DRAFT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Palm/Mann/Cypress Gravity Sewer Improvements Project (#959)
Multiple Locations in Marin County, California

Prepared for
Ross Valley Sanitary District
1111 Anderson Drive
San Rafael, CA 94901

Prepared by

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May 2025

MITIGATED NEGATIVE DECLARATION

PROJECT TITLE

Palm/Mann/Cypress Gravity Sewer Improvements Project (#959)

LEAD AGENCY/NAME AND ADDRESS

Ross Valley Sanitary District
1111 Anderson Drive
San Rafael, CA 94901

PROJECT LOCATION

The Palm/Mann/Cypress Gravity Sewer Improvements Project (#959) (Project) site is located in the Ross Valley Sanitary District (RVSD) service area within the town of Kentfield in Marin County, California. The unincorporated town of Kentfield has a land area of approximately 3 mi^2. Kentfield is bordered to the east by the unincorporated community of Greenbrae, to the north by the Town of Ross, and to the south by the City of Larkspur.

The Project site in Kentfield includes multiple sewer line segments (Figures 1 and 2). The sewer line segments are located within the existing alignments along Palm Avenue, Mann Drive, Cypress Avenue, and Hill Drive. Land uses surrounding the Project site in Kentfield mainly consist of single-family residential uses to the north, east, south, and west. The Corte Madera Creek is south of the Project site. Sir Francis Drake Boulevard is located south of the Project site and is a major traffic artery linking U.S. 101 with communities in the Kentfield area.

PROJECT DESCRIPTION

The primary objective of this Project is to relieve hydraulic and structural deficiencies and reduce groundwater infiltration associated with aging RVSD infrastructure. The Project includes replacement of existing pipe segments via open cut removal (45 linear feet [LF]), and pipe bursting (5,451 LF). Existing pipe segments would be replaced with new polyvinyl chloride (PVC) or high-density polyethylene (HDPE) pipes. The Project also includes construction of new sanitary sewer lines via open cut trenching (1,622 LF), construction of 17 new manholes, removal and replacement of 1 existing manhole, removal of 4 existing manholes, and abandonment of 4 existing manholes. Lower laterals and property line cleanouts would be replaced at all locations.

The Project site encompasses approximately 0.3 acres and the total area disturbed would be approximately 12,200 sq ft. Depths of the excavation would vary between 3 and 10 ft based on

location. Rehabilitation of all sanitary sewer mains would occur within the existing alignment. Most pipelines either fall within public rights-of-way or designated easements running through private property. For work in backyard easements, portable equipment would be used to accommodate space restrictions and minimize impact.

MITIGATION MEASURES

Five mitigation measures for the Project are listed below.

Mitigation Measure BIO-1

Vegetation removal and ground disturbance (collectively referred to as construction activities) shall be scheduled to avoid the bird nesting season to the greatest extent possible. The nesting season for most birds and raptors in the San Francisco Bay Area is February 1–September 15.

If construction activities cannot be scheduled to occur between September 16 and January 31, preconstruction surveys for nesting birds and raptors will be completed by a qualified ornithologist or biologist to ensure that no nests would be disturbed during project implementation. This survey will be completed no more than 14 days prior to the initiation of construction activities. During this survey, the qualified ornithologist/biologist will inspect all suitable nesting habitat on the Project site and within the zone of influence (the area immediately surrounding the Project site that supports suitable nesting habitat that could be impacted by the proposed Project due to visual or auditory disturbance associated with construction activities scheduled to occur during the nesting season).

If an active nest is found sufficiently close to the work areas to be disturbed by construction activities, the qualified ornithologist/biologist, in consultation with the California Department of Fish and Wildlife, will determine the extent of a construction-free buffer zone to be established around the nest to ensure that protected bird and raptor nests are not disturbed during project construction. This buffer would remain in place until such a time as the young have been determined (by a qualified ornithologist/biologist) to have fledged.

A report of findings will be prepared by the qualified biologist and submitted to RVSD for review prior to initiation of construction during the nesting season. The report would either confirm absence of any active nests or confirm that any young are located within a designated no-disturbance zone and construction can proceed. No report of findings is required if construction is initiated during the nonbreeding season (September 16–January 31) and continues uninterrupted according to the above criteria.

Mitigation Measure CUL-1

Prior to project implementation, an archeological testing and monitoring plan will be prepared by a qualified archaeological consultant. The plan will discuss the testing and monitoring procedures, field methods, communication protocols, and inadvertent discovery actions to be

taken in the event cultural resources are identified during testing, monitoring and/or any project activities. The plan will be developed in coordination with the Federated Indians of Graton Rancheria **(**Graton Rancheria**)**. Based on the results of the testing and in coordination with RVSD and the Graton Rancheria, monitoring by an archaeologist and tribal monitor may also be required to observe excavated soils that are removed during construction activities. If resources are identified during the testing or monitoring, the appropriate avoidance and/or treatment measures detailed in the Plan will be carried out in coordination with Graton Rancheria, as necessary. In addition, should resources be identified at any time during testing or project implementation, Department of Parks and Recreation (DPR 523) forms will be completed and for Native American/precontact sites will be shared with Graton Rancheria for review prior to submittal to the Northwest Information Center.

Mitigation Measure CUL-2

Upon approval of the testing and monitoring plan, archaeological testing will occur in areas determined to be highly sensitive for subsurface cultural resources. Testing will take place prior to Project implementation and will be coordinated in advance with Graton Rancheria. A tribal monitor will be present during all testing. Testing will occur at project segments:

- Western end of Mann Drive (nearest to Laurel Grove Avenue)
- Western half of Cypress Avenue in Kentfield
- Western end of Palm Avenue.

Where testing is not feasible, monitoring will occur in accordance with Mitigation Measure CUL-1.

Mitigation Measure CUL-3

Prior to project-related work, the construction crews shall be trained in "basic archaeological and tribal resources identification" and have access to an alert sheet. The alert sheet will photographically depict indicators of archaeological sites and artifacts and clearly outline the procedures in the event of new discovery. These procedures include temporary work stoppage (i.e., a stop work order) of all ground disturbance, short-term physical protection of features and artifacts and their context, and immediate advisement of the archaeological team, Graton Rancheria, and RVSD representatives. Any stop work order would contain a description of the work to be stopped, special instructions or requests for the contractor, suggestions for efficient mitigation, and a time estimate for the work stoppage. The archaeologist will notify Graton Rancheria (if a tribal monitor is not present), examine the findings and assess their significance, and offer recommendations for any procedures deemed appropriate to further investigate and/or mitigate adverse impacts to those archaeological and tribal resources that have been encountered.

Mitigation Measure CUL-4

Upon discovery of suspected human remains, the Coroner Division of the Marin County Sheriff's Office will be contacted for identification of human remains. The coroner has two working days to examine the remains after being notified.

If the remains are Native American, the coroner must notify the Native American Heritage Commission (NAHC) of the discovery within 24 hours. The NAHC will then identify and contact a most likely descendant, who may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the ancestral remains and associated funerary objects. Once proper consultation has occurred, a procedure that may include the preservation, excavation, analysis, and curation of artifacts and/or reburial of those remains and associated artifacts will be developed and implemented.

If the remains are not Native American, the coroner will consult with the archaeological research team and RVSD to develop a procedure for the proper study, documentation, and ultimate disposition of the remains. If a determination can be made as to the likely identity—either as an individual or as a member of a group—of the remains, an attempt should be made to identify and contact any living descendants or representatives of the descendant community. As interested parties, these descendants may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the remains and grave goods. Final disposition of any Native American human remains or associated funerary objects will be determined in consultation between RVSD and Graton Rancheria.

FINDINGS

An initial study has been prepared to assess the proposed Project's potential effects on the environment and the significance of those effects. Based on the initial study, it has been determined that the proposed Project, with the mitigation measures described above incorporated, would not have any significant effects on the environment.

A copy of the initial study is attached. The materials related to the proposed Project are on file at the Ross Valley Sanitary District Office at 1111 Anderson Drive, San Rafael, CA 94901. They are also available online at www.rvsd.org.

_____ _____

Philip Benedetti
Senior Engineer

Date

CALIFORNIA ENVIRONMENTAL QUALITY ACT INITIAL STUDY

Integral Consulting Inc. (Integral) completed the following document on behalf of Ross Valley Sanitary District for this project in accordance with the California Environmental Quality Act (CEQA) (*Pub. Resources Code*, div. 13, § 21000 et seq.) and accompanying guidelines (*Cal. Code Regs.*, tit. 14, § 15000 et seq.).

PROJECT TITLE:		
Palm/Mann/Cypress Gravity Sewer Improvements Project (#959)		
PROJECT ADDRESS: Palm Avenue, Mann Drive, Cypress Avenue, and Hill Drive.	CITY: Kentfield	COUNTY: Marin
PROJECT SPONSOR: Ross Valley Sanitary District	CONTACT: Philip Benedetti	PHONE: (415) 259-2949, ext. 212

LEAD AGENCY ADDRESS:	CONTACT:	PHONE:
1111 Anderson Drive San Rafael, CA 94901	Philip Benedetti	(415) 259-2949, ext. 212

APPROVAL ACTION UNDER CONSIDERATION:
Implementation of sewer rehabilitation project.

List of Attachments

Attachment A. Abbreviations and Acronyms

Attachment B. Figures

Attachment C. Construction Plans

Attachment D. Overview of Control Measures

Attachment E. CalEEMod Input Tables and Output Report

Attachment F. Protected Natural Resource Tables

Project Overview and Purpose

The Ross Valley Sanitary District (RVSD)[1] Palm/Mann/Cypress Gravity Sewer Improvements Project (#959) (Project) entails the construction and rehabilitation, within the existing alignment, of sanitary sewer mains, manholes, and related appurtenances within the town of Kentfield in Marin County

[1] See Attachment A for a list of abbreviations and acronyms.

(Attachment B, Figures). The primary goal of this Project is to replace aging RVSD infrastructure and reduce inflow and infiltration into the system.

The Project includes replacement of existing pipe segments via open cut removal (45 linear feet [LF]), and pipe bursting (5,451 LF). Existing pipe segments would be replaced with new polyvinyl chloride (PVC) or high-density polyethylene (HDPE) pipes. The Project also includes construction of new sanitary sewer lines via open cut trenching (1,622 LF), construction of 17 new manholes, removal and replacement of 1 existing manhole, removal of 4 existing manholes, and abandonment of 4 existing manholes. Lower laterals and property line cleanouts would be replaced at all locations.

The Project site encompasses approximately 0.3 acres and the total area disturbed would be approximately 12,200 sq ft. Depths of the excavation would vary between 3 and 10 ft based on location. Rehabilitation of all sanitary sewer mains would occur within the existing alignment. Most pipelines either fall within public rights-of-way or designated easements running through private property. For work in backyard easements, portable equipment would be used to accommodate space restrictions and minimize impact.

Project Location and Site Setting

The Project site is located in the RVSD's service area in Marin County. Regional access to the Project site from the north and south is provided by U.S. Highway 101 (U.S. 101) and from the east by Interstate 580 and the Richmond–San Rafael Bridge. The Project segments are located in several areas of Marin County, as detailed below:

The unincorporated town of Kentfield has a land area of approximately 3 mi^2. Kentfield is bordered to the east by the unincorporated community of Greenbrae, to the north by the Town of Ross, and to the south by the City of Larkspur.

The Project site in Kentfield includes multiple sewer line segments (Figures 1 and 2 in Attachment B). The sewer line segments are located within the existing alignments along Palm Avenue, Mann Drive, Cypress Avenue, and Hill Drive. Land uses surrounding the Project site in Kentfield mainly consist of single-family residential uses to the north, east, south, and west. The Corte Madera Creek is south of the Project site. Sir Francis Drake Boulevard is located south of the Project site and is a major traffic artery linking U.S. 101 with communities in the Kentfield area.

Site Background

The RVSD provides wastewater utility service to approximately 47,000 people in central Marin County. The service area includes the incorporated City of Larkspur; the Towns of San Anselmo, Ross, and Fairfax; and the unincorporated areas of Kentfield, Kent Woodlands, Greenbrae, Oak Manor, and Sleepy Hollow.

On May 13, 2013, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) issued Order No. R2-2013-0020, a cease and desist order (CDO) for RVSD in response to annually reoccurring excessive sewer system overflows (SSOs). The CDO contained a list of prescriptive actions and work practices for RVSD to take to mitigate the SSOs and improve operations and maintenance of the sewer system. These actions were largely based on RVSD's 2007 sewer system replacement master plan, which utilized limited condition assessment information available at the time. Provisions of the CDO include prescribed sewer main reinspection and repair requirements based on the severity of the defects found and requirements for televised inspections for the entire system. One of these requirements includes development of the 2013 infrastructure asset management plan (IAMP).

As RVSD implemented the IAMP and collected more data about the collection system, new priorities and decision-making strategies were developed. As RVSD began to better understand the system, it became clear that some of the original CDO requirements and priorities needed to change. Through implementation of the IAMP, RVSD achieved significant capital and repair targets set forth in the CDO.

The original CDO requirements have resulted in significant improvements in the system and in operations. However, they have also inhibited RVSD's ability to respond to other priorities, adjust plans based on new information and data, and develop a more programmatic approach to effective utility management. Throughout implementation of the CDO, RVSD has had to justify each deviation from the original CDO requirements on an annual basis. Currently, RVSD is revising its IAMP to shift to a more forward-looking and adaptive program.

In 2018, the Regional Water Board issued a National Pollutant Discharge Elimination System (NPDES) permit (current Order No. R2-2023-0003, NPDES No. CA0038628) to Central Marin Sanitation Agency and other dischargers, including RVSD, specifying wastewater treatment and discharge requirements. One of the key mandates that impacts RVSD is the requirement to "take all feasible actions to rehabilitate portions of their collection systems to reduce inflow and infiltration." This IAMP update incorporates activities to address this requirement, including an evaluation of the impact of RVSD's efforts to mitigate inflow and infiltration (I&I) into the collection system, provide additional insight about the dynamics of I&I in the system, and provide recommendations and strategies to reduce I&I and measure the effectiveness of mitigative actions.

Construction Methods

The Project includes the replacement of existing sewer pipes and the installation of new pipes by the following methods:

- Open-Cut Excavation: For this method, the existing sewer line would be exposed and removed by means of construction excavation equipment. The excavation extent is typically 3 ft wide, and the length and depth varies. A new pipe would then be installed, and the trench would be backfilled.

- Pipe Bursting: Pipe bursting is a trenchless method where a new pipe is inserted into an existing pipe by means of a hydraulic winch. First, an insertion pit (typically 4 × 10 × 5 ft) and a receiving pit (typically 4 × 4 × 5 ft) are excavated at each end of a pipe segment. The locations of these pits are determined by the contractor in the field based on site access. Prior to insertion of the new pipe, existing lateral connections are excavated and disconnected. A new pipe is then attached to a bursting head and pulled into the existing pipe. The bursting head breaks apart the existing pipe and creates a cavity for the new pipe. Once the new pipe is installed, the existing laterals are reconnected, and trenches are backfilled.

The Project would rehabilitate sanitary sewer via open-cut removal and replacement (160 LF) and pipe bursting (5,346 LF). Approximately 1,766 LF of new sanitary sewer would be constructed via open-cut excavation. The Project includes construction of 11 new manholes, removal and replacement of 6 existing manholes, and abandonment of 1 existing manhole. Manhole locations would require excavation and backfill of an area of approximately 8 × 8 ft. Depths of the excavation would vary between 3 and 10 feet based on location. The Project locations and construction method for each pipe section is identified on the preliminary construction plans provided in Attachment C.

Most of the Project pipe sections are within the public rights-of-way or designated easements running through private property. For work in backyard easements, portable equipment would be used to accommodate space restrictions and minimize impact.

Work Hours and Schedule

Construction is expected to begin in July 2025 and is anticipated to be completed in October 2025. Work hours would generally be 8:00 a.m. to 5:00 p.m.; however, hours would be dependent on location-specific constraints. It is anticipated that the Project would require approximately 90 working days (3 months) for construction.

Construction Staging

Project site preparation would include survey and excavation layout as well as the preparation of staging, ingress, and egress areas. Prior to construction, the selected contractor would develop a staging operations plan that identifies construction equipment staging and support areas, Project site access, exclusion areas, excavation areas and stockpile areas, truck lanes, parking areas, and Project site office trailers. Construction staging would occur daily, given the nature of the Project site.

Bypass Pumping

Bypass pumping during construction would be location specific and based on Project site-specific requirements and constraints as outlined in a contractor-supplied and RVSD-approved bypass plan. In general, bypass systems would be surface laid and follow the most direct route, excluding trespass onto private property.

Site Restoration

The contractor would be required, at all times, to keep property on which work is in progress and the adjacent property free from the accumulation of waste material or rubbish caused by employees or by the work. Upon completion of the construction, the contractor would be required to remove all surplus materials, temporary structures, rubbish, and waste materials resulting from operation.

Permits and Project Approvals

Permits that would likely be required include, but are not necessarily limited to, a County of Marin Encroachment Permit.

Several sewer main segments are located on private properties, including segments located near Cypress Avenue. RVSD would coordinate with private property owners to access and rehabilitate these sewer main segments.

Overview of Control Measures

Numerous control measures would be incorporated into the Project's contract documents by RVSD to address environmental and public health and safety issues. Control measures are procedures known to reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and construction or operating experiences of RVSD and the design engineer.

Regulatory agency requirements would be contained in permits obtained for the Project, and the contractor would be required to obtain encroachment permits from Marin County. These permits would contain specific requirements for traffic control and parking, emergency access, pavement restoration, noise control, and allowable work hours, and would provide for the safety of residents, pedestrians, and motorists. The contractor would be required to comply with all conditions set forth in the encroachment permits and corresponding RVSD standards.

Coordination would be established and maintained with local residents and businesses along the alignment, and a mechanism for monitoring construction activities and addressing any complaints

would be implemented. Any damaged landscaped and/or hardscaped areas would be restored, and a series of best management practices (BMPs) would be enforced to maintain Project site appearance; control dust, erosion, and stormwater discharge; and provide noise attenuation, if needed.

Full control measures that would be implemented for the Project are included in Attachment D and include measures for:

- Project site management, including tree protection
- Dust control
- Odor control
- Stormwater and erosion control
- Geotechnical
- Hazardous materials
- Safety
- Notifications
- Dewatering
- Noise
- Traffic management
- Ground movement monitoring
- Air quality.

Technical reports to support the evaluation of potential impacts to air quality (Attachment E), biological resources (Attachment F), and cultural resources (Far Western 2025[2]) have been completed and identify measures that would be included in the contract documents to address potential impacts. A variety of geotechnical and regulatory agency-related control measures are included to provide for the constructability of the Project and its environmental compatibility, and to ensure the protection of workers' and the public's health and safety.

References:

1. Far Western. 2025. Archaeological Resources Inventory and Testing/Monitoring Plan for the Ross Valley Sanitary District Palm/Mann/Cypress Gravity Sewer Improvement Project, Kentfield, Marin County, California. Far Western Anthropological Research Group, Inc, Davis, CA. April.

2. Regional Water Board. 2013. Order No. R2-2013-0020. San Francisco Bay Regional Water Quality Control Board, Oakland, CA. May 13.

[2] Because the report contains confidential information about the locations and characteristics of archaeological sites and tribal cultural resources, the technical report is not included as an attachment to this document; the report can be made available to agencies and other professionals for review as necessary.

3. Regional Water Board. 2018. Order No. R2-2018-0003. San Francisco Bay Regional Water Quality Control Board, Oakland, CA. January 10.

4. Ross Valley Sanitary District. 2021. IAMP Summary Report, Infrastructure Asset Management Plan Update. https://www.rvsd.org/DocumentCenter/View/2257/2021-IAMP-Summary?bidId=. Ross Valley Sanitary District, San Rafael, CA. September.

ENVIRONMENTAL IMPACT ANALYSIS

1. Aesthetics

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Project Activities Likely to Create an Impact:

- Staging of construction materials
- Generation of rubbish and debris and material storage
- Damage to hardscape and landscaped areas
- Transportation and handling of imported and exported materials
- Work crews accessing the Project site

Description of Baseline Environmental Conditions:

The Project segments are located in east Kentfield and contain single-family residential homes and landscaping. The Project site is visually characterized by the following features:

- Palm Avenue, Cypress Avenue, and Mann Drive are narrow two-way residential streets without sidewalks. They are flanked by private residences and landscaped vegetation, with some areas of non-landscaped vegetation.

- Hill Drive is a narrow, steep, local street without sidewalks and primarily serves single-family residential homes. The street is flanked by areas of non-landscaped vegetation as well as some areas of landscaped vegetation.

Scenic Routes and Vistas

According to the California Department of Transportation (Caltrans) Scenic Highway Inventory, portions of State Route 101 are considered eligible for listing as a scenic highway (Caltrans 2023). However, this roadway is not located near the Project site, and there are no other scenic highway designations or scenic vistas in the Project vicinity. While the Marin Countywide Plan does not identify any official scenic vistas within the Project site, Countywide Policy Des-4.1, "Preserve Visual Quality," emphasizes the protection of scenic quality and view of the natural environment (Marin County 2007). Views of unique and natural resources—such as ridgelines, upland greenbelts, and hillsides—are not easily visible from the Project site.

Light and Glare

Light pollution is defined as any adverse effect of artificial light, including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste. Existing sources of light and glare are generally from streetlights, residences, and traffic in the Project segments described above.

Analysis as to whether or not project activities would:

a. Have a substantial adverse effect on a scenic vista.

No impact. There are no designated scenic vistas within the Project vicinity, and the Project activities would not be visible from any designated scenic vista.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a State scenic highway.

No impact. The Project site is not located on or near a state-designated scenic highway and would not result in damage to scenic resources within a state scenic highway. Therefore, the Project would not result in an impact to scenic resources.

c. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than significant impact. The Project site consists of local roadways primarily used by residents and other locals. Construction activities would be temporary. Although the Project work would increase Project site activity, it would only temporarily degrade the existing visual quality of the Project site or the surroundings. With the implementation of control measures listed in Attachment D, under "Site Management Practices," the impact of temporary construction activities would be less than significant.

d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Less than significant impact. Construction activities would be temporary and limited to daylight hours for all Project work.

References:

1. Caltrans. 2023. Caltrans List of Designated Scenic Highways. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. California Department of Transportation, Sacramento, CA.
2. Marin County. 2007. Marin Countywide Plan. Last amended on January 24, 2023. https://www.marincounty.org/depts/cd/divisions/planning/countywide-plan. County of Marin, CA.

2. Agricultural and Forestry Resources

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

Project Activities Likely to Create an Impact:

No impact.

Description of Baseline Environmental Conditions:

The Project site is located within the town of Kentfield in Marin County (Attachment B). The Project segments are largely built out with residential uses.

According to the Protected Agricultural Lands Map (Map 2-20) (Marin County 2007), no agricultural or forest lands exist within the Project site. In addition, the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) classifies all Project segments as urban and built-up land (California Department of Conservation 2016). The Project site does not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as defined by the FMMP.

Analysis as to whether or not project activities would:

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

No impact. The Project site does not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as defined by the FMMP. The Project would not call for the conversion of land from agricultural to nonagricultural use. In addition, the Project site is surrounded by lands that are already developed, approved for development, or designated as parkland area and, therefore, the Project would not increase development pressure on agricultural lands by extending infrastructure into agricultural areas. Thus, the Project would have no impact on agricultural resources.

b. Conflict with existing zoning or agriculture use, or Williamson Act contract.

No impact. The Project would not call for the conversion of any land from agricultural to nonagricultural use.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Codes section 51104(g))?

No impact. The Project would not conflict with existing zoning or cause rezoning of forestland or timber.

d. Result in the loss of forest land or conversion of forest land or conversion of forest land to non-forest use?

No impact. The Project site does not contain forestland.

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

No impact. The Project site does not contain forestland nor is it zoned for agriculture.

References:

1. California Department of Conservation. 2022. California Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/. California Department of Conservation, Farmland Mapping and Monitoring Program, Sacramento, CA.
2. Marin County. 2007. Marin Countywide Plan. https://www.marincounty.org/userdata/cda/planning/cwp2023.pdf. Last amended on January 24, 2023. County of Marin, CA.

3. Air Quality

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?	☐	☐	☒	☐

Project Activities Likely to Create an Impact:

- Equipment used for construction activities
- Transportation of materials and supplies to and from work areas (via heavy-duty trucks)
- Media loading, including for soil and construction debris, onto dump trucks
- Transportation and handling of imported backfill materials.

Description of Baseline Environmental Conditions:

The Project is located within Marin County, part of the nine-county San Francisco Bay Area Air Basin (SF Air Basin). Federal, state, and regional agencies regulate air quality in the SF Air Basin. At the federal level, the U.S. Environmental Protection Agency (EPA) is responsible for overseeing implementation of the federal Clean Air Act (CAA). The California Air Resources Board (CARB) is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California CAA. The local air quality regulatory agency responsible for the SF Air Basin is the Bay Area Air District (Air District), formerly the Bay Area Air Quality Management District (BAAQMD).

Local Climate and Air Quality

The air quality in a given area depends on the sources of air pollution in the area, transport of pollutants to and from surrounding areas, and local and regional meteorological conditions, as well as the surrounding topography of the SF Air Basin. Air quality is described by the concentration of various pollutants in the atmosphere. Units of concentration are generally expressed in parts per million (ppm)

or micrograms per cubic meter ($\mu g/m^3$). The significance of a pollutant concentration is determined by comparing the concentration to an appropriate ambient air quality standard. The standards represent the allowable pollutant concentrations designed to ensure that the public health and welfare are protected while including a reasonable margin of safety to protect the more sensitive individuals in the population.

Marin County is bounded on the west by the Pacific Ocean, on the east by San Pablo Bay, on the south by the Golden Gate, and on the north by the Petaluma Gap. Most of Marin's population lives in the eastern part of the county in small, sheltered valleys. Because of the wedge shape of the county, northeast Marin County is farther from the ocean than the southeastern section. This extra distance from the ocean allows the marine air to be moderated by bayside conditions as it travels to northeastern Marin County. In southern Marin, the distance from the ocean is short, and elevations are lower, resulting in higher incidence of maritime air in that area.

In the summer months, areas along the coast are usually subject to onshore movement of cool marine air. In the winter, proximity to the ocean keeps the coastal regions relatively warm, with temperatures varying little throughout the year. Coastal temperatures are usually in the high 50s in the winter and the low 60s in the summer. The warmest months are September and October. The eastern side of Marin County has warmer weather than the western side because of its distance from the ocean and because of the hills that separate eastern Marin from western Marin, which occasionally block the flow of the marine air. The temperatures of cities next to the Bay are moderated by the cooling effect of the Bay in the summer and the warming effect of the Bay in the winter. For example, San Rafael experiences average maximum summer temperatures in the low 80s and average minimum winter temperatures in the low 40s. Inland towns, such as Greenbrae, experience average maximum temperatures that are 2 degrees cooler in the winter and 2 degrees warmer in the summer.

Air pollution potential is highest in eastern Marin County, where most of population is located in semi-sheltered valleys. In the southeast, the influence of marine air keeps pollution levels low. As development moves farther north, there is greater potential for air pollution to build up because the valleys are more sheltered from the sea breeze. While Marin County does not have many polluting industries, the air quality on its eastern side—especially along the U.S. 101 corridor—may be affected by emissions from increasing motor vehicle use within and through the county (BAAQMD 2017).

Criteria Air Pollutants

The federal and California CAAs have established ambient air quality standards for common pollutants. The ambient air quality standards are intended to protect human health and welfare. At the federal level, national ambient air quality standards have been established for criteria pollutants. These criteria pollutants include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), respirable particulate matter with a diameter less than 10 microns (PM10), fine particulate matter with a diameter less than 2.5 microns (PM2.5), sulfur dioxide (SO_2), and lead.

California has adopted ambient air quality standards that are, in general, more stringent than the national ambient air quality standards, and include other pollutants not regulated at the federal level (e.g., sulfates, hydrogen sulfide, and vinyl chloride). State and national ambient air quality standards are shown in Table 1. Both the national and California ambient air quality standards have been adopted by the Air District.

Table 1. State and National Air Quality Standards and Summary of Measured Air Quality Exceedances in the Region (2017–2019)

Pollutant/ Averaging Period	Primary Standard		Year	Maximum Concentration [a]	Days Exceeding State/National Standard [b]
	State	National			
Ozone			2017	0.088	6/0
1-hour	0.09 ppm	none	2018	0.072	2/0
			2019	0.096	6/0
Ozone			2017	0.063	6/6
8-hour	0.70 ppm	0.70 ppm	2018	0.053	3/3
			2019	0.08	9/9
Carbon Monoxide			2017	2.6	0/0
1-hour	20 ppm	35 ppm	2018	2	0/0
			2019	1.4	0/0
Carbon Monoxide			2017	1.6	0/0
8-hour	9 ppm	9 ppm	2018	1.6	0/0
			2019	0.9	0/0
Nitrogen Dioxide			2017	0.053	0/1
1-hour	0.18 ppm	0.100 ppm	2018	0.055	0/0
			2019	0.05	0/0
Nitrogen Dioxide			2017	0.001	0/0
Annual	0.030 ppm	0.053 ppm	2018	0.009	0/0
			2019	0.008	0/0
Sulfur Dioxide			2017	ND	0
1-hour	none	0.075 ppm	2018	ND	0
			2019	ND	0
Sulfur Dioxide			2017	ND	0
24-hour	0.04 ppm	none	2018	ND	0/0
			2019	ND	0/0
Respirable Particulate			2017	94	6/0
Matter (PM10)	50 µg/m^3	150 µg/m^3	2018	166	6/1
24-hour			2019	33	5/0
Respirable Particulate			2017	17.7	0/0
Matter (PM10)	20 µg/m^3	none	2018	19	0/0
Annual			2019	14.3	0/0
Fine Particulate Matter			2017	74.7	0/18
(PM2.5)	None	35 µg/m^3	2018	167.6	0/18
24-hour			2019	19.5	0/1

Table 1. State and National Air Quality Standards and Summary of Measured Air Quality Exceedances in the Region (2017–2019)

Pollutant/ Averaging Period	Primary Standard		Year	Maximum Concentration [a]	Days Exceeding State/National Standard [b]
	State	National			
Fine Particulate Matter			2017	9.7	0/0
(PM2.5)	12 µg/m^3	12.0 µg/m^3	2018	11.1	0/0
Annual			2019	6.4	0/0

Source: BAAQMD (2019)

Notes:

µg/m^3 = micrograms per cubic meter
ND = no data available
ppm = parts per million
[a] All pollutant concentrations were measured at the San Rafael monitoring station.
[b] Values from Ten-Year Bay Area Air Quality Summary table

Ambient concentrations of criteria pollutants are monitored in the SF Air Basin by the Air District. The San Rafael station is the closest to the Project site and the only station that measures criteria pollutants in Marin County (BAAQMD 2023a). Table 1 includes a summary of the monitored maximum concentrations and the number of occurrences of exceedances of the state/national ambient air quality standards for the 3-year period from 2017 through 2019.

Table 1 shows that, over the last 3 years reported, the state 1-hour and 8-hour O_3 standards were exceeded 14 and 18 times, respectively. Over the 3-year period, the state 24-hour PM10 standards were exceeded 17 times, and the 24-hour national PM2.5 standards were exceeded 37 times.

Toxic Air Contaminants

In addition to criteria air pollutants, there is another group of substances found in ambient air referred to as toxic air contaminants (TACs). These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects, including cancer. Sources of TACs include industrial processes, such as petroleum refining and manufacturing, commercial operations, such as gasoline stations and dry cleaners, and motor vehicle exhaust. One of the TACs of greatest concern in California is diesel particulate matter (DPM), which is classified as a carcinogen (i.e., causes cancer). TACs are regulated at the local, state, and federal level.

Federal Air Quality Regulations

The federal CAA requires CARB, based on air quality monitoring data, to designate portions of the state where the national ambient air quality standards are not met as “nonattainment areas.” Because of the differences between the national and state ambient air quality standards, the designation of nonattainment areas is different under the federal and state legislation. Areas that meet the air quality standards are considered to be in attainment of the standards. Areas where there are no monitoring data available or insufficient data to classify an area are considered unclassified, which for regulatory purposes is treated as an attainment area.

The Bay Area as a whole does not meet national ambient air quality standards for O_3 and PM2.5. EPA has classified the region as marginal nonattainment for 8-hour O_3. In October 2009, EPA designated the Bay Area as nonattainment for the 24-hour PM2.5 standard. The Bay Area is considered as attainment or unclassifiable with respect to the national air quality standards for all other pollutants. EPA requires states that have areas that are not in compliance with the national standards to prepare

and submit air quality plans showing how the standards would be met. If the states cannot show how the standards would be met, then they must show progress toward meeting the standards. These plans are referred to as the state implementation plan (SIP). On January 9, 2013, EPA issued a final rule to determine that the San Francisco Bay Area has attained the national 24-hour PM2.5 air quality standard. This action suspends federal SIP planning requirements for the Bay Area. The Air District has permit authority over stationary sources, acts as the primary reviewing agency for environmental documents, and develops regulations that must be consistent with or more stringent than federal and state air quality laws and regulations.

California Air Quality Regulations

The California CAA outlines a program for areas in the state to attain the California ambient air quality standards by the earliest practical date. The California CAA set more stringent air quality standards for most of the pollutants covered under national standards, and additionally regulates other pollutants. If an area does not meet the California ambient air quality standards, CARB designates the area as a nonattainment area. With respect to the state air quality standards, the Bay Area is a nonattainment area for O_3 and particulate matter (PM10 and PM2.5), and it is either an attainment or unclassified area for other pollutants. The California CAA requires local air pollution control districts to prepare air quality attainment plans for pollutants, except for particulate matter, that are not in attainment with the state standards. These plans must provide for district-wide emission reductions of 5 percent per year averaged over consecutive 3-year periods or, if not, provide for adoption of “all feasible measures on an expeditious schedule.”

Regional Air Quality Regulations and Planning

Air quality in the region is regulated by the Air District. The Air District regulates stationary sources (with respect to federal, state, and local regulations), monitors regional air pollutant levels (including the measurement of TACs), develops air quality control strategies, and conducts public awareness programs.

The most recent air quality plan is the 2017 Clean Air Plan that was adopted by the Air District in April 2017 (BAAQMD 2017). The plan provides a regional strategy to protect public health and the climate. To protect public health, the plan describes how the Air District will continue making progress toward attaining all state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. The 2017 Clean Air Plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful (such as particulate matter, O_3, and TACs) and to decrease emissions of carbon dioxide (CO_2) by reducing fossil fuel combustion. The plan represents the Bay Area’s most recent assessment of the region’s strategy to attain the state and national O_3 and PM2.5 standards.

The Air District has also developed California Environmental Quality Act (CEQA) air quality guidelines that establish significance thresholds for evaluating new projects and plans and provide guidance for evaluating air quality impacts of projects and plans (BAAQMD 2023b). The air quality guidelines provide procedures and significance thresholds for evaluating potential construction-related impacts during the environmental review process consistent with CEQA requirements. The guidelines also address operation-related impacts, but the Project is a construction activity with no substantial additional operational component as compared to existing operations.

In June 2010, the Air District adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were included in the Air District’s most recent CEQA air quality guidelines (BAAQMD 2023b).

In June 2022, the Air District released the CEQA Thresholds for Evaluating the Significance of Climate Impacts Report (BAAQMD 2022). This report recommends thresholds of significance for use in determining whether a proposed project would have a significant impact on climate change. Recommendations are focused on thresholds for either land use projects or general plans and planning documents (BAAQMD 2022).

Analysis as to whether or not project activities would:

a. Conflict with or obstruct implementation of the applicable air quality plan.

No impact. The Project site is in an area currently designated as nonattainment for the state 1-hour and 8-hour O_3 standards, nonattainment for the state 24-hour and annual PM10 standards, and nonattainment for the state annual PM2.5 standard. It is also designated as nonattainment for the national 8-hour O_3 standard. To meet planning requirements related to these standards, BAAQMD developed a regional air quality plan, the Bay Area 2017 Clean Air Plan. A significant impact would occur if a project conflicted with the plan by not being consistent with the plan's assumptions regarding population growth and vehicle miles traveled. As discussed, the Project involves the rehabilitation and replacement of existing sanitary sewer lines; thus, the Project would not be considered growth inducing. Construction activities associated with the Project would be short term and temporary, and there would be no long-term operational component to the Project that would generate new vehicle trips in the SF Air Basin that would conflict with the plan. As a result, the Project would not conflict with or obstruct with implementation of the plan, and there would be no impact.

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

Less than significant. The Project would involve construction activities associated with the rehabilitation and replacement of sewer system components that would result in temporary increases in air pollutant emissions. These emissions would be generated primarily from construction equipment exhaust, earth disturbance, and construction worker and other construction-related vehicle trips to and from the Project areas. The overall Project activities would occur for approximately 3 months.

The Air District's approach to the CEQA analysis of construction impacts is twofold. The Air District has identified thresholds of significance for exhaust emissions from construction-related activities. The guidelines specify the following significance thresholds for daily and annual criteria air pollutant emissions from project construction (BAAQMD 2023b):

- PM10 = 82 lb/day; 15 ton/year
- PM2.5 = 54 lb/day; 10 ton/year
- Reactive organic gases (ROG) = 54 lb/day; 10 ton/year
- Oxides of nitrogen (NOx) = 54 lb/day; 10 ton/year.

Construction emissions of O_3 precursors ROG and NOx, and PM10 and PM2.5, were estimated for the Project-related activities based on updated information obtained from RVSD and using the California Emissions Estimate Model (CalEEMod), an air quality modeling program that estimates air pollutant emissions in tons per year (CAPCOA 2022). Project emissions for the sewer rehabilitation were developed based on information provided by the project engineer and construction manager, including project activities and scheduling, off-road equipment use, and projected haul truck and vendor truck trips. Details of the emission calculations are included in Attachment E.

Table 2 provides a summary of the average annual and daily criteria pollutant emissions from Project construction activities along with a comparison to the Air District significance thresholds and conformity with *de minimis* emission thresholds.

Table 2. Annual and Average Daily Emissions from Project Activities

Pollutant	Annual Emissions (ton/year)	Thresholds (ton/year)	Average Daily Emissions (lb/day)[a]	Thresholds (lb/day)	Above Threshold?
ROG	0.10	10	0.57	54	No
CO	0.20	NA	1.10	NA	No
SO_2[a]	<0.005	NA	0.001	NA	No
NOx	0.07	10	0.36	54	No
PM10[b]	1.06	15	5.79	82	No
PM2.5[b]	0.11	10	0.60	54	No

Source of input parameters: Philip Benedetti, Senior Engineer (RVSD), April 2025.
Notes:
NA = not applicable
[a] SO_2 emissions are expected to be negligible due to use of ultra-low sulfur diesel fuel.
[b] PM10 and PM2.5 represent total emission values including exhaust and fugitive dust.

As noted above, Project activities that have the potential to impact air quality can be characterized as construction activities because of the short duration of the Project and use of construction equipment. Also as demonstrated above, estimated emissions for the Project are below significance thresholds listed in the Air District guidelines.

Emissions from gasoline- and diesel-fueled vehicles and equipment are below significance thresholds, and fugitive dust emissions would be controlled with control measures listed in Attachment D under “Air Quality” and “Dust Control,” which are consistent with Air District-recommended control methods for particulate emissions; therefore, the Project would not result in cumulatively considerable net increase of any criteria pollutant.

c. Expose sensitive receptors to substantial pollutant concentrations?

Less than significant**.** Sensitive receptors are locations where an identifiable subset of the general population (e.g., children, people with asthma, the elderly, and the chronically ill) at greater risk than the general population to the effects of air pollutants are likely to be exposed. These locations include residences, schools, playgrounds, childcare centers, retirement homes, hospitals, and medical clinics. The Project is within residential areas, and there are several sensitive receptors—including residences, schools, hospitals, and medical clinics—within 1,000 ft of the Project site. These sensitive receptors would be exposed to short-term emissions of TACs while construction takes place.

The primary concern for nearby sensitive receptors would be exposure to diesel emissions from diesel-powered construction equipment associated with Project construction activities and diesel trucks while at the Project site. DPM is designated as a TAC by CARB for the cancer risk associated with long-term (i.e., 30-year) exposure to DPM. Given that construction would occur for a limited amount of time (approximately 3 months) and that the Project would use only a limited number of diesel-fueled equipment and trucks, DPM emissions would be very low, and localized exposure to DPM would be minimal. In addition, the amount of onsite diesel-generated PM2.5 exhaust for this Project is estimated to be approximately 0.1 ton/year. The estimated PM2.5 exhaust emissions are several orders of magnitude below the Air District threshold of 10 tons/year.

The Project is not expected to expose sensitive receptors to substantial pollutant concentrations for the following reasons:

- Minor amounts of soil excavation would occur on a daily basis.
- A limited number of construction vehicles or equipment would operate at any time.
- The Project activities are short-term and would last approximately 3 months.
- Combustion emissions from vehicles and equipment are below the significance thresholds from the Air District guidelines.
- Control measures—such as minimizing idle times as well as others listed under "Dust Control" and "Air Quality" in Attachment D—would be implemented to control emissions and limit exposures.

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

Less than significant**.** During construction, there would be minimal sources of odor from Project activities. Sanitary sewer lines would be replaced and rehabilitated in place via pipe bursting or open-cut excavation. Control measures listed in Attachment D, under "Odors," would serve to minimize dispersal of odor, provide for control, and address odor complaints if received.

References:

1. BAAQMD. 2017. Spare the Air Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. Bay Area Air Quality Management District, San Francisco, CA. April.
2. BAAQMD. 2019. Annual Bay Area Air Quality Summaries. http://www.baaqmd.gov/about-air-quality/air-quality-summaries. Bay Area Air Quality Management District, San Francisco, CA.
3. BAAQMD. 2022. CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans. https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en. Bay Area Air Quality Management District, San Francisco, CA.
4. BAAQMD. 2023a. 2023 Annual Air Monitoring Network Plan. https://www.baaqmd.gov/~/media/files/technical-services/2023_network_plan-pdf.pdf?rev=8de9f6f74a2143a994734a3a870bd999&sc_lang=en. Bay Area Air Quality Management District, San Francisco, CA. June.
5. BAAQMD. 2023b. California Environmental Quality Act Air Quality Guidelines. https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Bay Area Air Quality Management District, San Francisco, CA. April.
6. CAPCOA. 2022. California Emissions Estimator Model. https://www.caleemod.com/. California Air Pollution Control Officers Association, Sacramento, CA.

4. Biological Resources

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Project Activities Likely to Create an Impact:

- Equipment used for construction activities
- Excavation of open-cut trenches and bore/receiving pits

- Project site restoration, including backfill of all excavated areas with native soil.

Description of Baseline Environmental Conditions:

The Project site consists largely of in-road rights-of-way within moderately to highly trafficked residential roadways in Kentfield. Biological resources associated with the Project site were identified through a review of available background information and a field reconnaissance survey. Available documentation was reviewed to provide information on natural resources in Kentfield, including the presence of special-status species, sensitive natural communities, and other protected biological resources and also included plans, policies, or ordinances that protected natural resources therein. Information about protected natural resources that could occur on or near the Project site was obtained from the following sources:

- California Natural Diversity Database (CNDDB) RareFind 5 (CDFW 2023)
- California Native Plant Society (CNPS) Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2024)
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) resource list report (USFWS 2024)
- Existing literature as cited in the text.

The protected natural resources identified in these searches were compiled into tables (Attachment F) and evaluated for likelihood of occurrence within the limits of construction disturbance associated with the Project. Integral personnel—Sadie McGarvey (a wildlife biologist and regulatory specialist) and Cristal Reagh—conducted a general survey of the Project site on February 14, 2025, to record biological resources and to assess the likelihood of resource agency regulated areas and special status species and habitats in the vicinity of the Project site. All publicly accessible portions of the Project site were assessed during the field survey. There are portions of the Project site that extend into or occur on residential property; these areas are accordingly designated as disturbed land and not expected to support special-status plants, wildlife, or habitats.

The sewer pipeline alignments occur primarily within the roadways and concrete-lined V-ditches of residential neighborhoods. Landscaping adjacent to the roadways consists of a mix of ornamental and native trees and shrubs, including Acacias (*Acacia* spp.), privet (*Ligustrum* sp.), *Cotoneaster*, coast live oak (*Quercus agrifolia*), liquid amber *(Liquidambar styraciflua),* bamboo (*Phyllostachys* sp.), California Bay Laurel (*Umbellularia californica*), magnolia (*Magnolia grandiflora*), buckeye (*Aesculus glabra*), Pyracantha, English ivy (*Hedera helix*), rosemary (*Rosmarinus officinalis*), purple sage (*Salvia leucophylla*), French broom (*Genista monspessulana*), and lantana (*Lantana* sp.).

Approximately 1,450 LF of the sewer pipeline alignment occurs within off-road rights-of-way below largely undeveloped portions of private property.

Analysis as to whether or not project activities would:

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

Less than significant with mitigation incorporated. Special-status species are plants and animal species considered to be rare by federal and/or state resource agencies (e.g., USFWS, National Marine Fisheries Service [NMFS], California Department of Fish and Wildlife [CDFW]) and/or the scientific community (CNPS) and are accordingly legally protected pursuant to federal, state, and/or local laws in

addition to CEQA. These species are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. The attached species lists from CNDDB, CNPS, and USFWS (Attachment F) detail the broad range of special-status species known to occur or to have previously occurred in the vicinity of the Project site.

Plants

According to the CNDDB, the CNPS Inventory of Rare, Threatened, and Endangered Plants of California, and the USFWS IPaC tool, 57 special-status plant species are known to occur or to have previously occurred within the same U.S. Geological Survey quadrangle (quad) as the Project site (San Rafael quad). All of these species require specialized habitats that *do not* occur within the Project site, including, but not limited to, chapparal, bogs and fens, marshes and swamps, meadows and seeps, riparian and coastal habitats, woodlands, and forests. The Project site is generally highly disturbed by past grading, installation of pavement, ornamental landscaping, existing sewer line facilities, and other current site uses, which precludes the possibility of presence of any special-status plant species in these areas. Therefore, there is no suitable habitat for special status plant species within the Project site.

Wildlife

According to the CNDDB, the CNPS Inventory of Rare, Threatened, and Endangered Plants of California, and the USFWS IPaC tool, 30 special-status wildlife species are known to occur or to have previously occurred within the San Rafael quad. All of these species require specialized habitats that *do not* occur on or adjacent to the Project site, including, but not limited to, open bay and ocean, marshes and swamps, permanent waters (and/or proximity thereto), open grassland slopes, freshwater wetlands, and coniferous forests.

The onsite and site-adjacent trees, shrubs, and herbaceous vegetation provide suitable nesting habitat for a variety of common bird species, including passerines and raptors, protected pursuant to the federal Migratory Bird Treaty Act and State Fish and Game code. However, the intensity of regular disturbance on and adjacent to the Project site limits the likelihood that any special-status bird species would nest on or near the Project site. No nests were observed during the February 2025 site assessment; however, owing to the mobile nature of birds and the seasonality of their nesting cycle, and in light of the presence of abundant marginal nesting habitat on site, it is possible that birds could nest on or adjacent to the Project site during future nesting seasons.

Nesting Birds

Project activities—including trenching, excavating, and test borings—associated with cultural resource investigations can be expected to result in temporary disturbance to suitable habitat for nesting birds. While no evidence of nesting bird activity has been observed on or adjacent to the Project site, there remains a possibility that new bird nests could be established in the trees and other vegetation on and near the Project site. If construction is initiated during the bird nesting season (February 1 to September 15), construction-related disturbance could result in abandonment of the nests if any are present in the immediate vicinity. If construction-related noise and disturbance results in destruction or abandonment of a nest in active use and loss of any eggs or young in the nest, this would be a significant adverse impact and violation of the federal Migratory Bird Treaty Act and State Fish and Game Code sections. Mitigation Measure BIO-1 would serve to avoid this potential for violation of federal and state regulations by ensuring a preconstruction survey is conducted and appropriate construction restrictions are implemented if any active nests are encountered and until any young birds have successfully fledged. With implementation of Mitigation Measure BIO-1, impacts to special-status wildlife would be less than significant.

Mitigation Measure BIO-1

Vegetation removal and ground disturbance (collectively referred to as construction activities) shall be scheduled to avoid the bird nesting season to the greatest extent possible. The nesting season for most birds and raptors in the San Francisco Bay Area is February 1–September 15.

If construction activities cannot be scheduled to occur between September 16 and January 31, preconstruction surveys for nesting birds and raptors will be completed by a qualified ornithologist or biologist to ensure that no nests would be disturbed during project implementation. This survey will be completed no more than 14 days prior to the initiation of construction activities. During this survey, the qualified ornithologist/biologist will inspect all suitable nesting habitat on the Project site and within the zone of influence (the area immediately surrounding the Project site that supports suitable nesting habitat that could be impacted by the proposed Project due to visual or auditory disturbance associated with construction activities scheduled to occur during the nesting season).

If an active nest is found sufficiently close to the work areas to be disturbed by construction activities, the qualified ornithologist/biologist will determine the extent of a construction-free buffer zone to be established around the nest to ensure that protected bird and raptor nests are not disturbed during project construction. This buffer would remain in place until such a time as the young have been determined (by a qualified ornithologist/biologist) to have fledged.

