | 0.02 | 0.29 | < 0.005 | 0.29 | 0.27 | < 0.005 | 0.27 | 1,505 | 1,510 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.10 | 0.09 | 0.78 | 0.95 | < 0.005 | 0.03 | < 0.005 | 0.03 | 0.03 | < 0.005 | 0.03 | 165 | 165 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.02 | 0.02 | 0.14 | 0.17 | < 0.005 | 0.01 | < 0.005 | 0.01 | 0.01 | < 0.005 | 0.01 | 27.3 | 27.4 |

### 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | CO2T | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | < 0.005 | 0.01 | < 0.005 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.06 | 0.06 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unmit. | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.01 | 0.01 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | < 0.005 | 0.01 | < 0.005 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.04 | 0.04 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.01 | 0.01 |

# 6. Climate Risk Detailed Report

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 0 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 0 | 0 | 0 | N/A |
| Wildfire | 0 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 1 | 1 | 1 | 2 |

| | | | | |
|---|---|---|---|---|
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

# 7. Health and Equity Details

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 52.0 |
| Healthy Places Index Score for Project Location (b) | 71.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.