

**FINAL**  
**INITIAL STUDY/MITIGATED NEGATIVE DECLARATION**  
**Fiscal Year 2024/2025 Gravity Sewer Improvements Project**  
**(#958)**  
**Various Communities in Marin County, CA**

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

*Prepared by*  
The logo for Integral Consulting Inc. features the word "integral" in a bold, blue, sans-serif font. Below it, the words "consulting inc." are written in a smaller, lighter blue font. A stylized, curved line in a light brown or tan color starts under the 'i' in "integral" and curves around the "consulting inc." text.  
2455 Bennett Valley Road  
Suite C101  
Santa Rosa, CA 95404

February 2025

## MITIGATED NEGATIVE DECLARATION

### PROJECT TITLE

Fiscal Year 2024/2025 Gravity Sewer Improvements Project (#958)

### LEAD AGENCY/NAME AND ADDRESS

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

### PROJECT LOCATION

The Fiscal Year 2024/2025 Gravity Sewer Improvements Project (Project) site is located in the Ross Valley Sanitary District (RVSD) service area within the town of Fairfax, the unincorporated town of Kentfield, and the town of San Anselmo, located within the County of Marin. The Project segments are located in several areas of Marin County, as detailed below:

#### Fairfax

The Town of Fairfax has a land area of approximately 2 mi<sup>2</sup> 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. The sewer line segments are within the existing alignments along Bolinas Road and Sherman Street.

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

#### Kentfield

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

The Project site in Kentfield includes multiple sewer line segments. The sewer line segments are located within the existing alignments along Stadium Way, Sherwood Court, Lancaster Avenue, Berens Drive, Wolfe Canyon Road, Tamal Vista Lane, Kentdale Lane, and Wolfe Grade.

Land uses surrounding the Project site in Kentfield mainly consist of single-family residential uses to the north, east, south, and west. The Corte Madera Creek is south of the Project site, and



a couple of schools lie to the east and west. Sir Francis Drake Boulevard (between Ash Avenue and Manor Road) is located near the Project site and is a major traffic artery linking U.S. 101 with communities in the Kentfield area.

## **San Anselmo**

The Town of San Anselmo has a land area of approximately 3 mi<sup>2</sup> in a series of small valleys created by streams. The streams are bordered by moderate-to-steep hillside slopes and ridge tops. The town is bordered by San Rafael to the east, Fairfax to the west, and Ross to the south.

The Project site in San Anselmo includes multiple sewer line segments. The sewer line segments are within the existing alignments along 1) Sir Francis Drake Boulevard between Suffield Avenue and Butterfield Road; 2) Valley Road between West Court and Traxler Road; and 3) West Court, Skyline Road, Camino de Herera, Rutherford Avenue, Suffield Avenue, Hawthorne Avenue, and Bennit Avenue.

Land uses surrounding the Project site in San Anselmo mainly consist of single-family residential uses to the north, east, south, and west. Sir Francis Drake Boulevard (at its intersection with Ross Avenue) is located near the Project site and is a major traffic artery linking U.S. 101 with communities in the San Anselmo area. Residences, businesses, and schools are along Ross Avenue.

## **PROJECT DESCRIPTION**

The Project entails the construction and rehabilitation—within the existing alignment—of sanitary sewer mains, manholes, and related appurtenances within the existing alignment, of sanitary sewer mains and related appurtenances unincorporated town of Fairfax, the town of Kentfield, and the town of San Anselmo, located within the County of Marin. The Project site encompasses approximately 0.61 acres and the total area disturbed would be approximately 26,700 square ft. The primary objective of this Project is to relieve hydraulic and structural deficiencies and reduce groundwater infiltration associated with aging RVSD infrastructure.

The Project would rehabilitate and replace approximately 14,042 linear feet (LF) of existing vitrified clay pipe sanitary sewers with high-density polyethylene (HDPE) pipe ranging in size from 6 to 8 inches. Sewers would be replaced by open-cut removal and replacement (3,994 LF), pipe bursting (8,912 LF), and pipe reaming (1,136 LF) methods. The Project would also install 862 LF of new sanitary sewer using HDPE pipe. Lower laterals and property-line cleanouts would also be replaced at all locations. Depths of the excavation would vary between 3 and 10 ft.

Work would also include the construction of 33 sanitary sewer manholes to replace existing manholes or construct new manholes. Manhole locations would require excavation and backfill of an area of approximately 8 × 8 ft, with varying depths projected to range from approximately 5 to 10 ft. 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.

Construction is expected to begin in March 2025 and is anticipated to be completed by January 2026. 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 360 consecutive calendar days (265 working days) for construction. Work within McAllister Avenue in Kentfield would take place outside the California Ridgeway's Rail and California Black Rail nesting season (i.e., between September 1 and January 14).

## **MITIGATION MEASURES**

Five mitigation measures for the Project are listed below.

### **Mitigation Measure BIO-1**

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

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

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

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

### **Mitigation Measure CUL-1**

Prior to project implementation, 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 project segments:

- Bolinas Road and Sherman Street in Fairfax
- Suffield Avenue and Sir Francis Drake Boulevard in San Anselmo
- Berens Drive, McAllister Avenue, Lancaster Avenue, Wolfe Grade, Kentdale Lane, and the western extent of Stadium Way in Kentfield.

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

### **Mitigation Measure CUL-3**

Prior to project related work, the construction crews shall be trained in “basic archaeological and tribal resources identification” and have access to an alert sheet. The alert sheet will photographically depict indicators of archaeological sites and artifacts and clearly outline the procedures in the event of new discovery. These procedures include temporary work stoppage (i.e., a stop work order) of all ground disturbance, short-term physical protection of features and artifacts and their context, and immediate advisement of the archaeological team, 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](http://www.rvsd.org).

2/24/25

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Philip Benedetti  
Senior Engineer

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Date

## CALIFORNIA ENVIRONMENTAL QUALITY ACT INITIAL STUDY

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

|  |                                     |                                      |
|--|-------------------------------------|--------------------------------------|
| <b>PROJECT TITLE:</b><br>Fiscal Year 2024/2025 Gravity Sewer Improvements Project (#958)   |                                     |                                      |
| <b>PROJECT ADDRESS:</b><br>Sherman Avenue and Bolinas Road   | <b>CITY:</b><br>Town of Fairfax     | <b>COUNTY:</b><br><br>Marin          |
| Stadium Way, Sherwood Court, Lancaster Avenue, Berens Drive, Wolfe Canyon Road, Tamal Vista Lane, Kentdale Lane, and Wolfe Grade   | Unincorporated town of Kentfield    |                                      |
| Sir Francis Drake Boulevard between Suffield Avenue and Butterfield Road, Valley Road between West Court and Traxler Road, West Court, Skyline Road, Camino de Herera, Rutherford Avenue, Suffield Avenue, Hawthorne Avenue, and Bennit Avenue | Town of San Anselmo                 |                                      |
| <b>PROJECT SPONSOR:</b><br>Ross Valley Sanitary District   | <b>CONTACT:</b><br>Philip Benedetti | <b>PHONE:</b><br>(415) 259-2949 x212 |

|  |                                     |                                      |
|--|-------------------------------------|--------------------------------------|
| <b>LEAD AGENCY ADDRESS:</b><br>1111 Anderson Drive<br>San Rafael, CA 94901 | <b>CONTACT:</b><br>Philip Benedetti | <b>PHONE:</b><br>(415) 259-2949 x212 |
|--|-------------------------------------|--------------------------------------|

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| <b>APPROVAL ACTION UNDER CONSIDERATION:</b><br>Implementation of sewer rehabilitation project. |
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### 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
- Attachment G. Summary of Comments on the Initial Study/Mitigated Negative Declaration

## **Project Overview and Purpose**

The Ross Valley Sanitary District (RVSD)<sup>1</sup> Fiscal Year 2024/2025 Gravity Sewer Improvements Project (#958) (Project) entails the construction and rehabilitation, within the existing alignment, of sanitary sewer mains, manholes, and related appurtenances within the town of Fairfax, unincorporated town of Kentfield, and town of San Anselmo, all of which are within the County of Marin (Attachment B, Figures). The primary goal of this project is to replace aging RVSD infrastructure and reduce inflow and infiltration into the system.

The Project would rehabilitate approximately 14,042 linear feet (LF) of sanitary sewers and install 862 LF of new sanitary sewer with high-density polyethylene (HDPE) pipe ranging in size from 6 to 8 inches. Sewers would be replaced by open-cut removal and replacement (3,994 LF), pipe bursting (8,912 LF), and pipe reaming (1,136 LF) methods. Lower laterals and property-line cleanouts would also be replaced at all locations. Depths of the excavation would vary between 3 and 10 ft.

Work would also include the construction of 33 sanitary sewer manholes to replace existing manholes or construct new manholes. Manhole locations would require excavation and backfill of an area of approximately 8 × 8 ft, with varying depths projected to range from approximately 5 to 10 ft.

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 several areas of Marin County, as detailed below:

### **Fairfax**

The town of Fairfax has a land area of approximately 2 mi<sup>2</sup> 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 (Figure 1-2a). The sewer line segments are located within the existing alignments along Bolinas Road and Sherman Street.

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

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<sup>1</sup> See Attachment A for a list of abbreviations and acronyms.

### Kentfield

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

The Project site in Kentfield includes multiple sewer line segments (Figure 1-2a). The sewer line segments are located within the existing alignments along Stadium Way, Sherwood Court, Lancaster Avenue, Berens Drive, Wolfe Canyon Road, Tamal Vista Lane, Kentdale Lane, and Wolfe Grade.

Land uses surrounding the Project site in Kentfield mainly consist of single-family residential uses to the north, east, south, and west. The Corte Madera Creek is south of the Project site, and a couple of schools lie to the east and west. Sir Francis Drake Boulevard near the Project site (between Ash Avenue and Manor Road) is located near the Project site and is a major traffic artery linking U.S. 101 with communities in the Kentfield area.

### San Anselmo

The Town of San Anselmo has a land area of approximately 3 mi<sup>2</sup> in a series of small valleys created by streams, which are bordered by moderate-to-steep hillside slopes and ridge tops. The town is bordered by San Rafael to the east, Fairfax to the west, and Ross to the south.

The Project site in San Anselmo includes multiple sewer line segments (Figure 1-2b). The sewer line segments are located within the existing alignments along 1) Sir Francis Drake Boulevard between Suffield Avenue and Butterfield Road; 2) Valley Road between West Court and Traxler Road; and 3) West Court, Skyline Road, Camino de Herera, Rutherford Avenue, Suffield Avenue, Hawthorne Avenue, and Bennit Avenue.

Land uses surrounding the Project site in San Anselmo mainly consist of single-family residential uses to the north, east, south, and west. Sir Francis Drake Boulevard, at its intersection with Ross Avenue, is located near the Project site and is a major traffic artery linking U.S. 101 with communities in the San Anselmo area. Residences, businesses, and schools are located along Ross Avenue.

### **Site Background**

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

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

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

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

## **Construction Methods**

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

- **Open-Cut Excavation:** For this method, the existing sewer line would be exposed and removed by means of construction excavation equipment. The excavation extent is typically 3 ft wide, and the length and depth varies. A new pipe would then be installed, and the trench would be backfilled.
- **Pipe Bursting:** Pipe bursting is a trenchless method where a new pipe is inserted into an existing pipe by means of a hydraulic winch. First, an insertion pit (typically 4 x 10 x 5 ft) and a receiving pit (typically 4 x 4 x 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.
- **Pipe Reaming:** Pipe reaming is very similar to pipe bursting, in that both are trenchless pipe replacement technologies with a similar order of work. The footprint of the operation and the required excavations are nearly the same as pipe bursting. Pipe reaming differs from pipe bursting in that, rather than using a winch to pull a conical bursting head through the existing pipe, a directional drill rig is used to grind the existing pipe into pieces. As the new pipe is pulled back into the boring, the fragments of existing pipe are usually vacuumed out of the new pipe. Pipe reaming would have some disposal required from the pipe fragments vacuumed out. Pipe reaming is planned to be used in locations that are in close proximity to gas and/or water mains because pipe reaming does not exert the outward pressures used pipe bursting.



The Project would not include horizontal directional drilling as a construction method. The trenchless pipe installation methods described above (pipe bursting and pipe reaming) do not use drilling fluid. Therefore, there is no risk of a hydraulic fracture or release drilling fluid during construction.

Approximately 862 LF of new sanitary sewer would be constructed. The Project would also rehabilitate 14,042 LF of sanitary sewer via open-cut removal and replacement (3,994 LF), pipe bursting (8,912 LF), and pipe reaming (1,136 LF). Of the 33 manholes that would be constructed for this project, 12 are new manholes; the remaining would be constructed to remove and replace existing ones. Manhole locations would require excavation and backfill of an area of approximately 8 × 8 ft, with varying depths projected to range from approximately 5 to 10 ft. The Project locations and construction method for each pipe section is identified on the preliminary construction plans provided in Attachment C.

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

### **Work Hours and Schedule**

Construction is expected to begin in March 2025 and is anticipated to be completed by January 2026. 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 360 consecutive calendar days (265 working days) for construction. Work within McAllister Avenue in Kentfield would take place outside the California Ridgeway's Rail and California Black Rail nesting season (i.e., between September 1 and January 14).

### **Construction Staging**

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

### **Bypass Pumping**

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

### **Site Restoration**

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

### **Permits and Project Approvals**

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

- County of Marin Encroachment Permit

Several sewer main segments are located on private properties, including segments located near West Court, Suffield Avenue, Bennit Avenue, and Hawthorne Avenue in San Anselmo and segments located near Wolfe Canyon Road, Kentdale Lane, and Wolfe Glen Way in Kentfield. RVSD would coordinate with private property owners to access and rehabilitate these sewer main segments.

### **Overview of Control Measures**

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

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

Coordination would be established and maintained with local residents and businesses along the alignment, and a mechanism for monitoring construction activities and addressing any complaints would be implemented. Any damaged landscaped and/or hardscaped areas would be restored, and a series of best management practices (BMPs) would be enforced to maintain Project site appearance; control dust, erosion, and stormwater discharge; and provide noise attenuation, if needed.

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

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

Technical reports to support the evaluation of potential impacts to air quality (Attachment E), biological resources (Attachment F), and cultural resources (Far Western 2024<sup>2</sup>) have been completed and identify measures that would be included in the contract documents to address potential impacts. A variety of geotechnical and regulatory agency-related control measures are included to provide for the constructability of the Project and its environmental compatibility, and to ensure the protection of workers' and the public's health and safety.

**References:**

Far Western. 2024. Archaeological Resources Inventory for the Ross Valley Sanitary District 2024-2025 Gravity Sewer Improvements Project, Marin County, California. Far Western Anthropological Research Group, Inc., Davis, CA. November.

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://www.rvsd.org/DocumentCenter/View/2257/2021-IAMP-Summary?bidId=>. Ross Valley Sanitary District, San Rafael, CA. September.

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<sup>2</sup> 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.

## 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

#### 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, Kentfield, and San Anselmo, was evaluated to identify its visual character. This information is summarized as follows:

#### Fairfax

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:

- Bolinas Road and Sherman Street are characterized by two-way residential streets that are flanked on either side by single-family residential homes with landscaped vegetation as well as occasionally interspersed spaces of non-landscaped vegetation.

### **Kentfield**

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

- Stadium Way, Sherwood Court, Lancaster Avenue, and Berens Drive are all characterized by paved two-way residential streets with sidewalks that are flanked on either side by single-family residential homes with landscaped vegetation.
- Wolfe Canyon Road and Tamal Vista Lane are narrow local streets without sidewalks and primarily serve single-family residential homes. They are flanked by areas of landscaped areas as well as non-landscaped vegetation.
- Kentdale Lane is a narrow two-way residential street that primarily serves residential traffic. There are no sidewalks. Kentdale Lane is flanked on either side by single-family residential homes with landscaped vegetation.
- Wolfe Grade is a two-way, heavily trafficked through street connecting directly to Sir Francis Drake Boulevard. Wolfe Grade has narrow shoulders on either side and no sidewalks. Wolfe Grade is flanked on either side by undeveloped, heavily vegetated slopes and dispersed private driveways.

### **San Anselmo**

The Project segments are dominated by views of surrounding single-family residential homes with landscaping (San Anselmo 2023). The Project site is visually characterized by paved, two-lane roads that are flanked by private residences and vegetation. The Project site is visually characterized by the following features:

- Sir Francis Drake Boulevard is characterized by paved, two-lane roads that are flanked by commercial use buildings and educational facilities, including the Ross Valley Charter School. Sir Francis Drake Boulevard includes sidewalks on either side as well as crosswalks and traffic lights.
- Valley Road, Skyline Road, Camino de Herera, Rutherford Avenue, Suffield Avenue, Hawthorne Avenue, and Bennit Avenue are narrow local roads that primarily serve residential homes and do not have sidewalks. Bennit Avenue connects Hawthorne Avenue with Suffield Avenue, Rutherford Avenue, and Camino de Herrera.
- West Court is a cul-de-sac that features single-family residences with landscaping without sidewalks on either side of the road entering the cul-de-sac.

### **Scenic Routes and Vistas**

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

## Light and Glare

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

### Analysis as to whether or not project activities would:

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

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

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

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

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

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

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

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

### References:

1. Caltrans. 2023. Caltrans List of Designated Scenic Highways. <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>. California Department of Transportation, Sacramento, CA.
2. Marin County. 2007. Marin Countywide Plan. Last amended on January 24, 2023. <https://www.marincounty.org/depts/cd/divisions/planning/countywide-plan>. County of Marin, CA.
3. San Anselmo. 2023. San Anselmo General Plan. Last amended on July 25, 2023. <https://www.townofsananselmo.org/DocumentCenter/View/31611/Town-of-San-Anselmo-General-Plan-updated-to-December-2023>. Town of San Anselmo, 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| b. Conflict with existing zoning or agriculture use, or a Williamson Act contract?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| 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))? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| d. Result in the loss of forestland or conversion of forestland to non-forest use?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

### Project Activities Likely to Create an Impact:

No impact.

### Description of Baseline Environmental Conditions:

The Project site is located at various areas within Marin County (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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c. Expose sensitive receptors to substantial pollutant concentrations?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d. Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

**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 Quality Management District (BAAQMD).

**Local Climate and Air Quality**

The air quality in a given area depends on the sources of air pollution in the area, transport of pollutants to and from surrounding areas, and local and regional meteorological conditions, as well as the surrounding topography of the 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 ( $\mu\text{g}/\text{m}^3$ ). The significance of a pollutant concentration is determined by

comparing the concentration to an appropriate ambient air quality standard. The standards represent the allowable pollutant concentrations designed to ensure that the public health and welfare are protected while including a reasonable margin of safety to protect the more sensitive individuals in the population.

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

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

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

### **Criteria Air Pollutants**

The federal and California CAAs have established ambient air quality standards for common pollutants. The ambient air quality standards are intended to protect human health and welfare. At the federal level, national ambient air quality standards have been established for criteria pollutants. These criteria pollutants include carbon monoxide (CO), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), respirable particulate matter with a diameter less than 10 microns (PM<sub>10</sub>), fine particulate matter with a diameter less than 2.5 microns (PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), 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 BAAQMD.

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

| Pollutant/<br>Averaging Period          | Primary Standard     |                        | Year | Maximum<br>Concentration <sup>a</sup> | Days Exceeding<br>State/National<br>Standard <sup>b</sup> |
|---|----------------------|------------------------|------|---------------------------------------|---|
|   | State                | National               |      |                                       |   |
| Ozone                                   | 0.09 ppm             | none                   | 2017 | 0.088                                 | 6/0   |
| 1-hour                                  |                      |                        | 2018 | 0.072                                 | 2/0   |
|   |                      |                        | 2019 | 0.096                                 | 6/0   |
| Ozone                                   | 0.70 ppm             | 0.70 ppm               | 2017 | 0.063                                 | 6/6   |
| 8-hour                                  |                      |                        | 2018 | 0.053                                 | 3/3   |
|   |                      |                        | 2019 | 0.08                                  | 9/9   |
| Carbon Monoxide                         | 20 ppm               | 35 ppm                 | 2017 | 2.6                                   | 0/0   |
| 1-hour                                  |                      |                        | 2018 | 2                                     | 0/0   |
|   |                      |                        | 2019 | 1.4                                   | 0/0   |
| Carbon Monoxide                         | 9 ppm                | 9 ppm                  | 2017 | 1.6                                   | 0/0   |
| 8-hour                                  |                      |                        | 2018 | 1.6                                   | 0/0   |
|   |                      |                        | 2019 | 0.9                                   | 0/0   |
| Nitrogen Dioxide                        | 0.18 ppm             | 0.100 ppm              | 2017 | 0.053                                 | 0/1   |
| 1-hour                                  |                      |                        | 2018 | 0.055                                 | 0/0   |
|   |                      |                        | 2019 | 0.05                                  | 0/0   |
| Nitrogen Dioxide                        | 0.030 ppm            | 0.053 ppm              | 2017 | 0.001                                 | 0/0   |
| Annual                                  |                      |                        | 2018 | 0.009                                 | 0/0   |
|   |                      |                        | 2019 | 0.008                                 | 0/0   |
| Sulfur Dioxide                          | none                 | 0.075 ppm              | 2017 | ND                                    | 0   |
| 1-hour                                  |                      |                        | 2018 | ND                                    | 0   |
|   |                      |                        | 2019 | ND                                    | 0   |
| Sulfur Dioxide                          | 0.04 ppm             | none                   | 2017 | ND                                    | 0   |
| 24-hour                                 |                      |                        | 2018 | ND                                    | 0/0   |
|   |                      |                        | 2019 | ND                                    | 0/0   |
| Respirable Particulate<br>Matter (PM10) | 50 µg/m <sup>3</sup> | 150 µg/m <sup>3</sup>  | 2017 | 94                                    | 6/0   |
| 24-hour                                 |                      |                        | 2018 | 166                                   | 6/1   |
|   |                      |                        | 2019 | 33                                    | 5/0   |
| Respirable Particulate<br>Matter (PM10) | 20 µg/m <sup>3</sup> | none                   | 2017 | 17.7                                  | 0/0   |
| Annual                                  |                      |                        | 2018 | 19                                    | 0/0   |
|   |                      |                        | 2019 | 14.3                                  | 0/0   |
| Fine Particulate Matter<br>(PM2.5)      | None                 | 35 µg/m <sup>3</sup>   | 2017 | 74.7                                  | 0/18  |
| 24-hour                                 |                      |                        | 2018 | 167.6                                 | 0/18  |
|   |                      |                        | 2019 | 19.5                                  | 0/1   |
| Fine Particulate Matter<br>(PM2.5)      | 12 µg/m <sup>3</sup> | 12.0 µg/m <sup>3</sup> | 2017 | 9.7                                   | 0/0   |
| Annual                                  |                      |                        | 2018 | 11.1                                  | 0/0   |
|   |                      |                        | 2019 | 6.4                                   | 0/0   |

Source: BAAQMD (2019)

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

| Pollutant/<br>Averaging Period | Primary Standard |          | Year | Maximum<br>Concentration <sup>a</sup> | Days Exceeding<br>State/National<br>Standard <sup>b</sup> |
|--------------------------------|------------------|----------|------|---------------------------------------|---|
|                                | State            | National |      |                                       |   |

Notes:

µg/m<sup>3</sup> = micrograms per cubic meter

ND = no data available

ppm = parts per million

<sup>a</sup> All pollutant concentrations were measured at the San Rafael monitoring station.

<sup>b</sup> Values from Ten-Year Bay Area Air Quality Summary table

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

Table 1 shows that, over the last 3 years reported, the state 1-hour and 8-hour O<sub>3</sub> standards were exceeded 14 and 18 times, respectively. Over the 3-year period, the state 24-hour PM<sub>10</sub> standards were exceeded 17 times, and the 24-hour national PM<sub>2.5</sub> 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<sub>3</sub> and PM<sub>2.5</sub>. EPA has classified the region as marginal nonattainment for 8-hour O<sub>3</sub>. In October 2009, EPA designated the Bay Area as nonattainment for the 24-hour PM<sub>2.5</sub> standard. The Bay Area is considered as attainment or unclassifiable with respect to the national air quality standards for all other pollutants. EPA requires states that have areas that are not in compliance with the national standards to prepare and submit air quality plans showing how the standards would be met. If the states cannot show how the standards would be met, then they must show progress toward meeting the standards. These plans are referred to as the state implementation plan (SIP). On January 9, 2013, EPA issued a final rule to determine that the San Francisco Bay Area has attained the national 24-hour PM<sub>2.5</sub> air quality standard. This action suspends federal SIP planning requirements for the Bay Area. BAAQMD 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<sub>3</sub> and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), 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 BAAQMD. BAAQMD 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 BAAQMD in April 2017 (BAAQMD 2017). The plan provides a regional strategy to protect public health and the climate. To protect public health, the plan describes how BAAQMD 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<sub>3</sub>, and TACs) and to decrease emissions of carbon dioxide (CO<sub>2</sub>) 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<sub>3</sub> and PM<sub>2.5</sub> standards.

BAAQMD 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 (BAAQMD 2023b). The Air Quality Guidelines provide procedures and significance thresholds for evaluating potential construction-related impacts during the environmental review process consistent with CEQA requirements. The guidelines also address operation-related impacts, but the Project is a construction activity with no substantial additional operational component as compared to existing operations.

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

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

### Analysis as to whether or not project activities would:

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

No impact. The Project site is in an area currently designated as nonattainment for the state 1-hour and 8-hour O<sub>3</sub> standards, nonattainment for the state 24-hour and annual PM<sub>10</sub> standards, and nonattainment for the state annual PM<sub>2.5</sub> standard. It is also designated as nonattainment for the national 8-hour O<sub>3</sub> standard. To meet planning requirements related to these standards, BAAQMD 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 10 months.

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

- PM<sub>10</sub> = 82 lb/day; 15 ton/year
- PM<sub>2.5</sub> = 54 lb/day; 10 ton/year
- Reactive organic gases (ROG) = 54 lb/day; 10 ton/year
- Oxides of nitrogen (NO<sub>x</sub>) = 54 lb/day; 10 ton/year.

Construction emissions of O<sub>3</sub> precursors ROG and NO<sub>x</sub>, and PM<sub>10</sub> and PM<sub>2.5</sub>, 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 BAAQMD 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) <sup>a</sup> | Thresholds (lb/day) | Above Threshold? |
|------------------------------|-----------------------------|-----------------------|---|---------------------|------------------|
| ROG                          | 0.43                        | 10                    | 2.34  | 54                  | No               |
| CO                           | 0.68                        | NA                    | 3.57  | NA                  | No               |
| SO <sub>2</sub> <sup>a</sup> | <0.005                      | NA                    | <0.005  | NA                  | No               |
| NO <sub>x</sub>              | 0.23                        | 10                    | 1.13  | 54                  | No               |
| PM10 <sup>b</sup>            | 0.04                        | 15                    | 0.22  | 82                  | No               |
| PM2.5 <sup>b</sup>           | 0.02                        | 10                    | 0.09  | 54                  | No               |

Source of input parameters: Phil Benedetti, Associate Engineer (RVSD), October 2024

Notes:

NA = not applicable

<sup>a</sup> SO<sub>2</sub> emissions are expected to be negligible due to use of ultra-low sulfur diesel fuel.