A report of findings will be prepared by the qualified biologist and submitted to RVSD for review prior to initiation of construction during the nesting season. The report would either confirm absence of any active nests or confirm that any young are located within a designated no-disturbance zone and construction can proceed. No report of findings is required if construction is initiated during the nonbreeding season (September 16–January 31) and continues uninterrupted according to the above criteria.

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

No impact. According to the CNDDB, four sensitive natural communities are known to occur or to have previously occurred within the San Rafael quad: coastal brackish marsh, coastal terrace prairie, northern coastal salt marsh, and serpentine bunchgrass. In addition, as much as 380 LF of the pipeline alignment at Cypress Avenue occur within habitat identified by both the Marin County Vegetation and Land Cover mapping and field confirmation as California Bay Forest and Woodland Sensitive Natural Community (Code 74.100.00), and as much as 405 LF of the pipeline at Mann Dr. occur within mapped and field confirmed Coast Live Oak Woodland and Forest Sensitive Natural Community (Code 71.060.00). Due to the highly and regularly disturbed nature of the remainder of the Project site, no other sensitive natural communities have been documented or are likely to occur on site.

Project activities would not have significant adverse effects on any Sensitive Natural Communities. While project activities are proposed to occur within California Bay Forest and Woodland and *Quercus agrifolia* Woodland and Forest Sensitive Natural Communities, these activities would be limited in scope to excavation of bore/receiving pits and test borings associated with cultural resource investigations. No trees would be removed as a result of Project implementation. Due to the limited extent of Project activities proposed to occur within/adjacent to Sensitive Natural Communities, and the proposed post-construction site restoration, impacts to riparian habitat or other Sensitive Natural Communities would be less than significant.

c. Have a substantial adverse effect on state or federally protected wetlands as (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No impact. Jurisdictional waters are regulated by state and federal resource agencies (U.S. Army Corps of Engineers [USACE], California State Water Resources Control Board [SWRCB], and CDFW) and are accordingly legally protected via the federal and/or state laws in addition to CEQA.

USACE implements the Clean Water Act, which establishes a program that regulates the discharge of dredge or fill material into waters of the United Status (WOTUS), which generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands. 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 CFR § 328.3(b), 51 FR 41251, November 13, 1986). The limit of USACE jurisdiction for nontidal watercourses is defined in 33 CFR § 328.4(c)(1) as the "ordinary high water mark" (OHWM). The OHWM is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR § 328.3(e), 51 FR 41251, November 13, 1986). The bank-to-bank extent of the channel that contains the water flow during a normal rainfall year generally serves as a good first approximation of the lateral limit of USACE jurisdiction. The upstream limits of other waters are defined as the point where the OHWM is no longer perceptible.

The Porter-Cologne Water Quality Control Act (Water Code § 13000 et seq.) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of waters of the state, and applies to surface waters, wetlands, and groundwater and to both point and nonpoint sources of pollution. The Porter-Cologne Act also implements many provisions of the Clean Water Act (CWA), such as the NPDES permitting program. The 401 Water Quality Certification and Wetlands Program regulates discharges of fill and dredged material into "waters of the State" pursuant to the CWA Section 401 and the State of California Porter-Cologne Water Quality Control Act. All WOTUS in California are also "waters of the State" (defined by the Porter-Cologne Water Quality Control Act as "any surface water or ground water, including saline waters, within the boundaries of the state" [Water Code Section 13050(e)]).

A review of the National Wetland Inventory identifies a riverine feature proximal to the sections of sewer pipeline alignment at Hill Drive in Kentfield (an unnamed creek). Field observations confirmed the existence of WOTUS at this location proximal to the sewer alignment. Pipeline replacement will occur within the footprint of the roadway; the sewer pipeline at this location occurs between approximately 2 and 3 ft below two 15-in. stormwater pipes that discharge into the unnamed creek. Project activities along this segment of sewer pipeline include open trenching to avoid impacts to in-road utilities, including the stormwater pipelines. Project activities are not expected to result in impacts to the unnamed creek.

It appears that flows across the property located at 104 Cypress Avenue have been focused into a linear channel that flows toward a storm drain within Cypress Avenue along the west-central border of the property. This does not appear to be a natural feature, does not occur within the proposed footprint of the Project site, and would not be impacted by Project activities.

State or federally protected wetlands do not occur on the Project site and would not be impacted by Project activities; therefore, Project activities would have no impact to state or federally protected wetlands.

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

No impact. A wildlife corridor is a portion of land that adjoins two or more larger areas of similar natural environment, often connecting wildlife populations separated by natural or created activities, disturbances, or structures. Wildlife corridors are used for dispersal and migration of wildlife, allowing for genetic exchange, population growth, and access to larger stretches of suitable habitats while reducing habitat fragmentation. The undeveloped portions of the Project site and adjacent areas provide suitable resting and roosting habitat; however, much of this area is subject to regular disturbance and occurs within a matrix of single-family homes surrounded by fences and other barriers to dispersal for terrestrial species. Accordingly, the Project site and area immediately surrounding it would not function as a wildlife corridor.

A nursery site is an area where juveniles occur at higher densities, avoid predation more successfully, or grow faster there than in a different habitat (Beck et al. 2001). It is possible that the undeveloped portions of the Project site occurring within California bay coast live oak woodlands may act as nursery sites. However, Project activities would be limited in scope to excavation of bore/receiving pits and test borings associated with cultural resource investigations. No trees would be removed as a result of Project implementation. Due to the limited extent of Project activities proposed to occur within the potential nursery site (temporal and size of disturbance), the proposed post-construction site restoration, and construction restrictions to avoid impacts to active nests (see Mitigation Measure BIO-1), impacts to nursery sites would be less than significant.

The Project site does not act as a wildlife corridor or a nursery site due to its location within a matrix of fenced, single-family residential and otherwise urban development; therefore, Project activities would not impact wildlife movement or breeding and rearing opportunities.

e. Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact. The Project site occurs within unincorporated Marin County and is subject to the Marin Countywide Plan (2007; last amended in 2023), which was developed to help guide the conservation and development of Marin County. The Marin Countywide Plan addresses the protection of sensitive biological and wetland resources, including creeks, trees, threatened and endangered species habitat, riparian vegetation, and other resources.

Similarly, as the Project site occurs within unincorporated Marin County, it is subject to the County of Marin Native Tree Preservation and Protection Ordinance (Tree Ordinance), which establishes regulations for the preservation and protection of native trees in the unincorporated areas of Marin County by limiting tree removal. No tree removal is proposed as part of the Project. The contractor shall exercise due diligence and implement necessary precautions to avoid needlessly damaging or destroying trees, shrubs, or other landscaping within and adjacent to the Project site. Any required pruning of existing trees would be completed by a certified arborist.

The Project would not conflict with policies in the Marin Countywide Plan. In addition, the Project does not include tree removal and would therefore not conflict with the Tree Ordinance. No major conflicts with local plans and policies are anticipated.

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

No impact. There are no adopted habitat conservation plans or other local, regional, or state habitat conservation plans in the area.

References:

1. Beck, M.W., K.L. Heck, K.W. Able, D.L. Childers, D.B. Eggleston, B.M. Gillanders, B. Halpern, C.G. Hays, K. Hoshino, T.J. Minello, R.J. Orth, P.F. Sheridan, and M.P. Weinstein. 2001. The identification, conservation, and management of estuarine and marine nurseries for fish and invertebrates: A better understanding of the habitats that serve as nurseries for marine species and the factors that create site-specific variability in nursery quality will improve conservation and management of these areas. *BioScience*. 51(8):633–641. https://doi.org/10.1641/0006-3568(2001)051[0633:TICAMO]2.0.CO;2.
2. CDFW. 2024. California Natural Diversity Database (CNDDB). https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Commercial versions dated October 31, 2024. California Department of Fish and Wildlife, Sacramento, CA.
3. CNPS. 2025. Rare Plant Inventory. https://www.rareplants.cnps.org. Version 9.5.1. Accessed March 14, 2025. California Native Plant Society, Sacramento, CA.
4. Marin County. 2007. Marin Countywide Plan. https://www.marincounty.gov/departments/cda/planning/plans-policies-and-regulations/marin-countywide-plan. Last amended on January 24, 2023. County of Marin, CA.
5. USFWS. 2024. Information for Planning and Consultation (IPaC) Resource List. https://ipac.ecosphere.fws.gov/. U.S. Fish and Wildlife Service, Bailey's Crossroads VA.

5. Cultural Resources

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Project Activities Likely to Create an Impact:

- Ground-disturbing activities (excavation of soil).

The Project entails the construction and rehabilitation of sanitary sewer lines within the existing alignment of mains and related appurtenances. It would primarily employ a pipe-bursting construction method for the majority of sewer line replacement. The Project would also involve open-cut excavation for some replacement lines where deemed necessary, construction of new sewer lines, rehabilitation of existing manholes, construction of new manholes, repair of sags, and potholes for lateral tie-ins.

While the Project has the potential to impact unrecorded archaeological resources, the construction methods, previous disturbances, and logistical constraints have been taken into consideration. The Project pipe-bursting construction method (trenchless) would have a minimal potential impact (see below) whereas the construction of a new sewer segments, manholes, repair of sags, and potholing for lateral tie-ins would require open-cut excavations.

Disturbance from pipe bursting is limited to the soils within and immediately surrounding the existing sewer footprint. While the pipe-bursting method is employed, the immediate soils around the existing sewer footprint are only expected to be displaced *in situ* a few centimeters outward to accommodate the new pipe and would reach an expected depth of 5 ft below the ground surface. The removal of soils is expected to occur for the entry and exit pits, construction of new sewer manholes, repair of sags, and potholes for lateral tie-ins and would involve excavating soils immediately surrounding the pipe as well as all soils above it to an expected depth of 3–10 ft below the ground surface. While the excavated soil would be solely or primarily backfill from the initial installation of the existing sewer—and thus should not contain an intact archaeological deposit—the new manhole sewer and associated pipes may encounter native soils if the new trench does not exactly correspond with the depth or width of any previously excavated trench.

In addition, as backfill soils could still contain previously displaced cultural materials, any methods disturbing adjacent soils have the potential to encounter human remains and associated funerary objects or disturbed cultural materials.

Description of Baseline Environmental Conditions:

A cultural resources inventory report for the Project was prepared was prepared by Far Western Anthropological Research Group, Inc. (Far Western) in April 2025. Because the report contains confidential information about the locations and characteristics of archaeological sites and tribal cultural resources, the technical report is not included in this initial study for public review, but it can be made available to agencies and other qualified professionals for review as necessary.

The cultural study included a records search, consultation with the Native American Heritage Commission (NAHC) and the Federated Indians of Graton Rancheria (Graton Rancheria), buried-site sensitivity assessment, and a pedestrian survey of the Project site. The records search did not identify any previously recorded archaeological sites within the area of direct impact (ADI).

As part of this study, an archaeological sensitivity assessment was also conducted to assess the potential for encountering unrecorded deposits at the proposed sewer line repair locations. The ADI was noted for possible early roadbed iterations or roadside features associated with many of the original travel/roadway alignments within and intersecting the ADI; however, given that the alignment of the roads in the ADI, many appear to have remained unchanged through time, and thus it is unlikely that project related activities will encounter historic-era artifacts or non-road related features in these portions of the ADI.

Based on the results of geoarchaeological assessment, there are locations within the ADI that are sensitive for subsurface precontact deposits; as such, it is recommended that an archaeological testing program is carried out in areas determined to have high sensitivity within the ADI. These locations include:

- Western end of Mann Drive (nearest to Laurel Grove Avenue)
- Western half of Cypress Avenue in Kentfield
- Western end of Palm Avenue.

Testing and monitoring details, including proposed locations and procedures, are provided in the Testing/Monitoring Plan (Far Western 2025). Testing will require homeowner notification for work occurring in front yards at homes.

RVSD initiated Native American outreach on this Project in accordance with Assembly Bill 52. The NAHC responded on February 13, 2025, and stated that the Sacred Lands File search was negative. See Section 18, “Tribal Cultural Resources,” for a detailed discussion of Assembly Bill 52 and ongoing consultation efforts with Graton Rancheria.

Regulatory Background

Cultural resources include precontact (prehistoric/Native American) and historic-era archaeological sites and objects as well as extant historic structures, buildings, and locations of important historic events or sites of traditional and/or tribal cultural importance to various groups. This study addresses archaeological resources and tribal resources in the ADI. The Project requires approval by local and state agencies, thereby mandating that it adheres to CEQA and its implementing guidelines and regulations in 14 CCR § 15000 et seq.

California Register of Historical Resources

The CEQA statutes and guidelines (14 CCR § 15064.5) include procedures for identifying, analyzing, and disclosing potential adverse impacts to historical resources, which include all resources listed in or formally determined eligible for the National Register of Historic Places (National Register), the

California Register of Historical Resources (California Register), or local registers. CEQA further defines a "historical resource" as a resource that meets any of the following criteria:

- A resource listed in, or determined to be eligible for listing in, the National or California registers
- A resource included in a local register of historical resources, as defined in § 5020.1(k) of the Public Resources Code (PRC), unless the preponderance of evidence demonstrates that it is not historically or culturally significant
- A resource identified as significant (rated 1–5) in a historical resource survey meeting the requirements of PRC § 5024.1(g) Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. See Section 18, "Tribal Cultural Resources," for the definition of Tribal Cultural Resources. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register.

Analysis as to whether or not project activities would:

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less than significant with mitigation. An archaeological resource's significance is determined by its potential eligibility to be listed on the California Register. The California Register is a listing of properties that are important to the history of California and the nation. To be eligible for listing on the California Register, a property must typically be 50 years of age or older; it must possess historical significance; and it must possess integrity of location, design, setting, materials, workmanship, feeling, and association. Historical significance is the importance of a property to the history, architecture, archaeology, engineering, or cultural aspects of a community.

The records search did not identify any previously recorded archaeological sites within the ADI. However, some areas of the ADI were determined sensitive for possible subsurface precontact deposits based on the results of the buried site sensitivity assessment. With the implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4, impacts to historical resources would be less than significant.

A program of focused archaeological testing will be conducted in areas determined to be sensitive for encountering cultural deposits based on the results of the buried site sensitivity assessment. Testing will occur in advance of proposed ground disturbance including manholes, sags, potholes, and the entry and exit pits for pipe bursting, where feasible. Where testing is not feasible, archaeological and tribal monitoring will occur, per CUL-2. All locations described above have limited accessibility and testing will be carried out alongside the roadway where the ground surface is exposed.

Based on the results of the testing—and in coordination with the RVSD and Graton Rancheria—monitoring by an archaeologist and tribal monitor may also be required to observe excavated soils that are removed during construction activities. Even if much of the excavation has been previously disturbed, as deposits may be visible in trench walls, and redeposited midden may contain human remains.

Mitigation Measure CUL-1

Prior to project implementation, an archaeological testing and monitoring plan will be prepared by a qualified archaeological consultant. The plan will discuss the testing and monitoring procedures, field methods, communication protocols, and inadvertent discovery actions to be taken in the event cultural resources are identified during testing, monitoring and/or any project activities. The plan will be developed in coordination with Graton Rancheria. Based on the results of the testing and in coordination with the RSVD and Graton Rancheria, monitoring by an archaeologist and tribal monitor may also be required to observe excavated soils that are removed during construction activities. If resources are identified during the testing or monitoring, the appropriate avoidance and/or treatment measures detailed in the Plan will be carried out in coordination with Graton Rancheria, as necessary. In addition, should resources be identified at any time during testing or project implementation, Department of Parks and Recreation (DPR 523) forms will be completed and for Native American/precontact sites will be shared with Graton Rancheria for review prior to submittal to the Northwest Information Center.

Mitigation Measure CUL-2

Upon approval of the testing and monitoring plan, archaeological testing will occur in areas determined to be highly sensitive for subsurface cultural resources. Testing will take place prior to Project implementation and will be coordinated in advance with Graton Rancheria. A tribal monitor will be present during all testing. Testing will occur at project segments:

- Western end of Mann Drive (nearest to Laurel Grove Avenue)
- Western half of Cypress Avenue in Kentfield
- Western end of Palm Avenue

Where testing is not feasible, monitoring will occur in accordance with Mitigation Measure CUL-1.

Mitigation Measure CUL-3

Prior to project related work, the construction crews shall be trained in “basic archaeological and tribal resources identification” and have access to an alert sheet. The alert sheet will photographically depict indicators of archaeological sites and artifacts and clearly outline the procedures in the event of new discovery. These procedures include temporary work stoppage (i.e., a stop work order) of all ground disturbance, short-term physical protection of features and artifacts and their context, and immediate advisement of the archaeological team, Graton Rancheria, and RVSD representatives. Any stop work order would contain a description of the work to be stopped, special instructions or requests for the contractor, suggestions for efficient mitigation, and a time estimate for the work stoppage. The archaeologist will notify Graton Rancheria (if a tribal monitor is not present), examine the findings and assess their significance, and offer recommendations for any procedures deemed appropriate to further investigate and/or mitigate adverse impacts to those archaeological and tribal resources that have been encountered.

Mitigation Measure CUL-4

Upon discovery of suspected human remains, the Coroner Division of the Marin County Sheriff’s Office will be contacted for identification of human remains. The coroner has two working days to examine the remains after being notified.

If the remains are Native American, the coroner must notify NAHC of the discovery within 24 hours. NAHC will then identify and contact a most likely descendant, who may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the ancestral remains

and associated funerary objects. Once proper consultation has occurred, a procedure that may include the preservation, excavation, analysis, and curation of artifacts and/or reburial of those remains and associated artifacts will be developed and implemented.

If the remains are not Native American, the coroner will consult with the archaeological research team and RVSD to develop a procedure for the proper study, documentation, and ultimate disposition of the remains. If a determination can be made as to the likely identity—either as an individual or as a member of a group—of the remains, an attempt should be made to identify and contact any living descendants or representatives of the descendant community. As interested parties, these descendants may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the remains and grave goods. Final disposition of any Native American human remains or associated funerary objects will be determined in consultation between RVSD and Graton Rancheria.

b. Cause a substantial adverse change in the significance of an archeological resource pursuant to §15064.5?

Less than significant with mitigation. With the implementation of mitigation measure CUL-1 through CUL-4, impacts to archaeological resources would be less than significant.

c. Disturb any human remains, including those interred outside of formal cemeteries?

Less than significant with mitigation. In California, the discovery of human remains during construction activities is regulated by the California Health and Safety Code. Per California Health and Safety Code §7050.5 and California PRC §5097.98, the appropriate procedures would be followed in the event that human remains and associated cemetery or funerary items are encountered. Associated cemetery or funerary items are any items (e.g., clothing, funerary gifts, ceremonial) that are buried with the individual as well as any cemetery furniture, architecture, fencing, or other features associated with the cemetery itself. This definition applies to both precontact and historic period cemeteries. There is a potential to discover human remains during any phases of the Project that involve excavation in the project soils. With implementation of Mitigation Measure CUL-4, impacts to cultural resources would be less than significant.

References:

1. Far Western. 2025. Archaeological Resources Inventory and Testing/Monitoring Plan for the Ross Valley Sanitary District Palm/Mann/Cypress Gravity Sewer Improvement Project, Kentfield, Marin County, California. Far Western Anthropological Research Group, Inc, Davis, CA. April.

6. Energy

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

Project Activities Likely to Create an Impact:

- Construction activities with associated equipment
- Transportation of materials and supplies to and from work areas via heavy-duty trucks
- Offsite transport and disposal of debris to appropriate facility.

Description of Baseline Environmental Conditions:

Current energy use within the Project site is predominantly for residential and nonresidential purposes. There would be no electrical use needed to operate equipment at the Project site for construction purposes.

Assembly Bill 32, the Global Warming Solutions Act, addresses greenhouse gas (GHG) emissions and associated energy use across the state and throughout different sectors of California's economy, with the goal of reducing emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030. CARB is tasked with the implementation of Assembly Bill 32 through the development of a scoping plan, which is to be updated every 5 years. CARB produced its third update to the scoping plan in 2022 (CARB 2022). Locally, the Marin County Climate Action Plan provides emissions reduction goals and measures for unincorporated Marin County, with the overall target of reducing emissions to 30 percent below 2005 levels by 2030 and drawdown GHG emissions below zero by 2045 (Marin County 2020). Efficient energy use is a key component to achieving these emission reduction goals.

Analysis as to whether or not project activities would:

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

Less than significant**.** This impact analysis focuses on the fuel for equipment and transport vehicles necessary to implement the Project. Fuel consumption associated with vehicle trips generated by the Project would not be considered inefficient, wasteful, or unnecessary in comparison to other similar projects in the region. The Project would not directly use electricity for construction-related operations. The construction activities would not create long-term energy demands, as there are no operational related components to the Project.

Construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency—combined with state regulations limiting engine idling times—would further reduce the amount of transportation fuel demand during Project implementation. All off-road equipment would be required to comply with CCR 13 §2485, which requires off-road construction equipment operators to reduce idling of engines to less than 5 minutes and to replace or retrofit older off-road equipment fleets to meet specific particulate matter and nitrogen oxide emission standards based on fleet averages. With implementation of control measures listed in Attachment D, under "Dust Control," the impact of temporary construction activities would be less than significant.

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

No impact. The Project would use small amounts of energy during construction, including the use of equipment and trucks associated with employees driving to and from the Project site and from material deliveries. These activities would be short term. The Project aims to rehabilitate and replace existing sewer mains and reduce SSOs and mitigate I&I with aging RVSD infrastructure. Implementation of this Project would reduce operation and maintenance needed below current conditions. The Project would not conflict with renewable energy or energy efficient plans, including goals set forth in Assembly Bill 32, the objectives of the 2022 CARB Scoping Plan, and the goals and policies contained in Marin County's Countywide Plan and the Climate Action Plan. Therefore, the Project would not conflict with or obstruct state or local plans for renewable energy or energy efficiency.

References:

1. CARB. 2022. California's 2022 Climate Change Scoping Plan. https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf. California Air Resources Board, Sacramento, CA. October.
2. Marin County. 2020. Marin County Unincorporated Area – Climate Action Plan 2030. Public Review Draft. https://www.marincounty.org/-/media/files/departments/cd/planning/sustainability/climate-and-adaptation/draft-climate-action-plan-2030.pdf?la=en. County of Marin, CA. October.

7. Geology and Soils

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of water?	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☐	☐	☒

Project Activities Likely to Create an Impact:

- Excavation of soil and fill/debris
- Loading of soil and fill/debris onto dump trucks
- Transportation and handling of imported backfill materials.

Description of Baseline Environmental Conditions:

Geotechnical studies were not conducted for the Project. However, geologic information from the Marin Countywide Plan was used to supplement this section. Geotechnical control measures included in Attachment D, under "Geotechnical," would be implemented on an as-needed basis. Unstable soils are not expected at the Project location; thus, it is not likely that construction activities would create Project-related impacts.

Regional Geology and Topography

The Project site is located within the Coast Range Geomorphic Province of California. The regional bedrock geology consists of complexly folded, faulted, sheared, and altered sedimentary, igneous, and metamorphic rock of the Franciscan Complex. Bedrock is characterized by a diverse assemblage of greenstone, sandstone, shale, chert, and melange, with lesser amounts of conglomerate, calc-silicate rock, schist, and other metamorphic rocks.

The regional topography is characterized by northwest-to-southeast-trending mountain ridges and intervening valleys that were formed by movement between the North American and the Pacific Plates. Continued deformation and erosion during the late Tertiary and Quaternary ages (the last several million years) formed the prominent coastal ridges and the inland depression that is now the San Francisco Bay. The more recent seismic activity within the Coast Range Geomorphic Province is concentrated along the San Andreas Fault zone, a complex group of generally north-to-northwest trending faults.

The Project site is located in the seismically active San Francisco Bay Area region. The Project site is not included on "Table 4 Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of January 2010" in *Special Publication 42, Fault-Rupture Hazard Zones in California*, indicating that the Project site property is not located within an earthquake fault zone (CGS 2010). No active faults were identified on site or in the Project vicinity by the Principal Faults Zones Under Alquist-Priolo Earthquake Fault Zoning Act 1974–2007 issued by the California Division of Mines and Geology in 2007 (Bryant and Hart 2007). Therefore, there would be no Project impacts related to rupture of a known earthquake fault as delineated by the state geologist or other substantial evidence of a known fault.

Geologic Hazards

Although there are no active faults or rift zones in the Project site (Marin County 2007), the Project is located near several active faults and is in an area subject to strong ground shaking from earthquakes along the San Andreas Fault.

Geological hazards identified in the Marin Countywide Plan include seismic shaking amplification and liquefaction. As indicated on the seismic shaking amplification hazards map in the Marin Countywide Plan (Marin County 2007, Map 2-9), soil types at the Project site include some untethered intrusive igneous rock, volcanic rock, mostly Mesozoic bedrock and some Franciscan bedrock ("Soil Types A&B"), some Quaternary sands, sandstones, and mudstones; some Upper Tertiary sandstones, mudstones, and limestones; some Lower Tertiary mudstones and sandstones; Franciscan melange and serpentinite ("Soil Type C"); and quaternary muds, sands, gravels, silts, and muds ("Soil Type D") near the Project site. Soil types A and B do not contribute greatly to shaking amplification, Soil Type C would be subject to less significant seismic shaking amplification, and Soil Type D would be subject to significant seismic shaking amplification (Marin County 2007). The Liquefaction Susceptibility Hazards Map indicates that segments of the Project site may be within a mapped zone of high susceptibility to liquefaction (Marin County 2007, Map 2-11).

Within the Project site, surface conditions generally consist of asphalt-paved roadways. The Project site is located within relatively densely populated suburban areas with neighboring properties generally consisting of residential land use. There are overhead power lines along the shoulder of some of the streets, and numerous underground utilities exist and are often located within several feet of the proposed alignments.

Groundwater

The Project includes maximum anticipated excavation depths of 3–10 ft for construction of various improvements, including the replacement of manholes. While the Project is not located adjacent to or crossing any creeks, groundwater could be encountered during construction activities.

Analysis as to whether or not project activities would:

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than significant**.** There are no active faults or potentially active faults underlying the Project site according to published geologic maps. The Project site is not within an identified Alquist-Priolo Earthquake Hazard Zone. Because the Project is not within an Alquist-Priolo Earthquake Fault Zone, and no major faults have been mapped within or adjacent to the Proposed Project sites, the likelihood of ground rupture from faulting across the Project sites is low.

ii) Strong seismic ground shaking?

Less than significant. Although there are no active faults underlying the Project site, the Project site is located near several active faults and is in an area subject to strong ground shaking from earthquakes along the active San Andreas and Hayward faults. Therefore, there is a possibility that the Project site may experience ground shaking from periodic minor earthquakes and possibly a major earthquake.

iii) Seismic-related ground failure, including liquefaction?

Less than significant. Some segments of Project site are in an area identified as having a high potential for a liquefaction hazard. As a result, the Project could be subject to liquefaction during an earthquake. However, the Project would incorporate standard engineering and construction techniques related to seismicity and liquefaction. Implementation of these practices and requirements would minimize potential impacts of liquefaction on site.

Strong seismic ground shaking can result in damage to the sewer mains and related improvements. Liquefaction can result in flood failure, lateral spreading, ground movement, settlement, and other related effects. Buried pipelines and manholes embedded within liquefied soils may also experience uplift due to buoyancy. Control measures listed under “Geotechnical” in Attachment D have been included in the Project to address these issues, should they arise.

iv) Landslides?

Less than significant. The Project site is in an area where few landslides occur (ABAG 2023). Construction activities would not increase the potential for seismically induced landslides or attract additional population to a potentially hazardous area.

b. Result in substantial soil erosion or the loss of topsoil?

Less than significant**.** Project construction would involve soil excavation, primarily for areas needing insertion and receiving pits and for replacement of manholes. Although the construction activities are limited in extent and duration, these activities could still cause sediment and other pollutants to leave the Project site and enter local drainage systems and possibly nearby streams. Proper implementation of the control measures, listed in Attachment D, would prevent significant soil erosion from occurring, and the loss of topsoil would be considered a less-than-significant impact.

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

Less than significant. As discussed in 7a(iii), the potential for impacts due to liquefaction would be less than significant. Project improvements should include flexible connections and new structures should be designed to resist seismic loads to account for uplift and buoyancy effects associated with liquefaction. The Project would incorporate standard engineering and construction techniques related to seismicity and liquefaction. Control measures listed under “Geotechnical” in Attachment D have been included in the Project to address these issues, should they arise.

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than significant. Although some of the native soils underlying the Project site may have expansion or shrink-swell potential, backfill material used would consist of non-expansive materials. The Project would adhere to standard engineering and construction techniques, which would further minimize potential effects of expansive soils on site.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of water?

No impact. While replacement sewer mains and manholes would be constructed and channel improvements would occur, no septic tanks or alternative wastewater disposal systems are included as a component of the Project.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Less than significant. The Project involves limited excavation within the public right-of-way or in designated easements, which in general have been previously disturbed. As discussed in Section 5, “Cultural Resources,” the Project site might contain paleontological resources or unique geologic features of paleontological value. However, mitigation measures listed in Section 5 would be implemented to reduce potential impacts to paleontological resources or unique geologic features of paleontological value.

References:

1. Bryant, W.A., and E.W. Hart. 2007. Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps. Special Publication 42. Interim Revision 2007. California Department of Conservations, Sacramento, CA. Accessed at https://www.dtsc-ssfl.com/files/lib_ceqa/ref_draft_peir/Chap4_5-Geology/68321_Bryant,_WA_and_EW_Hart_2007.pdf
2. CGS. 2010. Table 4. Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of January 2010. California Geological Survey, Sacramento, CA.
3. Marin County. 2007. Marin Countywide Plan. https://www.marincounty.org/userdata/cda/planning/cwp2023.pdf. Last amended on January 24, 2023. County of Marin, CA.
4. ABAG. 2023. Hazard Viewer Map. https://abag.ca.gov/our-work/resilience/data-research/hazard-viewer. Association of Bay Area Governments, San Francisco, CA.

8. Greenhouse Gas Emissions

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
g. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
h. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Project Activities Likely to Create an Impact:

- Excavation/removal of soil and debris using appropriate construction equipment in select areas
- Offsite transport and disposal of excavated soil and debris to appropriate facility
- Project site restoration, including backfill of all excavated areas with imported clean soil.

Description of Baseline Environmental Conditions:

Gases that trap heat in the atmosphere are called greenhouse gases, or GHGs. The process of heat being trapped in the atmosphere is similar to the effect greenhouses have in raising the internal temperature, hence the name “greenhouse gas.” Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates the Earth’s temperature; however, emissions from human activities—such as fossil fuel-based electricity production and the use of motor vehicles—have elevated the concentration of GHGs in the atmosphere. GHGs are not monitored in the same manner as air quality pollutants, so there are no background data to characterize the baseline conditions of a given area in terms of GHG levels.

GHGs from fossil fuel combustion include CO_2, methane, and nitrous oxide. Carbon dioxide is the most common reference gas for climate change. To account for warming potential, GHGs are often quantified and reported as CO_2 equivalents (CO_2e) based on their warming potential relative to CO_2.

Assembly Bill 32, the Global Warming Solutions Act, addresses GHG emissions and associated energy use across the state and throughout different sectors of California’s economy, with the goal of reducing emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030. CARB is tasked with the implementation of Assembly Bill 32 through the development of a scoping plan, which is to be updated every 5 years. CARB produced its third update to the scoping plan in 2022 (CARB 2022). Locally, the Marin County Climate Action Plan provides emissions reduction goals and measures for unincorporated Marin County, with the overall target of reducing emissions to 30 percent below 2005 levels by 2030 and drawdown GHG emissions below zero by 2045 (Marin County 2020).

Short-term construction projects are not recognized in Table 3-1 of the Air Quality Guidelines, which provide land use type screening-level sizes for criteria air pollutants, precursors, and GHG (BAAQMD 2017). BMPs identified in the Air Quality Guidelines for reducing GHG emissions during construction can include the following (BAAQMD 2023):

- Use alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment for at least 15 percent of the fleet. (The Project is a small-scale construction project with limited vehicle and equipment needs. While the chosen contractor may have alternative-fueled vehicles and equipment, requiring 15 percent of the fleet to be alternative-fueled would have an unnecessary cost burden with no measurable benefit.)
- Use local building materials of at least 10 percent. (Construction materials used, such as aggregate base and asphalt, would be limited for the Project, but all would be obtained locally.)
- Recycle or reuse at least 50 percent of construction waste or demolition materials. (The generation of construction waste would also be limited.)

Analysis as to whether or not project activities would:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant. Project activities would result in direct GHG emissions from fuel combustion in construction equipment and vehicles. The number of Project-related vehicles would be relatively small, and the Project duration would be relatively short. GHG emissions were calculated using the CalEEMod emissions estimator model, as described above in Section 3, "Air Quality." The estimated GHG emissions are shown in Table 3.

Table 3. Maximum Annual Emission from Project Activities

Pollutant	Maximum Annual Emissions ($MTCO_2e$ /year)	Threshold [a] ($MTCO_2e$ /year)	Above Threshold?
CO_2e	32.4	1,100	No

[a] Based on the threshold of significance for operations-related GHG emissions (BAAQMD 2023b)

The Air Quality Guidelines (BAAQMD 2023) present an emissions threshold for GHGs from a land use operations project of 1,100 CO_2e maximum annual emissions (MT/year), but they do not report an adopted threshold of significance for construction-related GHG emissions. However, based on the small-scale of this construction Project, it is estimated that the maximum annual emissions (32.4 $MTCO_{2e}$/year) that could be generated during construction are well below the BAAQMD (2023) threshold of significance for operations-related GHG emissions of 1,100 CO_2e MT/year. As a comparison, the Sacramento Metropolitan Air Quality Management District's threshold of significance for construction-related GHG emissions is 1,100 MT/year (SMAQMD 2015). The Marin Climate and Energy Partnership website (http://www.marinclimate.org/) was reviewed, but it also contains no thresholds of significance. The estimated GHG emissions for unincorporated Marin County in 2019 were 389,023 MT of CO_2e (Marin Climate 2021a).[3] Within unincorporated Marin County, the transportation and agricultural sectors account for more than half the GHG emissions reported, followed by the residential sector. As the construction-related Project emissions would constitute less than 1 percent of the emissions for all of the unincorporated towns in Marin County, the level of Project-related increase is less than significant.

[3] GHG emissions for unincorporated Marin County were used because most of the Project segments are locations within unincorporated areas. For reference, the GHG emissions for San Anselmo in 2019 were 55,078 MT of CO_2e, respectively (Marin Climate 2021b,c). The Project would constitute less than 1 percent of emissions generated.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Less than significant. The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Measures contained in the 2017 Clean Air Plan (BAAQMD 2017) to reduce overall emissions from construction equipment, already accounted for in the regional planning emissions budget, would also control GHG emissions. Thus, the Project would not conflict with GHG plans, policies, or regulations, and impacts would be less than significant.

References:

1. BAAQMD. 2017. Spare the Air Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. Bay Area Air Quality Management District, San Francisco, CA. April.
2. BAAQMD. 2023. California Environmental Quality Act Air Quality Guidelines. https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Bay Area Air Quality Management District, San Francisco, CA. April.
3. CARB. 2022. California's 2022 Climate Change Scoping Plan. https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf. California Air Resources Board, Sacramento, CA. October.
4. Marin County. 2020. Marin County Unincorporated Area – Climate Action Plan 2030 (Public Review Draft). https://www.marincounty.org/-/media/files/departments/cd/planning/sustainability/climate-and-adaptation/draft-climate-action-plan-2030.pdf?la=en. County of Marin, CA. October.
5. SMAQMD. 2015. Thresholds of Significance Table. https://files.ceqanet.opr.ca.gov/123569-2/attachment/UL9obk_yjl5aUBxUrjyQ9P3HVyfSLoCEnhvRpgSHGIQmRUgvfjw0ZXCcdqPM73lOOUtFc8Rl7yI_48800. Sacramento Metropolitan Air Quality Management District, Sacramento, CA.
6. Marin Climate. 2021a. Unincorporated County of Marin – Greenhouse Gas Inventory for the year 2019. https://marinclimate.org/wp-content/uploads/2021/08/Larkspur-2019-GHG-Inventory-Report.pdf. City of Larkspur, CA. August.
7. Marin Climate. 2021b. Town of San Anselmo – Greenhouse Gas Inventory for the year 2019. https://marinclimate.org/wp-content/uploads/2021/08/Larkspur-2019-GHG-Inventory-Report.pdf. City of Larkspur, CA. May.
8. Marin Climate 2021c. [cited in footnote 3]

9. Hazards and Hazardous Materials

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment throughout the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Project Activities Likely to Create an Impact:

- Excavation and stockpiling of debris using appropriate construction equipment in select areas
- Storage and staging of construction equipment.

This resource category addresses health and safety issues related to construction activities at the Project site. Health and safety issues apply to construction workers and members of the public who would be exposed to hazardous materials and physical conditions associated with the presence of construction equipment and excavations in the area of sensitive land uses. Construction activities are generally located within local roadways, and the surrounding areas are predominantly residential.

Description of Baseline Environmental Conditions:

Hazardous materials are not expected to be encountered during construction activities. There is a variety of state and federal regulations that apply to construction projects for protection of health and safety. RVSD also has standard specifications to address these issues based on other successfully completed projects. Control measures (Attachment D) have been established to manage the unexpected discovery of hazardous materials during Project implementation. The use of hazardous materials would be limited during construction activities and include such traditional materials as gasoline, diesel, oil, paint, resin, and concrete.

Several regulatory agency databases were consulted regarding the presence of hazardous materials release sites within the Project site, including the SWRCB GeoTracker website and the Department of Toxic Substances Control (DTSC) Cortese List. There are no active sites on the SWRCB GeoTracker website (SWRCB 2025) or the Cortese List (DTSC 2025) that are in the Project site.

Analysis as to whether or not project activities would:

a. Create a significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials?

No impact. Construction activities would not create a significant hazard to the public or environment. Control measures in Attachment D, under “Hazardous Materials,” have been established to manage the unexpected discovery of hazardous materials during Project implementation.

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

Less than significant. Construction activities would not create a significant hazard to the public or environment. The primary objective of the Project is to relieve hydraulic and structural deficiencies at the Project site. These improvements help address the problem of SSOs and I&I in the RVSD service area. SSOs and I&I can expose the public to raw sewage, and overflows can reach local streams with adverse water quality impacts.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?

Less than significant. There are no hazardous materials release sites within the Project site, nor are there any active cleanup sites within 0.25 mile of the Project according to the DTSC Cortese List.

Further, the use of hazardous materials would be limited during construction activities and include such traditional materials as gasoline, diesel, oil, paint, resin, and epoxy concrete. The control measures in Attachment D, under “Hazardous Materials,” would be implemented to address hazards and hazardous materials.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to public or the environment?

No impact. The Project site is not included on a list of hazardous materials sites that was compiled pursuant to Government Code Section 65962.5.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No impact. The Project is not within an airport land-use plan or within 2 miles of a public airport or public use airport. The Project is also not within the vicinity of a private airstrip. Thus, the Project would not result in a safety hazard for people residing or working in the vicinity of the Project site.

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

No impact. The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Project activities and movement related to such activities would be conducted in a manner that would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; therefore, there would be no impacts with an adopted emergency response plan or emergency evacuation plan.

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

No impact. No development is planned for this Project; therefore, no impacts are expected.

References:

1. DTSC. 2025. Hazardous Waste and Substances Site List (Cortese). https://www.envirostor.dtsc.ca.gov/public/. Department of Toxic Substances Control, Sacramento, CA.
2. SWRCB. 2025. GeoTracker. https://geotracker.waterboards.ca.gov/map/. State Water Resources Control Board, Sacramento, CA.

10. Hydrology and Water Quality

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Project Activities Likely to Create an Impact:

- Excavation of soil and fill/debris
- Generation of rubbish and debris material
- Project site restoration, including backfill of all excavated areas with imported clean soil.

The Project does not propose any discharges to receiving waters other than discharges associated with stormwater runoff.

Construction and grading within the Project site would require temporary disturbance of surface soils. During the construction period, grading and excavation activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment in the runoff. Excavated areas on the Project site would then be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation in downstream culverts and the bay. The accumulation of sediment could result in blockage of flows, potentially resulting in increased localized ponding or flooding.

The potential for chemical releases is present at most construction sites. Once released, substances such as fuels and lubricants could be transported to nearby surface waters in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters. Control measures listed in Attachment D would serve to minimize the exposure of soil to runoff and chemical releases.

Description of Baseline Environmental Conditions:

Regional Hydrology

The Project is within the Corte Madera Creek Watershed, a 28-mi^2 area of eastern Marin County. The Corte Madera Creek is a major waterway in Marin County, reaching from the San Francisco Bay to the Town of Fairfax and beyond. The Corte Madera Creek watershed ranges in elevation from sea level to 2,571 ft at the East Peak of Mount Tamalpais. The watershed encompasses Larkspur, Corte Madera, Kentfield, Ross, San Anselmo, and Fairfax. The watershed also includes Corte Madera Creek mainstem and major tributaries of Fairfax Creek, San Anselmo Creek, Sleepy Hollow Creek, Tamalpais Creek, and Larkspur Creek. Larkspur and Tamalpais creeks drain directly into the estuary/tidal portion. Ross Creek drains the northern slope of Mount Tamalpais with Phoenix Lake on the lower reach of the creek; San Anselmo Creek and its tributaries drain the northwestern portion of the watershed. Ross Creek and San Anselmo Creek join to form Corte Madera Creek, which continues through more than a mile of concrete-lined channel past the confluences of Larkspur and Tamalpais creeks and into the tidal salt marsh at the mouth, near Kentfield, and then into San Francisco Bay near Corte Madera.

Flood Hazard

The Federal Emergency Management Agency (FEMA) flood insurance rate map for Marin County provides coverage for the Project site. The FEMA flood map indicates that a majority of the Project site is within areas not marked as a Flood Hazard Zone. Portions of the Project along Palm Avenue, Mann Drive, and Cypress Avenue are located in FEMA designated 0.2% Annual Chance Flood Hazard, near their intersections with Laurel Grove Avenue (FEMA 2025).

Groundwater

The Project is located within the Central Basin of San Francisco Bay. The basin is not used for municipal drinking water or for major agricultural use. The Project includes maximum anticipated excavation depths of 3–10 ft for construction of various improvements, including the replacement of

manholes. While the Project is not located adjacent to or crossing any creeks, groundwater could be encountered during construction activities. With the implementation of control measures listed in Attachment D, under “Dewatering,” any potentially significant impacts to groundwater would be less than significant.

Analysis as to whether or not project activities would:

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less than significant impact. The Project is one of a series of RVSD projects that address I&I within the RVSD service area. The projects that have been set forth by the IAMP include projects to rehabilitate and replace RVSD’s deficient wastewater facilities. The RVSD is currently revising its IAMP to shift to a more forward-looking and adaptive program. The IAMP is in response to Regional Water Board CDO No. R2-2013-0020 (Regional Water Board 2013). The primary objective of this Project is to relieve hydraulic and structural deficiencies and reduce groundwater infiltration with aging RVSD infrastructure. Construction of the Project helps ensure compliance with the Regional Water Board Order No. R2-2023-0003 and NPDES No. CA0038628 and is a beneficial impact.

During Project construction, excavation and other construction activities could adversely affect water quality due to erosion from exposed soils and the generation of water pollutants, including trash, construction material debris, and equipment fluids. A plan containing construction BMPs (as listed in control measures under “Stormwater and Erosion Control” and “Site Management Practices” in Attachment D) would be prepared and implemented for the Project to reduce construction-related stormwater discharges and minimize potential downstream water quality impacts.

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

The Project does not propose the use of groundwater and therefore no long-term extraction of groundwater at the Project site is expected. There may be short-term dewatering of shallow groundwater associated with soil removal and filling activities. Short-term dewatering activities would not be expected to have any significant long-term effect on groundwater resources because any pumping activities would be of limited duration. With the implementation of control measures listed in Attachment D under “Dewatering,” any potentially significant impacts to groundwater supplies and recharge would be less than significant.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. result in substantial erosion or siltation on- or off-site?

Less than significant impact. The Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Less than significant impact. The Project would require short-term construction-related disturbances, including 160 LF of open-cut construction that would require trenching and would result in exposure of soil to runoff. However, these activities would be temporary and site conditions would return to preexisting conditions upon project completion. Implementation of the construction BMPs outlined in Attachment D would ensure that any temporary impacts during construction are less than significant.

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than significant impact. The Project would not significantly alter existing drainage patterns of the site or area, including through the alteration of the course of any stream, river, or creeks, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding. No substantial increases in the rate or amount of surface runoff are anticipated to result from project construction.

iv. impede or redirect flood flows?

Less than significant impact. See 10c.ii. No substantial increases in the rate or amount of surface runoff is anticipated to result from project construction. Control measures listed under "Biological Resources," "Stormwater and Erosion Control," and "Site Management Practices" in Attachment D would be implemented. These practices and procedures protect hydrology and water quality resources by avoiding or minimizing potential adverse impacts during and following construction activities.

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

No impact. The Project site is not located within a 100-year flood zone (FEMA 2025). In addition, Project limits are not within the tsunami inundation zone (CalEMA et al. 2009).

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than significant. See 10a and 10b.

References:

1. CalEMA, CGS, and USC. 2009. Tsunami Inundation Map for Emergency Planning, San Rafael Quadrangle, San Quentin Quadrangle. California Emergency Management Agency, California Geological Society, and the University of Southern California. July 1.
2. FEMA. 2025. FEMA's National Flood Hazard Layer (NFHL) Viewer https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-122.55298338098139,37.951570398995145,-122.54259786767575,37.95580028639339 Federal Emergency Management Agency.
3. Regional Water Board. 2013. Order No. R2-2013-0020. San Francisco Bay Regional Water Quality Control Board. May 13.
4. V.W. Housen & Associates. 2013. Sanitary District No. 1 of Marin County, Infrastructure Asset Management Plan. V.W. Housen & Associates. October 1.

11. Land Use and Planning

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

Project Activities Likely to Create an Impact:

None.

Description of Baseline Environmental Conditions:

The Project is located in areas currently zoned as single-family residential and within the RVSD's service area. The Project is a high-priority wastewater collection system improvement consistent with RVSD's responsibility to provide high-quality wastewater collection and disposal service for the local community, which is protective of public health and the environment.

Analysis as to whether or not project activities would:

a. Physically divide an established community?

No Impact. No land use changes are proposed; thus, implementation of the Project would not physically divide an established community.

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

No impact. The Project would occur predominantly within existing right-of-way with areas located within private property. The Project would remain consistent with the existing land use and surrounding land use designations, requiring no further change or amendment to the zoning assigned by Marin County. Therefore, the Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project.

References:

1. Marin County. 2007. Marin Countywide Plan. https://www.marincounty.org/userdata/cda/planning/cwp2023.pdf. Last amended on January 24, 2023. County of Marin, CA.
2. Kentfield/Greenbrae Community Planning Group and Marin County Planning Department. 1987. Kentfield/Greenbrae Community Plan. https://www.marincounty.gov/sites/g/files/fdkgoe241/files/2024-03/kentfield_greenbrae_community_plan_1987.pdf. Adopted May 1987.

12. Mineral Resources

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

Project Activities Likely to Create an Impact:

None.

Description of Baseline Environmental Conditions:

The Project site is not located in one of the eight sites in Marin County that have been designated by the California Division of Mines and Geology (CDMG) as having significant mineral resources for the North Bay region (Marin County 2007). The CDMG has classified urbanizing lands within the North San Francisco Bay Production-Consumption Region according to presence or absence of sand, gravel, or stone deposits that are suitable as sources of aggregate. The Project site is located in an area that has been classified as Mineral Resource Zone 1 (MRZ-1; Marin County 2005). Areas that are classified MRZ-1 are “areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence” (CDMG 1987). Furthermore, the Project site does not contain any Mineral Resource Preservation Sites (Marin County 2007, Map 3-5).

Analysis as to whether or not project activities would:

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

No Impact. No mineral extraction activities exist on the Project site and mineral extraction is not included as a part of the Project.

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

No Impact. See 12a.

References:

1. CDMG. 1987. Mineral Land Classification: Aggregate Materials in the San Francisco-Monterey Bay Area: North San Francisco Bay Production Consumption Region. California Department of Conservation, Division of Mines and Geology.

2. Marin County. 2005. Marin Countywide Plan - Geology, Mineral Resources and Hazardous Materials Technical Background Report. County of Marin, CA.
3. Marin County. 2007. Marin Countywide Plan. https://www.marincounty.org/userdata/cda/planning/cwp2023.pdf. Last amended on January 24, 2023. County of Marin, CA.

13. Noise

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Project Activities Likely to Create an Impact:

The Project activities could potentially cause temporary noise impacts associated with the upgrade and replacement of existing sewer lines primarily related to Project-generated traffic noise and operational noise from onsite construction equipment.

Description of Baseline Environmental Conditions:

The existing noise environment is dominated by traffic noise. Sensitive receptors at the Project site include adjacent residences within 1,000 ft of the Project site.

Local Noise Regulations

As a condition of permit approval for projects generating significant construction noise during the construction phase, construction management for any project shall develop a construction noise reduction plan and designate a disturbance coordinator at the construction site to implement the provisions of the plan.

