DRAFT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Fairfax Capacity and Creek Crossings Project (#957)
Fairfax and Unincorporated Marin County, CA

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

Prepared by

2455 Bennett Valley Road
Suite C101
Santa Rosa, CA 95404

March 2026

MITIGATED NEGATIVE DECLARATION

PROJECT TITLE

Fairfax Capacity and Creek Crossings Project (#957)

LEAD AGENCY/NAME AND ADDRESS

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

PROJECT LOCATION

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 unincorporated areas of Marin County as well as the Town of Fairfax (Fairfax), as detailed below.

Fairfax

Fairfax has a land area of approximately 2 mi^2 in a series of small valleys created by streams with surrounding hillsides. Fairfax is bordered to the east by San Anselmo and to the north by unincorporated Sleepy Hollow.

The Project site in Fairfax includes multiple sewer line segments (Attachment B; Figure 1-3). The sewer line segments are located within the existing alignments along Broadway, Merwin Avenue, Park Road, Spruce Road, Hawthorne Court, Merwin Road, Oak Manor Drive, Westbrae Drive, and Olema Drive.

Land uses surrounding the Project site in Fairfax mainly consist of single-family residential uses to the north, east, south, and west. Sir Francis Drake Boulevard is located near the Project site and is a major traffic artery linking U.S. 101 with communities in the Fairfax area. The proposed Project work along Broadway is also adjacent to commercial land uses.

PROJECT DESCRIPTION

The Project entails the construction and rehabilitation of sanitary sewer mains, manholes, and related appurtenances within the existing alignment, of sanitary sewer mains and related

appurtenances within unincorporated Marin County and the Town of Fairfax located within the County of Marin. The Project site encompasses approximately 0.3 acres and the total area disturbed would be approximately 13,300 ft. The primary objective of this Project is to relieve hydraulic and structural deficiencies and reduce groundwater infiltration associated with aging RVSD infrastructure.

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 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 BIO-2

Within 30 days prior to vegetation removal associated with site restoration work at Crossings 2 and 3, a qualified biologist shall survey the potential area of disturbance and adjacent areas for woodrat middens. If woodrat middens are observed, a 5-foot non-disturbance buffer shall be maintained around the middens and vegetation removal activities shall be implemented using hand-tools only under the supervision of a qualified biologist. If no middens are observed, no additional measures are required.

Mitigation Measure CUL-1

Prior to project implementation, a cultural and tribal resources 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 (FIGR). Based on the results of the testing and in coordination with the RSVD and FIGR, 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 plan will detail the appropriate avoidance and/or treatment measures to be carried out in coordination with FIGR, as necessary.

Mitigation Measure CUL-2

Upon approval of the cultural and tribal resources 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 FIGR. A tribal monitor will be present during all testing. Testing will occur at the following project segments:

- South side of Lanai Apartments (2555 Sir Francis Drake Boulevard)
- From southeast corner of Lanai Apartments, between 26 and 48 Westbrae Drive
- From 26 Westbrae Drive to 5, 6, 9, 10 Hawthorne Court
- From 13 Hawthorne Court to Oak Manor at Arrowood
- Between 30 and 46 Spruce Road
- Between 24 and 41 Merwin Avenue
- Between 35 and 150 Broadway Boulevard
- Between 35 Broadway Boulevard and Pacheco Avenue

Where testing is not feasible, monitoring will occur in accordance with Mitigation Measure CUL-1. A testing results report and monitoring report will be prepared to detail the methods

and results of the fieldwork and California Department of Parks and Recreation (DPR 523) site record forms will be completed for any resource discoveries. A copy of the report(s) will be shared with FIGR for review, including geospatial data and DPR 523 site records, if applicable.

Mitigation Measure CUL-3

Prior to project related work, the construction crews shall be trained in "basic archaeological and tribal resources awareness and 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, FIGR, 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 FIGR (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 (MLD). The MLD 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 human remains or associated funerary objects will be determined in consultation between RVSD and FIGR.

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 Date
Senior Engineer

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: Fairfax Capacity and Creek Crossings Project (#957)		
PROJECT ADDRESS: Broadway, Merwin Avenue, Park Road, Spruce Road, Hawthorne Court, Merwin Road, Oak Manor Drive, Westbrae Drive, and Olema Drive	CITY: Town of Fairfax, CA	COUNTY: Marin
PROJECT SPONSOR: Ross Valley Sanitary District	CONTACT: Philip Benedetti	PHONE: (415) 259-2949 x212

LEAD AGENCY ADDRESS:	CONTACT:	PHONE:
1111 Anderson Drive San Rafael, CA 94901	Philip Benedetti	(415) 259-2949 x212

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] Fairfax Capacity and Creek Crossings Project #957 (Project) entails the construction and rehabilitation, within the existing alignment, of sanitary sewer mains, manholes, and related appurtenances within unincorporated Marin County and the Town of Fairfax within the County of Marin (Attachment B, Figures 1-3). The primary goals of this project are to provide adequate capacity to convey wet weather flows preventing sewer overflows and replace aging RVSD infrastructure and reduce inflow and infiltration into the system.

The 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 impacts.

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 unincorporated areas of Marin County as well as the Town of Fairfax (Fairfax), as detailed below.

Fairfax

Fairfax has a land area of approximately 2 mi^2 in a series of small valleys created by streams with surrounding hillsides. Fairfax is bordered to the east by San Anselmo and to the north by unincorporated Sleepy Hollow.

The Project site in Fairfax includes multiple sewer line segments (Attachent B; Figures 1-3). The sewer line segments are located within the existing alignments along Broadway, Merwin Avenue, Park Road, Spruce Road, Hawthorne Court, Merwin Road, Oak Manor Drive, Westbrae Drive, and Olema Drive.

Land uses surrounding the Project site in Fairfax mainly consist of single-family residential uses to the north, east, south, and west. Sir Francis Drake Boulevard is located near the Project site and is a major traffic artery linking U.S. 101 with communities in the Fairfax area. The proposed Project work along Broadway is also adjacent to commercial land uses.

Site Background

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

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

based on the severity of the defects found requirements for televised inspections for the entire system. One of these requirements included 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.

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." The original CDO requirements have resulted in significant improvements in the system and in operations. RVSD produced the 2021 IAMP to support a transition from the 2013 IAMP. The 2021 IAMP Update is a proactive, data-driven, forward-looking, economically sustainable asset management plan. 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 vary. 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.
- Guided Jack and Bore: Guided jack-and-bore is a trenchless construction method used to install pipelines—typically steel casing with a carrier pipe—under roads, railways, or other obstacles without open-cut excavation. The "guided" aspect refers to a steering system that improves accuracy and keeps the bore on line and grade.

- Horizontal Directional Drilling (HDD): HDD is a trenchless construction method in which a drill rig creates an underground path for a pipe by drilling a pilot hole, enlarging it (reaming), and pulling the pipe back through the hole—all without open-cut excavation.

The Project would rehabilitate approximately 3,300 linear feet (LF) of 6-inch sanitary sewers with new polyvinyl chloride (PVC) or high-density polyethylene (HDPE) pipe via open-cut removal and

replacement (988 LF), pipe bursting (2,200 LF), guided jack and bore (140 LF), and aerial crossing (96 LF). Existing private sewer laterals would be reconnected to the sanitary sewers and rehabilitated as necessary.

Rehabilitating, removing and replacing, or installing new sanitary sewer manholes is also included in the project scope. Of the 31 manholes that would be constructed for this project, 13 are new manholes; the remaining would be constructed to remove and replace or rehabilitate existing ones. Manhole locations would require excavation and backfill of an area of approximately 8 × 8 ft, with varying depths estimated to range from approximately 5 to 23 ft.

The Project would also increase wet weather capacity by upsizing approximately 400 LF of 15-inch gravity sewer to 18-inch gravity sewer and installing approximately 2,000 LF of new 18-inch gravity main as a relief sewer throughout downtown Fairfax along Broadway and Merwin Avenue.

The project would cross Fairfax Creek four times, as described below:

1. The first creek crossing would involve trenchless installation of a new double-barrel siphon via HDD (106 LF), as detailed in PP-04 of the engineering designs for the proposed project found in Attachment C. The 106 LF of double-barrel siphon would be composed of a 10-inch and 16-inch sanitary sewer.

2. The second creek crossing is an aerial crossing across Fairfax Creek and involves replacing existing SS on the shared utility bridge already present traversing Fairfax Creek. The newly installed SS would include a 16-inch steel pipe casing and a 10-inch sanitary sewer carrier pipe approximately 43 LF in length.

3. The third creek crossing would also be an aerial crossing to replace the existing sanitary sewer. The new sanitary sewer would include an 18-inch steel pipeline casing and a 12-inch carrier pipe approximately 53 LF in length traversing above Fairfax Creek utilizing the existing support beams that hold the current sanitary sewer in place.

4. The fourth creek crossing would involve guided jack and bore underneath the creek to replace existing sanitary sewer. The existing sanitary sewer that is currently located in the creek would be abandoned. The 140 LF of new 8-inch sanitary sewer with a 12-ch steel pipeline casing would be installed underneath Fairfax Creek.

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. Depths of excavations would vary between 3 and 27ft based on location. The Project locations and construction method for each pipe section are identified on the preliminary construction plans provided in Attachment C.

Work Hours and Schedule

Construction is expected to begin in June 2026 and is anticipated to be completed by February 2027. 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 less than 230 consecutive calendar days (187 working days) 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.

Due to the slight widening and associated increased shading inherent with the aerial pipe replacement, additional restoration activities would be undertaken at aerial creek crossings two and three. Habitat at these creek crossings would be meaningfully uplifted as compared to pre-existing conditions. Uplift would include removal of invasive plant species such as French brome (*Bromus inermis*) and anthropogenic debris (old plastic straw wattles and trash), as well as planting of native woody riparian vegetation in additional to native seed mix. These restoration and uplift efforts would occur 20 ft up and downstream of the creek crossings. No long-term monitoring will occur at the site, and removal of invasive vegetation and creek channel debris would occur only to the extent that removal does not impact water quality or bank stability.

Permits and Project Approvals

Permits that would likely be required include, but are not necessarily limited to, the following:

- County of Marin Encroachment Permit
- California Department of Fish and Wildlife, Lake and Streambed Alteration Agreement
- Regional Water Quality Control Board, Waste Discharge Requirement Permit

Several sewer main segments are located on private properties, including segments located near Sir Franics Drake Boulevard and Olema Road as well as near Hawthorne Court and Westbrae Drive. 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 water quality measures to prevent impact to wildlife or wildlife habitat (including aquatic habitat), 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, as necessary. 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
- Biological Resources

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.

[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.

References:

Far Western. 2025. Archaeological Resources Inventory for the Ross Valley Sanitary District Fairfax Capacity and Creek Crossings Project, Marin County, California. Far Western Anthropological Research Group, Inc., Davis, CA. December.

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

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

Ross Valley Sanitary District. 2021. IAMP Summary Report, Infrastructure Asset Management Plan Update. https://rvsd.org/309/Infrastructure-Asset-Management-Plan. 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:

Each Project segment, located in various areas of Fairfax and unincorporated Marin County, was evaluated to identify its visual character. This information is summarized as follows:

The Project segments contain a mix of single-family residential homes and landscaping along with central commercial development. The Project site is visually characterized by the following features:

- Broadway, Merwin Avenue, Park Road, Spruce Road, Hawthorne Court, Merwin Road, Oak Manor Drive, Westbrae Drive, and Olema Drive are residential streets. They are flanked by private residences and landscaped vegetation, with some areas of non-landscaped vegetation.

- Land uses surrounding the Project site in Fairfax mainly consist of single-family residential uses to the north, east, south, and west. Sir Francis Drake Boulevard is located near the Project site and is a major traffic artery linking U.S. 101 with communities in the Fairfax area.

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 2025). 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. 2025. 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:

None.

Description of Baseline Environmental Conditions:

The Project site is located at various areas within Marin County and Fairfax (Attachment B). The Project segments are largely built out with residential and some commercial 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 (SFBAAB). Federal, state, and regional agencies regulate air quality in the SFBAAB. 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 SFBAAB is the Bay Area Air District (the Air District).

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 SFBAAB. 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 Fairfax, 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 (Air District 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: Air District (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 SFBAAB 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 (Air District 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. EPA designates 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 (Air District 2025). 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, which 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 (Air District 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 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 (Air District 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 the Air District 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 (Air District 2023b).

In June 2022, the Air District released the CEQA Thresholds for Evaluating the Significance of Climate Impacts Report (Air District 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 (Air District 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 and 24-hour PM2.5 standards. To meet planning requirements related to these standards, the Air District has 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 SFBAAB 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 4 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 (Air District 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 PM_{10} and $PM_{2.5}$, 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's 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	0.28	10	1.50	54	No
CO	0.30	NA	1.63	NA	No
SO_2[a]	<0.005	NA	<0.005	NA	No
NOx	0.11	10	0.60	54	No
PM10[b]	0.02	15	0.09	82	No
PM2.5[b]	0.01	10	0.04	54	No

Source of input parameters: Phil Benedetti, Associate Engineer (RVSD), January 2026
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) that is 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 mostly 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 4 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 approximately 0.01 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 4 months or less.

- 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 the Project activities. Sanitary sewer lines would be replaced and rehabilitated in place via pipe bursting and pipe reaming methods. 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. Air District. 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. Air District. 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. Air District. 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. Air District. 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. Air District. 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. Air District. 2025. Air Quality Standards and Attainment Status. https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status. Bay Area Air Quality Management District, San Francisco, CA.
7. California Air Pollution Control Officers Association (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 and native plant mix.

Description of Baseline Environmental Conditions:

The Project site consists largely of public rights-of-way or designated easements running through private property in unincorporated Main County and Fairfax. 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 the Fairfax area. Reviewed documentation included plans, policies, and ordinances that protected natural resources therein and discussed the presence of special-status species, sensitive natural communities, and other protected biological resources. 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 2026)
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) resource list report (USFWS 2024)
- iNaturalist, a global citizen science biodiversity database (iNaturalist 2026)
- Other relevant literature, as cited below

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), Cristal Reagh, and Luke Davies—conducted a general survey of the Project site on November 19, 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.

Fairfax and Unincorporated Marin County

The sewer pipeline alignments within Fairfax occur within the roadways in commercial and residential neighborhoods and at four Fairfax creek crossings (further discussed below). Landscaping adjacent to the roadways in the commercial areas of the Project site consists of a mix of ornamental and native trees and shrubs, including sycamore (*Platanus racemosa*), oak (*Quercus agrifolia* and *Q. kelloggii*), redwood (*Sequoia sempervirens*), firethorn (*Pyracantha* sp.), and privet (*Ligustrum* sp.). In the more residential less highly trafficked areas of the Project site, vegetation included African iris (*Dietes iridioides*), *Agapanthus*, Mexican sage (*Salvia leucantha*), Japanese maple (*Acer palmatum*), various fruit trees, and yellow gum (*Eucalyptus leucoxylon*). Notably, the yellow gum tree housed many Anna's hummingbirds (*Calypte anna*). Seagulls (*Larinae*), turkey vultures (*Cathartes aura*), and American crows (*Corvus brachyrhynchos*) were also observed at the Project site.

Fairfax Creek

The sewer pipeline alignment crosses Fairfax Creek at four locations, described below. There will be no excavation at top of bank for any of the creek crossings. Additional restoration and uplift will occur at aerial crossings at Creek Crossings 2 and 3 to mitigate for the increased shading associated with aerial pipe replacement. Uplift will include removal of invasive species and anthropogenic debris, as well as planting of native woody riparian vegetation.

Crossing 1

The first creek crossing area (as detailed in PP-04 of Attachment C) was characterized as havinghas relatively steep banks with gabion walls for erosion control and bank stabilization. This creek crossing area hasd a sandy and cobbly bed and consistent water movement. The creek is bound on each side by gabion walls covered in English ivy. At this location, the streambed is sandy and cobbly and is approximately 15 feet wide at the Ordinary High Water Mark (OHWM) and 24 feet wide at the Top of Bank (TOB). While not as heavily vegetated as the other creek crossing segments of Fairfax Creek, vegetation included redwood trees (*Sequoia sempervirens*), English ivy (*Hedera helix*), Algerian ivy (*Hedera algeriensis*), and bush clover (*Lespedeza sp.*).

Crossing 2

The second creek crossing area (as detailed in PP-06 of Attachment C) is characterized by steep banks, with a welded wire mesh confinement system along the western bank,and undercut banks with pools of slow-moving water. An approximately 43 LF aerial crossing occurs at this location. Riprap lines the creek banks and various non uniform pipes, assumed to be owned by surrounding neighbors, were visible emanating from the western bank. The creek exhibited a sandy cobbly bed and a depth of approximately 16 inches. At this location, the creek is approximately 13 feet wide at OHWM and the creek bank extends to 61.5 feet wide at TOB. Vegetation observed included Himalayan blackberry (*Rubus armeniacus*), alder (*Alnus glutinosa*), arroyo willow (*Salix lasiolepis*), fennel (*Foeniculum vulgare*), and *Oxalis.*

Crossing 3

The third creek crossing area (as detailed in PP-11 of Attachment C) is characterized by steep, riprap lined banks, and a cobbly sandy streambed. An approximately 53 LF aerial crossing occurs at this location. At this location, the creek is approximately 14 feet wide at OHWM and 90 feet at TOB. Similar to Crossing 2, vegetation at this creek crossing included Himalayan blackberry, some native blackberry (*Rubus ursinus*), alder, arroyo willow, rushes (*Juncus* spp.), and bracken fern (*Pteridium aquilinum*).

Crossing 4

The fourth creek crossing (as detailed in PP-12 of Attachment C) area is characterized by an engineered, concrete and riprap-lined channel adjacent to Olema Rd and an apartment building and its associated parking lot. A freespan bridge crosses the creek at this location, connecting the parking lot to Olema Rd. The sewer pipeline runs at the base of the creek (encased in concrete), and parallel to the bridge. Upstream from the crossing location, the creek transitions into a more natural channel, with steep, undercut banks with deeper pools. No vegetation occurs below the bridge, however, downstream from the crossing location, sparse privet and Arroyo willows are scattered along the riprap covered banks which are sparsely vegetated with English ivy, and upstream from the crossing location, the banks are densely vegetated with the same species. At this location, the creek is approximately 13 ft wide at OHWM and 27 feet wide at TOB.

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. None of these species have has been documented as occurring on the Project site, although as discussed above, iNaturalist has two observations for CRLF within the viscinityvicinity of the Project site. Additionally, while not observed in the vicinity of the Project site, the USFWS Critical Habitat GIS data depicts spotted owl habitat located approximately 0.75 miles southwest/ west of the Project Projectsite. Project activities would not have significant adverse effects of any special-status species.

Plants

According to the CNDDB, the CNPS Inventory of Rare, Threatened, and Endangered Plants of California, and the USFWS IPac tool, 59 special-status plant species are known to occur or to have previously occurred within the same U.S. Geological Survey quadrangles (quads) as the Project site (San Rafael and Novato quads).

Wildlife

According to the CNDDB, the USFWS IPac tool, and iNaturalist 38 special-status wildlife species are known to occur or to have previously occurred within the San Rafael and Novato quads.

None of these species has been documented as occurring on the Project site, or proximal reaches of Fairfax Creek. However, the Project site provides suitable habitat for the following species:

- the trees, shrubs, and structures throughout the Project site provide suitable habitat for nesting birds
- the undercut banks and in-stream pools located at Crossing 2 and upstream of Crossing 4 provide potentially suitable habitat for California red-legged frog (CRLF) and foothill yellow legged frog (FYLF)
- a San Francisco dusky footed woodrat midden was observed on the eastern upper bank of Fairfax Creek approximately 40 feet downstream from Crossing 2

All Project activities would remain outside of the wetted creek channel, would not require excavation within or adjacent to the creek TOB, and would be isolated from the riparian corridor by wildlife exclusion fencing. As such, with implementation of Mitigation Measure BIO-1 and BIO-2, Project activities are not expected to have significant adverse effects to any special-status species.

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Nesting Birds

Project activities, including trenching and excavating, as well a test borings associated with cultural resource investigations, would result in temporary disturbance to suitable habitat for nesting birds. Although nesting bird activity was not noted during the site survey on or adjacent to the Project site, the survey was done outside the nesting season and 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–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.

Mitigation Measure BIO-2

Within 30 days prior to vegetation removal associated with site restoration work at Crossings 2 and 3, a qualified biologist shall survey the potential area of disturbance and adjacent areas for woodrat middens. If woodrat middens are observed, a 5 foot non-disturbance buffer shall be maintained around the middens and vegetation removal activities shall be implemented using hand-tools only under the supervision of a qualified biologist. If no middens are observed, no additional measures are required.

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?

Less than significant impact. While riparian habitat is generally identified as a sensitive natural community by CDFW, with the use of BMPs listed in Attachment D, any impacts to the Fairfax Creek riparian corridor would be avoided, minimized, and temporary in nature.

While vegetation at Crossings 1 and 4 are identified by Marin County Vegetation and the Land Cover mapping as California bay forest and woodland (Code 74.100.00), this was not confirmed in the field by Integral biologists, as these locations are more closely identified as Arroyo willow riparian. Regardless, Project activities at these locations will remain within the adjacent roadways and below the streambed. According to the CNDDB, no other sensitive natural communities are known to occur or to have

previously occurred within the San Rafael and Novato quads. 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 or permanent effects on any Sensitive Natural Communities. While project activities are proposed to occur within riparian corridor 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 and temporary nature of Project activities proposed to occur within/adjacent to the Sensitive Natural Community, 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?

Less than significant 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 (CWA), 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 Code of Federal Regulations (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 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 (USFWS 2026) identifies the Fairfax Creek riverine feature proximal to the sections of sewer pipeline alignment along Merwin Avenure (PP-04), Oak Manor Drive (PP-06), Westbrae Drive (PP-11), and Olema Road (PP-12). Field observations confirmed the existence of WOTUS at these locations proximal to the sewer alignment. No pipeline replacement activities at these creek crossings will occur below top of bank or at the OHWM. Any potential for fill or

hydrological disturbance will be temporary and the Project site will be restored to preexisting conditions or better. Impacts to the Fairfax Creek as a result of Project activities would be less than significant.

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?

Less than significant with mitigation incorporated. No impact.Less than significant with mitigation incorporated. 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. RRiparian areas serve as important corridors for wildlife movement and habitat connectivity for both aquatic and upland speciesspecies and are generally considered to be wildlife corridors. Due to the short -term and temporary nature of the potential Project impacts to riparian areas and the post-construction restoration enhancements, Project activities are not expected to result in impacts to wildlife corridors. . Accordingly the riparian corridors at creek crossings two and three (PP-06 and PP-11) are considered wildlife corridors. As discussed above, any impacts to riparian corridors would be temporary in nature and post construction would be restored to as good or better than pre-existing conditions. AsideIn addition to from cCreek cCrossings two 2 and three 3 (PP-06 and PP-11), 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 remaining portions of the Project site and area immediately surrounding it would not function as a wildlife corridor. With implementation of post-construction restoration and given the temporary nature of Project activities, no Mitigation Measure BIO-1, impacts to wildlife corridors would be less than significantare expected.

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 the riparian corridor 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 BIO1), no impacts to nursery sites would be less than significantare expected. With implementation of Mitigation Measure BIO-1, impacts to potential 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 Fairfax, both of which are subject to the Marin Countywide Plan (2007; last amended in 2023). The Marin Countywide Plan was developed to help guide the conservation and development of Marin County and addresses the protection of sensitive biological and wetland resources, including creeks, trees, threatened and endangered species habitat, riparian vegetation, and other resources. The Marin Countywide Plan also establishes a Native Tree Preservation and Protection Ordinance (Tree Ordinance), which establishes regulations for the preservation and protection of native trees in the incorporated and 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.
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3. CNPS. 2026. Rare Plant Inventory. https://www.rareplants.cnps.org. Version 9.5.1a. Accessed February 18, 2026. California Native Plant Society, Sacramento, CA.
4. iNaturalist. 2026. Observations in Fairfax, California. Available at: Observations · iNaturalist
5. 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.
6. 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.
7. USFWS.2026. National Wetland Inventory. Wetlands Mapper. Available at: Wetlands Mapper | U.S. Fish & Wildlife Service

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?	☐	☒	☐	☐
Cause a substantial adverse change in the significance of an archeological resource pursuant to § 15064.5?	☐	☒	☐	☐
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 sewer lines within the existing alignment of sanitary sewer mains and related appurtenances as well as the installation of new manholes and a new sewer alignment including a double-barrel siphon to accommodate wet weather capacity within Fairfax. It would employ pipe-bursting methods to repair the existing lines and would also involve open-cut trench excavation in areas deemed necessary for the construction of new sewer lines, rehabilitation of 18 existing manholes, and construction of 13 new manholes. While the Project would cross Fairfax Creek four times, as discussed above under Construction Methods, all creek crossings would not involve ground disturbing activities within the riparian area of the creek and would employ trenchless methods with two of the creek crossings involving replacement of existing pipe that crosses above the creek on existing infrastructure.

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 and pipe-reaming construction methods (both trenchless) have a minimal potential impact (see below) whereas the construction of a new sewer manhole, 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 5–27 ft below the ground surface. Open trench work would involve ground disturbance ranging from 9 to 18 ft. The removal of soils is expected to occur for the entry and exit pits and construction of new sewer manholes, and would involve excavating soils immediately surrounding the pipe as well as all soils above it to varying expected depths ranging from 5 to 23 ft below the ground surface for construction of the new manholes. 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 February 2026. 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 and the Federated Indians of Graton Rancheria (FIGR), buried-site sensitivity assessment, and a pedestrian survey of the Project site. The records search identified 23 previously recorded cultural resources within the quarter-mile records search buffer, the majority of which are historic-era built environment resources that do not intersect the area of direct impact (ADI). One previously recorded cultural resource intersects the ADI. This resource is a landscape feature, Mount Tamalpais, a mountain that has cultural and natural significance to the Coast Miwok and has been identified by FIGR who are traditionally and culturally affiliated with the ADI. This resource overlaps the majority of the ADI, except for the northern two-thirds of the alignment along Oak Manor Drive. Due to the size of the resource and the identified landscape features including the peak, slopes, and viewshed, it is unlikely that the proposed sewer rehabilitation efforts in established public roadways and private property parcels will impact the resource. See “Tribal Cultural Resources” section below for additional information from FIGR regarding this resource. No archaeological resources were observed during the pedestrian survey conducted for this study.

As part of this study, and as presented above, an archaeological resources sensitivity analysis was 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 or roadway alignments within and intersecting the ADI, which may be encountered subsurface during project activities; however, based on the extent of historic and modern roadway disturbances, there is low potential to encounter historic-era archaeological deposits within the ADI.

Based on the results of geoarchaeological assessment, the entire ADI is sensitive for subsurface precontact deposits except for the proposed repair work along Park Road; as such, it is recommended that an archaeological testing program is carried out in areas determined to have high sensitivity within the ADI.

RVSD initiated Native American outreach on this Project in accordance with Assembly Bill (AB) 52 and is consulting with FIGR. The Native American Heritage Commission’s search of the Sacred Lands File was negative. See Section 18, “Tribal Cultural Resources,” for a detailed discussion of AB 52 and ongoing consultation efforts with FIGR.

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 California Code of Regulations (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 (TCR). 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 identified 23 previously recorded cultural resources within the 0.25-mile records search buffer and one landscape feature, Mount Tamalpais, that intersects portions of the ADI. Due to the size of the resource and the identified landscape features including the peak, slopes, and viewshed, it is unlikely that the proposed sewer rehabilitation efforts in established public roadways and private property parcels will impact the resource. However, discussions with FIGR regarding Mount Tamalpais and the proposed project address this resource and avoidance/no impact measures. See "Tribal Cultural Resources" section below.

Due to the results of the buried site sensitivity assessment and consultation with FIGR, a program of focused archaeological testing will be conducted in areas determined to be highly sensitive for encountering cultural deposits. Testing will occur in advance of proposed ground disturbance, including manholes, sags, potholes, trenches, and the entry and exit pits for pipe bursting, where feasible. Based on the results of the testing, and in coordination with RVSD and FIGR, 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 and associated artifacts. With implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4, impacts to cultural resources would be less than significant.

Mitigation Measure CUL-1

Prior to project implementation, a cultural and tribal resources 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 FIGR. Based on the results of the testing and in coordination with the RSVD and FIGR, 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 plan will detail the appropriate avoidance and/or treatment measures to be carried out in coordination with FIGR, as necessary.

Mitigation Measure CUL-2

Upon approval of the cultural and tribal resources 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 FIGR. A tribal monitor will be present during all testing. Testing will occur at the following project segments:

- South side of Lanai Apartments (2555 Sir Francis Drake Boulevard)
- From southeast corner of Lanai Apartments, between 26 and 48 Westbrae Drive
- From 26 Westbrae Drive to 5, 6, 9, 10 Hawthorne Court
- From 13 Hawthorne Court to Oak Manor at Arrowood
- Between 30 and 46 Spruce Road
- Between 24 and 41 Merwin Avenue
- Between 35 and 150 Broadway Boulevard
- Between 35 Broadway Boulevard and Pacheco Avenue

Where testing is not feasible, monitoring will occur in accordance with Mitigation Measure CUL-1. A testing results report and monitoring report will be prepared to detail the methods and results of the fieldwork and California Department of Parks and Recreation (DPR 523) site record forms will be completed for any resource discoveries. A copy of the report(s) will be shared with FIGR for review, including geospatial data and DPR 523 site records, if applicable.