<sup>b</sup> 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 BAAQMD 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 BAAQMD-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 10 months) and that the Project would use only a limited number of diesel-fueled equipment and trucks, DPM emissions would be very low, and localized exposure to DPM would be minimal. In addition, the amount of onsite diesel-generated PM2.5 exhaust for this Project is estimated to be below 0.01 ton/year. The estimated PM2.5 exhaust emissions are several orders of magnitude below the BAAQMD 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 10 months or less.

- Combustion emissions from vehicles and equipment are below the significance thresholds from the BAAQMD 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:

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3. BAAQMD. 2022. CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans. <https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en>. Bay Area Air Quality Management District, San Francisco, CA.
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5. BAAQMD. 2023b. California Environmental Quality Act Air Quality Guidelines. <https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines>. Bay Area Air Quality Management District, San Francisco, CA. April.
6. CAPCOA. 2022. California Emissions Estimator Model. <https://www.caleemod.com/>. California Air Pollution Control Officers Association, Sacramento, CA.



#### 4. Biological Resources

| Would the Project:   | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                | <input type="checkbox"/>     | <input type="checkbox"/>            |
| 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

#### Project Activities Likely to Create an Impact:

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

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

### **Description of Baseline Environmental Conditions:**

The Project site consists largely of in-road rights-of-way (ROWs) within moderately-to-highly trafficked urban and residential roadways in Fairfax, Kentfield, and San Anselmo. 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, Kentfield, and San Anselmo areas, including the presence of special-status species, sensitive natural communities, and other protected biological resources and also included plans, policies, or ordinances that protected natural resources therein. Information about protected natural resources that could occur on or near the Project site was obtained from the following sources:

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

The protected natural resources identified in these searches were compiled into tables (Attachment F) and evaluated for likelihood of occurrence within the limits of construction disturbance associated with the Project. Integral personnel—Sadie McGarvey (a wildlife biologist and regulatory specialist) and Cristal Reagh—conducted a general survey of the Project site on November 5, 2024, 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**

The sewer pipeline alignments within Fairfax occur primarily within the roadways in commercial and residential neighborhoods. Landscaping adjacent to the roadways 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.). Approximately 95 LF of the sewer pipeline alignment occurs within off-road ROWs between two commercial buildings.

Bolinas Park occurs adjacent to the Project site at the intersection of Bolinas Road and Sherman Avenue. Fairfax Creek flows through Bolinas Park and is undergrounded at Bolinas Road, where it enters twin box culverts and flows underneath Bolinas Road and parallel to the Project site along Sherman Avenue.

### **San Anselmo**

The sewer pipeline alignments within San Anselmo occur primarily within the roadways in residential neighborhoods. Landscaping adjacent to the roadways consists of a mix of ornamental and native trees and shrubs, including sycamore (*Platanus racemosa*), oak (*Quercus agrifolia* and *Q. kelloggii*), loquat (*Eriobotrya japonica*), manzanita (*Arctostaphylos* sp.), Japanese maple (*Acer palmatum*), redwood, oleander (*Nerium oleander*), privet, crimson bottlebrush (*Callistemon citrinus*), firethorn, and pineapple sage (*Salvia elegans*).

Approximately 1,285 LF of the sewer pipeline alignment occurs within off-road ROWs below largely undeveloped portions of private property. Vegetation adjacent to and within these portions of the alignment are dominated by primarily bottle brush along with other nonnative trees and shrubs, such as weeping birch (*Betula pendula*), English ivy (*Hedera helix*), privet (*Ligustrum* sp.), pepper tree (*Schinus molle*), and cyprus (*Cupressus* sp.), with an understory dominated by non-native herbs, such as pineapple sage and French lavender (*Lavandula stoechas*).

### Kentfield

The sewer pipeline alignment within Kentfield occurs primarily within the roadways of residential neighborhoods. Landscaping adjacent to the roadways consists of a mix of ornamental and native trees and shrubs, including Acacias (*Acacia* spp.), privet (*Ligustrum* sp.), redwood, coast live oak (*Quercus agrifolia*), cherry plum tree (*Prunus cerasifera*), bamboo (*Phyllostachys* sp.), callery pear (*Pyrus calleryana*), magnolia (*Magnolia grandiflora*), Liquid amber (*Liquidambar styraciflua*), Pyracantha, English ivy (*Hedera helix*), rosemary (*Rosmarinus officinalis*), Mexican bush sage, French broom (*Genista monspessulana*), and lantana (*Lantana* sp.).

Approximately 1,970 LF of the sewer pipeline alignment occurs within off-road ROWs below largely undeveloped portions of private property. Undeveloped portions of the alignment were dominated by native trees, shrubs, and herbaceous species, such as California bay laurel, redwood, California buckeye (*Aesculus californica*), Himalayan blackberry, as well as English ivy.

Two sections of the pipeline alignment within Kentfield occur adjacent to waters of the United States (WOTUS) or waters of the State of California. An unnamed perennial creek with associated adjacent wetlands flows along both sides of Wolfe Canyon Road adjacent to the Project site. Similarly, the in-road pipeline alignment along McAllister Avenue occurs adjacent to Corte Madera Creek.

### 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 CNDDDB, 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 been documented as occurring on the Project site. Project activities would not have significant adverse effects of any special-status species.

### Plants

According to the CNDDDB, the CNPS Inventory of Rare, Threatened, and Endangered Plants of California, and the USFWS IPaC tool, 58 special-status plant species are known to occur or to have previously occurred within the same U.S. Geological Survey quadrangle (quad) as the Project site (San Rafael quad). All of these species require specialized habitats that *do not* occur within the Project site, including, but not limited to, chaparral, bogs and fens, marshes and swamps, meadows and seeps, riparian and coastal habitats, woodlands, and forests. The Project site is generally highly disturbed by past grading, installation of pavement, ornamental landscaping, existing sewer line facilities, and other

current site-uses, which precludes the possibility of presence of any special-status plant species in these areas. Therefore, there is no suitable habitat for special status plant species within the Project site.

## Wildlife

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

While no work is scheduled to occur within aquatic resources, the unnamed creek adjacent to Wolfe Canyon Road provides suitable aquatic habitat for western pond turtle (*Actinemys marmorata*) (NWPT), California red-legged frog (*Rana draytonii*) (CRLF), and foothill yellow-legged frog (*Rana boylei*) (FYLF). However, there are no extant records for CRLF or FYLF within dispersal distance of the Project site, and Wolfe Canyon Road is separated by over 2 miles of developed landscape from the closest occurrence at Pheonix Lake in undeveloped Marin County. These species are not expected occur in the vicinity of the Project site.

Similarly, California Ridgway's Rail (CRR), California Black Rail (CBR), salt-marsh harvest mouse (*Reithrodontomys raviventris*), and tidewater goby (*Eucyclogobius newberryi*) are known to occur within Corte Madera Creek and the adjacent marshlands proximal to the Project site in Kentfield. However, as work would remain within the moderately trafficked roadways, primarily isolated from the marshland by residential development, these species are not expected to occur on or adjacent to the Project site. Further, project activities within McAllister Avenue would be isolated from the Corte Madera Creek spur, be comparable in disturbance to current site uses, and would occur outside the nesting season for CRR and CBR such that species associated with the adjacent marshlands would not be impacted by the proposed Project.

The onsite and site-adjacent trees, shrubs, and herbaceous vegetation provide suitable nesting habitat for a variety of common bird species, including passerines and raptors, protected pursuant to the federal Migratory Bird Treaty Act and State Fish and Game code. However, the intensity of regular disturbance on and adjacent to the Project site limits the likelihood that any special-status bird species would nest on or near the Project site. No nests were observed during the November 2024 site assessment; however, owing to the mobile nature of birds and the seasonality of their nesting cycle, and in light of the presence of abundant marginal nesting habitat on site, it is possible that birds could nest on or adjacent to the Project site during future nesting seasons.

## Nesting Birds

Project activities—including trenching, excavating, and test borings—associated with cultural resource investigations can be expected to result in temporary disturbance to suitable habitat for nesting birds. While no evidence of nesting bird activity has been observed on or adjacent to the Project site, there remains a possibility that new bird nests could be established in the trees and other vegetation on and near the Project site. If construction is initiated during the bird nesting season (February 1–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, in consultation with the CDFW, will determine the extent of a construction-free buffer zone to be established around the nest to ensure that protected bird and raptor nests are not disturbed during project construction. This buffer would remain in place until such a time as the young have been determined (by a qualified ornithologist/biologist) to have fledged.

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

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

No impact. According to CNDDB, four sensitive natural communities are known to occur or to have previously occurred within the San Rafael quad: coastal brackish marsh, coastal terrace prairie, northern coastal salt marsh, and serpentine bunchgrass. Coastal brackish marsh occurs adjacent to the sewer pipeline alignment along McAllister Avenue in Kentfield. In addition, *Quercus agrifolia* Woodland and Forest has been identified along the Wolfe Canyon Road sewer alignment in Kentfield by both Marin County Vegetation and the Land Cover mapping and field confirmation (Code 71.060.00). Project activities at along McAllister Avenue would remain on the opposite side of the road from coastal brackish marsh; as such, would avoid impacts to this sensitive natural community. Similarly, work along Wolfe Canyon would remain within and immediately adjacent to the roadway and therefore avoid impacts to *Quercus agrifolia* Woodland and Forest. 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.

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

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

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

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

A review of the National Wetland Inventory identifies riverine features proximal to the sections of sewer pipeline alignment at McAlister Avenue in Kentfield (Corte Madera Creek) and Bolinas Road in Fairfax (Fairfax Creek). Field observations confirmed the existence of WOTUS at these locations proximal to the sewer alignment. Additionally, an unnamed perennial creek and wetland vegetation were observed adjacent to Wolfe Canyon Road during the November 2024 site visit.

All work would remain outside the creeks and adjacent wetland vegetation that occur in proximity to the Project site. The unnamed creek crosses Wolfe Canyon Road (and the sewer pipeline alignment) at two locations. Project methodology includes pipe-bursting at these locations and would avoid impacts to the culverted portions of the unnamed creek that cross above the existing pipeline alignment (air-gap excavation removes the potential for pipe bursting to exert any force onto the culvert). In addition, to ensure no impacts to the undergrounded portion of Fairfax Creek that runs parallel to the Project site, the project footprint would be potholed near the proposed alignment prior to trenching to determine the final alignment of the main and to avoid potential for impacts to the box culvert or other utilities.

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



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

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

A nursery site is an area where juveniles occur at higher densities, avoid predation more successfully, or grow faster there than in a different habitat (Beck et al. 2001). There are no undeveloped portions of the Project site; subsequently, no areas which act as nursery sites occur within the Project area.

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

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

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

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

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

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

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

## References:

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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.  
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5. USFWS. 2024. Information for Planning and Consultation (IPaC) Resource List.  
<https://ipac.ecosphere.fws.gov/>. U.S. Fish and Wildlife Service, Bailey's Crossroads VA.



## 5. Cultural Resources

| Would the Project:  | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact                |
|---|--------------------------------|--|------------------------------|--------------------------|
| a. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?     | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                | <input type="checkbox"/>     | <input type="checkbox"/> |
| b. Cause a substantial adverse change in the significance of an archeological resource pursuant to § 15064.5? | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                | <input type="checkbox"/>     | <input type="checkbox"/> |
| c. Disturb any human remains, including those interred outside of formal cemeteries?                          | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                | <input type="checkbox"/>     | <input type="checkbox"/> |

### 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. It would employ pipe-bursting and pipe-reaming 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 existing manholes, construction of new manholes, repair of sags, and potholes for lateral tie-ins.

While the Project has the potential to impact unrecorded archaeological resources, the construction methods, previous disturbances, and logistical constraints have been taken into consideration. The Project pipe-bursting 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 ft below the ground surface. The removal of soils is expected to occur for the entry and exit pits, construction of new sewer manholes, repair of sags, and potholes for lateral tie-ins and would involve excavating soils immediately surrounding the pipe as well as all soils above it to an expected depth of 3–10 ft below the ground surface. While the excavated soil would be solely or primarily backfill from the initial installation of the existing sewer—and thus should not contain an intact archaeological deposit—the new manhole sewer and associated pipes may encounter native soils if the new trench does not exactly correspond with the depth or width of any previously excavated trench.

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

### Description of Baseline Environmental Conditions:

A cultural resources inventory report for the Project was prepared by Far Western Anthropological Research Group, Inc. (Far Western) in November 2024. 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 ADI. One previously recorded cultural resource intersects the ADI. This resource is a landscape feature, Mount Tamalpais, a mountain that has significance to FIGR. The landscape boundary for the resource is not fully defined and requires more study in consultation with Graton; however, a preliminary boundary was defined in the site record in 2022 to encompass the landform that rises prominently above its surroundings, steep slopes and summit areas. Mount Tamalpais is of extreme importance and value to the Coast Miwok. This resource overlaps with northwestern portion of the ADI in Fairfax along Bolinas Road and Sherman Street, as well as the southern extent of the ADI in Kentfield along Berens Drive. See “Tribal Cultural Resources” section below for additional information from FIGR regarding this tribal cultural 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, there are locations within the ADI that are sensitive for subsurface precontact deposits; as such, it is recommended that an archaeological testing program is carried out in areas determined to have high sensitivity within the ADI. These locations include:

- Bolinas Road and Sherman Street in Fairfax (open-cut trenching to install new pipe, pipe bursting to replace existing pipe, construction of one new manhole, and removal and replacement of one existing manhole)
- Suffield Avenue and Sir Francis Drake Boulevard in San Anselmo (open-cut trenching to install new pipe, pipe bursting and pipe reaming to replace existing pipe, construction of three new manholes, and removal and replacement of five existing manholes)
- Berens Drive, McAllister Avenue, Lancaster Avenue, Wolfe Grade, Kentdale Lane, and the western extent of Stadium Way in Kentfield (open-cut trenching to install new pipe, pipe bursting to replace existing pipe, construction of one new manhole, and removal and replacement of two existing manholes).

RVSD initiated Native American outreach on this Project in accordance with Assembly Bill 52. The Native American Heritage Commission did not identify any sacred sites within the ADI. 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 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 of Historical Resources (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 in Fairfax and Kentfield. Due to the size of the resource and the culturally defined 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 tribal cultural 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, and the entry and exit pits for pipe bursting, where feasible. 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. 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. 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 project segments:

- Bolinas Road and Sherman Street in Fairfax
- Suffield Avenue and Sir Francis Drake Boulevard in San Anselmo
- Berens Drive, McAllister Avenue, Lancaster Avenue, Wolfe Grade, Kentdale Lane, and the western extent of Stadium Way in Kentfield.

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

### **Mitigation Measure CUL-3**

Prior to project related work, the construction crews shall be trained in “basic archaeological and tribal resources identification” and have access to an alert sheet. The alert sheet will photographically depict indicators of archaeological sites and artifacts and clearly outline the procedures in the event of new discovery. These procedures include temporary work stoppage (i.e., a stop work order) of all ground disturbance, short-term physical protection of features and artifacts and their context, and immediate advisement of the archaeological team, 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. 2024. Archaeological Resources Inventory for the Ross Valley Sanitary District 2024–2025 Gravity Sewer Improvement Project, Marin County, California. Far Western Anthropological Research Group, Inc, Davis, CA. November.

**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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Project Activities Likely to Create an Impact:**

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

**Description of Baseline Environmental Conditions:**

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

Assembly Bill (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). Efficient energy use is a key component to achieving these emission reduction goals.

**Analysis as to whether or not project activities would:**

- 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 2017 CARB Scoping Plan, and the goals and policies contained in Marin County's Countywide Plan and the Climate Action Plan. Therefore, the Project would not conflict with or obstruct state or local plans for renewable energy or energy efficiency.

#### References:

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



## 7. Geology and Soils

| Would the Project:   | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact        | No Impact                           |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| iii) Seismic-related ground failure, including liquefaction?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| iv) Landslides?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b. Result in substantial soil erosion or the loss of topsoil?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |



| Would the Project:  | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|--|------------------------------|-------------------------------------|
| f. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

### Project Activities Likely to Create an Impact:

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

### Description of Baseline Environmental Conditions:

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

### Regional Geology and Topography

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

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

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

## Geologic Hazards

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

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

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

## Groundwater

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

## Analysis as to whether or not project activities would:

- a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than significant. There are no active faults or potentially active faults underlying the Project 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 Project site are in an area identified as having a high potential for a liquefaction hazard. As a result, the Project could be subject to liquefaction during an earthquake. However, the Project would incorporate standard engineering and construction techniques related to seismicity and liquefaction. Implementation of these practices and requirements would minimize potential impacts of liquefaction on site.

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

iv) Landslides?

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

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

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

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

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

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

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

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

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

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

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

#### References:

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

## 8. Greenhouse Gas Emissions

| Would the Project:   | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact        | No Impact                |
|--|--------------------------------|--|-------------------------------------|--------------------------|
| g. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?      | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| h. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### 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<sub>2</sub>, 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<sub>2</sub> equivalents (CO<sub>2</sub>e) based on their warming potential relative to CO<sub>2</sub>.

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 (BAAQMD 2017a). BMPs identified in the Air Quality Guidelines for reducing GHG emissions during construction can include the following (BAAQMD 2023):

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

#### Analysis as to whether or not project activities would:

- 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<br>(MTCO <sub>2</sub> e /year) | Threshold <sup>a</sup><br>(MTCO <sub>2</sub> e /year) | Above Threshold? |
|-------------------|---|---|------------------|
| CO <sub>2</sub> e | 93.0  | 1,100   | No               |

<sup>a</sup> Based on the threshold of significance for operations-related GHG emissions (BAAQMD 2023b)

The Air Quality Guidelines (BAAQMD 2023) present an emissions threshold for GHGs from a land use operations project of 1,100 CO<sub>2</sub>e 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 (93.0 MTCO<sub>2</sub>e/year) that could be generated during construction are well below the BAAQMD's threshold of significance for operations-related GHG emissions of 1,100 CO<sub>2</sub>e MT/year. As a comparison, SMAQMD'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<sub>2</sub>e (Marin Climate 2021a).<sup>3</sup> 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.

<sup>3</sup> 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<sub>2</sub>e, respectively (Marin Climate 2021b,c). The Project would constitute less than 1 percent of emissions generated.

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

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

#### References:

1. BAAQMD. 2017. Spare the Air Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. Bay Area Air Quality Management District, San Francisco, CA. April.
2. BAAQMD. 2023. California Environmental Quality Act Air Quality Guidelines. <https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines>. Bay Area Air Quality Management District, San Francisco, CA. April.
3. CARB. 2022. California's 2022 Climate Change Scoping Plan. <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>. California Air Resources Board, Sacramento, CA. October.
4. Marin County. 2020. Marin County Unincorporated Area – Climate Action Plan 2030 (Public Review Draft). <https://www.marincounty.org/-/media/files/departments/cd/planning/sustainability/climate-and-adaptation/draft-climate-action-plan-2030.pdf?la=en>. County of Marin, CA. October.
5. SMAQMD. 2015. Thresholds of Significance Table. [https://files.ceganet.opr.ca.gov/123569-2/attachment/UL9obk\\_yjl5aUBxUriyQ9P3HVyfSL0CEnhvRpgSHGIQmRUqvfiw0ZXCcdqPM73IOOUtFc8RI7yl\\_48800](https://files.ceganet.opr.ca.gov/123569-2/attachment/UL9obk_yjl5aUBxUriyQ9P3HVyfSL0CEnhvRpgSHGIQmRUqvfiw0ZXCcdqPM73IOOUtFc8RI7yl_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.



## 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

### 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 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. There are no active sites on the SWRCB GeoTracker website (SWRCB 2024) or the Cortese List (DTSC 2024) that are in the Project site.

While there are no hazardous materials release sites within the Project site, a review of the DTSC Cortese List revealed that there is an active cleanup site within 0.25 mile of the project. The site, the Fain-Anselm Center, is located in Fairfax and has been an active cleanup site since 2009 and is located approximately 240 m from the proposed project site on Sir Francis Drake Boulevard and Suffield Avenue.

### **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. While there are no hazardous materials release sites within the Project site, the DTSC Cortese List revealed that there is an active cleanup site within 0.25 mile of the Project. The site, the Fain-Anselm Center, is in Fairfax and has been an active cleanup site since 2009. The site is located approximately 240 m from the proposed Project site on Sir Francis Drake Boulevard and Suffield Avenue.

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

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

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

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

No impact. The Project is not within an airport land-use plan or within 2 miles of a public airport or public use airport. Additionally, 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. 2024. Hazardous Waste and Substances Site List (Cortese). <https://www.envirostor.dtsc.ca.gov/public/>. Department of Toxic Substances Control, Sacramento, CA.
2. SWRCB. 2024. 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?                                  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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: | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| i) result in substantial erosion or siltation on- or off-site  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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                             | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| iv) impede or redirect flood flows?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

### **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.

Pipe bursting would be used throughout 8,912 LF of the Project site. Pipe bursting is a trenchless method and does not require open exposure from the surface along the entire segment. The other 3,994 LF of the proposed Project would involve cut-and-cover construction, which would involve trenching and open-cut construction methods. Additionally, 1,136 LF of the project would involve pipe reaming.

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

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

### **Description of Baseline Environmental Conditions:**

#### **Regional Hydrology**

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

#### **Flood Hazard**

The Federal Emergency Management Agency (FEMA) flood insurance rate map for Marin County provides coverage for the Project site. The FEMA flood map indicates that a majority of the Project site is within FEMA Flood Hazard Zone Area of Minimal Flood Hazard (Zone X). Flood Hazard Zone X is described by FEMA as an area that has minimal flooding. Areas in which the Project are not in FEMA Flood Hazard Zone X are as follows:

- The area along Sherman Avenue in Fairfax is in an area designated as a regulatory floodway (Zone AE).
- The area along Stadium Way, McAllister Avenue, Lancaster Avenue, and Berens Drive in Kentfield is in an area designated to be without base flood elevation (Zone AE).
- Portions of the area along Wolfe Canyon Road, Wolfe Glen, Wolfe Grade, and Lancaster Avenue in Kentfield, as well as portions of Sir Francis Drake Boulevard in Fairfax, are designated as Zone X but located in a flood hazard area of 1% annual chance flood (with an average depth of less than 1 ft or with drainage areas of less than 1 mi<sup>2</sup>).

## 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," studies performed in the vicinity of the Project site found that groundwater occurs from 10 ft to 12 ft below ground surface. 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:

- 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.

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

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

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

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

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

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

Less than significant impact. The Project would require short-term construction-related disturbances, including 3,994 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. However, 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?

No impact. The Project site is not located within a 100-year flood zone (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. 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**Project Activities Likely to Create an Impact:**

None.

**Description of Baseline Environmental Conditions:**

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

**Analysis as to whether or not project activities would:**

## a. Physically divide an established community?

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

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

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

**References:**

1. Marin County. 2007. Marin Countywide Plan.  
<https://www.marincounty.org/userdata/cda/planning/cwp2023.pdf>. Last amended on January 24, 2023. County of Marin, CA.
2. San Anselmo. 2019. San Anselmo General Plan.  
<https://www.townofsananselmo.org/DocumentCenter/View/5210/General-Plan-includes-Feb-2019-amendment>. Last amended on February 12, 2019. Town of San Anselmo, CA.



3. Fairfax. 2012. Fairfax 2010-2030 General Plan.  
[https://storage.googleapis.com/proudcity/fairfaxca/uploads/2022/04/2010-2030-GenPlan\\_2015HE\\_2021TextAmend.pdf](https://storage.googleapis.com/proudcity/fairfaxca/uploads/2022/04/2010-2030-GenPlan_2015HE_2021TextAmend.pdf). Last amended in December 2021. Town of Fairfax, CA.

## 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?                                 | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

### 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:

- 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b. Generation of excessive groundborne vibration or groundborne noise levels?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Project Activities Likely to Create an Impact:**

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

**Description of Baseline Environmental Conditions:**

The existing noise environment is dominated by traffic noise. Sensitive receptors at the Project site include 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 Town of Fairfax, the Town of San Anselmo, and the Town of Kentfield 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<br>(7 a.m. to 10 p.m.) | Nighttime<br>(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 and San Anselmo also have specific measures, as described below. Kentfield is unincorporated and would be governed by Marin County regulations.

### **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.

### **San Anselmo**

Project segments located within San Anselmo would be subject to the Town of San Anselmo noise regulations. The Town of San Anselmo, Chapter 7, Article 2, Section 4-7.203 Construction and Demolition states that:

- It shall be unlawful to operate any powered equipment if the operation of such equipment emits a noise level of 80 dBA when measured at the loudest point 50 ft away from the equipment.
- Impact tools and equipment shall have intake and exhaust mufflers recommended by the manufacturers thereof; and provided, further, pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof. In lieu of or in the absence of manufacturers' recommendations, the Director of Public Works shall have the authority to prescribe such means of accomplishing maximum noise attenuation as he deems to be in the public interest, considering the available technology and economic feasibility.
- Construction or demolition work may be performed during the following times:
  - Mondays through Fridays from 7:00 a.m. to 7:00 p.m.
  - Saturdays from 9:00 a.m. to 5:00 p.m.
  - Sundays from 12:00 p.m. to 5:00 p.m.
  - Such hours shall be extended until 8:00 p.m. for work performed by homeowners or residents upon their own property.
- Construction or demolition work shall be allowed at any time provided the noise level does not exceed 5 dBA above the ambient at the nearest property plane with allowance for correction factors.

### **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](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)? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

#### 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| c. Police Protection?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| d. Schools?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| e. Parks?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| f. Other Public Facilities?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| 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?                        | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**Project Activities Likely to Create an Impact:**

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

**Description of Baseline Environmental Conditions:**

There are no public recreational facilities near the Project locations.

**Analysis as to whether or not project activities would:**

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

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

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

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

**17. Transportation**

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

**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: Bolinas Road and Sherman Street.
- Kentfield: Stadium Way, Sherwood Court, Lancaster Avenue, Berens Drive, Wolfe Canyon Road, Tamal Vista Lane, Kentdale Lane, and Wolfe Grade
- San Anselmo: Suffield Avenue, Butterfield Road, Valley Road, West Court, Rutherford Avenue, Skyline Road, Camino de Herrera, and Hawthorne Avenue, and Bennit Avenue.

**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. Kentfield/Greenbrae and Marin County. 1987. Kentfield/Greenbrae Community Plan. [https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/communityandareaplans/kentfield\\_greenbrae\\_community\\_plan\\_1987.pdf](https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/communityandareaplans/kentfield_greenbrae_community_plan_1987.pdf). Kentfield/Greenbrae Community Planning Group and Marin County Planning Department.

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. San Anselmo. 2019. San Anselmo General Plan. Last amendment February 12, 2019.  
<https://www.townofsananselmo.org/DocumentCenter/View/5210/General-Plan-includes-Feb-2019-amendment>. Last amended on February 12, 2019. Town of San Anselmo, CA.