Marin County

The Project site is within Marin County and is subject to noise regulations of Marin County. The County of Marin Municipal Code, Title 6, Chapter 6.70, Section 6.70.030 (Enumerated Noises) establishes allowable hours of operation for construction-related activities:

a. Hours for construction activities and other work undertaken in connection with building, plumbing, electrical, and other permits issued by the community development agency shall be limited to the following:
    i. Monday through Friday: 7:00 a.m. to 6:00 p.m.
    ii. Saturday: 9:00 a.m. to 5:00 p.m.
    iii. Prohibited on Sundays and Holidays (New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.)
b. Loud noise-generating construction-related equipment (e.g., backhoes, generators, jackhammers) can be maintained, operated, or serviced at a construction site for permits administered by the community development agency from 8:00 a.m. to 5:00 p.m. Monday through Friday only.
c. Special exceptions to these limitations may occur for:
    i. Emergency work as defined in Section 22.130.030 of this code provided written notice is given to the community development director within 48 hours of commencing work
    ii. Construction projects of city, county, state, other public agency, or other public utility
    iii. When written permission of the community development director has been obtained, for showing of sufficient cause
    iv. Minor jobs (e.g., painting, hand sanding, sweeping) with minimal/no noise impacts on surrounding properties
    v. Modifications required by the review authority as a discretionary permit condition of approval.

The noise levels provided in Section 3.10 (Noise) of the Marin Countywide Plan contain benchmarks for allowable noise exposure from stationary sources.

Level	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly L_{eq}, dB	50	45
Maximum Level, dB	70	65
Maximum Level, dB (Impulsive Noise)	65	60

Notes:
L_{eq} = equivalent sound pressure level. It is the constant sound energy that would produce the same noise level as actual sources that are fluctuating during the specified time period (1 hour).
dB = decibels; the standard measure of pressure exerted by sound

Analysis as to whether or not project activities would result in:

a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than significant impact. An encroachment permit will be required before the start of Project activities and the contractor will be required to comply with all conditions set forth in the permit and RVSD standards. Construction activities necessary to complete the Project could generate a considerable amount of noise in the immediate Project vicinity. Noise from vehicles, earth-moving operations, and heavy equipment would result in elevated ambient and intermittent noise levels. Noise

impacts from construction depend on the noise generated by various pieces of equipment, timing and duration of noise-generating activities, the distance between construction noise sources and noise-sensitive receptors, and the noise environment in which the Project would be constructed. Noise generated during the construction period would vary on a day-to-day basis, depending on the specific activities being undertaken at any given time.

Construction noise may result in a temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. However, this impact would be considered less than significant with the implementation of the control measures listed in Attachment D under “Noise.”

b. Generation of excessive groundbourne vibration or groundbourne noise levels?

Less than significant impact. Construction activities likely to create groundbourne vibration or groundbourne noise levels include pipe bursting, excavation, and backfill operations. With the implementation of control measures listed in Attachment D under “Ground Movement Monitoring,” this impact would be considered less than significant.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The Project site is not within any airport land use plan or within 2 miles of any airport or airstrip.

References:

1. County of Marin. Municipal Code, Title 06 – Public Peace, Safety and Morals, Chapter 6.70 Loud and Unnecessary Noises. Marin County, CA.
2. Marin County. 2007. Marin Countywide Plan. https://www.marincounty.org/userdata/cda/planning/cwp2023.pdf. Last amended on January 24, 2023. County of Marin, CA.

14. Population and Housing

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

Project Activities Likely to Create an Impact:

None.

Description of Baseline Environmental Conditions:

The primary objective of the Project is to relieve hydraulic and structural deficiencies and reduce groundwater infiltration with aging RVSD infrastructure by rehabilitating and replacing existing sewer pipes. Improvements would be made at the Project site primarily along local access roads and in public rights-of-way. The RVSD will coordinate with private property owners for improvements being made on private properties. Although the sewer line is being upsized, the primary purpose is to prevent SSOs and I&I. The Project would not generate additional capacity to accommodate new population growth under the proposed design.

Analysis as to whether or not project activities would:

a. Induce substantial unplanned population growth in area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

No impact. The Project-related construction activities would not induce population growth. Activities are aimed toward relieving hydraulic and structural deficiencies in existing pipes.

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

No impact. Replacing the sewer line with similar infrastructure within largely the same Project footprint would not involve the construction, displacement, or demolition of any existing housing structures.

15. Public Services

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire Protection?	☐	☐	☐	☒
ii) Police Protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other Public Facilities?	☐	☐	☐	☒

Project Activities Likely to Create an Impact:

None.

Description of Baseline Environmental Conditions:

The Project segments are located in areas that are currently served by fire, police, and paramedic services; schools; and other public facilities. It is not anticipated that the rehabilitation and replacement of the sanitary sewer main segments would increase the number of police and fire protection-related calls received from the area or the level of regulatory oversight that must be provided as a result of the work. Overall, the Project would not create additional demand for public services. Therefore, the Project would have no impact on public services.

Analysis as to whether or not project activities would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain

acceptable service ratios, response times or other performance objectives for any of the following public services:

- Fire protection
- Police protection
- Schools
- Parks
- Other public facilities?

No impact. Implementing the Project would not create new housing or other structures and, therefore, would not require additional public services (including fire or police protection facilities, schools, or parks). The replaced sanitary sewer mains would ensure necessary system reliability to continue meeting peak utility demands.

16. Recreation

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Project Activities Likely to Create an Impact:

The primary objective of the Project is to rehabilitate and replace existing sanitary sewer mains. Improvements would be made along local access roads and public right-of-way. The Project would have no impacts related to recreation and would not increase the use of local parks or involve construction of new facilities.

Description of Baseline Environmental Conditions:

There are no public recreational facilities near the Project locations.

Analysis as to whether or not project activities would:

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No impact. The Project does not include the development of any new residential uses or include other land development that would directly induce additional population growth affecting existing recreational facilities or opportunities. Employment opportunities from the construction phase of the Project would not induce any additional population growth within the communities. Therefore, the Project would not cause physical deterioration of existing recreational facilities from increased usage or result in the need for new or expanded recreational facilities.

b. Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

No impact. The Project does not include the development of any new recreational facilities or require the expansion of existing recreational facilities.

17. Transportation

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

Project Activities Likely to Create an Impact:

The Project could impact transportation and traffic by the following activities:

- Empty dump trucks accessing the Project site to load soil and debris excavated as part of the Project.
- Loaded dump trucks transporting excavated soil and debris from the Project site to appropriate disposal facilities.
- Loaded dump trucks accessing the Project site to deliver imported materials to backfill excavations.
- Empty dump trucks leaving the Project site after delivering backfill materials.
- Transport of Project-related construction equipment, materials, etc.
- Worker travel to and from the Project site.
- All areas of the Project site would require flow bypassing and traffic control measures listed under “Traffic Management” in Attachment D during construction activities. Excavated soils would be hauled away and replaced with suitable material from offsite sources on a continuous basis.

Description of Baseline Environmental Conditions:

According to the Marin Countywide Plan, travel through and around the Project site is affected by countywide development and travel patterns on Sir Francis Drake Boulevard (Marin County 2007). Bottlenecks on Sir Francis Drake Boulevard can push through traffic onto adjacent roadways.

Project site roadways affected include the following:

- Laurel Grove Avenue (accessed via Sir Francis Drake Boulevard)
- Cypress Avenue (accessed via Laurel Grove Avene)
- Mann Drive (accessed via Laurel Grove Avenue)
- Palm Avenue (accessed via Laurel Grove Avenue)
- Hill Drive (accessed via Poplar Drive).

Analysis as to whether or not project activities would:

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

Less than significant impact. The Project is a standard construction activity requiring equipment, materials, removal and offsite transport of construction debris and workers, and import of clean fill. The added number of vehicle trips would be minimal and by themselves would not overload traffic flow. However, the intrusion of construction equipment and vehicles into the local street system of residential areas at the Project site can result in traffic circulation and safety impacts. The contractor will prepare a traffic control plan and submit it to RVSD and the County of Marin for review and approval at least 3 weeks prior to start of construction. The traffic control plan will include, at minimum, the measures listed in Attachment D under “Traffic Management” to minimize traffic flow overload.

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

No impact. The Project does not include the development of any new residential uses or other land development that would directly induce additional population growth or affect the existing “vehicle miles traveled” by residents or visitors within the area. Replacement and rehabilitation of sewer lines would have no impact on vehicle miles traveled and therefore is presumed to result in a less-than-significant transportation impact consistent with CEQA Guidelines Section 15054.3(b)(2).

c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than significant impact. No hazards due to design features would occur through implementation of the Project. The contractor will place temporary signs 1 month in advance of work notifying residents of these lane closures and flaggers will be present during the lane closures. With the implementation of the traffic control plan prepared by the contractor and the control measures in Attachment D under “Traffic Management,” no elements of the Project design would introduce hazards to the road system.

d. Result in inadequate emergency access?

No impact. RVSD staff would ensure that access to the Project site would be maintained and controlled throughout Project implementation. In addition, the Project does not prescribe activities involving transportation of massive amounts of material and the high frequency of truck trips usually associated with such activities.

References:

1. Marin County. 2007. Marin Countywide Plan. https://www.marincounty.org/userdata/cda/planning/cwp2023.pdf. Last amended on January 24, 2023. County of Marin, CA.

18. Tribal Cultural Resources

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Project Activities Likely to Create an Impact:

- Ground-disturbing activities (excavation of soil).

The Project entails the construction and rehabilitation of sanitary sewer lines within the existing alignment of mains and related appurtenances. It would primarily employ a pipe-bursting construction method for the majority of sewer line replacement. The Project would also involve open-cut excavation for some replacement lines where deemed necessary, construction of new sewer lines, rehabilitation of existing manholes, construction of new manholes, repair of sags, and potholes for lateral tie-ins.

While the Project has the potential to impact unrecorded archaeological resources, the construction methods, previous disturbances, and logistical constraints have been taken into consideration. The Project pipe-bursting construction method (trenchless) would have a minimal potential impact (see below) whereas the construction of a new sewer segments, manholes, repair of sags, and potholing for lateral tie-ins would require open-cut excavations.

Disturbance from pipe bursting is limited to the soils within and immediately surrounding the existing sewer footprint. While the pipe-bursting method is employed, the immediate soils around the existing sewer footprint are only expected to be displaced *in situ* a few centimeters outward to accommodate the new pipe and would reach an expected depth of 5 ft below the ground surface. The removal of soils is expected to occur for the entry and exit pits, construction of new sewer manholes, repair of sags, and potholes for lateral tie-ins and would involve excavating soils immediately surrounding the pipe as well as all soils above it to an expected depth of 3–10 ft below the ground surface. While the excavated soil would be solely or primarily backfill from the initial installation of the existing sewer—and thus should not contain an intact archaeological deposit—the new manhole sewer and associated pipes may encounter native soils if the new trench does not exactly correspond with the depth or width of any previously excavated trench.

In addition, as backfill soils could still contain previously displaced cultural materials, any methods disturbing adjacent soils have the potential to encounter human remains and associated funerary objects or disturbed cultural materials.

Description of Baseline Environmental Conditions:

A cultural resources inventory report for the Project was prepared was prepared by Far Western in April 2025. Because the report contains confidential information about the locations and characteristics of archaeological sites and tribal cultural resources, the technical report is not included in this initial study for public review, but it can be made available to agencies and other qualified professionals for review as necessary.

The cultural study included a records search, consultation with NAHC and the Graton Rancheria, buried-site sensitivity assessment, and a pedestrian survey of the Project site. The records search did not identify any previously recorded archaeological sites or tribal cultural resources within the ADI.

As part of this study an archaeological sensitivity assessment was also conducted to assess the potential for encountering unrecorded deposits at the proposed sewer line repair locations. The ADI was noted for possible early roadbed iterations or roadside features associated with many of the original travel/roadway alignments within and intersecting the ADI; however, given that the alignment of the roads in the ADI, many appear to have remained unchanged through time, and thus it is unlikely that project-related activities will encounter historic-era artifacts or non-road related features in these portions of the ADI.

Ethnographic Context

Encroachment of European settlement culminated in a series of acts and bills removing land and political status from tribal governments. As a result, native Californians were left landless and legally powerless, often making their way as itinerant farm workers or commercial fishermen. Legal land entitlement remained out of reach until 1920, when the Bureau of Indian Affairs purchased a 15.45-acre tract of land in Graton to create a “village home” for dispersed people of Marshall, Bodega, Tomales, and Sebastopol (Graton Rancheria 2025). This home consolidated neighboring, traditionally interactive groups into a single entity—Graton Rancheria—thus establishing them, temporarily, as a Federally Recognized Tribe of American Indians.

In 1958, Congress passed the California Rancheria Act, terminating all 41 Rancherias, extinguishing the recognition of their residents as American Indians, and removing the land from Federal Trust. As with many other California Tribes, federal recognition for the Coast Miwok was not restored until decades later, after tribal members raised money to travel to Washington to campaign for restoration of federal status and rights. For Graton Rancheria, campaigning began in 1990, with recognition restored in 2000, and a tribal constitution ratified by the Bureau of Indian Affairs in 2002, allowing the tribe to

reestablish a land base, provide funding for cultural preservation, and establish tribally owned businesses capable of achieving self-sufficiency (Graton Rancheria 2025).

Today, Graton Rancheria encompasses a federation of Coast Miwok and Southern Pomo groups recognized as a tribe by the United States Congress. The Tribe opened the Graton Resort and Casino in 2013, which now funds various programs and services for its tribal membership, including environmental and cultural preservation, elder care, childcare, housing, legal support, emergency financial support, education, and employment. Graton Rancheria has developed a Tribal Heritage Preservation Office program with a designated Tribal Heritage Preservation Officer and Sacred Sites Protection Committee responsible for protecting the Tribe's cultural resources.

Regulatory Background

Cultural resources include precontact (prehistoric/Native American) and historic-era archaeological sites and objects, as well as extant historic structures, buildings, and locations of important historic events or sites of traditional and/or tribal cultural importance to various groups. This study addresses archaeological resources and tribal cultural resources in the ADI. The Project requires approval by local and state agencies, thereby mandating that it adhere to CEQA and its implementing guidelines and regulations in 14 CCR § 15000 et seq. In addition, Assembly Bill 52 establishes the requirements of Tribal Cultural Resources and Native American consultation under CEQA.

Assembly Bill 52

Assembly Bill 52 amended CEQA to address California Native American tribal concerns regarding how cultural resources of importance to tribes are treated under CEQA. With the addition of Assembly Bill 52, CEQA now specifies that a project that may cause a substantial adverse change in the significance of a "tribal cultural resource" [as defined in PRC 21074(a)] is a project that may have a significant effect on the environment. According to Assembly Bill 52, tribes may have expertise in tribal history and "tribal knowledge about land and tribal cultural resources at issue should be included in environmental assessments for projects that may have a significant impact on those resources."

Pursuant to CEQA Section 21080.3.1(d), within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location as well as the lead agency contact information, and a notification statement that the federally recognized California Native American tribe has 30 days to request consultation.

On behalf of the RVSD, Integral sent a letter to the Graton Rancheria on February 20, 2025, to introduce the Project in accordance with Assembly Bill 52. Graton Rancheria was provided with copies of the buried site sensitivity maps. Follow-up emails were sent by Far Western to Graton Rancheria on April 9, and April 16, 2025. No responses regarding consultation have been received by the time of this report. A copy of this report will be shared with Graton Rancheria for review and input.

California Register of Historical Resources

The CEQA Statutes and Guidelines (14 CCR § 15064.5) include procedures for identifying, analyzing, and disclosing potential adverse impacts to historical resources, which include all resources listed in or formally determined eligible for the National Register, the California Register, or local registers. CEQA further defines a "historical resource" as a resource that meets any of the following criteria:

- A resource listed in, or determined to be eligible for listing in, the National or California registers.

- A resource included in a local register of historical resources, as defined in § 5020.1(k) of the PRC, unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- A resource identified as significant (rated 1–5) in a historical resource survey meeting the requirements of PRC § 5024.1(g) Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any tribal cultural resource, object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register.

Analysis as to whether or not project activities would:

a. Cause substantial adverse change in the significance of a tribal cultural resource, defined in Public Resource Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1 (k)?

Less than significant with mitigation. The California Register identifies resources considered to be important for state and local planning purposes and affords certain protection under CEQA. California regulations require that effects to cultural and tribal resources be considered only for resources meeting the criteria for eligibility to the California Register, as outlined in PRC § 5024.1.

As discussed in Section 5, "Cultural Resources," the cultural resources inventory study did not identify any previously recorded archaeological sites or tribal cultural resources within the ADI. Graton Rancheria was informed of the Project in accordance with Assembly Bill 52. A copy of the inventory report was shared with Graton Rancheria for review and input and follow up outreach was carried out. No responses regarding consultation have been received by the time of this study. In the event that cultural materials or tribal cultural resources are identified by the tribe before and/or during Project implementation, mitigation measures CUL-1, CUL-2, CUL-3, and CUL-4 would reduce significant impacts to a less than significant level.

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American Tribe?

Less than significant with mitigation. A program of focused archaeological testing will be conducted in areas determined to be sensitive for encountering cultural deposits based on the results of the buried site sensitivity assessment. Testing will occur in advance of proposed ground disturbance including manholes, sags, potholes, and the entry and exit pits for pipe bursting, where feasible. Graton Rancheria will be informed of the testing schedule, and a tribal monitor will be present should the tribe want to participate. Where testing is not feasible, archaeological and tribal monitoring will occur, per CUL-2. All locations described above have limited accessibility and testing will be carried out alongside

the roadway where the ground surface is exposed. With the implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4, impacts to tribal cultural resources would be less than significant.

References:

1. Far Western. 2025. Archaeological Resources Inventory and Testing/Monitoring Plan for the Ross Valley Sanitary District Palm/Mann/Cypress Gravity Sewer Improvement Project, Kentfield, Marin County, California. Far Western Anthropological Research Group, Inc, Davis, CA. April.
2. Graton Rancheria. 2025. Federated Indians of Graton Rancheria Coast Miwok and Southern Pomo. https://gratonrancheria.com/culture/history/. Accessed April 2025. Federated Indians of Graton Rancheria, Rohnert Park, CA.

19. Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Project Activities Likely to Create an Impact:

- Removal of soil and fill/debris
- Use of water trucks for dust suppression.

Description of Baseline Environmental Conditions:

The Project is in an area where water service is provided by the Marin Municipal Water District, sewer facilities are managed by RVSD, wastewater treatment service is provided at the Central Marin Wastewater Treatment Plant, and local solid waste disposal is provided by Marin Sanitary Service at the Novato Landfill.

The sewer piping is operated and maintained by RVSD. RVSD provides collection service to the Project site. Several sewer line segments are located on private properties. The RVSD would coordinate with private property owners to access and rehabilitate these sewer line segments.

Wastewater would not be generated by the sanitary sewer rehabilitation and replacement activities. The sanitary sewer rehabilitation and replacement activities would not significantly increase the consumption of water on the Project site. A temporary increase of water consumption may occur that is associated with water truck use for dust suppression during soil removal and filling activities.

The Project would not require the construction of new public wastewater or stormwater drainage facilities.

Analysis as to whether or not project activities would:

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

No impact. The Project would not result in the construction of new wastewater or wastewater-treatment facilities, or the expansion of existing facilities; therefore, there would be no impact on the existing wastewater network.

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

Less than significant impact. The construction activities would not significantly increase the consumption of water on the Project site. A temporary increase of water consumption may occur that is associated with water truck use for dust suppression during construction activities (see Attachment D under “Dust Control”).

c. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?

No impact. Wastewater would not be generated by the construction activities; therefore, there would be no impact on the existing wastewater network.

d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Less than significant impact. The construction would not significantly increase solid waste disposal needs at the Project site. A temporary increase of solid waste disposal may occur associated with Project site debris from sanitary sewer rehabilitation and replacement activities. Landfill approval would take place before the planned soil removal; thus, there would be no impact associated with permitted capacity.

e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Less than significant impact. All wastes derived from construction activities would be properly disposed of at a designated facility following the applicable state and federal regulations (see Attachment D under “Hazardous Materials”).

20. Wildfire

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

Project Activities Likely to Create an Impact:

- Equipment used for construction activities
- Project site clearing and restoration activities.

Description of Baseline Environmental Conditions:

The California Department of Forestry and Fire Protection (CalFire) uses fire hazard severity zones to classify the anticipated fire-related hazard for state responsibility areas (SRAs), local responsibility areas (LRAs), and federal responsibility areas (FRAs). The classifications include Non-Wildland Non-Urban, Moderate, High, and Very High. Fire hazard measurements take into account the following elements: vegetation, topography, weather, crown fire production, and ember production and movement (CalFire 2025a). CalFire has a legal responsibility to provide fire protection on all SRA lands, which are defined by land ownership, population density, and land use. CalFire does not have responsibility for LRAs, densely populated areas, incorporated cities, agricultural lands, or lands administered by the federal government.

Each Project segment located in various areas was evaluated to identify if it was in an SRA, LRA, or FRA along with its fire hazard classification (Marin GeoHub 2023; CalFire 2025b). All Project segments are located in residential areas served by the Kentfield Fire Protection District in an LRA. Kentfield is

classified as being in a moderate fire hazard severity zone as recommended by the State Fire Marshal (CalFire 2025b).

Analysis as to whether or not project activities would:

If located in or near State responsibility area or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less than significant impact. The construction work at the Project site would be temporary, and roads would still be accessible so as not to impair an adopted emergency plan or emergency evacuation plan by ensuring access in the event of an emergency or evacuation.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than significant impact. Heavy equipment used during Project construction has the potential to start a fire on surrounding open space areas near the Project site. However, implementation of control measures in Attachment D under “Site Management Practices” would reduce the potential for construction-related wildland fires by providing a clearing, reducing fire fuels, and removing fire-sustaining litter. In addition, during construction, fire extinguishers would be required for all heavy equipment.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less than significant impact. The Project involves maintenance of sewer line segments. Maintenance and rehabilitation activities would be temporary and occur within the existing alignments. The Project site and sewer segments would be restored to existing conditions, and thus would not exacerbate fire risk. However, implementation of control measures in Attachment D under “Site Management Practices” would reduce the potential for construction-related wildland fires by providing a clearing, reducing fire fuels, and removing fire-sustaining litter.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less than significant impact. The Project would not expose people or structures to significant risks. All activities associated with the sewer rehabilitation Project would occur without altering the existing drainage pattern of the area.

References:

1. CalFire. 2025a. California Fire Hazard Severity Zones. https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildfire-preparedness/fire-hazard-severity-zones/. California Department of Forestry and Fire Protection.
2. CalFire. 2025b. California Fire Hazard Severity Zone Viewer. Compare old (2007-2011) with new (2025) recommended FHSZ in LRA. https://experience.arcgis.com/experience/5065c998b4b0462f9ec3c6c226c610a9/page/Compare-old-and-new-LRA-FHSZ. California Department of Forestry and Fire Protection.
3. Marin GeoHub. 2023. https://gisopendata.marincounty.org/datasets/fire-hazard-severity-zone/explore. County of Marin, CA.

21. Report Preparers

Organization	Name, Title
Integral Consulting Inc. 2455 Bennett Valley Road, Suite C101 Santa Rosa, CA 95404 Telephone: 707.636.3222	Bridgette DeShields, Principal-in-Charge Samantha Eanes, P.E.(California), Engineer/Project Manager Sadie McGarvey, Wildlife Biologist and Regulatory Specialist
Far Western Anthropological Research Group, Inc. 2727 Del Rio Place, Suite A Davis, CA 95618 Office: 530.756.3941	Cassidy DeBaker, Principal Sarah L. Izzi, Senior Archaeologist/Project Manager Montse Osterlye, Senior Archaeologist

Mandatory Findings of Significance

Based on evidence provided in this Initial Study, Integral makes the following findings:

a. The project ☐ has ☒ does not have the potential substantially 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

The short-term disturbance of the Project site during the construction activities would not impact the adjacent habitat. There are no identified special-status species on the Project site. Based on the information presented within Section 4, “Biological Resources,” there would be a less-than-significant 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, or reduce the number or restrict the range of a rare or endangered plant or animal. There remains a possibility that new bird nests could be established in the trees and other vegetation in and near the Project site before construction activities commence. With implementation of Mitigation Measure BIO-1, impacts to biological resources would be less than significant.

As discussed in Section 5, the cultural resources inventory report did not result in the identification of any historical resources. Due to the results of the buried site sensitivity, a program of focused archaeological testing will be conducted in areas determined to be sensitive for encountering cultural deposits. Testing will take place prior to project implementation and will be coordinated in advance with Graton Rancheria. Testing will occur at project segments: western end of Mann Drive (nearest to Laurel Grove Avenue), western half of Cypress Avenue in Kentfield, and western end of Palm Avenue. Based on the results of the testing and in coordination with the RVSD and Graton Rancheria, monitoring by an archaeologist and tribal monitor may also be required to observe excavated soils that are removed during construction activities. With implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 impacts to cultural resources would be less than significant. Informal consultation with Graton Rancheria is ongoing.

b. The project ☐ has ☒ does not have impacts that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The Project activities are limited in extent and duration, would result in the construction of no new structures/buildings, and would return the ground surface in outdoor areas to pre-Project conditions. Therefore, the cumulative impact from Project activities is less than significant.

c. The project ☐ has ☒ does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

Worker and public health and safety were discussed in various sections of this Initial Study, including air quality, geology and soils, hazards and hazardous materials, noise and vibration, transportation, and utilities and service systems. In all instances, specific control measures have been included as necessary in the Project to reduce impacts to worker and public health and safety to less-than-significant levels. The Project would replace infrastructure that is past its useful life, improve maintenance operations and safety, and reduce SSOs and I&I. Thus, the impact related to public health and environmental hazards is beneficial.

Determination of Appropriate Environmental Document:

On the basis of this initial evaluation:

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

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Certification:

_____ _____

Philip Benedetti Date

Senior Engineer

Attachment A

Abbreviations and Acronyms

ATTACHMENT A
ABBREVIATIONS AND ACRONYMS

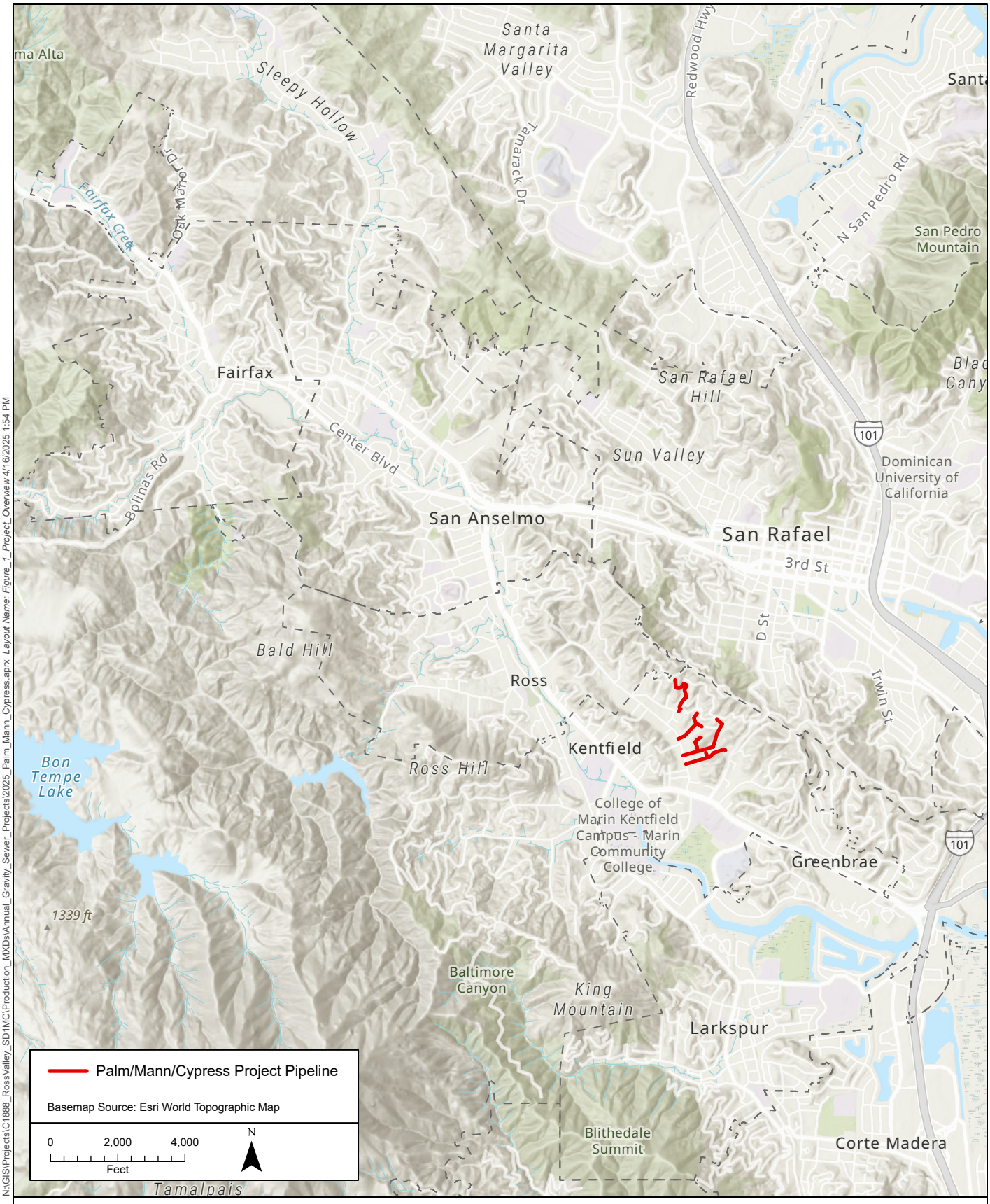
ADI	area of direct impact
Air District	Bay Area Air District, formerly the Bay Area Air Quality Management District
BAAQMD	Bay Area Air Quality Management District
BMP	best management practice
CAA	Clean Air Act
CalEEMod	California Emissions Estimate Model
CalFire	California Department of Forestry and Fire Protection
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CDO	cease and desist order
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CWA	Clean Water Act
dB	decibel(s)
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
Far Western	Far Western Anthropological Research Group, Inc.
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
FRA	federal responsibility area
GHG	greenhouse gas
Graton Rancheria	Federated Indians of Graton Rancheria

HDPE	high-density polyethylene
I&I	inflow and infiltration
IAMP	Infrastructure Asset Management Plan
Integral	Integral Consulting Inc.
IPaC	Information for Planning and Consultation
L_{eq}	equivalent sound pressure level
LF	linear foot
LRA	local responsibility area
MRZ	mineral resource zone
MT/year	metric tonne per year
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
O_3	ozone
OHWM	ordinary high water mark
PM2.5	fine particulate matter with a diameter less than 2.5 microns
PM10	respirable particulate matter with a diameter less than 10 microns
ppm	parts per million
PRC	Public Resources Code
Project	Palm/Mann/Cypress Gravity Sewer Improvements Project (#959)
PVC	polyvinyl chloride
Regional Water Board	San Francisco Bay Regional Water Quality Control Board
ROG	reactive organic gases
RVSD	Ross Valley Sanitary District
SF Air Basin	San Francisco Bay Area Air Basin
SIP	State Implementation Plan
SO_2	sulfur dioxide
SRA	State Responsibility Area
SSO	sewer system overflow
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
Tree Ordinance	County of Marin Native Tree Preservation and Protection Ordinance
U.S. 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers

USFWS	U.S. Fish and Wildlife Service
WOTUS	waters of the U.S.
$\mu g/m^3$	micrograms per cubic meter

Attachment B

Figures



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integral consulting inc.

Figure 1.
Project Vicinity Map
Palm/Mann/Cypress Gravity Sewer Improvements Project
Ross Valley Sanitary District

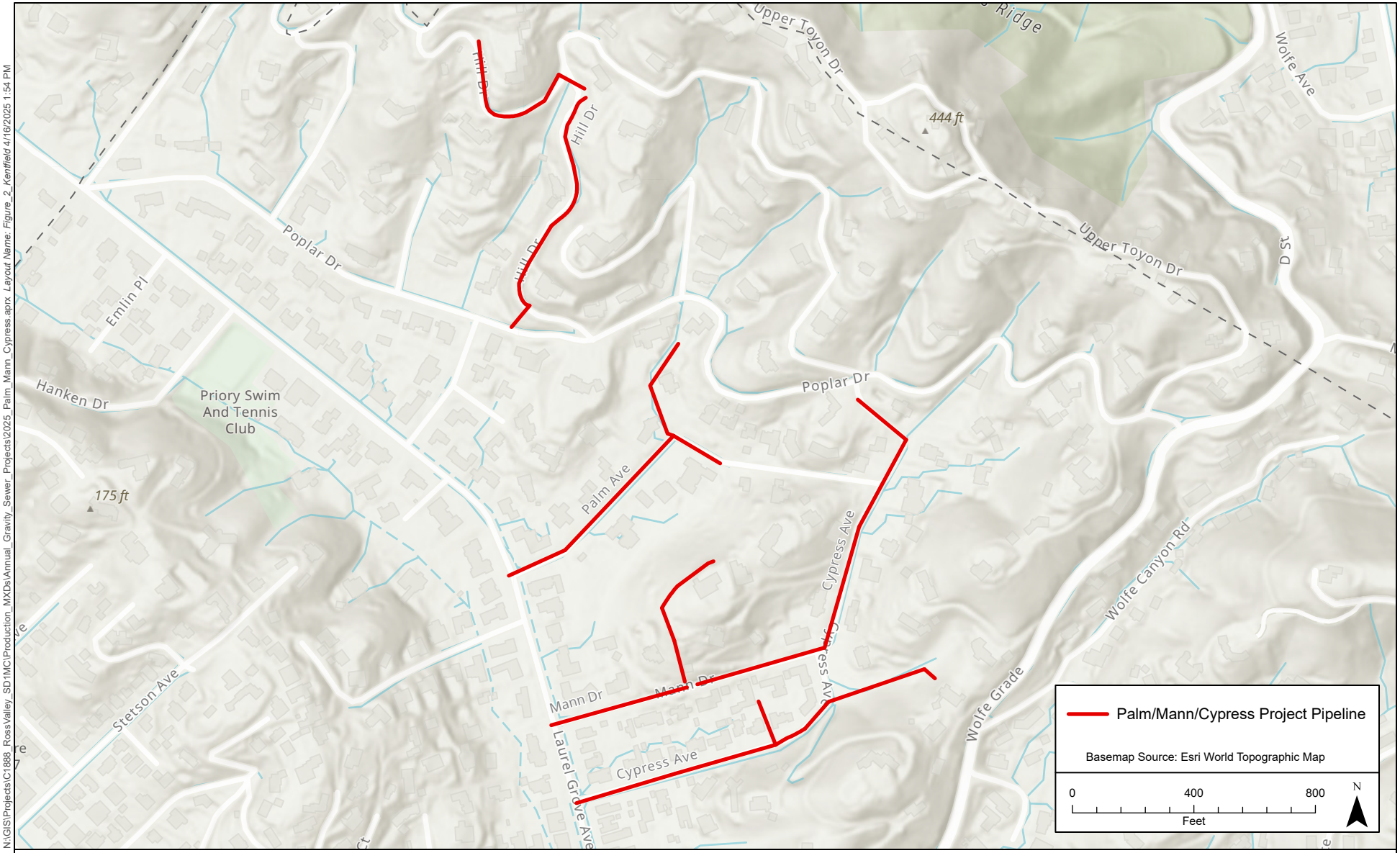

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Figure 2.
Project Location Map
Palm/Cypress/Mann Gravity Sewer Improvements Project
Ross Valley Sanitary District

Attachment C

Construction Plans

ROSS VALLEY SANITARY DISTRICT

MARIN COUNTY, CALIFORNIA

PLANS

FOR THE CONSTRUCTION OF

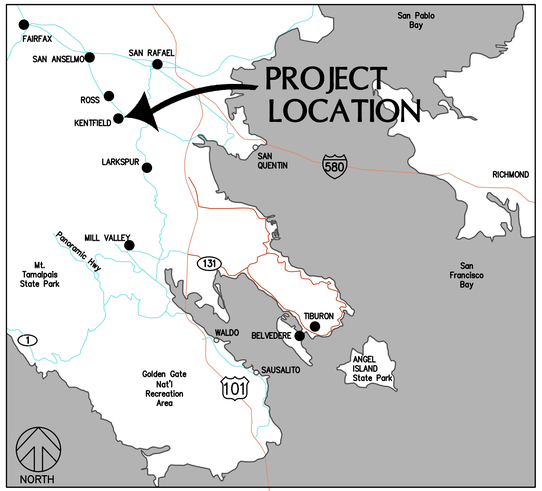
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT

INDEX OF DRAWINGS

DATUM

HORIZONTAL DATUM IS NAD 83, CALIFORNIA COORDINATE SYSTEM ZONE 3, ITRF 2011

VERTICAL DATUM IS NAVD 88



VICINITY MAP

BOARD OF DIRECTORS

MICHAEL BOORSTEIN
THOMAS GAFFNEY
MARY SYLLA
PAMELA MEIGS
DOUG KELLY

GENERAL MANAGER
STEVE MOORE, P.E.

DESIGN ENGINEER
DANIEL WILKINS, P.E.

DATE

NOT FOR CONSTRUCTION

90% SUBMITTAL

Know what's below. Call before you dig.

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

DRAWN BY: JAC

DESIGNED BY: JAC

CHECKED BY: DATE:

WEST VALLEY CONSTRUCTION
Design - Build Services
1001 GALAXY WAY, SUITE 400
CONCORD, CA 94520
925.447.1300
www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
TITLE SHEET

DATE: APRIL 29, 2025

PROJECT ID: 371753

SCALE: N.T.S.

DWG. NO T-01

SHT 1 OF 25

\\nasconi\Engineering Data\WL_EXTERNAL PROJECTS_PROJECTS\371753 RVSD Palm_Mann_Cypress GSP\8.0 DESIGN\8. Design\01 - TITLE.dwg Save Date: 4/29/2025 4:40 PM Plot Date: 4/29/2025 4:40 PM JosephC

GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR PREPARING & SUBMITTING A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) TO THE ENGINEER FOR APPROVAL FOR ALL CONSTRUCTION ACTIVITIES PRIOR TO THE BEGINNING OF WORK. THE SWPPP SHALL BE REVISED TO REMAIN CURRENT THROUGHOUT THE PROJECT.

2. CONTRACTOR TO PROVIDE 7 DAY NOTICE AND 24 HOUR NOTICE TO PROPERTY OWNERS AND RESIDENTS PRIOR TO COMMENCING CONSTRUCTION WORK. NOTIFICATION TO BE BY LETTER AND SHALL BE APPROVED BY THE ENGINEER.

3. IF SAW CUTTING AND/OR TRENCH EXCAVATION ACTIVITIES RESULT IN A WIDTH OF LESS THAN 4 FEET OF EXISTING PAVEMENT REMAINING BETWEEN THE PROPOSED EDGE OF TRENCH AND EXISTING EDGE OF PAVEMENT OR GUTTER, THE CONTRACTOR SHALL REMOVE THIS REMNANT "SLIVER" OF PAVEMENT ENTIRELY AND RESTORE IT TO ITS ORIGINAL FULL WIDTH DURING SURFACE RESTORATION. THIS PAVING WORK SHALL BE CONSIDERED INCIDENTAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

4. CONTRACTOR SHALL PROTECT ALL UTILITY POLES DURING CONSTRUCTION. ANY SPECIAL BRACING AND/OR SHORING REQUIRED BY THE WORK AND/OR BY THE UTILITY OWNER(S) SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

5. CONTRACTOR SHALL PROTECT EXISTING WATER UTILITIES AND EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH DISTRICT AND MMWD REQUIREMENTS.

6. CONTRACTOR SHALL RESTORE ALL FACILITIES OUTSIDE LIMITS OF WORK DAMAGED BY CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST. NO MATERIAL MAY BE STORED IN PUBLIC RIGHT OF WAY.

7. EXISTING UTILITIES IN THE PROJECT AREA MAY BE IN FRAGILE CONDITION. THE CONTRACTOR SHALL EXERCISE NECESSARY CAUTION WHEN WORKING NEAR EXISTING UTILITIES. WORK IN THE VICINITY OF ALL UTILITIES SHALL BE PER CALIFORNIA GOVERNMENT CODE SECTION 4216.

8. THE PLANS DO NOT SHOW ALL OF THE UTILITIES. THE CONTRACTOR SHALL VERIFY ALIGNMENT AND ELEVATION OF EXISTING UTILITIES AFFECTING THE WORK PRIOR TO CONSTRUCTION BY POTHOLING. PRIOR TO ANY DIGGING, CALL U.S.A. AT 811 A MINIMUM OF 48 HOURS IN ADVANCE OF EXCAVATION. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ANY ADDITIONAL UTILITY COMPANIES TO DETERMINE THE LOCATION OF EXISTING UTILITIES. CONTACT AND THE COORDINATION WITH U.S.A. AND U.S.A. MARKINGS SHALL NOT RELIEVE THE CONTRACTOR FROM THEIR RESPONSIBILITY FOR UTILITY VERIFICATION AND PROTECTION.

9. TYPICAL DETAILS REFERENCED ON THESE DRAWINGS ARE FROM THE RVSD STANDARD SPECIFICATIONS AND DRAWINGS, "UNIFORM STANDARDS ALL CITIES AND COUNTY OF MARIN", OR STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS DATED MAY 2010.

10. UNLESS OTHERWISE NOTED, EXISTING SANITARY SEWER LINES ARE TO BE REHABILITATED IN THE SAME LOCATION. EXISTING PIPES ARE ASSUMED TO HAVE UNIFORM GRADE BETWEEN MANHOLES. CONTRACTOR SHALL LOCATE LINES PRIOR TO BEGINNING WORK.

11. ALL STREET MARKINGS AFFECTED BY CONSTRUCTION SHALL BE REPLACED AT THEIR EXISTING LOCATIONS AT NO ADDITIONAL COST, THIS INCLUDES DAMAGE OF STREET MARKINGS ON ANY STREET WITHIN COUNTY, CITY AND TOWN LIMITS.

12. ALL PAVEMENT SHALL BE SAWCUT FULL DEPTH FOR PIPE TRENCH AND FOR PAVEMENT REMOVAL, PER RVSD STD DWG SD-14.

13. RECONNECT ALL ACTIVE SANITARY SEWER SERVICE LATERALS TO REHABILITATED SANITARY SEWER MAINS. DRAWINGS DO NOT SHOW ALL LATERALS AND WHERE SHOWN ARE APPROXIMATELY LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL SERVICE CONNECTIONS AND DYE TESTING TO DETERMINING IF SERVICES ARE ACTIVE AS PART OF THE WORK.

14. EXISTING UTILITY CROSSINGS AS SHOWN ON THE PROFILES ARE APPROXIMATE. VERIFICATION OF HORIZONTAL AND VERTICAL EXISTING UTILITY ALIGNMENTS SHALL BE THE RESPONSIBILITY OF CONTRACTOR.

15. TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE THE CONTRACTORS RESPONSIBILITY AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE REQUIREMENT OF THE COUNTY AND THE CITY/TOWN WITH JURISDICTION AND ENCROACHMENT PERMITS. THE CONTRACTOR SHALL SUBMIT A WRITTEN TRAFFIC CONTROL & SIGNING PLAN (INCLUDING STREET CLOSURE DETAILS) TO THE ENGINEER WITHIN TEN (10) WORKING DAYS AFTER AWARD OF CONTRACT.

16. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS BARRICADES, FLAGMEN AND OTHER DEVICES TO PROVIDE VEHICULAR AND PEDESTRIAN SAFETY.

17. CONTRACTOR SHALL PROTECT ALL UTILITY STRUCTURES, AND SURVEY MONUMENTS WITHIN THE WORK AREAS. THE CONTRACTOR SHALL REVIEW THE WORK SITES PRIOR TO SUBMISSION OF BIDS.

18. THE FOLLOWING UTILITY COMPANIES AND AGENCIES, BUT NOT LIMITED TO, ARE KNOWN TO HAVE SUBSTRUCTURES OR OTHER FACILITIES WITHIN THE AREA OF PROPOSED WORK:

MARIN MUNICIPAL WATER DISTRICT, BOB PIERI	(415) 945-1481
PG&E (NORTH BAY DIVISION)	(415) 257-3405
COMCAST	(707) 207-1376
AT&T	(707) 575-2077
ALL UTILITIES, CONTACT U.S.A.	811 / (800) 227-2600

19. THE CONTRACTOR SHALL BYPASS PUMP ALL MAIN-LINE SANITARY SEWER FLOW DURING REHABILITATION OR CCTV ACTIVITIES IF NECESSARY TO ASSESS PIPE CONDITION. ADDITIONAL LATERAL PUMPING (OR OTHER METHOD APPROVED BY THE ENGINEER) NECESSARY TO PREVENT SEWER SPILLAGE INTO SURROUNDING PROPERTIES FROM LATERAL SERVICES SHALL BE CONSIDERED INCIDENTAL TO THE WORK REQUIREMENTS.

20. DIMENSIONS SHOWN ON PLANS ARE HORIZONTAL MEASUREMENTS.

21. HORIZONTAL AND VERTICAL DIMENSIONS PROVIDED ON THE DRAWINGS ARE BASED ON DESIGN SURVEY METHODS. FIELD MEASUREMENTS MAY VARY FROM THOSE ON THE DRAWINGS. ADJUSTMENTS TO LINE AND GRADE MAY BE MADE BY THE ENGINEER DURING CONSTRUCTION. PAYMENT WILL BE BASED ON QUANTITIES INSTALLED.

22. RIGHT OF WAY LINES ARE SHOWN AT APPROXIMATE LOCATIONS.

23. FOR OPEN TRENCH INSTALLATIONS, IF A NEW SEWER MAIN CROSSES UNDER AN EXISTING WATER LINE WITH LESS THAN 1 FOOT OF CLEARANCE, THE CONTRACTOR SHALL INSTALL A CONTINUOUS SLEEVE AROUND THE SEWER MAIN FOR A DISTANCE OF 4 FEET CLEAR TO EACH SIDE OF THE EXISTING WATER LINE. IF A NEW SEWER MAIN CROSSES ABOVE AN EXISTING WATER MAIN WITH LESS THAN 1 FOOT OF CLEARANCE, THE CONTRACTOR SHALL INSTALL A CONTINUES HDPE SLEEVE AROUND THE SEWER MAIN FOR A DISTANCE OF 10 FEET CLEAR TO EACH SIDE OF THE EXISTING WATER LINE, PER RVSD STD DWG SD-22.

24. NEW SEWER MAINS CROSSING UNDER OR ABOVE EXISTING WATER LINES WITH LESS THAN 4 INCHES OF CLEARANCE ARE PROHIBITED.

25. THE CONTRACTOR SHALL MAINTAIN ACCESS TO RESIDENCES AND BUSINESSES ALONG THE STREETS TO BE REPAIRED THROUGHOUT THE LIFE OF THE CONTRACT.

26. CONTRACTOR TO COORDINATE WITH ALL PROPERTY OWNERS FOR EASEMENT WORK A MINIMUM OF TWO WEEKS PRIOR TO START OF SAID WORK.

27. PEDESTRIAN, PUBLIC, AND WHEELCHAIR ACCESSES SHALL BE MAINTAINED DURING THE CONSTRUCTION TO THE SATISFACTION OF THE DISTRICT AND AGENCY HAVING JURISDICTION IN THE RIGHT-OF-WAY IN ACCORDANCE WITH THE ENCROACHMENT PERMITS.

28. CONTRACTOR SHALL RESTORE SITES TO EQUAL TO OR BETTER THAN EXISTING CONDITIONS.

29. ANY DAMAGE TO THE EXISTING FACILITIES INCLUDING, BUT NOT LIMITED TO, TREES, LANDSCAPING, IRRIGATION, FENCES, WALLS, SIDEWALK, AND OTHER PAVEMENT SURFACES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL RESTORE ANY AND ALL PAVEMENT AND OTHER FACILITIES OUTSIDE LIMITS OF WORK AFFECTED BY THE CONSTRUCTION OPERATIONS AT NO ADDITIONAL COST.

30. BIDDERS SHOULD NOTE PRESENCE OF OVERHEAD UTILITIES IN THE WORK AREA. ALL OVERHEAD UTILITIES MAY NOT BE SHOWN AND IF SHOWN, MAY BE IN THEIR APPROXIMATE ALIGNMENT. AS PART OF THEIR PRE-BID INSPECTION, BIDDERS SHALL NOTE THE TYPE AND LOCATION OF OVERHEAD UTILITIES IN THE PROPOSED WORK AREA. BIDDER'S PRICE SHALL INCLUDE PROVISIONS FOR WORKING IN AREAS WHERE OVERHEAD UTILITIES EXIST AT THE TIME OF BIDDING, WHETHER SHOWN ON THE PLANS OR NOT, AND NO ADDITIONAL COMPENSATION IS ALLOWED.