Mitigation Measure CUL-3

Prior to project related work, the construction crews shall be trained in “basic archaeological and tribal resources awareness and 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, FIGR, 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 FIGR (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 (MLD). The MLD 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 human remains or associated funerary objects will be determined in consultation between RVSD and FIGR.

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) 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. 2026. Archaeological Resources Inventory and Testing Plan for the Ross Valley Sanitary District Fairfax Capacity and Creek Crossing Project, Marin County, California. Far Western Anthropological Research Group, Inc, Davis, CA. February.

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.

AB 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 AB 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). In addition, the Fairfax has developed the Fairfax Climate Action Plan, which has a set community goal of 100 percent GHG emissions reduction by the year 2030 from a 2005 baseline (Fairfax 2022). 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 AB 32, the objectives of the 2022 CARB Scoping Plan, and the goals and policies contained in Marin County's Countywide Plan, Marin County Climate Action Plan, and Fairfax 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. Fairfax. 2022. Fairfax Climate Action Plan 2030. https://townoffairfaxca.gov/documents/climate-action-plan_2030/. Fairfax, CA. July.
3. 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:	☐	☐	☒	☐

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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 located within an Alquist-Priolo fault hazard zone (DOC 2019). 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 27 ft for construction of various improvements, including the replacement of manholes. Groundwater could be encountered during construction activities, as the proposed Project crosses Fairfax Creek four times, two of which involve trenchless pipe installation underneath the creek.

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 sites 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 the Project site are in an area identified as having a high potential for a liquefaction hazard, particularly those found along or near Fairfax Creek. 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 or would be impacted 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. Association of Bay Area Governments (ABAG). 2020. Hazard Viewer Map. https://abag.ca.gov/our-work/resilience/data-research/hazard-viewer. Association of Bay Area Governments, San Francisco, CA.

2. 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 Conservation, Sacramento, CA.
3. California Department of Conservation (DOC). 2019. California Geological Survey (CGS) Seismic Hazards Program: Alquist-Priolo Fault Hazards Zones. Last updated December 18, 2019. California Department of Conservation, Sacramento, CA.
4. 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.

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.

AB 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 AB 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 (Air District 2017a). BMPs identified in the Air Quality Guidelines for reducing GHG emissions during construction can include the following (Air District 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 the table below.

Table 3. Maximum Annual Emission from Project Activities

Pollutant	Maximum Annual Emissions ($MTCO_2e$ /year)	Threshold [a] ($MTCO_2e$ /year)	Above Threshold?
CO_2e	40.03	1,100	No

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

The Air Quality Guidelines (Air District 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 (72.83 $MTCO_{2e}$/year) that could be generated during construction are well below the Air District's 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.

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 (Air District 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. Air District. 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. Air District 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.

[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.

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 are 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 listed in 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 (linked to the EnviroStor website). There are no active sites or open cases 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. Although there are schools in the vicinity of the Project, 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.. While there are no hazardous materials release sites within the Project site, the DTSC Cortese List revealed that there are three active cleanup site within 0.25 mile of the Project. French Laundry and Cleaners on 101 Bolinas Road 0.17 mile from Project components along Sir Francis

Drake Boulevard is an active state response listed on both GeoTracker and EnviroStor databases. Fair Anselm Center, Inc. located at 709 Center Boulevard 0.21 mile away from Project components at Sir Francis Drake Boulevard is another active state response. The final listing near the Project site is an active cleanup located at 77 & 83 Broadway directly adjacent to Project components along Broadway (DTSC 2025; SWRCB 2025). However, none of these sites are within the Project footprint. Therefore, 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. In addition, the Project is 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 as well as Fairfax Creek at the four proposed Creek crossings. 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 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 FEMA Flood Hazard Zone Area of Minimal Flood Hazard (Zone X) with some Project components in areas indicated as Zones A and AE. Flood Hazard Zone X is described by FEMA as an area that has minimal flooding and is considered low-risk, Zone A indicates there is at least a 1 percent chance of flooding annually, as does Zone AE which also has studies determining specific base flood elevations, these zone areas are considered higher risk and are Special Flood Hazard Areas. Areas in which the Project are not in FEMA Flood Hazard Zone X are as follows:

- Project components along Merwin Avenue and Spruce Road are contained within special flood hazard areas including both areas Without Base Flood Elevation (Zone A) as well as crossing a Regulatory Floodway (Zone AE).

- Project components along Broadway south of the intersection of Broadway and Bolinas Road are largely in Zone X with portions in Zone AE.
- A portion of the Project located on private residences near Olema Road crosses a Regulatory Floodway (Zone AE).
- Project components north of Westbrae Drive include areas designated as Zone AE including a Regulatory Floodway.

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. As discussed in Section 7, "Geology and Soils," Groundwater may be encountered during excavation activities along the Project alignments. 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?

Less than significant impact. 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 560 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 is 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?

Less than significant impact. As discussed above portions of the proposed Project are located in SFHAs. However, risk of pollutant release due to inundation would only occur during construction and with implementation of the control measures found in Attachment D impacts would be less than significant in the event of a 100-year flood event (FEMA 2009). 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. California Office of Emergency Services (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. 2009. FEMA Flood Map Service Center. https://msc.fema.gov/portal/search?AddressQuery=fawn%20drive%2C%20san%20anselmo#searchresultsanchor. 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 mostly located in areas currently zoned as single-family and multi-family residential and within the RVSD's service area with portions of the proposed Project, namely along Broadway, with commercial zone designations (Fairfax 2017; Marin 2025). 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 an 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. Marin County. Zoning of Unincorporated Marin County. https://gisopendata.marincounty.gov/datasets/marincounty::zoning-of-unincorporated-marin-county/about. Last updated October 9, 2025.
3. Town of Fairfax. 2017. Town of Fairfax Zoning Map. https://townoffairfaxca.gov/documents/current-zoning-map/. October 2017

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:

- Excavation of soil and fill/debris
- Transport of Project-related construction equipment, materials, etc.

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 the adjacent residences and schools 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. Work in Project segments located in the Fairfax would be subject to the Marin County noise regulations. 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 a.m. to 6 p.m.
    ii. Saturday: 9 a.m. to 5 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 a.m. to 5 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 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 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

Fairfax also has specific measures, as described below. The portions of the project in unincorporated Marin County would be governed by the Marin County regulations discussed above.

Fairfax

Project segments located within Fairfax would be subject to the Town of Fairfax Ordinance No. 770 which regulates construction related noise. The Town of Fairfax Ordinance No. 770 states:

- Operating or permitting the operation of any mechanically powered tools between the hours of 6:00 p.m. and 8:00 a.m. Monday through Friday and between 4:00 p.m. and 9:00 a.m. on weekends and holidays is prohibited.

The Fairfax General Plan contains benchmarks for allowable noise exposure based on land use. In single-family residential areas, exterior noise exposure is acceptable below 60 dB, conditionally acceptable between 60 dB and 75 dB, and unacceptable above 75 dB.

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.
3. Fairfax. 2012. Fairfax 2010-2030 General Plan. https://storage.googleapis.com/proudcity/fairfaxca/uploads/2022/04/2010-2030-GenPlan_2015HE_2021TextAmend.pdf. Last amended in December 2021. Town of Fairfax, 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:				
b. Fire Protection?	☐	☐	☐	☒
c. Police Protection?	☐	☐	☐	☒
d. Schools?	☐	☐	☐	☒
e. Parks?	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f. 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:

The Marine Little League baseball field, Peri Park, and Bolinas Park are directly adjacent to each other and are located within 0.25 mile of project components along Merwin Avenue and Broadway.

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:

- Fairfax: Broadway, Merwin Avenue, Park Road, Spruce Road, Hawthorne Court Sir Francis Drake Boulevard, Westbrae Drive, and Olema Road
- Unincorporated Marin County: Oak Manor 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
e. 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 sewer lines within the existing alignment of sanitary sewer mains and related appurtenances as well as the installation of new manholes and a new sewer alignment including a double-barrel siphon to accommodate wet weather capacity within Fairfax. It would employ pipe-bursting methods to repair the existing lines and would also involve open-cut trench excavation in areas deemed necessary for the construction of new sewer lines, rehabilitation of 18 existing manholes, and construction of 13 new manholes. While the Project would cross Fairfax Creek four times, as discussed above under Construction Methods, all creek crossings would not involve ground disturbing activities within the riparian area of the creek and would employ trenchless methods with two of the creek crossings involving replacement of existing pipe that crosses above the creek on existing infrastructure.

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 and pipe-reaming construction methods (both trenchless) have a minimal potential impact (see below) whereas the construction of a new sewer manhole, 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 5–27 ft below the ground surface. Open trench work would involve ground disturbance ranging from 9 to 18 ft. The removal of soils is expected to occur for the entry and exit pits and construction of new sewer manholes,and would involve excavating soils immediately surrounding the pipe as well as all soils above it to varying expected depths ranging from 5 to 23 ft below the ground surface for construction of the new manholes. 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 and testing plan for the Project was prepared by Far Western in February 2026 and was shared with FIGR on February 6, 2026. 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 and FIGR, buried-site sensitivity assessment, and a pedestrian survey of the Project site. The records search identified 23 previously recorded cultural resources within the quarter-mile records search buffer, the majority of which are historic-era built environment resources that do not intersect the ADI. One previously recorded cultural resource intersects the ADI. This resource is a landscape feature, Mount Tamalpais, a mountain that has cultural and natural significance to the Coast Miwok and has been identified by FIGR, who are traditionally and culturally affiliated with the ADI. This resource overlaps the majority of the ADI, except for the northern two-thirds of the alignment along Oak Manor Drive. Due to the size of the resource and the identified landscape features including the peak, slopes, and viewshed, it is unlikely that the proposed sewer rehabilitation efforts in established public roadways and private property parcels will impact the resource. However, discussions with FIGR regarding Mount Tamalpais and the proposed project address this resource and avoidance/no impact measures. No archaeological resources were observed during the pedestrian survey conducted for this study.

Based on the results of geoarchaeological assessment, the entire ADI is sensitive for subsurface precontact deposits except for the proposed repair work along Park Road; as such, it was recommended that an archaeological testing program is carried out in areas determined to have high sensitivity within 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 (FIGR 2026). 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 FIGR, 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 (FIGR 2026).

Today, the FIGR community encompasses "a federation of Coast Miwok and Southern Pomo groups recognized as a tribe by the United States Congress. The Coast Miwok of west Marin County have, through the years, been referred to as Marshall Indians, Marin Miwok, Tomales, Tomales Bay, and Hookooeko. 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. FIGR has developed a Tribal Heritage Preservation Office program with a designated Tribal Heritage Preservation Officer and Sacred Site Protection Committee responsible for protecting the Tribe's tribal 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 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. In addition, AB 52 establishes the requirements of Tribal Cultural Resources and Native American consultation under CEQA.

Assembly Bill 52

AB 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 AB 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 AB 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 RVSD, Integral sent a letter to FIGR on November 20, 2025, pursuant to AB 52. FIGR requested to schedule a consultation meeting to further discuss the project. On January 13, 2026, RVSD and Far Western met with FIGR to discuss the Project and proposed locations for archaeological testing. On January 15, 2026, FIGR was provided with a copy of the 90 percent project design plans The cultural resources inventory and testing plan was shared with FIGR on February 6, 2026. Consultation with FIGR is ongoing and RVSD will continue to conduct outreach throughout the duration of the project, including participation in fieldwork (testing and monitoring).

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 result in the identification of any archaeological resources, however the documented resource boundary for Mount Tamalpais, a significant landscape feature to FIGR, intersects portions of the ADI. Consultation between FIGR and RVSD is currently ongoing and 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. Due to the results of the buried site sensitivity assessment , and consultation with FIGR, a program of focused archaeological testing will be conducted in areas determined to be highly sensitive for encountering cultural deposits. Testing will occur in advance of proposed ground disturbance including manholes, sags, potholes, trenches, and the entry and exit pits for pipe bursting, where feasible. 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. 2026. Archaeological Resources Inventory and Testing Plan for the Ross Valley Sanitary District Fairfax Capacity and Creek Crossing Project, Marin County, California. Far Western Anthropological Research Group, Inc, Davis, CA. February.

2. FIGR. 2026. Federated Indians of Graton Rancheria Coast Miwok and Southern Pomo. https://gratonrancheria.com/culture/history/. Accessed February 2026. 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?	☐	☐	☒	☐

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

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
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 (FHSZs) 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 2026). CalFire has a legal responsibility to provide fire protection on all SRA lands, which are defined based on land ownership, population density, and land use. CalFire does not have responsibility for 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 2024, CalFire 2025). This information is summarized as follows:

- The Project segments are located along Merwin Avenue, Park Road, Spruce Road, Hawthorne Court, Westbrae Drive, Olema Drive south of Westbrae Drive, Broadway west of Bank Street, and a small portion of Oak Manor Drive, are within the LRA FHSZ of High as deemed by the State Fire Marshal (CalFire 2025).

- Project segments located on Oak Manor Drive and Broadway east of Bank Street are in LRA FHSZ Moderate (CalFire 2025).
- The Project segments along Olema Road north of Westbrae Drive are in a SRA FHSZ designation of High (CalFire 2025).

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 all Project sites 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. 2025. California Fire Hazard Severity Zone Viewer. https://experience.arcgis.com/experience/03beab8511814e79a0e4eabf0d3e7247/. California Department of Forestry and Fire Protection. March 24, 2025
2. CalFire. 2026. 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.

3. Marin GeoHub. 2024. Fire Hazard Severity Zones https://gisopendata.marincounty.gov/datasets/b9d3a51966784b7a870933efb7d47ffc_0/explore?location=37.989092%2C-122.646666%2C12. County of Marin, CA. May 14, 2024

21. Report Preparers

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2455 Bennett Valley Road, Suite C101
Santa Rosa, CA 95404
Telephone: 707.636.3222

Bridgette DeShields, Principal-in-Charge

Sadie McGarvey, Senior Consultant, Biologist

Yancey Cashell, Project Scientist, Project Manager

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 the Mitigation Measure BIO-1 and Mitigation Measure BIO-2, 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 assessment and consultation with FIGR, a program of focused archaeological testing will be conducted in areas determined to be highly sensitive for encountering cultural deposits. Testing will take place prior to project implementation and will be coordinated in advance with FIGR. Testing will occur at project segments: including along Sir Francis Drake Boulevard, Westbrae Drive, Hawthorne Court, Spruce Road, Merwin Avenue, Broadway Boulevard, and Pacheco Avenue as outline in Mitigation Measure CUL-2. Based on the results of the testing and in coordination with the RVSD and FIGR, 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 FIGR is ongoing.

h. 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.

i. 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/ traffic, 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. It should be noted that 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 environmental impact report (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

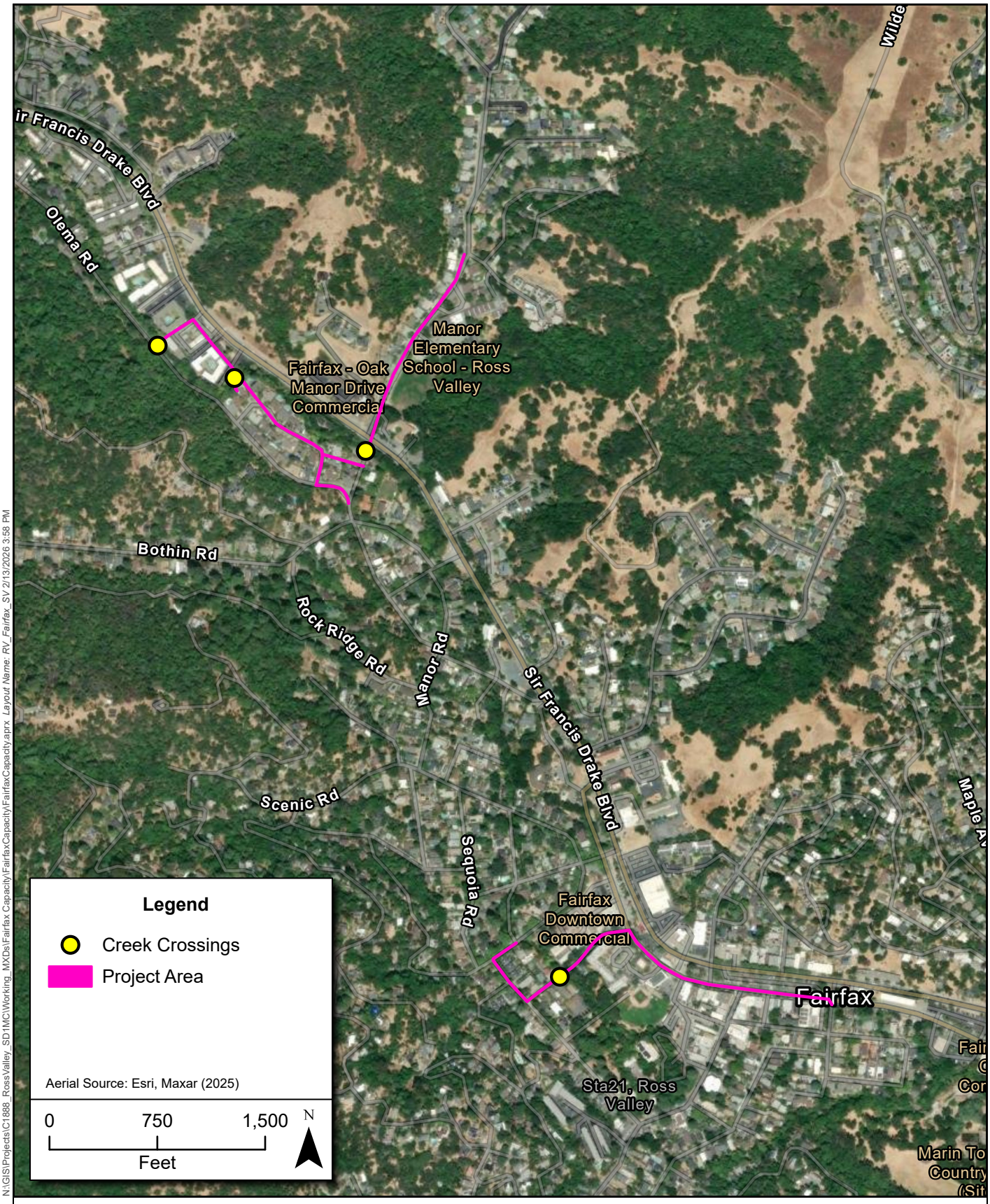
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ADI	area of direct impact
BMP	best management practice
CAA	Clean Air Act
CalEEMod	California Emissions Estimate Model
CalEMA	California Office of Emergency Services
CalFire	California Department of Forestry and Fire Protection
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
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
CGS	California Geologic Society
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
CRLF	California red-legged frog
CWA	Clean Water Act
dB	decibel(s)
DOC	California Department of Conservation
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency

Fairfax	Town of Fairfax
Far Western	Far Western Anthropological Research Group, Inc.
FEMA	Federal Emergency Management Agency
FHSZ	fire hazard severity zone
FIGR	Federated Indians of Graton Rancheria
FMMP	Farmland Mapping and Monitoring Program
FRA	federal responsibility area
GHG	greenhouse gas
HDD	horizontal directional drilling
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 feet
LRA	local responsibility area
MLD	most likely descendant
MRZ	mineral resource zone
MT	metric ton
MT/year	metric ton 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	Fairfax Capacity and Creek Crossings Project (#957)
PVC	polyvinyl chloride
Regional Water Board	San Francisco Bay Regional Water Quality Control Board
ROG	reactive organic gases

RVSD	Ross Valley Sanitary District
SFBAAB	San Francisco Bay Area Air Basin
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SRA	State Responsibility Area
SSO	sewer system overflow
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	Tribal Cultural Resources
The Air District	Bay Area Air District
TOB	top of bank
Tree Ordinance	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

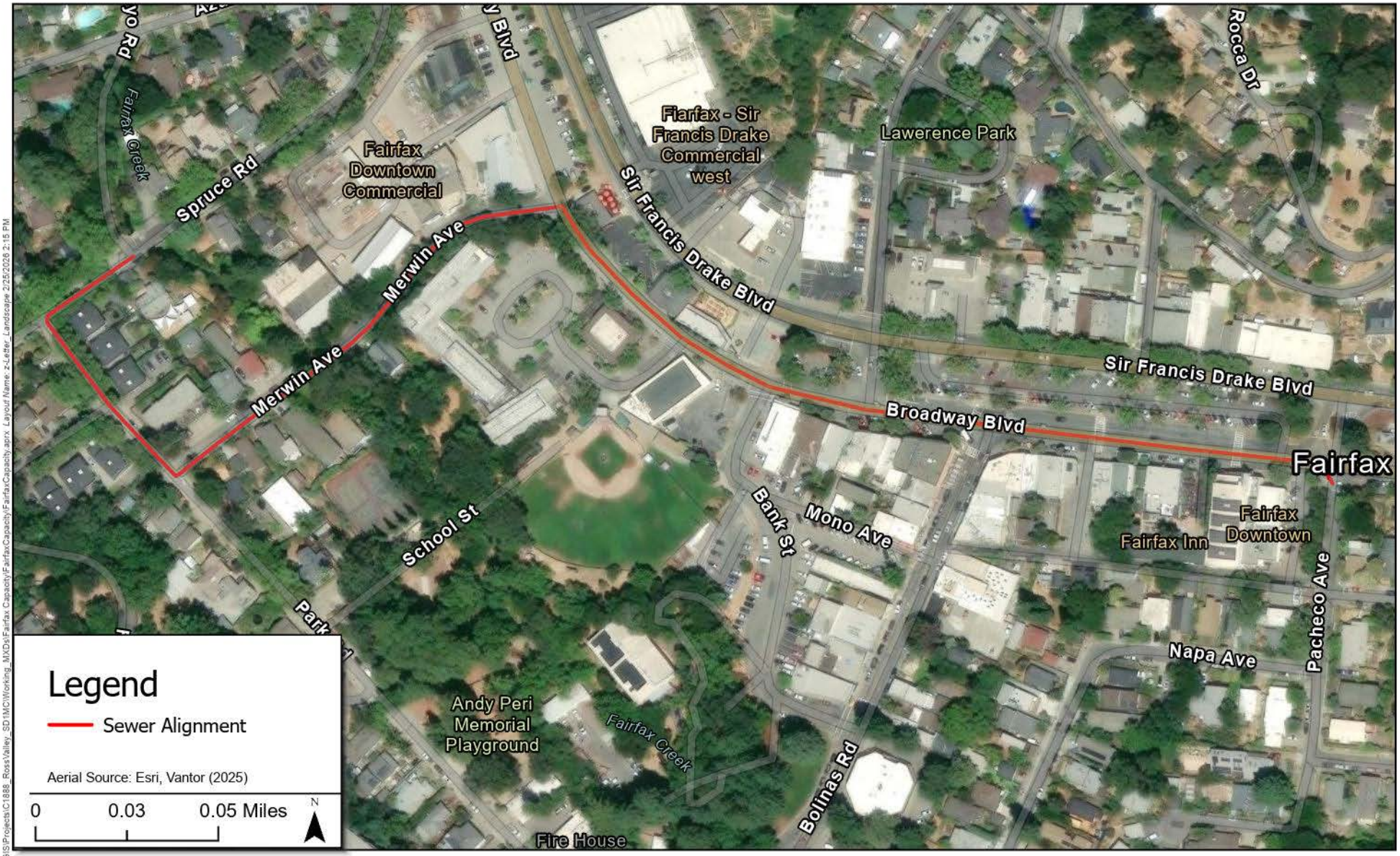


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Figure 1.
Site and Vicinity Map



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Figure 2.
Proposed New Alignment



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Figure 3.
Proposed Rehabilitation of Existing Alignment

Attachment C

Construction Plans

ROSS VALLEY SANITARY DISTRICT

MARIN COUNTY, CALIFORNIA

PLANS

FOR THE CONSTRUCTION OF

FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

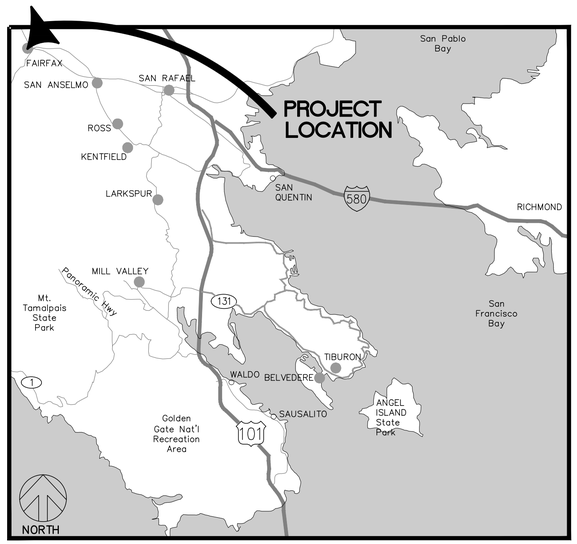
INDEX OF DRAWINGS

SHEET NO.	DRAWING NO.	DESCRIPTION
GENERAL		
1	T-01	TITLE SHEET
2	N-01	NOTES, LEGENDS, AND ABBREVIATIONS
3	K-01	KEY MAP
PLAN AND PROFILE		
4	PP-01	PACHECO AVE/BROADWAY
5	PP-02	BROADWAY
6	PP-03	BROADWAY/MERWIN AVE
7	PP-04	MERWIN AVE
8	PP-05	MERWIN AVE/PARK RD/SPRUCE RD
9	PP-06	OAK MANOR DR
10	PP-07	OAK MANOR DR
11	PP-08	OAK MANOR DR
12	PP-09	WESTBRAE DR
13	PP-10	WESTBRAE DR
14	PP-11	SFD/OLEMA EASEMENT
15	PP-12	SFD/OLEMA EASEMENT
16	PP-13	WESTBRAE DR LATERAL
17	PP-14	WESTBRAE DR/OLEMA RD
CONSTRUCTION DETAILS		
18	D-01	CONSTRUCTION DETAILS
19	D-02	CONSTRUCTION DETAILS
20	D-03	CONSTRUCTION DETAILS

DATUM

HORIZONTAL DATUM IS NAD 83, CALIFORNIA STATE PLANE, ZONE III, US FOOT

VERTICAL DATUM IS NAVD 88



VICINITY MAP

BOARD OF DIRECTORS
MARY SYLLA
DOUG KELLY
MICHAEL BOORSTEIN
PAMELA MEIGS
THOMAS GAFFNEY

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

GENERAL MANAGER
STEVE MOORE, P.E.

DESIGN ENGINEER
FIDEL SALAMANCA, P.E.

DATE

Prepared By:

Harris & Associates

1401 Willow Pass Road, Suite 500, Concord, CA 94520

p: 925.827.4900 ■ f: 866.356.0998 ■ WeAreHarris.com

REGISTERED PROFESSIONAL ENGINEER FIDEL T. SALAMANCA C 69351 Exp. 03-31-26 CIVIL STATE OF CALIFORNIA

90% SUBMITTAL
NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
1			
2			
3			
4			
5			

TITLE SHEET

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

Harris & Associates
1401 Willow Pass Rd, Suite 500 Concord, CA 94520
weareharris.com (925) 827-4900

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF THE ENGINEER AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH THE ENGINEER. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER PRIOR TO THE START OF ANY WORK.

DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/24/2025
JOB NO:	120-0743.007
DWG NO.	T-01
SHEET No:	1 OF 20

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 72 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. ALTHOUGH SOME MAJOR UTILITIES HAVE BEEN IDENTIFIED FOR POTHOLING, THE CONTRACTOR IS RESPONSIBLE FOR POTHOLING ANY UTILITY THAT MAY INTERFERE WITH THE INSTALLATION OF THE NEW PIPE.
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 2018.
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-16.
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	(415) 945-1508
PG&E (SAN RAFAEL)	(916) 758-1415
COMCAST	(323) 342-5552
ZAYO GROUP COMMUNICATIONS	(800) 961-6500
AT&T	(888) 290-3111
TOWN OF FAIRFAX	(415) 458-2370
ALL UTILITIES, CONTACT U.S.A	811 / (800) 642-2444

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 PER RVSD STD DWG SD-25. IF A NEW SEWER MAIN CROSSES ABOVE AN EXISTING WATER MAIN WITH LESS THAN 1 FOOT OF CLEARANCE, THE CONTRACTOR SHALL INSTALL A CONTINUOUS 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-25.
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.