**18. Tribal Cultural Resources**

| Would the Project:  | Potentially Significant Impact | Less Than Significant With Mitigation Incorporated | Less Than Significant Impact | No Impact                |
|---|--------------------------------|--|------------------------------|--------------------------|
| <p>a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <p>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</p> | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                | <input type="checkbox"/>     | <input type="checkbox"/> |
| <p>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.</p>  | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                | <input type="checkbox"/>     | <input type="checkbox"/> |

**Project Activities Likely to Create an Impact:**

- Ground-disturbing activities (excavation of soil).

The Project entails the construction and rehabilitation of sewer lines located within the existing alignment of sanitary sewer mains and related appurtenances. The project would employ pipe bursting and pipe reaming 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 existing manholes, construction of new manholes, repair of sags, and potholes for lateral tie-ins.

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

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

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

### **Description of Baseline Environmental Conditions:**

A cultural resources inventory report for the Project was prepared was prepared by Far Western Anthropological Research Group, Inc. (Far Western) in November 2024. 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 ADI. One previously recorded cultural resource intersects the ADI. This resource is a landscape feature, Mount Tamalpais, a mountain that has significance to FIGR. The landscape boundary for the resource is not fully defined and requires more study in consultation with Graton; however, a preliminary boundary was defined in the site record in 2022 to encompass the landform that rises prominently above its surroundings, steep slopes and summit areas. Mount Tamalpais is of extreme importance and value to the Coast Miwok. This resource overlaps with northwestern portion of the ADI in Fairfax along Bolinas Road and Sherman Street, as well as the southern extent of the ADI in Kentfield along Berens Drive. 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.

### **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 2024). 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 2024).

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

### **Regulatory Background**

Cultural resources include precontact (prehistoric/Native American) and historic-era archaeological sites and objects, as well as extant historic structures, buildings, and locations of important historic events or sites of traditional and/or tribal cultural importance to various groups. This study addresses archaeological resources and tribal 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 the 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 October 16, 2024, pursuant to AB 52. FIGR was provided with copies of the buried site sensitivity maps and requested to schedule a consultation meeting to further discuss the project. On November 26, 2024, RVSD, Integral, and Far Western met with FIGR to discuss the Project and proposed locations for archaeological testing. On November 27, 2024, FIGR was provided with a copy of the cultural resources report and an email was sent to FIGR

on December 10, 2024 to inform them of the CEQA schedule and to obtain any follow up information or concerns. Consultation with FIGR is ongoing and the RVSD will continue to conduct outreach throughout the duration of the project.

### **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 in Fairfax and Kentfield. 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 overall poor surface visibility of the Project site, the results of the buried and subsurface site sensitivity analysis 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, 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. 2024. Archaeological Resources Inventory for the Ross Valley Sanitary District 2024-2025 Gravity Sewer Improvement Project, Marin County, California. Far Western Anthropological Research Group, Inc. November.
2. FIGR. 2024. Federated Indians of Graton Rancheria Coast Miwok and Southern Pomo. <https://gratonrancheria.com/culture/history/>. Accessed November 2024. 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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

### 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?   | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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?  | <input type="checkbox"/>       | <input type="checkbox"/>                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Project Activities Likely to Create an Impact:**

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

**Description of Baseline Environmental Conditions:**

The California Department of Forestry and Fire Protection (CalFire) uses fire hazard severity zones to classify the anticipated fire-related hazard for state responsibility areas (SRAs), local responsibility areas (LRAs), and federal responsibility areas (FRAs). The classifications include Non-Wildland Non-Urban, Moderate, High, and Very High. Fire hazard measurements take into account the following elements: vegetation, topography, weather, crown fire production, and ember production and movement (CalFire 2022). 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 2020, CalFire 2023). This information is summarized as follows:

- **Fairfax:** The Project segments are located in residential/urban areas served by the Ross Valley Fire Department in both a CalFire SRA and LRA. This area is classified as having a high fire risk.
- **Kentfield:** The Project segments are located in residential areas served by the Kentfield Fire Protection District in an LRA. Portions of Kentfield are classified as having a moderate fire risk.
- **San Anselmo:** The Project segments are located in residential areas served by the Ross Valley Fire Department in both a CalFire SRA and LRA. This area is classified having high/moderate fire risk.

#### 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. 2023. California Fire Hazard Severity Zone Viewer. <https://experience.arcgis.com/experience/03beab8511814e79a0e4eabf0d3e7247/>. California Department of Forestry and Fire Protection.

2. CalFire. 2022. 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. Fire Safe Marin. 2023. Evacuation Maps. <https://firesafemarin.org/prepare-yourself/evacuation-guide/evacuation-maps/#gsc.tab=0>. County of Marin, CA.
4. Marin GeoHub. 2020. <https://gisopendata.marincounty.org/datasets/fire-hazard-severity-zone/explore>. County of Marin, CA.



## 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  
Samantha Eanes, P.E.(California), Engineer,  
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, 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: Bolinas Road and Sherman Street in Fairfax; Suffield Avenue and Sir Francis Drake Boulevard in San Anselmo; and Berens Drive, McAllister Avenue, Lancaster Avenue, Wolfe Grade, Kentdale Lane, and the western extent of Stadium Way in Kentfield. 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 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:

2/24/25

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Philip Benedetti  
Senior Engineer

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Date

## **Attachment A**

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### Abbreviations and Acronyms

## **ATTACHMENT A ABBREVIATIONS AND ACRONYMS**

|                     |   |
|---------------------|---|
| AB                  | Assembly Bill   |
| ADI                 | area of direct impact                                 |
| BAAQMD              | Bay Area Air Quality Management District              |
| bgs                 | below ground surface                                  |
| BMP                 | best management practice                              |
| CAA                 | Clean Air Act   |
| CalEEMod            | California Emissions Estimate Model                   |
| CalFire             | California Department of Forestry and Fire Protection |
| California Register | California Register of Historical Resources           |
| Caltrans            | California Department of Transportation               |
| CARB                | California Air Resources Board                        |
| CBR                 | California Black Rail                                 |
| 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                  |
| CIP                 | cast iron pipe  |
| CFGC                | CDFW Fish and Game Code                               |
| CFR                 | Code of Federal Regulations                           |
| CNDDB               | California Natural Diversity Database                 |
| CNPS                | California Native Plant Society                       |
| CO                  | carbon monoxide                                       |
| CO <sub>2</sub>     | carbon dioxide  |
| CO <sub>2e</sub>    | carbon dioxide equivalents                            |
| CRR                 | California Ridgeway's Rail                            |
| dB                  | decibel(s)  |
| DPM                 | diesel particulate matter                             |
| DTSC                | Department of Toxic Substances Control                |
| EIR                 | environmental impact report                           |
| EPA                 | U.S. Environmental Protection Agency                  |
| Far Western         | Far Western Anthropological Research Group, Inc.      |
| FEMA                | Federal Emergency Management Agency                   |

|                      |  |
|----------------------|--|
| FIGR                 | Federated Indians of Graton Rancheria                              |
| FMMP                 | Farmland Mapping and Monitoring Program                            |
| FRA                  | federal responsibility area  |
| GHG                  | greenhouse gas   |
| 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 <sub>eq</sub>      | equivalent sound pressure level                                    |
| LF                   | linear feet  |
| LRA                  | local responsibility area  |
| MLD                  | most likely descendant   |
| MRZ                  | mineral resource zone  |
| MT/year              | metric tonne per year  |
| NAHC                 | Native American Heritage Commission                                |
| National Register    | National Register of Historic Places                               |
| NMFS                 | National Marine Fisheries Service                                  |
| NO <sub>2</sub>      | nitrogen dioxide   |
| NO <sub>x</sub>      | oxides of nitrogen   |
| NPDES                | National Pollutant Discharge Elimination System                    |
| O <sub>3</sub>       | ozone  |
| OHWM                 | ordinary high water mark   |
| PM <sub>2.5</sub>    | fine particulate matter with a diameter less than 2.5 microns      |
| PM <sub>10</sub>     | respirable particulate matter with a diameter less than 10 microns |
| ppm                  | parts per million  |
| PRC                  | Public Resources Code  |
| Project              | 2024-2025 Gravity Sewer Improvements Project (#958)                |
| 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                                   |
| SIP                  | State Implementation Plan  |
| SMAQMD               | Sacramento Metropolitan Air Quality Management District            |
| SO <sub>2</sub>      | sulfur dioxide   |
| SRA                  | State Responsibility Area  |
| SSO                  | sewer system overflow  |

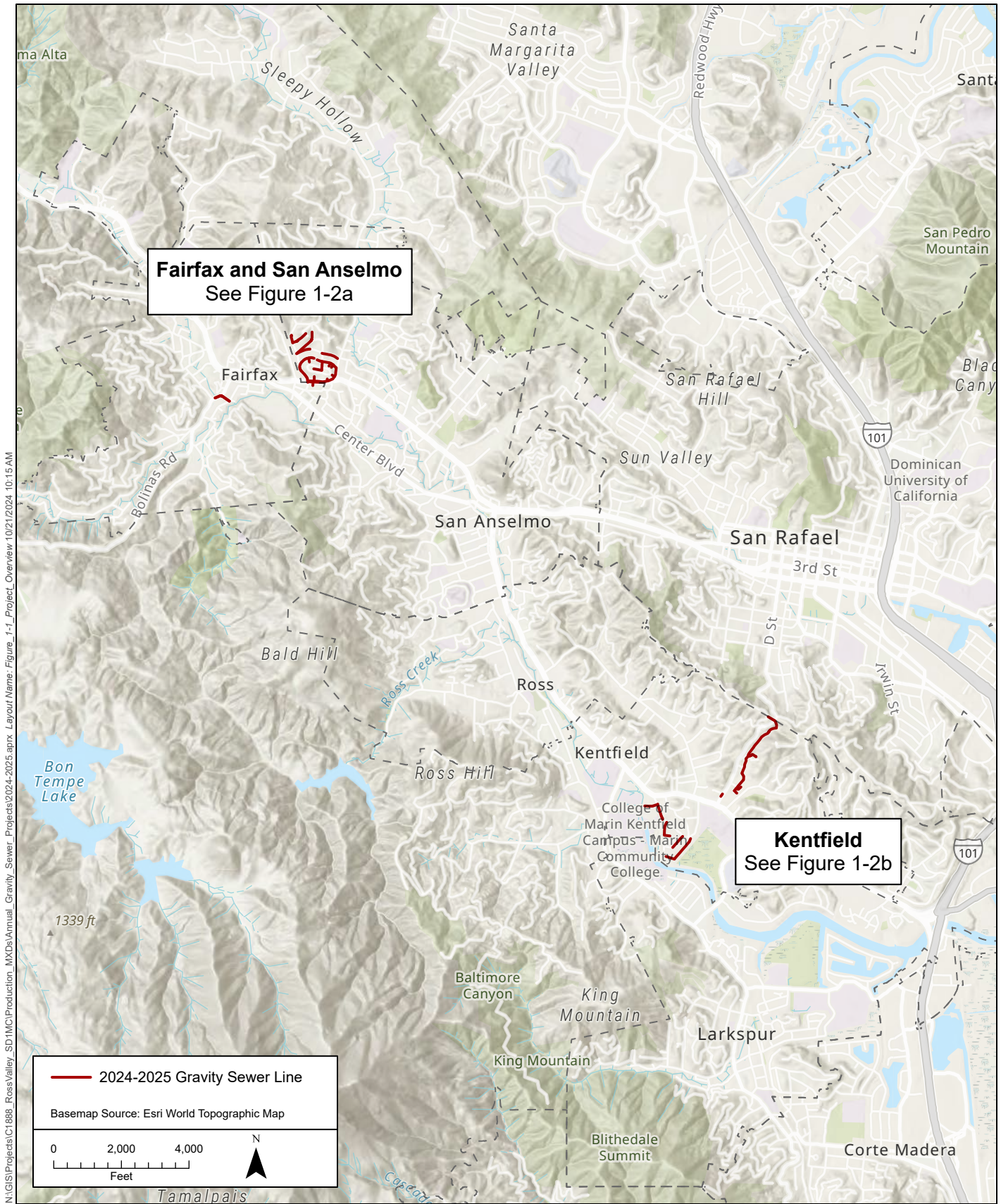
|                   |                                     |
|-------------------|-------------------------------------|
| SWRCB             | State Water Resources Control Board |
| TAC               | toxic air contaminant               |
| U.S. 101          | U.S. Highway 101                    |
| USACE             | U.S. Army Corps of Engineers        |
| USFWS             | U.S. Fish and Wildlife Service      |
| VCP               | vitrified clay pipe                 |
| WOTUS             | waters of the U.S.                  |
| µg/m <sup>3</sup> | micrograms per cubic meter          |

## **Attachment B**

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### Figures

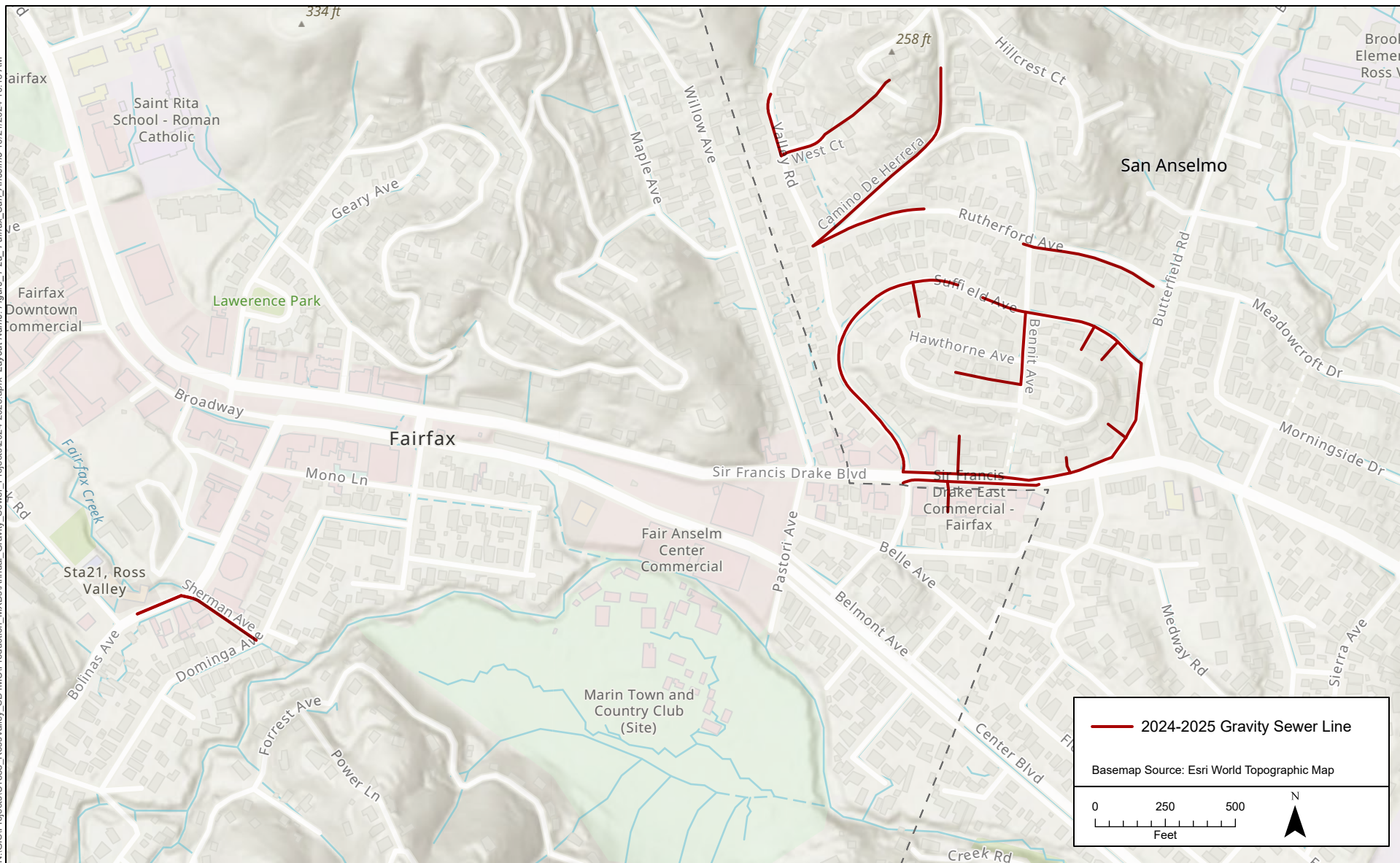




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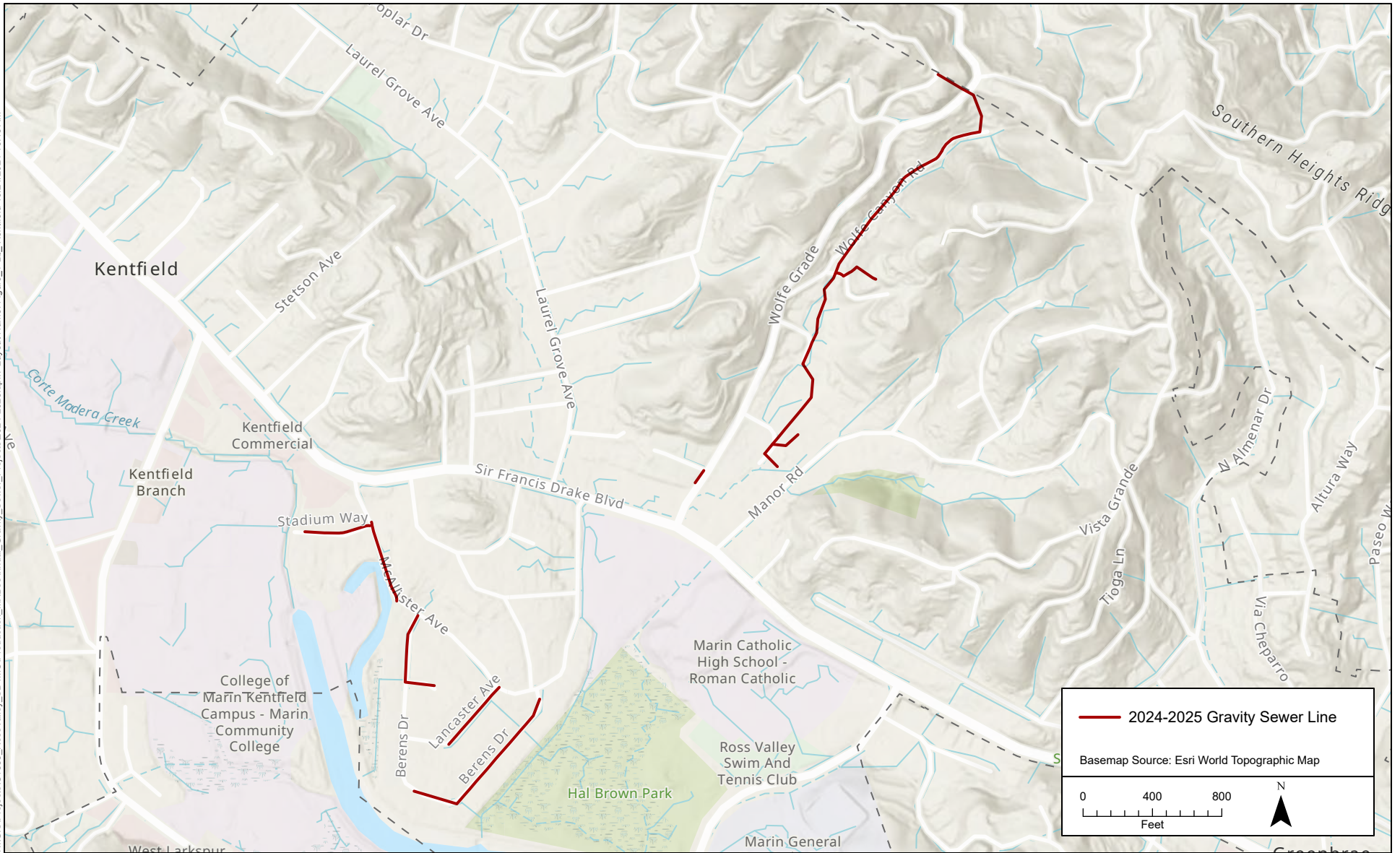
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**Figure 1-2a.**  
Project Location Map – Fairfax and San Anselmo  
2024-2025 Gravity Sewer Improvements Project  
Ross Valley Sanitary District



N:\GIS\Projects\CI1888\_RosaValley\_SD1\MC\Production\_MXD\Annual\_Gravity\_Sewer\_Projects\2024-2025.aprx Layout Name: Figure\_1-2b\_Kentfield 10/21/2024 10:15 AM



**Figure 1-2b.**  
Project Location Map – Kentfield  
2024-2025 Gravity Sewer Improvements Project  
Ross Valley Sanitary District

## **Attachment C**

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### Construction Plans



| <u>SHT#</u> | <u>DWG#</u> | <u>DESCRIPTION</u> |
|-------------|-------------|--------------------|
| 1           | T-1         | TITLE              |
| 2           | T-2         | NOTES              |
| 3           | T-3         | KEY MAP 1          |
| 4           | T-4         | KEY MAP 2          |

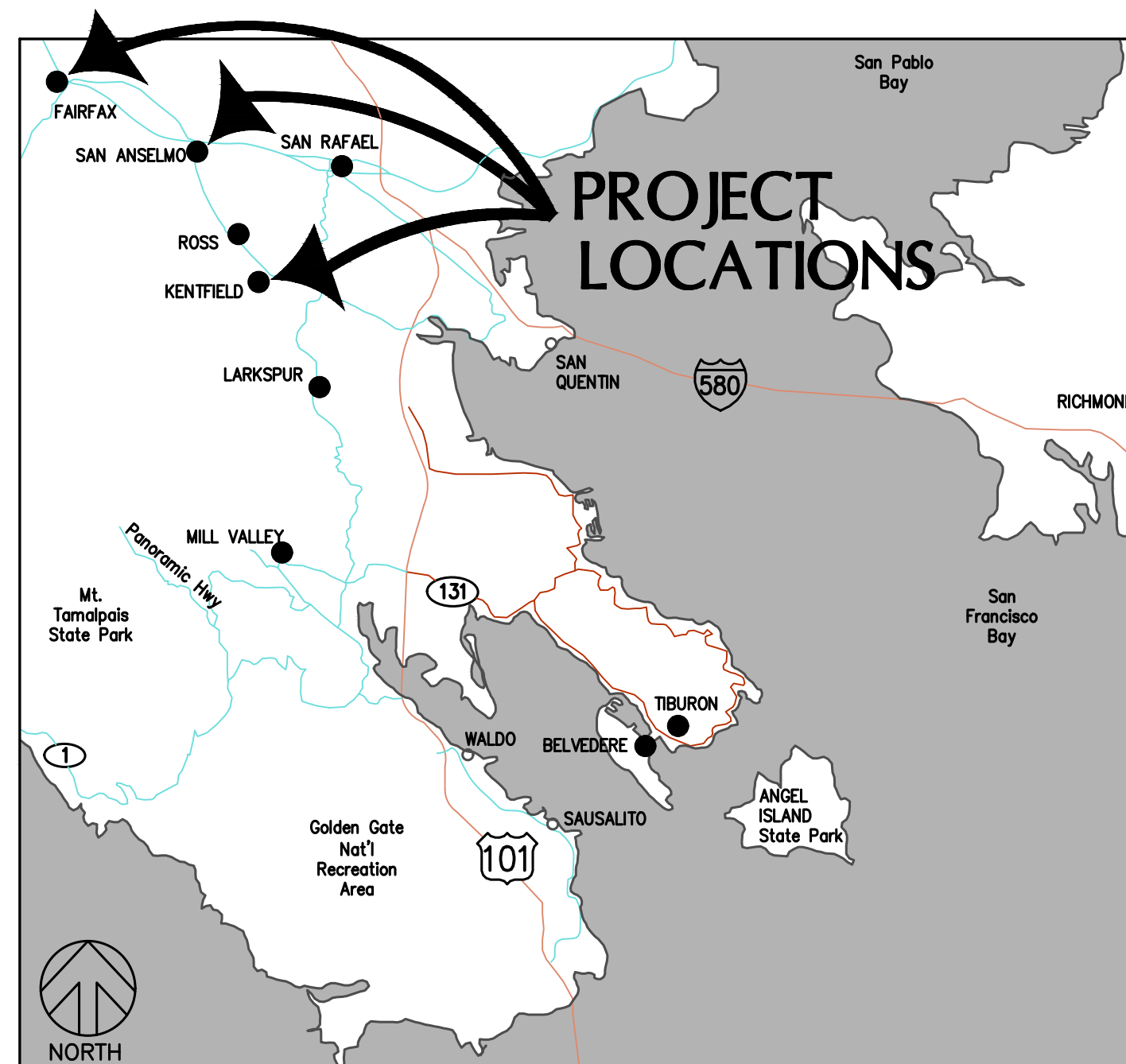
|    |       |  |
|----|-------|--|
| 5  | PP-01 | SHERMAN AVE STA 10+00 TO STA 12+25                         |
| 6  | PP-02 | BOLINAS RD STA 12+25 TO END                                |
| 7  | PP-03 | VALLEY RD STA 10+00 TO END                                 |
| 8  | PP-04 | WEST CT STA 10+00 TO STA 13+00                             |
| 9  | PP-05 | WEST CT STA 13+00 TO END                                   |
| 10 | PP-06 | CAMINO DE HERRERA STA 10+00 TO 14+50                       |
| 11 | PP-07 | CAMINO DE HERRERA STA 14+50 TO END                         |
| 12 | PP-08 | RUTHERFORD AVE STA 10+00 TO END                            |
| 13 | PP-09 | RUTHERFORD AVE STA 10+00 TO 13+00                          |
| 14 | PP-10 | RUTHERFORD AVE STA 13+00 TO END                            |
| 15 | PP-11 | SUFFIELD AVE STA 10+00 TO 13+50                            |
| 16 | PP-12 | SUFFIELD AVE STA 13+50 TO 17+50                            |
| 17 | PP-13 | SUFFIELD AVE STA 17+50 TO END                              |
| 18 | PP-14 | 79 SUFFIELD AVE EASEMENT STA 10+00 TO END                  |
| 19 | PP-15 | SIR FRANCIS DRAKE BLVD STA 10+00 TO 12+00                  |
| 20 | PP-16 | SIR FRANCIS DRAKE BLVD SOUTH STA 12+00 TO END              |
| 21 | PP-17 | 1589 SIR FRANCIS DRAKE BLVD EASEMENT STA 12+00 TO END      |
| 22 | PP-18 | SIR FRANCIS DRAKE BLVD NORTH STA 10+00 TO STA 12+50        |
| 23 | PP-19 | SIR FRANCIS DRAKE BLVD NORTH STA 12+50 TO STA 16+50        |
| 24 | PP-20 | SIR FRANCIS DRAKE BLVD STA 16+50 TO STA 20+00              |
| 25 | PP-21 | SUFFIELD AVE STA 20+00 TO STA 24+00                        |
| 26 | PP-22 | SUFFIELD AVE STA 24+00 TO END                              |
| 27 | PP-23 | 1590/1562 SIR FRANCIS DRAKE BLVD EASEMENT STA 10+00 TO END |
| 28 | PP-24 | 5/25 SUFFIELD AVE EASEMENT STA 10+00 TO END                |
| 29 | PP-25 | 35 SUFFIELD AVE EASEMENT STA 10+00 TO END                  |
| 30 | PP-26 | BENNIT AVE STA 10+00 TO 13+00                              |
| 31 | PP-27 | BENNIT AVE EASEMENT STA 13+00 TO END                       |
| 32 | PP-28 | MCALLISTER AVE STA 10+00 TO STA 12+50                      |
| 33 | PP-29 | MCALLISTER AVE STA 12+50 TO END                            |
| 34 | PP-30 | STADIUM WAY STA 10+00 TO END                               |
| 35 | PP-31 | BERENS DR STA 10+00 TO STA 13+00                           |
| 36 | PP-32 | BERENS DR STA 13+00 TO END                                 |
| 37 | PP-33 | LANCASTER AVE STA 10+00 TO END                             |
| 38 | PP-34 | BERENS DR STA 10+00 TO STA 14+00                           |
| 39 | PP-35 | BERENS DR STA 14+00 TO STA 17+50                           |
| 40 | PP-36 | BERENS DR STA 17+50 TO END                                 |
| 41 | PP-37 | WOLFE GRADE STA 10+00 TO END                               |
| 42 | PP-38 | KENTDALE LN. STA 10+00 TO 13+50                            |
| 43 | PP-39 | KENTDALE LN. EASEMENT STA 13+50 TO 16+00                   |
| 44 | PP-40 | WOLFE GLEN WAY STA 16+00 TO STA 19+50                      |
| 45 | PP-41 | WOLFE GLEN WAY STA 19+50 TO STA 23+50                      |
| 46 | PP-42 | WOLFE CANYON RD STA 23+50 TO STA 27+50                     |
| 47 | PP-43 | WOLFE CANYON RD STA 27+50 TO STA 31+50                     |
| 48 | PP-44 | WOLFE CANYON RD STA 31+50 TO STA 34+50                     |
| 49 | PP-45 | WOLFE GRADE STA 34+50 TO END                               |
| 50 | PP-46 | 11 KENTDALE LN EASEMENT STA 10+00 TO END                   |
| 51 | PP-47 | 9 KENTDALE LN EASEMENT STA 10+00 TO END                    |
| 52 | PP-48 | KENTDALE LN STA 10+00 TO END                               |
| 53 | PP-49 | TAMAL VISTA LN STA 10+00 TO END                            |

54      D-01      CONSTRUCTION DETAILS

## MARIN COUNTY, CALIFORNIA

FOR THE CONSTRUCTION OF  
FY 2024/25 GRAVITY SEWER  
IMPROVEMENTS PROJECT

HORIZONTAL DATUM IS NAD 83, CALIFORNIA COORDINATE SYSTEM ZONE 3, ITRF 2011  
VERTICAL DATUM IS NAVD 88



### VICINITY MAP

**BOARD OF DIRECTORS**  
**MICHAEL BOORSTEIN – PRESIDENT**  
**THOMAS GAFFNEY – SECRETARY**  
**MARY SYLLA – TREASURER**  
**MELA MEIGS – ALTERNATE SECRETARY**  
**DOUG KELLY – ALTERNATE TREASURER**

GENERAL MANAGER  
STEVE MOORE, P.E.