31. REFER TO SPECIFICATIONS FOR WORK HOUR AND WORK SEQUENCE RESTRICTIONS.

32. WHEN AN ABANDONED GAS LINE IS EXPOSED, CONTRACTOR TO COORDINATE WITH PG&E TO VERIFY THAT IT IS DEACTIVATED.

33. UNLESS OTHERWISE NOTED ON THE PLANS OR SPECIFICATIONS, ALL EXPOSED CONCRETE WORK (I.E. SIDEWALKS, CURB AND GUTTER, VALLEY GUTTERS, ETC) SHALL CONFORM TO THE LATEST EDITION OF THE MARIN COUNTY STANDARD DRAWINGS.

34. DURING NON WORKING HOURS, A TEMPORARY CONNECTION SHALL BE MADE FROM THE EXISTING SEWER TO THE NEW SEWER. LATERALS AND SEWERS CROSSING THE TRENCH SHALL BE TEMPORARILY RECONNECTED UNTIL THEY CAN BE PERMANENTLY CONNECTED TO THE NEW SEWER.

35. CDF BACKFILL IS NOT ALLOWED FOR SITES WITHIN COUNTY OF MARIN JURISDICTION.

36. CONTRACTOR TO NOTE THAT SOME SITES ARE WITHIN EASEMENTS WITH LIMITED OR NO ACCESS FOR VEHICLES AND EQUIPMENT. THESE SITES MAY REQUIRE PORTABLE EQUIPMENT AND/OR HAND EXCAVATION.

ABBREVIATIONS

AB, ASB	AGGREGATE BASE, SUBBASE
ABD	ABANDONED
AC	ASPHALT CONCRETE
ADJ	ADJUSTABLE
APPROX	APPROXIMATE
AVE	AVENUE
BC	BEGIN CURVE
BM	BLUE MARKER
BOC	BACK OF CURB
BP	BOTTOM OF PIPE
BSW	BACK OF SIDEWALK
C&G	CURB & GUTTER
CATV	CABLE TV
CB	CATCH BASIN
CCTV	CLOSED CIRCUIT TELEVISION
CIP	CAST IRON PIPE
CIPP	CURED-IN-PLACE PIPE
CL, ℄	CENTERLINE
CLR	CLEARANCE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CON'T	CONTINUED
CP	CONTROL POINT
D, DIA	DIAMETER
DI	DRAIN INLET
DL	DETECTOR LOOP
DR	DIMENSION RATIO
DWY	DRIVEWAY
DWG	DRAWING
E	EASTING, ELECTRIC
E (OH)	ELECTRIC OVERHEAD
EC	EDGE OF CONCRETE
EC	END OF CURVE
EG	EXISTING GRADE
EL OR ELEV	ELEVATION
ELEC	ELECTRIC
EP, EOP	EDGE OF PAVEMENT
EOS	EDGE OF SHOULDER
ETW	EDGE OF TRAVELED WAY
EXIST, EX	EXISTING
FC, FOC	FACE OF CURB
FD	FOUND
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL, ℄	FLOWLINE
FOB	FACE OF BERM
FY	FISCAL YEAR
G	GAS
GA	GAUGE
GB	GRADE BREAK
GM	GAS METER
GRND	GROUND
GTP	GALVANIZED THREADED PIPE
GTR	GUTTER
GV	GAS VALVE
>	GREATER THAN
H, HORIZ	HORIZONTAL
HDD	HORIZONTAL DIRECTIONAL DRILLING
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
HMA	HOT MIX ASPHALT
HV	HIGH VOLTAGE
ID	INNER DIAMETER
IN	INCH
INV	INVERT
IPB	IRRIGATION PULL BOX
JP	JOINT UTILITY POLE
LAT	LATERAL
LDCC	LOW DENSITY CELLULAR CONCRETE
LF	LINEAR FOOT
LH	LAMPHOLE
LIP	LIP OF GUTTER
MAGN	"MAG" NAIL
MAX	MAXIMUM
MAGNW	"MAG" NAIL & WASHER
MAGNS	"MAG" NAIL & SHINER
MBGR	METAL BEAM GUARD RAIL
MH	MANHOLE
MIN	MINIMUM
MMWD	MARIN MUNICIPAL WATER DISTRICT
MNFR	MANUFACTURER
MON	MONUMENT
N	NORTHING
N.I.C.	NOT IN CONTRACT
NO	NUMBER
O.C.	OFF CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OG	ORIGINAL GRADE
PCC	PORTLAND CEMENT CONCRETE
PCC	POINT OF COMPOUND CURVE
PK	"PK" NAIL
PL	PLASTIC
PLS#	PROFESSIONAL LAND SURVEYOR #
PP	POWER POLE, PLAN AND PROFILE
PROP	PROPOSED
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROAD
R+C	REBAR & CAP
RCE#	REGISTERED CIVIL ENGINEER #
REQ'D	REQUIRED
RET	RETAINING
R/R	REMOVE & REPLACE
RS	ROADWAY STABILIZATION
R/W	RIGHT-OF-WAY
RVSD	ROSS VALLEY SANITARY DISTRICT
S	SLOPE
SD	STORM DRAIN, STANDARD DRAWING
SDCB	STORM DRAIN CATCH BASIN
SDMH	STORM DRAIN MANHOLE
SDR	STANDARD DIMENSION RATIO
SDWK	SIDEWALK
SF	SQUARE FEET
SHT	SHEET
SL	STREET LIGHT
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSLH	SANITARY SEWER LAMPHOLE
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
STL	STEEL
T	TELEPHONE, TOTAL
TBA	TO BE ABANDONED
TC	TOP OF CURB
TEL	TELEPHONE
TMH	TELEPHONE MANHOLE
TOE	TOE OF SLOPE, TOE OF CURB, TOE OF WALL
TOP	TOP OF PIPE
TYP	TYPICAL
TV	TELEVISION
UNK	UNKNOWN
UT	UNKNOWN UTILITY
VCP	VITRIFIED CLAY PIPE
VG	VALLEY GUTTER
W, WAT	WATER
W/	WITH
WM	WATER METER
WSP	WELDED STEEL PIPE
WV	WATER VALVE
W.W.M.	WELDED WIRE MESH
100D	100 PENNY
2:1	2 HORIZONTAL TO 1 VERTICAL SLOPE

LEGEND

EXISTING	PROPOSED	DESCRIPTION
	8" SS	CONSTRUCT SEWER BY OPEN TRENCH, DIRECTION OF FLOW, SIZE
	8" SS	CONSTRUCT SEWER BY PIPE BURSTING, DIRECTION OF FLOW, SIZE
	8" SS	CONSTRUCT SEWER BY PIPE REAMING, DIRECTION OF FLOW, SIZE
SS		ABANDON SANITARY SEWER
		BUILDING
x x x x		FENCE
		PROPERTY LINE
WV W W W W	8"AC	WATER MAIN, VALVE AND METER
SD	8"SD	STORM DRAIN < 12"ø
	12"SD	STORM DRAIN >= 12"ø
SS	6"SS	SANITARY SEWER < 12"ø
	12"SS	SANITARY SEWER >= 12"ø
GV G		GAS MAIN AND VALVE
E		BURIED ELECTRIC
FO		BURIED FIBER OPTIC
ATT		BURIED COMMUNICATION (AT&T)
VERIZON		BURIED COMMUNICATION (VERIZON)
COM		BURIED COMMUNICATION (COMCAST)
UNK		BURIED UNKNOWN UTILITY
OH		OVERHEAD UTILITIES
		CATCH BASIN
MON		CITY MONUMENT
		FIRE HYDRANT
		GUY WIRE
PP		JOINT POLE
Ⓢ	Ⓢ	SANITARY SEWER MANHOLE
SSCO	CO	SANITARY SEWER CLEAN OUT
Ⓓ		STORM DRAIN MANHOLE
		SIGN
		STREETLIGHT
		CURB AND GUTTER
60		CONTOUR

NOT FOR CONSTRUCTION

90% SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

DRAWN BY: JAC

DESIGNED BY: JAC

CHECKED BY: DATE:

WEST VALLEY CONSTRUCTION
Design - Build Services
1001 GALAXY WAY, SUITE 400
CONCORD, CA. 94520
925-414-3001
www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
NOTES, ABBREVIATIONS & LEGEND

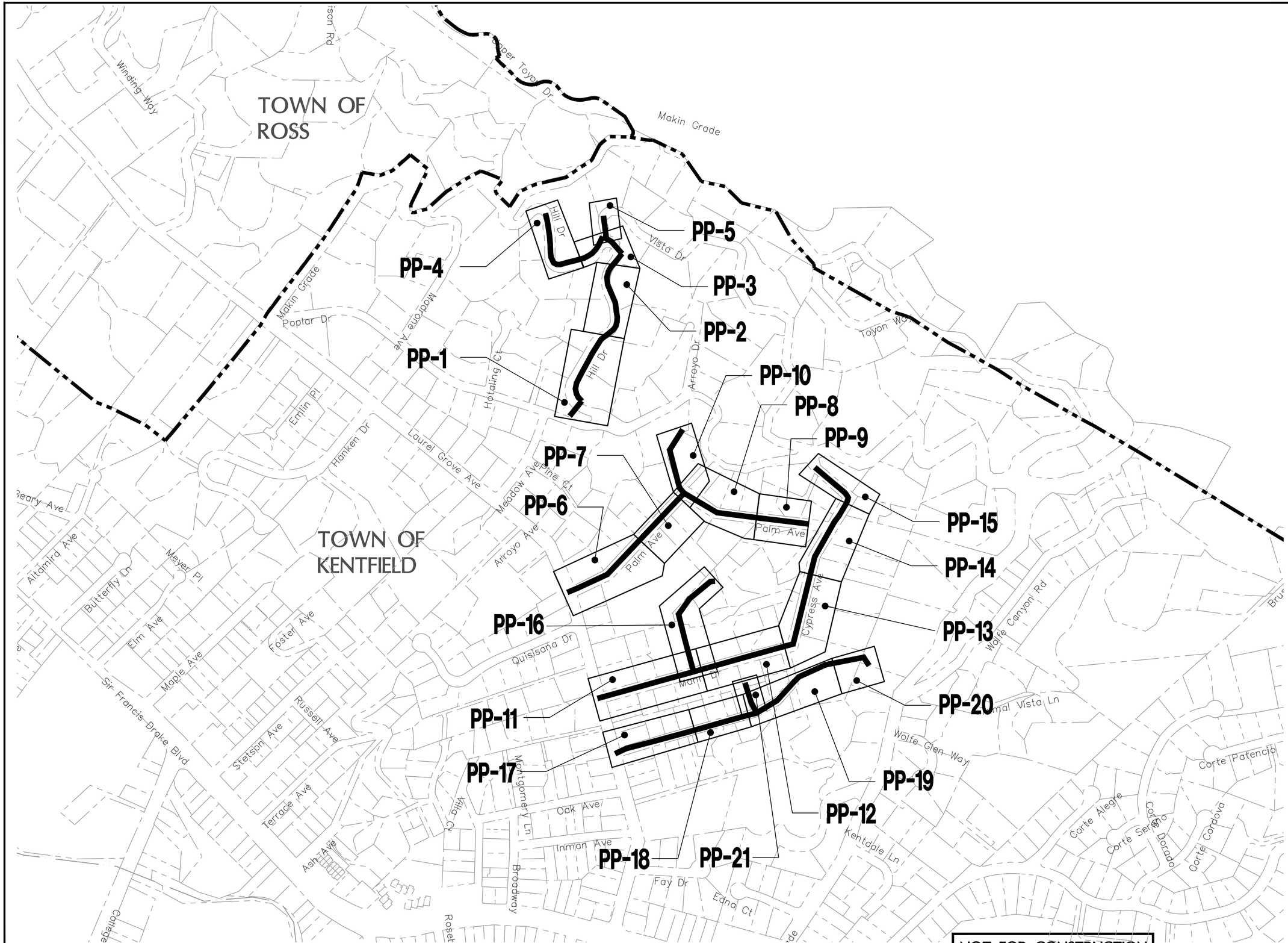
DATE: APRIL 29, 2025

PROJECT ID: 371753

SCALE: N.T.S.

DWG. NO T-02

SHT 2 OF 25



NOT TO SCALE

NOT FOR CONSTRUCTION

90% SUBMITTAL

NO.	DATE	BY	DESCRIPTION

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DRAWN BY: JAC
DESIGNED BY: JAC
CHECKED BY: DATE:

ROSS VALLEY SANITARY DISTRICT

WEST VALLEY CONSTRUCTION
Design - Build Services
1001 GALAXY WAY, SUITE 400
CONCORD, CA. 94520
925-414-3001
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ROSS VALLEY SANITATION DISTRICT PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT KEY MAP

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: N.T.S.
DWG. NO T-03
SHT 3 OF 25

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
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Exp. 09/30/25
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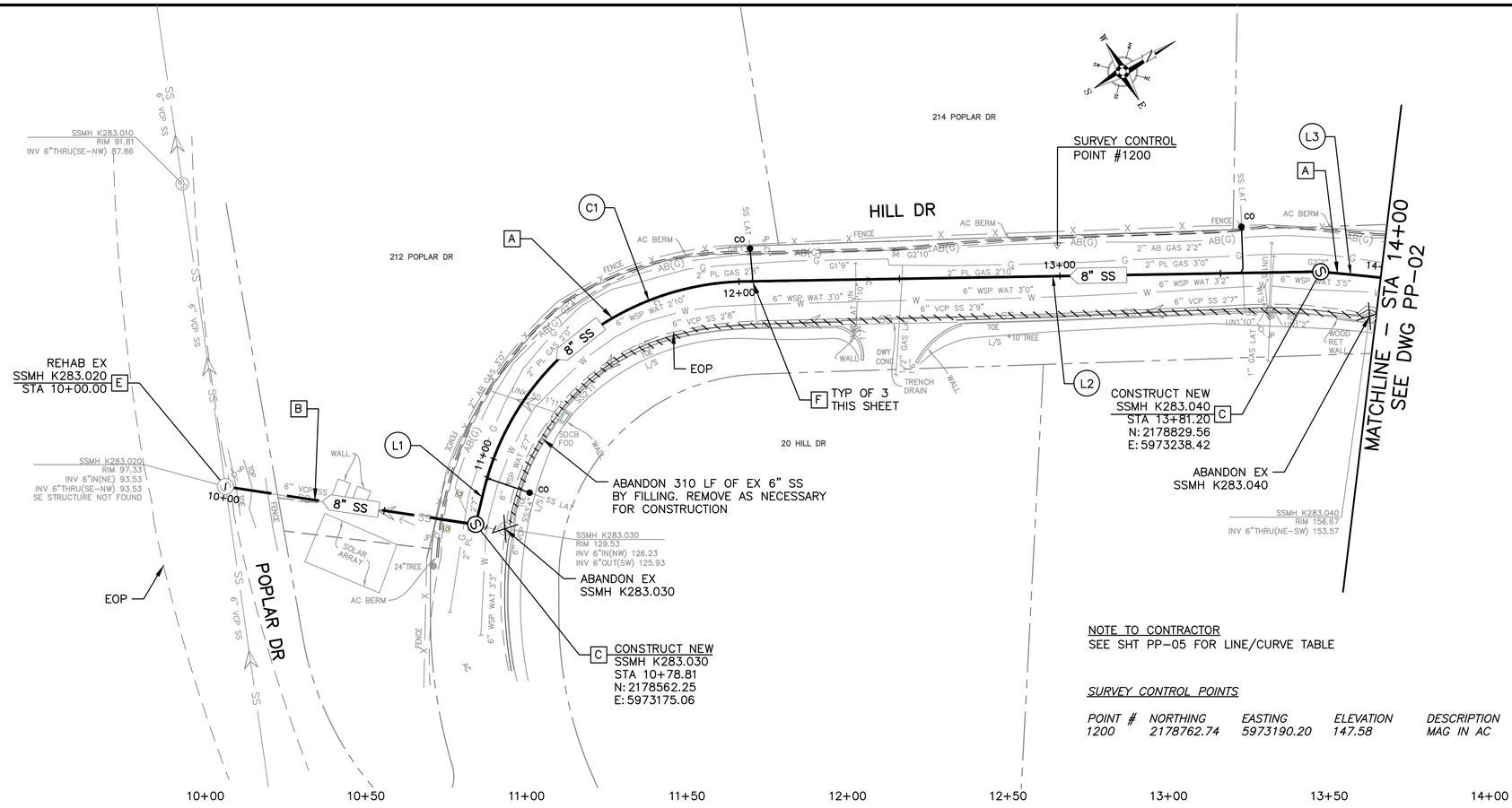
STATE OF CALIFORNIA



NOTE TO CONTRACTOR
SEE SHT PP-05 FOR LINE/CURVE TABLE

SURVEY CONTROL POINTS

POINT #	*NORTHING*	*EASTING*	*ELEVATION*	*DESCRIPTION*
1200	*2178762.74*	*5973190.20*	*147.58*	*MAG IN AC*

LEGEND OF REHABILITATION METHODS

A REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.

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E REHABILITATE EX SSMH PER RVSD STD DWG SD-13.

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PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.

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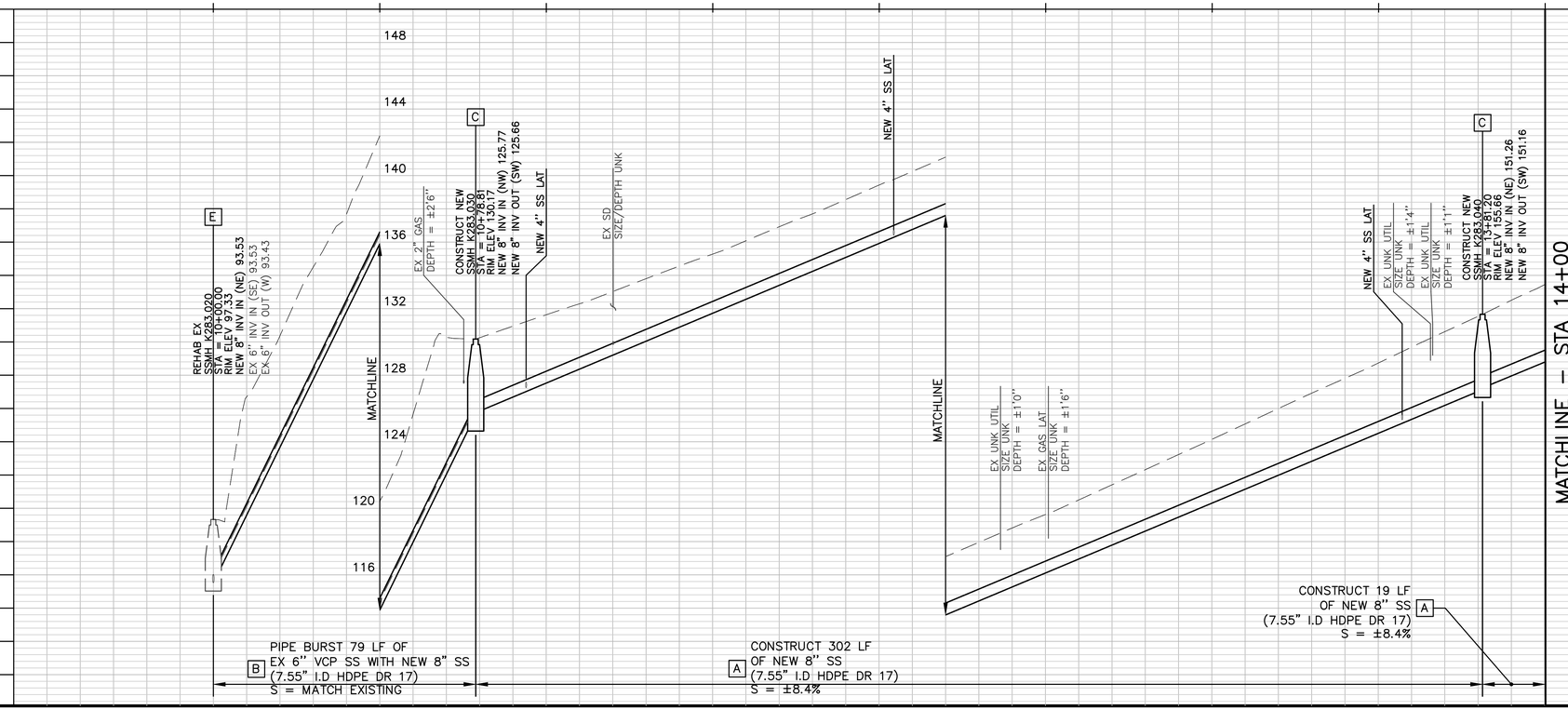

B PIPE BURST 79 LF OF EX 6" VCP SS WITH NEW 8" SS (7.55" I.D HDPE DR 17) S = MATCH EXISTING

A CONSTRUCT 302 LF OF NEW 8" SS (7.55" I.D HDPE DR 17) S = ±8.4%

CONSTRUCT 19 LF OF NEW 8" SS (7.55" I.D HDPE DR 17) S = ±8.4% A

NOT FOR CONSTRUCTION
90% SUBMITTAL

GRAPHIC SCALE:
20 0 20 40 60
H: 1" = 20'
V: 1" = 4'

REGISTERED PROFESSIONAL ENGINEER DANIEL C. WILKINS No. C83909 Exp. 09/30/25 CIVIL STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

DRAWN BY: JAC
DESIGNED BY: JAC
CHECKED BY:

SOUTH VALLEY SANITARY DISTRICT

WEST VALLEY CONSTRUCTION
Design - Build Services
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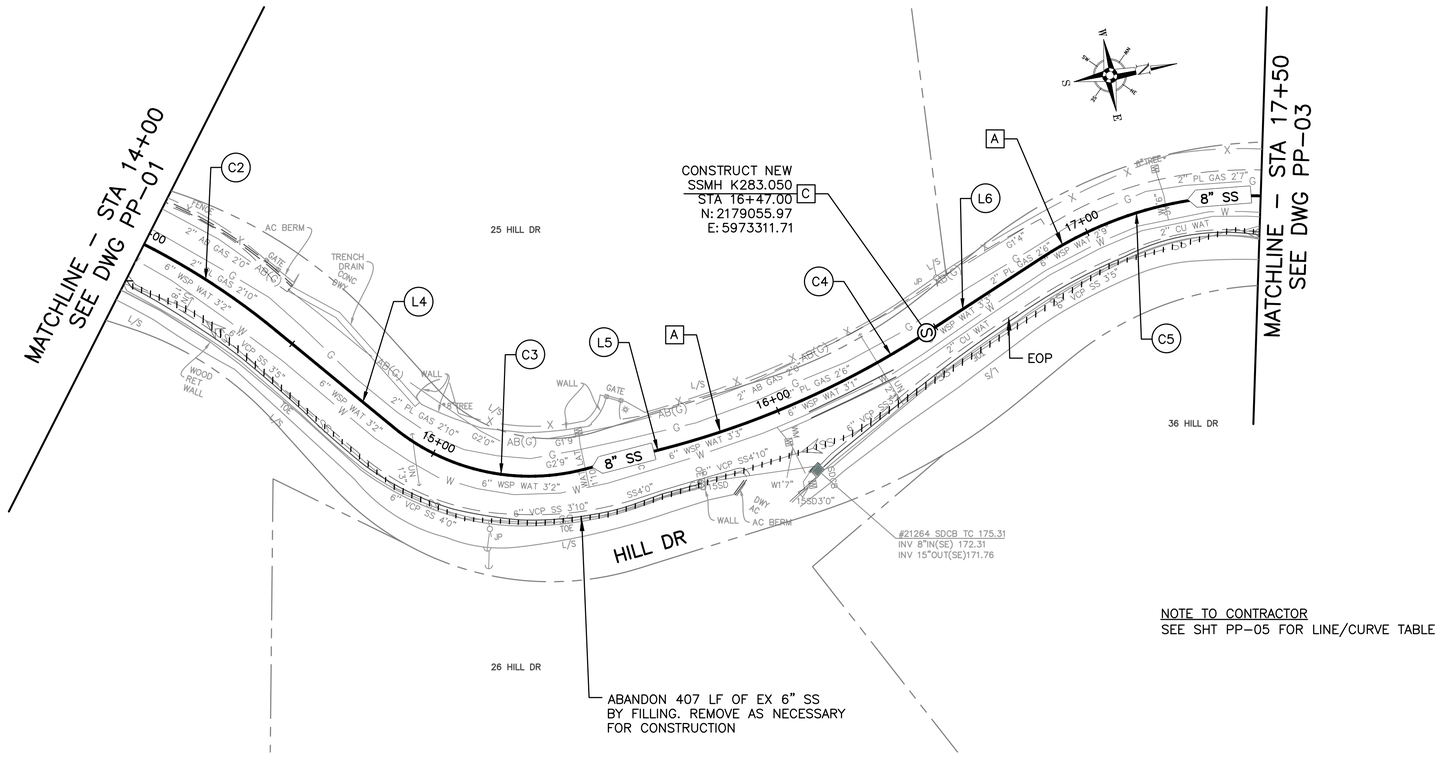
925-414-3001
www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
HILL DR
STA 10+00 TO 14+00

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP-01
SHT 4 OF 25

\\vcnscon\Engineering Data\WLEXTERNAL PROJECTS\1_PROJECTS\371753 RVSD Palm_Mann_Cypress GSP\8.0 DESIGN\8. Design\04-08 PP-01 To PP-05 - KT HILL.dwg Save Date: 4/29/2025 4:28 PM Plot Date: 4/29/2025 4:28 PM JosephC



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NOT FOR CONSTRUCTION

90% SUBMITTAL

GRAPHIC SCALE:
20 0 20 40 60
H: 1" = 20'
V: 1" = 4'

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

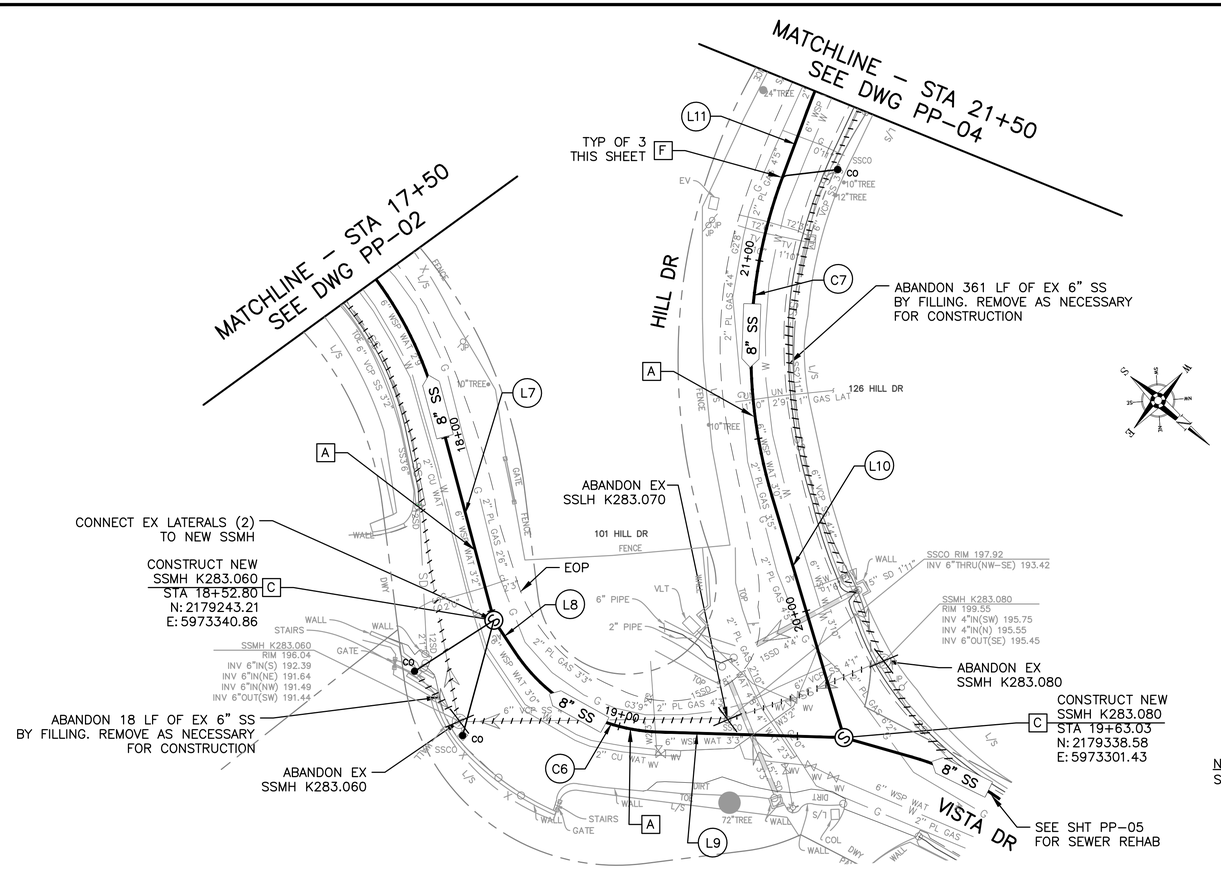
DRAWN BY: JAC
DESIGNED BY: JAC
CHECKED BY:

WEST VALLEY CONSTRUCTION
Design - Build Services
1001 GALAXY WAY, SUITE 400
CONCORD, CA. 94520
925–414–3001
www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
HILL DR
STA 14+00 TO 17+50

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP–02
SHT 5 OF 25

\\vasscon\Engineering Data\WL_EXTERNAL PROJECTS\1_PROJECTS\371753 RVSD Palm_Mann_Cypress GSP\8.0 DESIGN\8. Design\04–08 PP–01 To PP–05 – KT HILL.dwg Save Date: 4/29/2025 4:28 PM Plot Date: 4/29/2025 4:28 PM JosephC



NOTE TO CONTRACTOR
SEE SHT PP–05 FOR LINE/CURVE TABLE

LEGEND OF REHABILITATION METHODS

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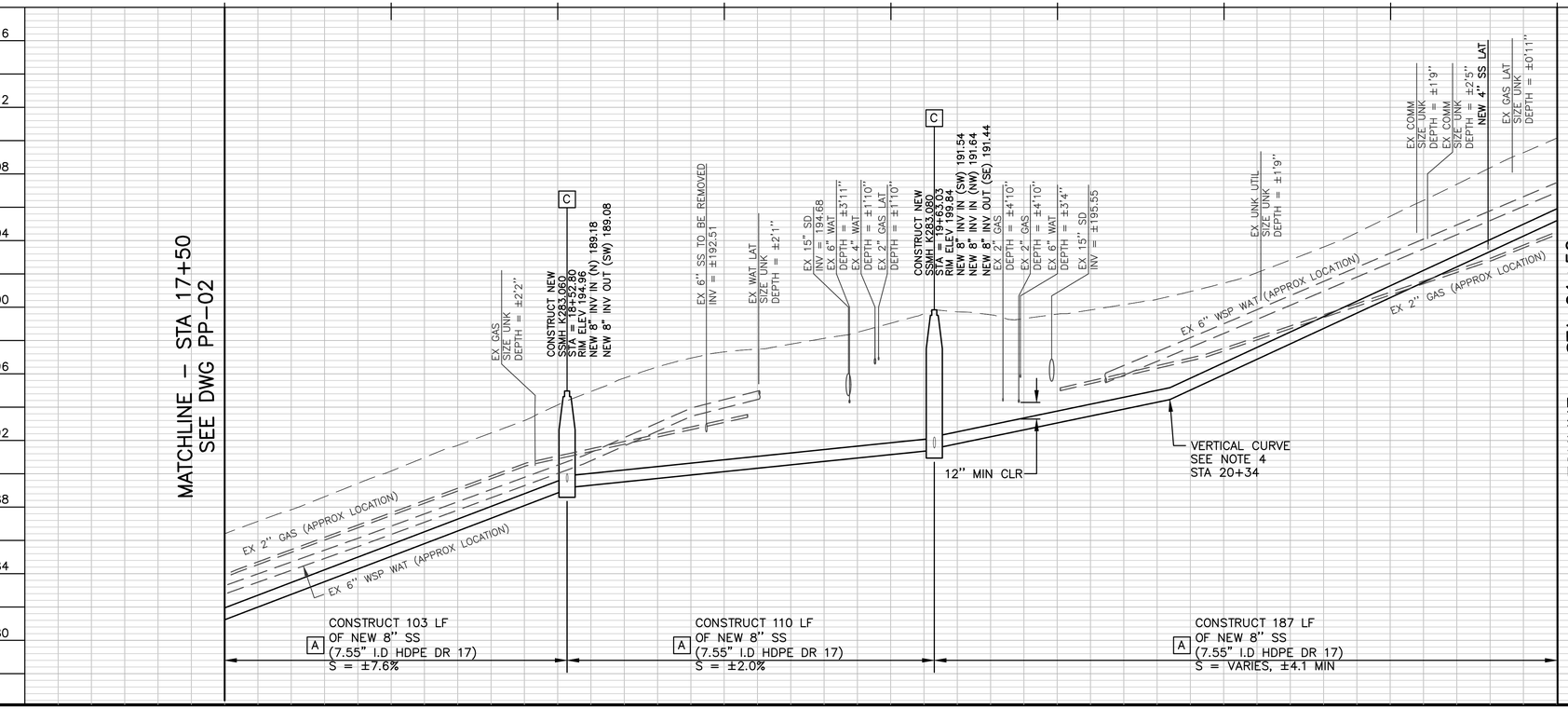

NOT FOR CONSTRUCTION

90% SUBMITTAL

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REGISTERED PROFESSIONAL ENGINEER DANIEL C. WILKINS No. C83909 Exp. 09/30/25 CIVIL STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

DRAWN BY: JAC
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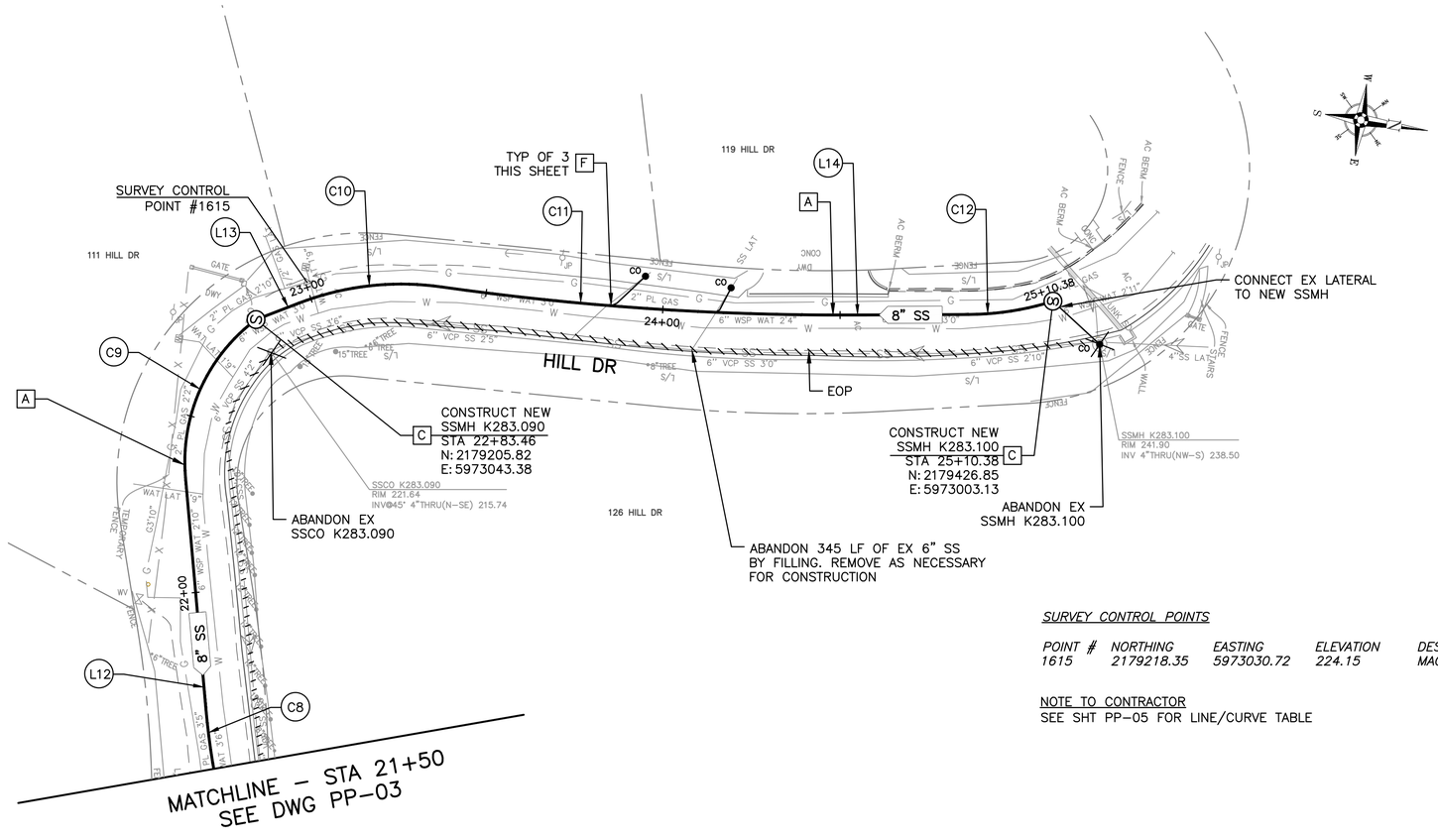
ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
HILL DR
STA 17+50 TO 21+50

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP–03
SHT 6 OF 25



SURVEY CONTROL POINTS

POINT #	*NORTHING*	*EASTING*	*ELEVATION*	*DESCRIPTION*
1615	*2179218.35*	*5973030.72*	*224.15*	*MAG IN AC*

NOTE TO CONTRACTOR
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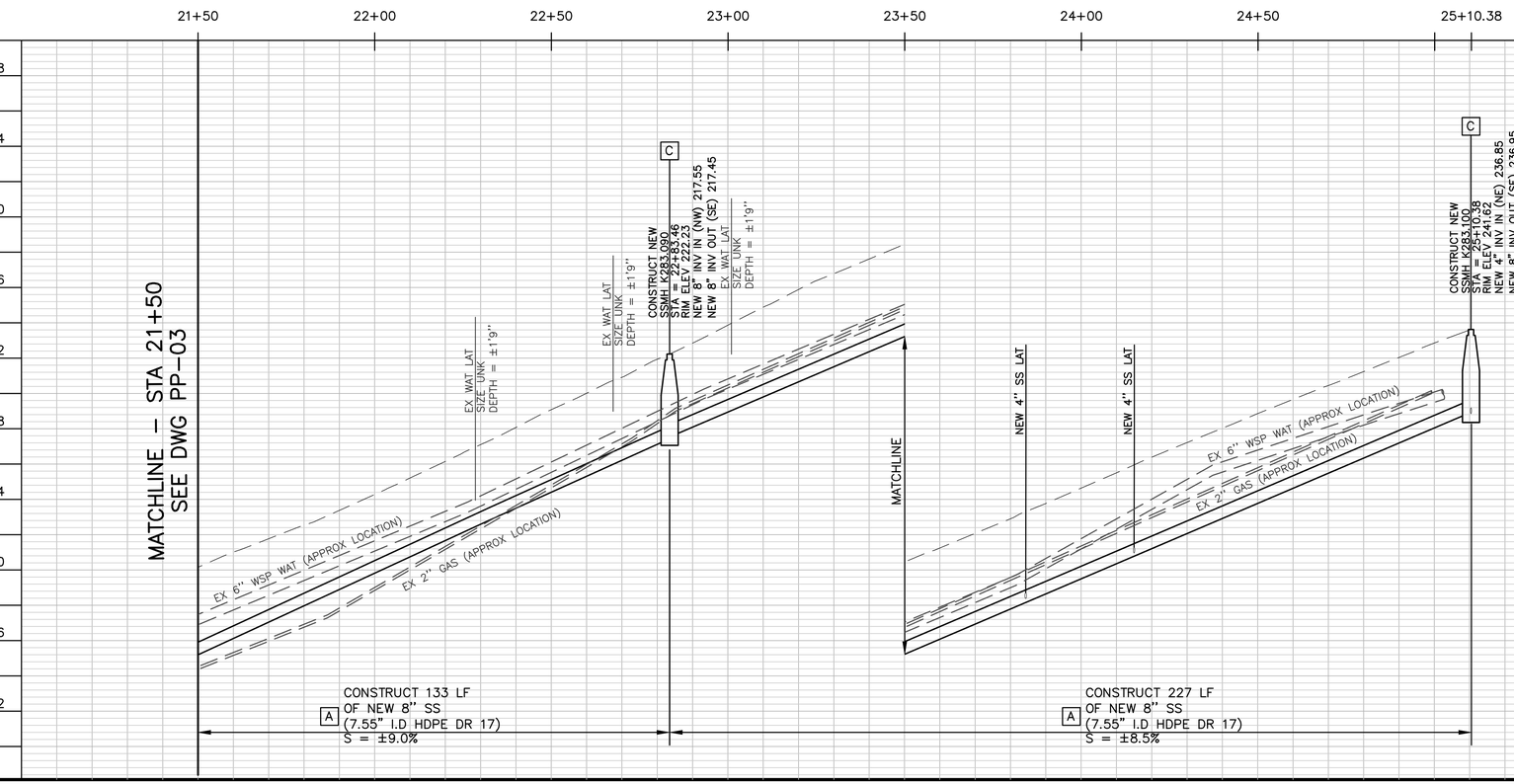

NOT FOR CONSTRUCTION

90% SUBMITTAL

GRAPHIC SCALE:
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REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

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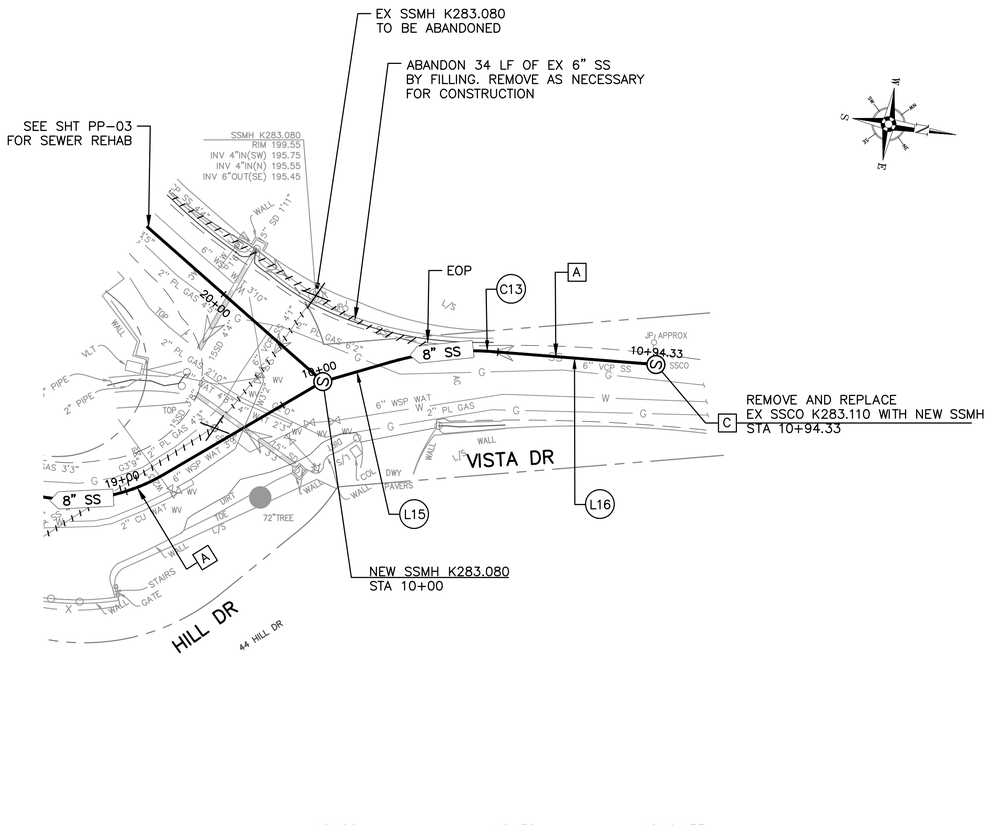
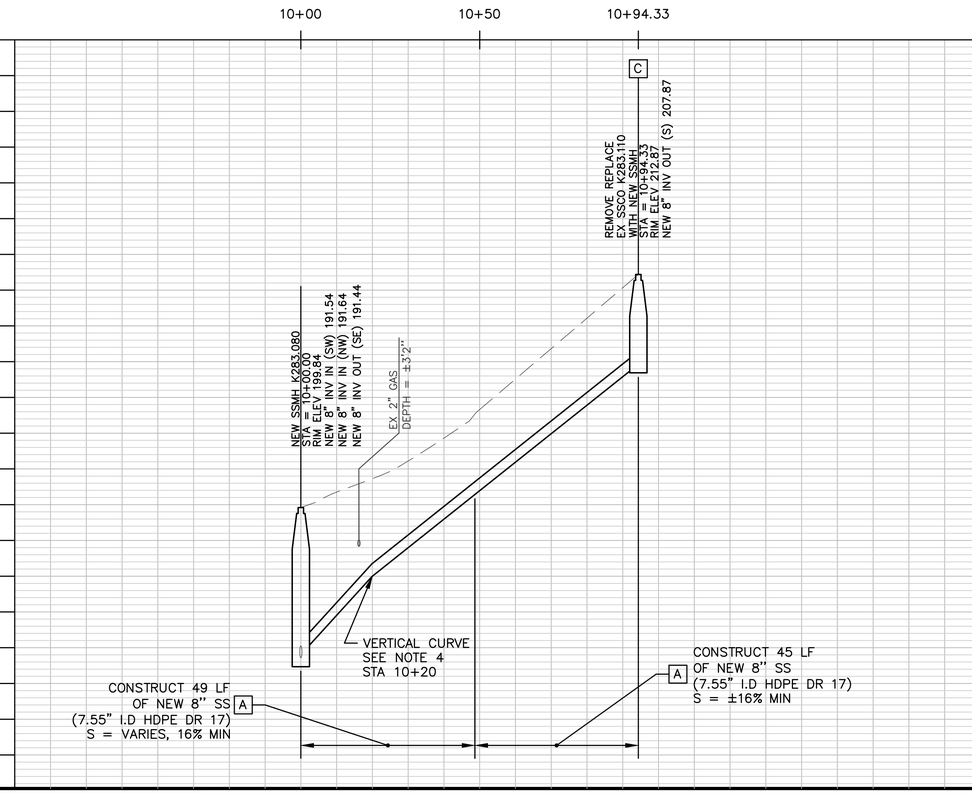
ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
HILL DR
STA 21+50 TO END

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP-04
SHT 7 OF 25





HILL DR NEW SEWER LINE AND CURVE TABLE

SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
L1	11.00'	N46°26'03"W				10+78.81	N = 2178562.25 E = 5973175.06	10+89.81	N = 2178569.83 E = 5973167.09
C1	111.95'		75°27'53"	85.00'	65.77'	10+89.81	N = 2178569.83 E = 5973167.09	12+01.76	N = 2178672.67 E = 5973151.35
L2	179.44'	N29°01'50"E				12+01.76	N = 2178672.67 E = 5973151.35	13+81.20	N = 2178829.56 E = 5973238.42
L3	14.39'	N35°34'01"E				13+81.20	N = 2178829.56 E = 5973238.42	13+95.60	N = 2178841.27 E = 5973246.80
C2	48.55'		13°54'35"	200.00'	24.40'	13+95.60	N = 2178841.27 E = 5973246.80	14+44.15	N = 2178876.97 E = 5973279.53
L4	42.54'	N49°28'36"E				14+44.15	N = 2178876.97 E = 5973279.53	14+86.70	N = 2178904.61 E = 5973311.87
C3	56.51'		53°58'03"	60.00'	30.55'	14+86.70	N = 2178904.61 E = 5973311.87	15+43.21	N = 2178954.92 E = 5973332.70
L5	22.76'	N04°29'27"W				15+43.21	N = 2178954.92 E = 5973332.70	15+65.97	N = 2178977.61 E = 5973330.92
C4	81.03'		18°34'14"	250.00'	40.87'	15+65.97	N = 2178977.61 E = 5973330.92	16+47.00	N = 2179055.97 E = 5973311.71
L6	39.03'	N23°03'41"W				16+47.00	N = 2179055.97 E = 5973311.71	16+86.03	N = 2179091.88 E = 5973296.42
C5	104.79'		57°10'48"	105.00'	57.22'	16+86.03	N = 2179091.88 E = 5973296.42	17+90.82	N = 2179191.90 E = 5973306.10
L7	61.97'	N34°07'07"E				17+90.82	N = 2179191.90 E = 5973306.10	18+52.80	N = 2179243.21 E = 5973340.86
L8	10.71'	N15°25'24"E				18+52.80	N = 2179243.21 E = 5973340.86	18+63.50	N = 2179253.53 E = 5973343.71
C6	47.73'		54°41'39"	50.00'	25.86'	18+63.50	N = 2179253.53 E = 5973343.71	19+11.23	N = 2179298.48 E = 5973334.22
L9	51.80'	N39°16'15"W				19+11.23	N = 2179298.48 E = 5973334.22	19+63.03	N = 2179338.58 E = 5973301.43
L10	70.69'	S32°24'37"W				19+63.03	N = 2179338.58 E = 5973301.43	20+33.72	N = 2179278.90 E = 5973263.54
C7	90.44'		37°00'41"	140.00'	46.86'	20+33.72	N = 2179278.90 E = 5973263.54	21+24.16	N = 2179222.87 E = 5973194.56
L11	19.99'	S69°25'18"W				21+24.16	N = 2179222.87 E = 5973194.56	21+44.14	N = 2179215.85 E = 5973175.84
C8	22.84'		6°32'33"	200.00'	11.43'	21+44.14	N = 2179215.85 E = 5973175.84	21+66.98	N = 2179209.05 E = 5973154.05
L12	65.63'	S75°57'51"W				21+66.98	N = 2179209.05 E = 5973154.05	22+32.61	N = 2179193.14 E = 5973090.39
C9	50.85'		58°16'11"	50.00'	27.87'	22+32.61	N = 2179193.14 E = 5973090.39	22+83.46	N = 2179205.82 E = 5973043.38
L13	13.14'	N29°59'01"W				22+83.46	N = 2179205.82 E = 5973043.38	22+96.60	N = 2179217.21 E = 5973036.81
C10	40.58'		29°03'44"	80.00'	20.74'	22+96.60	N = 2179217.21 E = 5973036.81	23+37.18	N = 2179255.90 E = 5973026.12
C11	116.49'		8°20'34"	800.00'	58.35'	23+37.18	N = 2179255.90 E = 5973026.12	24+53.67	N = 2179371.82 E = 5973015.78
L14	32.52'	N09°15'50"W				24+53.67	N = 2179371.82 E = 5973015.78	24+86.18	N = 2179403.92 E = 5973010.55
C12	24.20'		17°19'44"	80.00'	12.19'	24+86.18	N = 2179403.92 E = 5973010.55	25+10.38	N = 2179426.85 E = 5973003.13

HILL DR NEW SEWER LINE AND CURVE TABLE

SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
L15	19.86'	N25°05'14"W				10+00.00	N = 2179338.58 E = 5973301.43	10+19.86	N = 2179356.57 E = 5973293.01
C13	28.79'		20°37'14"	80.00'	14.55'	10+19.86	N = 2179356.57 E = 5973293.01	10+48.65	N = 2179384.26 E = 5973285.70
L16	45.68'	N04°28'00"W				10+48.65	N = 2179384.26 E = 5973285.70	10+94.33	N = 2179429.79 E = 5973282.15

LEGEND OF REHABILITATION METHODS

A REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.