ABBREVIATIONS

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

LEGEND

EXISTING	REHABILITATE OR NEW	DESCRIPTION
SS, CO	8" SS, CO	SANITARY SEWER WITH SIZE, FLOW DIRECTION, CO, MH
	8" SS	PIPE BURST SEWER MAIN OR LATERAL WITH SIZE, FLOW DIRECTION
	8" SS	INSTALL SEWER MAIN OR LATERAL VIA NOTED TRENCHLESS METHOD OR APPROVED EQUAL
	8" SS	CURED-IN-PLACE PIPE LINER
12"SD		STORM DRAIN WITH SIZE, FLOW DIRECTION, MH, DI
		ABANDON/REMOVE EX PIPE, SSMH
1000		HOUSE NUMBER
CATV		COMMUNICATIONS LINE
W, WM, WV		WATER MAIN, METER & WATER VALVE
G, GM, GV		GAS LINE
TEL, TEL MH		TELEPHONE LINE OR DUCT & MH
UNK		UNKNOWN UTILITY LINE
		APPROXIMATE RIGHT OF WAY OR PROPERTY LINE

EXISTING	DESCRIPTION
MON	MONUMENT
E	ELECTRIC
HV	HIGH VOLTAGE ELECTRIC
	GUY WIRE
	FIRE HYDRANT
	JOINT/POWER POLE
	EDGE OF PAVEMENT
	CURB AND GUTTER
	AC BERM
	CONTROL POINT
X X	FENCE
12" TREE	TREE
	SIGN
E-BOX EPB	ELECTRIC BOX/PULL BOX
	WALL
	PROFILE CONTINUES TO THE PREVIOUS OR NEXT SHEET
OH OH OH	OVERHEAD UTILITY LINE

GENERAL NOTES CON'T

35. 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.
36. CONTRACTOR SHALL USE RECYCLED WATER FOR ANY CONSTRUCTION ACTIVITY. MMWD WILL NOT PROVIDE A WATER METER FOR CONTRACTOR'S USE DUE TO SEVERE DROUGHT CONDITIONS.
37. AMEND SUBSECTION 3.03 OF RVSD STANDARD SPECIFICATION SECTION 02345, PIPE BURSTING, AS FOLLOWS: CONTRACTOR SHALL ALSO BE EQUIPPED TO USE PNEUMATIC BURSTING DEVICES (WITH CONTINUOUS-PULL WINCH WITH 50,000 LB MIN CAPACITY) WHEN NECESSARY AND AS APPROVED BY THE DISTRICT AT NO ADDITIONAL COST.

ROSS VALLEY SANITARY DISTRICT NOTES

1. ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ROSS VALLEY SANITARY DISTRICT STANDARD SPECIFICATIONS AND DRAWINGS.
2. THE CONTRACTOR SHALL NOTIFY THE DISTRICT 48 HOURS PRIOR TO STARTING ANY SEWER WORK.
3. FOR ANY WORK IN A PUBLIC STREET, THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE AGENCY HAVING JURISDICTION.
4. THE LOCATIONS OF UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS AND DEPTHS WITH APPROPRIATE AGENCIES OR BY POTHOLING. THE CONTRACTOR SHALL CALL USA UNDERGROUND SERVICE ALERT AT LEAST 72 HOURS PRIOR TO COMMENCING WORK.
5. THE CONTRACTOR SHALL POTHOLE ALL UNDERGROUND UTILITIES AND SEWERS PRIOR TO ANY TRENCHING OPERATION.
6. THE CONTRACTOR SHALL NOTIFY THE DISTRICT IMMEDIATELY OF ANY CONFLICT BETWEEN SEWERS AND OTHER UNDERGROUND FACILITIES.
7. THE CONTRACTOR SHALL SHORE ALL EXCAVATIONS IN ACCORDANCE WITH APPLICABLE SAFETY ORDERS.
8. ALL SEWER LATERALS SHALL BE A MINIMUM 4 INCHES INSIDE DIAMETER AND SHALL HAVE A MINIMUM SLOPE OF 2.0% AND MINIMUM DEPTH OF COVER AT THE PROPERTY LINE OF 3.0 FEET (MEASURED FROM THE TOP OF CURB), UNLESS OTHERWISE NOTED ON THESE PLANS.

90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
RUPERT T. SALAMANCA
C 69351
EXP. 03-31-26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
1			
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3			
4			
5			

NOTES, LEGENDS, AND ABBREVIATIONS

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS
PROJECT (#957)

Harris & Associates
1401 Willow Pass Rd, Suite 500 Concord, CA 94520
weareharris.com (925) 827-4900

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF THE ENGINEER AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH THE ENGINEER. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER PRIOR TO THE START OF ANY WORK.

DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/24/2025
JOB NO:	120-0743.007
DWG NO.	N-01
SHEET No:	2 OF 20

TOWN LIMITS

PP-01

PP-02

PP-03

PP-04

PP-05

PP-06

PP-07

PP-08

PP-09

PP-10

PP-11

PP-12

PP-13

PP-14

TOWN OF FAIRFAX

FAIRFAX CREEK

BOTHIN CREEK

GRAPHIC SCALE:

200 0 200 400 600

H: 1" = 200'

90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
PIDEL T. SALAMANCA
C86351
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA

NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
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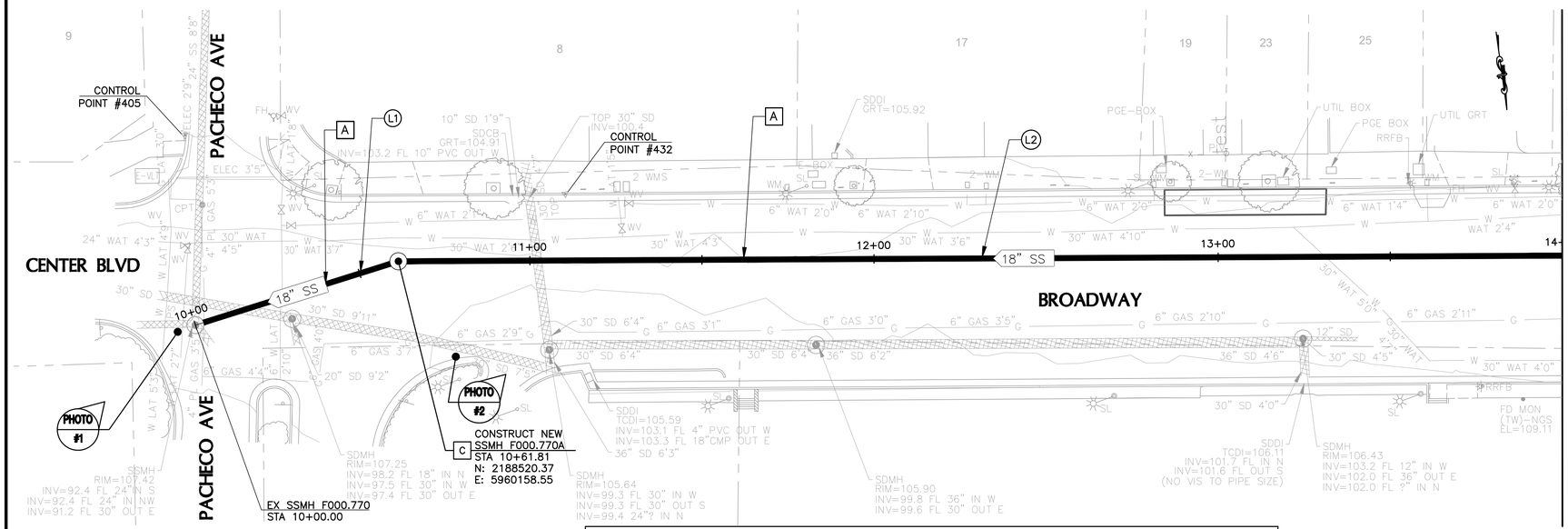
KEY MAP

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

Harris & Associates
1401 Willow Pass Rd, Suite 500 Concord, CA 94520
westerlharris.com (925) 827-4900

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DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/25/2025
JOB NO:	120-0743.007
DWG NO.	K-01
SHEET No:	3 OF 20



SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
405	2188475.50	5960214.96	104.19	CP FD SCRATCH + TC
432	2188507.71	5960107.86	105.44	CP CUT+

BROADWAY/MERWIN AVE NEW SEWER LINE AND CURVE TABLE

SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
L1	61.81'	S80°31'24"W				10+00.00	N = 2188530.54 E = 5960219.52	10+61.81	N =2188520.37 E = 5960158.55
L2	363.42'	N82°19'04"W				10+61.81	N = 2188520.37 E = 5960158.55	14+25.23	N =2188568.95 E = 5959798.39

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

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 2/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-14. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES 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 2/D-01 FOR ALL OPEN TRENCHES. SEE NOTE 38 ON DWG N-01

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

DISCONNECT AND RECONNECT SEWER LATERALS PER RVSD STD DWG SD-29.

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, SD-04, SD-05 AND SD-06. FINAL PAVING SHALL BE PER DETAIL 2/D-01.

D REHABILITATE MANHOLE BY LINING WITH CALCIUM ALUMINATE MORTAR SYSTEM AFTER MANHOLE MODIFICATIONS ARE PERFORMED AND IN ACCORDANCE WITH THE SPECIFICATIONS. REMOVE EXISTING MANHOLE STEPS PRIOR TO REHABILITATION.

E PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-29 AND SD-30. 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 2/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. CLEANOUTS SHALL BE TWO-WAY WITH SEWER POPPER TYPE 2 BACKWATER PREVENTION DEVICE. CLEANOUTS SHALL MATCH EXISTING LOWER LATERAL MATERIAL. REFER TO SD-29: C-900 IS TWO-WAY AND HDPE IS WYE FACING MAIN. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY B09 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CHRISTY B1017 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT. CONNECTION OF SEWER LATERAL TO SEWER MAIN, INCLUDING DROP OFF ANGLE (TYPE A OR TYPE B CONNECTION) OF SERVICE LATERAL, SHALL BE AS SHOWN ON RVSD DWG SD-29. NO VERTICAL DROP OFF IS ALLOWED.

F REMOVE AND REPLACE FRAME AND COVER PER RVSD STD DWG SD-10.

G REMOVE MANHOLE STEP/LADDER RUNGS BY BURNING OFF THE STEEL STEPS TO MINIMIZE DAMAGE TO THE MANHOLE WALL.

H AFTER OBTAINING RSVD PERMISSION, THE CONTRACTOR MAY OPT TO SWITCH THE LAUNCHING AND RECEIVING SHAFTS.

NOTES:
1. 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.
2. FOR PIPE BURSTING SITES, PROVIDE AIR GAP FOR (1) LOCATIONS WHERE EXISTING UTILITY CROSSES NEW PIPE WITH LESS THAN TWO FEET CLEARANCE PER RVSD STD DWG SD-21 AND (2) WHERE PIPE MATERIAL CHANGES AND REQUIRES REMOVAL PRIOR TO PIPE BURSTING, IF NEEDED. NOT ALL PIPE MATERIAL CHANGES ARE SHOWN ON THE PROFILE. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION. AIR GAP LOCATIONS ARE NOT IDENTIFIED ON THE PLANS.
3. 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.
4. FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS, SEE GENERAL NOTE 23 AND 24 ON DWG N-01 FOR HDPE SLEEVE REQUIREMENTS.
5. BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
6. 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).

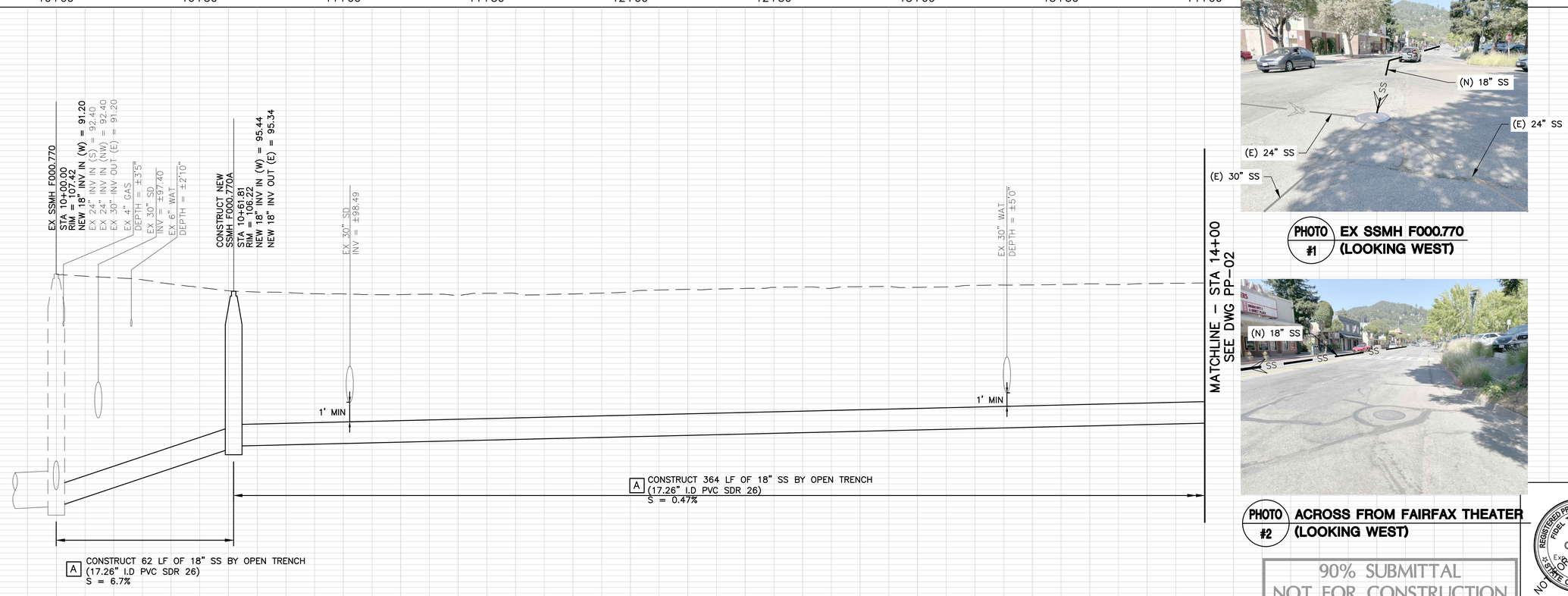


PHOTO #1 EX SSMH F000.770 (LOOKING WEST)

PHOTO #2 ACROSS FROM FAIRFAX THEATER (LOOKING WEST)

90% SUBMITTAL NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER RIDEL T. SALAMANCA C89351 EXP. 03-31-26 CIVIL STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

NO.	DATE	INITIAL	DESCRIPTION
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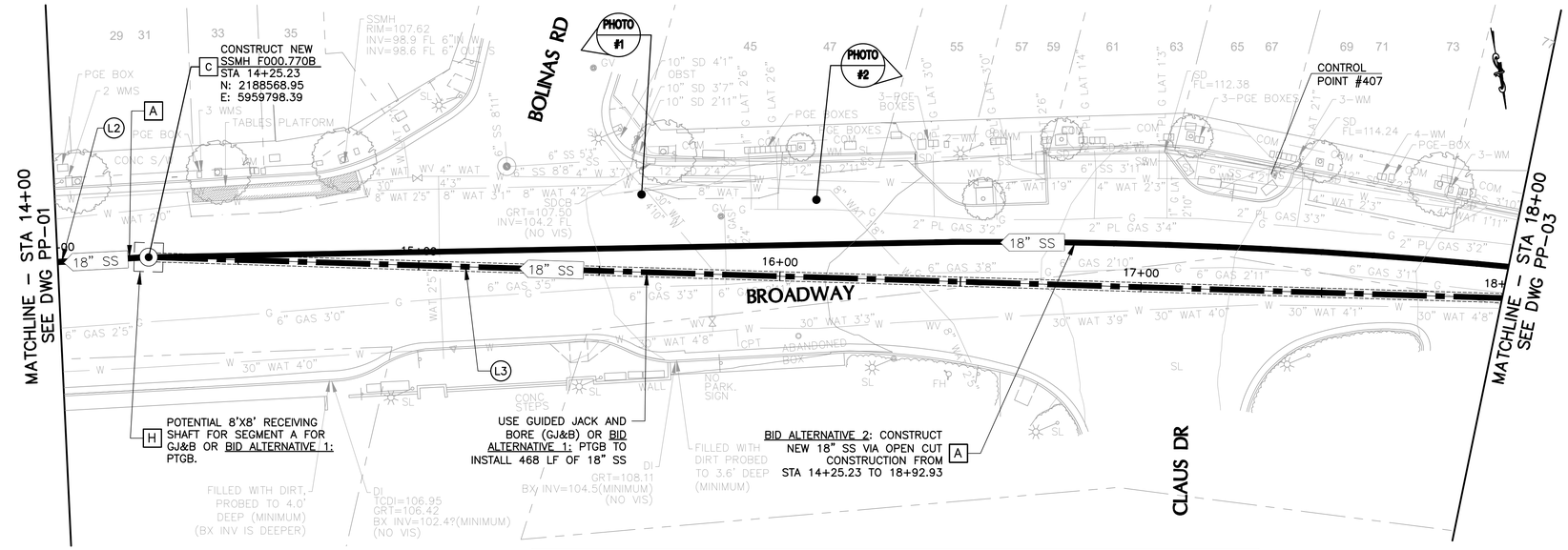
SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
PACHECO AVE/BROADWAY

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

Harris & Associates
1401 Willow Pass Rd, Suite 500 Concord, CA 94520
weareharris.com (925) 827-4900

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DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/24/2025
JOB NO:	120-0743.007
DWG NO.	PP-01
SHEET No:	4 OF 20

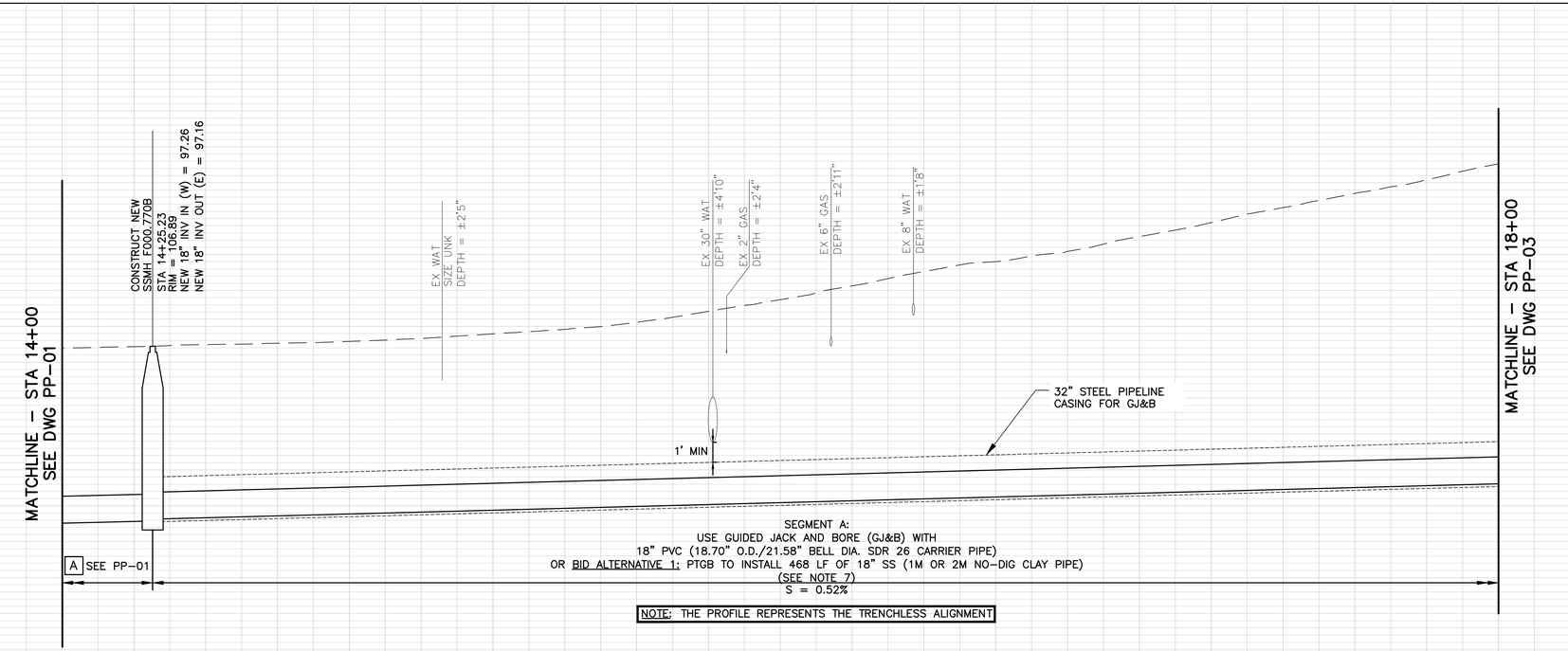


SURVEY CONTROL POINTS

POINT #	*NORTHING*	*EASTING*	*ELEVATION*	*DESCRIPTION*
407	*2188604.32*	*5959487.92*	*114.17*	*CP CUT+*

BROADWAY/MERWIN AVE NEW SEWER LINE AND CURVE TABLE

SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
L2	363.42'	N82°19'04"W				10+61.81	N = 2188520.37 E = 5960158.55	14+25.23	N =2188568.95 E = 5959798.39
L3	467.70'	N77°36'40"W				14+25.23	N = 2188568.95 E = 5959798.39	18+92.93	N =2188669.29 E = 5959341.58



NOTE: THE PROFILE REPRESENTS THE TRENCHLESS ALIGNMENT

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 2/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–14. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES 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 2/D–01 FOR ALL OPEN TRENCHES. SEE NOTE 38 ON DWG N–01

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

DISCONNECT AND RECONNECT SEWER LATERALS PER RVSD STD DWG SD–29.

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, SD–04, SD–05 AND SD–06. FINAL PAVING SHALL BE PER DETAIL 2/D–01.

D REHABILITATE MANHOLE BY LINING WITH CALCIUM ALUMINATE MORTAR SYSTEM AFTER MANHOLE MODIFICATIONS ARE PERFORMED AND IN ACCORDANCE WITH THE SPECIFICATIONS. REMOVE EXISTING MANHOLE STEPS PRIOR TO REHABILITATION.

E PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD–29 AND SD–30. 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 2/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. CLEANOUTS SHALL BE TWO–WAY WITH SEWER POPPER TYPE 2 BACKWATER PREVENTION DEVICE. CLEANOUTS SHALL MATCH EXISTING LOWER LATERAL MATERIAL. REFER TO SD–29: C–900 IS TWO–WAY AND HDPE IS WYE FACING MAIN. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY B09 BOXES SHALL BE USED FOR NON–TRAFFIC LOCATIONS. CHRISTY B1017 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT. CONNECTION OF SEWER LATERAL TO SEWER MAIN, INCLUDING DROP OFF ANGLE (TYPE A OR TYPE B CONNECTION) OF SERVICE LATERAL, SHALL BE AS SHOWN ON RVSD DWG SD–29. NO VERTICAL DROP OFF IS ALLOWED.

F REMOVE AND REPLACE FRAME AND COVER PER RVSD STD DWG SD–10.

G REMOVE MANHOLE STEP/LADDER RUNGS BY BURNING OFF THE STEEL STEPS TO MINIMIZE DAMAGE TO THE MANHOLE WALL.

H AFTER OBTAINING RSVD PERMISSION, THE CONTRACTOR MAY OPT TO SWITCH THE LAUNCHING AND RECEIVING SHAFTS.

NOTES:
1. 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.
2. FOR PIPE BURSTING SITES, PROVIDE AIR GAP FOR (1) LOCATIONS WHERE EXISTING UTILITY CROSSES NEW PIPE WITH LESS THAN TWO FEET CLEARANCE PER RVSD STD DWG SD–21 AND (2) WHERE PIPE MATERIAL CHANGES AND REQUIRES REMOVAL PRIOR TO PIPE BURSTING, IF NEEDED. NOT ALL PIPE MATERIAL CHANGES ARE SHOWN ON THE PROFILE. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION. AIR GAP LOCATIONS ARE NOT IDENTIFIED ON THE PLANS.
3. 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.
4. FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS, SEE GENERAL NOTE 23 AND 24 ON DWG N–01 FOR HDPE SLEEVE REQUIREMENTS.
5. BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
6. 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).
7. SEE RVSD SD–26 FOR ADDITIONAL NOTES FOR STEEL PIPELINE CASING, CARRIER PIPES, CASING SPACERS, "U" END SEALS, AND COUPLING.

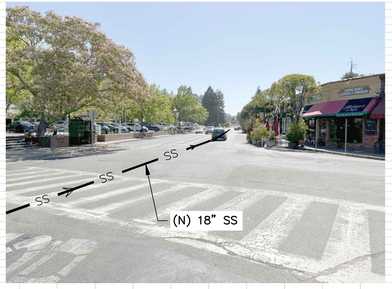


PHOTO #1 **BROADWAY AND BOLINAS RD (LOOKING EAST)**



PHOTO #2 **45 BROADWAY (LOOKING WEST)**

90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
FIDEL T. SALAMANCA
C86351
Exp. 03–31–26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

NO.	DATE	INITIAL	DESCRIPTION
A			
A			
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A			
A			

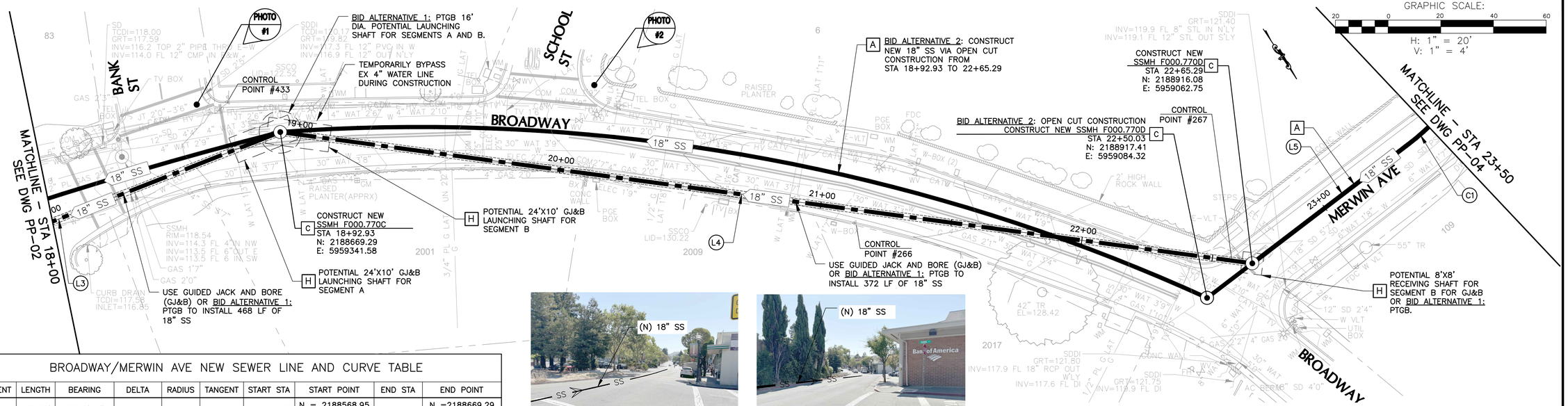
SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
BROADWAY

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

Harris & Associates
1401 Willow Pass Rd, Suite 500 Concord, CA 94520
weareharris.com (925) 827-4900

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DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/24/2025
JOB NO:	120-0743.007
DWG NO.	PP-02
SHEET No:	5 OF 20



BROADWAY/MERWIN AVE NEW SEWER LINE AND CURVE TABLE									
SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
L3	467.70'	N77°36'40"W				14+25.23	N = 2188568.95 E = 5959798.39	18+92.93	N =2188669.29 E = 5959341.58
L4	372.36'	N48°29'18"W				18+92.93	N = 2188669.29 E = 5959341.58	22+65.29	N =2188916.08 E = 5959062.75
L5	74.30'	S86°28'19"W				22+65.29	N = 2188916.08 E = 5959062.75	23+39.59	N =2188911.51 E = 5958988.60
C1	37.75'		21°37'54"	100.00'	19.10'	23+39.59	N = 2188911.51 E = 5958988.60	23+77.34	N = 2188902.21 E = 5958952.24

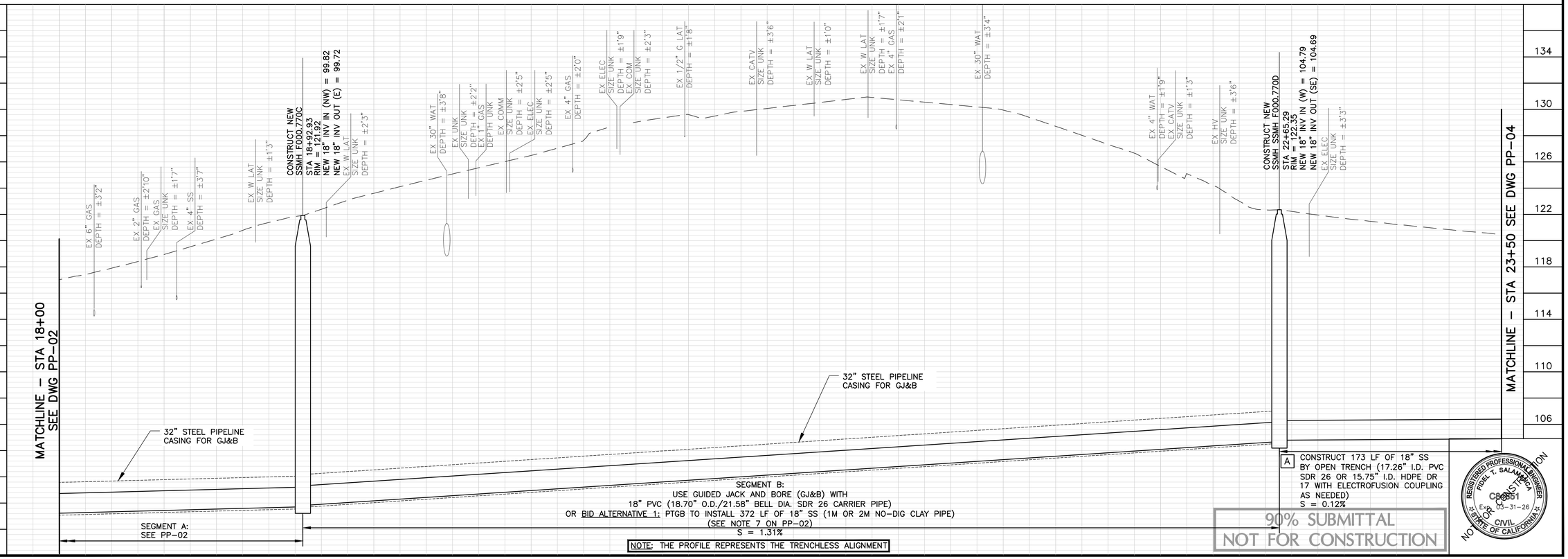
PHOTO #1 **BROADWAY AND BANK ST (LOOKING EAST)**

PHOTO #2 **BROADWAY AND SCHOOL ST (LOOKING EAST)**

SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
266	2188819.37	5959179.62	131.23	CP PAINT+TC
267	2188910.06	5959068.84	122.33	CP CUT+GLIP STP BR
433	2188648.62	5959351.69	120.50	CP CUT+ TC BANK

NOTES:
1. REFER TO DWG PP-02 FOR FULL SET OF CONSTRUCTION NOTES.