DESIGN ENGINEER  
DANIEL WILKINS, P.E.

DATE \_\_\_\_\_

NOT FOR CONSTRUCTION

90% SUBMITTAL



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



| CROSS VALLEY SANITARY DISTRICT<br>FY24/25 GRAVITY SEWER<br>IMPROVEMENTS PROJECT |  | TITLE |
|---|--|-------|
|---|--|-------|

DATE:  
SEPT 5, 2024  
PROJECT ID:  
371282  
SCALE:  
N.T.S.  
DWG. NO  
T-01  
SHT 1 OF 54

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF THE ENGINEER AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY WRITTEN AGREEMENT WITH THE ENGINEER. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND FIELD DIMENSIONS SHALL BE VERIFIED ON THE JOBSITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER PRIOR TO THE START OF ANY WORK.

DRAWN BY: JAC

DESIGNED BY: JAC

CHECKED BY: DATE: DCW 09/04/24



**west valley**  
CONSTRUCTION  
SINCE 1958

*Design - Build Services*  
001 GALAXY WAY, SUITE 400  
CONCORD, CA. 94520  
925-414-3001  
[www.Westvalleyconstruction.com](http://www.Westvalleyconstruction.com)



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

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

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

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

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

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

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

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

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

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

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

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

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

20. DIMENSIONS SHOWN ON PLANS ARE HORIZONTAL MEASUREMENTS.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

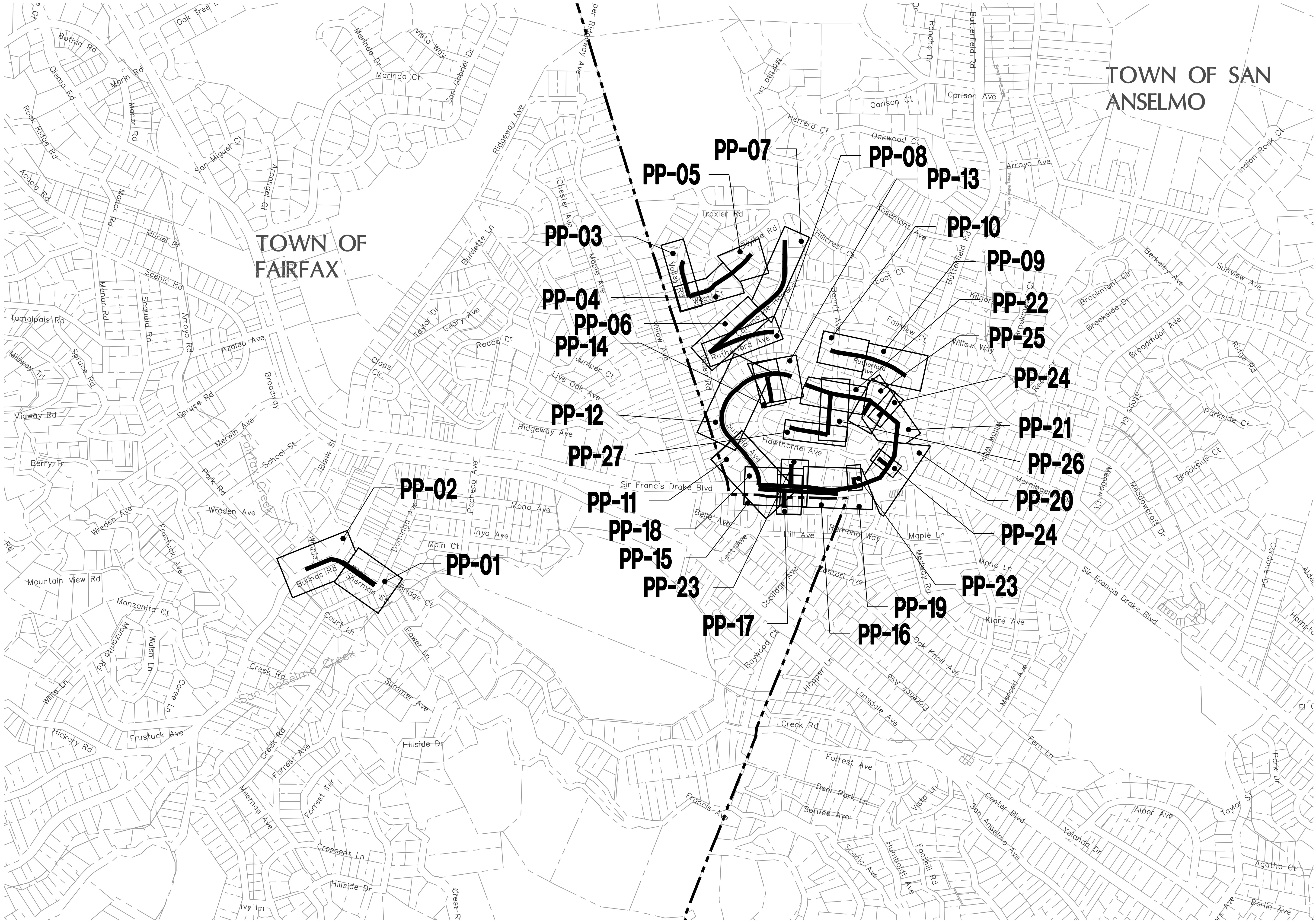
ASB AGGREGATE BASE, SUBBASE  
 BDN ABANDONED  
 C ASPHALT CONCRETE  
 DJU ADJUSTABLE  
 PROX APPROXIMATE  
 VE AVENUE  
 C BEGIN CURVE  
 M BLUE MARKER  
 OC BACK OF CURB  
 P BOTTOM OF PIPE  
 SW BACK OF SIDEWALK  
 &G CURB & GUTTER  
 ATV CABLE TV  
 B CATCH BASIN  
 CTY CLOSED CIRCUIT TELEVISION  
 CIP CAST IRON PIPE  
 PP CURB-IN-PLACE PIPE  
 L CENTERLINE  
 L CLEARANCE  
 SM CONTROLLED LOW STRENGTH MATERIAL  
 MP CORRUGATED METAL PIPE  
 C CLEANOUT  
 NT CONTINUED  
 P CONTROL POINT  
 DIA DIAMETER  
 DRAIN INLET  
 R DETECTOR LOOP  
 DIMENSION RATIO  
 DRIVEWAY  
 WG DRAWING  
 (OH) EASTING, ELECTRIC  
 C ELECTRIC OVERHEAD  
 C EDGE OF CONCRETE  
 G END OF CURVE  
 G EXISTING GRADE  
 OR ELEV ELEVATION  
 LEC ELECTRIC  
 P, EOP EDGE OF PAVEMENT  
 OS EDGE OF SHOULDER  
 TW EDGE OF TRAVELED WAY  
 IST, EX EXISTING  
 C, FOC FACE OF CURB  
 D FOUND  
 G FINISHED GRADE  
 H FIRE HYDRANT  
 L FLOWLINE  
 OB FACE OF BERM  
 Y FISCAL YEAR  
 A GAS  
 B GAUGE  
 M GAS BREAK  
 M GAS METER  
 RND GROUND  
 TP GALVANIZED THREADED PIPE  
 GUTTR GUTTER  
 V GAS VALVE  
 H, HORIZ GREATER THAN  
 DD HORIZONTAL  
 DDD HORIZONTAL DIRECTIONAL DRILLING  
 DPE HIGH DENSITY POLYETHYLENE  
 H HAND-LE  
 MA HOT MIX ASPHALT  
 V HIGH VOLTAGE  
 V INNER DIAMETER  
 INCH  
 V INVERT  
 B IRRIGATION PULL BOX  
 P JOINT UTILITY POLE  
 L LATERAL  
 ATT LOW DENSITY CELLULAR CONCRETE  
 F LINEAR FOOT  
 H LAMPHOLE  
 P LIP OF GUTTER  
 MAGN "MAG" NAIL  
 AX MAXIMUM  
 MAGNW "MAG" NAIL & WASHER  
 MAGNS "MAG" NAIL & SHINER  
 MBGR METAL BEAM GUARD RAIL  
 H MANHOLE  
 IN MINIMUM  
 MWD MARIN MUNICIPAL WATER DISTRICT  
 NFR MANUFACTURER  
 ON MONUMENT  
 NOTHING  
 I.C. NOT IN CONTRACT  
 O NUMBER  
 C. OFF CENTER  
 D OUTSIDE DIAMETER  
 H OVERHEAD  
 G ORIGINAL GRADE  
 CC PORTLAND CEMENT CONCRETE  
 CC POINT OF COMPOUND CURVE  
 K "PK" NAIL  
 L PLASTIC  
 S# PROFESSIONAL LAND SURVEYOR #  
 P POWER POLE, PLAN AND PROFILE  
 ROC PROPOSED  
 C POLYVINYL CHLORIDE  
 ROAD  
 REAR+ CAP  
 DE# REGISTERED CIVIL ENGINEER #  
 REQ'D REQUIRED  
 ET RETAINING  
 R REMOVE & REPLACE  
 W ROADWAY STABILIZATION  
 S RIGHT-OF-WAY  
 VSD ROSS VALLEY SANITARY DISTRICT  
 SLOPE  
 D STORM DRAIN, STANDARD DRAWING  
 CDB STORM DRAIN CATCH BASIN  
 DMH STORM DRAIN MANHOLE  
 DR STANDARD DIMENSION RATIO  
 DWK SIDEWALK  
 F SQUARE FEET  
 HT SHEET  
 S STREET LIGHT  
 S SANITARY SEWER  
 SCSO SANITARY SEWER CLEANOUT

| EXISTING | PROPOSED | DESCRIPTION   |
|----------|----------|---|
|          |          | CONSTRUCT SEWER BY OPEN TRENCH, DIRECTION OF FLOW, SIZE   |
|          |          | CONSTRUCT SEWER BY PIPE BURSTING, DIRECTION OF FLOW, SIZE |
|          |          | CONSTRUCT SEWER BY PIPE REAMING, DIRECTION OF FLOW, SIZE  |
|          |          | ABANDON SANITARY SEWER                                    |
|          |          | BUILDING  |
|          |          | FENCE   |
|          |          | PROPERTY LINE   |
|          |          | WATER MAIN, VALVE AND METER                               |
|          |          | STORM DRAIN < 12"Ø  |
|          |          | STORM DRAIN >= 12"Ø                                       |
|          |          | SANITARY SEWER < 12"Ø                                     |
|          |          | SANITARY SEWER >= 12"Ø                                    |
|          |          | GAS MAIN AND VALVE  |
|          |          | BURIED ELECTRIC   |
|          |          | BURIED UNKNOWN COMMUNICATION                              |
|          |          | BURIED COMMUNICATION (AT&T)                               |
|          |          | BURIED COMMUNICATION (VERIZON)                            |
|          |          | BURIED COMMUNICATION (COMCAST)                            |
|          |          | BURIED UNKNOWN UTILITY                                    |
|          |          | OVERHEAD UTILITIES  |
|          |          | CATCH BASIN   |
|          |          | CITY MONUMENT   |
|          |          | FIRE HYDRANT  |
|          |          | GUY WIRE  |
|          |          | JOINT POLE  |
|          |          | SANITARY SEWER MANHOLE                                    |
|          |          | SANITARY SEWER CLEAN OUT                                  |
|          |          | STORM DRAIN MANHOLE                                       |
|          |          | SIGN  |
|          |          | STREETLIGHT   |
|          |          | CURB AND GUTTER   |
|          |          | CONTOUR   |

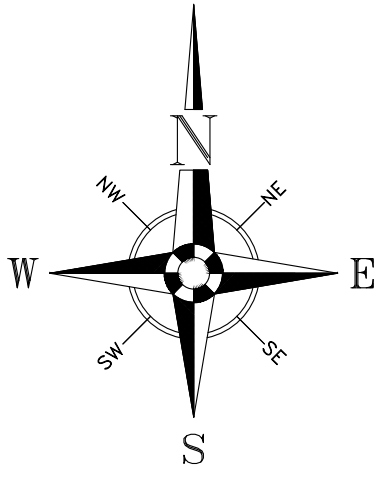
REGISTERED PROFESSIONAL ENGINEER  
DANIEL C. WILKINS  
No. C83909  
Exp. 09/30/25  
CIVIL  
STATE OF CALIFORNIA



\\reason\Engineering Data\18\EXTERNAL PROJECTS\18\PROJECTS\371282 RSD F24-25 CSP\8.0 DESIGN\B Design\03-04 K-01 To K-02 KEY MAP.dwg Save Date: 9/4/2024 10:14 AM Plt Date: 9/4/2024 10:14 AM JosephC



TOWN OF SAN  
ANSELMO



NOT TO SCALE

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DESIGNED BY:  
JAC  
CHECKED BY: DATE:  
DCW 09/04/24



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CONSTRUCTION  
SINCE 1958  
Design - Build Services  
1001 GALAXY WAY, SUITE 400  
CONCORD, CA 94520  
925-414-3001  
www.westvalleyconstruction.com

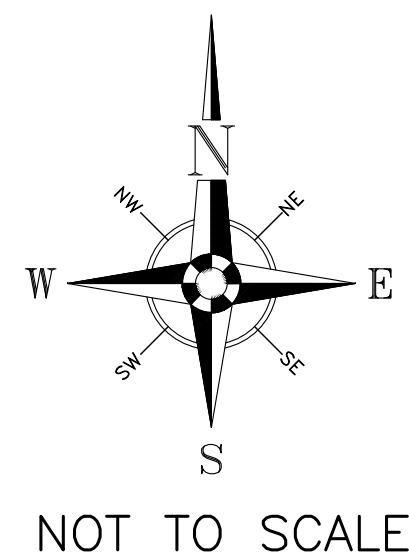
ROSS VALLEY SANITARY DISTRICT  
F24/25 GRAVITY SEWER  
IMPROVEMENTS PROJECT  
KEY MAP 1

DATE:  
SEPT 5, 2024  
PROJECT ID:  
371282  
SCALE:  
N.T.S.  
DWG. NO  
T-03  
SHEET 3 OF 54



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# TOWN OF ROSS

TOWN OF  
KENTFIELD

**CITY OF  
LARKSPUR**

# PP-45

# PP-43

# PP-42

**PP-44**

**PP-49**

**PP-41**

# PP-40

**PP-48-**

**PP-37**

**PP-39**

PP-47

PP-4

**PP-38**

**PP-48-**

# PP-30

# PP-29

**PP-28**

**PP-31**

**PP-32**

# PP-33

# PP-34

**PP-35**

**PP-36**

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**ROSS VALLEY SANITARY DISTRICT  
FY24/25 GRAVITY SEWER  
IMPROVEMENTS PROJECT  
KEY MAP 2**

**west valley**  
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SINCE 1958

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JAC

DESIGNED BY:  
JAC

CHECKED BY: DATE:

DCW 09/04/24

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DATE:  
SEPT 5, 2024

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371282

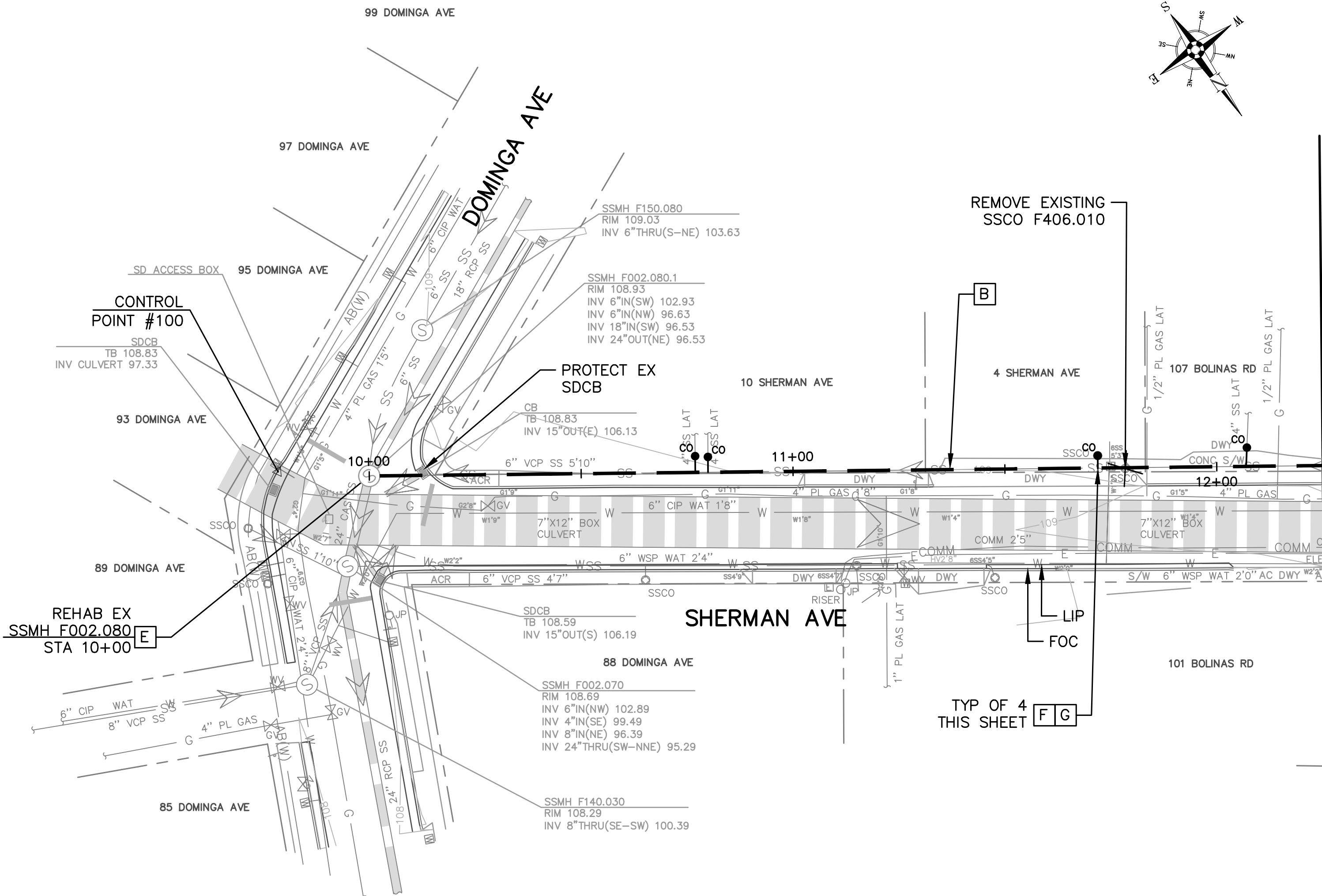
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DWG. NO  
T-04

SHT 4 OF 54



\\reason\Engineering Data\WIL EXTERNAL PROJECTS\1\_PROJECTS\371282 RVS0 FYZ+25 CSP\8.0 DESIGN\B Design\05-06 PP-01 To PP-02 - FT SHERMAN.dwg Save Date: 9/5/2024 1:59 PM Plot Date: 9/5/2024 1:59 PM JosephC

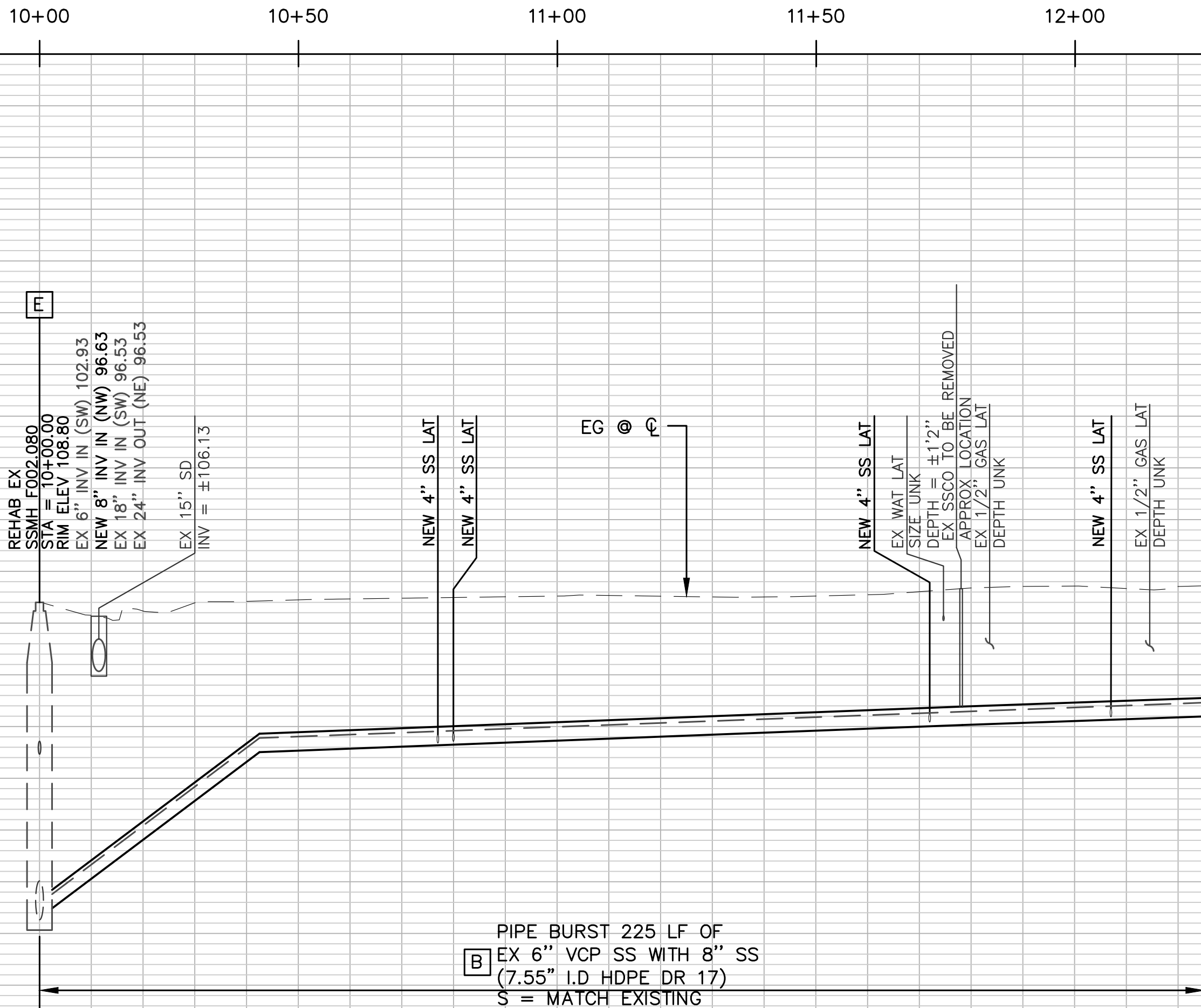


MATCHLINE - STA 12+25  
SEE DWG PP-02

SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
|---------|------------|------------|-----------|-------------|
| 100     | 2187791.78 | 5959636.38 | 108.84    | MAG IN TC   |

MATCHLINE - STA 12+25  
SEE DWG PP-02



LEGEND OF REHABILITATION METHODS

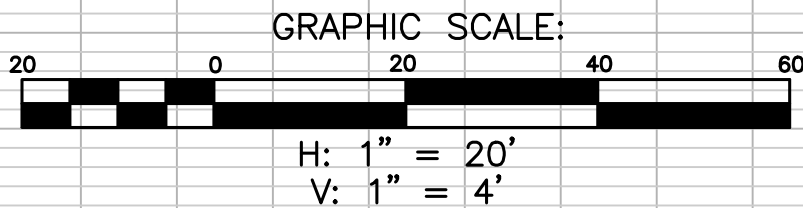
- [A] REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- [B] REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- [B1] REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- [C] REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- [D] REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
- [E] REHABILITATE EX SSMH PER RVSD STD DWG SD-13
- [F] PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.

CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY 809 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CHRISTY 81017 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT.

- [G] 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.

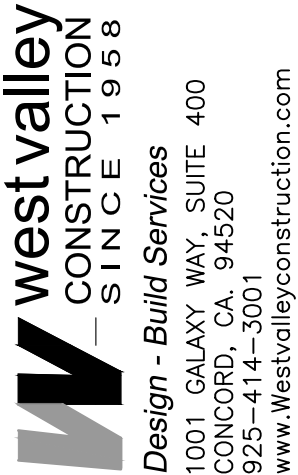
NOTES:

- 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
- 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.
- FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS. SEE GENERAL NOTE 23 AND 24 ON N-01 FOR HDPE SLEEVE REQUIREMENTS.
- BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
- 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).



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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
SHERMAN AVE  
STA 10+00 TO STA 12+25

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-01  
SHT 5 OF 54

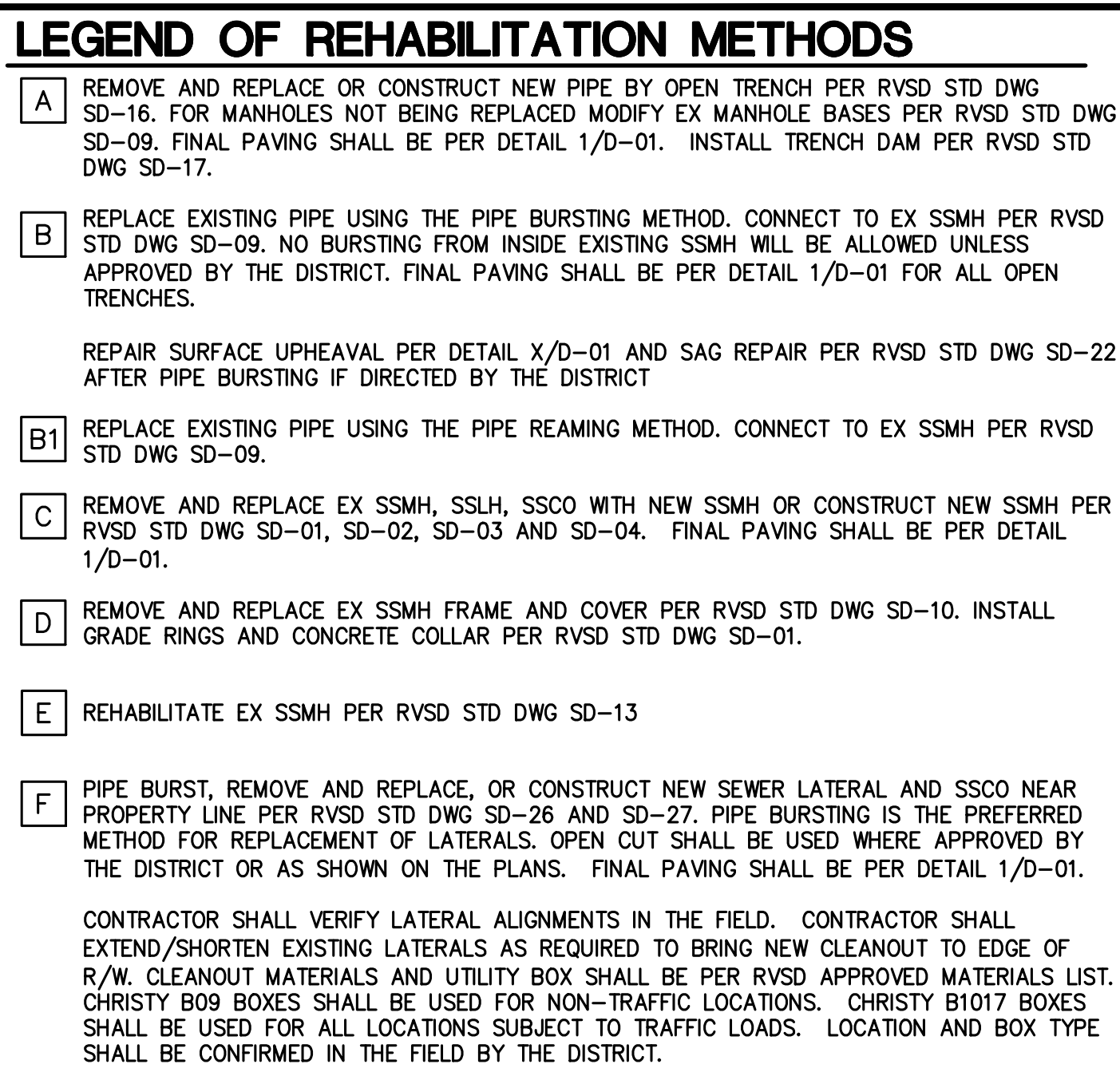


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DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24

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**NOTES:**

1. 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
2. WHERE PIPING IS REMOVED AND REPLACED BY OPEN TRENCH, NEW PIPE INVERT ELEVATIONS SHALL MATCH EX PIPE INVERT ELEVATIONS (UPSIZED 8" SS INVERTS SHALL MATCH EXISTING 6" SS INVERTS), UNLESS OTHERWISE NOTED.
3. FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS. SEE GENERAL NOTE 23 AND 24 ON N-01 FOR HDPE SLEEVE REQUIREMENTS.
4. BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
5. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. SEE GENERAL NOTE 8 ON DWG N-01. USE CLSM BACKFILL WHERE 6" CLEARANCE CANNOT BE OBTAINED BETWEEN NEW AND EXISTING UTILITIES. IF CONFLICTS REQUIRE THE RELOCATION OF EXISTING UTILITIES, THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING UTILITY OWNER(S) FOR RELOCATION(S).

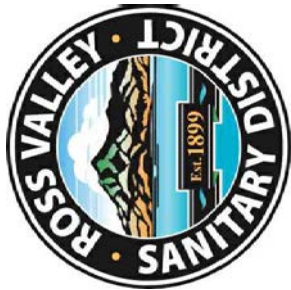
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JAC

DESIGNED BY:  
JAC

CHECKED BY:  
DCW 09/04/24



**west valley**  
CONSTRUCTION  
SINCE 1958

*Design - Build Services*

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CONCORD, CA. 94520  
925-414-3001  
[www.Westvalleyconstruction.com](http://www.Westvalleyconstruction.com)

**CROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
BOLINAS RD**

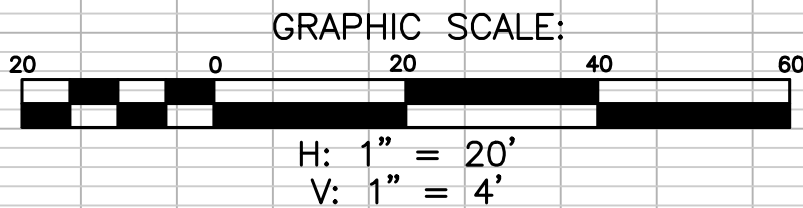
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SEPT 05, 2024

PROJECT ID:  
371282

SCALE:  
1" = 20'

DWG. NO  
PP-02

SHT 6 OF 54



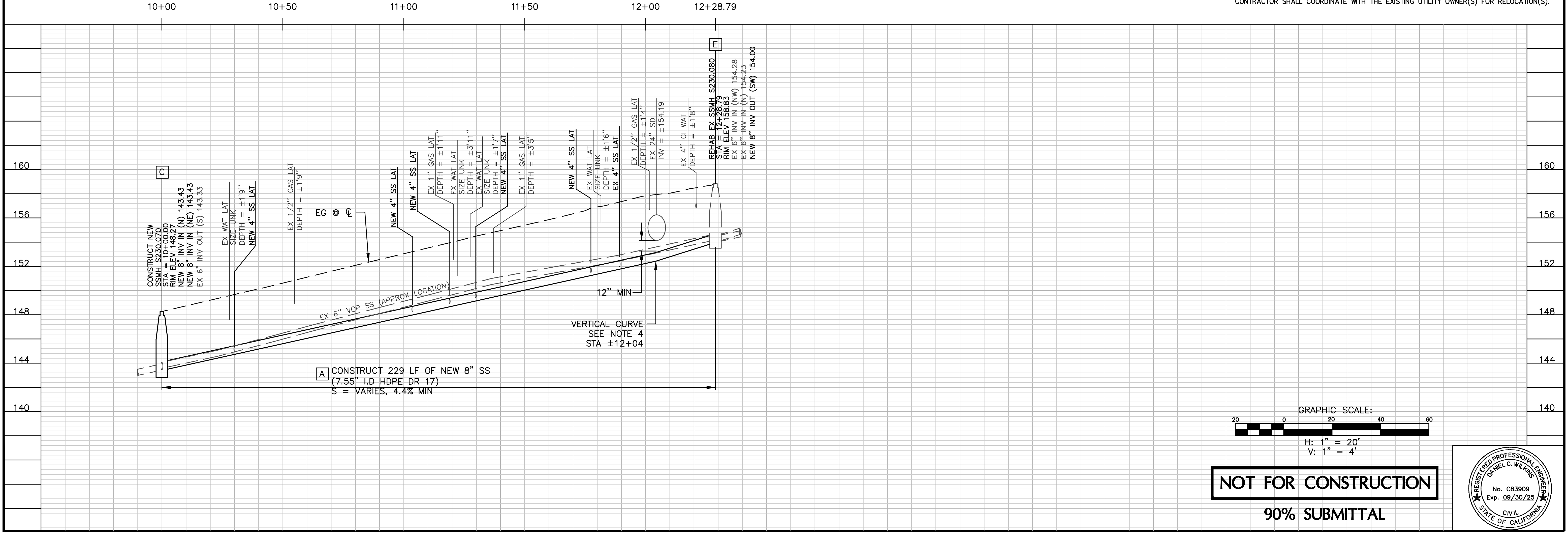
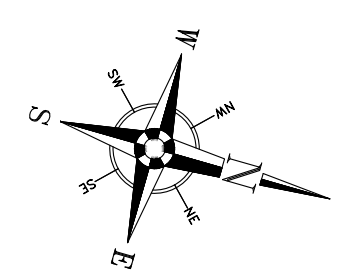
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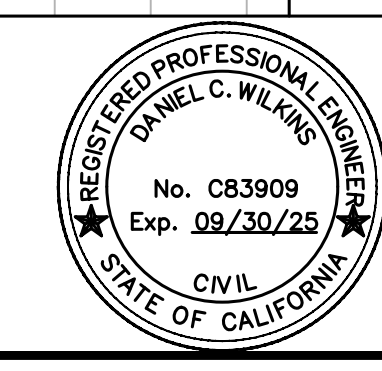
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PROJECT ID:  
371282

SCALE:  
1" = 20'

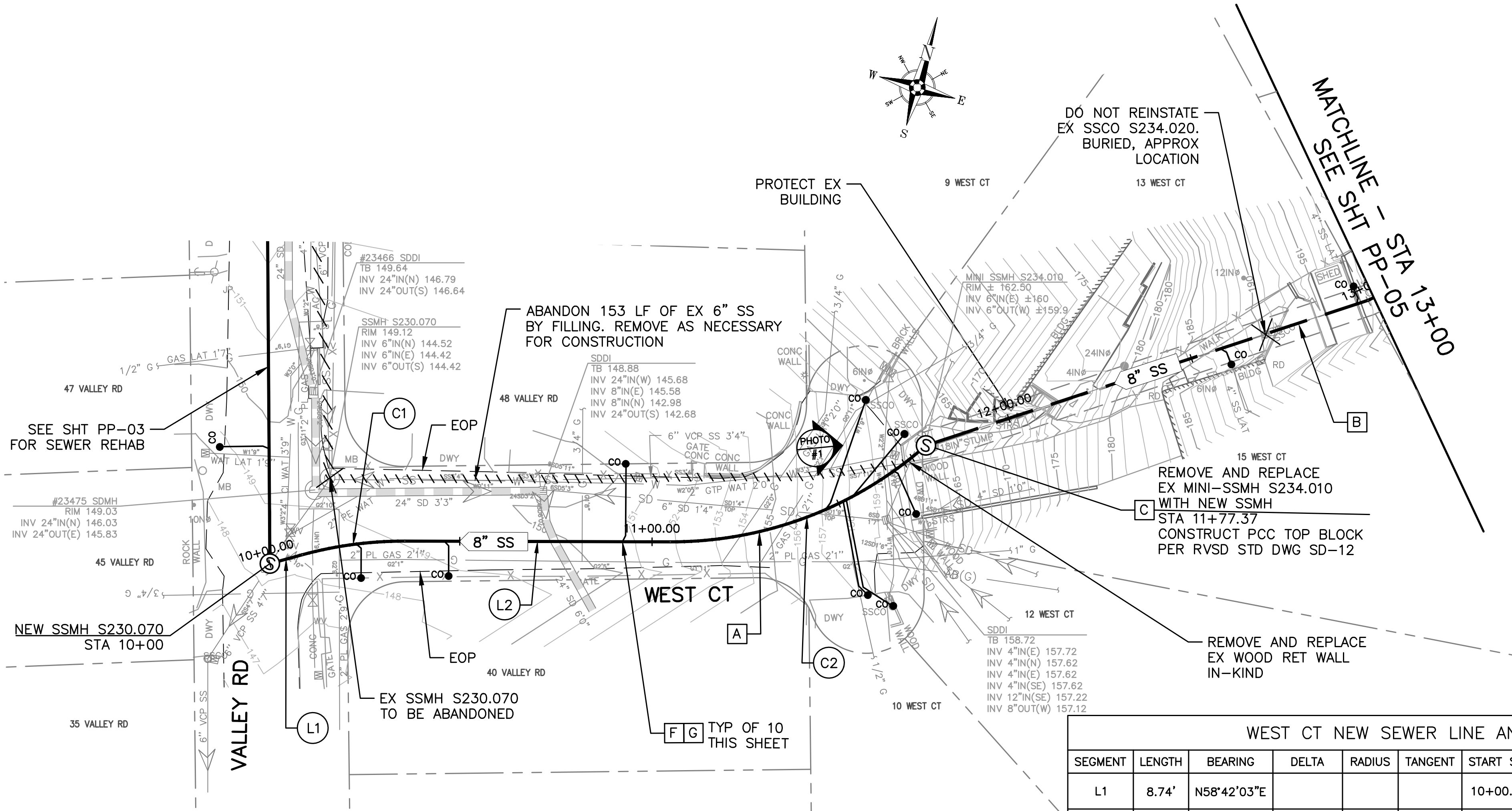
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PP-03

SHT 7 OF 54





\\recon\Engineering Data\WIL EXTERNAL PROJECTS\171282 RVSD FYZA-25 CSP\8.0 DESIGN\B Design\08-09 PP-04 To PP-05 - SA WEST CT.dwg Save Date: 9/5/2024 2:01 PM Plot Date: 9/5/2024 2:01 PM JosephC



| WEST CT NEW SEWER LINE AND CURVE TABLE |        |             |           |         |         |           |                                  |          |
|--|--------|-------------|-----------|---------|---------|-----------|----------------------------------|----------|
| SEGMENT                                | LENGTH | BEARING     | DELTA     | RADIUS  | TANGENT | START STA | START POINT                      | END STA  |
| L1                                     | 8.74'  | N58°42'03"E |           |         |         | 10+00.00  | N = 2189534.15<br>E = 5961493.66 | 10+08.74 |
| C1                                     | 26.97' |             | 15°27'08" | 100.00' | 13.57'  | 10+08.74  | N = 2189538.69<br>E = 5961501.13 | 10+35.71 |
| L2                                     | 69.01' | N74°09'10"E |           |         |         | 10+35.71  | N = 2189549.45<br>E = 5961525.77 | 11+04.73 |
| C2                                     | 72.64' |             | 41°37'20" | 100.00' | 38.01'  | 11+04.73  | N = 2189568.29<br>E = 5961592.16 | 11+77.37 |
|  |        |             |           |         |         |           | N = 2189610.72<br>E = 5961649.17 |          |

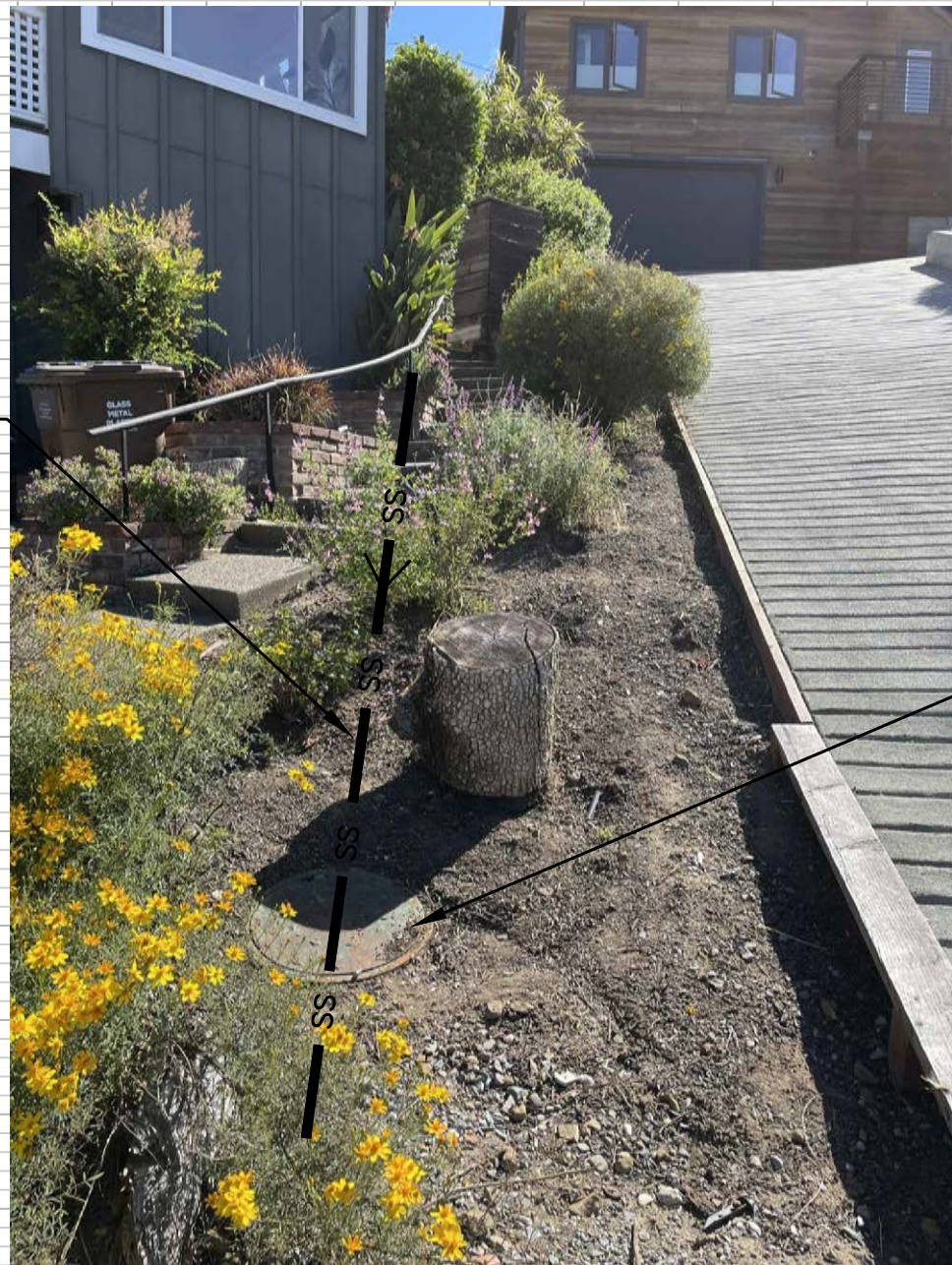
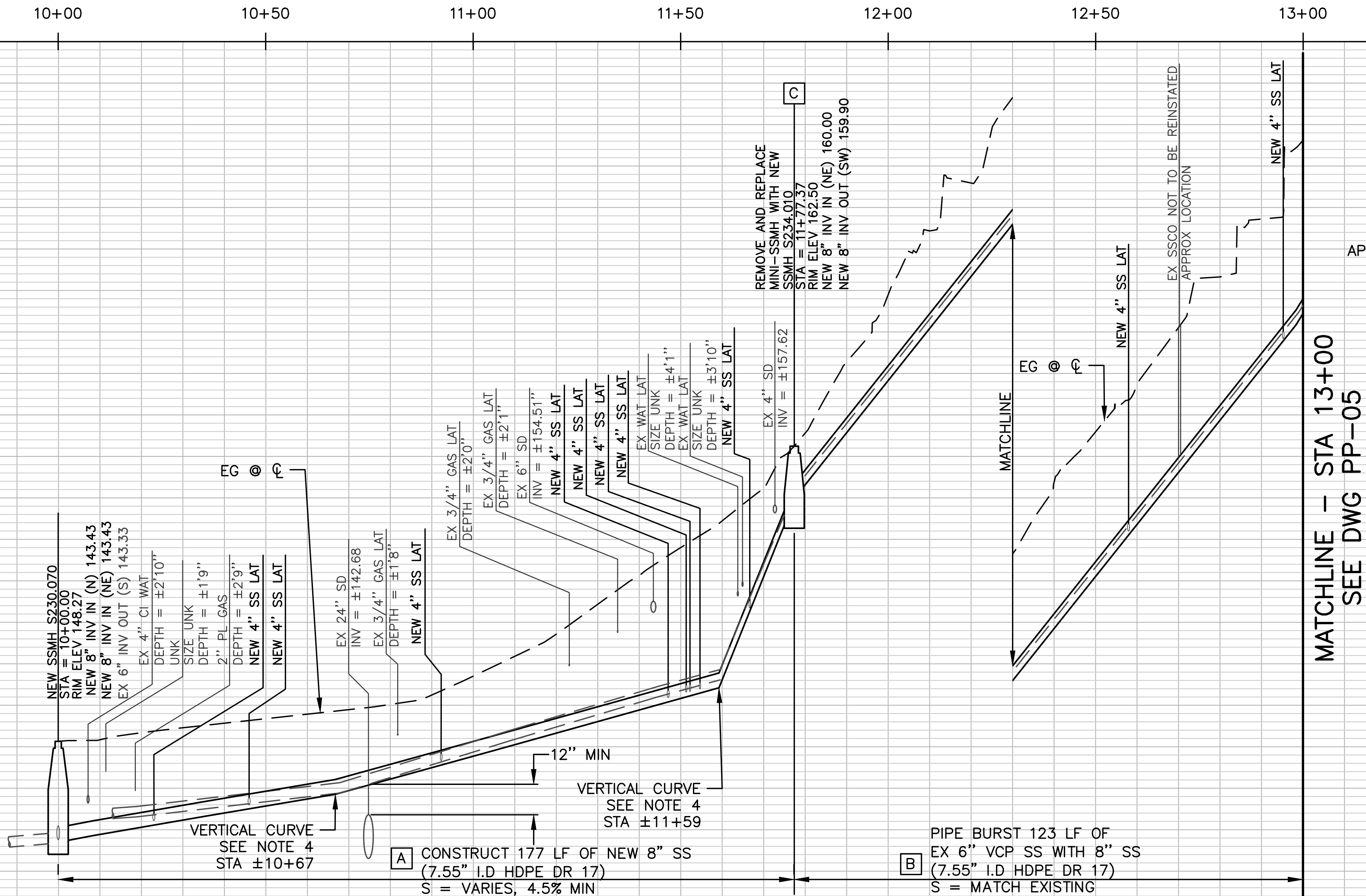
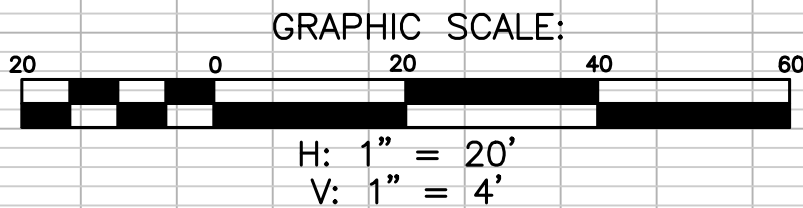


PHOTO 1 EX SEWER NOT TO SCALE



NOT FOR CONSTRUCTION  
90% SUBMITTAL



## LEGEND OF REHABILITATION METHODS

- A** REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- B** REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- B1** REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- C** REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- D** REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
- E** REHABILITATE EX SSMH PER RVSD STD DWG SD-13
- F** PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY 809 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.
- G** 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.