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F CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING LIVE SANITARY SEWER LATERALS ALONG SEWER MAINS BY DYE TESTING AND SONDE AND REINSTATE LIVE LATERALS TO NEW SEWER MAIN.

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REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
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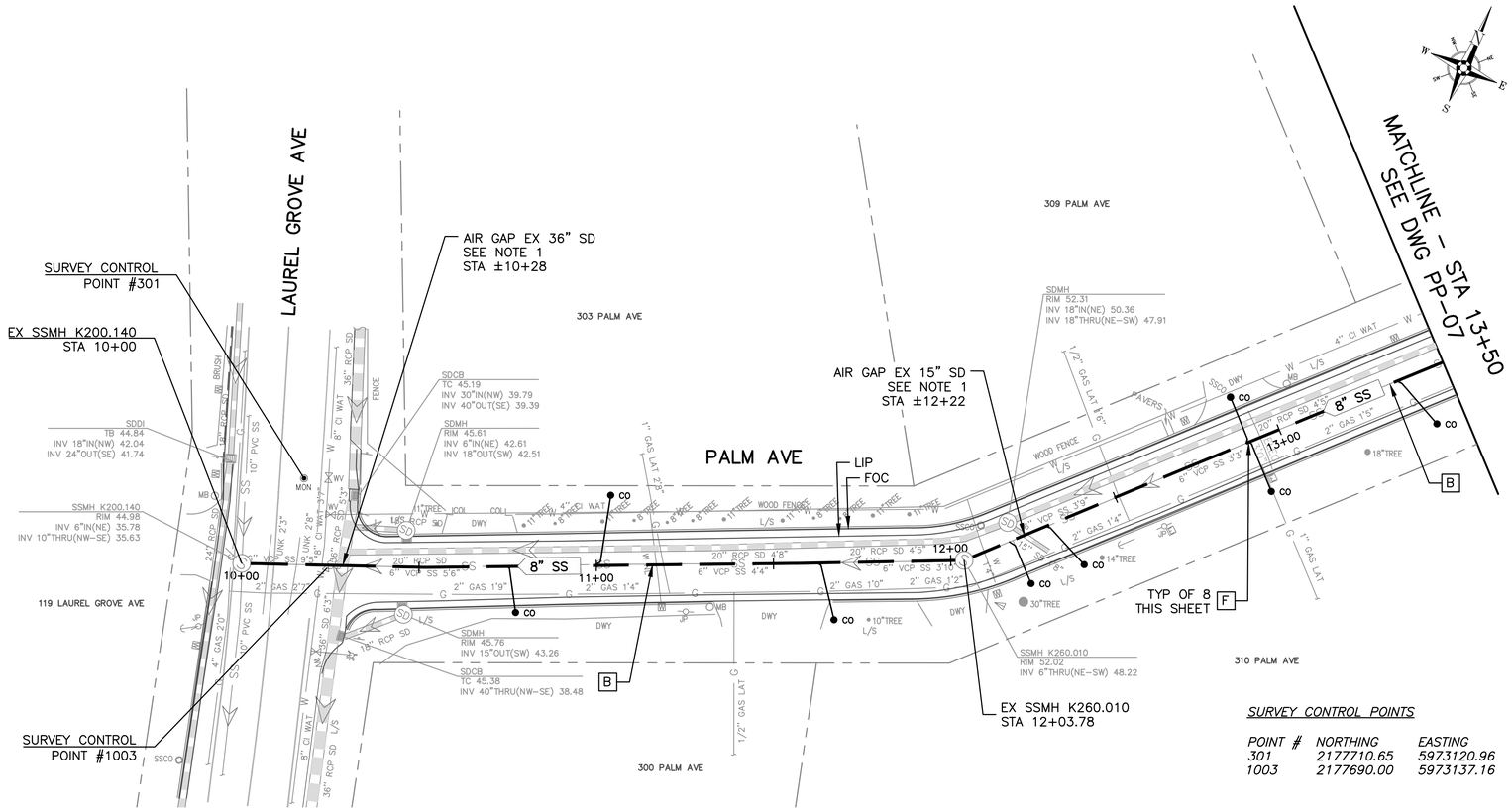
ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
VISTA DR
STA 10+00 TO END

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP-05
SHT 8 OF 25

\\vsancon\Engineering Data\WL_EXTERNAL PROJECTS\L_PROJECTS\371753 RVSD Palm_Mann_Cypress GSP\8.0 DESIGN\8. Design\04-08 PP-01 To PP-05 - KT HILL.dwg Save Date: 4/29/2025 4:28 PM Plot Date: 4/29/2025 4:28 PM JosephC



SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
301	2177710.65	5973120.96	45.91	FND MON
1003	2177690.00	5973137.16	45.69	MAG IN AC

LEGEND OF REHABILITATION METHODS

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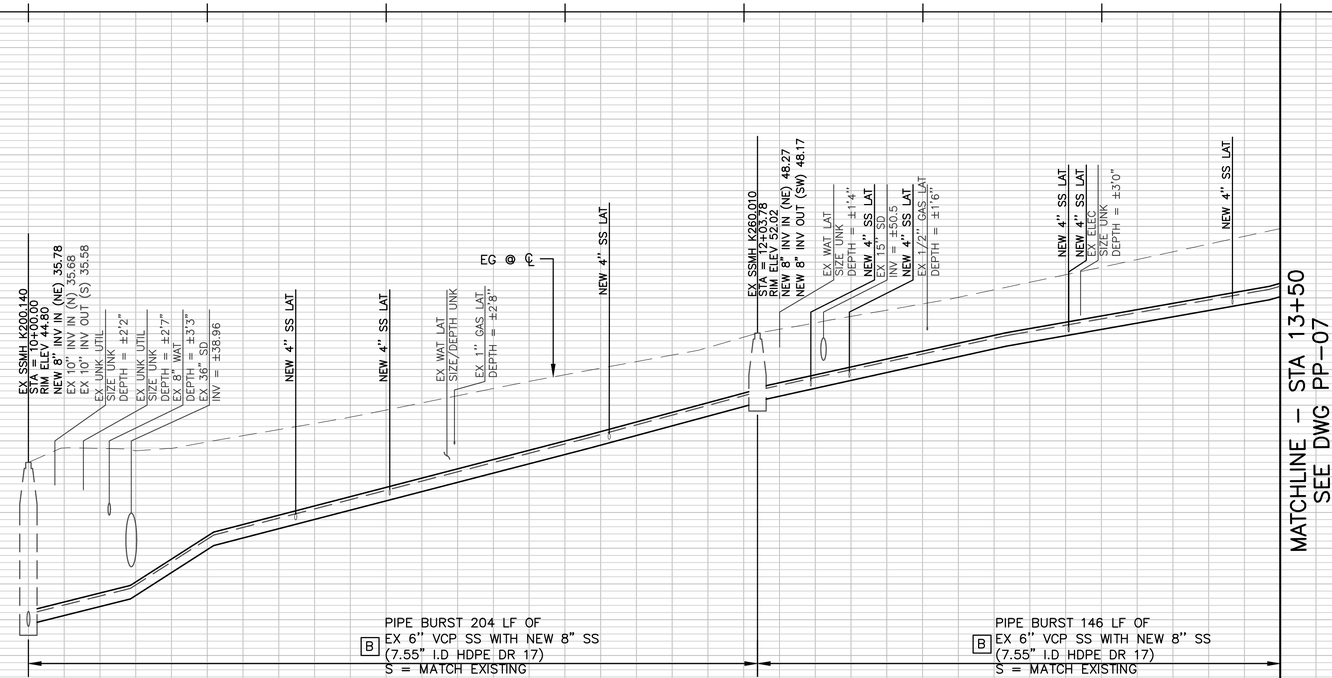

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PALM AVE
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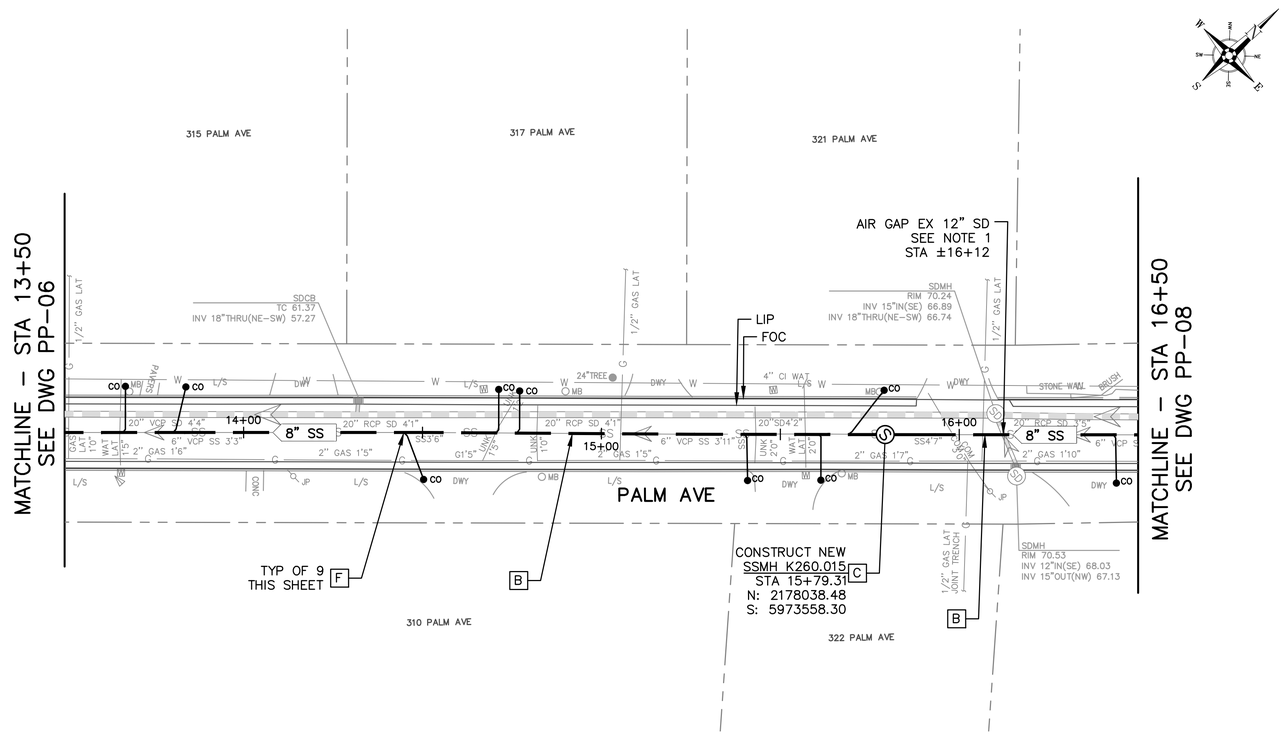
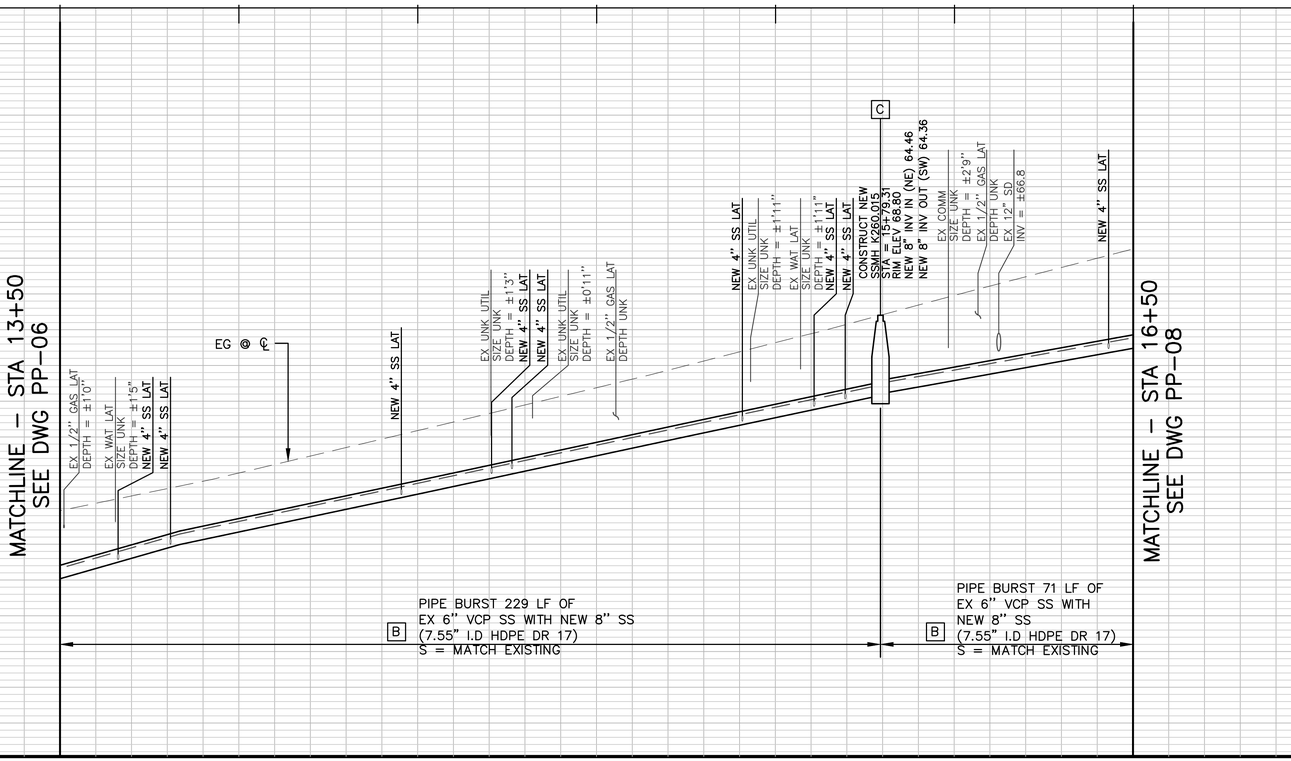
DWG. NO PP-06
SHT 9 OF 25

\\vcncon\Engineering Data\WLEXTERNAL PROJECTS\1_PROJECTS\371753 RVSD Palm_Mann_Cypress GSP\8.0 DESIGN\8. Design\09-13 PP-06 To PP-10 - KT PALM.dwg Save Date: 4/29/2025 11:10 AM Plot Date: 4/29/2025 11:10 AM JosephC





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NOT FOR CONSTRUCTION

90% SUBMITTAL

GRAPHIC SCALE:
20 0 20 40 60
H: 1" = 20'
V: 1" = 4'

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

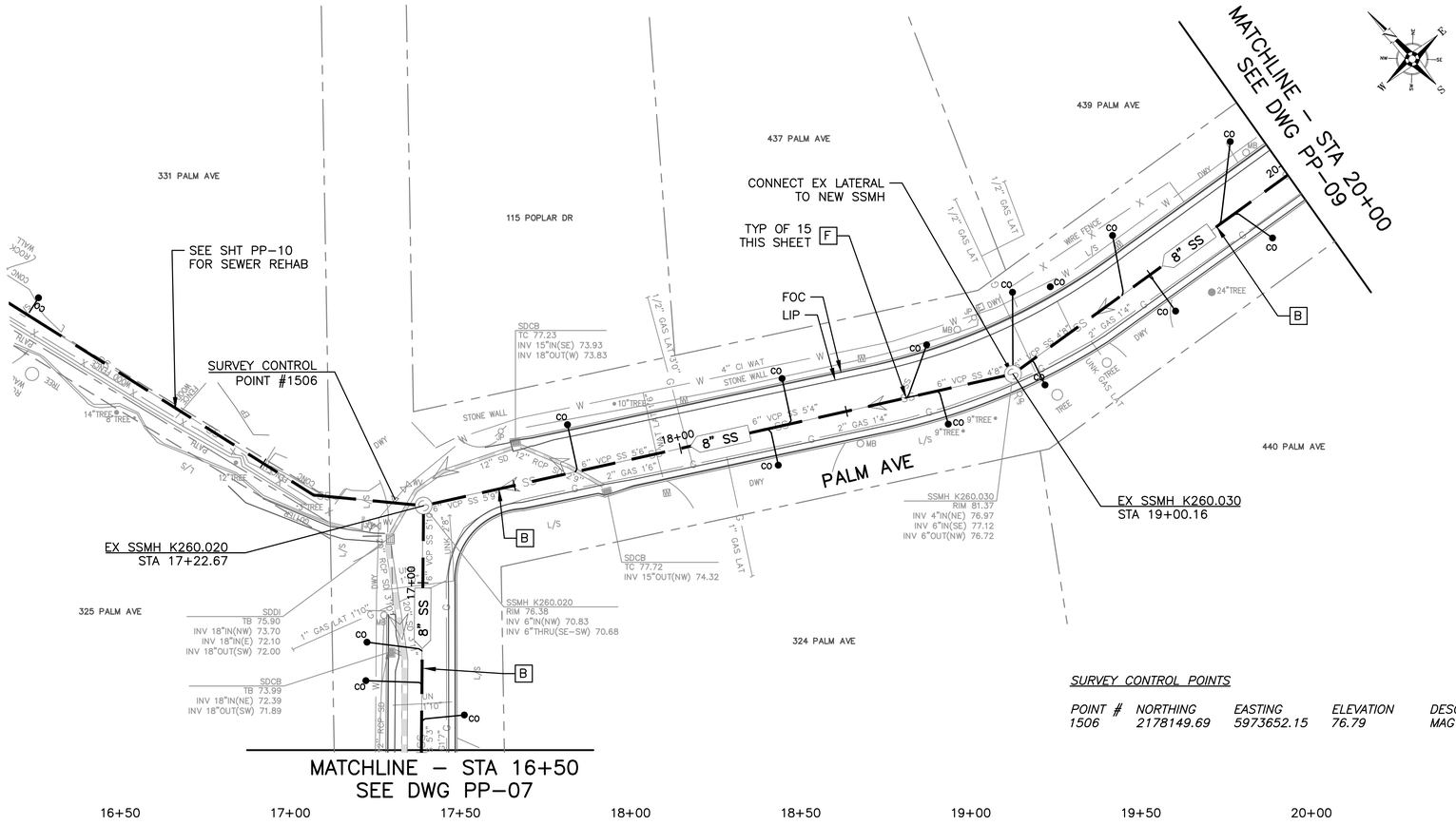
DRAWN BY: JAC
DESIGNED BY: JAC
CHECKED BY:

ROSS VALLEY SANITARY DISTRICT

WEST VALLEY CONSTRUCTION
Design - Build Services
1001 GALAXY WAY, SUITE 400
CONCORD, CA. 94520
925–414–3001
www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
PALM AVE
STA 13+50 TO 16+50

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP–07
SHT 10 OF 25



SURVEY CONTROL POINTS

POINT #	*NORTHING*	*EASTING*	*ELEVATION*	*DESCRIPTION*
1506	2178149.69	5973652.15	76.79	MAG

LEGEND OF REHABILITATION METHODS

A REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD–16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD–09. FINAL PAVING SHALL BE PER DETAIL 1/D–01. INSTALL TRENCH DAM PER RVSD STD DWG SD–17.

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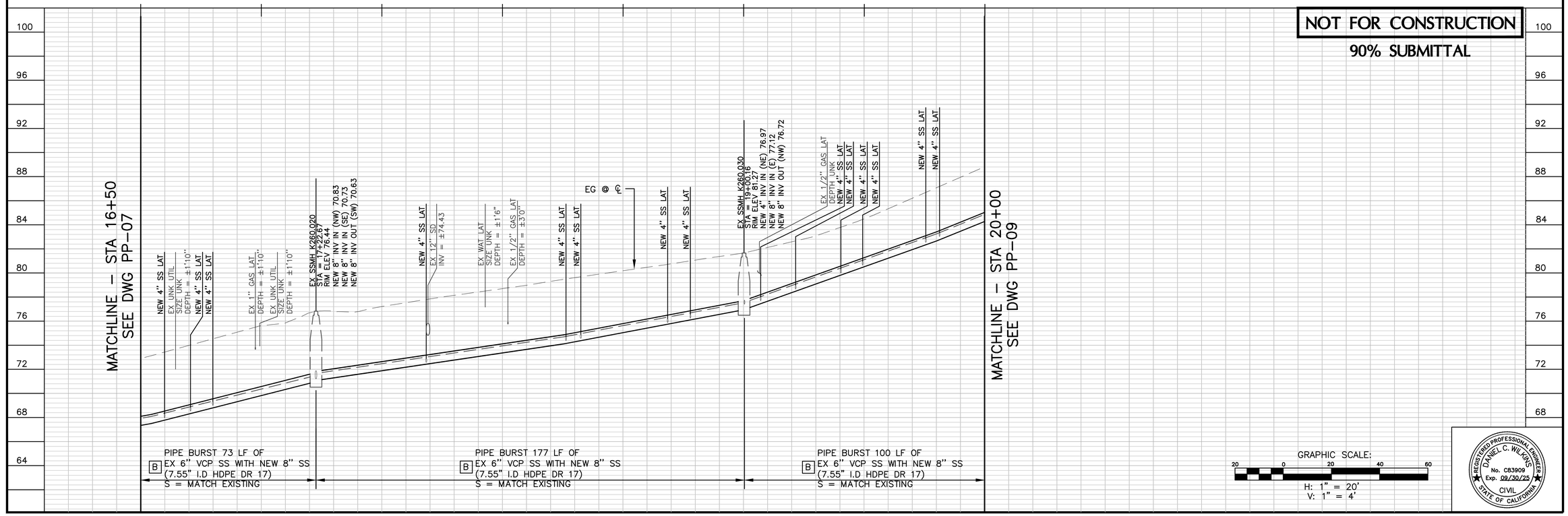

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PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
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DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
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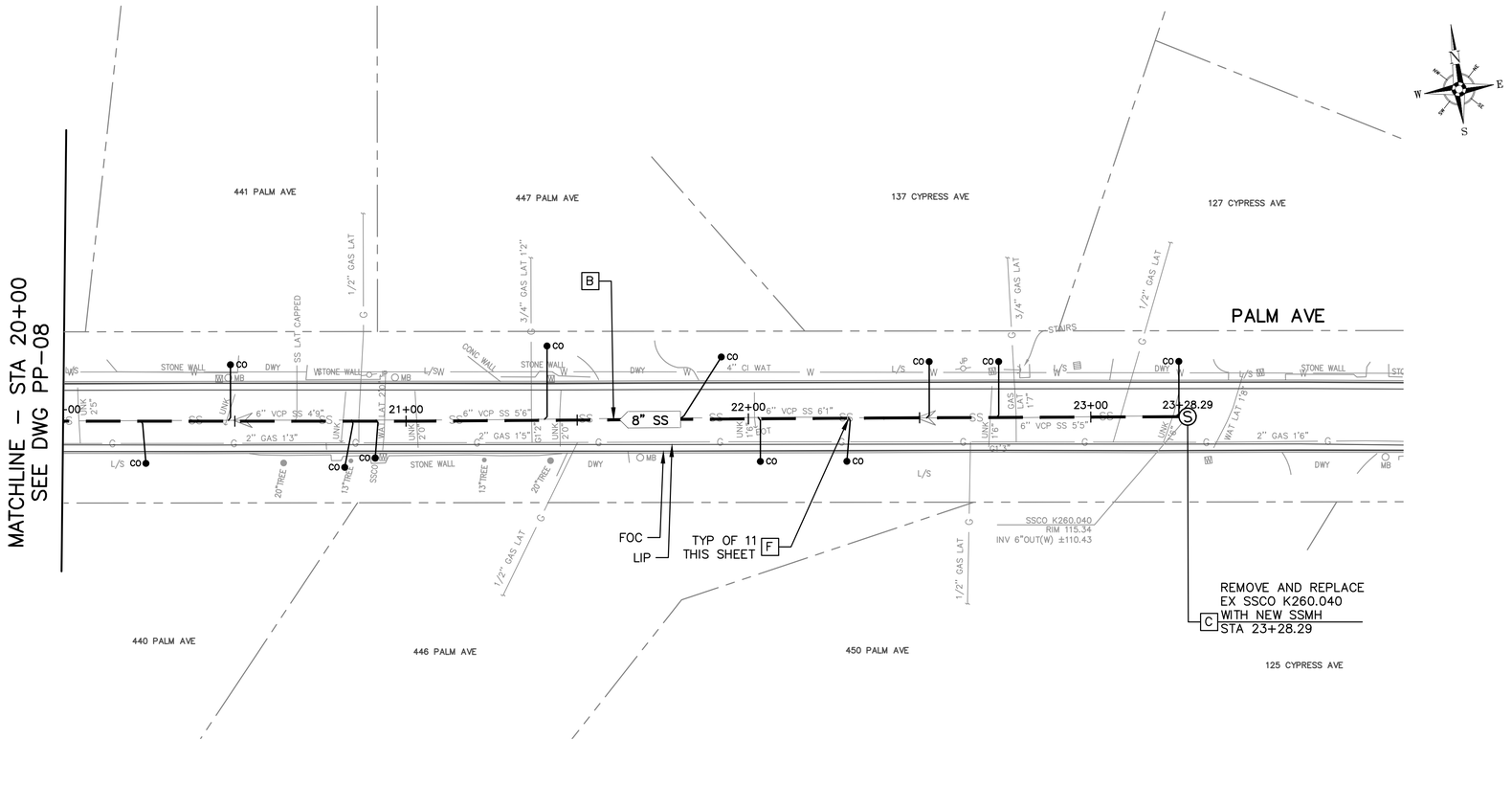
SHT 11 OF 25



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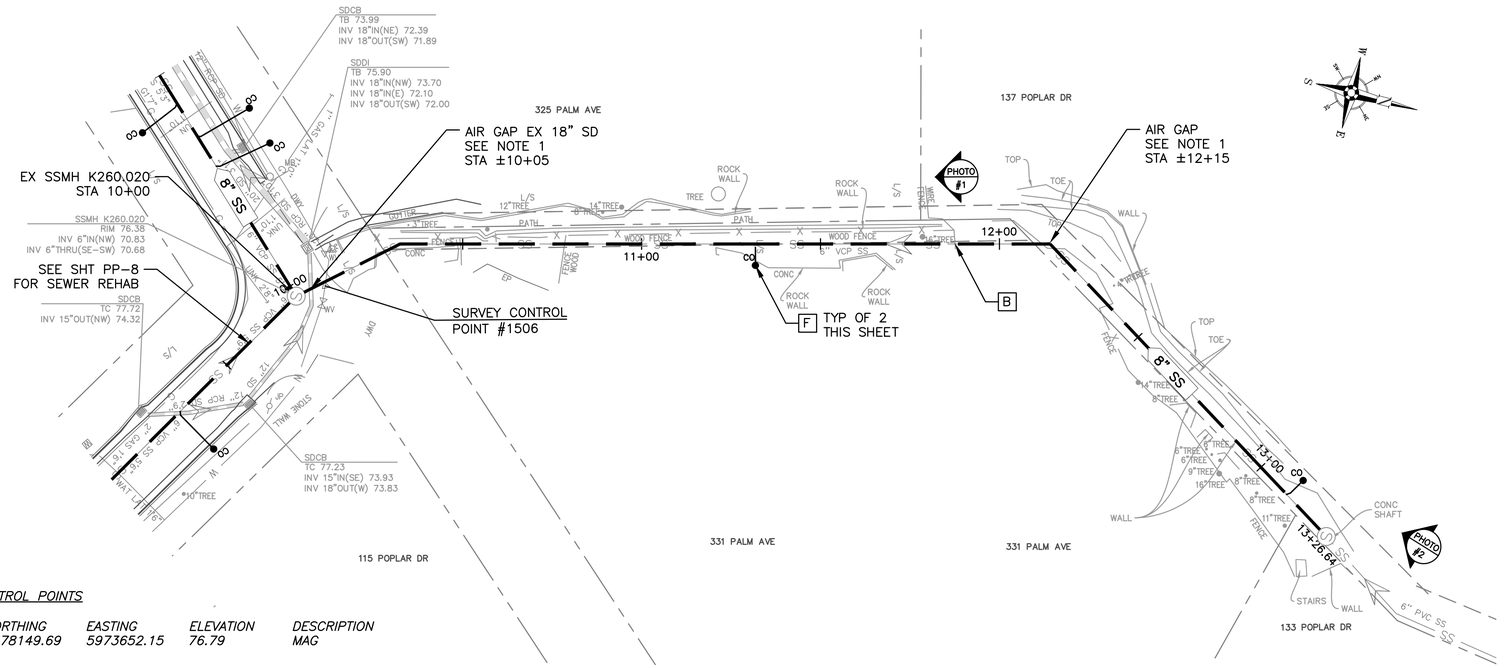
PALM AVE
STA 20+00 TO END

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP–09
SHT 12 OF 25



SURVEY CONTROL POINTS

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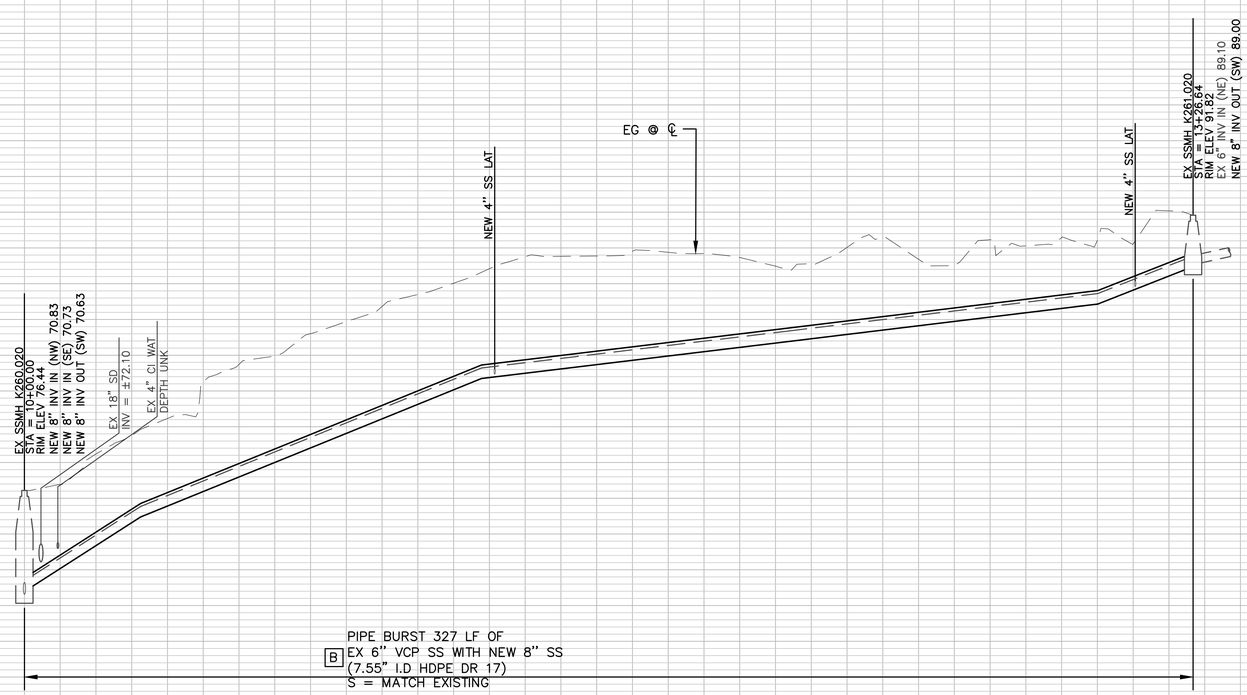

B PIPE BURST 327 LF OF EX 6" VCP SS WITH NEW 8" SS (7.55" I.D HDPE DR 17)
S = MATCH EXISTING

PHOTO 1 EX SEWER
NOT TO SCALE

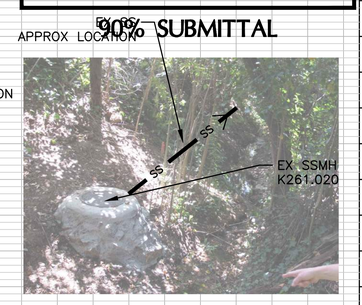

PHOTO 2 EX SEWER
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SOSS VALLEY SANITARY DISTRICT EST. 1939

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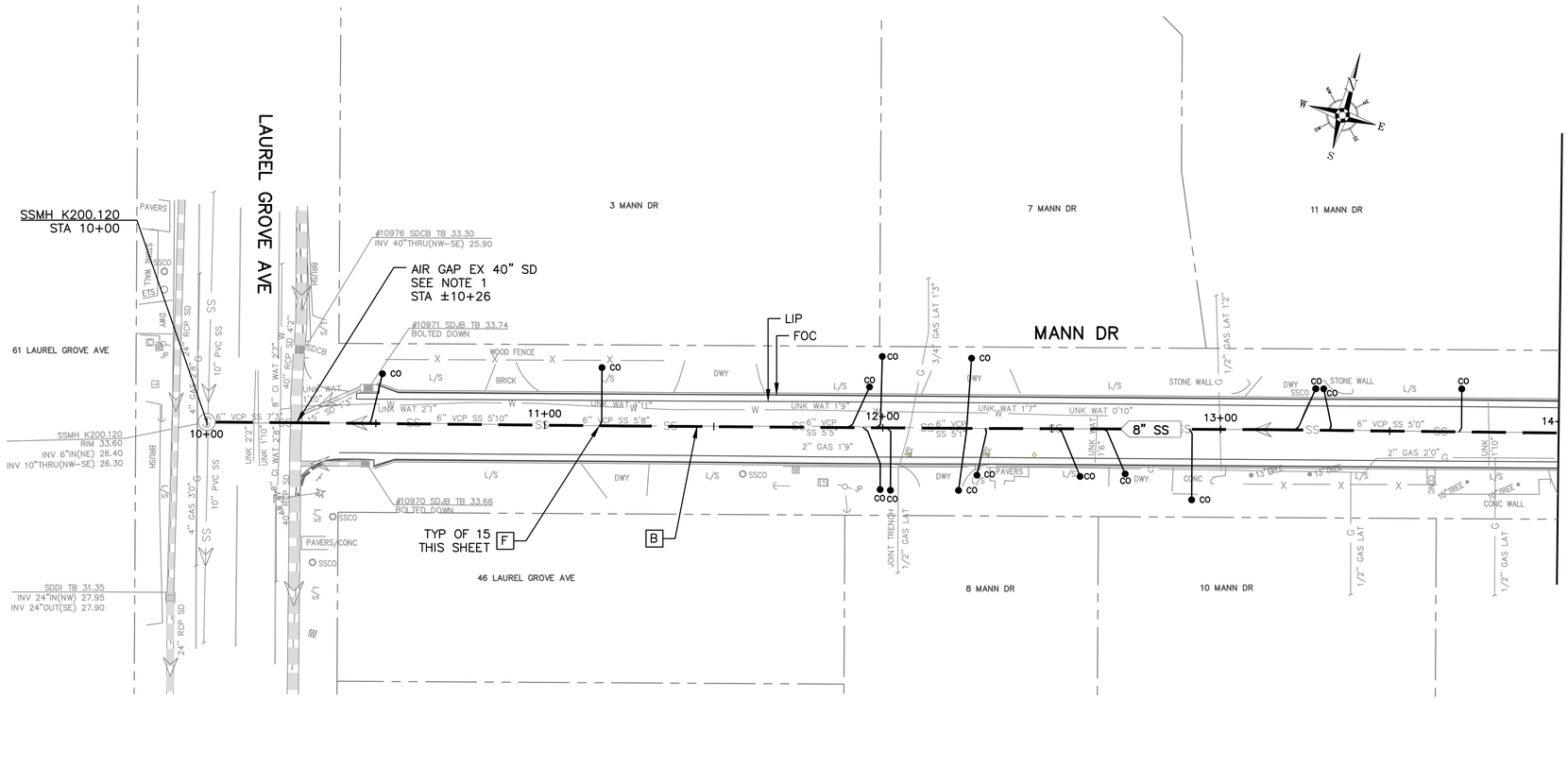
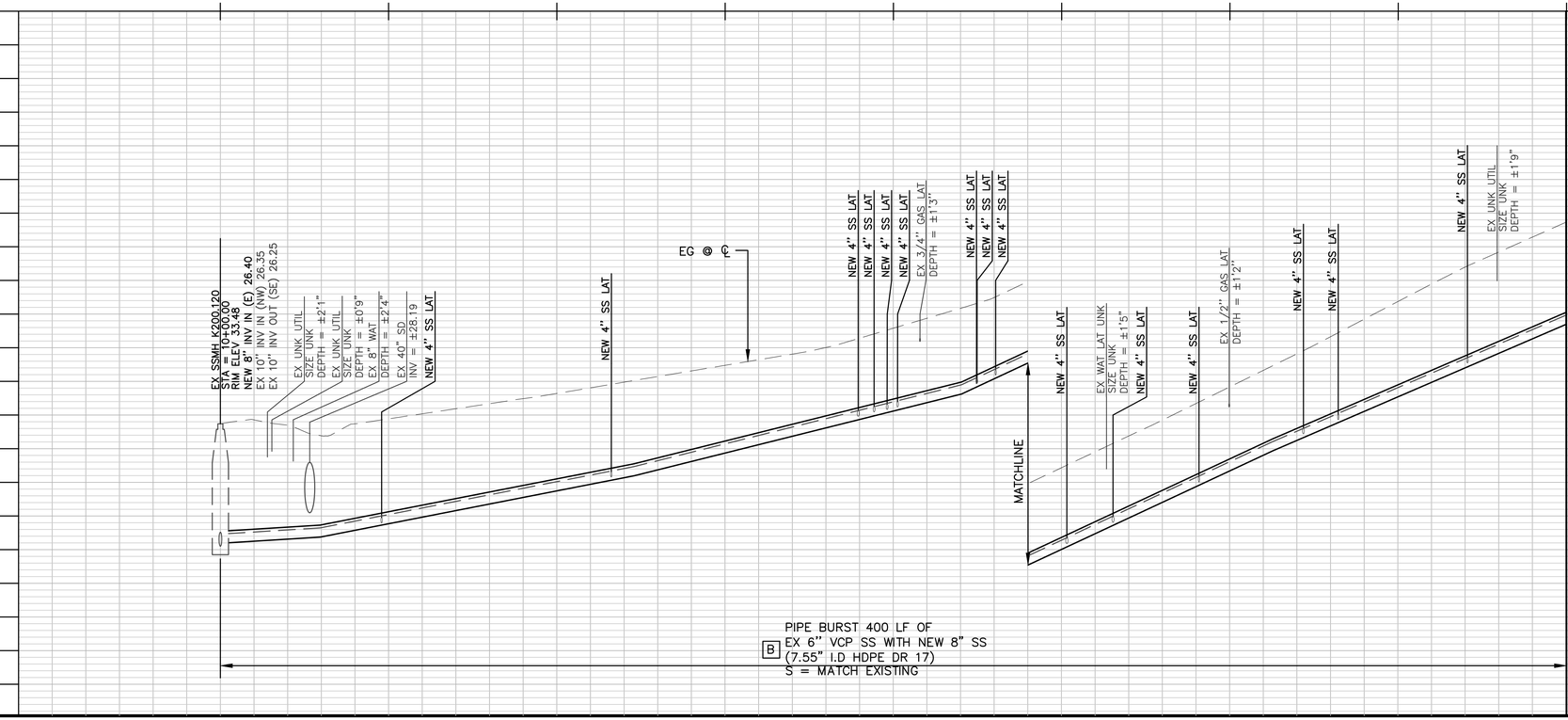
ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
137 POPLAR EASEMENT
STA 10+00 TO END

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP-10
SHT 13 OF 25





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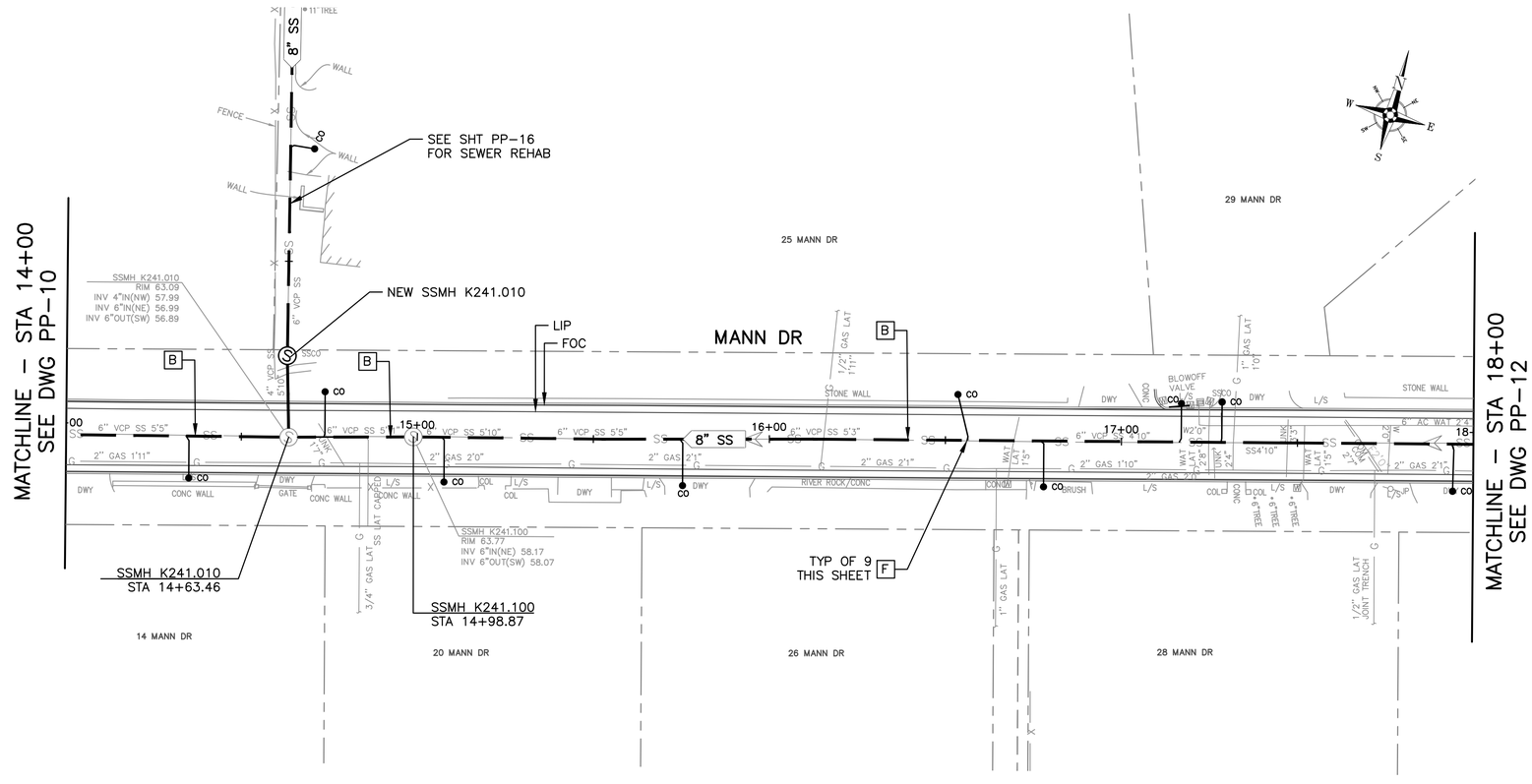

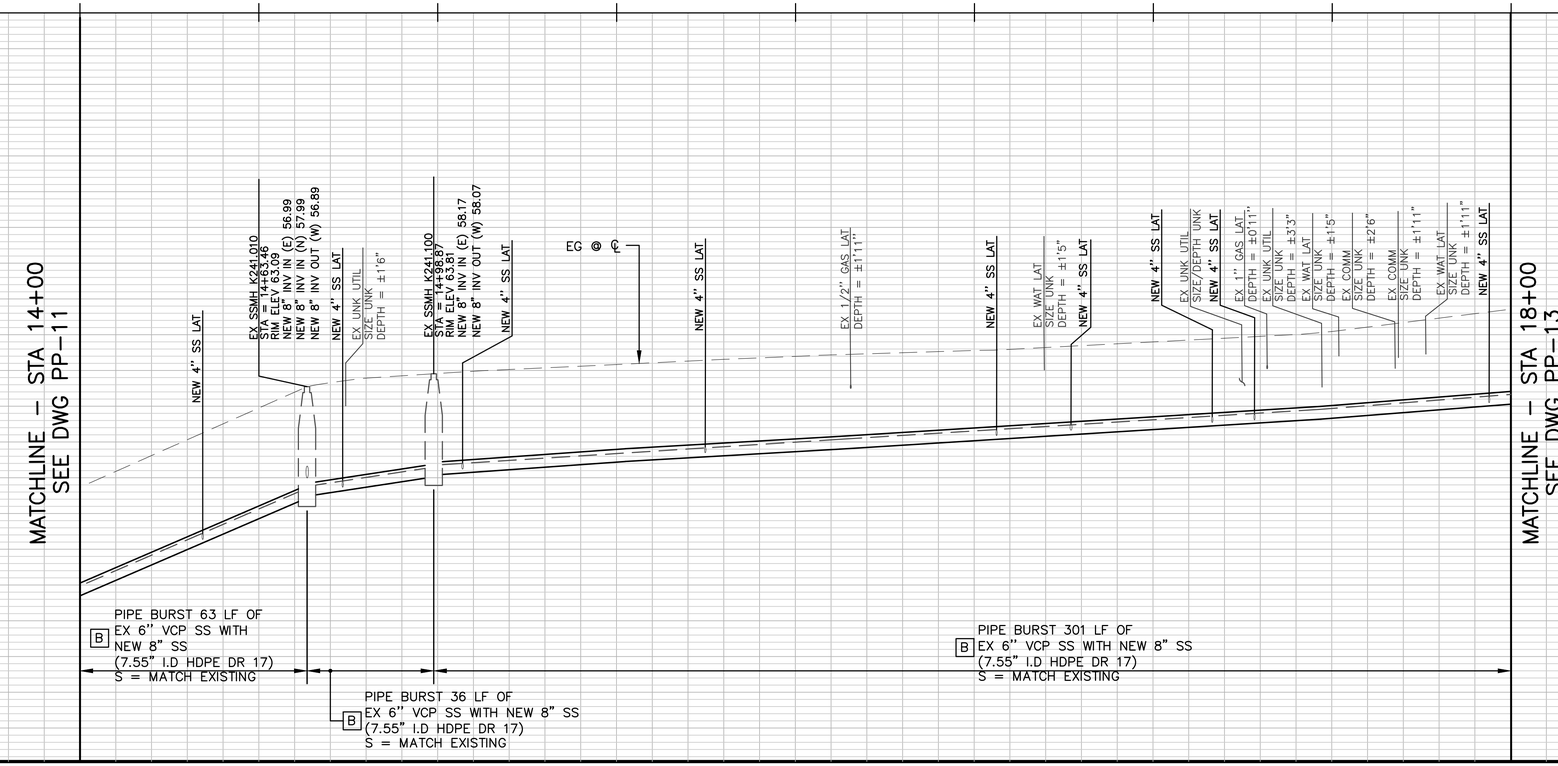

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NOTES:

1. FOR PIPE BURSTING SITES, PROVIDE AIR GAP PER RVSD STD DWG SD–21 FOR (1) LOCATIONS WHERE EXISTING UTILITY CROSSES NEW PIPE WITH LESS THAN TWO FEET CLEARANCE; (2) WHERE PIPE MATERIAL CHANGES AND REQUIRES REMOVAL PRIOR TO PIPE BURSTING, IF NEEDED; AND (3) AT LOCATIONS WITH BENDS IN PIPE. NOT ALL PIPE MATERIAL CHANGES ARE SHOWN ON THE PROFILE. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION
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NOT FOR CONSTRUCTION

90% SUBMITTAL

GRAPHIC SCALE:
20 0 20 40 60
H: 1" = 20'
V: 1" = 4'

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

DRAWN BY: JAC
DESIGNED BY: JAC
CHECKED BY:

SOSS VALLEY · SANITARY DISTRICT · EST. 1939

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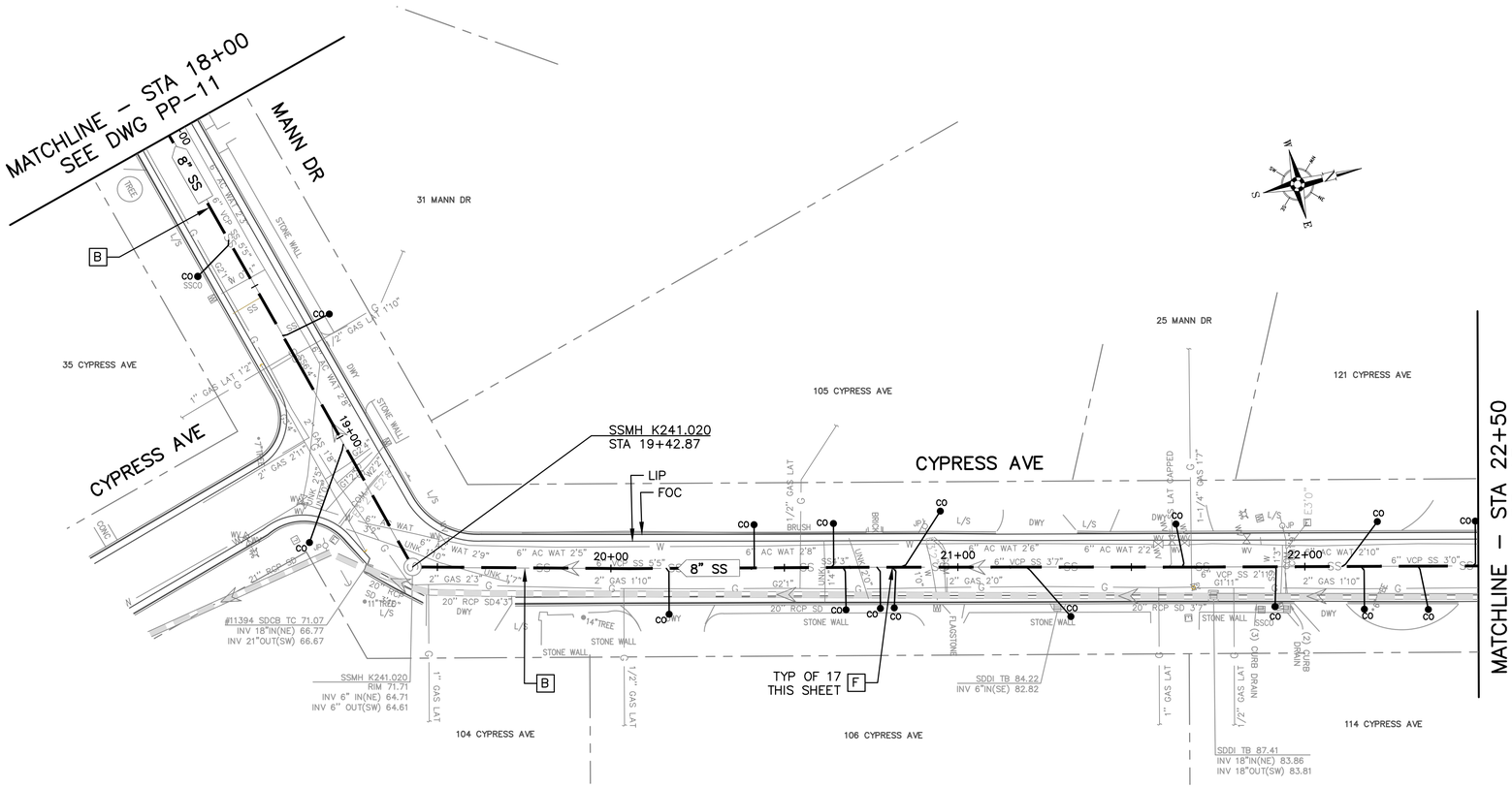
ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
MANN DR
STA 14+00 TO 18+00

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP–12
SHT 15 OF 25



LEGEND OF REHABILITATION METHODS

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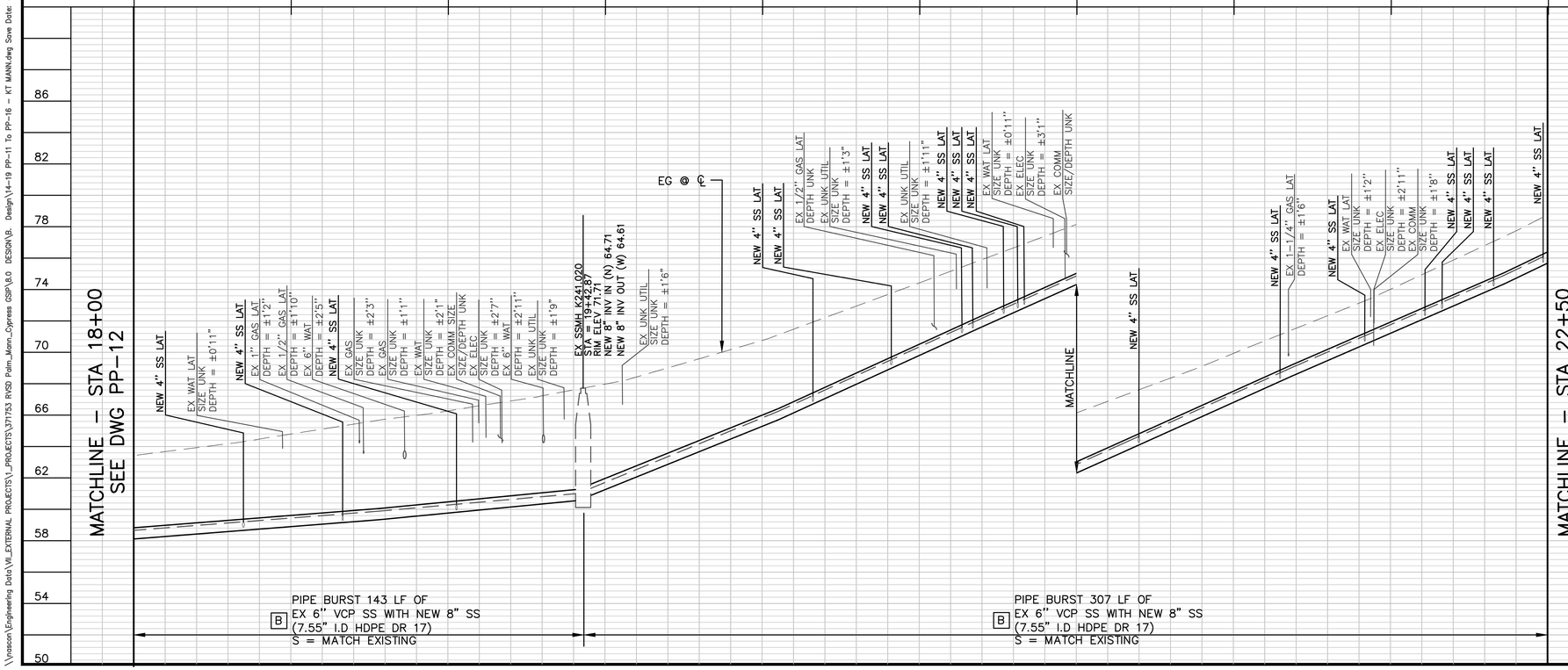

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PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
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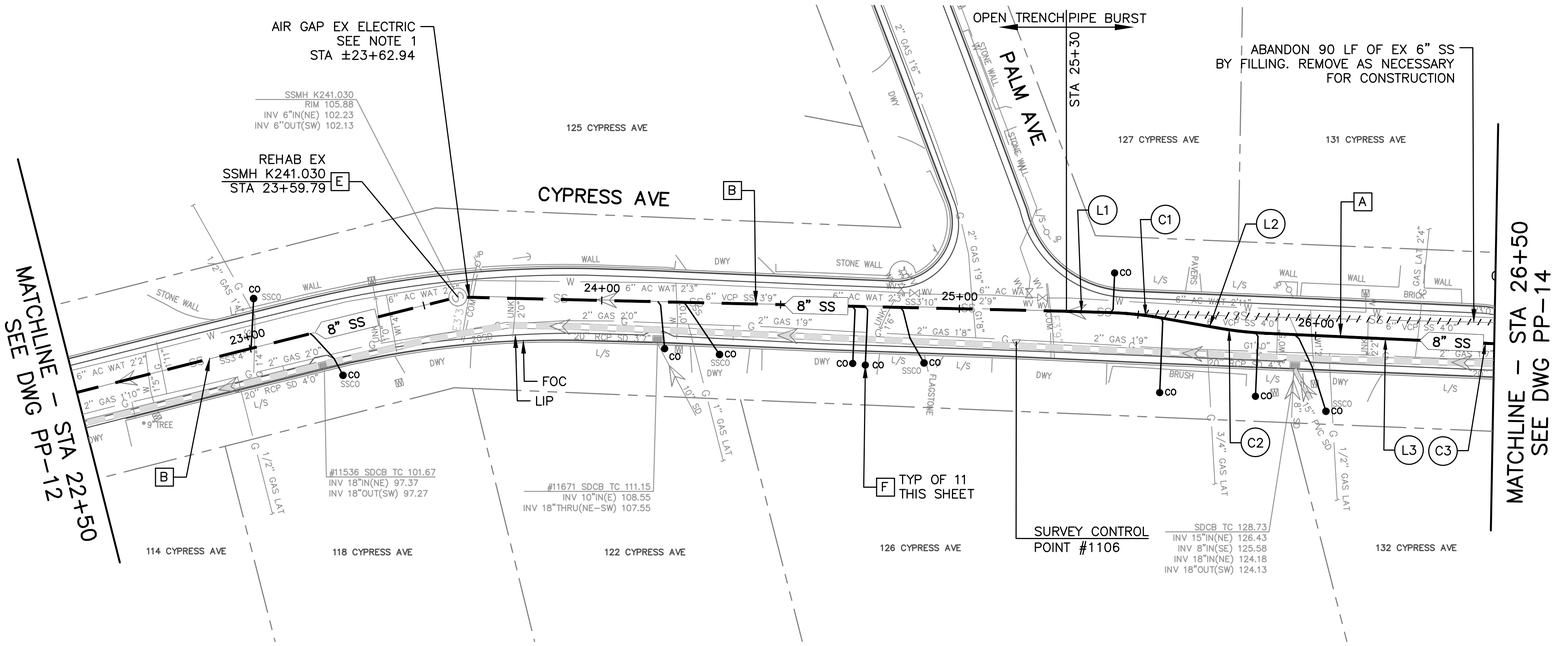
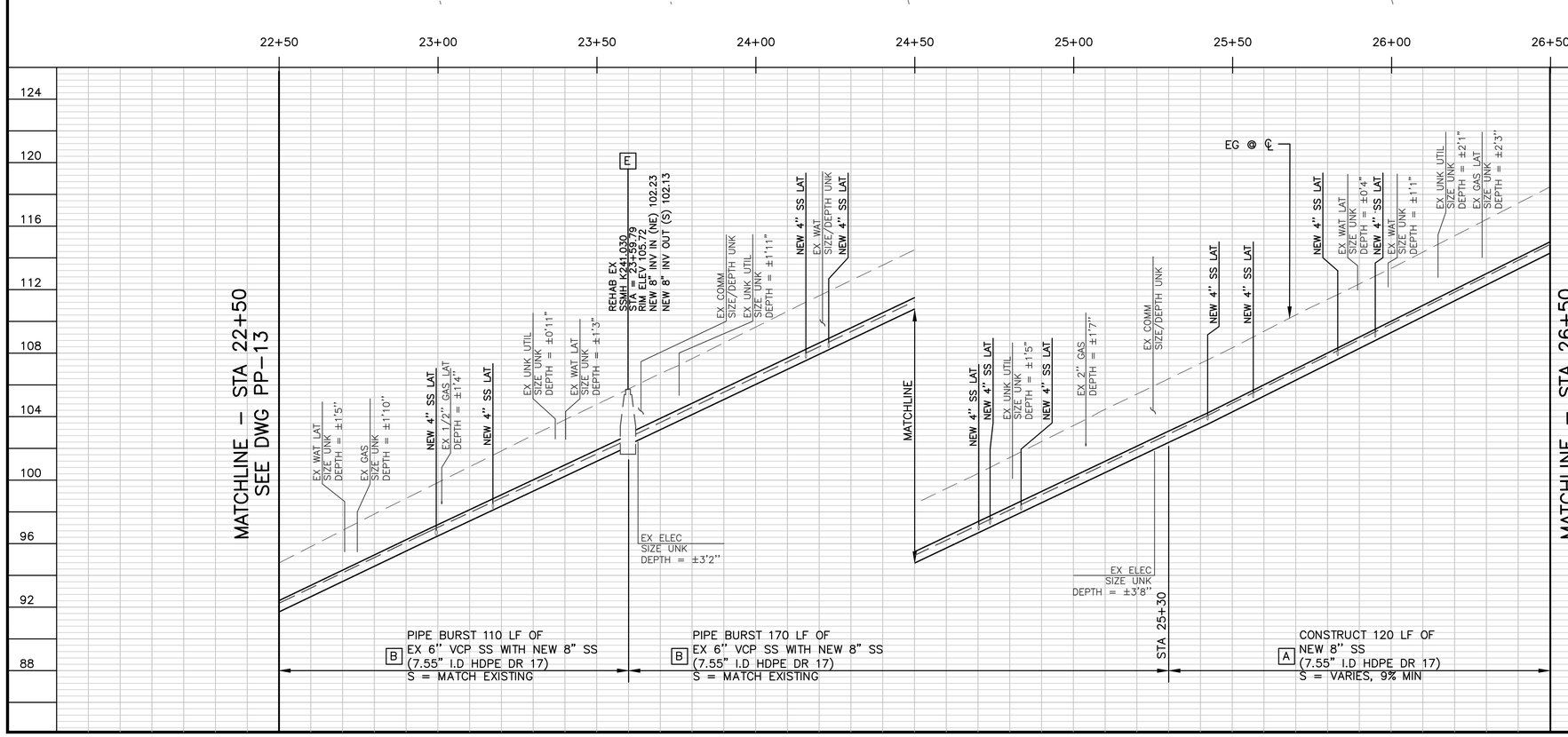
DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP–13
SHT 16 OF 25

NOTE TO CONTRACTOR
SEE SHT PP-15 FOR LINE/CURVE TABLE

SURVEY CONTROL POINTS

POINT #	*NORTHING*	*EASTING*	*ELEVATION*	*DESCRIPTION*
1106	*2177978.78*	*5974347.95*	*120.92*	*MAG*





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DANIEL C. WILKINS
No. C83909
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THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF THE ENGINEER AND SHALL NOT BE USED IN WHOLE OR IN PART EXCEPT BY WRITTEN AGREEMENT WITH THE ENGINEER. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND FIELD DIMENSIONS SHALL BE VERIFIED ON THE JOBSITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY WORK.

DRAWN BY: JAC
DESIGNED BY: JAC
CHECKED BY:

SOSS VALLEY · SANITARY DISTRICT · EST. 1939

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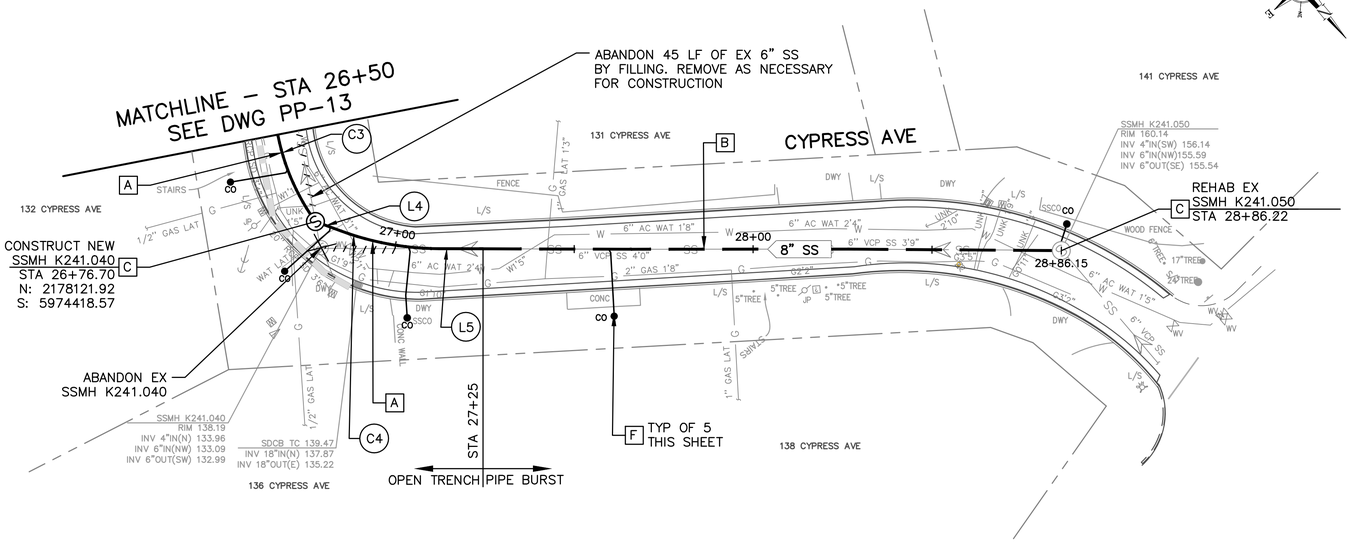
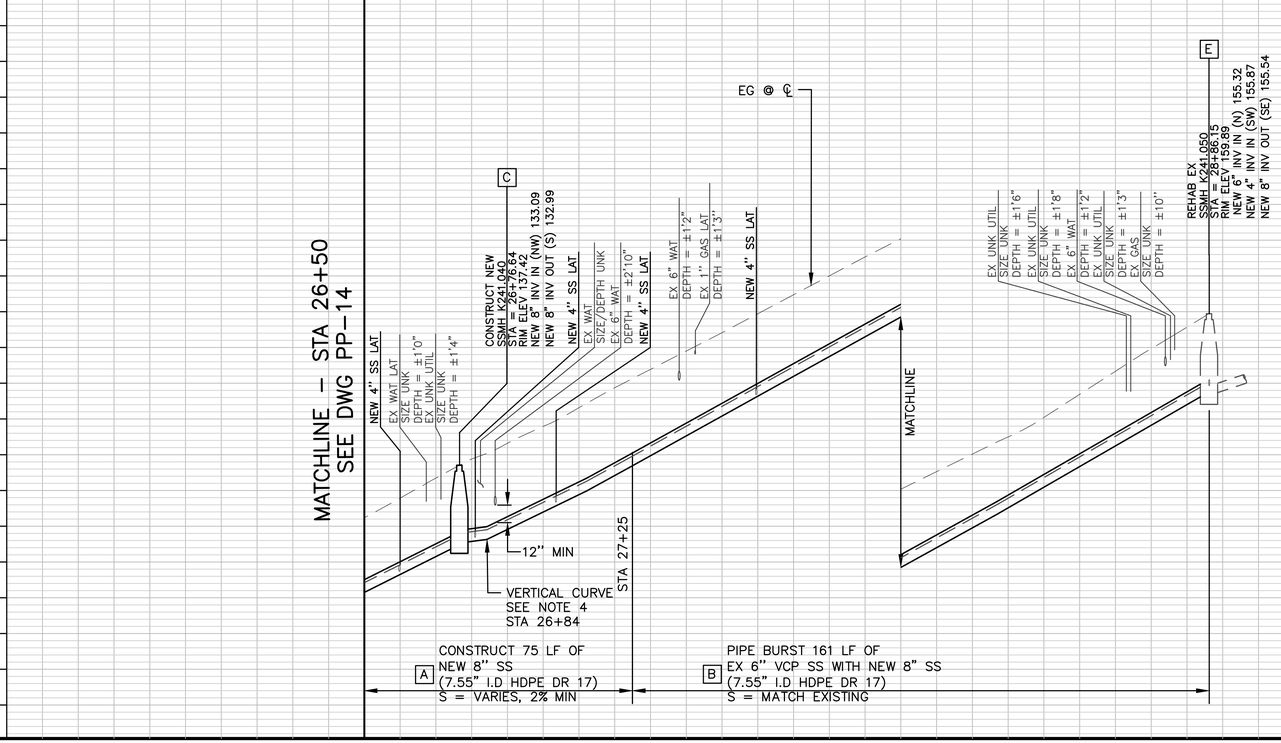
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
CYPRESS AVE
STA 22+50 TO 26+50

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP-14
SHT 17 OF 25

\\vsocon\Engineering Data\WL_EXTERNAL PROJECTS\1_PROJECTS\371753 RVSD Palm_Mann_Cypress GSP\8.0 DESIGN\8. Design\14-19 PP-11 To PP-16 - KT MANN.dwg Save Date: 4/29/2025 11:11 AM Plot Date: 4/29/2025 11:11 AM JosephC





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CYPRESS AVE NEW SEWER LINE AND CURVE TABLE

SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
L1	12.01'	N29°43'24"E				25+29.92	N = 2177995.19 E = 5974346.88	25+41.93	N = 2178005.62 E = 5974352.83
C1	14.58'		8°21'18"	100.00'	7.30'	25+41.93	N = 2178005.62 E = 5974352.83	25+56.51	N = 2178017.71 E = 5974360.96
L2	16.19'	N38°04'42"E				25+56.51	N = 2178017.71 E = 5974360.96	25+72.70	N = 2178030.46 E = 5974370.94
C2	12.99'		7°26'42"	100.00'	6.51'	25+72.70	N = 2178030.46 E = 5974370.94	25+85.69	N = 2178041.18 E = 5974378.27
L3	60.62'	N30°38'01"E				25+85.69	N = 2178041.18 E = 5974378.27	26+46.31	N = 2178093.34 E = 5974409.16
C3	30.32'		24°49'10"	70.00'	15.40'	26+46.31	N = 2178093.34 E = 5974409.16	26+76.64	N = 2178121.92 E = 5974418.57
L4	7.68'	N29°47'50"W				26+76.64	N = 2178121.92 E = 5974418.57	26+84.32	N = 2178128.58 E = 5974414.75
C4	27.97'		20°02'07"	80.00'	14.13'	26+84.32	N = 2178128.58 E = 5974414.75	27+12.29	N = 2178149.96 E = 5974396.93
L5	12.22'	N49°49'57"W				27+12.29	N = 2178149.96 E = 5974396.93	27+24.51	N = 2178157.84 E = 5974387.60

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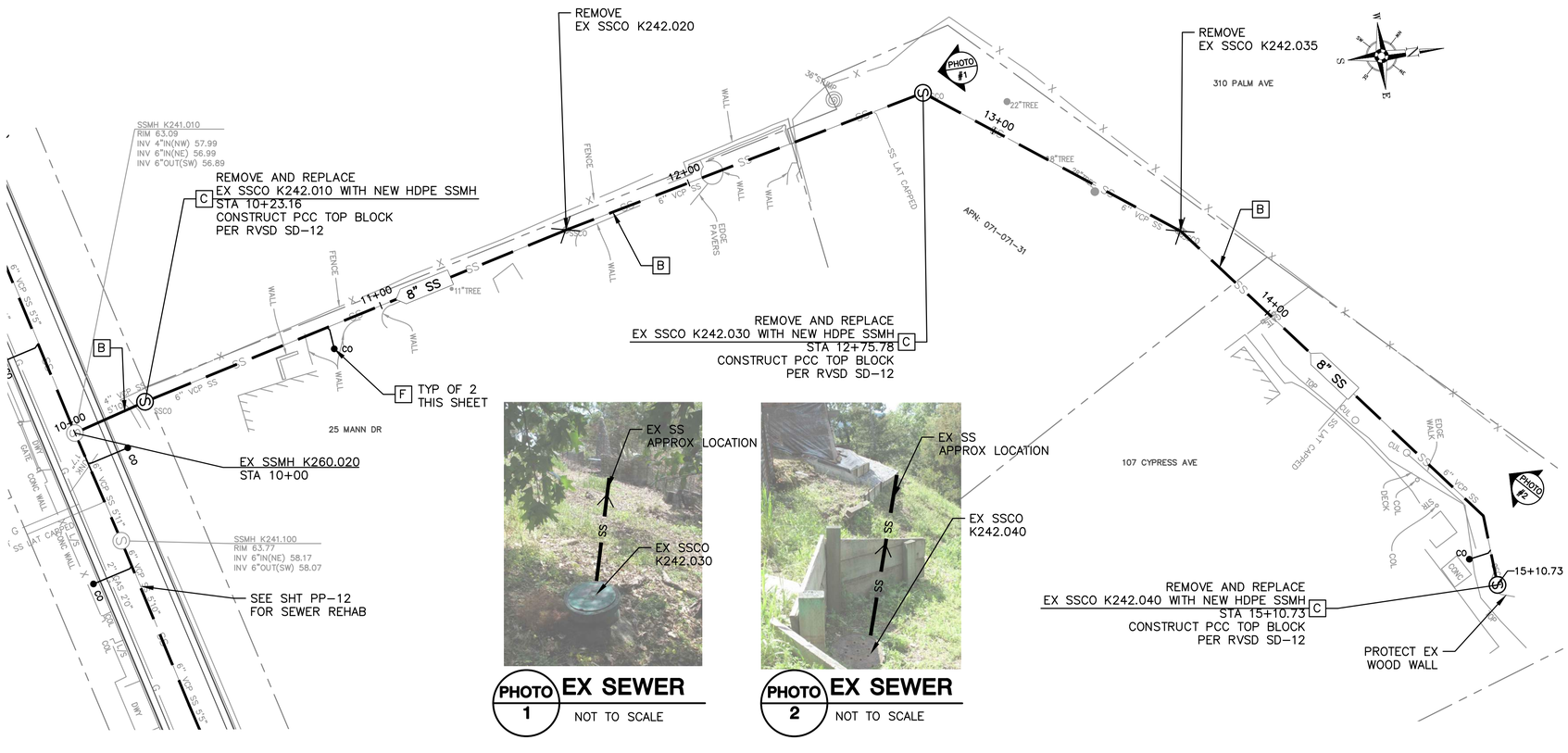
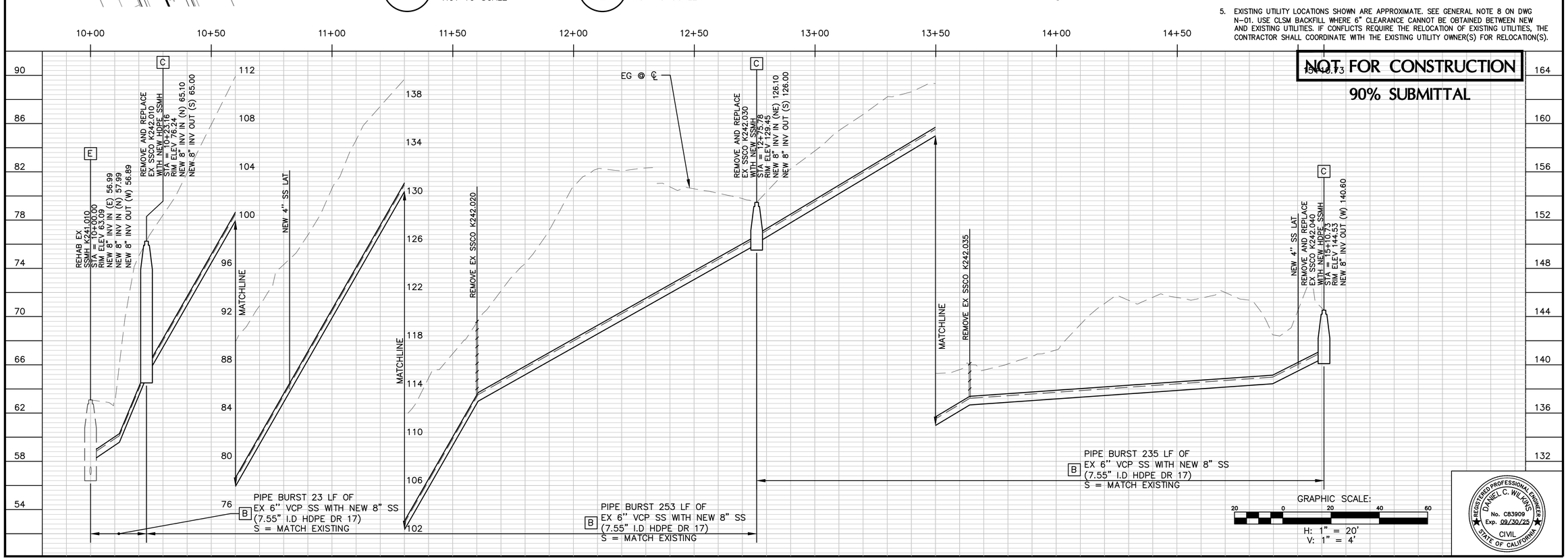
SHT 18 OF 25





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NOT FOR CONSTRUCTION

90% SUBMITTAL

GRAPHIC SCALE:
20 0 20 40 60
H: 1" = 20'
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REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

DRAWN BY: JAC
DESIGNED BY: JAC
CHECKED BY:

ROSS VALLEY SANITARY DISTRICT

WEST VALLEY CONSTRUCTION
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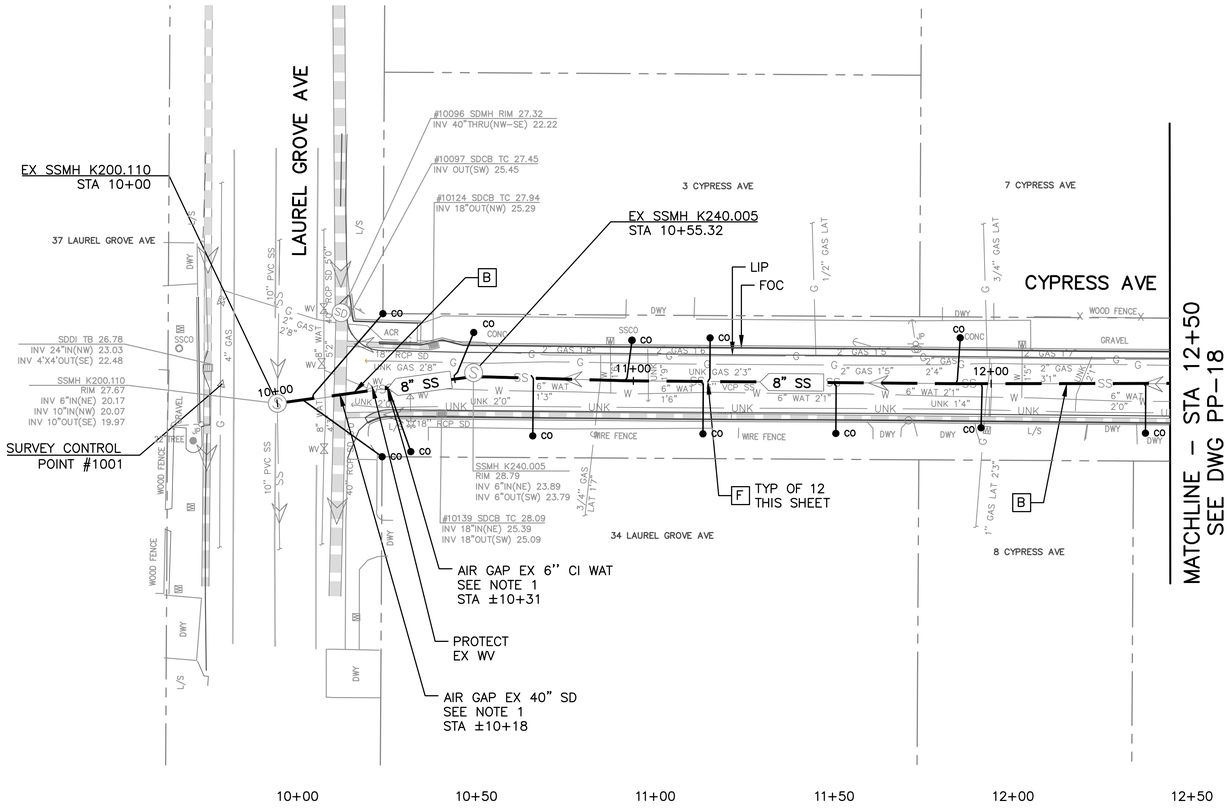
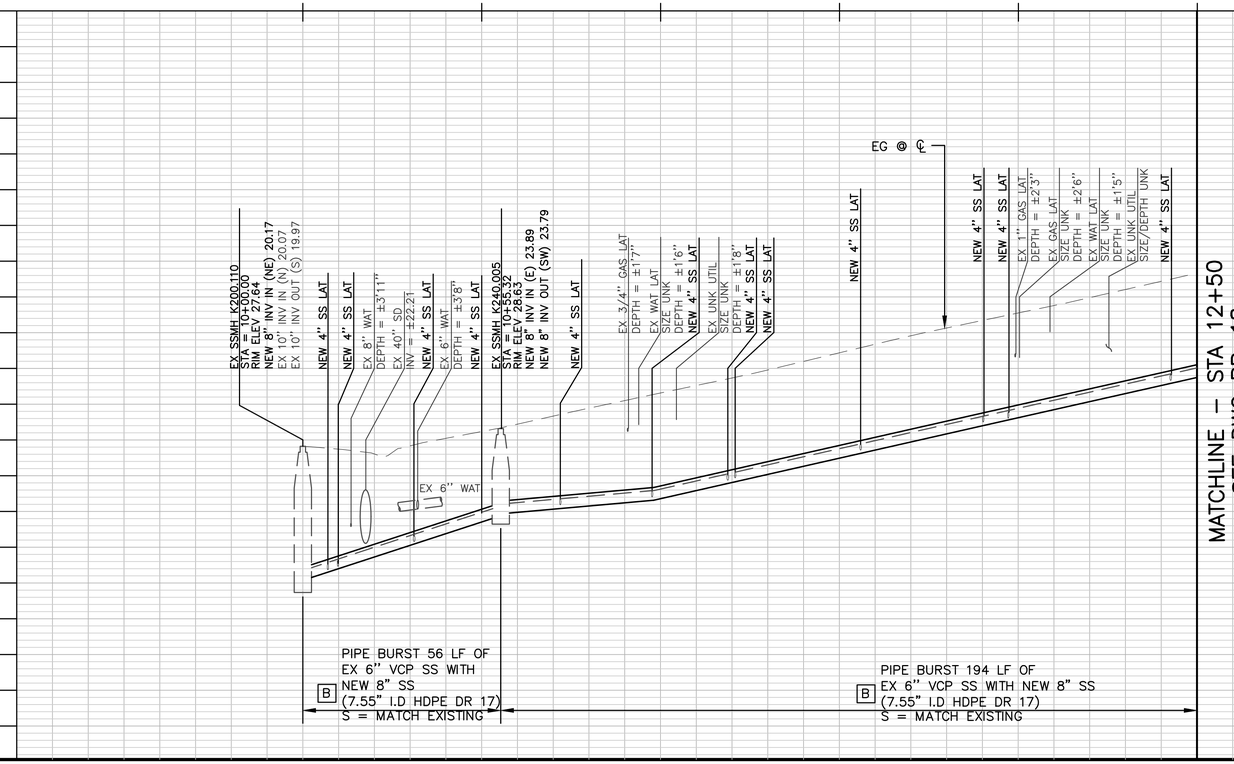
ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
25 MANN DR EASEMENT
STA 10+00 TO END

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP-16
SHT 19 OF 25





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SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1001	2176933.70	5973320.23	26.97	MAG IN AC

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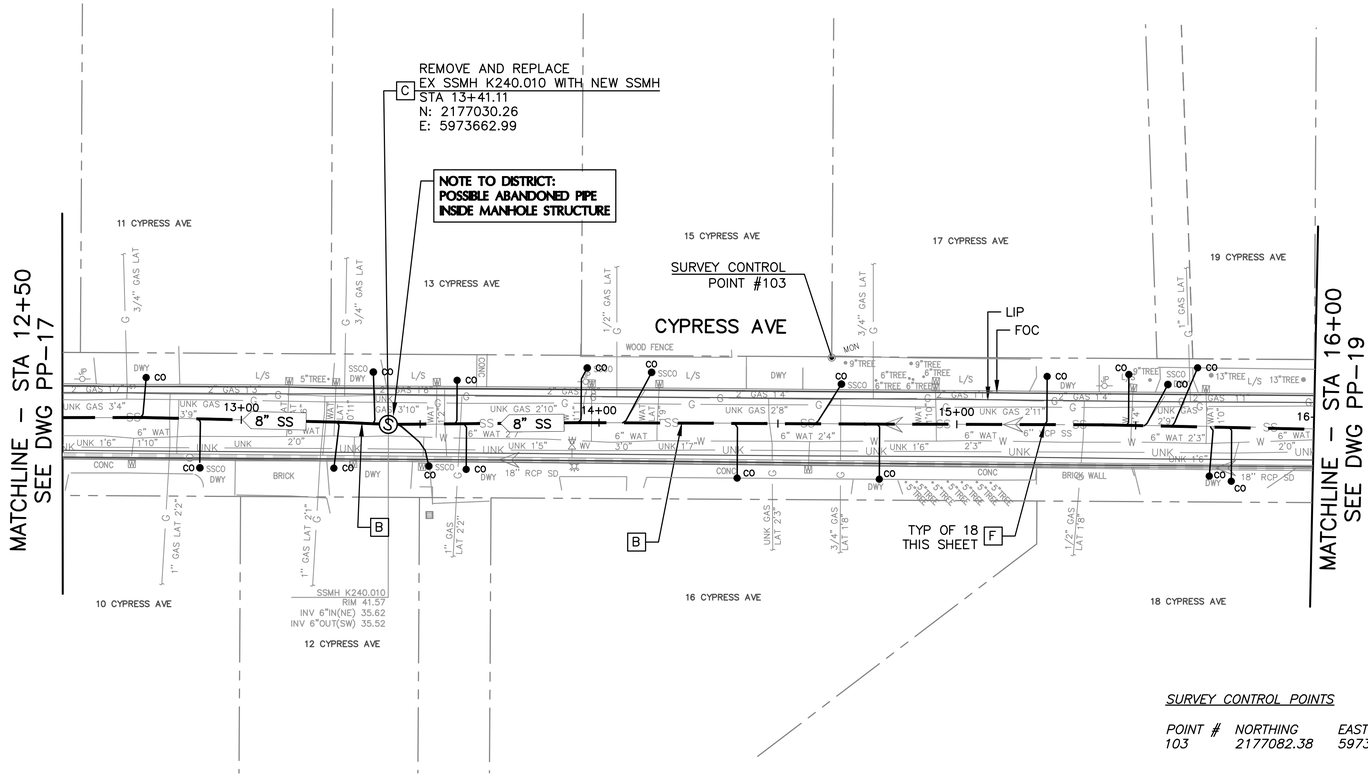
ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
CYPRESS AVE
STA 10+00 TO 12+50

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP-17
SHT 20 OF 25



SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
103	2177082.38	5973776.98	47.30	MON

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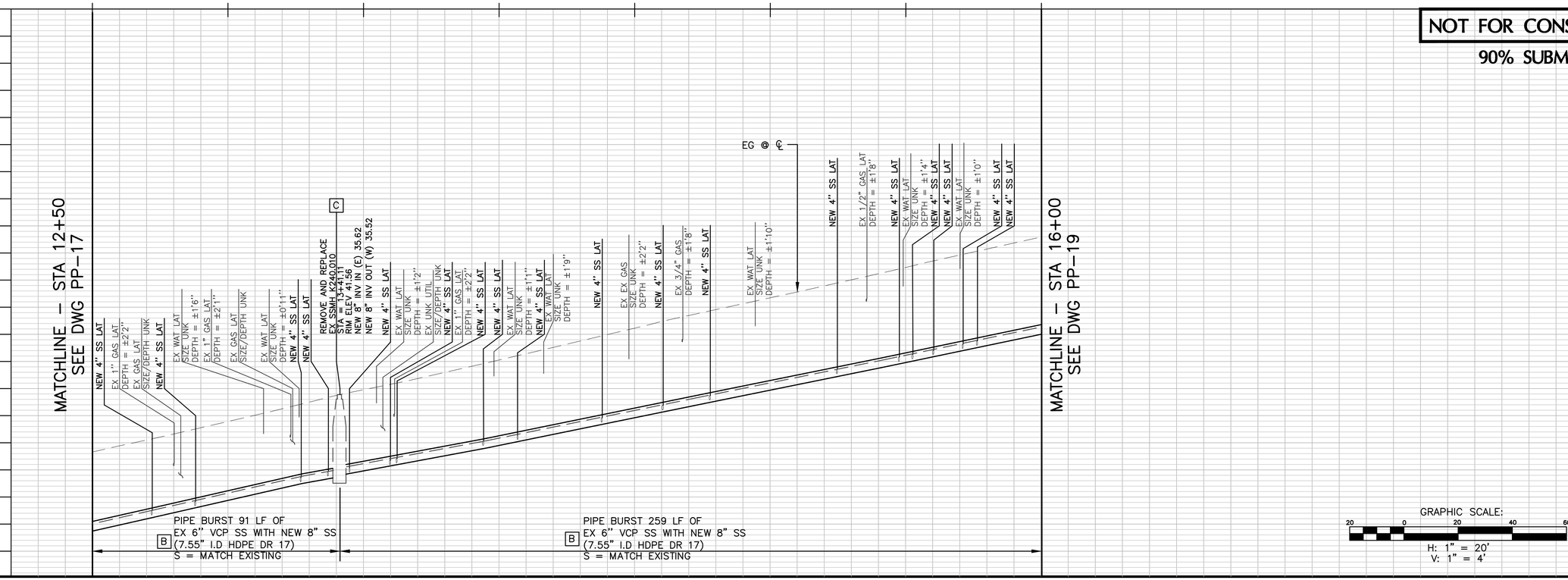

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90% SUBMITTAL

GRAPHIC SCALE:
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H: 1" = 20'
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REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

DRAWN BY: JAC
DESIGNED BY: JAC
CHECKED BY:

ROSS VALLEY SANITARY DISTRICT

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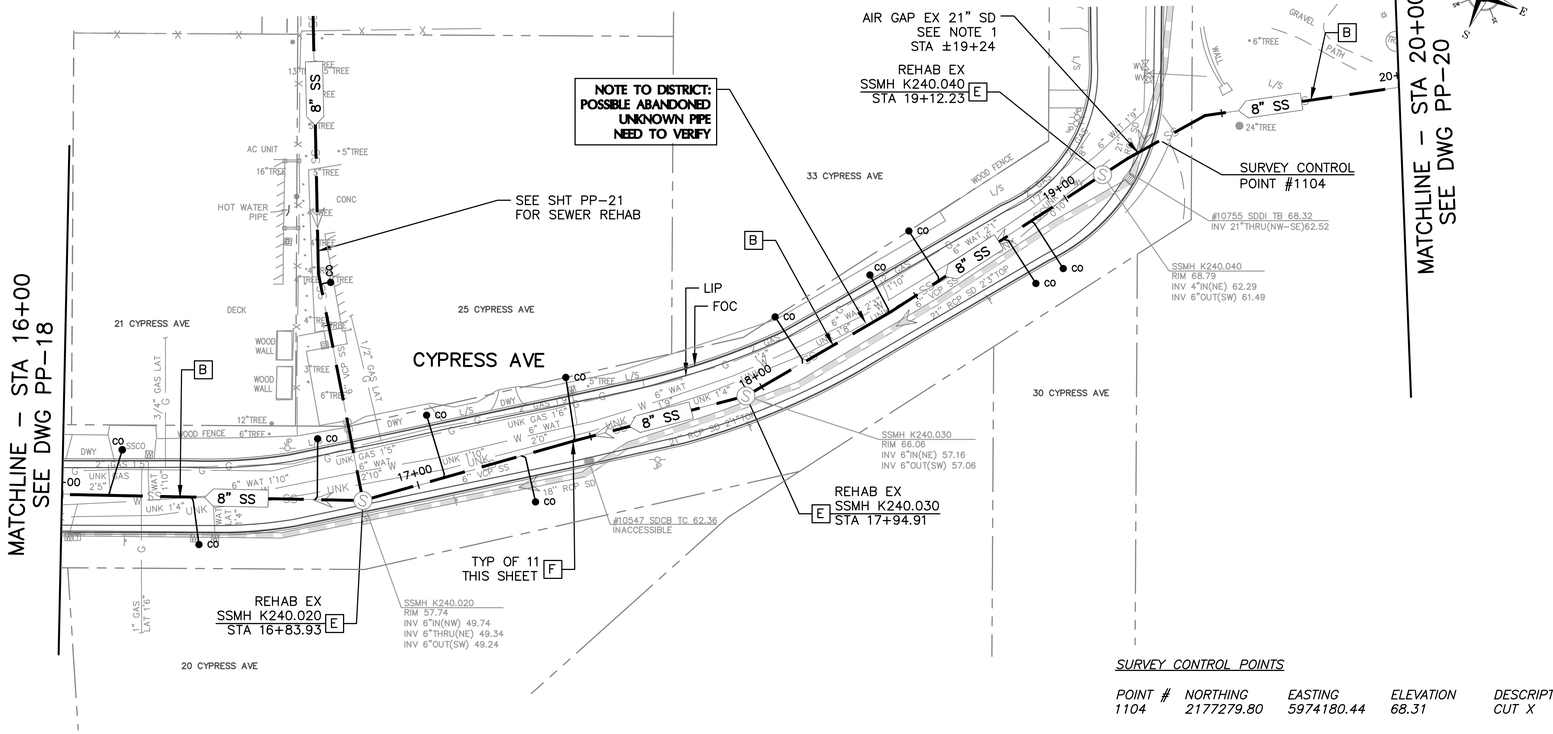
ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
CYPRESS AVE
STA 12+50 TO 16+00

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG NO PP–18
SHT 21 OF 25



SURVEY CONTROL POINTS

POINT #	*NORTHING*	*EASTING*	*ELEVATION*	*DESCRIPTION*
1104	2177279.80	5974180.44	68.31	CUT X

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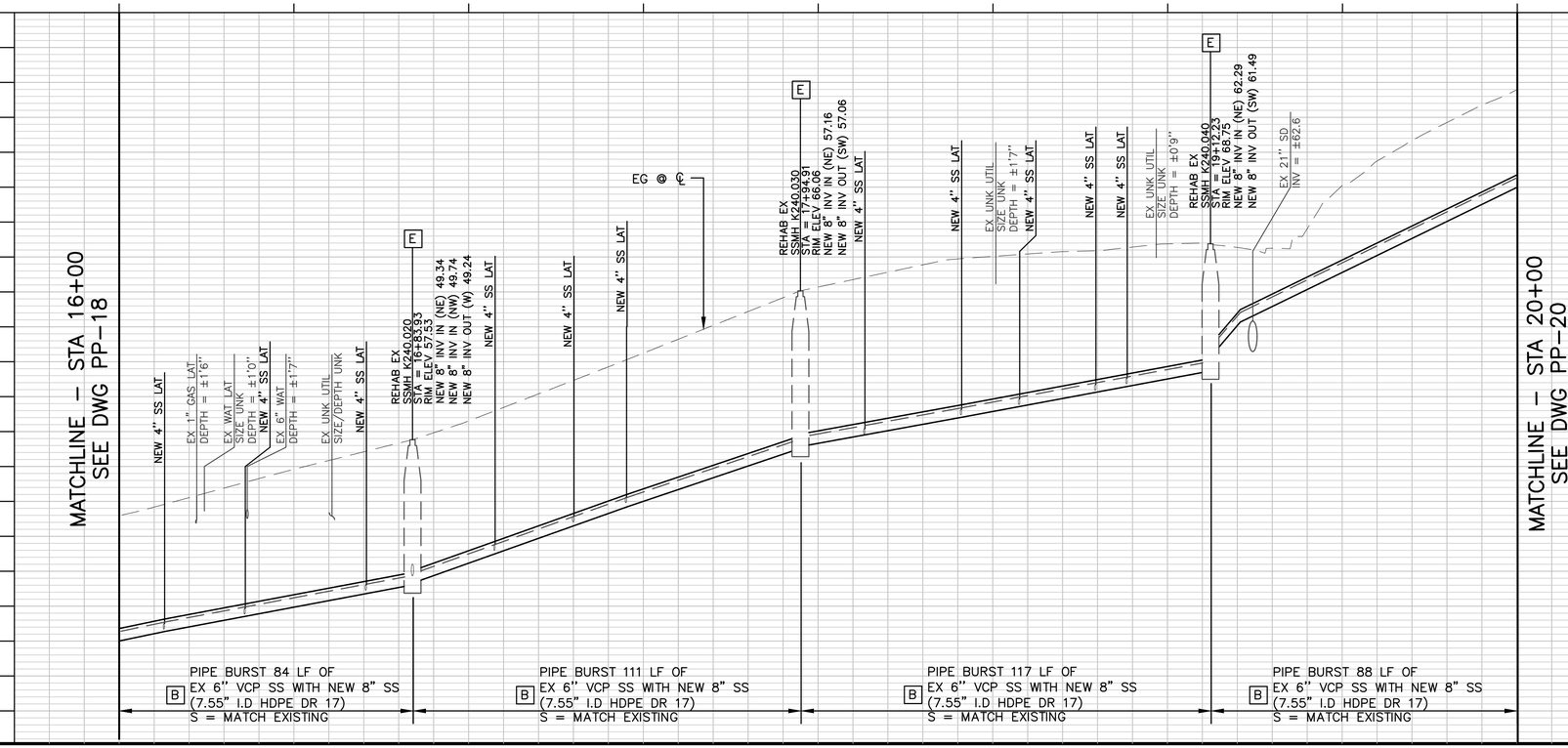