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REGISTERED PROFESSIONAL ENGINEER RIDEL T. SALAMEH C85351 Exp. 03-31-26 CIVIL STATE OF CALIFORNIA NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
A			
A			
A			
A			
A			

SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
BROADWAY/MERWIN AVE

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

Harris & Associates
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DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/26/2025
JOB NO:	120-0743.007
DWG NO:	PP-03
SHEET No:	6 OF 20



PHOTO #1 UTILITY ALONGSIDE BRIDGE AT FAIRFAX CREEK



PHOTO #2 FAIRFAX CREEK



PHOTO #3 FAIRFAX CREEK

SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
268	2188883.14	5958904.76	119.45	CP MAG AC
269	2188730.93	5958792.50	116.78	CP CUT+TC
270	2188678.34	5958730.20	116.51	CP CUT+BSW
273	2188693.84	5958696.83	116.30	CP CUT + SW
274	2188738.19	5958766.09	117.00	CP CUT+TC

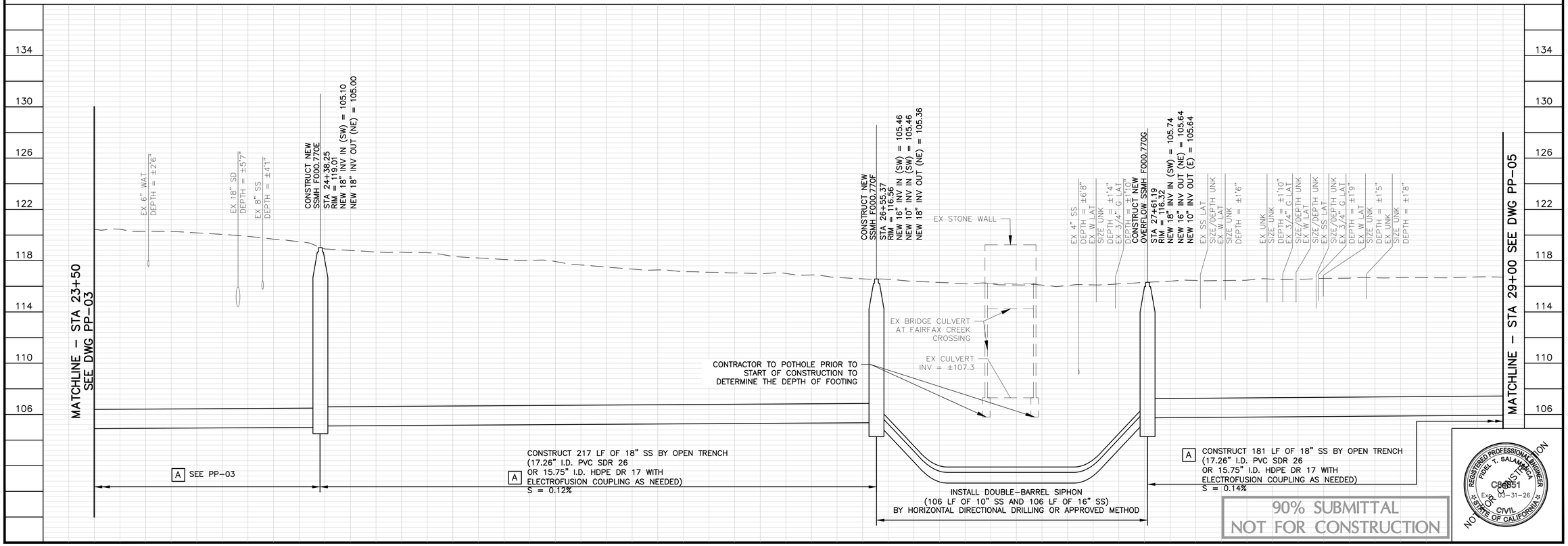
BROADWAY/MERWIN AVE NEW SEWER LINE AND CURVE TABLE

SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
C1	37.75'		21°37'54"	100.00'	19.10'	23+39.59	N = 2188911.51 E = 5958988.60	23+77.34	N = 2188902.21 E = 5958952.24
L6	60.91'	S64°50'25"W				23+77.34	N = 2188902.21 E = 5958952.24	24+38.25	N =2188876.31 E = 5958897.10
L7	171.80'	S41°26'56"W				24+38.25	N = 2188876.31 E = 5958897.10	26+10.05	N =2188747.54 E = 5958783.38
C2	36.88'		14°05'15"	150.00'	18.53'	26+10.05	N = 2188747.54 E = 5958783.38	26+46.93	N = 2188723.16 E = 5958755.83
L8	111.15'	S55°32'11"W				26+46.93	N = 2188723.16 E = 5958755.83	27+58.08	N =2188660.27 E = 5958664.19
L9	167.52'	S55°47'45"W				27+58.08	N = 2188660.27 E = 5958664.19	29+25.60	N =2188566.10 E = 5958525.65

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

NOTES:
1. REFER TO DWG PP–01 FOR FULL SET OF CONSTRUCTION NOTES.

23+50 24+00 24+50 25+00 25+50 26+00 26+50 27+00 27+50 28+00 28+50 29+00



134 130 126 122 118 114 110 106

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NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
PIDEL T. SALAMERA
C88351
Exp. 03–31–26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
A			
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A			

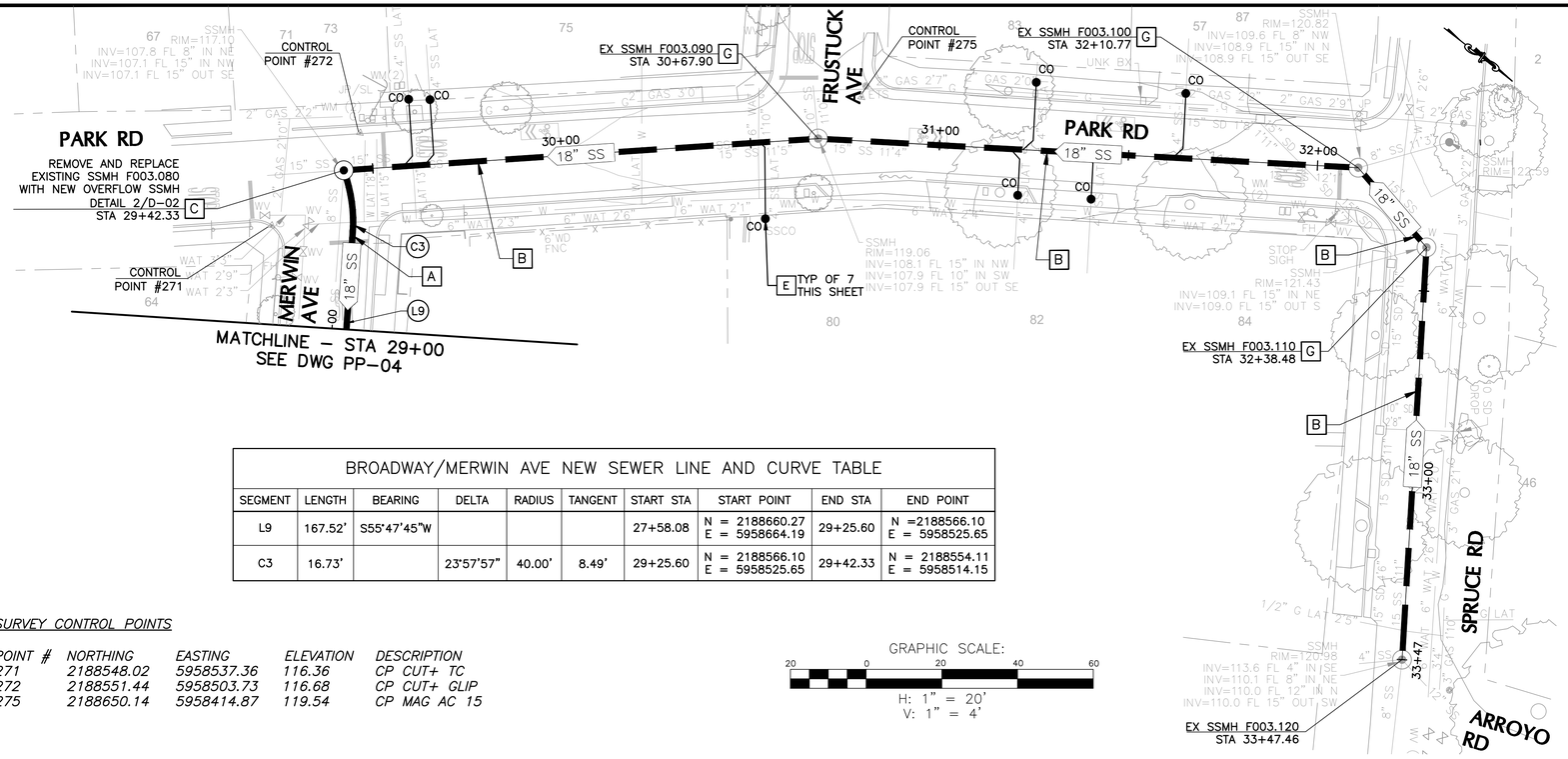
SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
MERWIN AVE

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

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DESIGNED BY: KLC
DRAWN BY: TRF
CHECKED BY: FTS
DATE ISSUED: 10/2/2025
JOB NO: 120-0743.007
DWG NO: PP-04
SHEET No: 7 OF 20



BROADWAY/MERWIN AVE NEW SEWER LINE AND CURVE TABLE

SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
L9	167.52'	S55°47'45"W				27+58.08	N = 2188660.27 E = 5958664.19	29+25.60	N =2188566.10 E = 5958525.65
C3	16.73'		23°57'57"	40.00'	8.49'	29+25.60	N = 2188566.10 E = 5958525.65	29+42.33	N = 2188554.11 E = 5958514.15

SURVEY CONTROL POINTS

POINT #	*NORTHING*	*EASTING*	*ELEVATION*	*DESCRIPTION*
271	*2188548.02*	*5958537.36*	*116.36*	*CP CUT+ TC*
272	*2188551.44*	*5958503.73*	*116.68*	*CP CUT+ GLIP*
275	*2188650.14*	*5958414.87*	*119.54*	*CP MAG AC 15*

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

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 2/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-14. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES 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 2/D-01 FOR ALL OPEN TRENCHES. SEE NOTE 38 ON DWG N-01

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

DISCONNECT AND RECONNECT SEWER LATERALS PER RVSD STD DWG SD-29.

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, SD-04, SD-05 AND SD-06. FINAL PAVING SHALL BE PER DETAIL 2/D-01.

D REHABILITATE MANHOLE BY LINING WITH CALCIUM ALUMINATE MORTAR SYSTEM AFTER MANHOLE MODIFICATIONS ARE PERFORMED AND IN ACCORDANCE WITH THE SPECIFICATIONS. REMOVE EXISTING MANHOLE STEPS PRIOR TO REHABILITATION.

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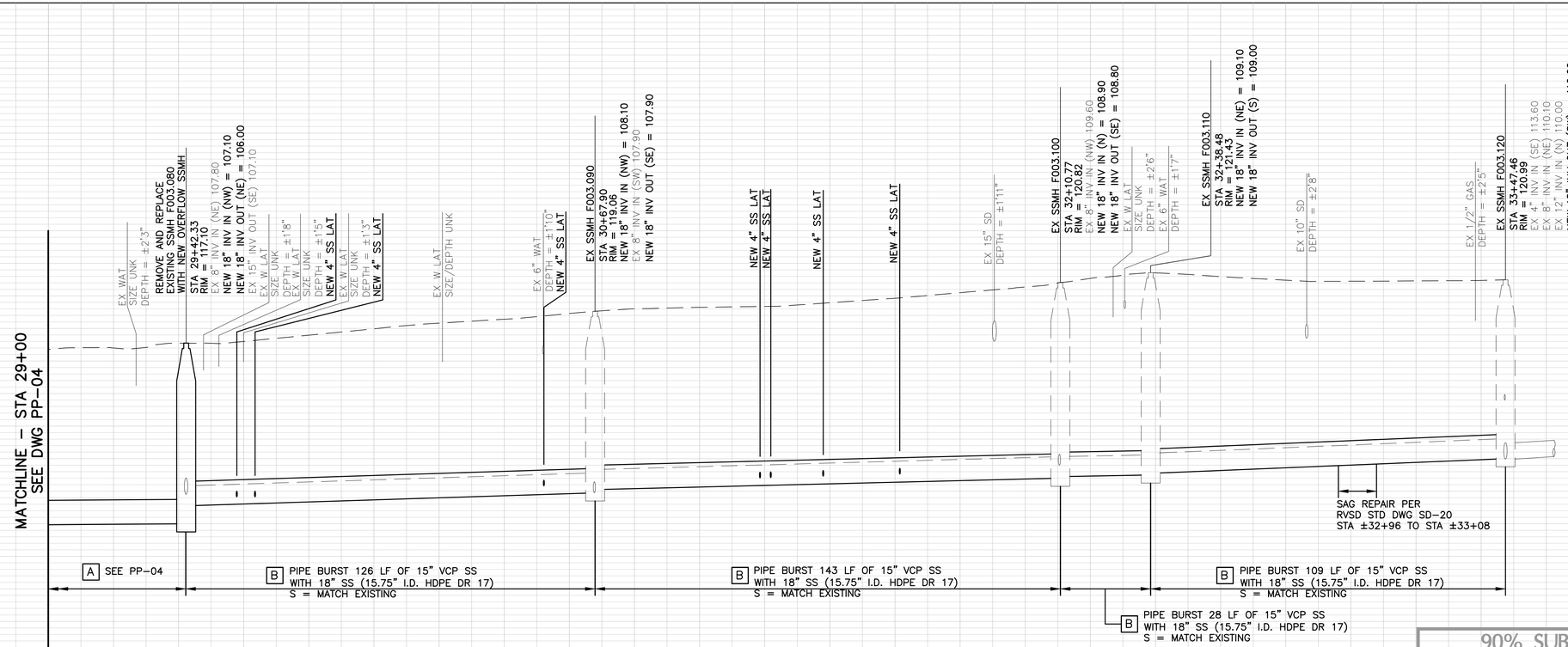
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NOTES:
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2. FOR PIPE BURSTING SITES, PROVIDE AIR GAP FOR (1) LOCATIONS WHERE EXISTING UTILITY CROSSES NEW PIPE WITH LESS THAN TWO FEET CLEARANCE PER RVSD STD DWG SD-21 AND (2) WHERE PIPE MATERIAL CHANGES AND REQUIRES REMOVAL PRIOR TO PIPE BURSTING, IF NEEDED. NOT ALL PIPE MATERIAL CHANGES ARE SHOWN ON THE PROFILE. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION. AIR GAP LOCATIONS ARE NOT IDENTIFIED ON THE PLANS.
3. 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.
4. FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS, SEE GENERAL NOTE 23 AND 24 ON DWG N-01 FOR HDPE SLEEVE REQUIREMENTS.
5. BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
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90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
PIDEL T. SALAMERA
C88351
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
1			
2			
3			
4			
5			

SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
MERWIN AVE/PARK RD/
SPRUCE RD

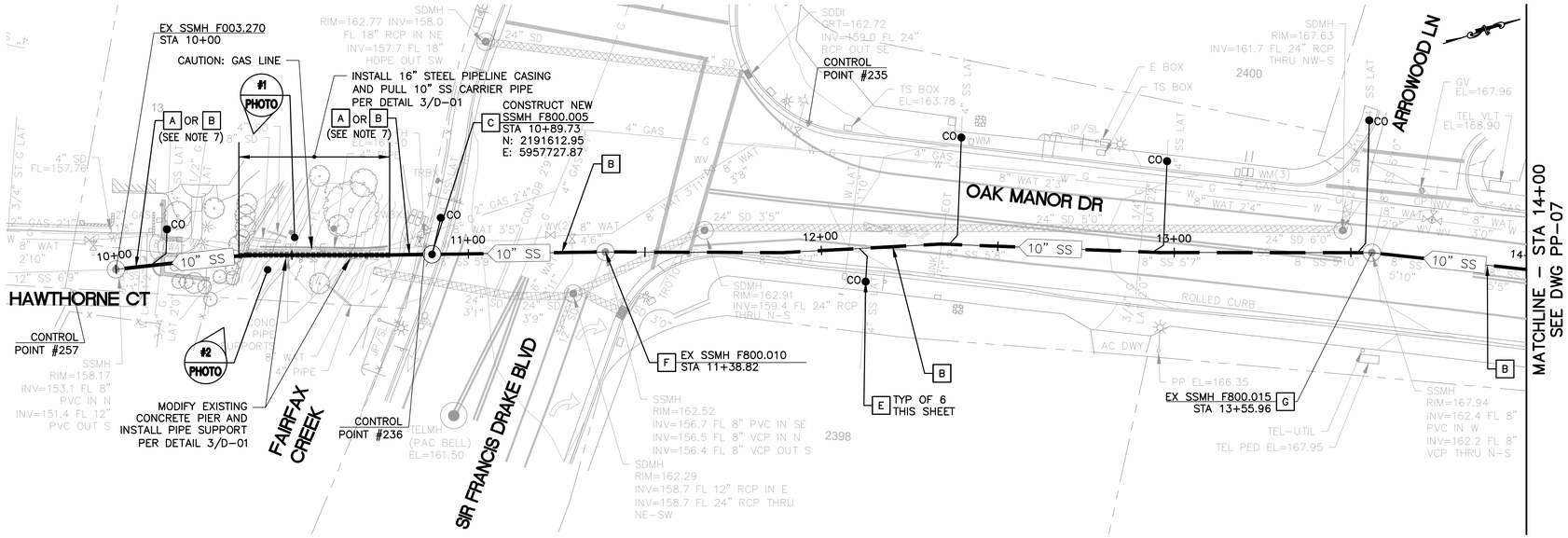
ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND
CREEK CROSSINGS
PROJECT (#957)

ROSS VALLEY SANITARY DISTRICT

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DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	10/2/2025
JOB NO:	120-0743.007
DWG NO:	PP-05
SHEET No:	8 OF 20



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 2/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-14. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES 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 2/D-01 FOR ALL OPEN TRENCHES. SEE NOTE 38 ON DWG N-01

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DISCONNECT AND RECONNECT SEWER LATERALS PER RVSD STD DWG SD-29.

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, SD-04, SD-05 AND SD-06. FINAL PAVING SHALL BE PER DETAIL 2/D-01.

D — REHABILITATE MANHOLE BY LINING WITH CALCIUM ALUMINATE MORTAR SYSTEM AFTER MANHOLE MODIFICATIONS ARE PERFORMED AND IN ACCORDANCE WITH THE SPECIFICATIONS. REMOVE EXISTING MANHOLE STEPS PRIOR TO REHABILITATION.

E — PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-29 AND SD-30. 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 2/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. CLEANOUTS SHALL BE TWO-WAY WITH SEWER POPPER TYPE 2 BACKWATER PREVENTION DEVICE. CLEANOUTS SHALL MATCH EXISTING LOWER LATERAL MATERIAL. REFER TO SD-29: C-900 IS TWO-WAY AND HDPE IS WYE FACING MAIN. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY B09 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CHRISTY B1017 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT. CONNECTION OF SEWER LATERAL TO SEWER MAIN, INCLUDING DROP OFF ANGLE (TYPE A OR TYPE B CONNECTION) OF SERVICE LATERAL, SHALL BE AS SHOWN ON RVSD DWG SD-29. NO VERTICAL DROP OFF IS ALLOWED.

F — REMOVE AND REPLACE FRAME AND COVER PER RVSD STD DWG SD-10.

G — REMOVE MANHOLE STEP/LADDER RUNGS BY BURNING OFF THE STEEL STEPS TO MINIMIZE DAMAGE TO THE MANHOLE WALL.

H — AFTER OBTAINING RSVD PERMISSION, THE CONTRACTOR MAY OPT TO SWITCH THE LAUNCHING AND RECEIVING SHAFTS.

NOTES:
1. 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.
2. FOR PIPE BURSTING SITES, PROVIDE AIR GAP FOR (1) LOCATIONS WHERE EXISTING UTILITY CROSSES NEW PIPE WITH LESS THAN TWO FEET CLEARANCE PER RVSD STD DWG SD-21 AND (2) WHERE PIPE MATERIAL CHANGES AND REQUIRES REMOVAL PRIOR TO PIPE BURSTING, IF NEEDED. NOT ALL PIPE MATERIAL CHANGES ARE SHOWN ON THE PROFILE. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION. AIR GAP LOCATIONS ARE NOT IDENTIFIED ON THE PLANS.
3. 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.
4. FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS, SEE GENERAL NOTE 23 AND 24 ON DWG N-01 FOR HDPE SLEEVE REQUIREMENTS.
5. BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
6. 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).
7. TO MINIMIZE DAMAGE TO THE CREEK BANK, IT IS RECOMMENDED TO INSTALL THE CASING FIRST AND THEN PULL THE CARRIER HDPE PIPE THROUGH THE CASING VIA ONE OF THE MANHOLES ON EITHER SIDE.

SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
235	2191725.80	5957724.58	163.66	CP CUT+TC OAK MANOR
236	2191611.95	5957725.08	162.26	CP CUT+BSW
257	2191512.80	5957707.38	158.47	CP MAG AC

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

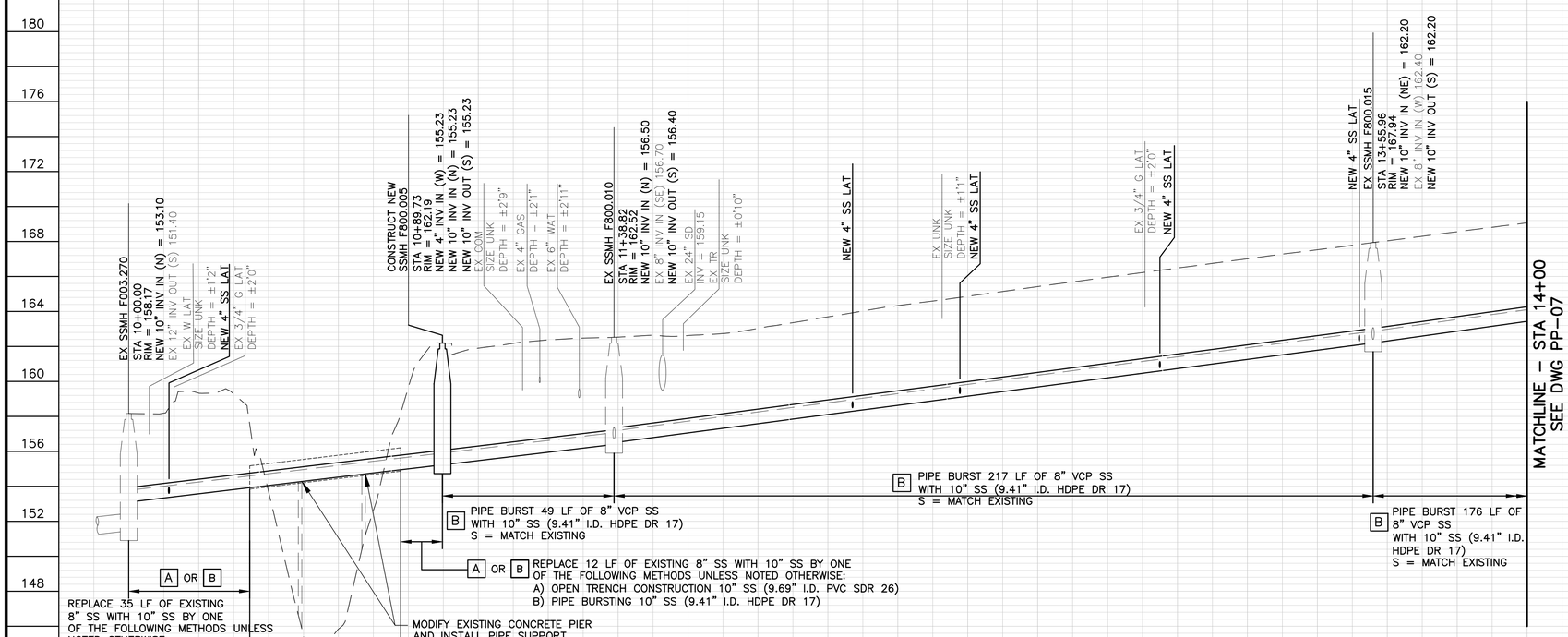


PHOTO #1 FAIRFAX CREEK (LOOKING EAST)



PHOTO #2 FAIRFAX CREEK (LOOKING WEST)

90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
HOPE T. SALAMANCA
C69351
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

NO.	DATE	INITIAL	DESCRIPTION
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4			
5			

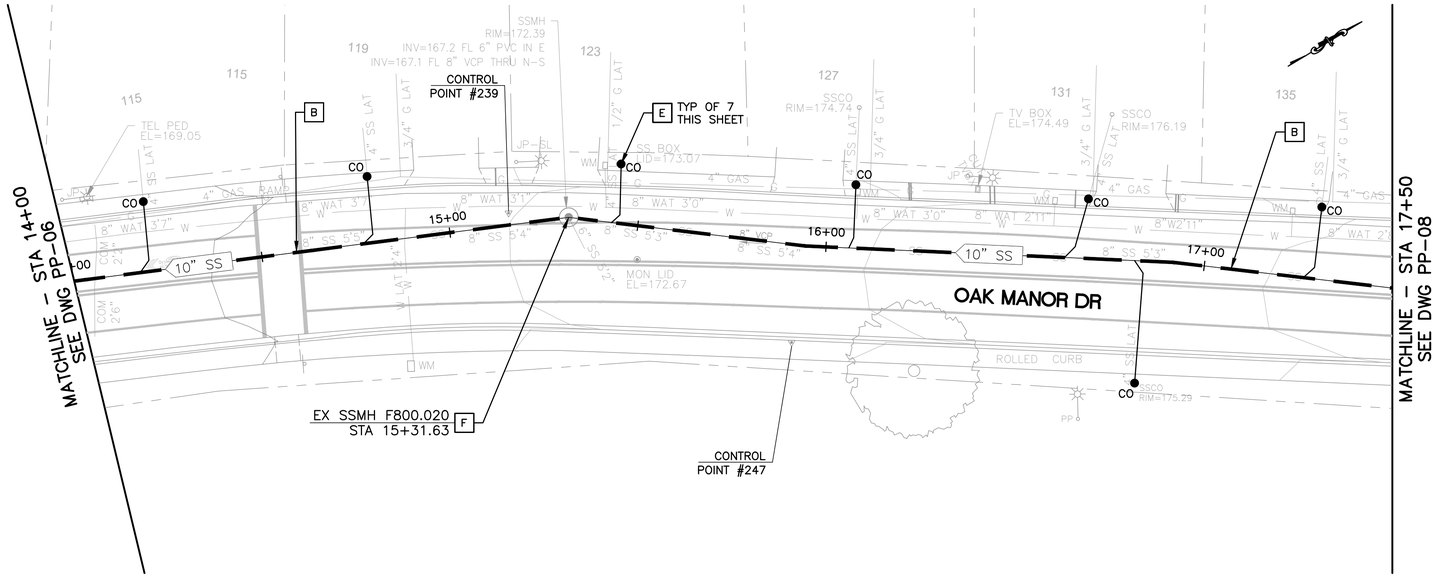
SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
OAK MANOR DR

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

Harris & Associates
1401 Willow Pass Rd, Suite 500 Concord, CA 94520
weareharris.com (925) 627-4900

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DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	10/2/2025
JOB NO:	120-0743.007
DWG NO.	PP-06
SHEET No:	9 OF 20



SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
239	2192014.57	5957869.36	171.96	CP MAG AC 123 OAK MNR
247	2192060.89	5957937.19	173.46	CP CUT+FSW OAK MNR

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

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 2/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.