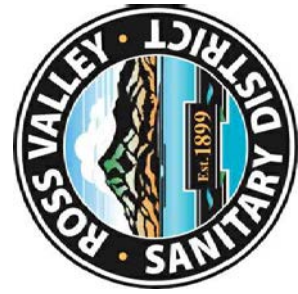
### NOTES:

- 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
- 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.
- FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS. SEE GENERAL NOTE 23 AND 24 ON N-01 FOR HDPE SLEEVE REQUIREMENTS.
- BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
- 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).

| NO. |  | DATE | BY | DESCRIPTION |
|-----|--|------|----|-------------|
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|     |  |      |    |             |
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|     |  |      |    |             |

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DRAWN BY: JAC  
DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24

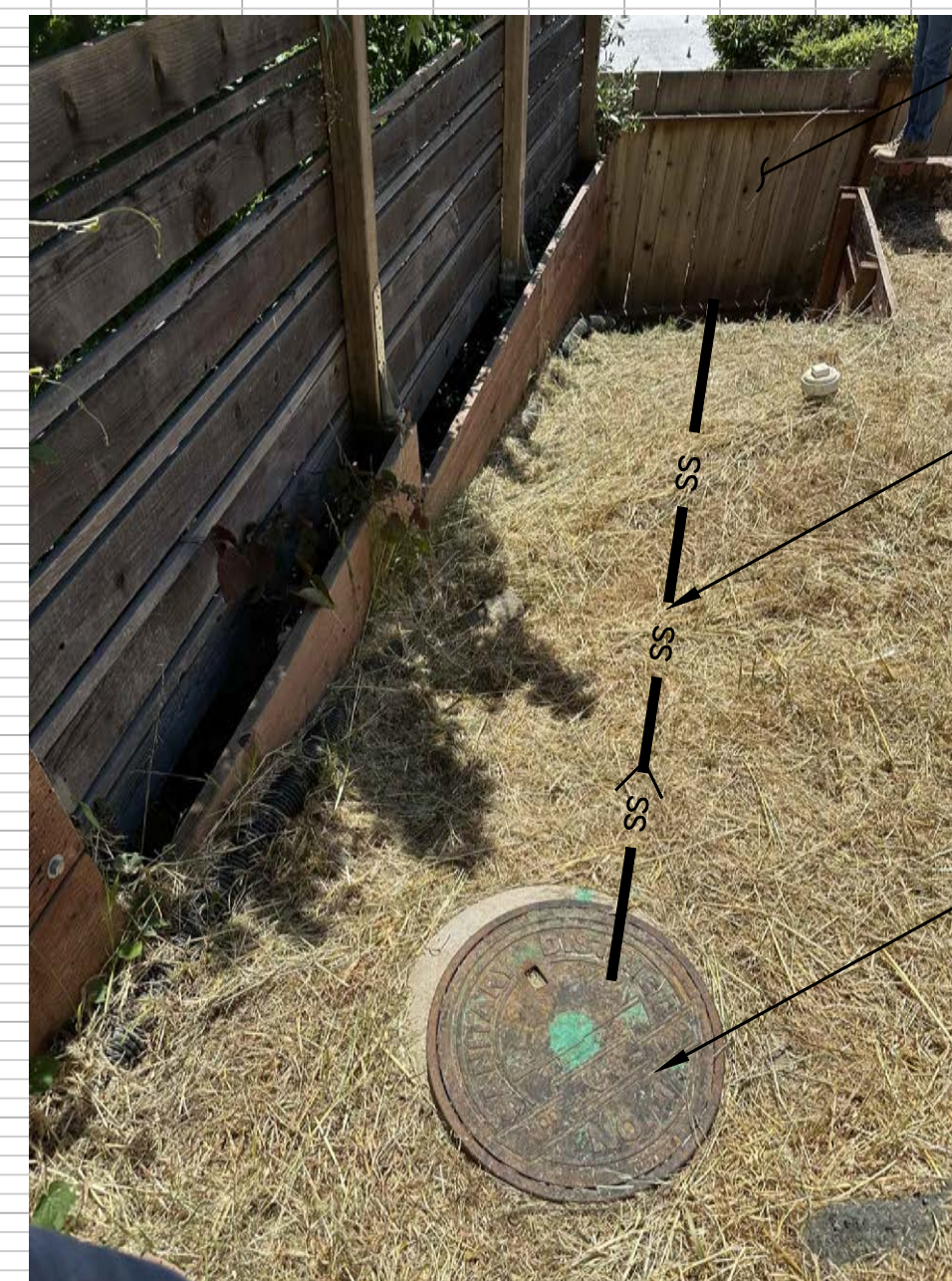
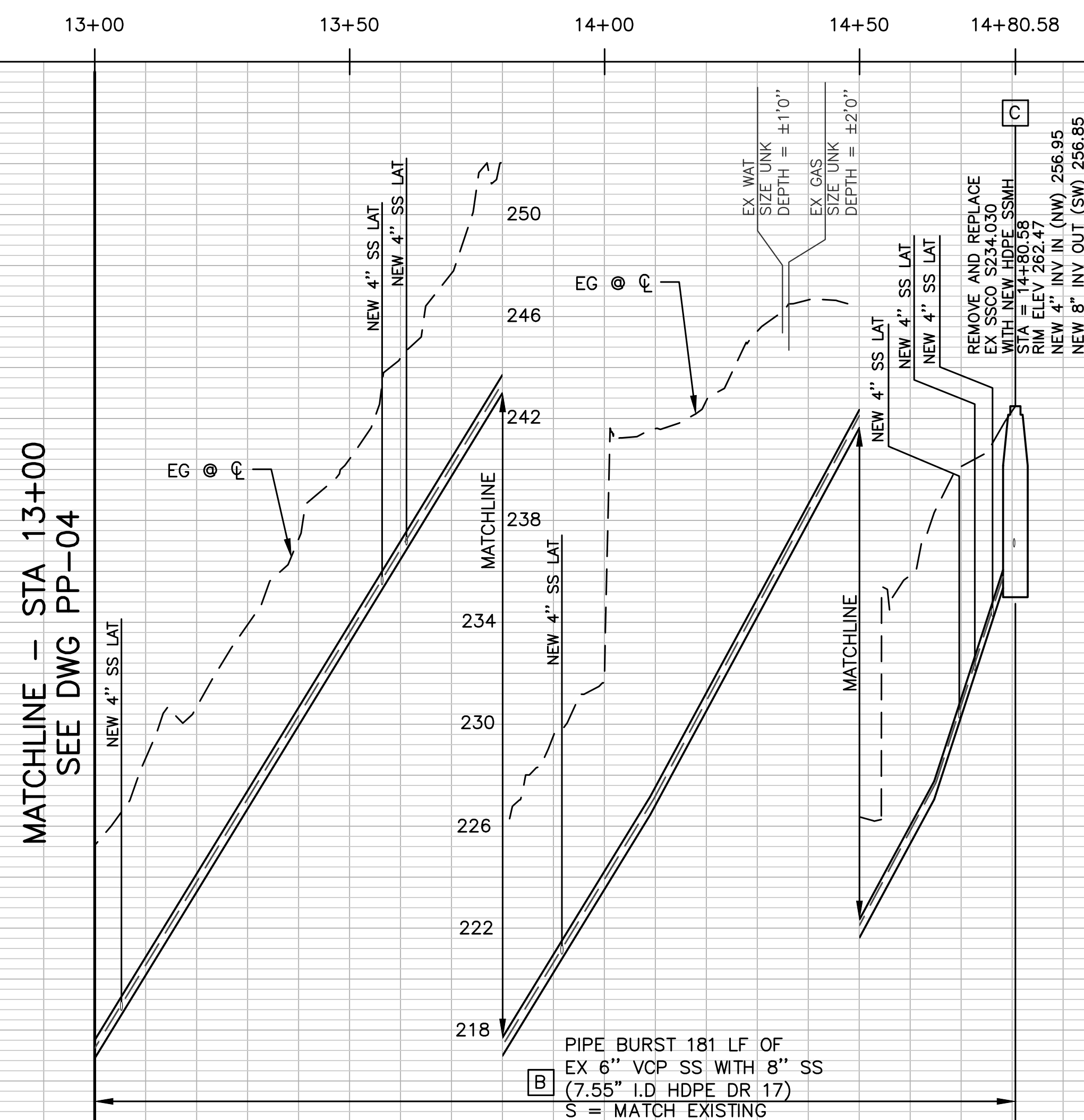
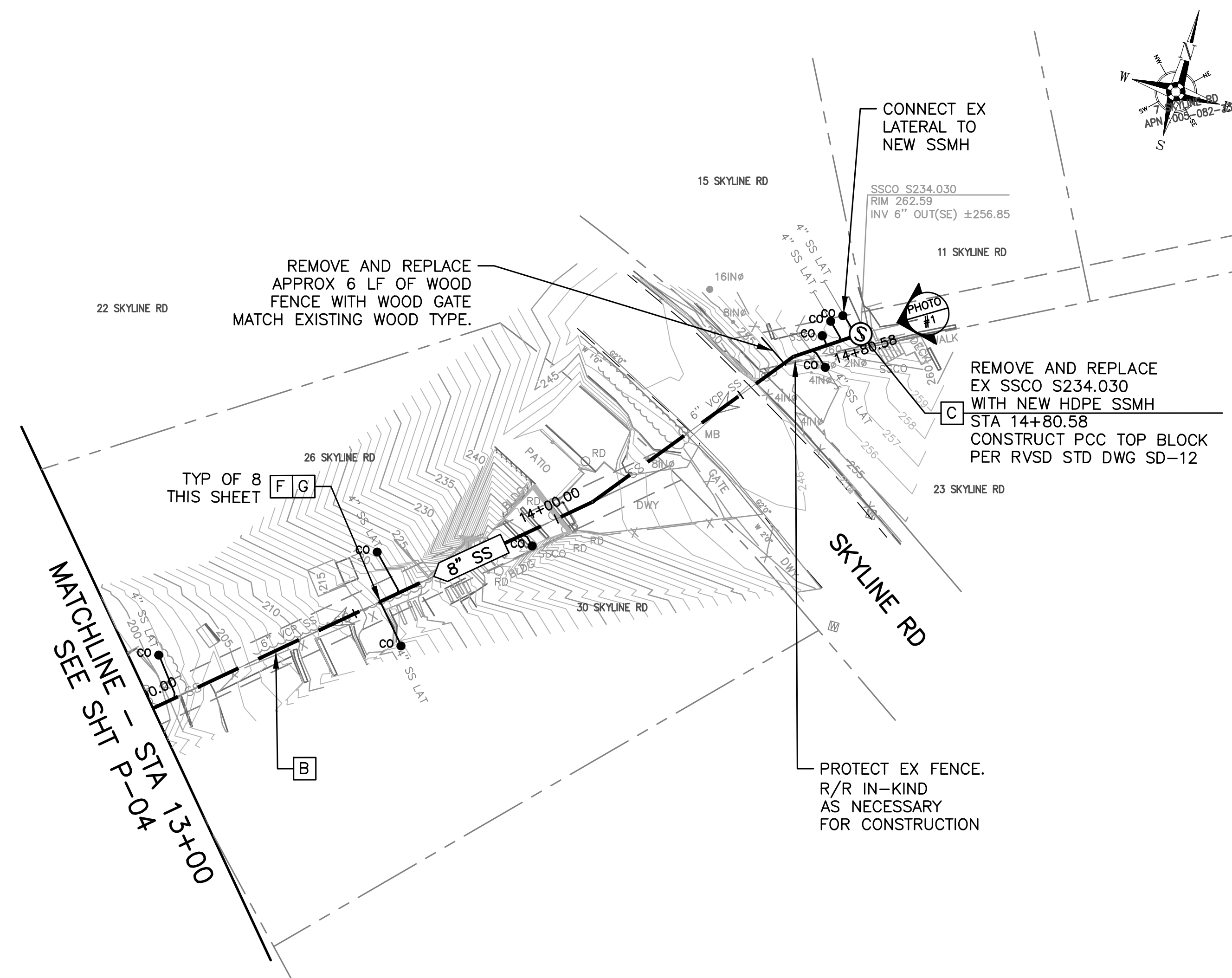


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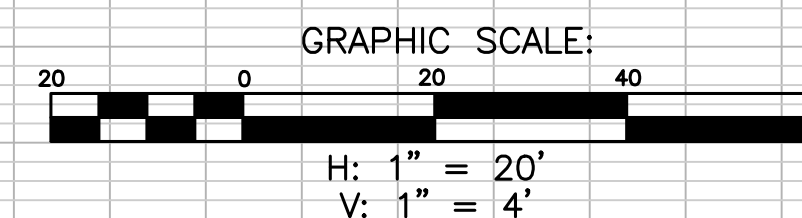
ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
WEST CT  
STA 10+00 TO STA 13+00

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-04  
SHT 8 OF 54






**PHOTO EX SEWER**  
**1** NOT TO SCALE



**NOT FOR CONSTRUCTION**

## 90% SUBMITTAL



## LEGEND OF REHABILITATION METHODS

- A) REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- B) REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
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- G) CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING LIVE SANITARY SEWER LATERALS ALONG SEWER MAINS BY DYE TESTING AND SONDE AND REINSTATE LIVE LATERALS TO NEW SEWER MAIN.

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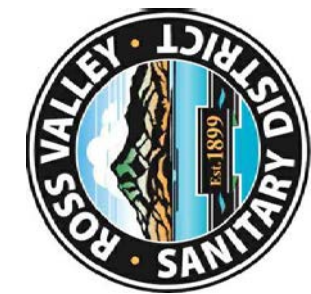
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**DRAWN BY:**

DESIGNED BY:

**JAC**  
**CHECKED BY:**

DCW 09/04/24



**west valley**  
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**CROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
WEST CT  
STA 13+00 TO END**

DATE: \_\_\_\_\_

SEPT 05, 2024

PROJECT ID:

371282

**SCALE:**

$$1'' = 20'$$

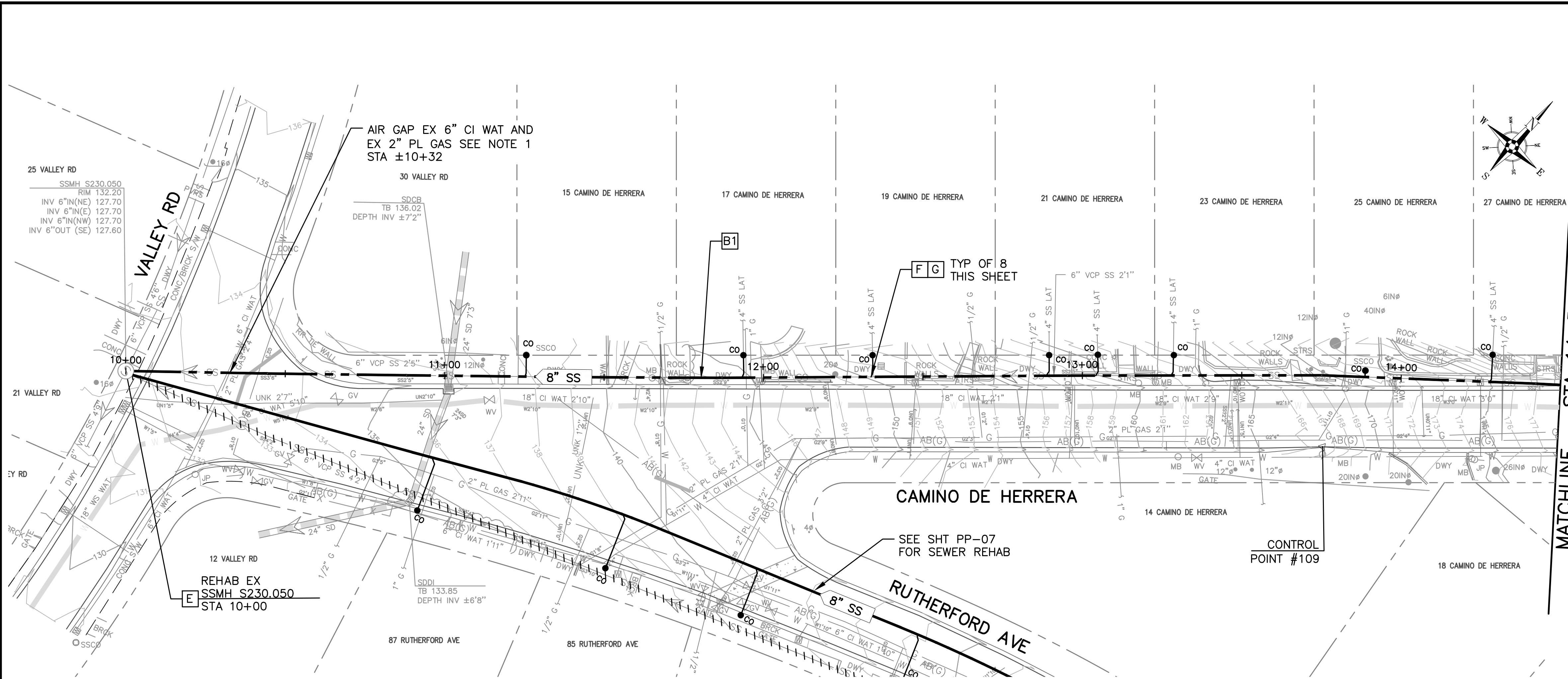
DWG. NO

PP-05

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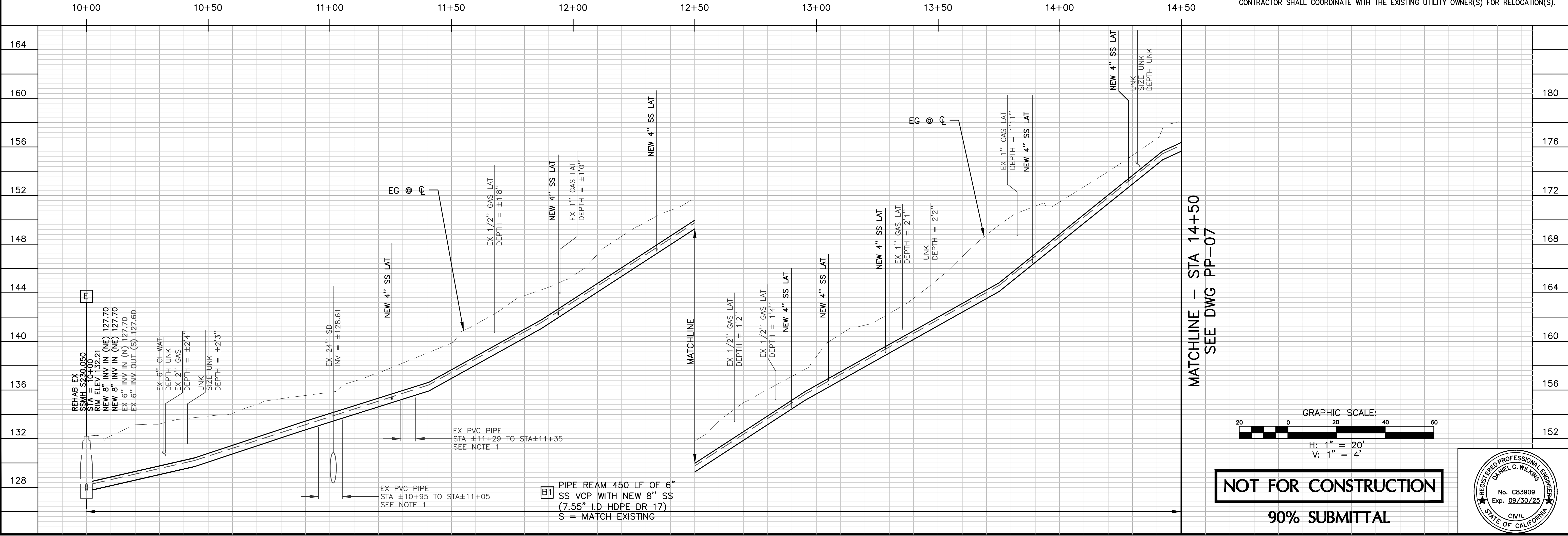


\\reason\Engineering Data\WIL\EXTERNAL PROJECTS\1\PROJECTS\71282 RVS0 FYZ4-25 CSP\8.0 DESIGN\B Design\10-11 PP-06 To PP-07 - SA CAMINO HERRERA.dwg Save Date: 9/6/2024 2:03 PM Plot Date: 9/6/2024 2:03 PM JosephC



SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
|---------|------------|------------|-----------|-------------|
| 109     | 2189445.54 | 5961902.11 | 167.84    | MAG IN AC   |



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| NO. | DATE | BY | DESCRIPTION |
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|     |      |    |             |

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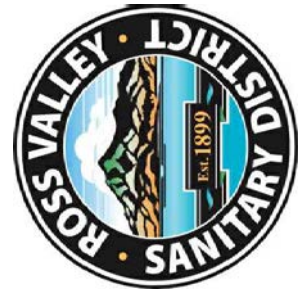
JAC

DESIGNED BY:

JAC

CHECKED BY:

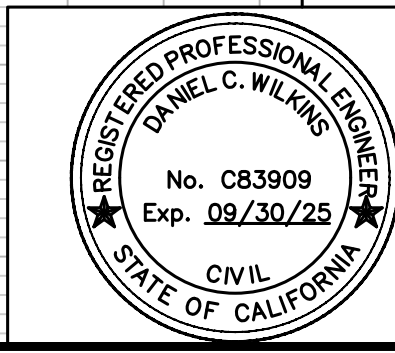
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**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**CAMINO DE HERRERA**  
**STA 10+00 TO 14+50**

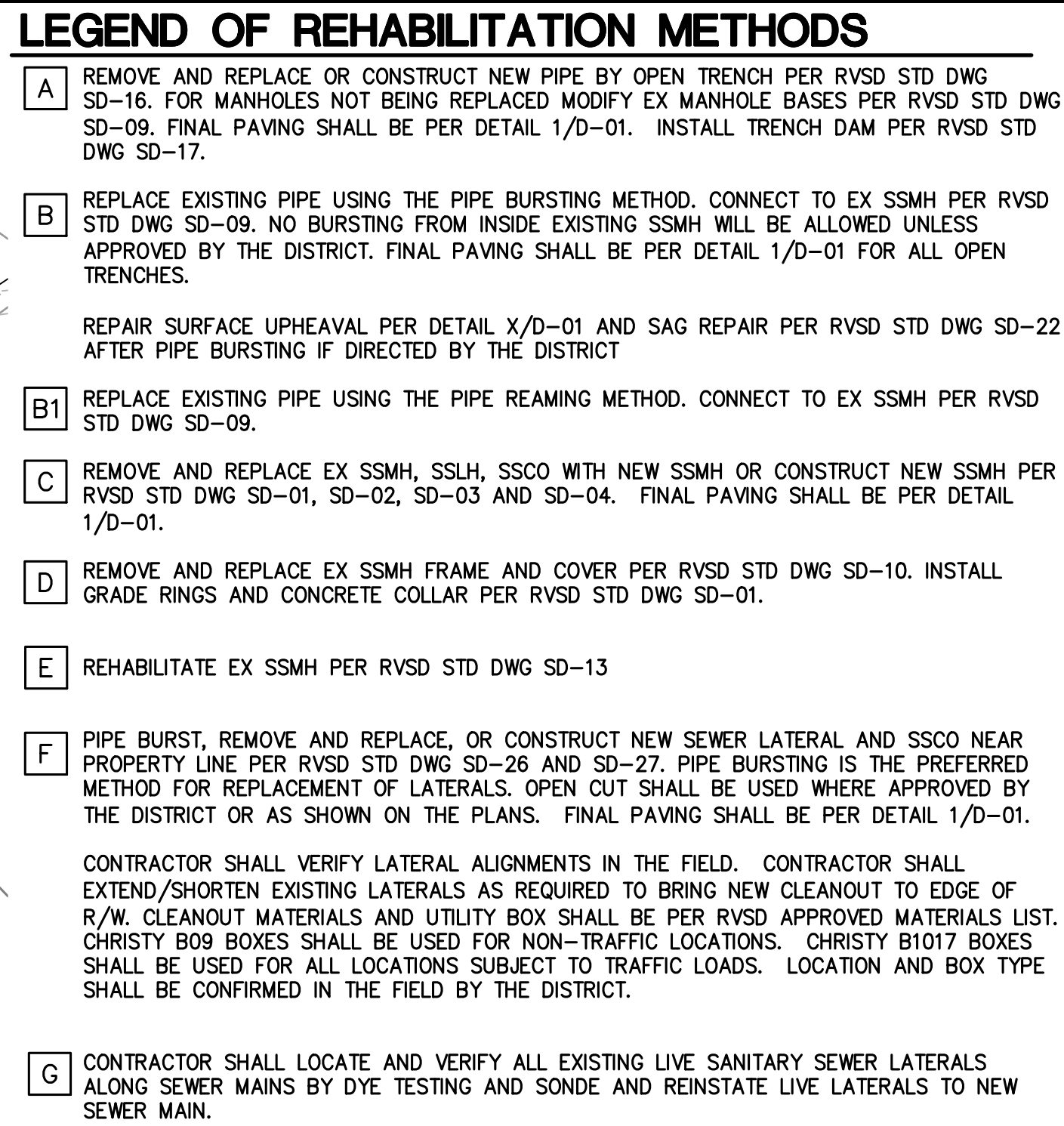
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**SEPT 05, 2024**  
PROJECT ID:  
**371282**  
SCALE:  
**1" = 20'**  
DWG. NO.  
**PP-06**  
SHT **10** OF **54**



**NOT FOR CONSTRUCTION**

**90% SUBMITTAL**

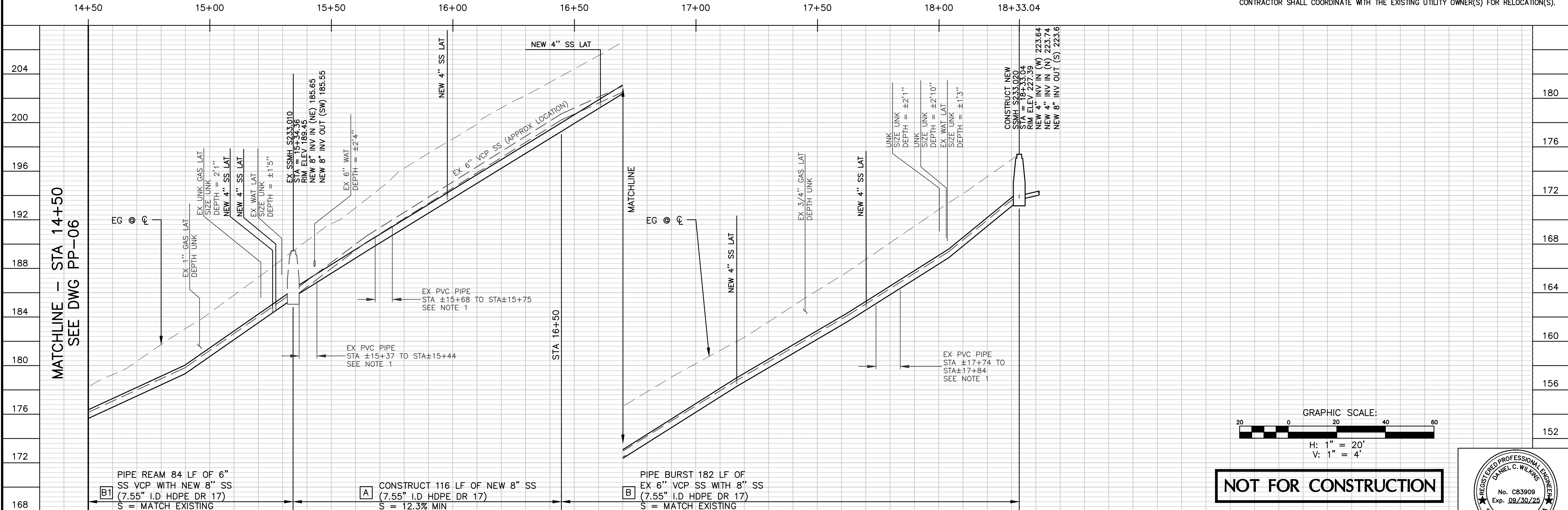


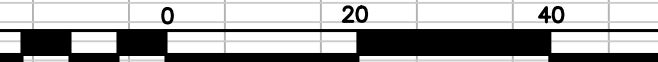


| CAMINO DE HERRERA NEW SEWER LINE AND CURVE TABLE |        |             |           |         |         |           |                                  |          |                                  |
|--|--------|-------------|-----------|---------|---------|-----------|----------------------------------|----------|----------------------------------|
| SEGMENT  | LENGTH | BEARING     | DELTA     | RADIUS  | TANGENT | START STA | START POINT                      | END STA  | END POINT                        |
| L1   | 29.90' | N41°51'48"E |           |         |         | 15+34.36  | N = 2189565.35<br>E = 5962008.06 | 15+64.26 | N = 2189587.62<br>E = 5962028.01 |
| C1   | 80.42' |             | 36°51'43" | 125.00' | 41.66'  | 15+64.26  | N = 2189587.62<br>E = 5962028.01 | 16+44.68 | N = 2189660.14<br>E = 5962059.44 |
| L2   | 6.07'  | N05°00'05"E |           |         |         | 16+44.68  | N = 2189660.14<br>E = 5962059.44 | 16+50.75 | N = 2189666.19<br>E = 5962059.97 |

**NOTES:**

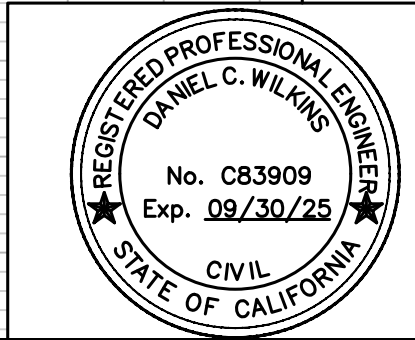
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GRAPHIC SCALE:  
  
 H: 1" = 20'  
 V: 1" = 4'

**NOT FOR CONSTRUCTION**

**90% SUBMITTAL**

[illegible]

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DRAWN BY:  
JAC

DESIGNED BY:  
JAC

CHECKED BY:  
DCW 09/04/24



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DATE:  
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371282  
SCALE:  
1" = 20'  
DWG. NO  
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SHEET 11 OF 54

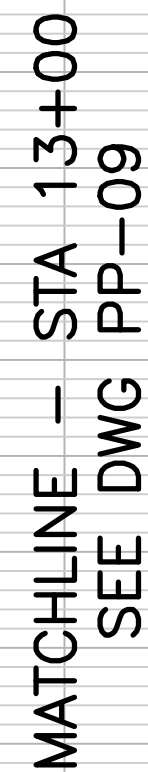
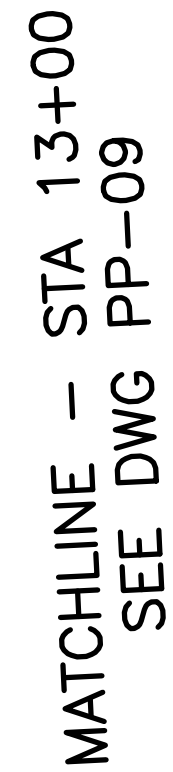


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PIPE BURST 194 LF OF  
EX 6" VCP SS WITH 8" SS  
(7.55" I.D HDPE DR 17)  
S = MATCH EXISTING

EX CI PIPE  
STA  $\pm 14+83$   
TO STA  $\pm 14+93$   
SEE NOTE 1

REHAB EX  
SSMH S945.060  
STA = 14+93.98  
RIM ELEV 146.46  
EX 6" INV IN (NE) 141.96  
EX 6" INV IN (W) 141.66  
NEW 8" INV OUT (E) 141.56

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

B REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.

REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT

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C REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.

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

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**G** 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.

1. 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
2. WHERE PIPING IS REMOVED AND REPLACED BY OPEN TRENCH, NEW PIPE INVERT ELEVATIONS SHALL MATCH EX PIPE INVERT ELEVATIONS (UPSIZED 8" SS INVERTS SHALL MATCH EXISTING 6" SS INVERTS), UNLESS OTHERWISE NOTED.
3. FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS. SEE GENERAL NOTE 23 AND 24 ON N-01 FOR HDPE SLEEVE REQUIREMENTS.
4. BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
5. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. SEE GENERAL NOTE 8 ON DWG N-01. USE CLSM BACKFILL WHERE 6" CLEARANCE CANNOT BE OBTAINED BETWEEN NEW AND EXISTING UTILITIES. IF CONFLICTS REQUIRE THE RELOCATION OF EXISTING UTILITIES, THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING UTILITY OWNER(S) FOR RELOCATION(S).

ARE THE PROPERTY AND COPYRIGHT OF THE ENGINEER AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY WRITTEN AGREEMENT WITH THE ENGINEER. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND FIELD DIMENSIONS SHALL BE VERIFIED ON THE JOBSITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER PRIOR TO THE START OF ANY WORK.

AC

AC

CW 09/04/24



**West Valley**  
**CONSTRUCTION**  
— SINCE 1958 —

*Design • Build Services*

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CONCORD, CA, 94520  
925-414-3001  
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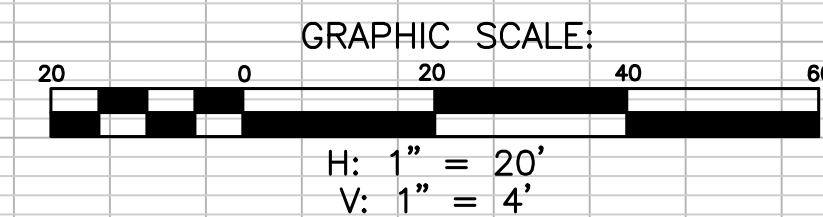
**CROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
RUTHERFORD AVE  
STA 13+00 TO END**

SEPT 05, 2024

371282

$$1'' = 20'$$
WG. NO  
DD-10

PP-10



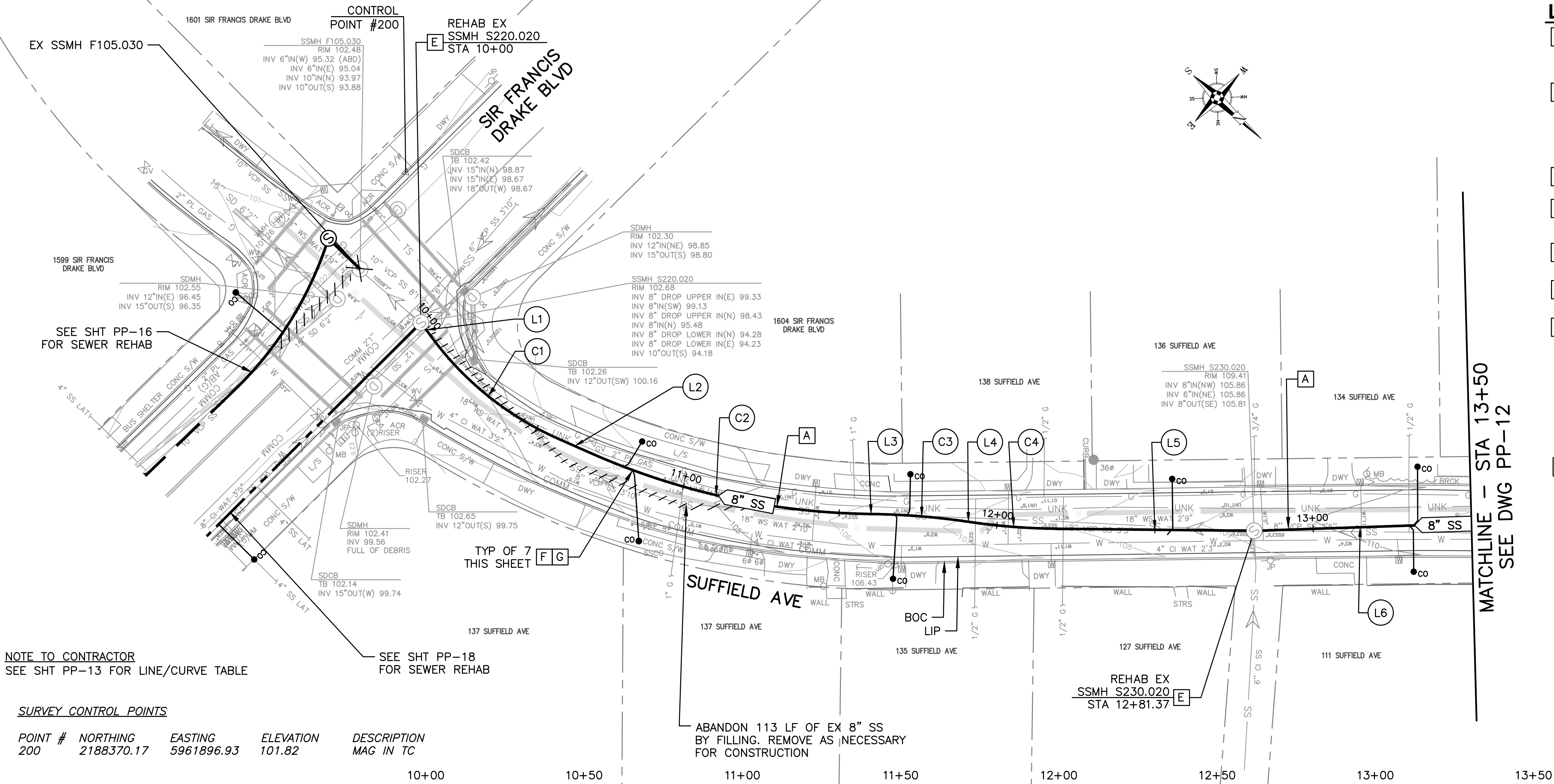
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## 90% SUBMITTAL





\\recon\Engineering Data\WIL\EXTERNAL PROJECTS\1\_PROJECTS\371282 RVSD FYZA-25 CSP\8.0 DESGN\B Design\15-17 PP-11 To PP-13 - SA\_SUFFIELD.dwg Save Date: 9/5/2024 2:08 PM Plt Date: 9/5/2024 2:08 PM JosephC

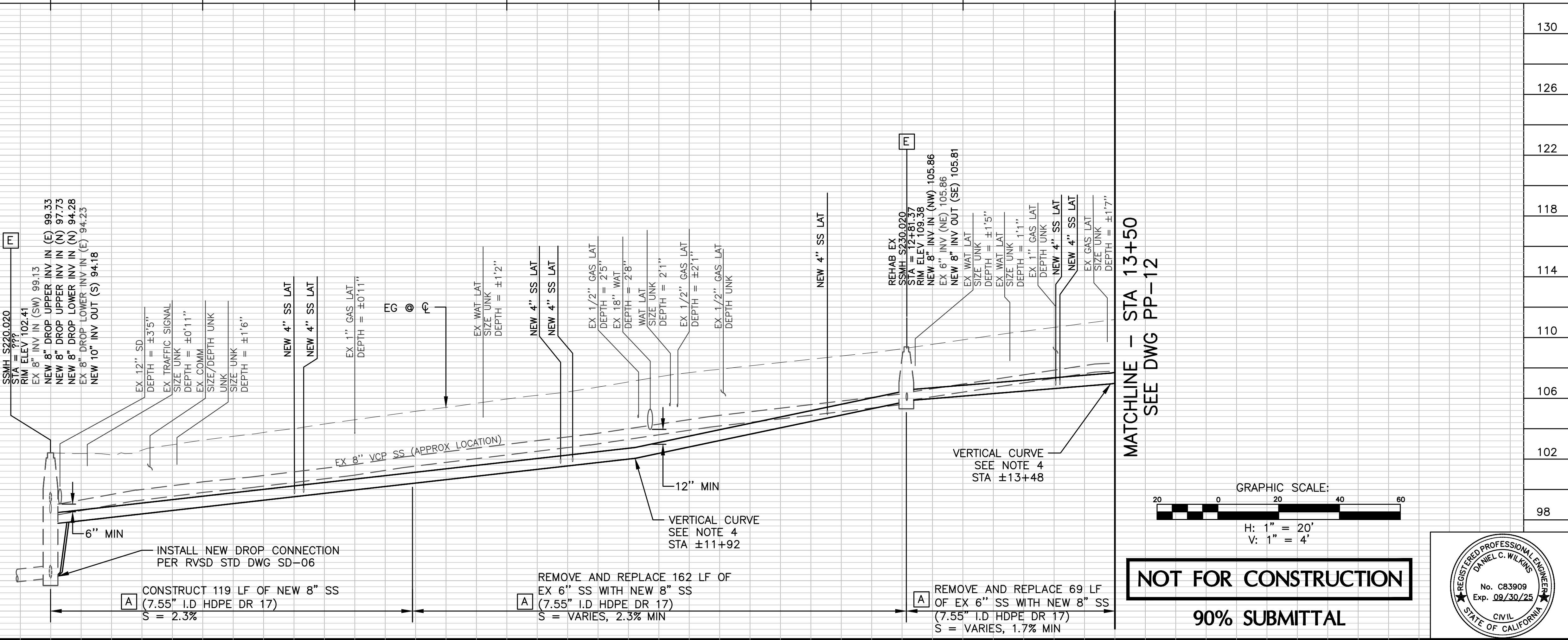


NOTE TO CONTRACTOR  
SEE SHT PP-13 FOR LINE/CURVE TABLE

SURVEY CONTROL POINTS

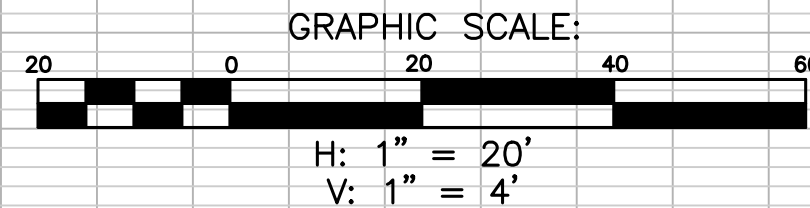
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|---------|------------|------------|-----------|-------------|
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10+00 10+50 11+00 11+50 12+00 12+50 13+00 13+50

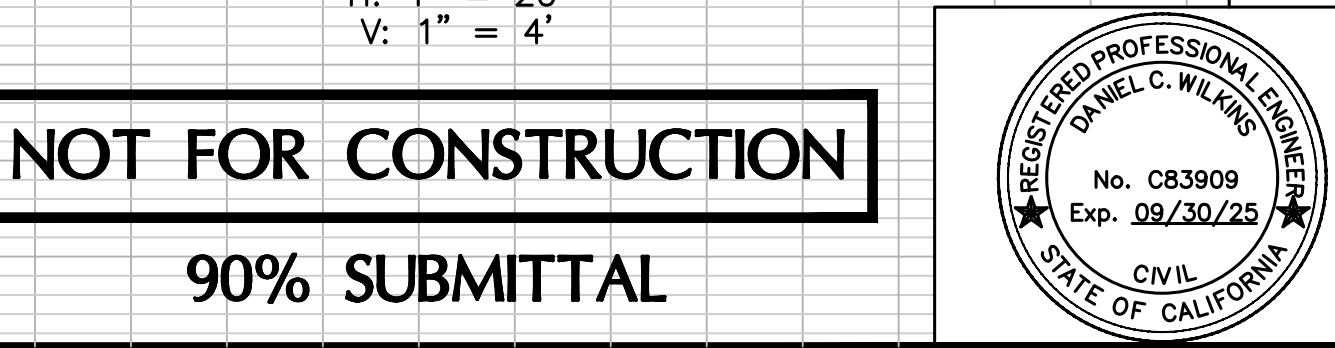


MATCHLINE - STA 13+50  
SEE DWG PP-12

NOT FOR CONSTRUCTION  
90% SUBMITTAL



DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO. PP-11  
SHT 15 OF 54



- NOTES:
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| NO. | DATE | BY | DESCRIPTION |
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DRAWN BY: JAC  
DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24



west valley  
CONSTRUCTION  
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Design - Build Services  
1001 GALAXY WAY, SUITE 400  
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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
SUFFIELD AVE  
STA 10+00 TO STA 13+50

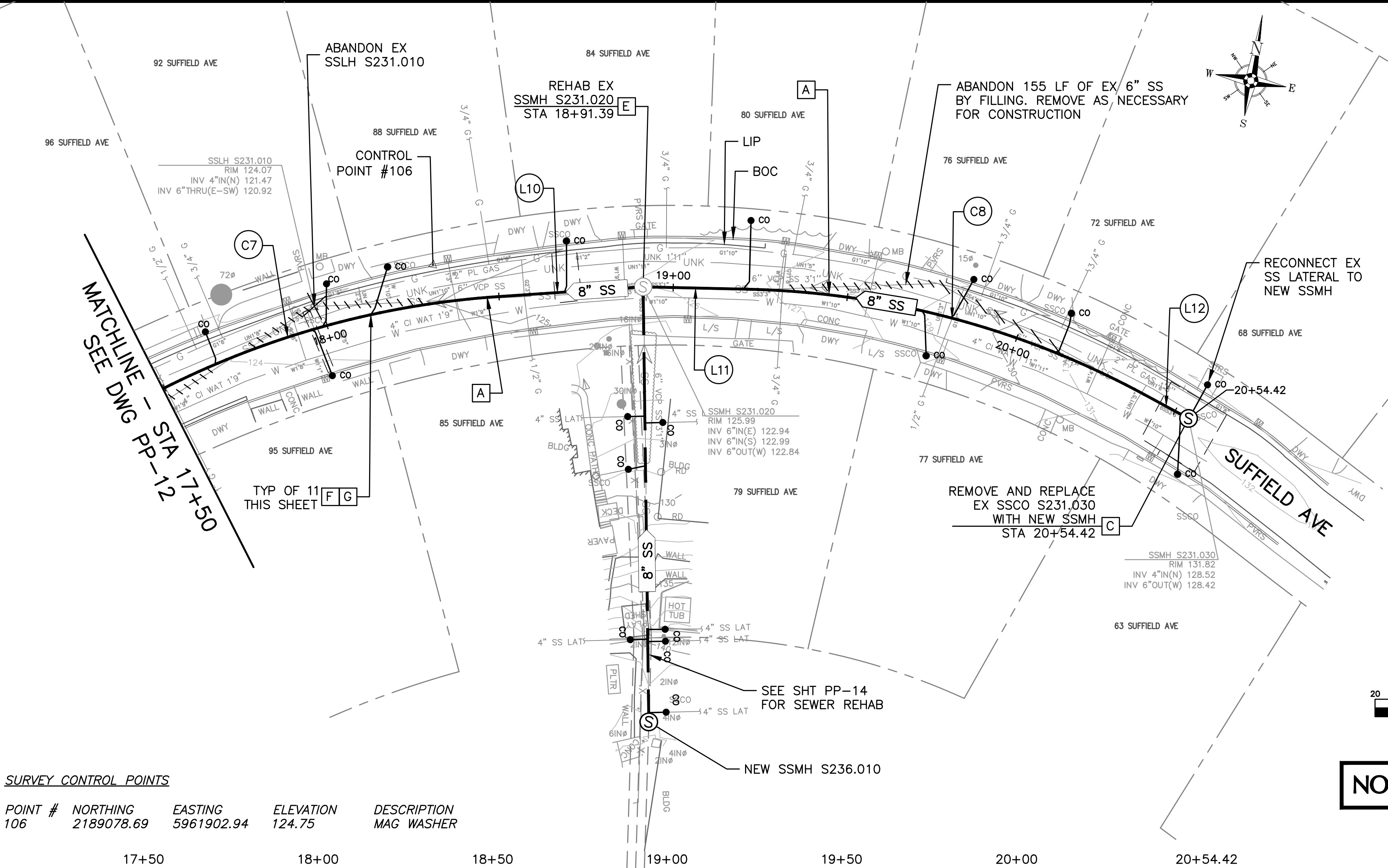
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PROJECT ID: 371282  
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DWG. NO. PP-11  
SHT 15 OF 54







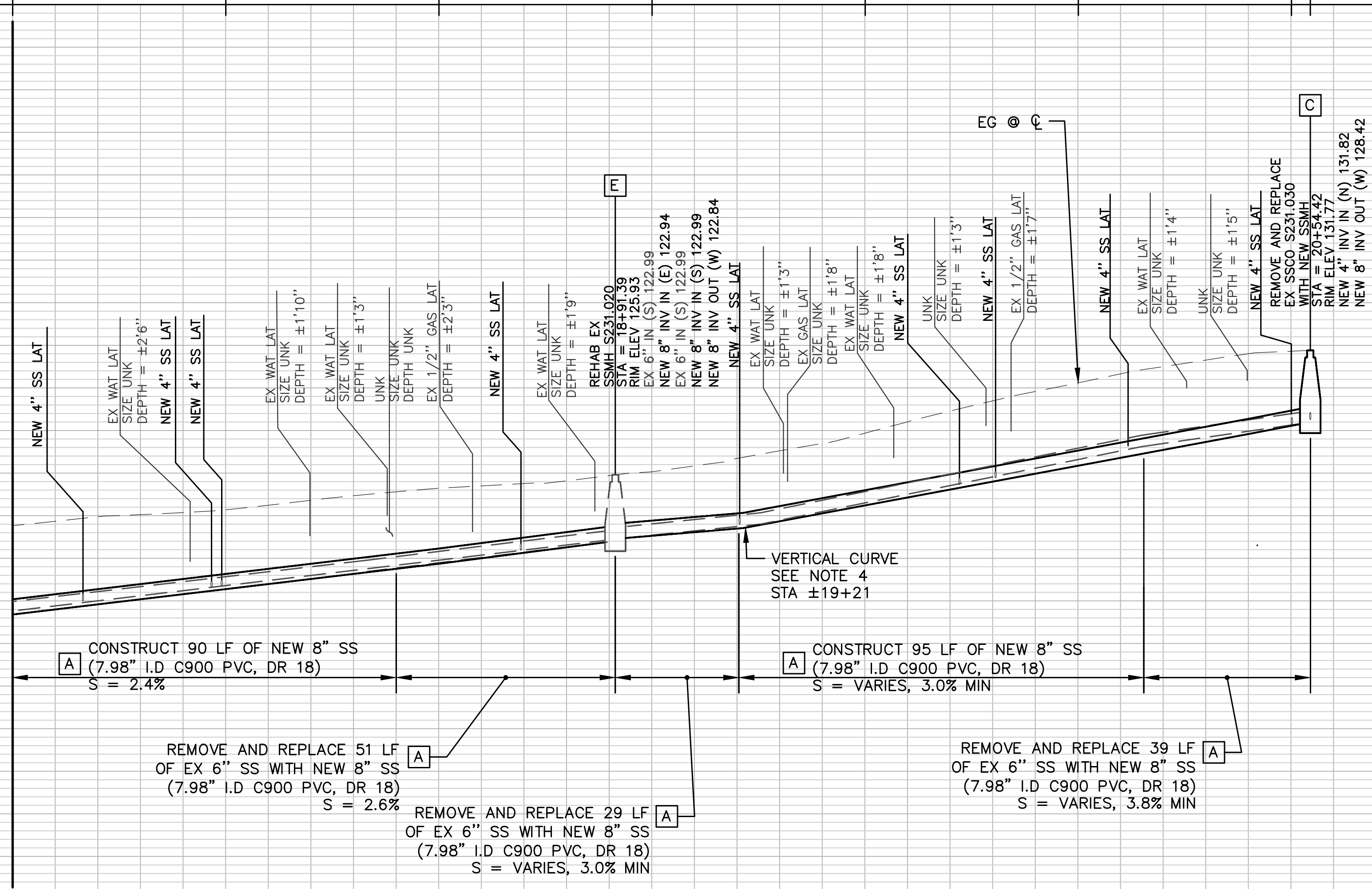
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SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
|---------|------------|------------|-----------|-------------|
| 106     | 2189078.69 | 5961902.94 | 124.75    | MAG WASHER  |

MATCHLINE - STA 17+50  
SEE DWG PP-12



SUFFIELD AVE NEW SEWER LINE AND CURVE TABLE

| SEGMENT | LENGTH  | BEARING     | DELTA     | RADIUS  | TANGENT | START STA | START POINT                      | END STA  | END POINT                        |
|---------|---------|-------------|-----------|---------|---------|-----------|----------------------------------|----------|----------------------------------|
| L1      | 5.73'   | N10°36'17"E |           |         |         | 10+00.00  | N = 2188406.09<br>E = 5961928.40 | 10+05.73 | N = 2188411.72<br>E = 5961929.45 |
| C1      | 51.93'  |             | 29°45'22" | 100.00' | 26.57'  | 10+05.73  | N = 2188411.72<br>E = 5961929.45 | 10+57.67 | N = 2188462.93<br>E = 5961925.62 |
| L2      | 11.25'  | N19°09'05"W |           |         |         | 10+57.67  | N = 2188462.93<br>E = 5961925.62 | 10+68.91 | N = 2188473.56<br>E = 5961921.93 |
| C2      | 88.90'  |             | 22°38'21" | 225.00' | 45.04'  | 10+68.91  | N = 2188473.56<br>E = 5961921.93 | 11+57.82 | N = 2188549.69<br>E = 5961877.14 |
| L3      | 4.58'   | N41°47'27"W |           |         |         | 11+57.82  | N = 2188549.69<br>E = 5961877.14 | 11+62.39 | N = 2188553.10<br>E = 5961874.09 |
| C3      | 27.34'  |             | 6°57'40"  | 225.00' | 13.68'  | 11+62.39  | N = 2188553.10<br>E = 5961874.09 | 11+89.73 | N = 2188574.53<br>E = 5961857.16 |
| L4      | 2.45'   | N34°49'47"W |           |         |         | 11+89.73  | N = 2188574.53<br>E = 5961857.16 | 11+92.18 | N = 2188576.55<br>E = 5961855.76 |
| C4      | 26.40'  |             | 7°33'46"  | 200.00' | 13.22'  | 11+92.18  | N = 2188576.55<br>E = 5961855.76 | 12+18.58 | N = 2188597.16<br>E = 5961839.29 |
| L5      | 62.78'  | N42°23'33"W |           |         |         | 12+18.58  | N = 2188597.16<br>E = 5961796.96 | 12+81.37 | N = 2188643.53<br>E = 5961796.96 |
| L6      | 66.99'  | N44°56'05"W |           |         |         | 12+81.37  | N = 2188643.53<br>E = 5961796.96 | 13+48.36 | N = 2188690.96<br>E = 5961749.65 |
| C5      | 152.93' |             | 50°04'14" | 175.00' | 81.74'  | 13+48.36  | N = 2188690.96<br>E = 5961749.65 | 15+01.29 | N = 2188830.22<br>E = 5961699.23 |
| L7      | 24.47'  | N05°08'09"E |           |         |         | 15+01.29  | N = 2188830.22<br>E = 5961699.23 | 15+25.77 | N = 2188854.60<br>E = 5961701.43 |
| L8      | 29.58'  | N19°51'08"E |           |         |         | 15+25.77  | N = 2188854.60<br>E = 5961701.43 | 15+55.34 | N = 2188882.42<br>E = 5961711.47 |
| C6      | 122.27' |             | 28°01'23" | 250.00' | 62.39'  | 15+55.34  | N = 2188882.42<br>E = 5961711.47 | 16+77.62 | N = 2188982.94<br>E = 5961778.93 |
| L9      | 48.91'  | N47°52'31"E |           |         |         | 16+77.62  | N = 2188982.94<br>E = 5961778.93 | 17+26.53 | N = 2189015.75<br>E = 5961815.21 |
| C7      | 123.40' |             | 28°16'55" | 250.00' | 62.99'  | 17+26.53  | N = 2189015.75<br>E = 5961815.21 | 18+49.93 | N = 2189073.07<br>E = 5961923.08 |
| L10     | 41.45'  | N76°09'26"E |           |         |         | 18+49.93  | N = 2189073.07<br>E = 5961923.08 | 18+91.39 | N = 2189082.99<br>E = 5961993.32 |
| L11     | 30.05'  | N81°17'54"E |           |         |         | 18+91.39  | N = 2189082.99<br>E = 5961993.32 | 19+21.44 | N = 2189087.53<br>E = 5961993.03 |
| C8      | 118.34' |             | 27°07'21" | 250.00' | 60.30'  | 19+21.44  | N = 2189087.53<br>E = 5961993.03 | 20+39.78 | N = 2189077.60<br>E = 5962109.85 |
| L12     | 14.64'  | S71°34'45"E |           |         |         | 20+39.78  | N = 2189077.60<br>E = 5962109.85 | 20+54.42 | N = 2189072.97<br>E = 5962123.74 |