PIPE BURST 84 LF OF
B EX 6" VCP SS WITH NEW 8" SS
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S = MATCH EXISTING

PIPE BURST 111 LF OF
B EX 6" VCP SS WITH NEW 8" SS
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S = MATCH EXISTING

PIPE BURST 117 LF OF
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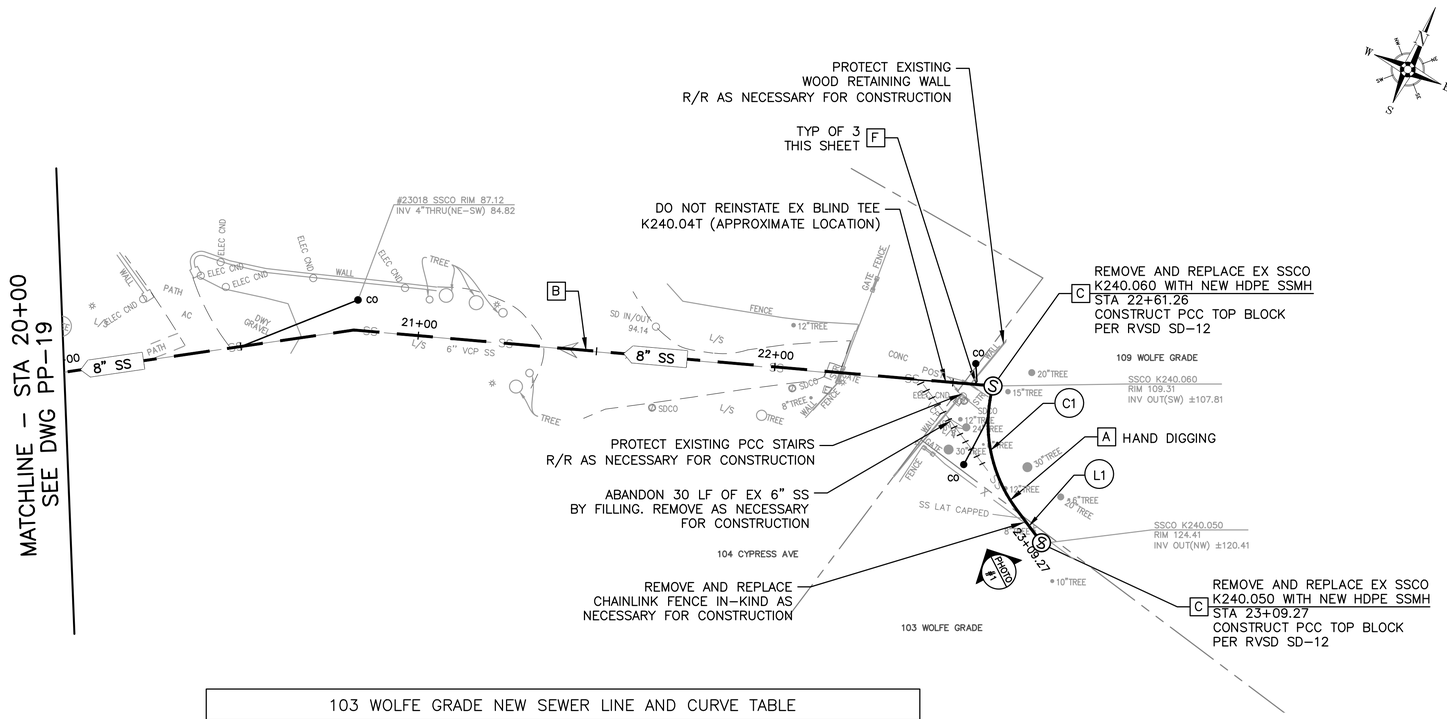

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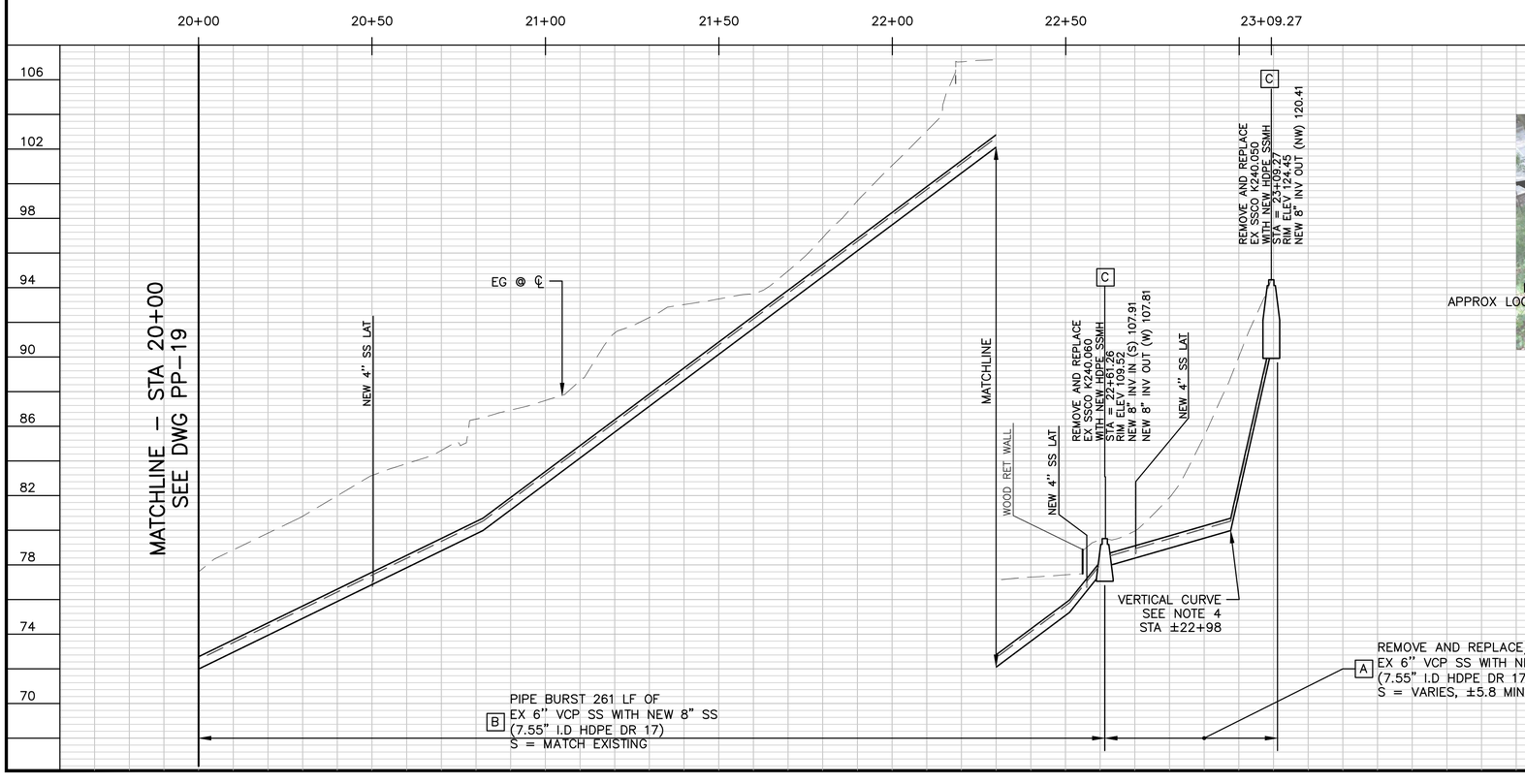
1. FOR PIPE BURSTING SITES, PROVIDE AIR GAP PER RVSD STD DWG SD–21 FOR (1) LOCATIONS WHERE EXISTING UTILITY CROSSES NEW PIPE WITH LESS THAN TWO FEET CLEARANCE; (2) WHERE PIPE MATERIAL CHANGES AND REQUIRES REMOVAL PRIOR TO PIPE BURSTING, IF NEEDED; AND (3) AT LOCATIONS WITH BENDS IN PIPE. NOT ALL PIPE MATERIAL CHANGES ARE SHOWN ON THE PROFILE. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION
2. WHERE PIPING IS REMOVED AND REPLACED BY OPEN TRENCH, NEW PIPE INVERT ELEVATIONS SHALL MATCH EX PIPE INVERT ELEVATIONS (UPSIZED 8" SS INVERTS SHALL MATCH EXISTING 6" SS INVERTS), UNLESS OTHERWISE NOTED.
3. FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS. SEE GENERAL NOTE 23 AND 24 ON N–01 FOR HDPE SLEEVE REQUIREMENTS.
4. BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
5. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. SEE GENERAL NOTE 8 ON DWG N–01. USE CLSM BACKFILL WHERE 6" CLEARANCE CANNOT BE OBTAINED BETWEEN NEW AND EXISTING UTILITIES. IF CONFLICTS REQUIRE THE RELOCATION OF EXISTING UTILITIES, THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING UTILITY OWNER(S) FOR RELOCATION(S).

103 WOLFE GRADE NEW SEWER LINE AND CURVE TABLE

SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
C1	36.30'		51°59'30"	40.00'	19.51'	22+61.26	N = 2177380.52 E = 5974490.47	22+97.55	N = 2177349.20 E = 5974506.25
L1	11.72'	S52°44'28"E				22+97.55	N = 2177349.20 E = 5974506.25	23+09.27	N = 2177342.11 E = 5974515.58



NOT FOR CONSTRUCTION

90% SUBMITTAL

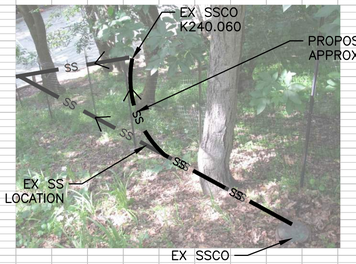


PHOTO 1 **EX SEWER**

NOT TO SCALE

GRAPHIC SCALE:

20 0 20 40 60

H: 1" = 20'
V: 1" = 4'

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

DRAWN BY: JAC

DESIGNED BY: JAC

CHECKED BY:

ROSS VALLEY SANITARY DISTRICT

WEST VALLEY CONSTRUCTION
Design - Build Services
1001 GALAXY WAY, SUITE 400
CONCORD, CA. 94520
925–414–3001
www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
CYPRESS AVE
STA 20+00 TO END

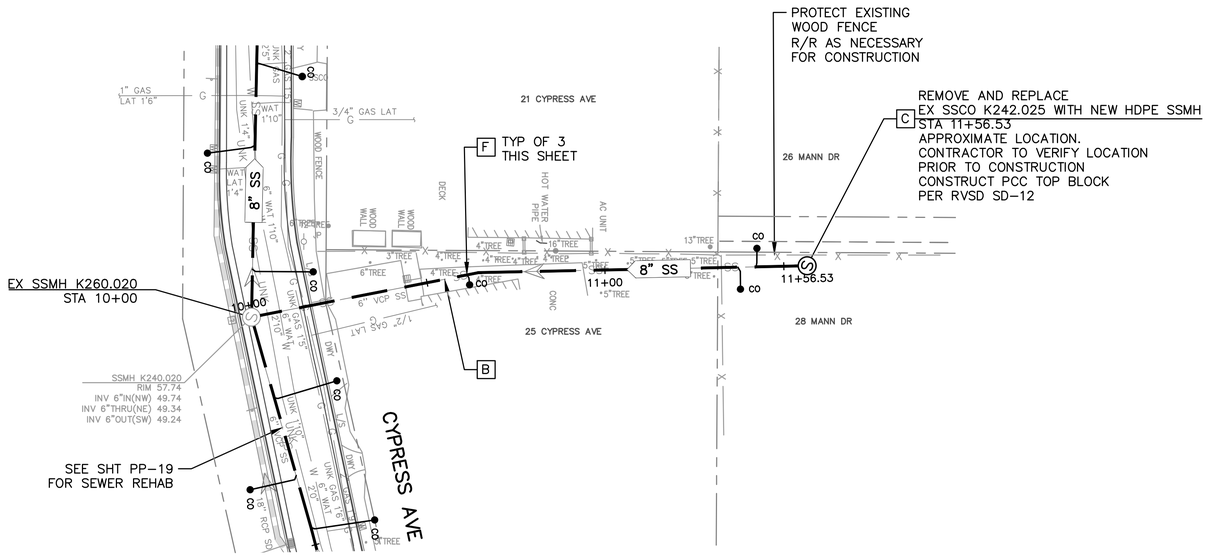
DATE: APRIL 29, 2025

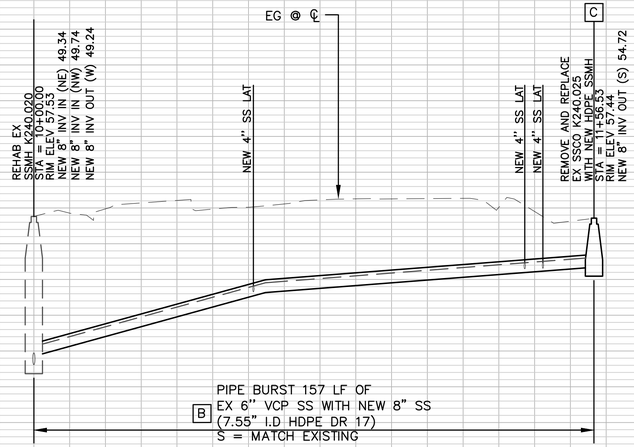
PROJECT ID: 371753

SCALE: 1" = 20'

DWG. NO PP–20

SHT 23 OF 25





LEGEND OF REHABILITATION METHODS

A REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.

B REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09.

REPAIR SURFACE UPHEAVAL PER DETAIL RVSD STD DWG SD-22 AND SAG REPAIR PER RVSD STD DWG SD-20 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT.

C REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01. DISTRICT TO PROVIDE FRAMES AND COVERS FOR ALL MANHOLES. MANHOLES LOCATED IN EASEMENTS SHALL HAVE COMPOSITE MANHOLE COVERS.

D REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.

E REHABILITATE EX SSMH PER RVSD STD DWG SD-13.

F CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING LIVE SANITARY SEWER LATERALS ALONG SEWER MAINS BY DYE TESTING AND SONDE AND REINSTATE LIVE LATERALS TO NEW SEWER MAIN.

PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.

CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY B09 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CAST IRON LIDS SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT.

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NOT FOR CONSTRUCTION

90% SUBMITTAL

GRAPHIC SCALE:
20 0 20 40 60
H: 1" = 20'
V: 1" = 4'

REGISTERED PROFESSIONAL ENGINEER
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No. C83909
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NO.	DATE	BY	DESCRIPTION

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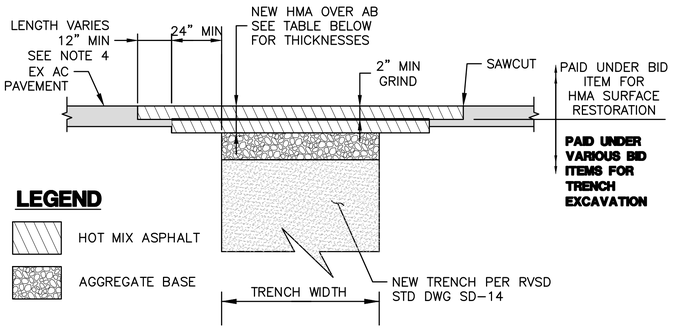
ROSS VALLEY SANITATION DISTRICT
PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT
28 MANN DR EASEMENT
STA 10+00 TO END

DATE: APRIL 29, 2025
PROJECT ID: 371753
SCALE: 1" = 20'
DWG. NO PP-21
SHT 24 OF 25



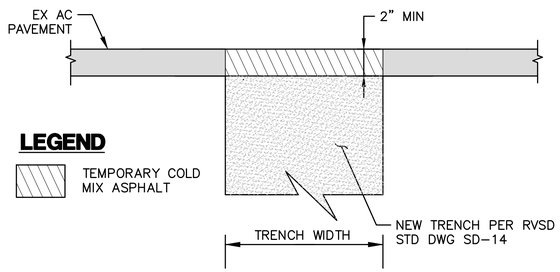
FINAL PAVING		
ROAD TYPE (SEE NOTE 2)	PAVING REQUIREMENTS	ALTERNATE FULL DEPTH AC
LOCAL	MIN HMA: 4" MIN AB: 7"	7"
COLLECTOR	MIN HMA: 5" MIN AB: 11"	11"
ARTERIAL	MIN HMA: 6" (SEE NOTE 3) MIN AB: 14"	14"

NOTES

1. BORING LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. SEE APPENDICES IN THE SPECIFICATIONS FOR BORING LOGS SHOWING EXISTING PAVEMENT SECTIONS AND SOIL CONDITIONS. EXISTING PAVEMENT SECTIONS/SOIL CONDITIONS PROVIDED ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO NOTE PAVEMENT AND SOIL CONDITIONS VARY DEPENDING ON WHERE BORING WAS TAKEN. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR VARYING CONDITIONS.
2. ROAD CLASSIFICATIONS ARE AS DETERMINED BY LOCAL JURISDICTION.
3. SIR FRANCIS DRAKE BOULEVARD IN SAN ANSELMO SHALL REQUIRE A MINIMUM OF 10" HMA.
4. **SEE APPENDIX C FOR MARIN COUNTY STANDARDS 330, 350, 370 AND 380 (DATED JULY 2018) DETAILING ADDITIONAL PAVING REQUIREMENTS. NOTE THAT EACH JURISDICTION MAY HAVE THEIR OWN ADDITIONAL PAVING REQUIREMENTS ASIDE FROM THOSE SHOWN IN APPENDIX F.**

1 / - **FINAL PAVING REQUIREMENTS**

NOT TO SCALE



2 / - **TEMPORARY PAVING REQUIREMENTS**

NOT TO SCALE

NOT FOR CONSTRUCTION

90% SUBMITTAL

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. WILKINS
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Exp. 09/30/25
CIVIL
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DESIGNED BY: JAC

CHECKED BY: DATE:

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WEST VALLEY CONSTRUCTION

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CONCORD, CA 94520
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www.Westvalleyconstruction.com

PALM/MANN/CYPRESS GRAVITY SEWER IMPROVEMENTS PROJECT

CONSTRUCTION DETAILS

DATE: APRIL 29, 2025

PROJECT ID: 371753

SCALE: N.T.S.

DWG. NO D-01

SHT 25 OF 25

Attachment D

Overview of Control Measures

ATTACHMENT D
OVERVIEW OF CONTROL MEASURES

Numerous control measures would be incorporated into the Project's Contract Documents by the Ross Valley Sanitary District (RVSD) to address environmental and public health and safety issues. Control measures are procedures known to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and construction/operating experiences of RVSD and the design engineer.

Site Management Practices

1. Remove rubbish and debris from job site daily with proper disposal in compliance with all federal, state, and local regulations. Removal and transport of rubbish and debris shall be in a manner that prevents spillage on pavements, streets, or adjacent areas. Clean up any spillage.
2. Store materials that cannot be removed daily in the Contractor's approved laydown and storage areas, following all requirements established by the property owner and associated permitting jurisdiction.
3. Stockpile materials, including portable equipment, vehicles, and supplies (e.g., chemicals), only in the designated construction staging areas, exclusive of any riparian and wetland areas; ensure refueling of any vehicles or equipment is done at least 100 ft away from creeks.
4. Remove all material excavated immediately and ensure it is transported offsite. No stockpiling of excavated materials will be allowed at any time in the public right-of-way except for limited stockpiling of soil or imported fill at the work site to help facilitate daily operations.
5. Provide temporary lighting that complies with California Occupational Safety and Health Administration (Cal/OSHA) standards.
6. Conduct operations in a manner that causes as little damage to hardscape and landscape areas as possible:
   - The Contractor shall exercise due diligence and implement necessary precautions to avoid needlessly damaging or destroying trees, shrubs, or other landscaping in the Project limits. Any required pruning of existing trees will be completed by a certified arborist. A specification for the protection of trees will be provided to the Contractor.
   - The Contractor shall protect all existing utilities, pavement, sidewalks, curbs, fences, landscaping, and other improvements that are not designated for removal from damage by its operations. Any such features that are damaged or temporarily relocated by the Contractor during construction shall be repaired or

restored by the Contractor to a condition equal to or better than they were prior to such damage or temporary relocation.

7. Upon completion of the work, and prior to final acceptance, the Contractor shall remove from the vicinity of the work all surplus material and equipment belonging to it or used under its direction during construction.
8. Restore pavement in all roadways, driveways, and sidewalks.
9. Upon completion of work, the Contractor shall restore road stripping on the roadway.

Dust Control

1. Water all exposed unpaved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) up to two times per day.
2. Cover all haul trucks transporting soil, sand, or other loose material offsite.
3. Sweep pavements as often as necessary to avoid the spread of debris. Remove all visible mud or dirt track-out from adjacent public roads using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. Minimize idling times either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
5. Maintain and properly tune all construction equipment in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
6. Post a publicly visible sign with the telephone number and person to contact at RVSD regarding dust complaints. This person shall respond and take corrective action within 48 hours.
7. Priority shall be given to obtaining power from Pacific Gas and Electric (PG&E) to reduce air pollutant emissions; if not practicable, then electrical generators and, if necessary, diesel generators shall be used subject to the noise attenuation measures under the "Noise" section of these Control Measures.
8. All excavations shall be adequately ventilated, and air in the shafts or pits will be monitored continuously, pursuant to the Contract Documents.
9. To minimize the dispersal of sewer odors above ground during sewage bypass pumping, the Contractor shall:
    a. Seal all open sanitary manholes or access openings in the sewers when operations have been suspended for a period of 2 hours or more.

b. During construction operations when open manholes or access openings cannot be sealed, vent and filter hydrogen sulfide gases upstream of the openings in the sewer.

Odor Control

1. Control odor related to construction through the use of filters, chemical addition to the wastewater, and masking agents as needed to limit the levels of hydrogen sulfide gas to 5 parts per million (by volume) 25 ft from the source or at the outside wall of any habitable structure.
2. If odor complaints are received, identify the source, evaluate and implement available abatement measures, and notify the complainant(s) of the results.

Permits

1. Trees and other landscaping removed during construction shall be replaced by the Contractor. If required, the Contractor shall obtain a permit from the County of Marin for the removal of any trees of regulated size and shall comply with relevant permit conditions:
   a. Marin County: Ordinance 3342, Chapter 22.75, Section 22.75.080
2. The Contractor will submit to RVSD, if applicable, a copy of its annual trench and/or excavation permit issued by Cal/OSHA.
3. Contractor shall obtain an encroachment permit from the County of Marin and comply with permit conditions.

Stormwater and Erosion Control

The Contractor shall prepare a Water Pollution Control Plan, Stormwater Pollution Prevention Plan, or an Erosion Sediment Control Plan for RVSD approval. The plan shall describe measures to be implemented to prevent the discharge of contaminated stormwater runoff from the job site. Erosion control measures shall be in accordance with the requirements of the Marin County Stormwater Pollution Prevention Program and RVSD's Field Management Practices for protection of water quality. The temporary construction site best management practices (BMPs) to be included in the plan shall address, but not be limited to, the following:

1. Providing all excavated areas with temporary erosion control measures where natural ground cover is disturbed, all temporary excavation stockpiles, including structures and trench excavations.
2. Preventing any construction debris from entering drainages in the Project vicinity.

3. Controlling equipment fueling and maintenance, concrete mixing and washout, and hauling and storage of materials.
4. Inspecting and maintaining protected areas regularly during the course of the work.
5. Placing all excavations, spills, and waste materials in areas not subject to washout, flooding, or natural drainage. No sand, mud, rocks, or other construction debris shall be disposed of in the sanitary sewers, storm sewers, or waterways. The Contractor shall comply with all water discharge requirements to local sanitary and storm sewers.
6. Placing filter fabric at local storm drains and using other appropriate BMPs.

Geotechnical

The Project components do not entail work that would require geotechnical engineer review. The following measures will be implemented on an as-needed basis.

1. Have a geotechnical engineer review the final Project plans and specifications prior to construction.
2. Have a geotechnical engineer review geotechnical-related Contractor submittals during construction (e.g., shoring, dewatering, ground improvement, backfill materials).
3. Have a geotechnical engineer perform periodic site inspections during the construction to observe and document subsurface conditions encountered by the Contractor with respect to the subsurface conditions.
4. In accordance with the provisions in Section 6705 of the Labor Code, the Contractor shall submit in advance of excavation of any trench or trenches 5 ft or more in depth, a detailed plan in conformance with the Project Geotechnical Studies showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. The use of watertight shoring in excavations or dewatering will be options available to the Contractor. All trenches in streets shall have vertical trench walls. If such plans vary from the shoring system standards set forth in the Construction Safety Orders of the Division of Industrial Safety in Title 8, Subchapter 4, Article 6, CCR, then the plans shall be prepared and signed by a California registered civil or structural engineer.

Hazardous Materials

1. Store and handle all hazardous materials in strict accordance with the Safety Data Sheets for the products. The storage and handling of potential pollution-causing

and hazardous materials, including but not necessarily limited to gasoline, oil, and paint, will be in accordance with all local, state, and federal requirements.

2. When sandblasting, spray painting, spraying insulation, or other activities inconveniencing or dangerous to property or the health of employees or the public are in progress, the area of activity shall be enclosed adequately to contain the dust, overspray, or other hazards. In the event there are no permanent enclosures at the area, or such enclosures are incomplete or inadequate, the Contractor shall provide suitable temporary enclosures.
3. If contaminated materials are encountered during excavation, then all work shall comply with the following codes:
    a. Code of Federal Regulations, Title 40—Protection of the Environment, Part 761 (40 CFR 761).
    b. California Code of Regulations, Title 22, Social Security, Division 4, Environmental Health, Chapter 30—Minimum Standards for Management of Hazardous and Extremely Hazardous Wastes.
4. Pursuant to the Contract Documents, relative to contaminated materials, the Contractor shall submit the following to the RVSD for review:
    a. The Contractor shall prepare and submit to the RVSD or its appointed representative, for review, a detailed Job Plan describing the proposed methods and procedures for excavating, segregating, testing, and disposing of petroliferous soil or groundwater. The Job Plan shall be submitted to the RVSD or its appointed representative no less than 14 days prior to the start of any excavation work at locations where contaminated soils and groundwater are anticipated.
    b. The Job Plan shall include step-by-step procedures for the actions to be taken in identifying, handling, removing, and disposing of any contaminated soil or groundwater encountered during excavation.
    c. At least 14 days before the start of any excavation at locations where contaminated soils and groundwater are anticipated, the Contractor shall prepare and submit to the RVSD or its appointed representative, for review, a supplemental Health and Safety Plan. The supplemental Health and Safety Plan shall be prepared by an industrial hygienist certified by the American Board of Industrial Hygiene and shall include, but not be limited to, training of the Contractor's personnel, protective equipment, air monitoring, sampling, and emergency procedures.
    d. No excavation will be allowed to commence until the Health and Safety Plan has been returned by the RVSD to the Contractor with the notation: "Resubmittal not required."

e. The Contractor shall provide copies of hazardous waste transporter licenses, permits, or registrations for all states in which the shipment shall travel.

f. The Contractor shall obtain all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including certification of transport vehicles carrying hazardous material.

5. Pursuant to the Contract Documents relative to contaminated materials, the Contractor shall implement the following monitoring requirements:

   a. Contractor shall furnish a properly calibrated, fully functional organic vapor analyzer (OVA) for use at the site of every excavation or open trench to continually sample and monitor the ambient atmosphere.

   b. The preliminary mode of examination for petroliferous soil and/or groundwater shall be through visual and olfactory means. Upon the first observation of soil or water that may contain petroliferous products, the Contractor shall stop excavation work and immediately notify the RVSD or its appointed Representative. No excavation of petroliferous soil, nor pumping of petroliferous water, shall proceed without the approval of RVSD or its appointed representative.

   c. Following sensory observation of petroliferous products, the OVA equipment shall be brought to the excavation site and the atmosphere shall be tested. The Contractor's Job Plan and Health and Safety Plan shall be immediately placed into effect.

   d. Potentially contaminated soil or water shall be segregated and tested by the Contractor, at a certified laboratory approved by RVSD or its appointed representative, to determine the consistency and quantity of petroliferous products. The soil or water shall then be disposed of in accordance with applicable local, state, and federal laws, following the procedures described in the Contractor's Job Plan and Health and Safety Plan.

6. Pursuant to the Contract Documents, contaminated materials will be handled and disposed of in the following manner:

   a. The Contractor shall avoid or minimize excavation in contaminated areas whenever possible.

   b. Excavated trench material that, in the opinion of RVSD or its appointed representative, exhibits evidence of petroleum contamination shall be removed from the site and temporarily stockpiled by the Contractor. The location of the temporary stockpile area must be reviewed by RVSD. The contaminated trench materials shall be placed on a 10-mil polyethylene sheeting to prevent contamination of uncontaminated soils and shall be separated from all uncontaminated trench materials. The temporary stockpiles of contaminated

trench materials shall be covered securely with 10-mil polyethylene sheeting to limit emissions and prevent rainfall from entering the stockpile. Runoff or drainage from the temporary stockpile shall be prevented from leaving the area and all materials shall be surrounded with 6-ft-high temporary chain-link fence.

c. The temporary stockpiles of contaminated trench materials shall be sampled and analyzed by a certified testing laboratory, approved by RVSD or its appointed representative. Results of the laboratory analysis shall be provided by RVSD or its appointed representative within calendar days from the date that the material is stockpiled.

d. Disposal of the contaminated trench materials will depend on the results of the testing program. The Contractor shall dispose of the contaminated material with the approval of RVSD or its appointed representative, either at a licensed thermal remediation plant or by disposal at a Class II landfill, following required procedures.

e. All handling, storing, transporting, treatment, and disposal of contaminated soil and groundwater shall conform to the federal and state environmental regulations, including those of the Regional Water Board, Department of Toxic Substances Control (DTSC), Integrated Waste Management Board, California Air Resources Board (CARB), and Bay Area Air Quality Management District (BAAQMD). Transport of contaminated material and groundwater shall be performed by appropriately certified and/or licensed personnel.

7. Groundwater management shall conform to the federal and state environmental regulations, including those of the Regional Water Board, DTSC, Integrated Waste Management Board, CARB, and BAAQMD. Transport of contaminated material and groundwater shall be performed by appropriately certified and/or licensed personnel.

   a. Upon completion of excavation within the contaminated area and the hauling and disposal of contaminated materials, the Contractor shall clean up the site, including proper removal and disposal of all plastic sheeting, containers, and other materials used.

   b. Any groundwater from trenching activities within the contaminated soil area, as shown on the plan, shall be stored in temporary Baker-type storage tanks. The Contractor shall sample and analyze groundwater, and then dispose of the stored groundwater as directed by RVSD or its appointed representative. Depending on the quality of the groundwater, disposal may be to the sewer system or a suitable offsite disposal facility.

Safety

1. Employ safety provisions conforming to the U.S. Department of Labor Occupational Safety and Health Administration (OSHA), Cal/OSHA, and all other applicable federal, state, county, and local laws, ordinances, and codes. The completed work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items, required by the state and federal industrial authorities and applicable local and national codes.
2. Develop and submit to RVSD for approval a Health and Safety Plan that defines proposed site safety measures.
3. Appoint as safety supervisor an employee who is qualified and authorized to supervise and enforce compliance with the Safety Program. The Safety Program will include an operation plan with emergency contacts.
4. The Contractor shall construct appropriate safety barriers such as temporary fencing, berms, or similar facilities where required or directed by RVSD. To minimize disturbance of existing roads and facilities, safety barriers shall allow for normal maintenance and operation of existing facilities and roads as determined by RVSD or its appointed representative. The Contractor shall conduct its work so as to ensure the least possible obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the work, and to ensure the protection of persons and property.
5. Establish, implement, and maintain a written injury prevention program as required by Labor Code Section 6401.7.
6. In case of an emergency, make all necessary repairs and promptly execute such work when required by the Construction Manager.
7. Manhole entry and/or entry to any excavation greater than 5 ft deep shall be in full compliance with the confined space entry requirements of OSHA, Cal/OSHA, and RVSD. RVSD shall have the authority to require the removal from the Project of the foreman and/or superintendent in responsible charge of the work where safety violations occur.
8. During non-working hours, all trenches in public streets shall either be backfilled and temporarily paved or shall be shored and covered with steel plates in compliance with the requirements of local jurisdictions. The maximum length of trench excavation in advance of the pipe laying operation and the maximum amount of trench remaining open without backfill during the course of the daily pipe installations shall be in accordance with local jurisdictional agencies encroachment and excavation permit requirements or a maximum of 200 ft, whichever is more restrictive.
9. Submit for RVSD review, in accordance with the provisions of Section 6705 of the Labor Code, in advance of excavation of any trench or trenches 5 ft or more in

depth, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of ground caving.

Notifications

1. Provide written notice to all private property owners along the alignment three times before work commences in the vicinity of said property. The notices will be provided 7 days before planned construction, 24 hours prior to start of work, and the day of construction, and will provide information on Project activities, the construction schedule, protocol for providing complaints related to hazardous conditions and noise, and vehicle access needs.
2. If complaints are received related to unsafe conditions, identify the source, evaluate and implement appropriate corrective measures, and notify the complainant(s) of the results.

Dewatering

1. Contractor shall submit a plan for all excavation dewatering procedures to RVSD for approval prior to performing dewatering operations as specified in the Contract Documents. The dewatering plan shall provide for:
    a. Use of appropriate equipment and means to accomplish dewatering and may include use of wells, well points, sump pumps, storage tanks, settling tanks, filters, temporary pipelines for water disposal, rock or gravel placement, standby pumps and/or generators, and other means.
    b. Compliance with any permitting requirements of RVSD, Central Marin Sanitation Agency, and Regional Water Board.
    c. A dry excavation and preservation of the final lines and grades of the bottoms of excavation with drawdown of groundwater level a minimum of 2 ft below the trench bottom and beyond excavation sidewalls where shoring is not designed to resist hydrostatic pressures.
    d. Control of the rate and effect of dewatering so as to avoid settlement, subsidence, or damage to the structures or facilities adjacent to areas of proposed dewatering with repair, restoration, or replacement of facilities or structures damaged. Contractor shall establish reference points daily to quickly detect any settlement, subsidence, or damage that may develop during or following dewatering operations.
    e. Demonstrated compliance with the Contractor-designed shoring and bracing method.
    f. Disposal of collected groundwater. Discharge options include the sanitary sewer system or the storm drain system. Pretreatment may be required.

g. Minimal interference with vehicle or pedestrian traffic.

2. Implement control measures listed above for handling and disposal of contaminated soil and groundwater, if encountered.
3. Comply with the requirements of the approved plan as detailed under "Stormwater and Erosion Control."

Noise Control

1. During the encroachment permit process, the Contractor will coordinate with the County of Marin and RVSD on allowable work hour limitations that are consistent with the County of Marin's noise ordinance. Working hour limitations included in the Project Contract Documents will be generally limited to 8:00 a.m. to 5:00 p.m. on weekdays. Work hours beyond these referenced limits must be approved by RVSD and the County of Marin. Avoid the use of loud sound signals in favor of light warnings except those required by safety laws for the protection of personnel.
2. Equip internal combustion engines with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated without said muffler.
3. To minimize noise levels, attempt to obtain electrical power from PG&E in lieu of providing power by portable generator. If use of utility power is not practicable, generator power may be provided by sound-attenuated and enclosed electric generators. Diesel generators shall not be utilized unless they are provided with sound enclosures, as necessary to comply with local ordinances.
4. Do not use of radio or other music amplification devices in the work area.
5. Implement a vibration monitoring and correction program to protect buildings, structures, and utilities from extensive vibration during construction.
6. If noise complaints are received, identify the source, and evaluate and implement available abatement.
7. Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active Project site.
8. Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active Project site during all Project construction.
9. Ensure temporary noise control blanket barriers are installed in a manner to shield adjacent land uses.
10. Designate a "disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler) and

will determine and implement reasonable measures warranted to correct the problem.

11. Ensure noise generated from nightwork operations does not exceed 90 decibels measured at 50 ft from the source of the noise, or as stipulated in the encroachment permits.
12. Comply with all applicable provisions of Section 7-1.01I, "Sound Control Requirements," of the California Department of Transportation Standard Specifications and Contract Documents.
13. Comply with the County of Marin codes that regulate noise levels. The County of Marin Municipal Code, Title 6, Chapter 6.70, Section 6.70.030 (Enumerated Noises) states that:
    - Hours for construction activities and other work undertaken in connection with building, plumbing, electrical, and other permits issued by the community development agency shall be limited to the following:
      - Monday through Friday: 7:00 a.m. to 6:00 p.m.
      - Saturday: 9:00 a.m. to 5:00 p.m.
      - Prohibited on Sundays and Holidays (New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day).
    - Loud noise-generating construction-related equipment (e.g., backhoes, generators, jackhammers) can be maintained, operated, or serviced at a construction site for permits administered by the community development agency from 8:00 a.m. to 5:00 p.m. Monday through Friday only.
    - Special exceptions to these limitations may occur for:
      - Emergency work as defined in Section 22.130.030 of this code provided written notice is given to the community development director within 48 hours of commencing work
      - Construction projects of city, county, state, other public agency, or other public utility
      - When written permission of the community development director has been obtained, for showing of sufficient cause
      - Minor jobs (e.g., painting, hand sanding, sweeping) with minimal/no noise impacts on surrounding properties
      - Modifications required by the review authority as a discretionary permit condition of approval.

Traffic Management

1. Contractor will prepare a traffic control plan (TCP) and submit it to RVSD and the County of Marin for review and approval at least 3 weeks prior to start of construction. The TCP shall include, at a minimum, the following provisions:
    a. Limit construction work or as otherwise required by the County of Marin.
    b. Conduct operations to reduce obstruction and inconvenience to public traffic and have under construction no greater length or amount of work than can be properly undertaken with due regard to the rights of the public.
    c. Avoid blocking driveways or private roads without notifying the property owner, and access must be restored during all non-working hours.
    d. Maintain safe access for pedestrian and bicyclist traffic throughout the work area at all times.
    e. To the extent possible, maintain at least one lane of traffic in each direction open at all times. Traffic shall be permitted to use shoulders and the side of the roadbed opposite the one under construction. When sufficient width is available, a passageway wide enough to accommodate one lane of traffic shall be kept open at locations where construction operations are in active progress and it is safe to do so.
    f. The Contractor shall be responsible for notifying police and fire departments, the school district, ambulance services, and local transit districts as to the hours and dates of closure and routes of detour at least 48 hours in advance of the detour's occurrence, and shall notify them again when the detour is discontinued.
    g. The Contractor shall call local emergency services dispatcher(s) daily with the location of the work and road status.
    h. Avoid blocking or obstructing fire lanes at all times. Fire hydrants on or adjacent to the work will be kept accessible to firefighting equipment at all times.
    i. Utilize certified flagmen to direct vehicular traffic through the construction area and to guard all obstructions to traffic, and illuminate at night. Traffic control will include signs, warning lights, reflectors, barriers, and other necessary safety devices and measures. These measures shall conform to the requirements set forth in the current "Manual of Traffic Controls for Construction and Maintenance Work Zones," issued by the State Department of Transportation, latest edition.
    j. Install and maintain temporary bridges of approved construction (ADA compliant) across the trench at all crosswalks, intersections, and at such other points where traffic conditions make it advisable.

k. Repair excavated areas to the requirements of the County of Marin.

l. Use only approved haul routes for all construction traffic on the Project as may be stipulated by the County of Marin.

m. A maximum delay of 10 minutes shall be allowed on a roadway if it does not create a significant or dangerous area of traffic congestion away from the traffic control area. The County of Marin has the right to reduce the 10-minute traffic-related delay if traffic conditions require it in their opinion. The maximum delay for access to a residence or business is 10 minutes. The Contractor shall have materials onsite to provide safe passage across the work zone and shall install said material when a person in a vehicle requests access to the residence or business.

n. Avoid storing or parking material or equipment where it could interfere with the free and safe passage of public traffic, and at the end of each day's work, and at all times when construction operations are suspended for any reason.

o. Immediately remove any spillage on local roadways resulting from hauling operations.

p. The Contractor may organize parking and staging independently. However, no sidewalks or private property adjacent to the site shall be used for storage of equipment and supplies unless prior written approval is obtained from the legal owner and submitted to the Construction Manager a minimum of 14 days before use of the site. Offroad parking and staging may not occur along Wolfe Canyon Road, otherwise, parking and staging may be allowed only within the public right-of-way, if any, designated for such use by the Project Manager.

q. Minimize the removal of curb parking, but if necessary, removal shall be in accordance with the approved TCP.

r. Coordinate with the Central Marin Police Authority and the County of Marin's Public Works Department for the location of "No Stopping" and "No Parking" signs.

s. Where construction work will disrupt the traffic signal loops at an intersection, the Contractor shall install and have operational a temporary detection system that is compatible with the traffic signal controller at that location as approved by the County of Marin. The temporary detection system for the Project will be dependent on the Contractor's work sequence. The temporary detection system is a temporary traffic control device that shall not be removed/relocated until the permanent traffic signal loops are reinstalled and accepted by local jurisdictions.

t. In the event of a declared emergency by the Central Marin Police Authority Chief of Police, the local Captain of the Highway Patrol, or the Marin County Fire Department Fire Marshal, or their Representative, the Contractor shall

comply with verbal demands and immediately stop all work and reopen through traffic where work is occurring.

u. Provide, install, and maintain for the duration of the Project up to four Project signs pursuant to the requirements of local jurisdictions.

2. Contact the Marin Transit District, inform them of the construction schedule, and coordinate work in areas that may affect access to bus stops.

Ground Movement Monitoring

1. The Contractor shall provide all labor, materials, equipment, and incidentals required to install, operate, and maintain geotechnical instruments and survey monitoring points for the purpose of monitoring ground movement during construction. The Work shall include, but not be limited to, installing and monitoring crack gages and settlement markers, and determining ambient vibration levels.
2. The ground movement indicator points shall provide reference points for monitoring vertical and horizontal ground and structure movement and to establish a baseline record of such movement.
3. Measurements of ground and structure movement will provide the basis for the implementation of remedial measures to prevent possible damage to structures and utilities.
4. Remedial measures, if necessary, include modifications to construction procedures, repair or replacement of damaged facilities, and restoration to original conditions of any disturbed property, structure, or utility.
5. The Contractor shall keep the Construction Manager informed of the monitoring measurements; however, it shall be the Contractor's sole responsibility to protect onsite structures and utilities and all adjacent structures and utilities within 50 ft of any excavation, pipe bursting, jack and bore, shoring, and backfill operations. Any damage caused to any of these structures or utilities by the Contractor shall be repaired and restored by the Contractor immediately and at the Contractor's expense.

Air Quality

1. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
2. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California

airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.

3. All construction equipment, diesel trucks, and generators shall be required to be equipped with Best Available Control Technology for emission reductions of oxides of nitrogen and particulate matter.
4. All Contractors shall be required to use equipment that meets CARB's most recent certification standard for off-road, heavy-duty diesel engines.

Biological Resources

1. Tightly woven fiber netting or similar material shall be used for erosion control or other purposes to ensure wildlife species do not get trapped. Plastic monofilament netting (erosion control matting), rolled erosion control products, or similar material shall not be used.
2. Modified or disturbed portions of the woodland habitat will be restored as nearly as possible to natural and stable contours (elevations, profile, and gradient). Project methodology within the undisturbed woodland habitat shall include scraping and stockpiling the upper 4 in. of soil prior to commencing excavation activities. These soils shall be replaced after backfilling excavated pits/trenches to ensure the seedbank present onsite remains intact.
6. Environmental training will be provided to all persons working in the Project areas prior to the initiation of Project-related activities and training materials and briefings will include all biological resources that may be found on or in the vicinity of the Project site, the laws and regulations that protect those resources, the consequences of non-compliance with those laws and regulations, and a contact person in the event that protected biological resources are discovered on the Project site.

Attachment E

CalEEMod Input Tables and Output Report

Table 1. CalEEMod Project Description

Inputs	Total Project Quantity	Total Project Unit	Daily Rate Quantity	Daily Rate Unit	Note
Duration					
Construction	90	days	--	--	--
	3.0	months	--	--	--
Working days	66	days	--	--	22 working days per month
Area					
Total Project Area	12,116	sq feet	135	sq feet/day	Maximum area disturbed
	0.28	acres	0.003	acres/day	
Project Length	7,272	feet	--	--	Sum of pipelines in project scope
	1.38	mile	--	--	
Workers					
Workers onsite each day	8	workers	--	--	6 to 8 workers on site per day (8 workers to be conservative)
Worker roundtrips each day	16	roundtrips	--	--	Two roundtrips to/from site per worker each day
Material					
Volume Import	2,000	CY			Volume of soil/material imported over the total project.
Volume Emport	2,000	CY			Volume of soil/material exported over the total project.

Notes

Inputs were recevied from RVSD (April 2025).

sq feet = square feet

Table 2. CalEEMod Project Inputs

Phase		Equipment					Hauling Trucks (Average trucks/day)[1]				
Activity	**Max Working Days per Activity**	**Type**	**HP**	**Number/ day**	**Operating hours/day**	**Fuel Type**	**Material Import**	**Material Export**	**Equipment/ Delivery**	**Cement/ Asphalt**	**Onsite Truck[2]**
Site Preparation	15	Excavator	36	1	2	Diesel	0	0	0	0	1
Construction (New pipe locations and open cut repairs)	20	Bypass pump	11	1	8	Diesel	1	1	1	0	1
		Concrete Saw	10	1	1	Gasoline					
		Dumper/Tender	16	1	2	Diesel					
		Excavator	36	1	2	Diesel					
Construction (Manhole Rehab)	10	Bypass pump	11	1	8	Diesel	1	1	1	1	1
		Concrete Saw	10	1	1	Gasoline					
		Dumper/Tender	16	1	2	Diesel					
		Excavator	36	1	2	Diesel					
Pipe Bursting	15	Bypass pump	11	1	8	Diesel	1	1	2	0	1
		Concrete Saw	10	1	1	Gasoline					
		Excavator	36	1	2	Diesel					
Paving	30	Paving Equipmen	89	1	2	Diesel	1	1	1	1	1
		Rollers	36	1	1	Diesel					
		Sweepers	36	1	1	Diesel					
		Skid Steer	71	1	2	Diesel					

Notes

Inputs were recevied from RVSD (April 2025).

HP = horsepower

[1] = CalEEMod assumes haul truck capacity is 16 cublic yards.

[2] = Onsite truck includes water truck.