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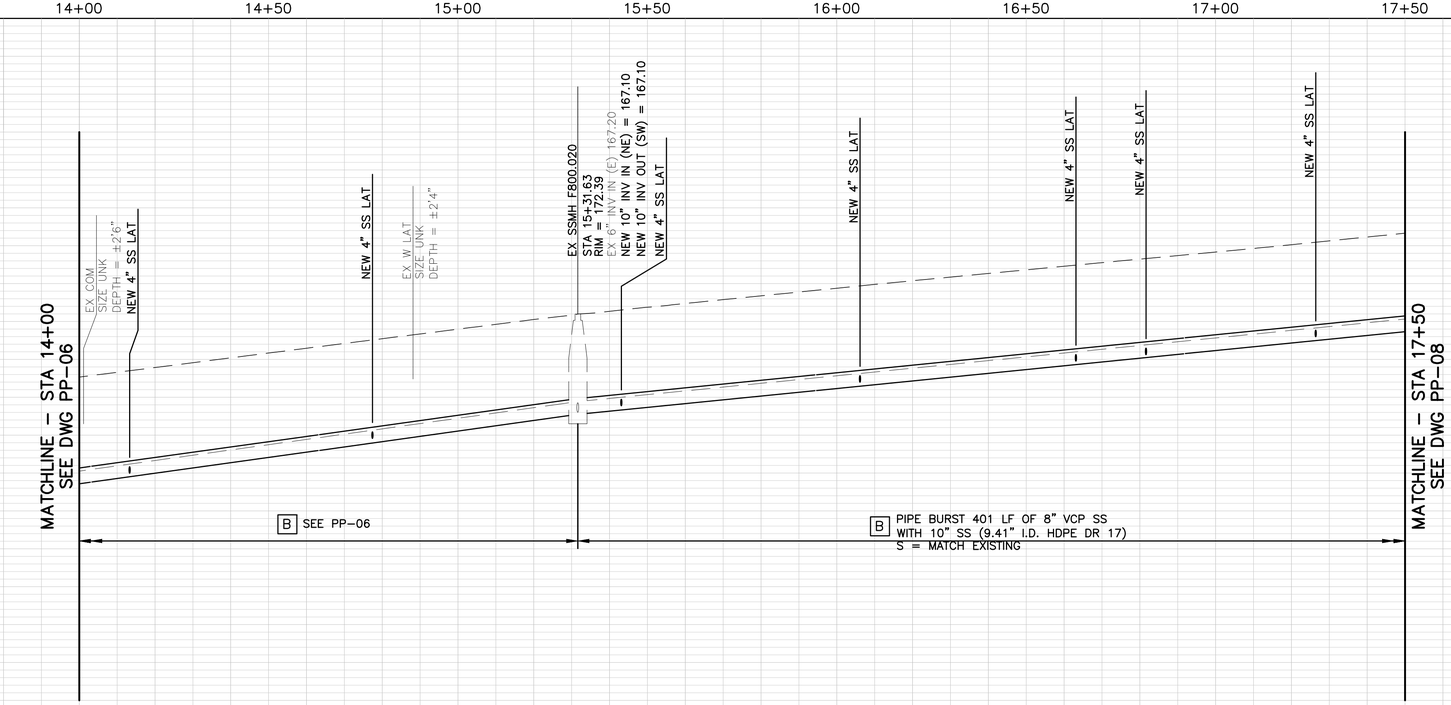
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90% SUBMITTAL
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REGISTERED PROFESSIONAL ENGINEER
RIPEL T. SALAMEH
C88351
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
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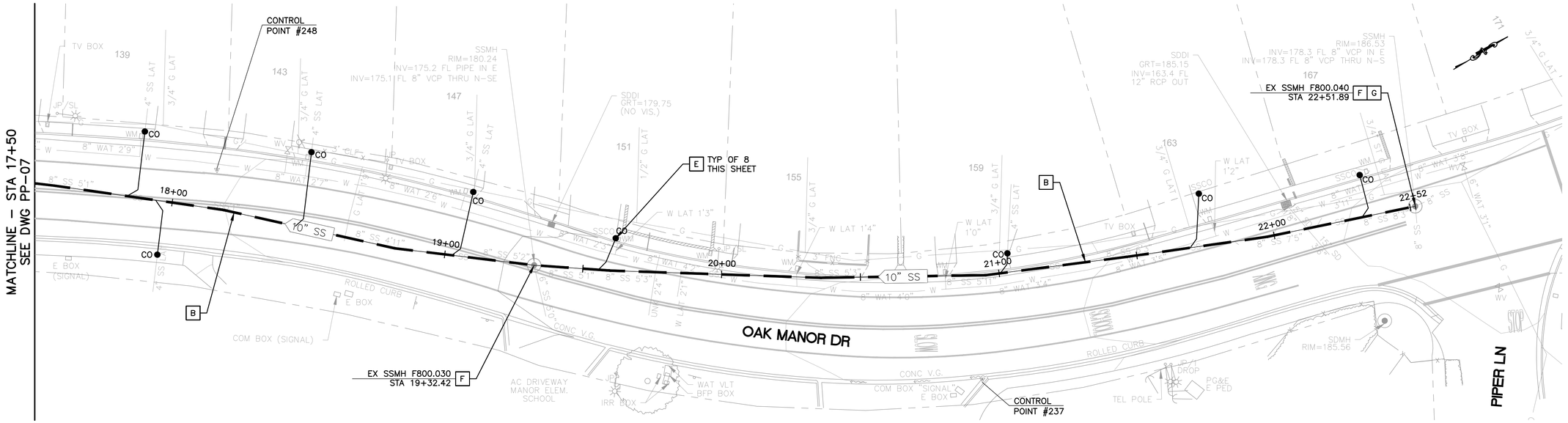
SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
OAK MANOR DR

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

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DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/24/2025
JOB NO:	120-0743.007
DWG NO:	PP-07
SHEET No:	10 OF 20

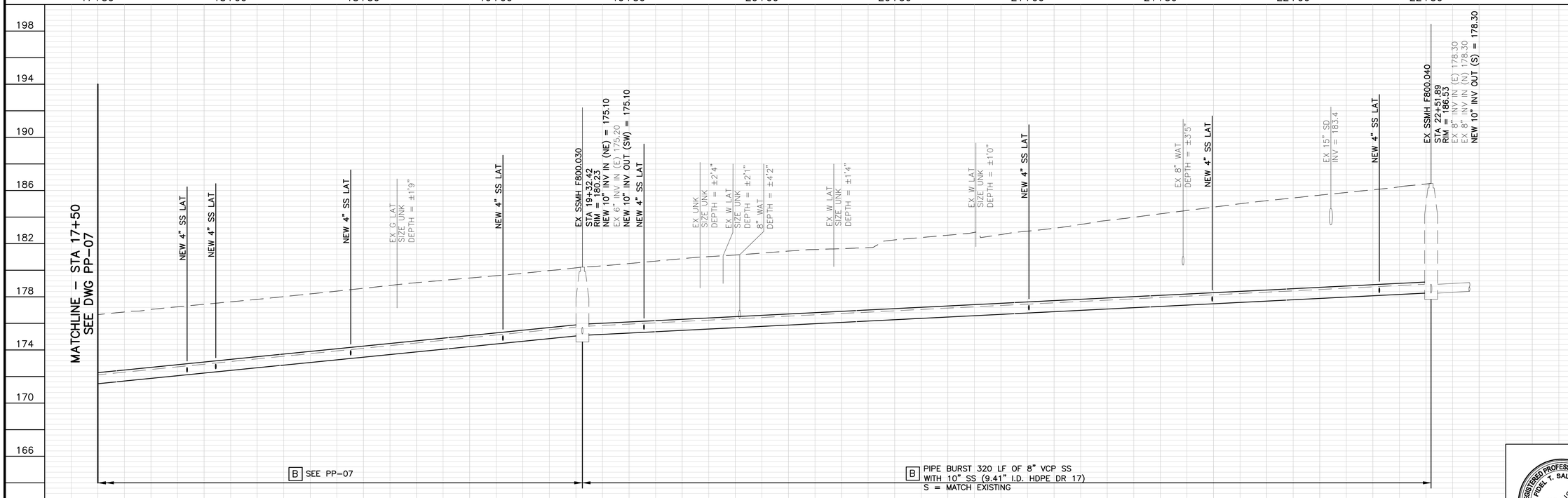


SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
237	2192459.77	5958243.62	182.85	CP CUT+GLIP
248	2192262.78	5958036.60	177.79	CP MAG AC 143/139 OAK MNR

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

NOTES:
1. REFER TO DWG PP–01 FOR FULL SET OF CONSTRUCTION NOTES.



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RYDEL T. SALAMEDA
C88351
Exp. 03-31-26
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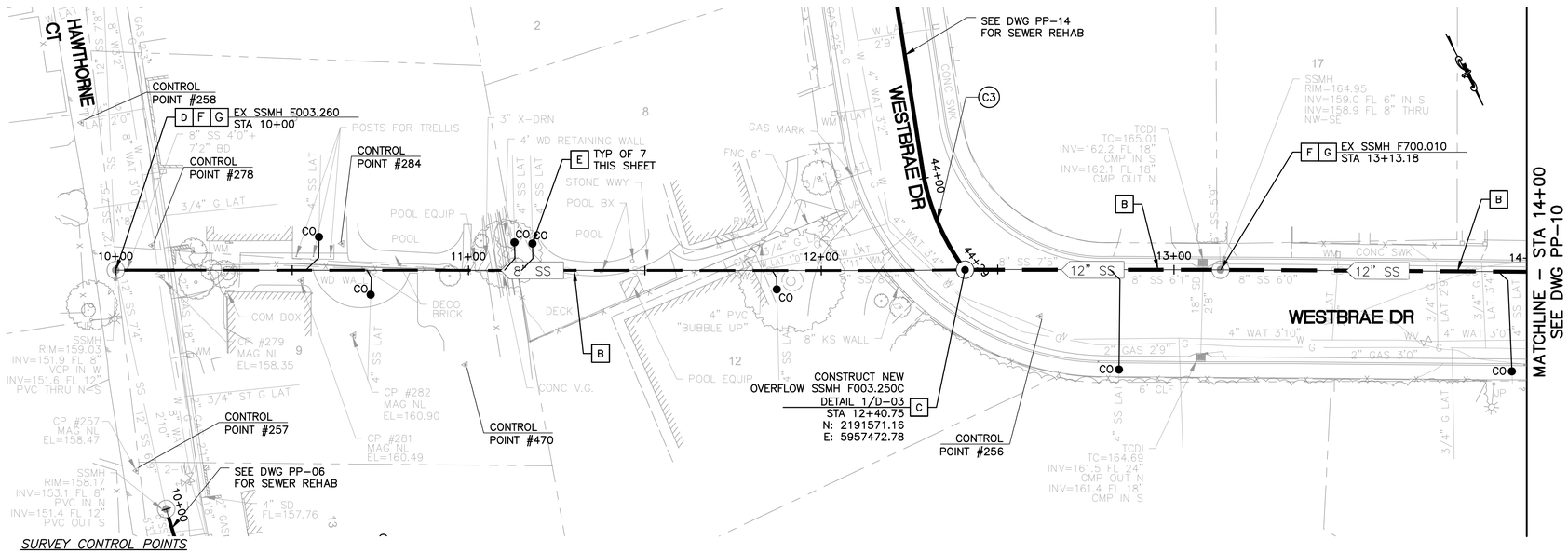
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CHECKED BY:	FTS
DATE ISSUED:	10/2/2025
JOB NO:	120-0743.007
DWG NO:	PP-08
SHEET No:	11 OF 20



SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
256	2191592.65	5957460.07	165.25	CP MAG AC
257	2191512.80	5957707.38	158.47	CP MAG AC
258	2191418.14	5957675.42	159.13	CP MAG AC
278	2191458.25	5957673.83	158.40	CP MAG AC
284	2191482.70	5957625.92	160.95	CP MAG DECO BRICK
470	2191529.36	5957610.83	160.69	CP 60D FROM 469

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

LEGEND OF REHABILITATION METHODS

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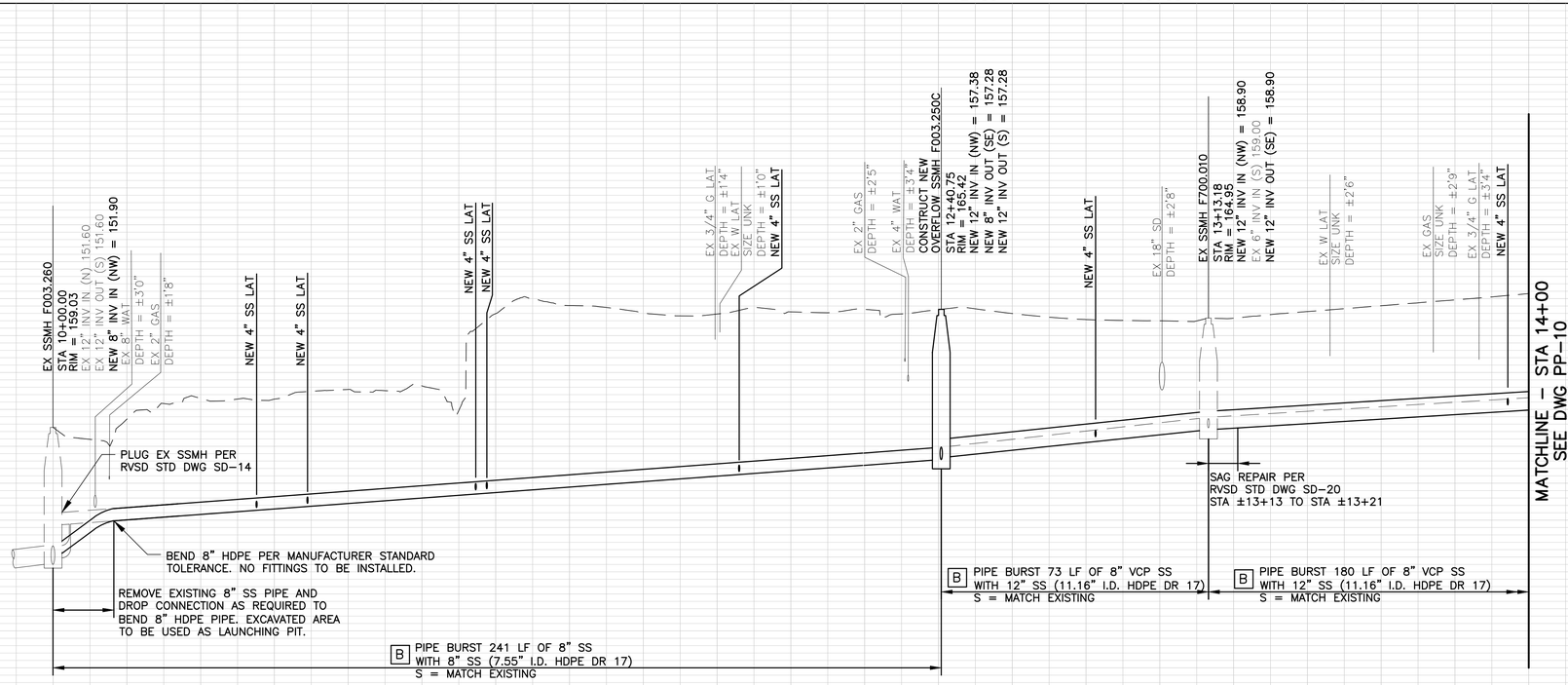
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PIPEL T. SALAMEA
C89351
Exp. 03-31-26
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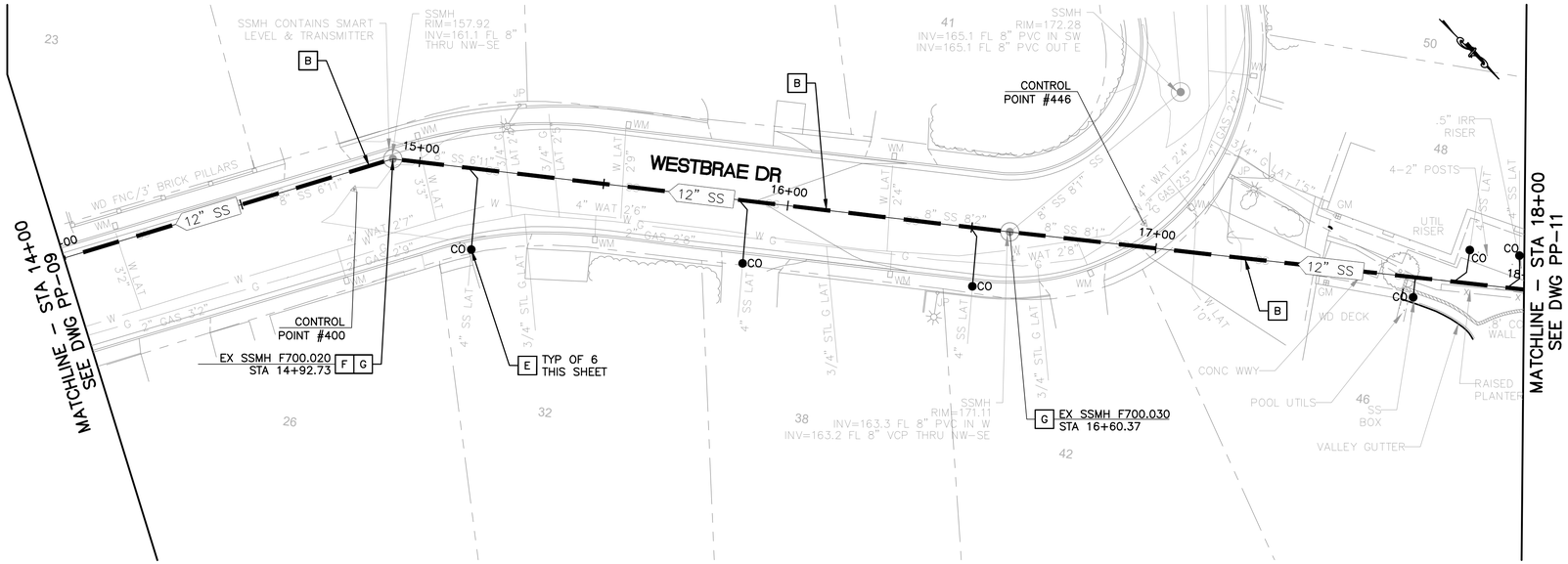
SANITARY SEWER IMPROVEMENTS
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ROSS VALLEY SANITARY DISTRICT
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DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/24/2025
JOB NO:	120-0743.007
DWG NO:	PP-09
SHEET No:	12 OF 20



SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
400	2191687.38	5957263.22	168.04	CP MAG
446	2191843.98	5957118.18	171.41	CP MAG AC DWY 46

GRAPHIC SCALE:
20 0 20 40 60
H: 1" = 20'
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LEGEND OF REHABILITATION METHODS

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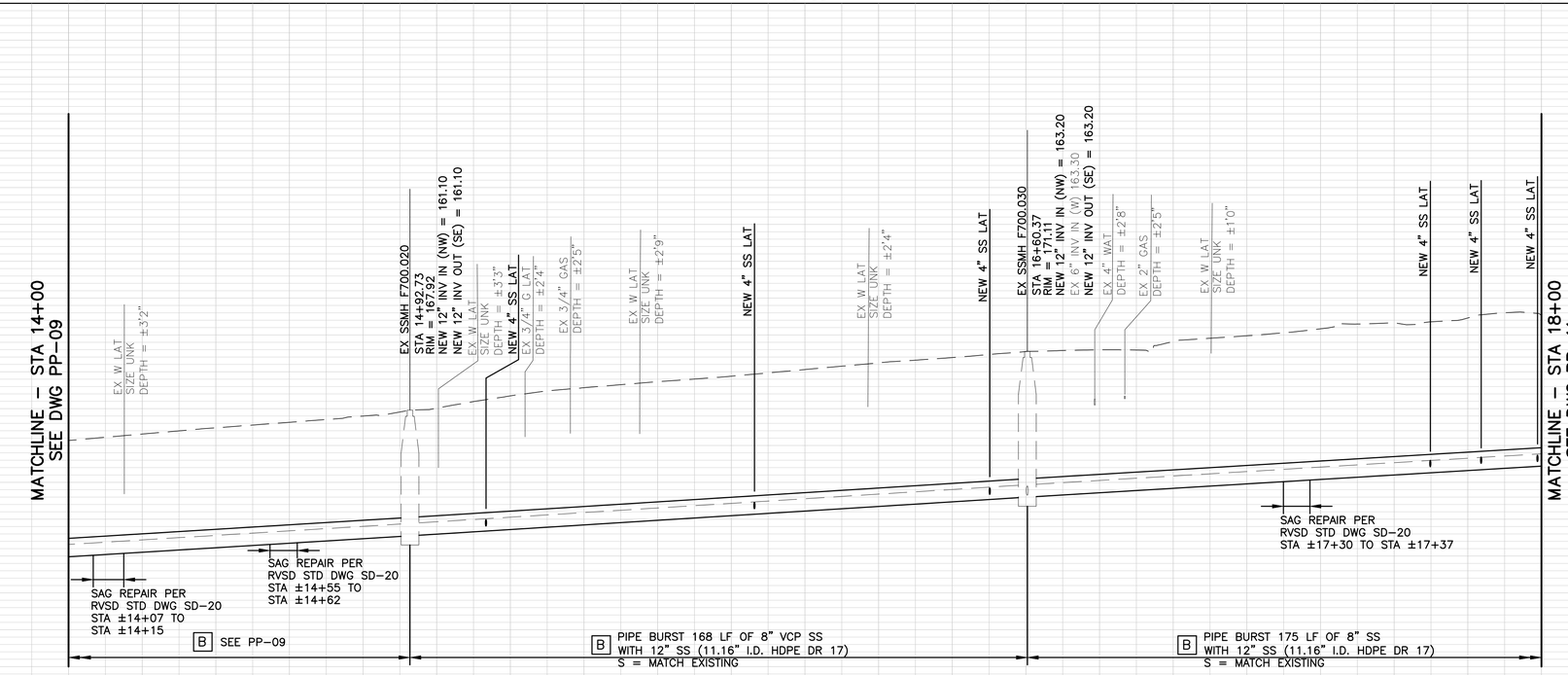
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90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
RIDEL T. SALAMEDA
C88551
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
A			
A			
A			
A			
A			

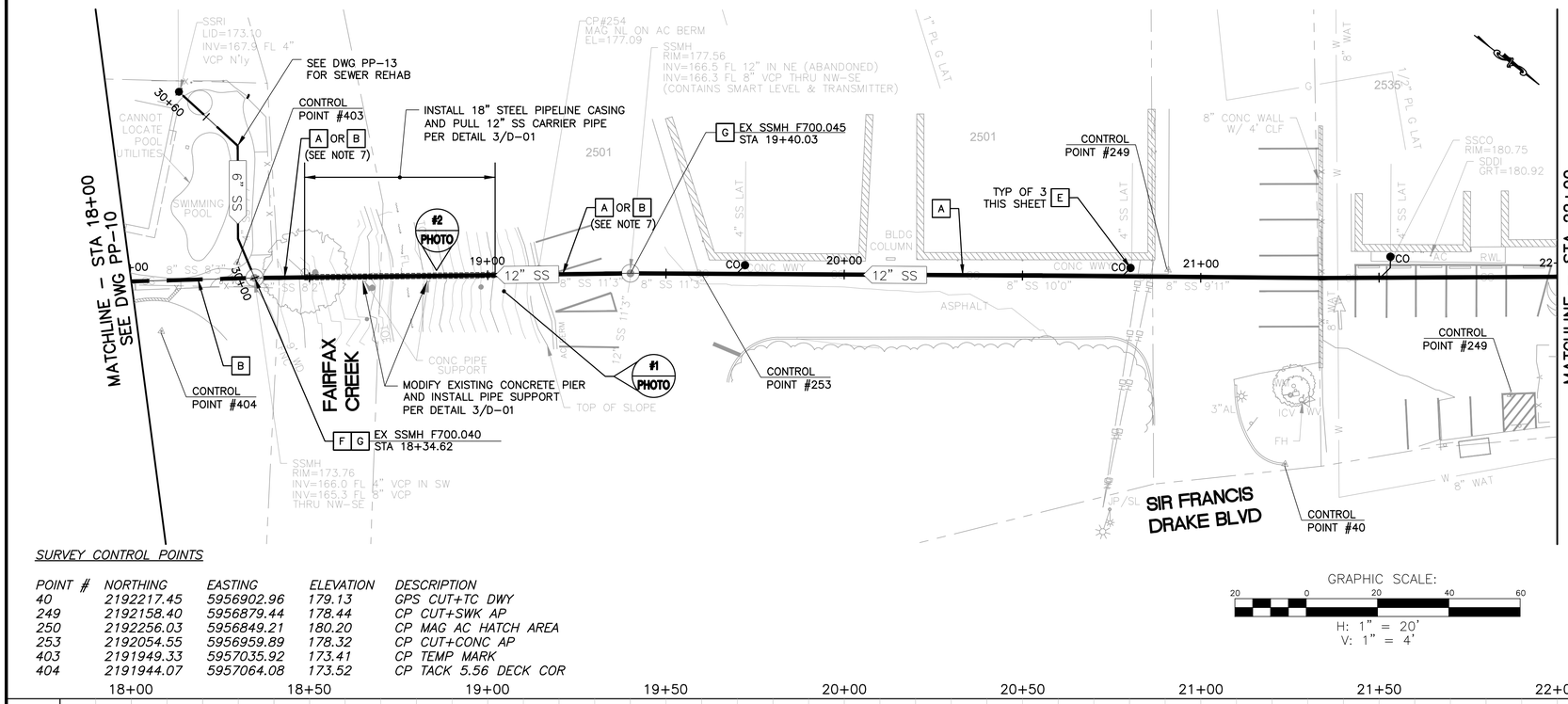
SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
WESTBRAE DR

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

Harris & Associates
1401 Willow Pass Rd, Suite 500 Concord, CA 94520
weareharris.com (925) 827-4900

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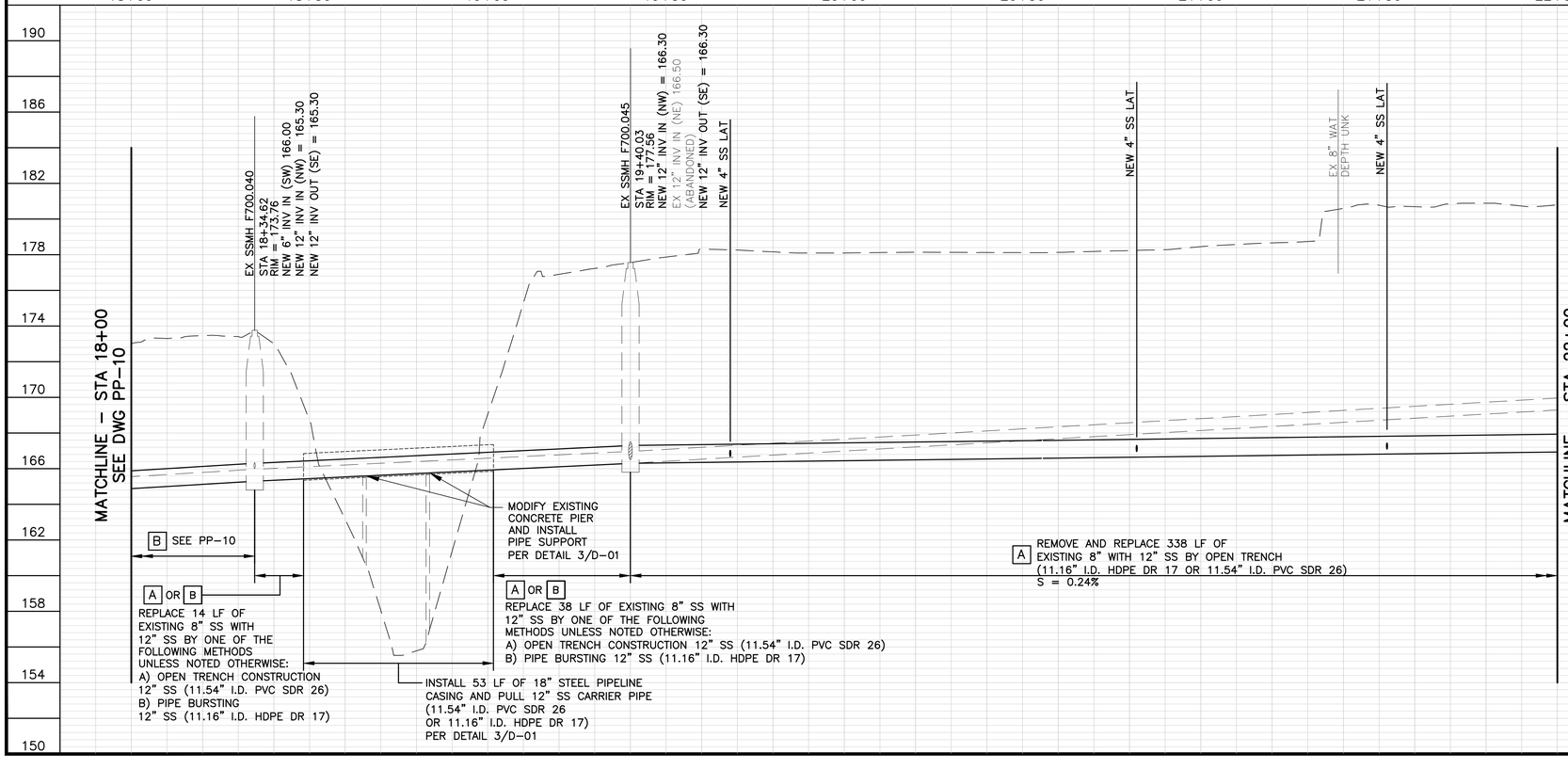
DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/24/2025
JOB NO:	120-0743.007
DWG NO:	PP-10
SHEET No:	13 OF 20



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

SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
40	2192217.45	5956902.96	179.13	GPS CUT+TC DWY
249	2192158.40	5956879.44	178.44	CP CUT+SWK AP
250	2192256.03	5956849.21	180.20	CP MAG AC HATCH AREA
253	2192054.55	5956959.89	178.32	CP CUT+CONC AP
403	2191949.33	5957035.92	173.41	CP TEMP MARK
404	2191944.07	5957064.08	173.52	CP TACK 5.56 DECK COR



LEGEND OF REHABILITATION METHODS

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7. TO MINIMIZE DAMAGE TO THE CREEK BANK, IT IS RECOMMENDED TO INSTALL THE CASING FIRST AND THEN PULL THE CARRIER HDPE PIPE THROUGH THE CASING VIA ONE OF THE MANHOLES ON EITHER SIDE.