Palm/Mann/Cypress GSIP Detailed Report

Table of Contents

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Palm/Mann/Cypress GSIP
Construction Start Date	7/14/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	7.60
Location	37.957256333701196, -122.5383962948681
County	Marin
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	926
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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	1.38	Mile	0.30	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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.63	3.36	9.70	0.01	0.14	47.9	48.0	0.11	4.89	5.00	1,866
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.60	3.28	9.35	0.01	0.13	47.8	48.0	0.11	4.88	4.99	1,751
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.57	0.36	1.10	< 0.005	0.02	5.77	5.79	0.01	0.59	0.60	196
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.07	0.20	< 0.005	< 0.005	1.05	1.06	< 0.005	0.11	0.11	32.4

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	4.63	3.36	9.70	0.01	0.14	47.9	48.0	0.11	4.89	5.00	1,866
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
2025	4.60	3.28	9.35	0.01	0.13	47.8	48.0	0.11	4.88	4.99	1,751

Average Daily	—	—	—	—	—	—	—	—	—	—	—
2025	0.57	0.36	1.10	< 0.005	0.02	5.77	5.79	0.01	0.59	0.60	196
Annual	—	—	—	—	—	—	—	—	—	—	—
2025	0.10	0.07	0.20	< 0.005	< 0.005	1.05	1.06	< 0.005	0.11	0.11	32.4

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	35.5
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—
Onsite truck	< 0.005	0.10	0.06	< 0.005	< 0.005	23.6	23.6	< 0.005	2.35	2.35	64.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.46
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.95	0.95	< 0.005	0.09	0.09	2.65
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.24

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	0.44
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.08	1.25	0.00	0.00	0.26	0.26	0.00	0.06	0.06	280
Vendor	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.8
Vendor	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
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.78
Vendor	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

3.3. Construction (new locations and open cut repairs) (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.28	1.03	5.23	< 0.005	0.09	—	0.09	0.07	—	0.07	140

Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
Onsite truck	< 0.005	0.10	0.06	< 0.005	< 0.005	23.6	23.6	< 0.005	2.35	2.35	64.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.06	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	7.68
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	1.26	1.26	< 0.005	0.13	0.13	3.54
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.27
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.23	0.23	< 0.005	0.02	0.02	0.59
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.08	1.25	0.00	0.00	0.26	0.26	0.00	0.06	0.06	280
Vendor	< 0.005	0.08	0.05	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	58.9
Hauling	0.01	0.43	0.25	< 0.005	0.01	0.08	0.08	< 0.005	0.02	0.02	312
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	14.4
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.22
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	17.1

Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.38
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.53
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.83

3.5. Construction (manhole rehab) (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.28	1.03	5.23	< 0.005	0.09	—	0.09	0.07	—	0.07	140
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	< 0.005	0.10	0.06	< 0.005	< 0.005	23.6	23.6	< 0.005	2.35	2.35	64.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.03	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.84
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.63	0.63	< 0.005	0.06	0.06	1.77
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.64
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	0.29
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.08	1.25	0.00	0.00	0.26	0.26	0.00	0.06	0.06	280
Vendor	< 0.005	0.16	0.09	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	118
Hauling	0.01	0.43	0.25	< 0.005	0.01	0.08	0.08	< 0.005	0.02	0.02	312
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.19
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.22
Hauling	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.55
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.19
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.53
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.42

3.7. Pipe Bursting (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.27	0.91	5.17	< 0.005	0.09	—	0.09	0.07	—	0.07	125
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—
Onsite truck	< 0.005	0.10	0.06	< 0.005	< 0.005	23.6	23.6	< 0.005	2.35	2.35	64.6

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.27	0.91	5.17	< 0.005	0.09	—	0.09	0.07	—	0.07	125
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—
Onsite truck	< 0.005	0.11	0.06	< 0.005	< 0.005	23.6	23.6	< 0.005	2.35	2.35	64.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.04	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.13
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.95	0.95	< 0.005	0.09	0.09	2.65
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.01	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.85
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	0.44
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.08	1.25	0.00	0.00	0.26	0.26	0.00	0.06	0.06	280
Vendor	< 0.005	0.08	0.05	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	58.9
Hauling	0.01	0.43	0.25	< 0.005	0.01	0.08	0.08	< 0.005	0.02	0.02	312
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	1.12	0.00	0.00	0.26	0.26	0.00	0.06	0.06	261
Vendor	< 0.005	0.08	0.05	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	58.8
Hauling	0.01	0.46	0.25	< 0.005	0.01	0.08	0.08	< 0.005	0.02	0.02	312

Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.42
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	12.8
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.40
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.12

3.9. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.78	1.16	< 0.005	0.03	—	0.03	0.03	—	0.03	175
Onsite truck	< 0.005	0.10	0.06	< 0.005	< 0.005	23.6	23.6	< 0.005	2.35	2.35	64.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.78	1.16	< 0.005	0.03	—	0.03	0.03	—	0.03	175
Onsite truck	< 0.005	0.11	0.06	< 0.005	< 0.005	23.6	23.6	< 0.005	2.35	2.35	64.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	14.4
Onsite truck	< 0.005	0.01	0.01	< 0.005	< 0.005	1.90	1.90	< 0.005	0.19	0.19	5.30
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.39

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.35	0.35	< 0.005	0.03	0.03	0.88
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.08	1.25	0.00	0.00	0.26	0.26	0.00	0.06	0.06	280
Vendor	< 0.005	0.16	0.09	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	118
Hauling	0.01	0.43	0.25	< 0.005	0.01	0.08	0.08	< 0.005	0.02	0.02	312
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	1.12	0.00	0.00	0.26	0.26	0.00	0.06	0.06	261
Vendor	< 0.005	0.17	0.09	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	118
Hauling	0.01	0.46	0.25	< 0.005	0.01	0.08	0.08	< 0.005	0.02	0.02	312
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	0.01	0.01	21.6
Vendor	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.66
Hauling	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	25.6
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.57
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.60
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.25

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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
Site Preparation	Linear, Grubbing & Land Clearing	7/14/2025	8/3/2025	5.00	15.0	—

Construction (new locations and open cut repairs)	Linear, Grading & Excavation	8/4/2025	8/31/2025	5.00	20.0	—
Construction (manhole rehab)	Linear, Grading & Excavation	9/1/2025	9/14/2025	5.00	10.0	—
Pipe Bursting	Linear, Drainage, Utilities, & Sub-Grade	9/15/2025	10/5/2025	5.00	15.0	—
Paving	Linear, Paving	8/25/2025	10/5/2025	5.00	30.0	—

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
Site Preparation	Excavators	Diesel	Average	1.00	2.00	36.0	0.38
Construction (new locations and open cut repairs)	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Construction (new locations and open cut repairs)	Concrete/Industrial Saws	Gasoline	Average	1.00	1.00	10.0	0.78
Construction (new locations and open cut repairs)	Dumpers/Tenders	Diesel	Average	1.00	2.00	16.0	0.38
Construction (new locations and open cut repairs)	Excavators	Diesel	Average	1.00	2.00	36.0	0.38
Construction (manhole rehab)	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Construction (manhole rehab)	Concrete/Industrial Saws	Gasoline	Average	1.00	1.00	10.0	0.78
Construction (manhole rehab)	Dumpers/Tenders	Diesel	Average	1.00	2.00	16.0	0.38
Construction (manhole rehab)	Excavators	Diesel	Average	1.00	2.00	36.0	0.38

Pipe Bursting	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Pipe Bursting	Concrete/Industrial Saws	Gasoline	Average	1.00	1.00	10.0	0.78
Pipe Bursting	Excavators	Diesel	Average	1.00	2.00	36.0	0.38
Paving	Paving Equipment	Diesel	Average	1.00	2.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	1.00	36.0	0.38
Paving	Sweepers/Scrubbers	Diesel	Average	1.00	1.00	36.0	0.46
Paving	Skid Steer Loaders	Diesel	Average	1.00	2.00	71.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	32.0	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	2.00	8.00	HHDT
Construction (new locations and open cut repairs)	—	—	—	—
Construction (new locations and open cut repairs)	Worker	32.0	11.7	LDA,LDT1,LDT2
Construction (new locations and open cut repairs)	Vendor	2.00	8.40	HHDT,MHDT
Construction (new locations and open cut repairs)	Hauling	4.00	20.0	HHDT
Construction (new locations and open cut repairs)	Onsite truck	2.00	8.00	HHDT
Pipe Bursting	—	—	—	—
Pipe Bursting	Worker	32.0	11.7	LDA,LDT1,LDT2

Pipe Bursting	Vendor	2.00	8.40	HHDT,MHDT
Pipe Bursting	Hauling	4.00	20.0	HHDT
Pipe Bursting	Onsite truck	2.00	8.00	HHDT
Paving	—	—	—	—
Paving	Worker	32.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	4.00	8.40	HHDT,MHDT
Paving	Hauling	4.00	20.0	HHDT
Paving	Onsite truck	2.00	8.00	HHDT
Construction (manhole rehab)	—	—	—	—
Construction (manhole rehab)	Worker	32.0	11.7	LDA,LDT1,LDT2
Construction (manhole rehab)	Vendor	4.00	8.40	HHDT,MHDT
Construction (manhole rehab)	Hauling	4.00	20.0	HHDT
Construction (manhole rehab)	Onsite truck	2.00	8.00	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)
Site Preparation	—	—	0.30	0.00	—

Construction (new locations and open cut repairs)	1,000	1,000	0.30	0.00	—
Construction (manhole rehab)	1,000	1,000	0.30	0.00	—
Pipe Bursting	—	—	0.30	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	0.30	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	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	9.12	annual days of extreme heat
Extreme Precipitation	15.8	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	7.96	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	6.38
AQ-PM	19.3
AQ-DPM	11.3
Drinking Water	7.43
Lead Risk Housing	50.3
Pesticides	0.00
Toxic Releases	43.9
Traffic	63.6
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	50.1
Impaired Water Bodies	12.5
Solid Waste	26.7
Sensitive Population	—
Asthma	0.88
Cardio-vascular	2.47
Low Birth Weights	8.60
Socioeconomic Factor Indicators	—
Education	3.52
Housing	15.9
Linguistic	18.9
Poverty	7.55
Unemployment	9.72

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	94.40523547
Employed	59.69459772
Median HI	98.22918003
Education	—
Bachelor's or higher	98.10085975
High school enrollment	100
Preschool enrollment	79.91787502
Transportation	—
Auto Access	50.77633774
Active commuting	82.59976902
Social	—
2-parent households	86.83433851
Voting	98.34466829
Neighborhood	—
Alcohol availability	43.92403439
Park access	45.88733479
Retail density	61.36276145
Supermarket access	58.6167073
Tree canopy	98.96060567
Housing	—
Homeownership	72.25715386
Housing habitability	86.05158476
Low-inc homeowner severe housing cost burden	82.56127294
Low-inc renter severe housing cost burden	62.055691

Uncrowded housing	92.9038881
Health Outcomes	—
Insured adults	83.67765944
Arthritis	0.0
Asthma ER Admissions	92.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	86.5
Cognitively Disabled	76.7
Physically Disabled	83.0
Heart Attack ER Admissions	96.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	50.3
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	35.6

Children	91.6
Elderly	5.5
English Speaking	98.1
Foreign-born	13.1
Outdoor Workers	77.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	88.6
Traffic Density	33.6
Traffic Access	63.8
Other Indices	—
Hardship	1.2
Other Decision Support	—
2016 Voting	99.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	0.00
Healthy Places Index Score for Project Location (b)	99.0
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	Project specific inputs.
Construction: Off-Road Equipment	Project specific inputs.
Construction: Trips and VMT	Project specific inputs.

Attachment F

Protected Natural Resources Tables

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE RareFind

Query Summary:
Quad IS (San Rafael (3712285))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Acipenser medirostris pop. 1	green sturgeon - southern DPS	Fish	AFCAA01031	14	1	Threatened	None	G2T1	S1	null	AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered	Aquatic, Estuary, Marine bay, Sacramento/San Joaquin flowing waters
Actinemys marmorata	northwestern pond turtle	Reptiles	ARAAD02031	1160	3	Proposed Threatened	None	G2	SNR	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	null
Adela oplerella	Opler's longhorn moth	Insects	IILEE0G040	14	1	None	None	G2	S2	null	null	Ultramafic, Valley & foothill grassland
Amorpha californica var. napensis	Napa false indigo	Dicots	PDFAB08012	123	24	None	None	G4T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Chaparral, Cismontane woodland
Amsinckia lunaris	bent-flowered fiddleneck	Dicots	PDBOR01070	93	1	None	None	G3	S3	1B.2	BLM_S-Sensitive, SB_UCBG-UC Botanical Garden at Berkeley, SB_UCSC-UC Santa Cruz	Cismontane woodland, Coastal bluff scrub, Valley & foothill grassland
Antrozous pallidus	pallid bat	Mammals	AMACC10010	425	2	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland

Arctostaphylos montana ssp. montana	Mt. Tamalpais manzanita	Dicots	PDERI040J5	15	9	None	None	G3T3	S3	1B.3	SB_UCBG-UC Botanical Garden at Berkeley	Chaparral, Ultramafic, Valley & foothill grassland
Arctostaphylos virgata	Marin manzanita	Dicots	PDERI041K0	32	8	None	None	G2	S2	1B.2	SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture	Broadleaved upland forest, Chaparral, Closed-cone coniferous forest, North coast coniferous forest
Ardea herodias	great blue heron	Birds	ABNGA04010	156	2	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Bombus caliginosus	obscure bumble bee	Insects	IIHYM24380	181	5	None	None	G2G3	S1S2	null	IUCN_VU-Vulnerable	null
Bombus occidentalis	western bumble bee	Insects	IIHYM24252	306	5	None	Candidate Endangered	G3	S1	null	IUCN_VU-Vulnerable, USFS_S-Sensitive	null
Calamagrostis crassiglumis	Thurber's reed grass	Monocots	PMPOA17070	15	1	None	None	G5Q	S2	2B.1	null	Coastal scrub, Freshwater marsh, Marsh & swamp, Wetland
Callophrys mossii marinensis	Marin elfin butterfly	Insects	IILEPE2207	4	1	None	None	G4T1	S2	null	null	Redwood
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	Dicots	PDSCR0J0C3	80	7	None	None	G4?T2	S2	1B.2	BLM_S-Sensitive, SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden	Marsh & swamp, Salt marsh, Wetland
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	Dicots	PDPGN04081	17	1	None	None	G2T1	S1	1B.2	SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden	Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub
Cirsium hydrophilum var. vaseyi	Mt. Tamalpais thistle	Dicots	PDAST2E1G2	14	7	None	None	G2T1	S1	1B.2	SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Chaparral, Meadow & seep, Ultramafic, Wetland
Coastal Brackish Marsh	Coastal Brackish Marsh	Marsh	CTT52200CA	30	1	None	None	G2	S2.1	null	null	Marsh & swamp, Wetland
Coastal Terrace Prairie	Coastal Terrace Prairie	Herbaceous	CTT41100CA	8	1	None	None	G2	S2.1	null	null	Coastal prairie
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	2	None	None	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special	Broadleaved upland forest, Chaparral, Chenopod

											Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, Upper montane coniferous forest, Valley & foothill grassland
Dermatocarpon meiophyllizum	silverskin lichen	Lichens	NLTEST91L0	20	3	None	None	G3G5	S3	2B.3	null	Coastal prairie, Lower montane coniferous forest, North coast coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest
Dicamptodon ensatus	California giant salamander	Amphibians	AAAAH01020	254	9	None	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Aquatic, Meadow & seep, North coast coniferous forest, Riparian forest
Dirca occidentalis	western leatherwood	Dicots	PDTHY03010	90	1	None	None	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North coast coniferous forest, Riparian forest, Riparian woodland
Eriogonum luteolum var. caninum	Tiburon buckwheat	Dicots	PDPGN083S1	26	10	None	None	G5T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Coastal prairie, Ultramafic, Valley & foothill

												grassland
Eucyclogobius newberryi	tidewater goby	Fish	AFCQN04010	127	1	Endangered	None	G3	S3	null	AFS_EN-Endangered, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Aquatic, Klamath/ North coast flowing waters, Sacramento/ San Joaquin flowing waters, South coast flowing waters
Fissidens pauperculus	minute pocket moss	Bryophytes	NBMUS2W0U0	22	2	None	None	G3?	S2	1B.2	USFS_S-Sensitive	North coast coniferous forest, Redwood
Fritillaria lanceolata var. tristulis	Marin checker lily	Monocots	PMLIL0V0P1	32	1	None	None	G5T2	S2	1B.1	SB_UCSC-UC Santa Cruz	Coastal bluff scrub, Coastal prairie, Coastal scrub, Ultramafic
Gilia millefoliata	dark-eyed gilia	Dicots	PDPLM04130	54	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden	Coastal dunes
Helianthella castanea	Diablo helianthella	Dicots	PDAST4M020	107	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Dicots	PDAST4R0W1	52	2	None	None	G5T2	S2	1B.2	SB_UCBG-UC Botanical Garden at Berkeley	Valley & foothill grassland
Hesperolinon congestum	Marin western flax	Dicots	PDLIN01060	27	2	Threatened	Threatened	G1	S1	1B.1	SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley	Chaparral, Ultramafic, Valley & foothill grassland
Holocarpha macradenia	Santa Cruz tarplant	Dicots	PDAST4X020	37	2	Threatened	Endangered	G1	S1	1B.1	SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley	Coastal prairie, Coastal scrub, Valley & foothill grassland
Horkelia tenuiloba	thin-lobed horkelia	Dicots	PDROS0W0E0	27	4	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Chaparral, Valley & foothill grassland
Kopsiopsis hookeri	small groundcone	Dicots	PDORO01010	21	4	None	None	G4?	S1S2	2B.3	null	North coast coniferous forest

Lasiurus cinereus	hoary bat	Mammals	AMACC05032	238	1	None	None	G3G4	S4	null	IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	304	4	None	Threatened	G3T1	S2	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_EN-Endangered	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Lessingia micradenia var. micradenia	Tamalpais lessingia	Dicots	PDAST5S063	9	6	None	None	G2T2	S2	1B.2	SB_CalBG/RSABG-California/ Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture	Chaparral, Ultramafic, Valley & foothill grassland
Melospiza melodia samuelis	San Pablo song sparrow	Birds	ABPBXA301W	41	3	None	None	G5T2	S2	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern	Salt marsh
Microseris paludosa	marsh microseris	Dicots	PDAST6E0D0	38	2	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_SBBG-Santa Barbara Botanic Garden, SB_UCSC-UC Santa Cruz	Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley & foothill grassland
Navarretia rosulata	Marin County navarretia	Dicots	PDPLM0C0Z0	15	7	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/ Rancho Santa Ana Botanic Garden	Chaparral, Closed-cone coniferous forest, Ultramafic
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	Marsh	CTT52110CA	53	2	None	None	G3	S3.2	null	null	Marsh & swamp, Wetland
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	Fish	AFCHA02034	23	1	Endangered	Endangered	G5T2Q	S2	null	AFS_EN-Endangered	Aquatic
Pentachaeta bellidiflora	white-rayed pentachaeta	Dicots	PDAST6X030	14	6	Endangered	Endangered	G1	S1	1B.1	SB_UCBG-UC Botanical Garden at Berkeley	Ultramafic, Valley & foothill grassland
Plagiobothrys glaber	hairless popcornflower	Dicots	PDBOR0V0B0	9	1	None	None	GX	SX	1A	null	Marsh & swamp, Salt marsh, Vernal pool, Wetland
Pleuropogon hooverianus	North Coast semaphore grass	Monocots	PMPOA4Y070	34	1	None	Threatened	G2	S2	1B.1	BLM_S-Sensitive, SB_BerrySB-Berry Seed Bank, SB_CalBG/RSABG-	Broadleaved upland forest, Meadow & seep, North coast coniferous

											California/ Rancho Santa Ana Botanic Garden	forest, Wetland
Polygonum marinense	Marin knotweed	Dicots	PDPGN0L1C0	32	2	None	None	G2Q	S2	3.1	null	Brackish marsh, Marsh & swamp, Salt marsh, Wetland
Pomatiopsis binneyi	robust walker	Mollusks	IMGASJ9010	2	1	None	None	G1	S1	null	null	null
Quercus parvula var. tamalpaisensis	Tamalpais oak	Dicots	PDFAG051Q3	19	15	None	None	G4T2	S2	1B.3	null	Cismontane woodland, Lower montane coniferous forest
Rallus obsoletus obsoletus	California Ridgway's rail	Birds	ABNME05011	99	4	Endangered	Endangered	G3T1	S2	null	CDFW_FP-Fully Protected	Brackish marsh, Marsh & swamp, Salt marsh, Wetland
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	Amphibians	AAABH01051	1610	11	None	None	G3T4	S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	Aquatic, Klamath/ North coast flowing waters, Riparian forest, Riparian scrub, Riparian woodland
Reithrodontomys raviventris	salt-marsh harvest mouse	Mammals	AMAFF02040	151	4	Endangered	Endangered	G1G2	S3	null	CDFW_FP-Fully Protected, IUCN_EN-Endangered	Marsh & swamp, Wetland
Serpentine Bunchgrass	Serpentine Bunchgrass	Herbaceous	CTT42130CA	22	1	None	None	G2	S2.2	null	null	Valley & foothill grassland
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	Dicots	PDMAL11012	34	1	None	None	G5T2	S2	1B.2	null	Freshwater marsh, Marsh & swamp, Wetland
Spirinchus thaleichthys pop. 2	longfin smelt - San Francisco Bay-Delta DPS	Fish	AFCHB03040	35	1	Endangered	Threatened	G5TNRQ	S1	null	IUCN_LC-Least Concern	Aquatic, Estuary, Marine bay, Sacramento/ San Joaquin flowing waters
Stebbinsoseris decipiens	Santa Cruz microseris	Dicots	PDAST6E050	19	3	None	None	G2	S2	1B.2	SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden, SB_UCSC-UC Santa Cruz	Broadleaved upland forest, Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland
Streptanthus batrachopus	Tamalpais jewelflower	Dicots	PDBRA2G050	8	5	None	None	G2	S2	1B.3	SB_UCSC-UC Santa Cruz	Chaparral, Closed-cone coniferous forest, Ultramafic

Streptanthus glandulosus ssp. pulchellus	Mt. Tamalpais bristly jewelflower	Dicots	PDBRA2G0J2	24	8	None	None	G4T2	S2	1B.2	SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden	Chaparral, Ultramafic, Valley & foothill grassland
Trachusa gummifera	San Francisco Bay Area leaf-cutter bee	Insects	IIHYM80010	3	1	None	None	G1	S1	null	null	null
Trifolium amoenum	two-fork clover	Dicots	PDFAB40040	26	1	Endangered	None	G1	S1	1B.1	SB_CalBG/ RSABG-California/ Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley, SB_USDA-US Dept of Agriculture	Coastal bluff scrub, Ultramafic, Valley & foothill grassland
Tryonia imitator	mimic tryonia (=California brackishwater snail)	Mollusks	IMGASJ7040	39	1	None	None	G2	S2	null	IUCN_DD-Data Deficient	Aquatic, Brackish marsh, Estuary, Lagoon, Marsh & swamp, Salt marsh, Wetland
Vespericola marinensis	Marin hesperian	Mollusks	IMGASA4140	23	3	None	None	G2	S2	null	null	Chaparral, Meadow & seep, North coast coniferous forest, Riparian woodland

CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

Search Results

57 matches found. Click on scientific name for details

Search Criteria: , County or Island is one of [MRN], Quad is one of [3712285]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Amorpha californica var. *napensis*	Napa false indigo	Fabaceae	perennial deciduous shrub	Apr-Jul	None	None	G4T2	S2	1B.2	Yes	2001-01-01	 © 2016 John Doyen
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	None	None	G3	S3	1B.2	Yes	1974-01-01	 © 2011 Neal Kramer
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	Feb-May	None	None	G4	S4	4.3	Yes	1974-01-01	 © 2011 Neal Kramer
Arctostaphylos montana ssp. *montana*	Mt. Tamalpais manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	None	None	G3T3	S3	1B.3	Yes	1974-01-01	 © 2018 John Doyen
Arctostaphylos virgata	Marin manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Aspidotis carlotta-halliae	Carlotta Hall's lace fern	Pteridaceae	perennial rhizomatous herb	Jan-Dec	None	None	G3	S3	4.2	Yes	1994-01-01	No Photo Available

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	Apr-Jun	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available
Calamagrostis crassiglumis	Thurber's reed grass	Poaceae	perennial rhizomatous herb	May-Aug	None	None	G5Q	S2	2B.1		1980-01-01	No Photo Available
Calamagrostis ophitidis	serpentine reed grass	Poaceae	perennial herb	Apr-Jul	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	None	None	G4	S4	4.2		1994-01-01	No Photo Available
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	None	None	G3?	S3?	4.2	Yes	1980-01-01	No Photo Available
Calochortus uniflorus	pink star-tulip	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4	S4	4.2		2010-03-04	 © 2021 Scot Loring
Calystegia collina ssp. *oxyphylla*	Mt. Saint Helena morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	None	None	G4T3	S3	4.2	Yes	1984-01-01	No Photo Available
Castilleja ambigua var. *ambigua*	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	None	None	G5T4	S3S4	4.2		2009-02-04	 ©2011 Dylan Neubauer
Ceanothus gloriosus var. *exaltatus*	glory brush	Rhamnaceae	perennial evergreen shrub	Mar-Jun(Aug)	None	None	G4T4	S4	4.3	Yes	2001-01-01	 ©2018 John Doyen
Ceanothus pinetorum	Kern ceanothus	Rhamnaceae	perennial evergreen shrub	May-Jul	None	None	G3	S3	4.3	Yes	1974-01-01	 ©2017 Aaron Schusteff

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	None	None	G4?T2	S2	1B.2		1974-01-01	 ©2017 John Doyen
Chorizanthe cuspidata var. *cuspidata*	San Francisco Bay spineflower	Polygonaceae	annual herb	Apr-Jul(Aug)	None	None	G2T1	S1	1B.2	Yes	1994-01-01	No Photo Available
Cirsium hydrophilum var. *vaseyi*	Mt. Tamalpais thistle	Asteraceae	perennial herb	May-Aug	None	None	G2T1	S1	1B.2	Yes	1974-01-01	No Photo Available
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	None	None	G3G4	S3	4.2		1980-01-01	No Photo Available
Cypripedium californicum	California lady's-slipper	Orchidaceae	perennial rhizomatous herb	Apr-Aug(Sep)	None	None	G3	S4	4.2		1980-01-01	 © 2012 Barry Rice
Dermatocarpon meiophyllizum	silverskin lichen	Verrucariaceae	foliose lichen (aquatic)		None	None	G3G5	S3	2B.3		2022-07-14	No Photo Available
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2017 Steve Matson
Elymus californicus	California bottle-brush grass	Poaceae	perennial herb	May-Aug(Nov)	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Eriogonum luteolum var. *caninum*	Tiburon buckwheat	Polygonaceae	annual herb	May-Sep	None	None	G5T2	S2	1B.2	Yes	1974-01-01	No Photo Available
Erysimum franciscanum	San Francisco wallflower	Brassicaceae	perennial herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss		None	None	G3?	S2	1B.2		2001-01-01	 ©2021 Scot Loring

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Fritillaria lanceolata var. *tristulis*	Marin checker lily	Liliaceae	perennial bulbiferous herb	Feb-May	None	None	G5T2	S2	1B.1	Yes	1994-01-01	 © 2020 Barry Rice
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2		2001-01-01	 © 2017 John Doyen
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2013 Christopher Bronny
Hemizonia congesta ssp. *congesta*	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	None	None	G5T2	S2	1B.2	Yes	1988-01-01	 © 2015 Vernon Smith
Hesperolinon congestum	Marin western flax	Linaceae	annual herb	Apr-Jul	FT	CT	G1	S1	1B.1	Yes	1974-01-01	 © 2009 Neal Kramer
Holocarpha macradenia	Santa Cruz tarplant	Asteraceae	annual herb	Jun-Oct	FT	CE	G1	S1	1B.1	Yes	1974-01-01	 © 2011 Dylan Neubauer
Horkelia tenuiloba	thin-lobed horkelia	Rosaceae	perennial herb	May-Jul(Aug)	None	None	G2	S2	1B.2	Yes	1988-01-01	 © 1994 Doreen L. Smith
Hosackia gracilis	harlequin lotus	Fabaceae	perennial rhizomatous herb	Mar-Jul	None	None	G3G4	S3	4.2		2004-01-01	 © 2015 John Doyen

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May(Jun)	None	None	G3	S3	4.2	Yes	2006-10-12	 © 2014 Aaron Schusteff
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	None	None	G5T5	S4	4.2		1988-01-01	 © 2019 Belinda Lo
Kopsiopsis hookeri	small groundcone	Orobanchaceae	perennial rhizomatous herb (parasitic)	Apr-Aug	None	None	G4?	S1S2	2B.3		1994-01-01	 ©2016 Vernon Smith
Leptosiphon aureus	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G4?	S4?	4.2	Yes	1994-01-01	 © 2007 Len Blumin
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	Apr-Aug	None	None	G3G4	S3S4	4.2	Yes	1994-01-01	 © 2003 Doreen L. Smith
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	Yes	1994-01-01	 © 2015 Aaron Schusteff
Lessingia micradenia var. *micradenia*	Tamalpais lessingia	Asteraceae	annual herb	(Jun)Jul-Oct	None	None	G2T2	S2	1B.2	Yes	1994-01-01	 © 2015 Vernon Smith
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun(Jul)	None	None	G2	S2	1B.2	Yes	2001-01-01	No Photo Available
Navarretia rosulata	Marin County navarretia	Polemoniaceae	annual herb	May-Jul	None	None	G2	S2	1B.2	Yes	1980-01-01	No Photo Available

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Perideridia gairdneri ssp. *gairdneri*	Gairdner's yampah	Apiaceae	perennial herb	Jun-Oct	None	None	G5T3T4	S3S4	4.2	Yes	1974-01-01	 ©2007 Neal Kramer
Plagiobothrys glaber	hairless popcornflower	Boraginaceae	annual herb	Mar-May	None	None	GX	SX	1A	Yes	1974-01-01	No Photo Available
Pleuropogon hooverianus	North Coast semaphore grass	Poaceae	perennial rhizomatous herb	Apr-Jun	None	CT	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	(Apr)May-Aug(Oct)	None	None	G2Q	S2	3.1	Yes	1974-01-01	No Photo Available
Quercus parvula var. *tamalpaisensis*	Tamalpais oak	Fagaceae	perennial evergreen shrub	Mar-Apr	None	None	G4T2	S2	1B.3	Yes	2001-01-01	No Photo Available
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	None	None	G4	S3	4.2		1974-01-01	 © 2018 John Doyen
Sidalcea calycosa ssp. *rhizomata*	Point Reyes checkerbloom	Malvaceae	perennial rhizomatous herb	Apr-Sep	None	None	G5T2	S2	1B.2	Yes	1994-01-01	No Photo Available
Stebbinsoseris decipiens	Santa Cruz microseris	Asteraceae	annual herb	Apr-May	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Streptanthus batrachopus	Tamalpais jewelflower	Brassicaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.3	Yes	1974-01-01	 © 2012 Aaron Schusteff
Streptanthus glandulosus ssp. *pulchellus*	Mt. Tamalpais bristly jewelflower	Brassicaceae	annual herb	May-Jul(Aug)	None	None	G4T2	S2	1B.2	Yes	1980-01-01	No Photo Available

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Toxicoscordion fontanum	marsh zigadenus	Melanthiaceae	perennial bulbiferous herb	Apr-Jul	None	None	G3	S3	4.2	Yes	2001-01-01	No Photo Available
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	FE	None	G1	S1	1B.1	Yes	1974-01-01	No Photo Available

Showing 1 to 57 of 57 entries

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IPaC **U.S. Fish & Wildlife Service**

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

Marin County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

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.

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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:

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse Reithrodontomys raviventris Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Least Tern Sternula antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
California Ridgway''s Rail Rallus obsoletus obsoletus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered
Marbled Murrelet Brachyramphus marmoratus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl Strix occidentalis caurina Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover Charadrius nivosus nivosus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle Chelonia mydas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6199	Threatened
Northwestern Pond Turtle Actinemys marmorata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Tidewater Goby Eucyclogobius newberryi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Flowering Plants

NAME	STATUS

California Seablite Suaeda californica — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6310

Marin Dwarf-flax Hesperolinon congestum — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5363

Santa Cruz Tarplant Holocarpha macradenia — Threatened
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/6832

Showy Indian Clover Trifolium amoenum — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6459

White-rayed Pentachaeta Pentachaeta bellidiflora — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/7782

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and

the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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 avoidance and minimization 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 Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs
The FAQs below provide important additional information and resources.

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. https://ecos.fws.gov/ecp/species/1626	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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "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.

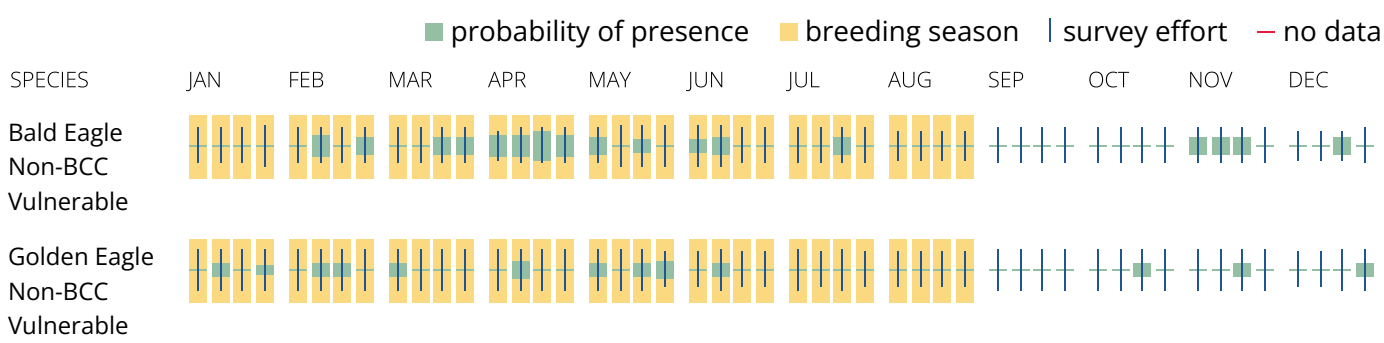
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.



Bald & Golden Eagles FAQs

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 an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 line or no data line (red horizontal) 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 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 and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are 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 resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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.

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
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.

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.

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.

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.

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.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by

the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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 avoidance and minimization measures for birds
- 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

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON

Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9637

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31
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/1626

Belding's Savannah Sparrow Passerculus sandwichensis beldingi — Breeds Apr 1 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8

Black Oystercatcher Haematopus bachmani — Breeds Apr 15 to Oct 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9591

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Black Tern Chlidonias niger surinamenisis — Breeds May 15 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3093

Black Turnstone Arenaria melanocephala — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Black-chinned Sparrow Spizella atrogularis — Breeds Apr 15 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9447

Brandt's Cormorant *Urile penicillatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 15 to Sep 15
Bullock's Oriole *Icterus bullockii* 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* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
California Spotted Owl *Strix occidentalis occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 10 to Jun 15
California Thrasher *Toxostoma redivivum* 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* 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* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Elegant Tern *Thalasseus elegans* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8561	Breeds Apr 5 to Aug 5
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

Heermann's Gull Larus heermanni — Breeds Mar 15 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lawrence's Goldfinch Spinus lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Long-eared Owl asio otus — Breeds Mar 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3631

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Northern Harrier Circus hudsonius — Breeds Apr 1 to Sep 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8350

Nuttall's Woodpecker Dryobates nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Red Knot Calidris canutus roselaari — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8880

Santa Barbara Song Sparrow Melospiza melodia graminea — Breeds Mar 1 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/5513

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Western Gull Larus occidentalis — Breeds Apr 21 to Aug 25
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Western Screech-owl Megascops kennicottii cardonensis — Breeds Mar 1 to Jun 30
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "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.

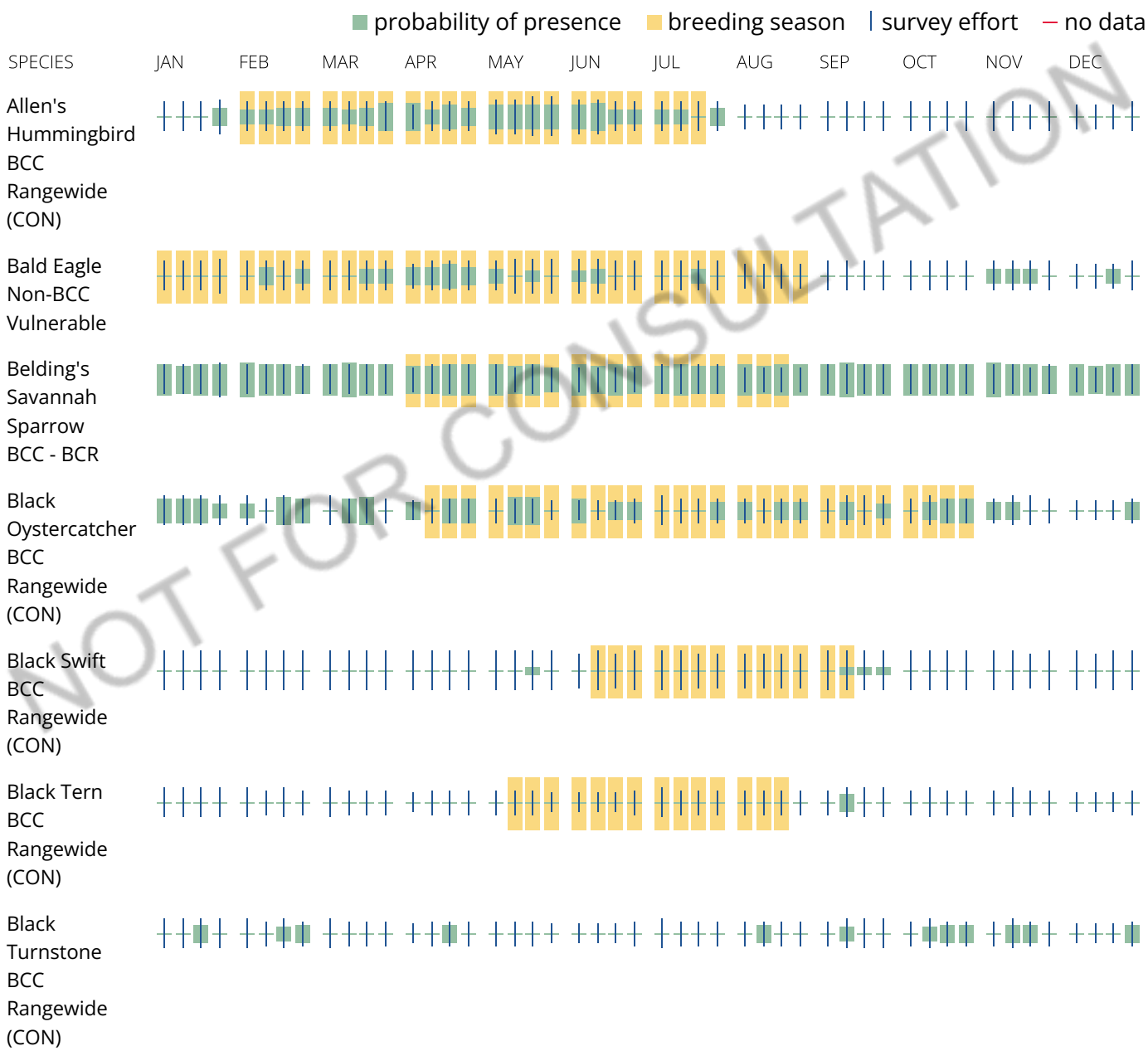
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

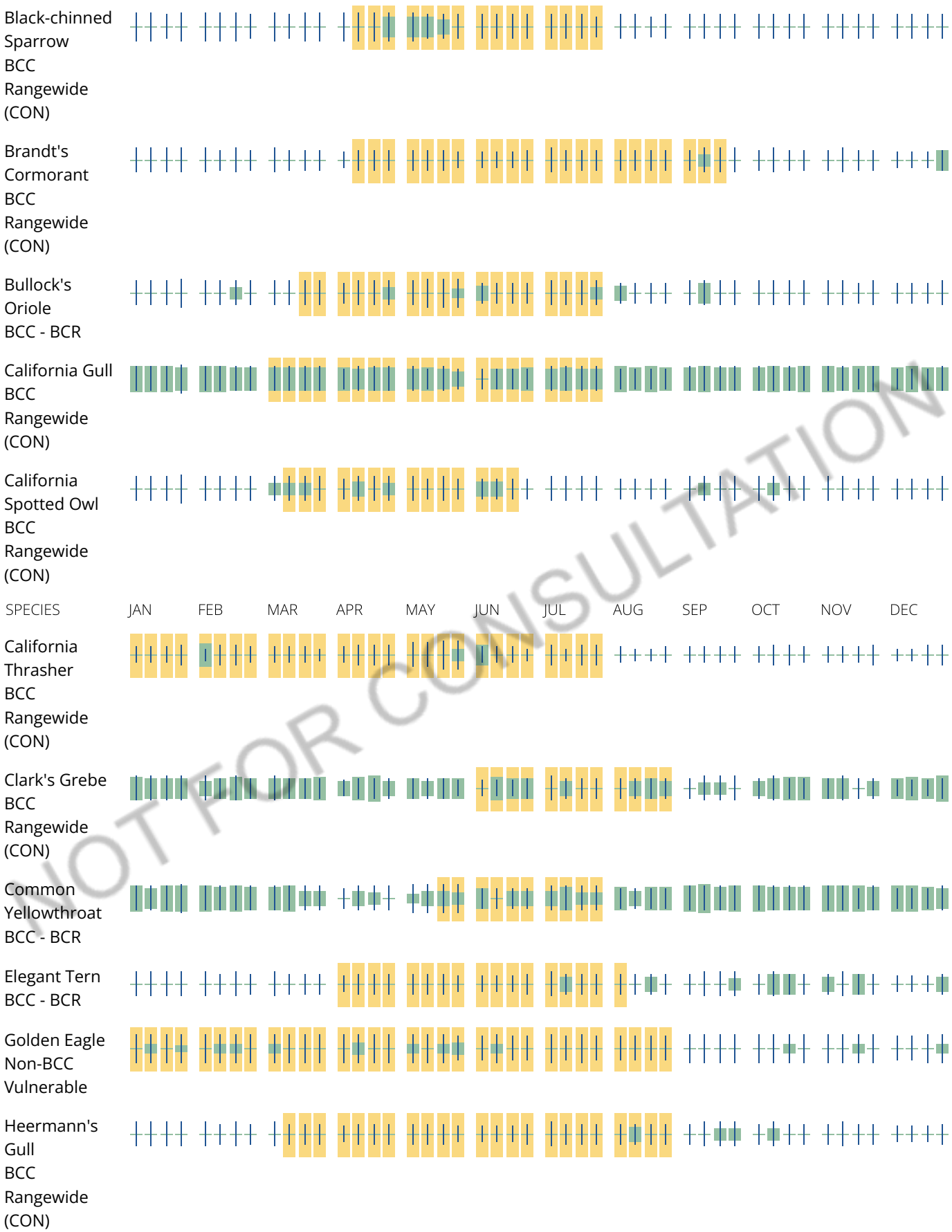
No Data (–)

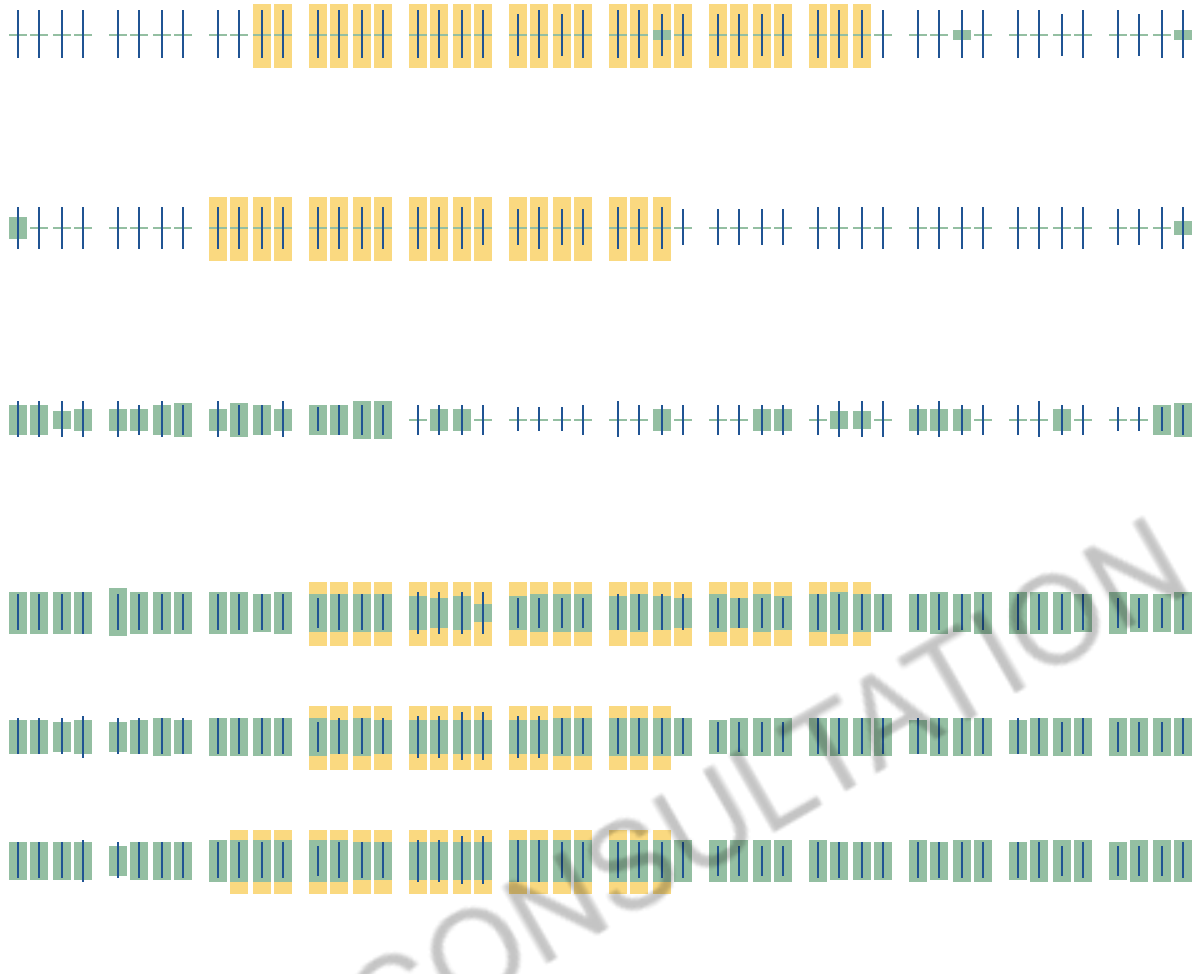
A week is marked as having no data if there were no survey events for that week.

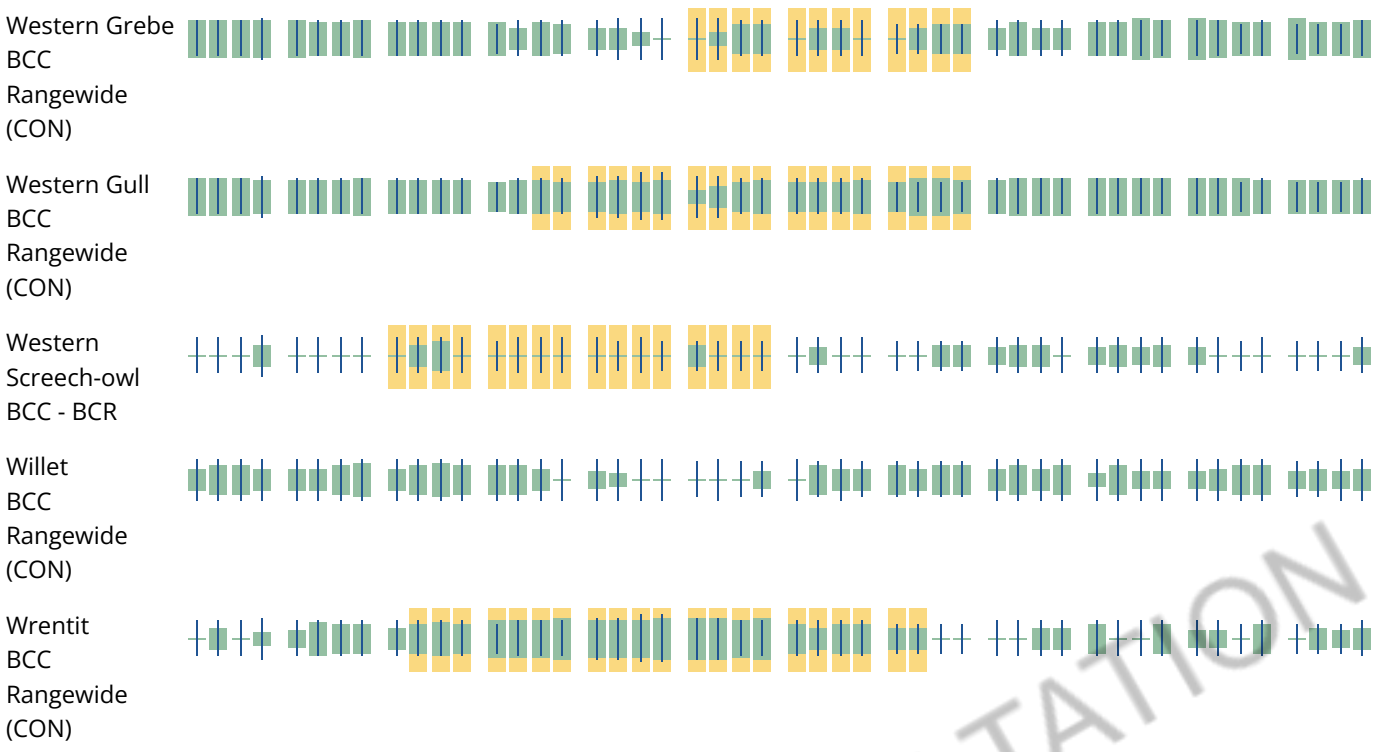
Survey Timeframe

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.









Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed 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 Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

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) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection 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, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

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 to 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 resident), you may query your location using the RAIL Tool and view 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 IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), 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 Bald and Golden Eagle Protection 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 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 BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

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.

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 look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 does not represent all birds present in your project area. 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 and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

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.

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.

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.

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.

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.

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:

ESTUARINE AND MARINE WETLAND

- E2EM1N
- E2SBNh
- E2SBN

FRESHWATER POND

- PUBHx

RIVERINE

- R3UBF
- R4SBA

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.