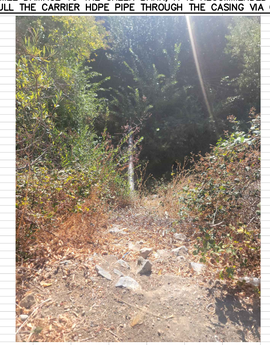


PHOTO #1 **FAIRFAX CREEK (LOOKING NORTHEAST)**



PHOTO #2 **FAIRFAX CREEK (LOOKING SOUTHEAST)**

90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
HOE T. SALAMANCA
No. C80351
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
A			
A			
A			
A			
A			

SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
SFD/OLEMA EASEMENT

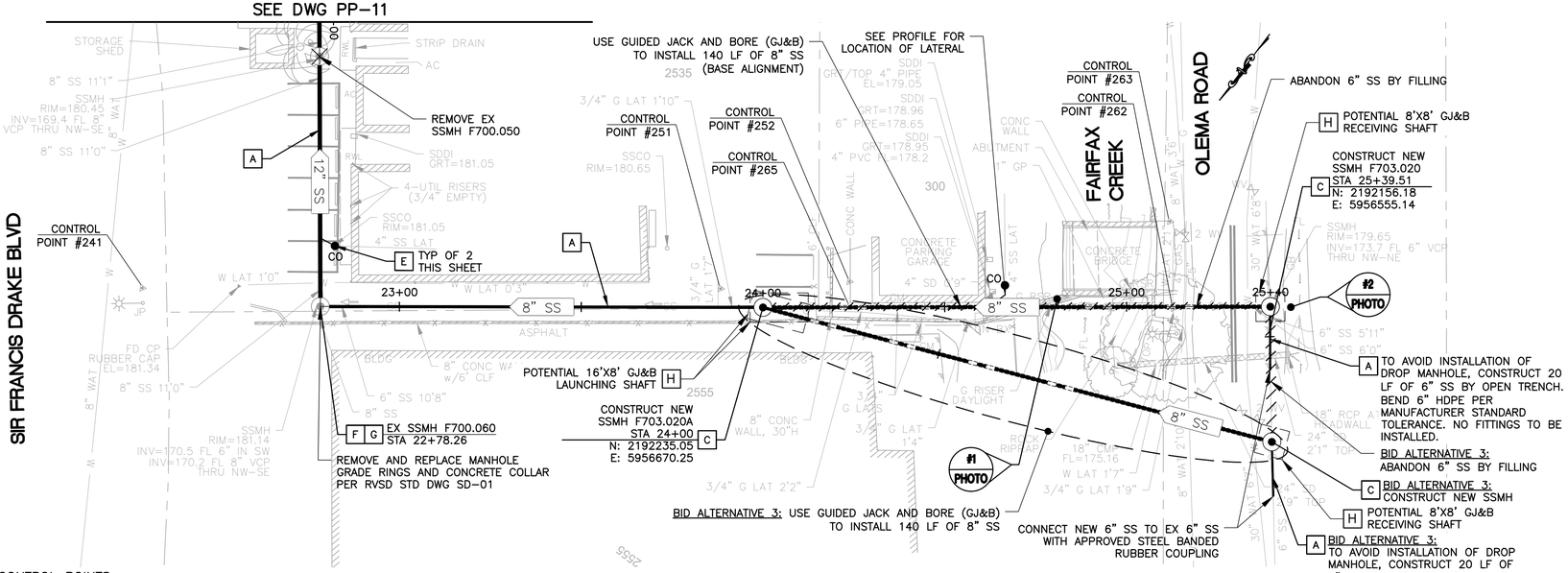
ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

ROSS VALLEY SANITARY DISTRICT

Harris & Associates
1401 Willow Pass Rd, Suite 500 Concord, CA 94520
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DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	10/16/2025
JOB NO:	120-0743.007
DWG NO.	PP-11
SHEET No:	14 OF 20



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

SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
241	2192334.16	5956809.38	181.68	CP CUT+BSW 2525 SFD
251	2192237.97	5956682.64	180.92	CP MAG AC 2525 SFD
252	2192215.00	5956655.63	179.77	CP CUT+CONC
262	2192166.89	5956580.21	179.80	CP MAG AC AT FH
263	2192148.44	5956595.48	180.11	CP MAG AC
265	2192220.43	5956651.51	179.78	CP CUT + CONC

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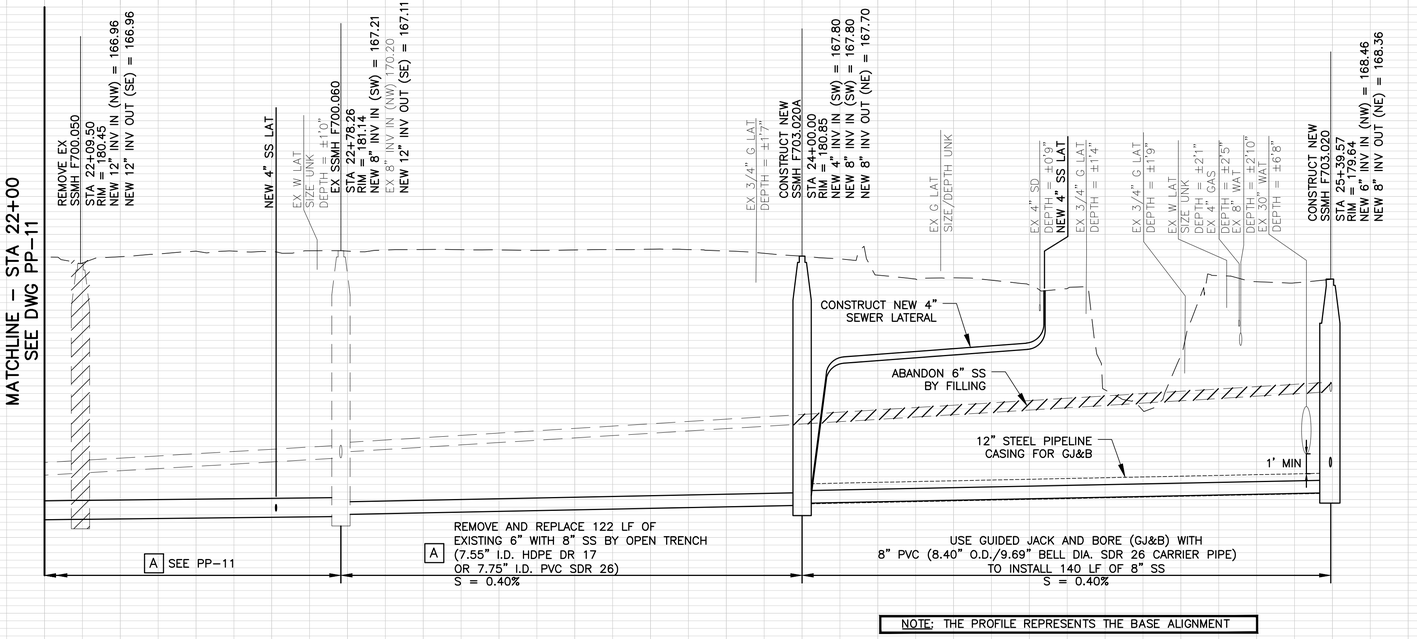
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NOTE: THE PROFILE REPRESENTS THE BASE ALIGNMENT



PHOTO #1 FAIRFAX CREEK (LOOKING SOUTH)



PHOTO #2 OLEMA RD (LOOKING NORTHEAST)

90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
PIPEL T. SALAMEA
C89351
Exp. 03–31–26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
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4			
5			

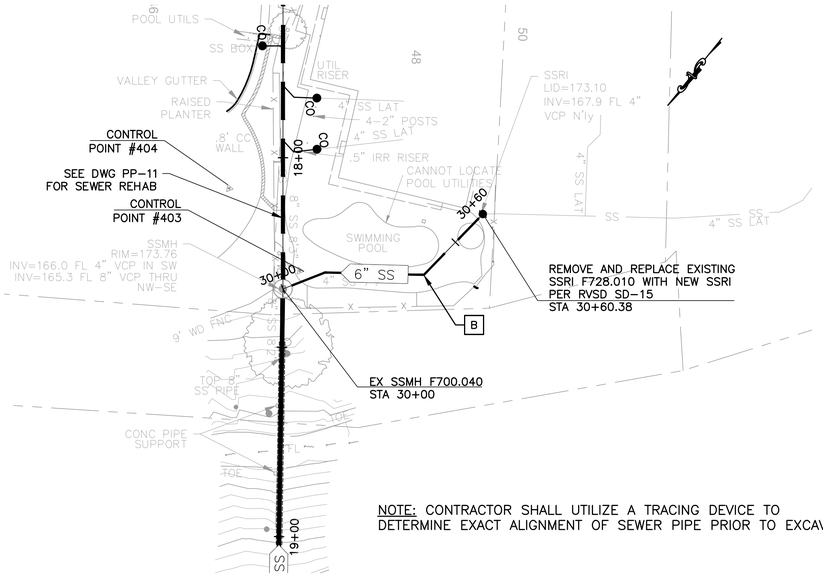
SANITARY SEWER IMPROVEMENTS
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ROSS VALLEY SANITARY DISTRICT
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DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	10/16/2025
JOB NO:	120-0743.007
DWG NO:	PP-12
SHEET No:	15 OF 20



NOTE: CONTRACTOR SHALL UTILIZE A TRACING DEVICE TO DETERMINE EXACT ALIGNMENT OF SEWER PIPE PRIOR TO EXCAVATION

SURVEY CONTROL POINTS

POINT #	*NORTHING*	*EASTING*	*ELEVATION*	*DESCRIPTION*
403	*2191949.33*	*5957035.92*	*173.41*	*CP TEMP MARK*
404	*2191944.07*	*5957064.08*	*173.52*	*CP TACK 5.56 DECK COR*

GRAPHIC SCALE:
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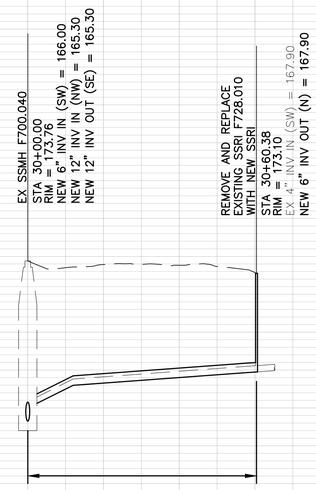
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3. WHERE PIPING IS REMOVED AND REPLACED BY OPEN TRENCH, NEW PIPE INVERT ELEVATIONS SHALL MATCH EX PIPE INVERT ELEVATIONS (UPSIZED 8" SS INVERTS SHALL MATCH EXISTING 6" SS INVERTS), UNLESS OTHERWISE NOTED.
4. FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS, SEE GENERAL NOTE 23 AND 24 ON DWG N-01 FOR HDPE SLEEVE REQUIREMENTS.
5. BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
6. 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).

30+00 30+60.38



B — PIPE BURST 60 LF OF 4" CAST IRON SS WITH 6" SS (5.80" I.D. HDPE DR 17)
S = MATCH EXISTING

90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
RIDEL T. SALAMEDA
C88351
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

No.	DATE	INITIAL	DESCRIPTION
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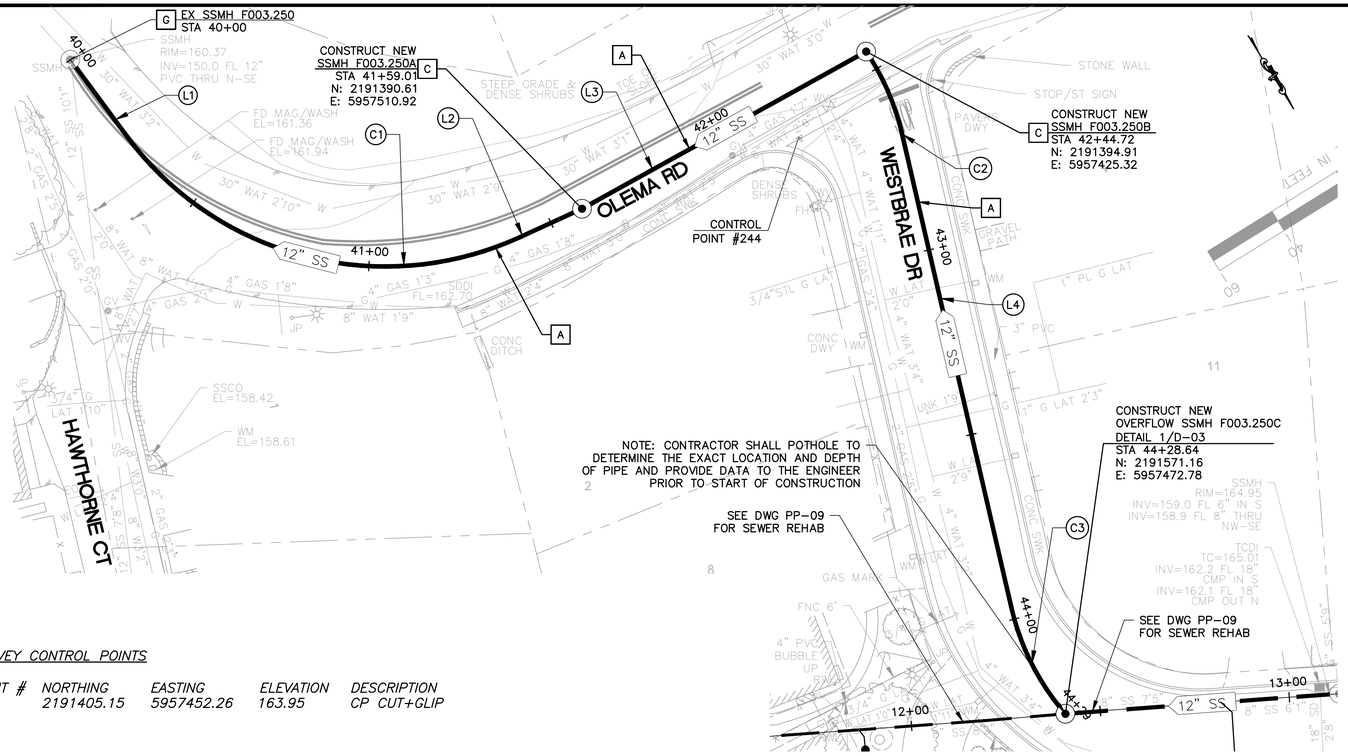
SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
WESTBRAE DR LATERAL

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

Harris & Associates
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DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	9/25/2025
JOB NO:	120-0743.007
DWG NO:	PP-13
SHEET No:	16 OF 20



SURVEY CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
244	2191405.15	5957452.26	163.95	CP CUT+GLIP

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 2/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-14. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES 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 2/D-01 FOR ALL OPEN TRENCHES. SEE NOTE 38 ON DWG N-01

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

DISCONNECT AND RECONNECT SEWER LATERALS PER RVSD STD DWG SD-29.

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, SD-04, SD-05 AND SD-06. FINAL PAVING SHALL BE PER DETAIL 2/D-01.

D REHABILITATE MANHOLE BY LINING WITH CALCIUM ALUMINATE MORTAR SYSTEM AFTER MANHOLE MODIFICATIONS ARE PERFORMED AND IN ACCORDANCE WITH THE SPECIFICATIONS. REMOVE EXISTING MANHOLE STEPS PRIOR TO REHABILITATION.

E PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-29 AND SD-30. 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 2/D-01.

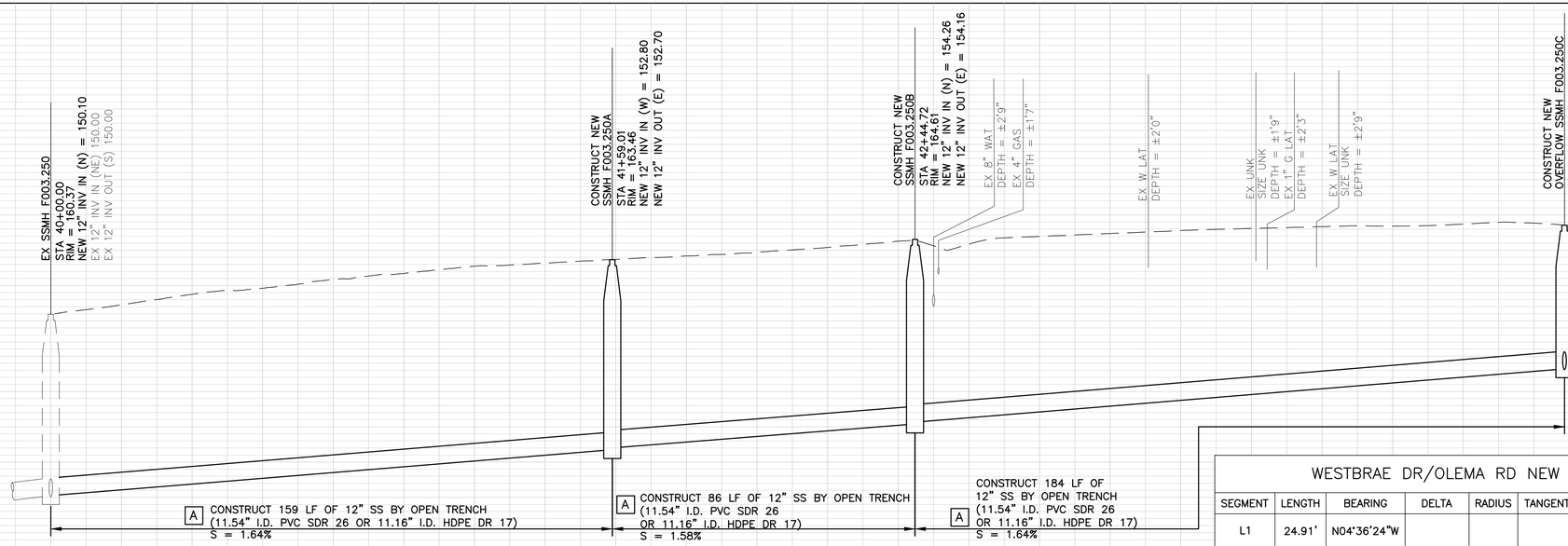
CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUTS SHALL BE TWO-WAY WITH SEWER POPPER TYPE 2 BACKWATER PREVENTION DEVICE. CLEANOUTS SHALL MATCH EXISTING LOWER LATERAL MATERIAL. REFER TO SD-29: C-900 IS TWO-WAY AND HDPE IS WYE FACING MAIN. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY B09 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CHRISTY B1017 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT. CONNECTION OF SEWER LATERAL TO SEWER MAIN, INCLUDING DROP OFF ANGLE (TYPE A OR TYPE B CONNECTION) OF SERVICE LATERAL, SHALL BE AS SHOWN ON RVSD DWG SD-29. NO VERTICAL DROP OFF IS ALLOWED.

F REMOVE AND REPLACE FRAME AND COVER PER RVSD STD DWG SD-10.

G REMOVE MANHOLE STEP/LADDER RUNGS BY BURNING OFF THE STEEL STEPS TO MINIMIZE DAMAGE TO THE MANHOLE WALL.

H AFTER OBTAINING RSVD PERMISSION, THE CONTRACTOR MAY OPT TO SWITCH THE LAUNCHING AND RECEIVING SHAFTS.

NOTES:
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WESTBRAE DR/OLEMA RD NEW SEWER LINE AND CURVE TABLE

SEGMENT	LENGTH	BEARING	DELTA	RADIUS	TANGENT	START STA	START POINT	END STA	END POINT
L1	24.91'	N04°36'24"W				40+00.00	N = 2191285.99 E = 5957604.95	40+24.91	N =2191310.82 E = 5957602.95
C1	115.88'		78°06'37"	85.00'	68.97'	40+24.91	N = 2191310.82 E = 5957602.95	41+40.78	N = 2191388.30 E = 5957529.00
L2	18.22'	N82°43'01"W				41+40.78	N = 2191388.30 E = 5957529.00	41+59.01	N =2191390.61 E = 5957510.92
L3	85.71'	N87°07'42"W				41+59.01	N = 2191390.61 E = 5957510.92	42+44.72	N =2191394.91 E = 5957425.32
C2	23.91'		21°04'43"	65.00'	12.09'	42+44.72	N = 2191394.91 E = 5957425.32	42+68.63	N = 2191418.44 E = 5957428.74
L4	128.26'	N18°49'38"E				42+68.63	N = 2191418.44 E = 5957428.74	43+96.89	N =2191539.84 E = 5957470.14
C3	31.75'		27°59'13"	65.00'	16.20'	43+96.89	N = 2191539.84 E = 5957470.14	44+28.64	N = 2191571.16 E = 5957472.78

REGISTERED PROFESSIONAL ENGINEER
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C88351
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

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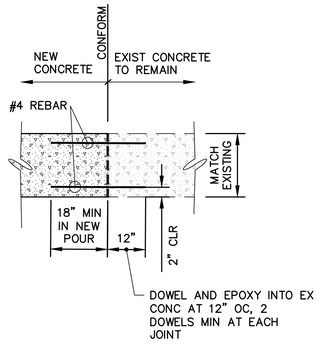
SANITARY SEWER IMPROVEMENTS
PLAN AND PROFILE
WESTBRAE DR/OLEMA RD

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

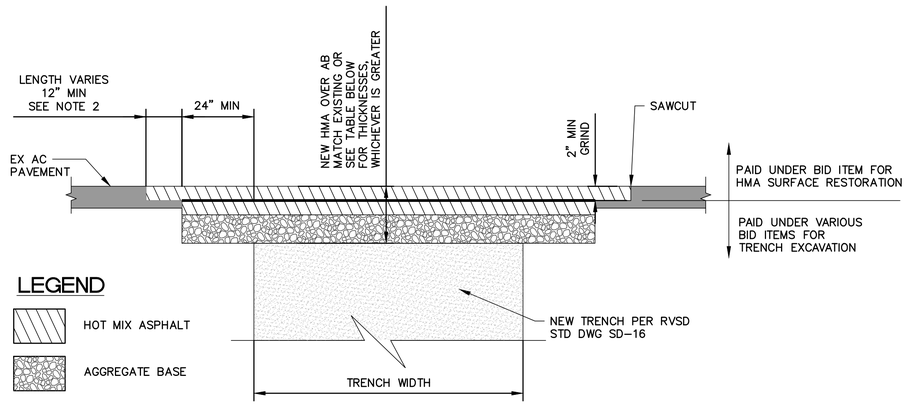
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DESIGNED BY: KLC
DRAWN BY: TRF
CHECKED BY: FTS
DATE ISSUED: 10/2/2025
JOB NO: 120-0743.007
DWG NO: PP-14
SHEET No: 17 OF 20



1 PCC CONFORM SECTION
NOT TO SCALE

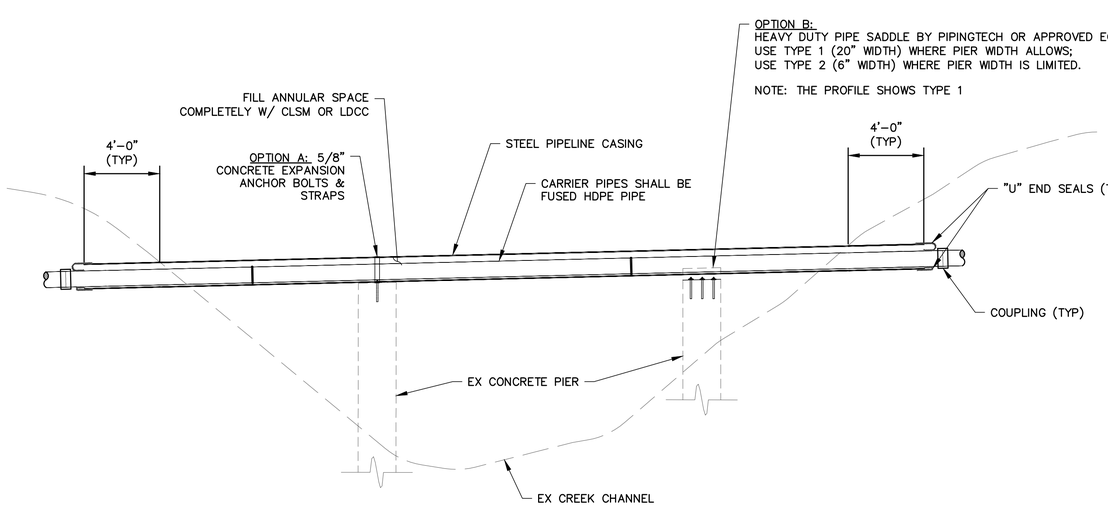


FINAL PAVING		
ROAD CLASSIFICATION (SEE NOTE 1)	PAVING REQUIREMENTS	ALTERNATE FULL DEPTH AC
LOCAL	MIN HMA: 4" MIN AB: 7"	7"
COLLECTOR	MIN HMA: 5" MIN AB: 11"	11"
ARTERIAL	MIN HMA: 6" MIN AB: 14"	14"

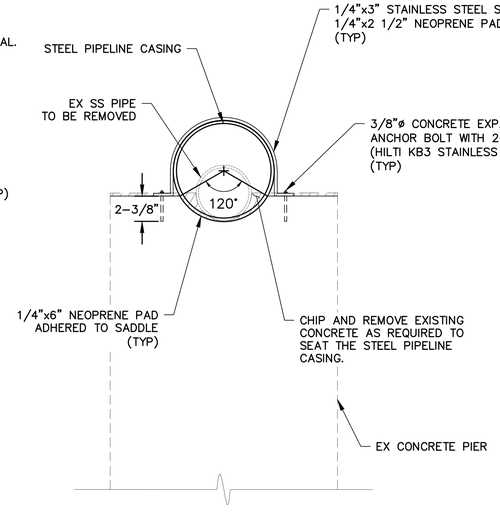
NOTES

1. ROAD CLASSIFICATIONS ARE AS DETERMINED BY THE LOCAL JURISDICTION.
2. SEE APPENDIX D FOR MARIN COUNTY STANDARDS 330 TO 380 FOR ADDITIONAL PAVING REQUIREMENTS.

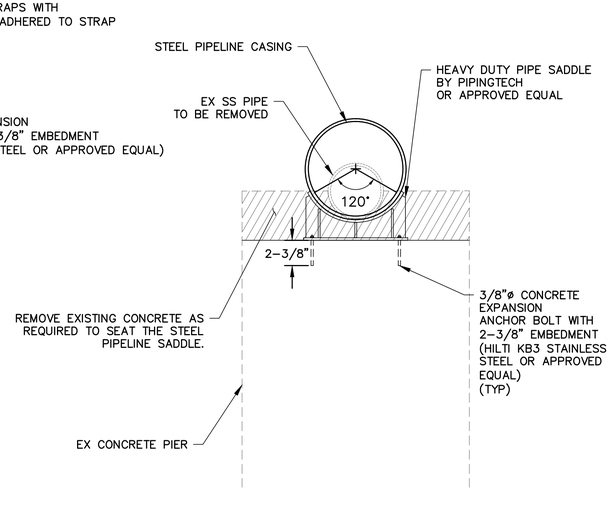
2 FINAL PAVING
NOT TO SCALE



ELEVATION
NOT TO SCALE



OPTION A - SECTION (MINIMAL CONCRETE REMOVAL)
NOT TO SCALE



OPTION B - SECTION (REMOVAL OF PIER TOP)
NOT TO SCALE

NOTES

1. SEE RVSD SD-26 FOR ADDITIONAL NOTES FOR STEEL PIPELINE CASING, CARRIER PIPES, CASING SPACERS, "U" END SEALS, AND COUPLING.

3 AERIAL PIPE CROSSING
NOT TO SCALE

NOTES

1. INSTEAD OF THE SUGGESTED OPTIONS, ALTERNATIVE CASING SUPPORT MAY BE SUBMITTED TO THE DISTRICT FOR REVIEW AFTER THE PROJECT IS AWARDED.THE PRICING WILL BE NEGOTIATED IF APPROVED.

90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
RIOEL T. SALAMEDA
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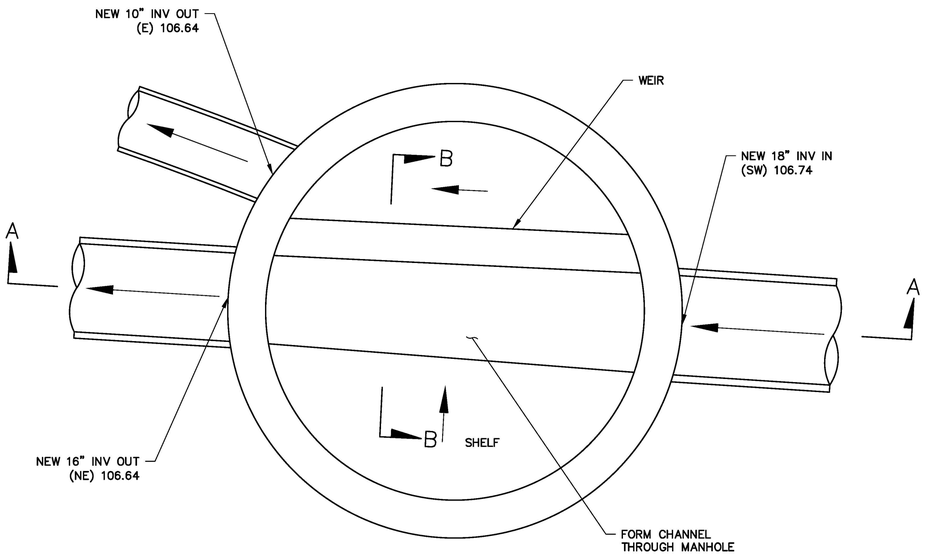
CONSTRUCTION DETAILS

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

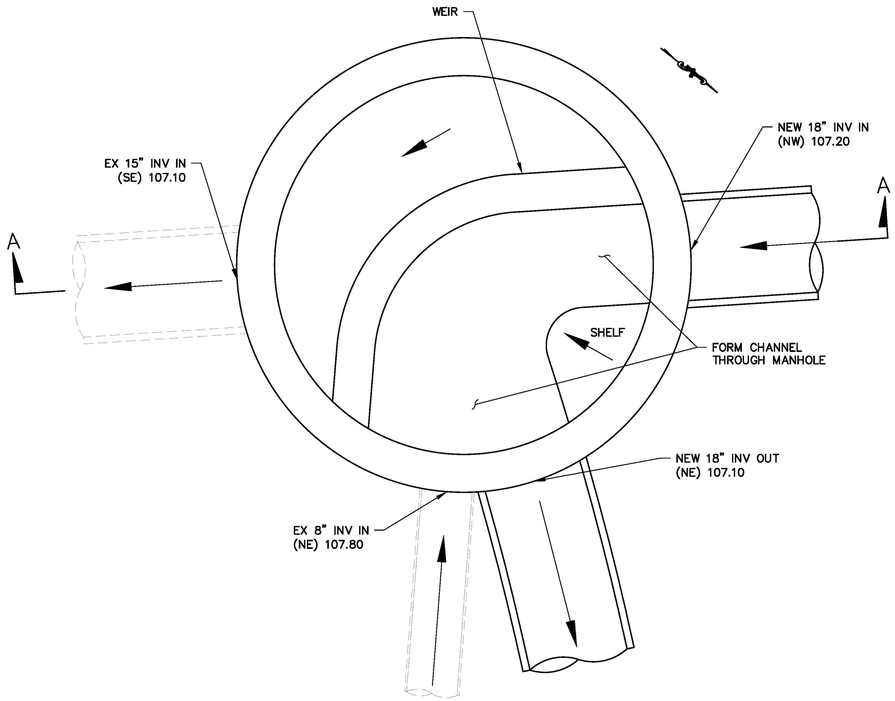
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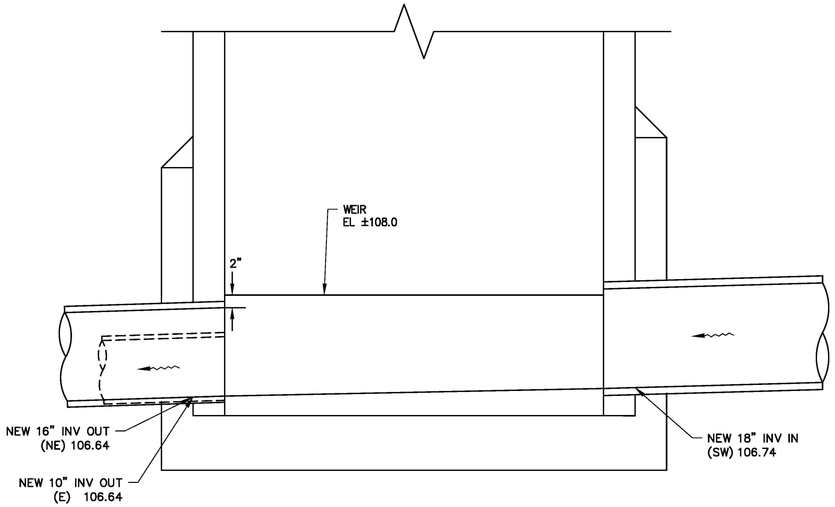
DESIGNED BY:	KLC
DRAWN BY:	TRF
CHECKED BY:	FTS
DATE ISSUED:	10/2/2025
JOB NO:	120-0743.007
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SHEET No:	18 OF 20



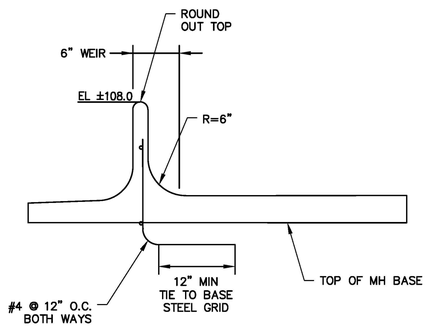
PLAN



PLAN



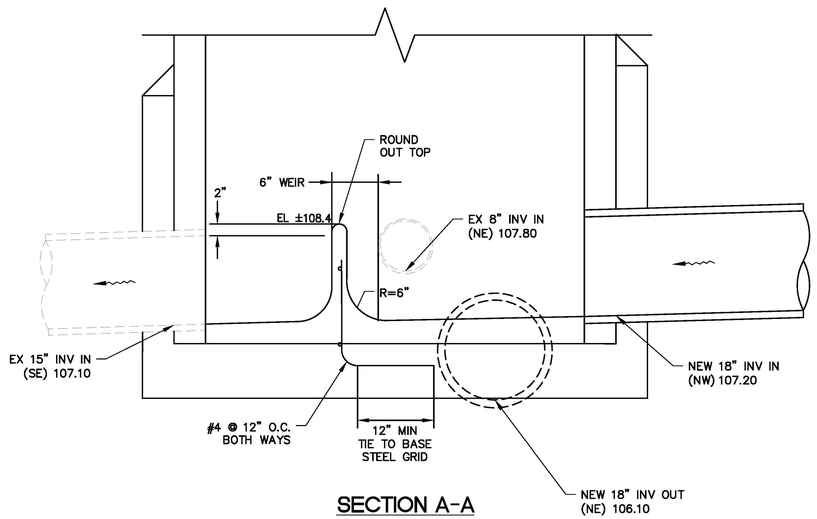
SECTION A-A



SECTION B-B

1 — OVERFLOW MANHOLE

NOT TO SCALE
(SEE PP-04 FOR LOCATION)



SECTION A-A

2 — OVERFLOW MANHOLE

NOT TO SCALE (SEE PP-05 FOR LOCATION)

90% SUBMITTAL
NOT FOR CONSTRUCTION

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NOT FOR CONSTRUCTION

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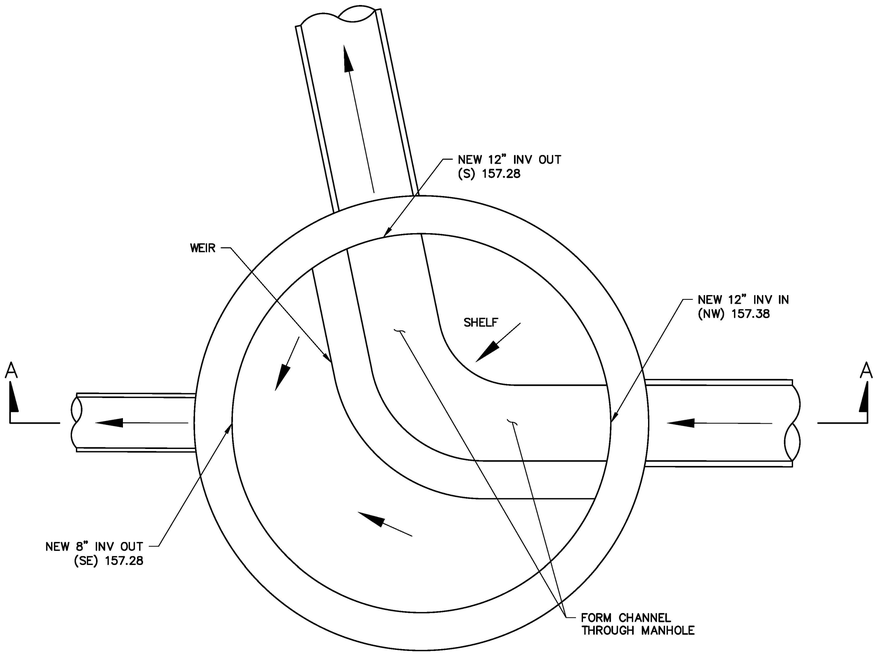
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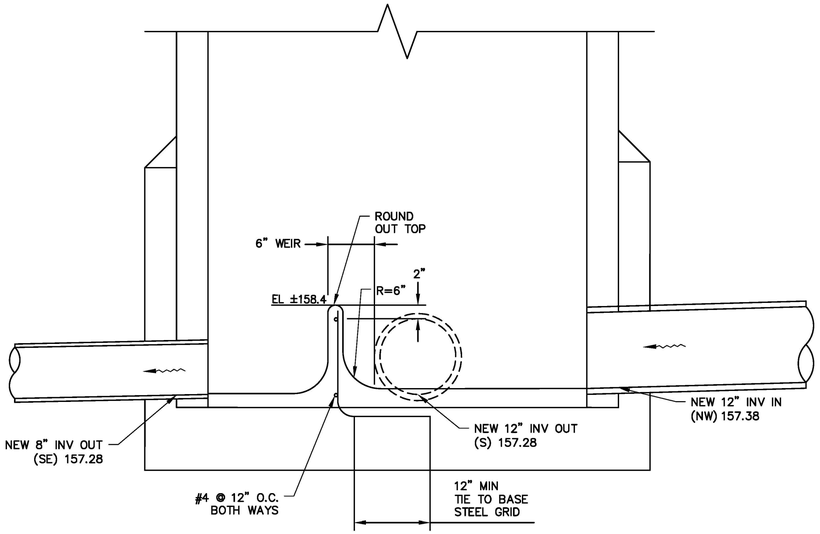
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CHECKED BY:	FTS
DATE ISSUED:	9/24/2025
JOB NO:	120-0743.007
DWG NO:	D-02
SHEET No:	19 OF 20



PLAN



SECTION A-A

1 — OVERFLOW MANHOLE

NOT TO SCALE
(SEE PP-09 AND PP 14 FOR LOCATION)

90% SUBMITTAL
NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
RIDEL T. SALAMERA
C86951
Exp. 03-31-26
CIVIL
STATE OF CALIFORNIA
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CONSTRUCTION DETAILS

ROSS VALLEY SANITARY DISTRICT
FAIRFAX CAPACITY AND CREEK CROSSINGS PROJECT (#957)

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DATE ISSUED:	10/16/2025
JOB NO:	120-0743.007
DWG NO:	D-03
SHEET No:	20 OF 20

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.
3. 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	Unit		Daily Rate Quantity	Unit	Note
Duration						
Construction	109	days	--	--		--
	3.6	months	--	--		--
Working days	80	days	--	--		22 working days per month
Area						
Total Project Area	13,303	sq feet		122	sq feet/day	Maximum area disturbed
	0.31	acres		0.003	acres/day	
Project Length	5,633	feet	--	--		Sum of pipelines in project scope
	1	mile	--	--		
Workers						
Workers onsite each day	5	workers	--	--		4 to 5 workers on site per day (5 workers to be conservative)
Worker roundtrips each day	10	roundtrips	--	--		Two roundtrips to/from site per worker each day
Material						
Volume Import	7600	CY				Volume of soil/material imported over the total project.
Volume Emport	7,900	CY				Volume of soil/material exported over the total project.

Notes

Inputs were recevied from RVSD (January 2026).

sq feet = square feet

Table 2. CalEEMod Project Inputs

Phase		Equipment					Hauling Trucks (Average trucks/day)[1]				
Activity	**Working Days**	**Type**	**HP**	**Number/ day**	**Operating hours/day**	**Fuel Type**	**Material Import**	**Material Export**	**Equipment/ Delivery**	**Cement/ Asphalt**	**Onsite Truck[2]**
Construction (New Pipe Locations, Open Trenching)	29	Bypass pump	11	1	8	Diesel	1	1	0.5		1
		Concrete Saw	10	1	1	Gasoline					
		Excavator	36	1	4	Diesel					
Construction (Aerial Crossing)	2	Bypass pump	11	1	8	Diesel	1	1	0.5		1
		Concrete Saw	10	1	1	Gasoline					
		Crane	74	1	4	Gasoline					
		Excavator	36	1	4	Diesel					
Construction (Manhole Rehab and Installation)	15	Bypass pump	11	1	8	Diesel	2	1	1	2	1
		Concrete Saw	10	1	1	Gasoline					
		Other General Industrial Equipment	35	1	4	Diesel					
		Excavator	36	1	2	Diesel					
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	13	Bypass pump	11	1	8	Diesel	1	1	2		1
		Wench	35	1	2	Diesel					
		Concrete Saw	10	1	2	Gasoline					
		Other General Industrial Equipment	35	1	8	Diesel					
		Excavator	36	1	4	Diesel					
Paving	59	Paving Equipment	89	1	4	Diesel	1		1	1	1
		Rollers	36	1	1	Diesel					
		Sweepers	36	1	0.5	Diesel					
		Skid Steer	71	1	2	Diesel					

Notes

Inputs were recevied from RVSD (January 2026).

HP = horsepower

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

[2] = Onsite truck includes water truck.

Fairfax Capacity and Creek Crossings Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year

2.2.1. Total Construction Emissions by Year, Unmitigated

2.2.2. Onsite Construction Emissions by Year, Unmitigated

2.2.3. Offsite Construction Emissions by Year, Unmitigated

3. Construction Emissions Details

3.1. Construction (Manhole Rehab and Installation) (2026)

3.1.1. Onsite - Unmitigated

3.1.2. Offsite - Unmitigated

3.2. Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD) (2026)

3.2.1. Onsite - Unmitigated

3.2.2. Offsite - Unmitigated

3.3. Construction (Aerial Crossing) (2026)

3.3.1. Onsite - Unmitigated

3.3.2. Offsite - Unmitigated

3.4. Paving (2026)

3.4.1. Onsite - Unmitigated

3.4.2. Offsite - Unmitigated

3.5. Construction (New Pipe Locations, Open Trenching) (2026)

3.5.1. Onsite - Unmitigated

3.5.2. Offsite - Unmitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

8.1. Justifications

8.4. Construction

8.4.4. Dust from Material Movement

8.4.6. Trips and VMT

8.4.7. On-Road Fugitive Dust

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fairfax Capacity and Creek Crossings
Construction Start Date	6/1/2026
Lead Agency	Ross Valley Sanitary District
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60000
Precipitation (days)	24.0000
Location	37.98743984810595, -122.58954486711812
County	Marin
City	Fairfax
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	928
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.38

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	1.06000	Mile	0.30700	0.00000	0.00000	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	130.386	130.093	5.18504	29.5103	0.01373	0.29973	0.48197	0.77500	0.24275	0.12301	0.36182	—	1,846.41	1,846.41	0.16092	0.19240	3.10880	1,910.88
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.19924	0.13578	1.51270	2.18896	0.00438	0.04202	0.17785	0.21987	0.03766	0.04461	0.08227	—	660.263	660.263	0.05064	0.05776	0.02742	678.769
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.54805	1.51769	0.59252	1.62637	0.00163	0.02632	0.06467	0.09099	0.02198	0.01619	0.03816	—	234.304	234.304	0.01956	0.02281	0.16854	241.760
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.28252	0.27698	0.10814	0.29681	0.00030	0.00480	0.01180	0.01661	0.00401	0.00295	0.00696	—	38.7916	38.7916	0.00324	0.00378	0.02790	40.0261
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year

2.2.1. Total Construction Emissions by Year, Unmitigated

Includes both onsite and offsite emissions.

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	130.386	130.093	5.18504	29.5103	0.01373	0.29973	0.48197	0.77500	0.24275	0.12301	0.36182	—	1,846.41	1,846.41	0.16092	0.19240	3.10880	1,910.88
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.19924	0.13578	1.51270	2.18896	0.00438	0.04202	0.17785	0.21987	0.03766	0.04461	0.08227	—	660.263	660.263	0.05064	0.05776	0.02742	678.769
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.54805	1.51769	0.59252	1.62637	0.00163	0.02632	0.06467	0.09099	0.02198	0.01619	0.03816	—	234.304	234.304	0.01956	0.02281	0.16854	241.760
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.28252	0.27698	0.10814	0.29681	0.00030	0.00480	0.01180	0.01661	0.00401	0.00295	0.00696	—	38.7916	38.7916	0.00324	0.00378	0.02790	40.0261

2.2.2. Onsite Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	130.209	130.006	4.14232	28.1268	0.00923	0.28756	0.06640	0.33631	0.23411	0.01571	0.24714	—	911.964	911.964	0.05450	0.03644	0.37727	924.564
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.12970	0.09838	1.12157	1.63467	0.00282	0.03811	0.02437	0.06248	0.03463	0.00652	0.04114	—	333.209	333.209	0.02207	0.01719	0.00489	338.887
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.52169	1.50521	0.43149	1.42932	0.00096	0.02458	0.00919	0.03377	0.02069	0.00230	0.02299	—	103.118	103.118	0.00695	0.00552	0.02617	104.963
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.27771	0.27470	0.07875	0.26085	0.00018	0.00448	0.00168	0.00616	0.00378	0.00042	0.00420	—	17.0724	17.0724	0.00115	0.00091	0.00433	17.3778

2.2.3. Offsite Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.21543	0.09501	1.41887	1.60768	0.00622	0.01640	0.43323	0.44963	0.01199	0.10997	0.12197	—	1,150.04	1,150.04	0.11552	0.15778	2.73153	1,202.68
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.06953	0.03741	0.39114	0.55430	0.00156	0.00392	0.15347	0.15739	0.00303	0.03809	0.04112	—	327.055	327.055	0.02857	0.04057	0.02253	339.882
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.02636	0.01248	0.16103	0.19705	0.00066	0.00175	0.05547	0.05722	0.00128	0.01389	0.01518	—	131.185	131.185	0.01261	0.01729	0.14236	136.797
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.00481	0.00228	0.02939	0.03596	0.00012	0.00032	0.01012	0.01044	0.00023	0.00254	0.00277	—	21.7192	21.7192	0.00209	0.00286	0.02357	22.6482

3. Construction Emissions Details

3.1. Construction (Manhole Rehab and Installation) (2026)

3.1.1. Onsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.36511	4.31492	1.28275	5.65007	0.00227	0.09756	—	0.09756	0.08082	—	0.08082	—	186.075	186.075	0.00756	0.00151	—	186.714
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.01537	0.00232	0.14329	0.08687	0.00061	0.00170	0.02437	0.02607	0.00113	0.00652	0.00765	—	94.4468	94.4468	0.01239	0.01525	0.18863	99.4893
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17939	0.17733	0.05272	0.23219	0.00009	0.00401	—	0.00401	0.00332	—	0.00332	—	7.64691	7.64691	0.00031	0.00006	—	7.67319
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00063	0.00009	0.00611	0.00358	0.00003	0.00007	0.00099	0.00106	0.00005	0.00026	0.00031	—	3.88174	3.88174	0.00051	0.00063	0.00333	4.08454

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03274	0.03236	0.00962	0.04238	0.00002	0.00073	—	0.00073	0.00061	—	0.00061	—	1.26603	1.26603	0.00005	0.00001	—	1.27038
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00011	0.00002	0.00112	0.00065	< 0.000005	0.00001	0.00018	0.00019	0.00001	0.00005	0.00006	—	0.64267	0.64267	0.00008	0.00010	0.00055	0.67624

3.1.2. Offsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03586	0.03520	0.02316	0.39347	0.00000	0.00000	0.09072	0.09072	0.00000	0.02126	0.02126	—	92.6812	92.6812	0.00154	0.00349	0.34974	94.1102
Vendor	0.01929	0.00590	0.20328	0.12008	0.00095	0.00190	0.03719	0.03909	0.00190	0.01001	0.01192	—	142.950	142.950	0.01230	0.02011	0.33776	149.587
Hauling	0.06693	0.00886	0.62025	0.37236	0.00278	0.00794	0.11389	0.12182	0.00529	0.03046	0.03575	—	435.855	435.855	0.05516	0.07037	0.88147	459.086
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00141	0.00126	0.00110	0.01384	0.00000	0.00000	0.00367	0.00367	0.00000	0.00086	0.00086	—	3.56658	3.56658	0.00008	0.00015	0.00621	3.62029
Vendor	0.00078	0.00023	0.00863	0.00501	0.00004	0.00008	0.00151	0.00159	0.00008	0.00041	0.00048	—	5.87523	5.87523	0.00051	0.00083	0.00599	6.14009
Hauling	0.00275	0.00036	0.02652	0.01534	0.00011	0.00033	0.00463	0.00495	0.00022	0.00124	0.00146	—	17.9129	17.9129	0.00227	0.00289	0.01555	18.8470
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00026	0.00023	0.00020	0.00253	0.00000	0.00000	0.00067	0.00067	0.00000	0.00016	0.00016	—	0.59049	0.59049	0.00001	0.00003	0.00103	0.59938
Vendor	0.00014	0.00004	0.00157	0.00091	0.00001	0.00001	0.00028	0.00029	0.00001	0.00007	0.00009	—	0.97271	0.97271	0.00008	0.00014	0.00099	1.01656
Hauling	0.00050	0.00007	0.00484	0.00280	0.00002	0.00006	0.00084	0.00090	0.00004	0.00023	0.00027	—	2.96569	2.96569	0.00038	0.00048	0.00257	3.12033

3.2. Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD) (2026)

3.2.1. Onsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.65969	8.57193	2.13512	11.1116	0.00365	0.17566	—	0.17566	0.14373	—	0.14373	—	321.406	321.406	0.01306	0.00261	—	322.511
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.01537	0.00232	0.14329	0.08687	0.00061	0.00170	0.02437	0.02607	0.00113	0.00652	0.00765	—	94.4468	94.4468	0.01239	0.01525	0.18863	99.4893
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30843	0.30530	0.07605	0.39575	0.00013	0.00626	—	0.00626	0.00512	—	0.00512	—	11.4473	11.4473	0.00047	0.00009	—	11.4867
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00055	0.00008	0.00530	0.00310	0.00002	0.00006	0.00086	0.00092	0.00004	0.00023	0.00027	—	3.36417	3.36417	0.00044	0.00054	0.00288	3.53994
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.05629	0.05572	0.01388	0.07223	0.00002	0.00114	—	0.00114	0.00093	—	0.00093	—	1.89524	1.89524	0.00008	0.00002	—	1.90175
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00010	0.00001	0.00097	0.00057	< 0.000005	0.00001	0.00016	0.00017	0.00001	0.00004	0.00005	—	0.55698	0.55698	0.00007	0.00009	0.00048	0.58608

3.2.2. Offsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03586	0.03520	0.02316	0.39347	0.00000	0.00000	0.09072	0.09072	0.00000	0.02126	0.02126	—	92.6812	92.6812	0.00154	0.00349	0.34974	94.1102
Vendor	0.01286	0.00393	0.13552	0.08005	0.00063	0.00127	0.02479	0.02606	0.00127	0.00667	0.00794	—	95.3003	95.3003	0.00820	0.01340	0.22517	99.7249
Hauling	0.04462	0.00591	0.41350	0.24824	0.00185	0.00529	0.07592	0.08121	0.00353	0.02030	0.02383	—	290.570	290.570	0.03677	0.04691	0.58765	306.057
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00122	0.00109	0.00096	0.01199	0.00000	0.00000	0.00318	0.00318	0.00000	0.00074	0.00074	—	3.09104	3.09104	0.00007	0.00013	0.00538	3.13759
Vendor	0.00045	0.00013	0.00498	0.00289	0.00002	0.00005	0.00087	0.00092	0.00005	0.00023	0.00028	—	3.39458	3.39458	0.00029	0.00048	0.00346	3.54761
Hauling	0.00159	0.00021	0.01532	0.00886	0.00007	0.00019	0.00267	0.00286	0.00013	0.00072	0.00084	—	10.3497	10.3497	0.00131	0.00167	0.00898	10.8894
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00022	0.00020	0.00017	0.00219	0.00000	0.00000	0.00058	0.00058	0.00000	0.00014	0.00014	—	0.51176	0.51176	0.00001	0.00002	0.00089	0.51946
Vendor	0.00008	0.00002	0.00091	0.00053	< 0.000005	0.00001	0.00016	0.00017	0.00001	0.00004	0.00005	—	0.56201	0.56201	0.00005	0.00008	0.00057	0.58735
Hauling	0.00029	0.00004	0.00280	0.00162	0.00001	0.00003	0.00049	0.00052	0.00002	0.00013	0.00015	—	1.71351	1.71351	0.00022	0.00028	0.00149	1.80286

3.3. Construction (Aerial Crossing) (2026)

3.3.1. Onsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	121.518	121.430	1.72062	16.8415	0.00436	0.10850	—	0.10850	0.08811	—	0.08811	—	401.664	401.664	0.01666	0.00333	—	403.074
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.01537	0.00232	0.14329	0.08687	0.00061	0.00170	0.02437	0.02607	0.00113	0.00652	0.00765	—	94.4468	94.4468	0.01239	0.01525	0.18863	99.4893
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66585	0.66537	0.00943	0.09228	0.00002	0.00059	—	0.00059	0.00048	—	0.00048	—	2.20090	2.20090	0.00009	0.00002	—	2.20863
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00008	0.00001	0.00082	0.00048	< 0.000005	0.00001	0.00013	0.00014	0.00001	0.00004	0.00004	—	0.51757	0.51757	0.00007	0.00008	0.00044	0.54461
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.12152	0.12143	0.00172	0.01684	< 0.000005	0.00011	—	0.00011	0.00009	—	0.00009	—	0.36438	0.36438	0.00002	< 0.000005	—	0.36566
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00002	< 0.000005	0.00015	0.00009	< 0.000005	< 0.000005	0.00002	0.00003	< 0.000005	0.00001	0.00001	—	0.08569	0.08569	0.00001	0.00001	0.00007	0.09017

3.3.2. Offsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03586	0.03520	0.02316	0.39347	0.00000	0.00000	0.09072	0.09072	0.00000	0.02126	0.02126	—	92.6812	92.6812	0.00154	0.00349	0.34974	94.1102
Vendor	0.00321	0.00098	0.03388	0.02001	0.00016	0.00032	0.00620	0.00652	0.00032	0.00167	0.00199	—	23.8251	23.8251	0.00205	0.00335	0.05629	24.9312
Hauling	0.04462	0.00591	0.41350	0.24824	0.00185	0.00529	0.07592	0.08121	0.00353	0.02030	0.02383	—	290.570	290.570	0.03677	0.04691	0.58765	306.057
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00019	0.00017	0.00015	0.00184	0.00000	0.00000	0.00049	0.00049	0.00000	0.00011	0.00011	—	0.47554	0.47554	0.00001	0.00002	0.00083	0.48271
Vendor	0.00002	0.00001	0.00019	0.00011	< 0.000005	< 0.000005	0.00003	0.00004	< 0.000005	0.00001	0.00001	—	0.13056	0.13056	0.00001	0.00002	0.00013	0.13645
Hauling	0.00024	0.00003	0.00236	0.00136	0.00001	0.00003	0.00041	0.00044	0.00002	0.00011	0.00013	—	1.59226	1.59226	0.00020	0.00026	0.00138	1.67529
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00003	0.00003	0.00003	0.00034	0.00000	0.00000	0.00009	0.00009	0.00000	0.00002	0.00002	—	0.07873	0.07873	< 0.000005	< 0.000005	0.00014	0.07992
Vendor	< 0.000005	< 0.000005	0.00003	0.00002	< 0.000005	< 0.000005	0.00001	0.00001	< 0.000005	< 0.000005	< 0.000005	—	0.02162	0.02162	< 0.000005	< 0.000005	0.00002	0.02259

Hauling	0.00004	0.00001	0.00043	0.00025	< 0.000005	0.00001	0.00008	0.00008	< 0.000005	0.00002	0.00002	—	0.26362	0.26362	0.00003	0.00004	0.00023	0.27736

3.4. Paving (2026)

3.4.1. Onsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11447	0.09619	0.97051	1.54705	0.00220	0.03641	—	0.03641	0.03349	—	0.03349	—	238.741	238.741	0.00968	0.00194	—	239.560
Onsite truck	0.01537	0.00232	0.14329	0.08687	0.00061	0.00170	0.02437	0.02607	0.00113	0.00652	0.00765	—	94.4468	94.4468	0.01239	0.01525	0.18863	99.4893
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11447	0.09619	0.97051	1.54705	0.00220	0.03641	—	0.03641	0.03349	—	0.03349	—	238.741	238.741	0.00968	0.00194	—	239.560
Onsite truck	0.01523	0.00219	0.15106	0.08762	0.00061	0.00170	0.02437	0.02607	0.00113	0.00652	0.00765	—	94.4679	94.4679	0.01239	0.01525	0.00489	99.3267
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01850	0.01555	0.15688	0.25007	0.00036	0.00588	—	0.00588	0.00541	—	0.00541	—	38.5910	38.5910	0.00157	0.00031	—	38.7235
Onsite truck	0.00248	0.00037	0.02405	0.01409	0.00010	0.00027	0.00389	0.00417	0.00018	0.00104	0.00123	—	15.2682	15.2682	0.00200	0.00246	0.01309	16.0659
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.00338	0.00284	0.02863	0.04564	0.00007	0.00107	—	0.00107	0.00099	—	0.00099	—	6.38918	6.38918	0.00026	0.00005	—	6.41111
Onsite truck	0.00045	0.00007	0.00439	0.00257	0.00002	0.00005	0.00071	0.00076	0.00003	0.00019	0.00022	—	2.52782	2.52782	0.00033	0.00041	0.00217	2.65989

3.4.2. Offsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03586	0.03520	0.02316	0.39347	0.00000	0.00000	0.09072	0.09072	0.00000	0.02126	0.02126	—	92.6812	92.6812	0.00154	0.00349	0.34974	94.1102
Vendor	0.01286	0.00393	0.13552	0.08005	0.00063	0.00127	0.02479	0.02606	0.00127	0.00667	0.00794	—	95.3003	95.3003	0.00820	0.01340	0.22517	99.7249
Hauling	0.02231	0.00295	0.20675	0.12412	0.00093	0.00265	0.03796	0.04061	0.00176	0.01015	0.01192	—	145.285	145.285	0.01839	0.02346	0.29382	153.029
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03476	0.03083	0.03036	0.34754	0.00000	0.00000	0.09072	0.09072	0.00000	0.02126	0.02126	—	86.4267	86.4267	0.00198	0.00371	0.00907	87.5917
Vendor	0.01259	0.00376	0.14247	0.08189	0.00063	0.00127	0.02479	0.02606	0.00127	0.00667	0.00794	—	95.3218	95.3218	0.00820	0.01340	0.00585	99.5271
Hauling	0.02218	0.00282	0.21830	0.12487	0.00093	0.00265	0.03796	0.04061	0.00176	0.01015	0.01192	—	145.306	145.306	0.01839	0.02346	0.00762	152.764
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00555	0.00495	0.00434	0.05443	0.00000	0.00000	0.01444	0.01444	0.00000	0.00338	0.00338	—	14.0286	14.0286	0.00032	0.00060	0.02441	14.2398
Vendor	0.00205	0.00061	0.02262	0.01313	0.00010	0.00021	0.00396	0.00416	0.00021	0.00107	0.00127	—	15.4062	15.4062	0.00133	0.00217	0.01570	16.1007
Hauling	0.00360	0.00047	0.03477	0.02011	0.00015	0.00043	0.00607	0.00649	0.00029	0.00162	0.00191	—	23.4858	23.4858	0.00297	0.00379	0.02038	24.7105
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00101	0.00090	0.00079	0.00993	0.00000	0.00000	0.00263	0.00263	0.00000	0.00062	0.00062	—	2.32259	2.32259	0.00005	0.00010	0.00404	2.35756
Vendor	0.00037	0.00011	0.00413	0.00240	0.00002	0.00004	0.00072	0.00076	0.00004	0.00019	0.00023	—	2.55067	2.55067	0.00022	0.00036	0.00260	2.66565
Hauling	0.00066	0.00009	0.00634	0.00367	0.00003	0.00008	0.00111	0.00119	0.00005	0.00030	0.00035	—	3.88835	3.88835	0.00049	0.00063	0.00337	4.09110

3.5. Construction (New Pipe Locations, Open Trenching) (2026)

3.5.1. Onsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.33672	4.29106	1.11169	5.42261	0.00202	0.09164	—	0.09164	0.07537	—	0.07537	—	159.792	159.792	0.00649	0.00130	—	160.341
Dust From Material Movement	—	—	—	—	—	—	0.01765	0.01765	—	0.00267	0.00267	—	—	—	—	—	—	—
Onsite truck	0.01537	0.00232	0.14329	0.08687	0.00061	0.00170	0.02437	0.02607	0.00113	0.00652	0.00765	—	94.4468	94.4468	0.01239	0.01525	0.18863	99.4893
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34456	0.34093	0.08833	0.43084	0.00016	0.00728	—	0.00728	0.00599	—	0.00599	—	12.6958	12.6958	0.00052	0.00010	—	12.7394
Dust From Material Movement	—	—	—	—	—	—	0.00140	0.00140	—	0.00021	0.00021	—	—	—	—	—	—	—
Onsite truck	0.00122	0.00018	0.01182	0.00693	0.00005	0.00013	0.00191	0.00205	0.00009	0.00051	0.00060	—	7.50469	7.50469	0.00098	0.00121	0.00643	7.89678
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.06288	0.06222	0.01612	0.07863	0.00003	0.00133	—	0.00133	0.00109	—	0.00109	—	2.10193	2.10193	0.00009	0.00002	—	2.10916
Dust From Material Movement	—	—	—	—	—	—	0.00026	0.00026	—	0.00004	0.00004	—	—	—	—	—	—	—
Onsite truck	0.00022	0.00003	0.00216	0.00126	0.00001	0.00002	0.00035	0.00037	0.00002	0.00009	0.00011	—	1.24249	1.24249	0.00016	0.00020	0.00106	1.30740

3.5.2. Offsite - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03586	0.03520	0.02316	0.39347	0.00000	0.00000	0.09072	0.09072	0.00000	0.02126	0.02126	—	92.6812	92.6812	0.00154	0.00349	0.34974	94.1102
Vendor	0.00321	0.00098	0.03388	0.02001	0.00016	0.00032	0.00620	0.00652	0.00032	0.00167	0.00199	—	23.8251	23.8251	0.00205	0.00335	0.05629	24.9312
Hauling	0.04462	0.00591	0.41350	0.24824	0.00185	0.00529	0.07592	0.08121	0.00353	0.02030	0.02383	—	290.570	290.570	0.03677	0.04691	0.58765	306.057
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00273	0.00243	0.00213	0.02675	0.00000	0.00000	0.00710	0.00710	0.00000	0.00166	0.00166	—	6.89539	6.89539	0.00016	0.00029	0.01200	6.99923
Vendor	0.00025	0.00007	0.00278	0.00161	0.00001	0.00003	0.00049	0.00051	0.00003	0.00013	0.00016	—	1.89313	1.89313	0.00016	0.00027	0.00193	1.97847
Hauling	0.00354	0.00046	0.03418	0.01977	0.00015	0.00042	0.00596	0.00638	0.00028	0.00160	0.00188	—	23.0878	23.0878	0.00292	0.00373	0.02004	24.2916
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00050	0.00044	0.00039	0.00488	0.00000	0.00000	0.00130	0.00130	0.00000	0.00030	0.00030	—	1.14161	1.14161	0.00003	0.00005	0.00199	1.15880
Vendor	0.00005	0.00001	0.00051	0.00029	< 0.000005	< 0.000005	0.00009	0.00009	< 0.000005	0.00002	0.00003	—	0.31343	0.31343	0.00003	0.00004	0.00032	0.32756
Hauling	0.00065	0.00008	0.00624	0.00361	0.00003	0.00008	0.00109	0.00116	0.00005	0.00029	0.00034	—	3.82244	3.82244	0.00048	0.00062	0.00332	4.02176

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	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
Construction (Manhole Rehab and Installation)	Linear, Grading & Excavation	7/11/2026	7/31/2026	5.00000	15.0000	Construction (Manhole Rehab and Installation)
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Linear, Grading & Excavation	7/10/2026	8/19/2026	5.00000	13.0000	Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)
Construction (Aerial Crossing)	Linear, Drainage, Utilities, & Sub-Grade	7/9/2026	7/10/2026	5.00000	2.00000	Construction (Aerial Crossing)
Paving	Linear, Paving	8/19/2026	11/9/2026	5.00000	59.0000	Paving
Construction (New Pipe Locations, Open Trenching)	Linear, Trenching	6/1/2026	7/9/2026	5.00000	29.0000	Construction (New Pipe Locations, Open Trenching)

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

Construction (Manhole Rehab and Installation)	Pumps	Diesel	Average	1.000000	8.00000	11.0000	0.74000
Construction (Manhole Rehab and Installation)	Concrete/Industrial Saws	Gasoline	Average	1.000000	1.000000	10.00000	0.78000
Construction (Manhole Rehab and Installation)	Other General Industrial Equipment	Diesel	Average	1.000000	4.00000	35.0000	0.34000
Construction (Manhole Rehab and Installation)	Excavators	Diesel	Average	1.000000	2.00000	36.0000	0.38000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Pumps	Diesel	Average	1.000000	8.00000	11.0000	0.74000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Other General Industrial Equipment	Diesel	Average	1.000000	2.00000	35.0000	0.34000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Concrete/Industrial Saws	Gasoline	Average	1.000000	2.00000	10.00000	0.78000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Other General Industrial Equipment	Diesel	Average	1.000000	8.00000	35.0000	0.34000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Excavators	Diesel	Average	1.000000	4.00000	36.0000	0.38000
Construction (Aerial Crossing)	Pumps	Diesel	Average	1.000000	8.00000	11.0000	0.74000
Construction (Aerial Crossing)	Concrete/Industrial Saws	Gasoline	Average	1.000000	1.000000	10.00000	0.78000
Construction (Aerial Crossing)	Cranes	Gasoline	Average	1.000000	4.00000	74.0000	0.47000

Construction (Aerial Crossing)	Excavators	Diesel	Average	1.000000	4.00000	36.0000	0.38000
Paving	Paving Equipment	Diesel	Average	1.000000	4.00000	89.0000	0.36000
Paving	Rollers	Diesel	Average	1.000000	1.000000	36.0000	0.38000
Paving	Sweepers/Scrubbers	Diesel	Average	1.000000	0.50000	36.0000	0.46000
Paving	Skid Steer Loaders	Diesel	Average	1.000000	2.00000	71.0000	0.37000
Construction (New Pipe Locations, Open Trenching)	Pumps	Diesel	Average	1.000000	8.00000	11.0000	0.74000
Construction (New Pipe Locations, Open Trenching)	Concrete/Industrial Saws	Gasoline	Average	1.000000	1.000000	10.00000	0.78000
Construction (New Pipe Locations, Open Trenching)	Excavators	Diesel	Average	1.000000	4.00000	36.0000	0.38000

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Construction (Manhole Rehab and Installation)	Worker	10.00000	12.8400	LDA,LDT1,LDT2
Construction (Manhole Rehab and Installation)	Vendor	6.00000	7.20000	HHDT,MHDT
Construction (Manhole Rehab and Installation)	Hauling	6.00000	20.0000	HHDT
Construction (Manhole Rehab and Installation)	Onsite truck	2.00000	12.8400	HHDT
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Worker	10.00000	12.8400	LDA,LDT1,LDT2
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Vendor	4.00000	7.20000	HHDT,MHDT

Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Hauling	4.00000	20.0000	HHDT
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Onsite truck	2.00000	12.8400	HHDT
Construction (Aerial Crossing)	Worker	10.00000	12.8400	LDA,LDT1,LDT2
Construction (Aerial Crossing)	Vendor	1.000000	7.20000	HHDT,MHDT
Construction (Aerial Crossing)	Hauling	4.00000	20.0000	HHDT
Construction (Aerial Crossing)	Onsite truck	2.00000	12.8400	HHDT
Paving	Worker	10.00000	12.8400	LDA,LDT1,LDT2
Paving	Vendor	4.00000	7.20000	HHDT,MHDT
Paving	Hauling	2.00000	20.0000	HHDT
Paving	Onsite truck	2.00000	12.8400	HHDT
Construction (New Pipe Locations, Open Trenching)	Worker	10.00000	12.8400	LDA,LDT1,LDT2
Construction (New Pipe Locations, Open Trenching)	Vendor	1.000000	7.20000	HHDT,MHDT
Construction (New Pipe Locations, Open Trenching)	Hauling	4.00000	20.0000	HHDT
Construction (New Pipe Locations, Open Trenching)	Onsite truck	2.00000	12.8400	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Construction (Manhole Rehab and Installation)	0.00000	0.00000	0.30500	0.00000	0.00000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	0.00000	0.00000	0.30500	0.00000	0.00000
Construction (Aerial Crossing)	0.00000	0.00000	0.30500	0.00000	0.00000
Construction (New Pipe Locations, Open Trenching)	7,600.00	7,900.00	0.30500	0.00000	0.00000

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00000	203.983	0.03300	0.00400

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	9.66000	annual days of extreme heat
Extreme Precipitation	18.8000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	7.65000	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	5	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

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

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	5	1	1	4
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	7.51711
AQ-PM	15.7934
AQ-DPM	4.43062
Drinking Water	7.43100
Lead Risk Housing	53.2829
Pesticides	0.00000
Toxic Releases	35.2213
Traffic	62.2125
Effect Indicators	—
CleanUp Sites	68.9436
Groundwater	0.00000
Haz Waste Facilities/Generators	0.00000
Impaired Water Bodies	0.00000
Solid Waste	0.00000
Sensitive Population	—
Asthma	2.52991

Cardio-vascular	0.79761
Low Birth Weights	32.2684
Socioeconomic Factor Indicators	—
Education	14.1736
Housing	66.5146
Linguistic	11.2735
Poverty	13.0402
Unemployment	5.57002

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	78.58334403
Employed	94.55921981
Median HI	70.537662
Education	—
Bachelor's or higher	83.02322597
High school enrollment	100
Preschool enrollment	66.7393815
Transportation	—
Auto Access	34.87745413
Active commuting	84.74271782
Social	—
2-parent households	51.35377903
Voting	99.25574233
Neighborhood	—
Alcohol availability	49.78827153

Park access	42.84614398
Retail density	39.08635955
Supermarket access	40.2669062
Tree canopy	97.21544976
Housing	—
Homeownership	52.16219684
Housing habitability	71.35891184
Low-inc homeowner severe housing cost burden	34.32567689
Low-inc renter severe housing cost burden	68.67701784
Uncrowded housing	91.95431798
Health Outcomes	—
Insured adults	56.42243039
Arthritis	0.0
Asthma ER Admissions	94.7
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	36.5
Cognitively Disabled	72.6
Physically Disabled	63.7
Heart Attack ER Admissions	99.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	67.5

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	0.0
Children	88.7
Elderly	18.2
English Speaking	93.8
Foreign-born	20.9
Outdoor Workers	44.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	89.9
Traffic Density	68.5
Traffic Access	57.8
Other Indices	—
Hardship	9.4
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)	2.00000
Healthy Places Index Score for Project Location (b)	90.0000
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

8.1. Justifications

Screen	Justification
Construction: Construction Phases	Changes made to reflect construction plans
Construction: Off-Road Equipment	Addition of the equipment reflects project needs during construction
Construction: Dust From Material Movement	Changes reflect conditions during construction
Construction: Trips and VMT	changes reflect project conditions
Construction: On-Road Fugitive Dust	Changes reflect project conditions

8.4. Construction

8.4.4. Dust from Material Movement

Phase Name	Model Parameter	Units	Default Value	New Value
Construction (Manhole Rehab and Installation)	Material Imported	Cubic Yards	—	0.00000

Construction (Manhole Rehab and Installation)	Material Exported	Cubic Yards	—	0.00000
Construction (Manhole Rehab and Installation)	Total Acres Graded	acres	0.30700	0.30500
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Material Imported	Cubic Yards	—	0.00000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Material Exported	Cubic Yards	—	0.00000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Total Acres Graded	acres	0.30700	0.30500
Construction (Aerial Crossing)	Material Imported	Cubic Yards	—	0.00000
Construction (Aerial Crossing)	Material Exported	Cubic Yards	—	0.00000
Construction (Aerial Crossing)	Material Import/Export Phased?	—	—	No
Construction (Aerial Crossing)	Total Acres Graded	acres	0.30700	0.30500
Construction (New Pipe Locations, Open Trenching)	Material Import/Export Phased?	—	—	No

8.4.6. Trips and VMT

Phase Name	Trip Type	Model Parameter	Default Value	New Value
Construction (Manhole Rehab and Installation)	Worker	One-Way Trips per Day	0.00000	10.00000
Construction (Manhole Rehab and Installation)	Vendor	One-Way Trips per Day	0.00000	6.00000
Construction (Manhole Rehab and Installation)	Hauling	One-Way Trips per Day	0.00000	6.00000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Worker	One-Way Trips per Day	0.00000	10.00000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Vendor	One-Way Trips per Day	0.00000	4.00000

Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Hauling	One-Way Trips per Day	0.00000	4.00000
Construction (Aerial Crossing)	Worker	One-Way Trips per Day	0.00000	10.00000
Construction (Aerial Crossing)	Vendor	One-Way Trips per Day	0.00000	1.000000
Construction (Aerial Crossing)	Hauling	One-Way Trips per Day	0.00000	4.00000
Paving	Worker	One-Way Trips per Day	0.00000	10.00000
Paving	Vendor	One-Way Trips per Day	0.00000	4.00000
Paving	Hauling	One-Way Trips per Day	0.00000	2.00000
Construction (New Pipe Locations, Open Trenching)	Worker	One-Way Trips per Day	0.00000	10.00000
Construction (New Pipe Locations, Open Trenching)	Hauling	One-Way Trips per Day	66.8276	4.00000

8.4.7. On-Road Fugitive Dust

Phase Name	Model Parameter	Units	Default Value	New Value
Construction (Manhole Rehab and Installation)	Onsite Truck Trip Paved	%	0.00000	100.0000
Construction Trenchless Methods (Pipe Bursting, Guided Jack and Bore, HDD)	Onsite Truck Trip Paved	%	0.00000	100.0000
Construction (Aerial Crossing)	Onsite Truck Trip Paved	%	0.00000	100.0000
Paving	Onsite Truck Trip Paved	%	0.00000	100.0000
Construction (New Pipe Locations, Open Trenching)	Onsite Truck Trip Paved	%	0.00000	100.0000

Attachment F

Protected Natural Resources Tables

CNPS Rare Plant Inventory

Search Results

57 matches found. Click on scientific name for details

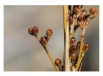
Search Criteria: , Quad is one of [3812215:3712285]

▲ 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	 © 2024 Vernon Smith

Aspidotis carlotta-halliae	Carlotta Hall's lace fern	Pteridaceae	perennial rhizomatous herb	Jan-Dec	None	None	G3	S3	4.2	Yes	1994-01-01	 © 2023 Barry Rice
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	Apr-Jun	None	None	G3	S3	4.2	Yes	1974-01-01	 © 2021 Zoya Akulova
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

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	G2T2	S2	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
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	 © 2023 Dylan Neubauer
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
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	G3G4	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	G2	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
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

Go to top

Suggested Citation:
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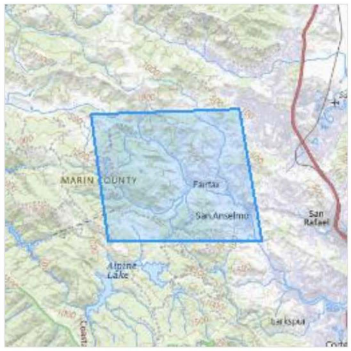
IPaC resource list

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

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

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

NOT FOR CONSULTATION

Northern Spotted Owl Strix occidentalis caurina — Threatened
Wherever found
There is **final** critical habitat for this species. Your location overlaps the critical habitat.
https://ecos.fws.gov/ecp/species/1123

Western Snowy Plover Charadrius nivosus nivosus — Threatened
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/8035

Yellow-billed Cuckoo Coccyzus americanus — Threatened
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/3911

Reptiles

NAME	STATUS

Green Sea Turtle Chelonia mydas — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6199

Northwestern Pond Turtle Actinemys marmorata — Proposed Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1111

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — 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/2891

Fishes

NAME	STATUS

Tidewater Goby Eucyclogobius newberryi — Endangered
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

Insects

NAME	STATUS

Monarch Butterfly Danaus plexippus — Proposed Threatened
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

Flowering Plants

NAME	STATUS

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

NOT FOR CONSULTATION

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

Sonoma Alopecurus Alopecurus aequalis var. sonomensis — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/557

Tiburon Paintbrush Castilleja affinis ssp. neglecta — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2687

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.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Northern Spotted Owl Strix occidentalis caurina https://ecos.fws.gov/ecp/species/1123#crithab	Final

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

NOT FOR CONSULTATION

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.

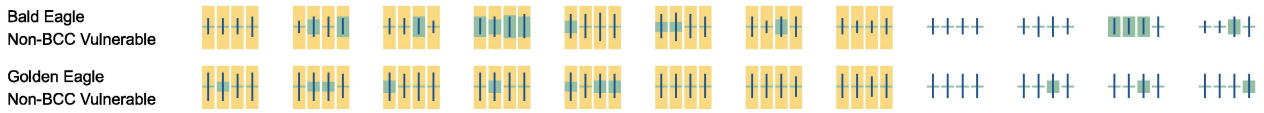
No Data (–)
A week is marked as having no data if there were no survey events for that week.

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.

■ probability of presence ■ breeding season | survey effort – no data

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

NOT FOR CONSULTATION



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).

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

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- 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 This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
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
Belding's Savannah Sparrow Passerculus sandwichensis beldingi 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	Breeds Apr 1 to Aug 15
Black Swift Cypseloides niger This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black-chinned Sparrow Spizella atrogularis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31
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. https://ecos.fws.gov/ecp/species/7266	Breeds Mar 10 to Jun 15

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California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

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

Golden Eagle Aquila chrysaetos — 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/1680

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

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

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

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.

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Western Screech-owl Megascops kennicottii cardonensis This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Jun 30
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "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.

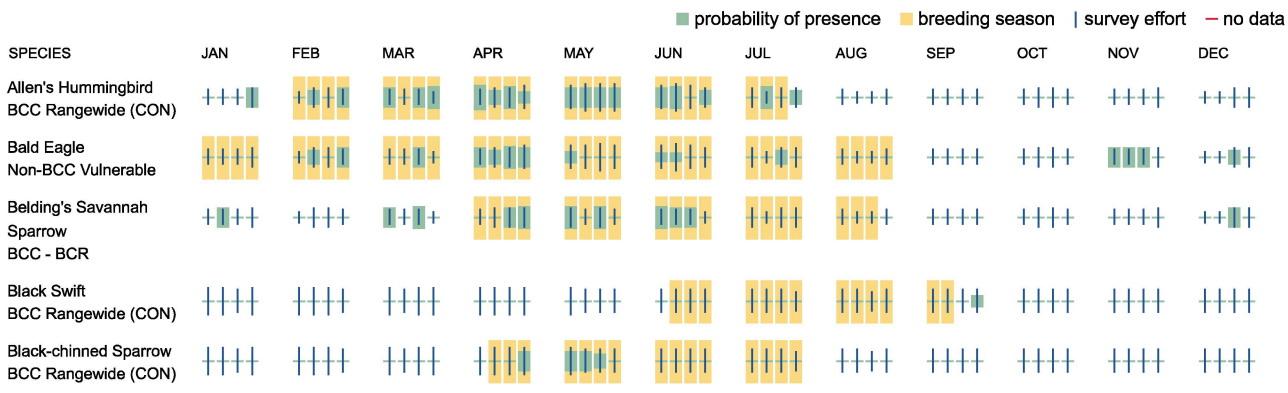
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.

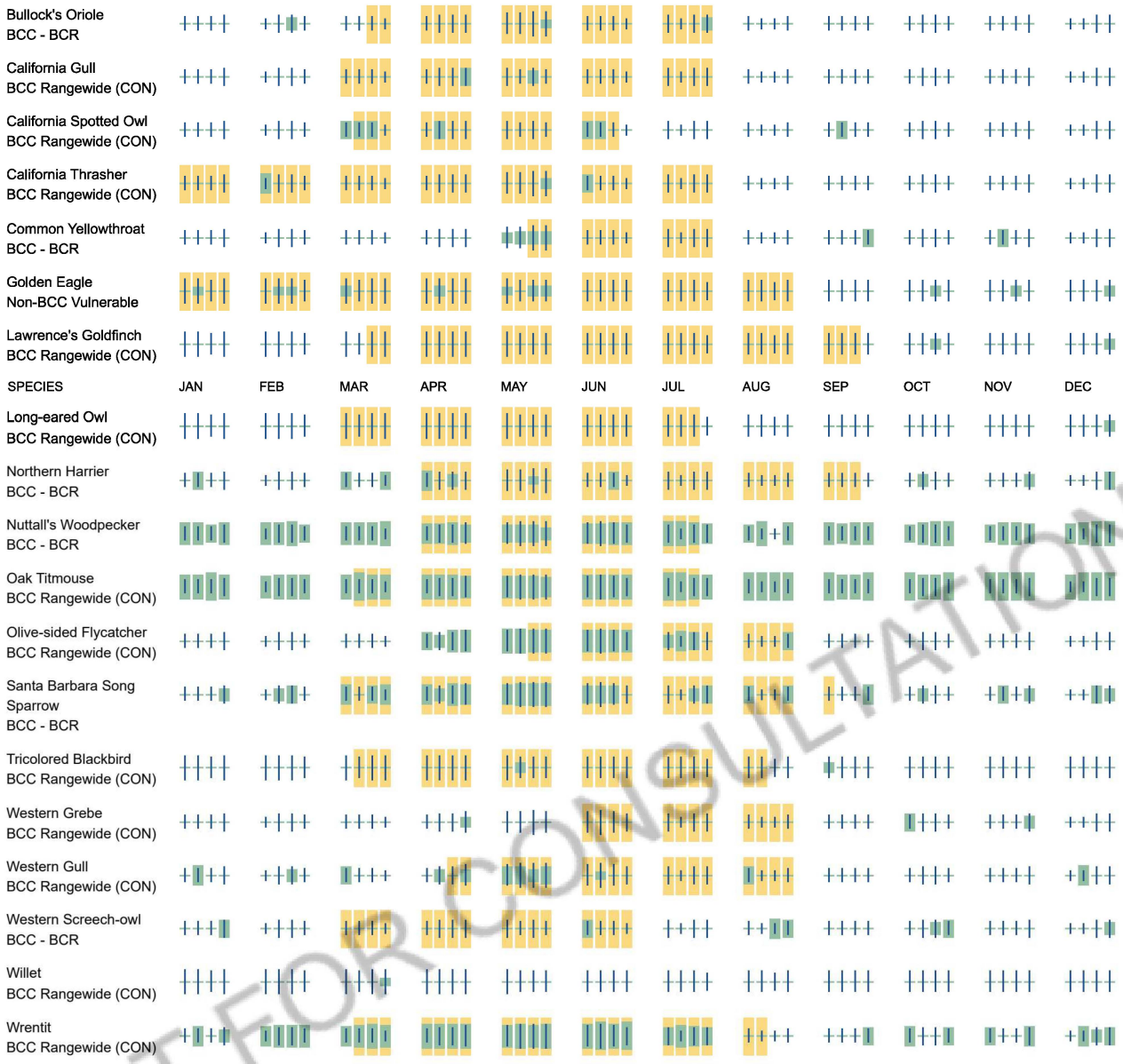
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



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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 ()

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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.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

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.

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CALIFORNIA DEPARTMENT OF FISH and WILDLIFE RareFind

Query Summary:
Quad IS (San Rafael (3712285) OR Novato (3812215))
AND County IS (Marin)

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	5	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	3	None	None	G2	S2	null	null	Ultramafic, Valley & foothill grassland
Amorpha californica var. napensis	Napa false indigo	Dicots	PDFAB08012	123	25	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	2	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
Anarhynchus nivosus nivosus	western snowy plover	Birds	ABNNB03031	140	1	Threatened	None	G3T3	S3	null	CDFW_SSC-Species of Special Concern	Great Basin standing waters, Sand shore, Wetland
Antrozous pallidus	pallid bat	Mammals	AMACC10010	425	4	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 alba	great egret	Birds	ABNGA04040	43	1	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Ardea herodias	great blue heron	Birds	ABNGA04010	156	3	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least	Brackish marsh, Estuary,

											Concern	Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Athene cunicularia	burrowing owl	Birds	ABNSB10010	2415	7	None	Candidate Endangered	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
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	6	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
Calicina diminua	Marin blind harvestman	Arachnids	ILARAU8040	1	1	None	None	G1	S1	null	null	Ultramafic
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	8	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	G2T2	S2	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	2	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	3	None	None	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive	Broadleaved upland forest, Chaparral, Chenopod 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	10	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
Egretta thula	snowy egret	Birds	ABNGA06030	20	1	None	None	G5	S4	null	IUCN_LC-Least Concern	Marsh & swamp, Meadow & seep, Riparian forest, Riparian woodland, Wetland
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	190	1	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland
Eriogonum luteolum var. caninum	Tiburon buckwheat	Dicots	PDPGN083S1	26	12	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	2	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
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	Birds	ABPBX1201A	114	1	None	None	G5T3	S3	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern	Marsh & swamp
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	6	None	None	G5T2	S2	1B.2	SB_UCBG-UC Botanical Garden at Berkeley	Valley & foothill grassland
Hesperolinon congestum	Marin western flax	Dicots	PDLIN01060	27	4	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	11	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	9	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	6	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-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Meadow & seep, North coast coniferous forest, Wetland
Polygonum marinense	Marin knotweed	Dicots	PDPGN0L1C0	32	2	None	None	G2	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	8	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	13	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	6	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	2	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	10	None	None	G4T2	S2	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chaparral, Ultramafic, Valley & foothill grassland
Talanites ubicki	Ubick's gnaphosid spider	Arachnids	ILARA98030	1	1	None	None	G1	S1	null	null	Ultramafic
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	2	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