**LEGEND OF REHABILITATION METHODS**

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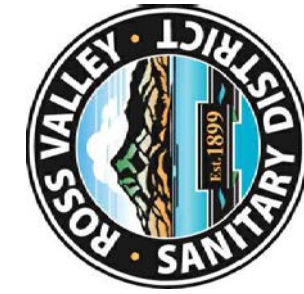
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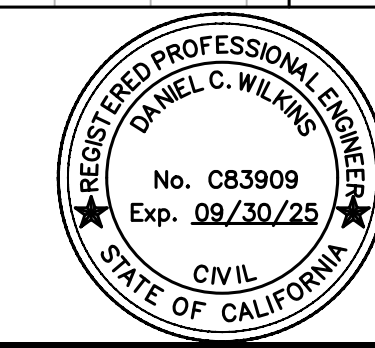
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DESIGNED BY: JAC  
CHECKED BY: JAC  
DCW 09/04/24



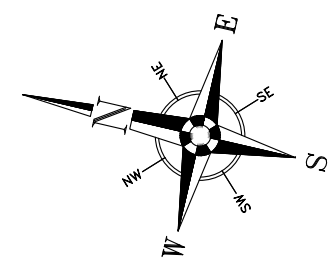
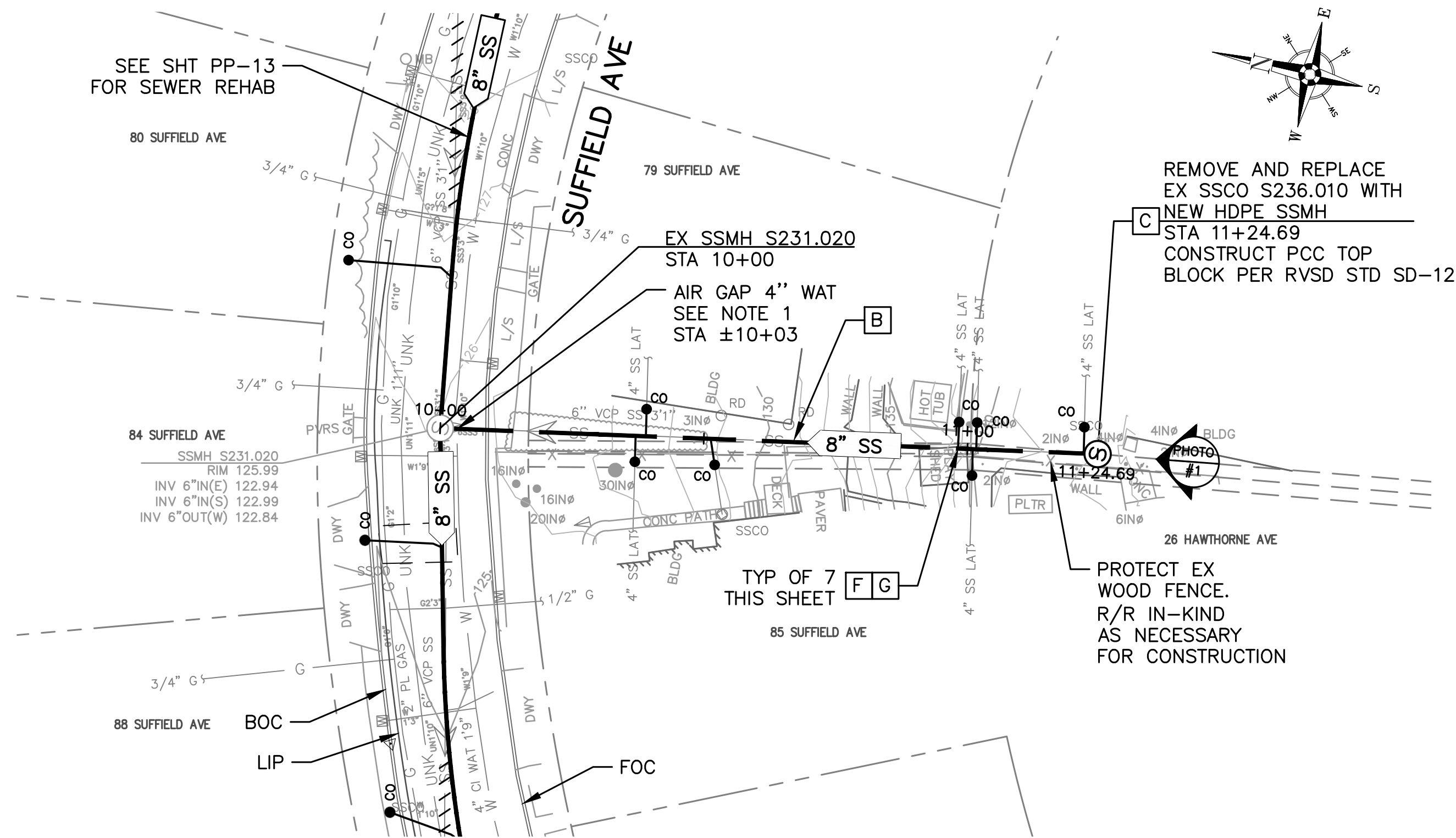
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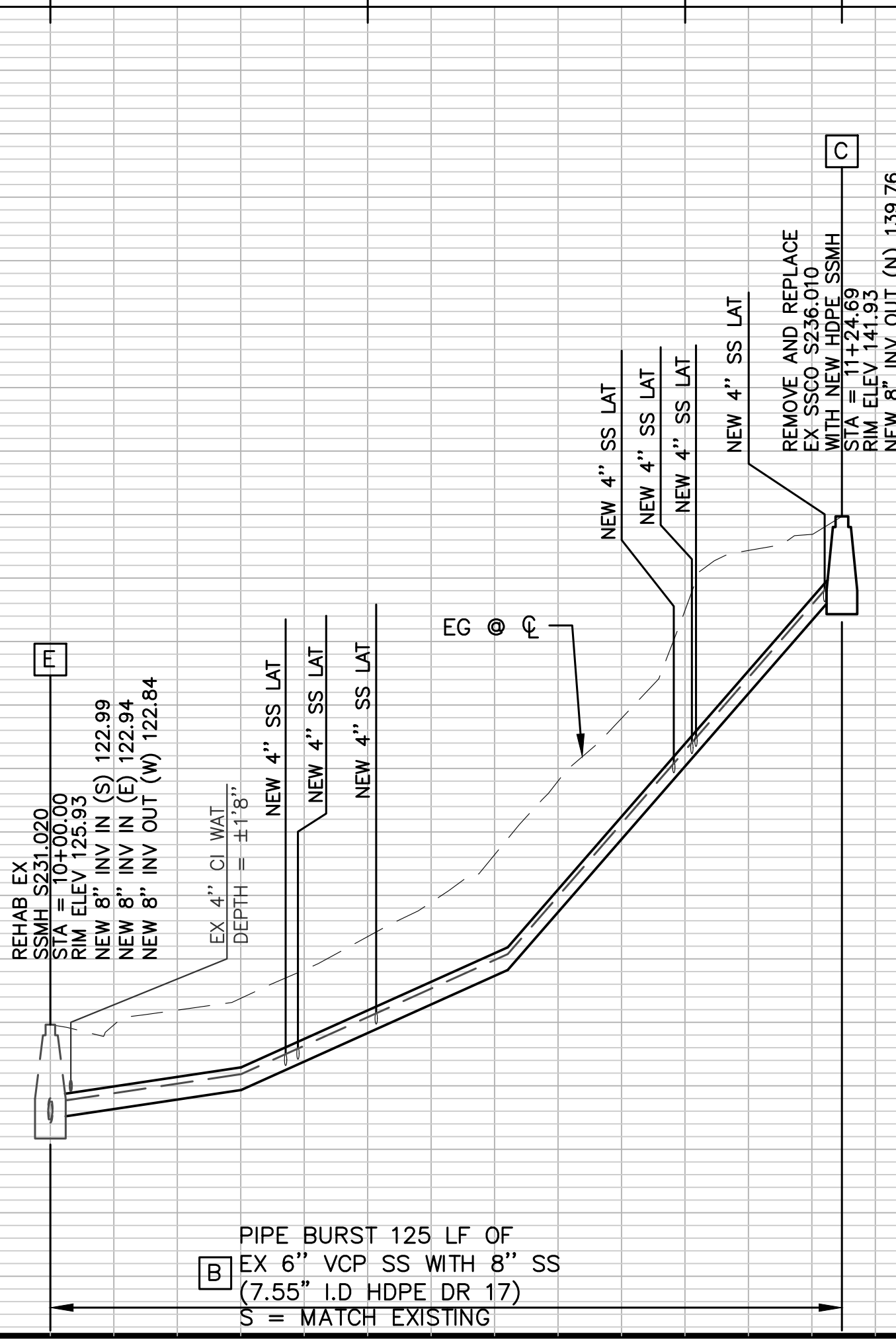
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PROJECT ID: 371282  
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DWG. NO: PP-13  
SHT 17 OF 54







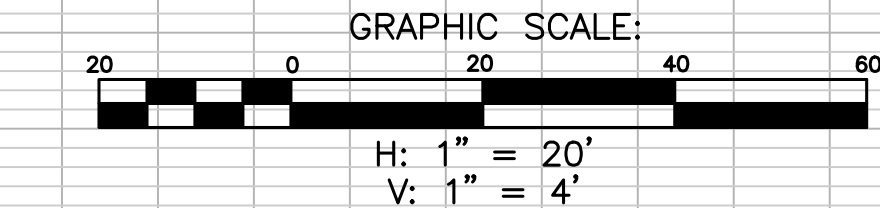
10+00 10+50 11+00 11+24.69



EX SS  
APPROX LOCATION



PHOTO EX SEWER  
1 NOT TO SCALE



NOT FOR CONSTRUCTION  
90% SUBMITTAL



## LEGEND OF REHABILITATION METHODS

- A** REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- B** REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- B1** REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- C** REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- D** REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
- E** REHABILITATE EX SSMH PER RVSD STD DWG SD-13
- F** PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY 809 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CHRISTY 51017 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT.
- G** 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.

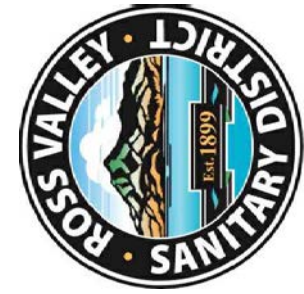
### NOTES:

- 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
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- FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS. SEE GENERAL NOTE 23 AND 24 ON N-01 FOR HDPE SLEEVE REQUIREMENTS.
- BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
- 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).

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DRAWN BY: JAC  
DESIGNED BY: JAC  
CHECKED BY: JAC  
DCW 09/04/24



west valley  
CONSTRUCTION  
SINCE 1958  
Design - Build Services  
1001 GALAXY WAY, SUITE 400  
CONCORD, CA. 94520  
925-414-3000  
www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
79 SUFFIELD AVE EASEMENT  
STA 10+00 TO END

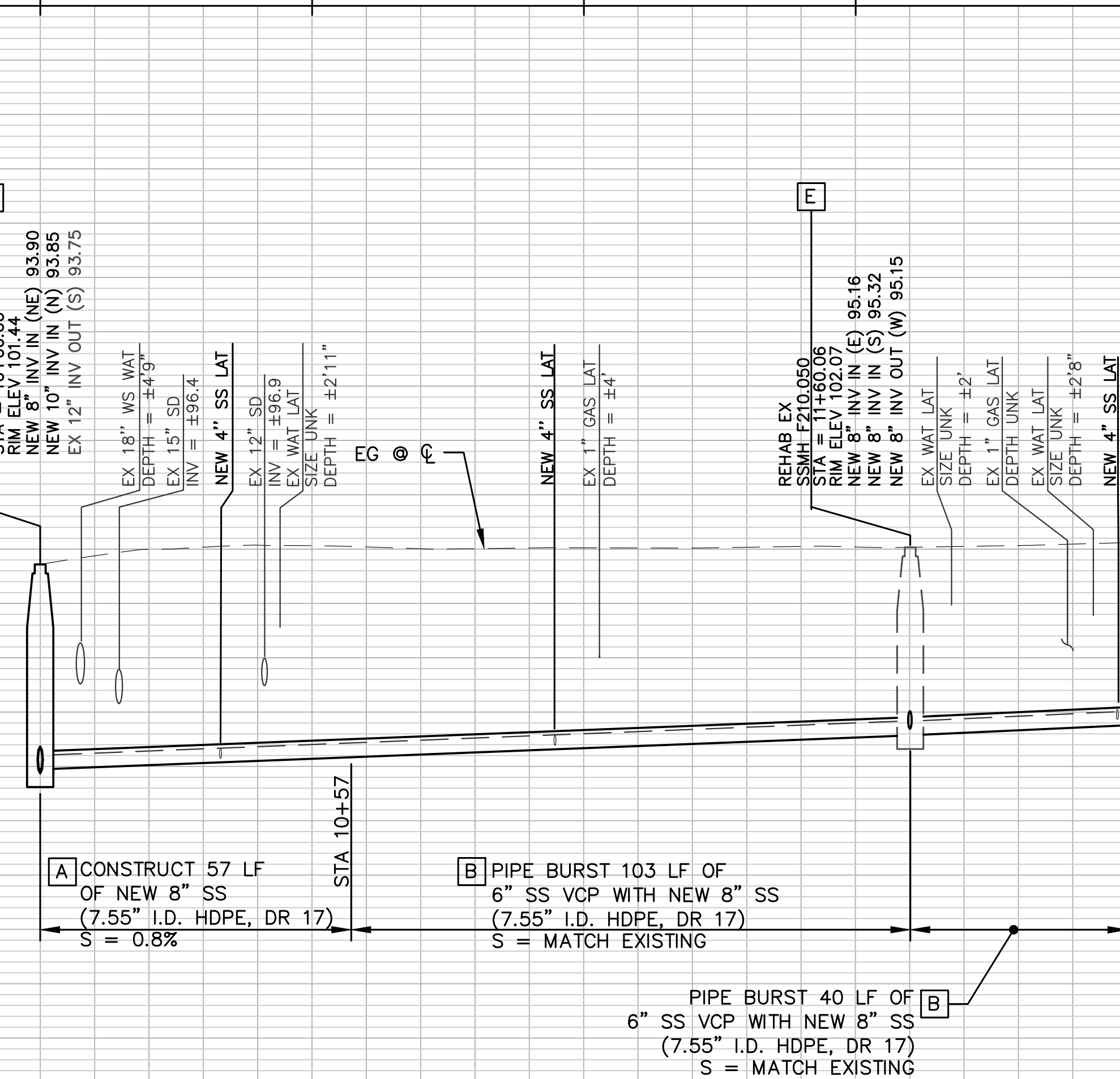
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PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-14  
SHT 18 OF 54



\\recon\Engineering Data\VL\EXTERNAL PROJECTS\171282 RS0 FYZ-25 CSP\8.0 DESIGN\9-20 PP-15 To PP-16 - SA STD SOUTH.dwg Save Date: 9/5/2024 3:21 PM Plot Date: 9/5/2024 3:21 PM JosephC

| SIR FRANCIS DRAKE BLVD NEW SEWER LINE AND CURVE TABLE |        |         |           |         |         |           |                                  |          |                                  |
|---|--------|---------|-----------|---------|---------|-----------|----------------------------------|----------|----------------------------------|
| SEGMENT   | LENGTH | BEARING | DELTA     | RADIUS  | TANGENT | START STA | START POINT                      | END STA  | END POINT                        |
| C1  | 57.22' |         | 28°30'34" | 115.00' | 29.22'  | 10+00.00  | N = 2188366.55<br>E = 5961928.83 | 10+57.22 | N = 2188377.53<br>E = 5961984.39 |

10+00                      10+50                      11+00                      11+50                      12+00

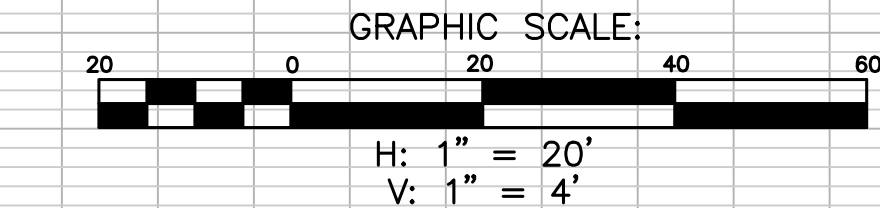


MATCHLINE - STA 12+00  
SEE DWG PP-16

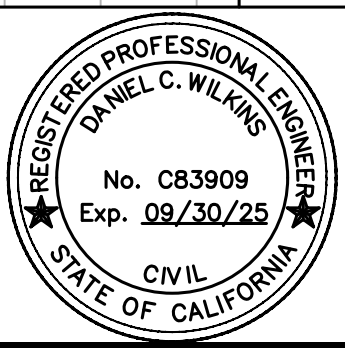
MATCHLINE - STA 12+00  
SEE DWG PP-16

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
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| 200     | 2188370.17 | 5961896.93 | 101.82    | MAG IN TC   |

SURVEY CONTROL POINTS



**NOT FOR CONSTRUCTION**  
**90% SUBMITTAL**



**LEGEND OF REHABILITATION METHODS**

- A** REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- B** REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- B1** REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- C** REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
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- E** REHABILITATE EX SSMH PER RVSD STD DWG SD-13
- F** PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY BOB 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.
- G** 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.

NOTES:

- 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
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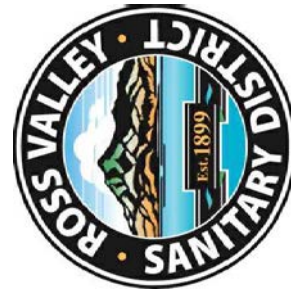
**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**SIR FRANCIS DRAKE BLVD**  
**STA 10+00 TO STA 12+00**

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-15  
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DRAWN BY: MPV  
DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24

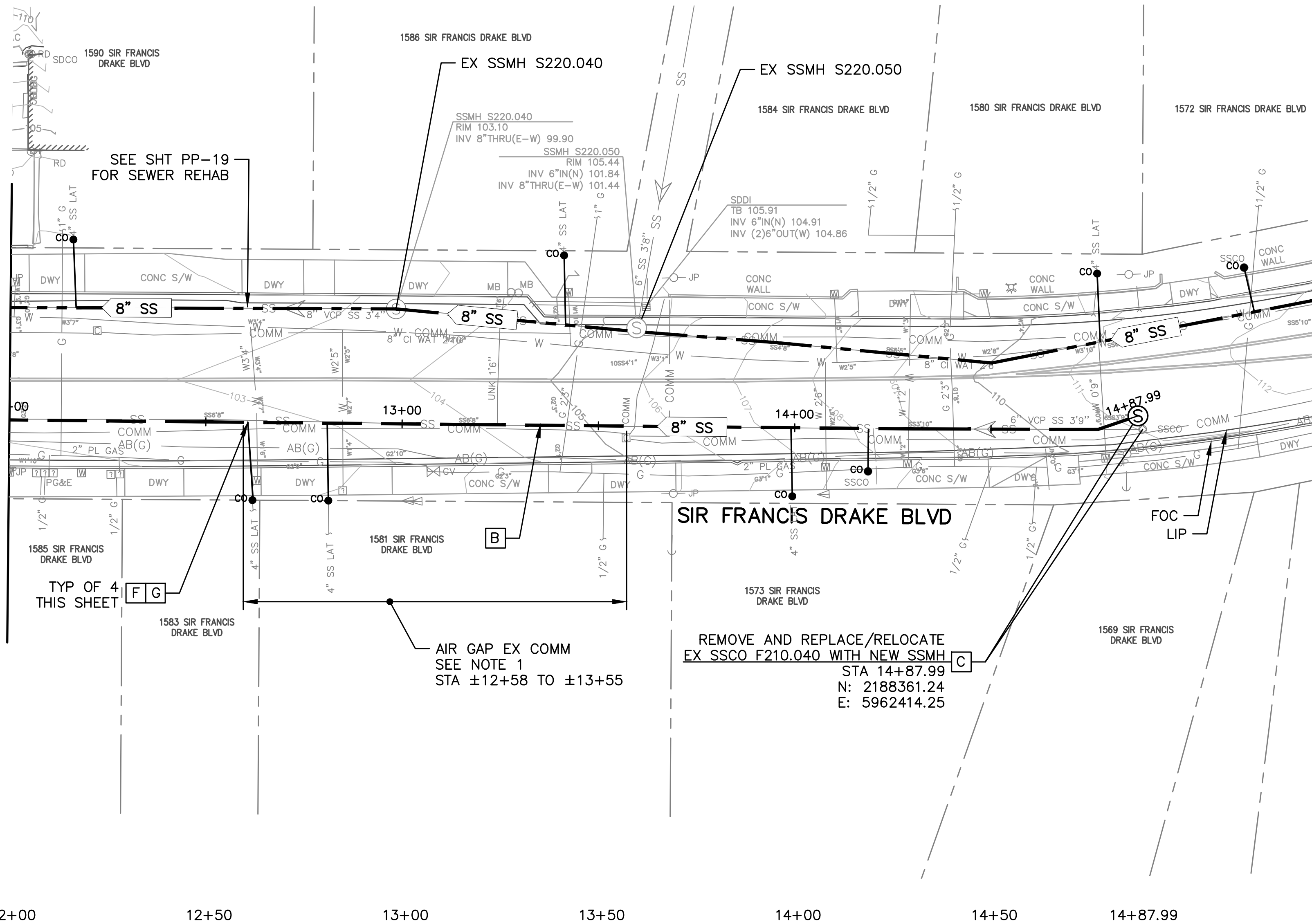




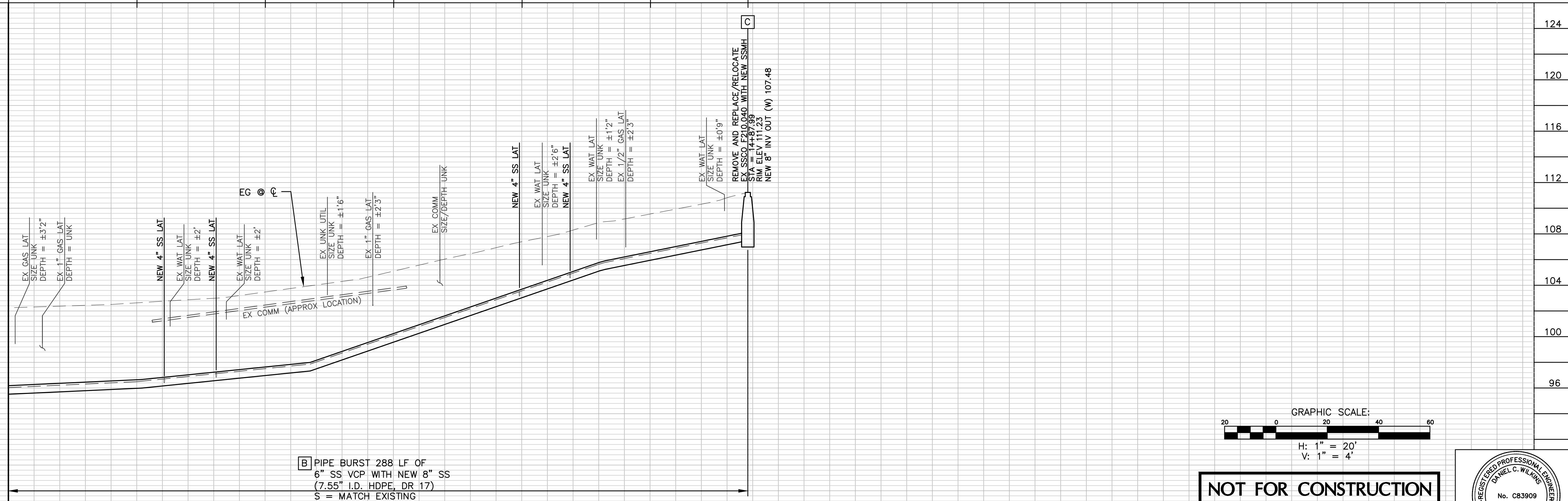
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MATCHLINE - STA 12+00  
SEE DWG PP-15

MATCHLINE - STA 12+00  
SEE DWG PP-15



12+00 12+50 13+00 13+50 14+00 14+50 14+87.99



[B] PIPE BURST 288 LF OF  
6" SS VCP WITH NEW 8" SS  
(7.55" I.D., HDPE, DR 17)  
S = MATCH EXISTING

## LEGEND OF REHABILITATION METHODS

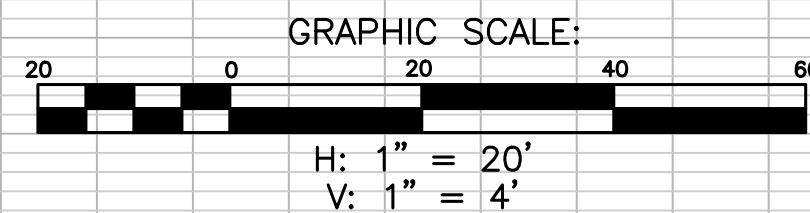
- [A] REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- [B] REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
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- [B1] REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
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- [G] 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.

### NOTES:

- 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
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NOT FOR CONSTRUCTION

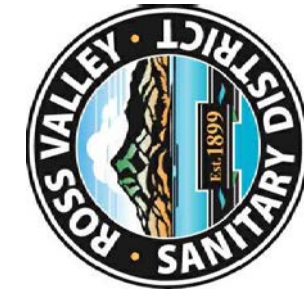
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DRAWN BY:  
MPV  
DESIGNED BY:  
JAC  
CHECKED BY:  
DCW 09/04/24

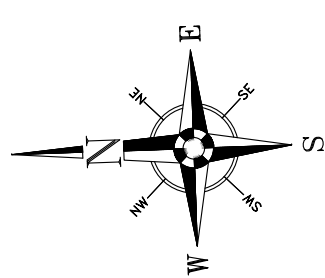


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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
SIR FRANCIS DRAKE BLVD SOUTH  
STA 12+00 TO END

DATE:  
SEPT 05, 2024  
PROJECT ID:  
371282  
SCALE:  
1" = 20'  
DWG. NO  
PP-16  
SHT 20 OF 54



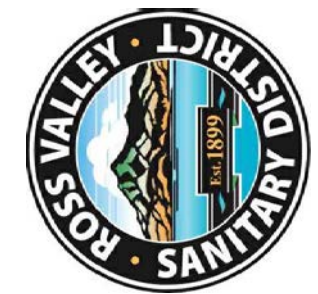


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DRAWN BY:  
MPV  
DESIGNED BY:  
JAC  
CHECKED BY:  
DCW 09/04/24



**west valley**  
**CONSTRUCTION**  
— SINCE 1958

*Design - Build Services*

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**ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
1589 SIR FRANCIS DRAKE BLVD  
EASEMENT  
STA 10+00 TO END**

DATE:  
SEPT 05, 2024

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PROJECT ID:  
371282

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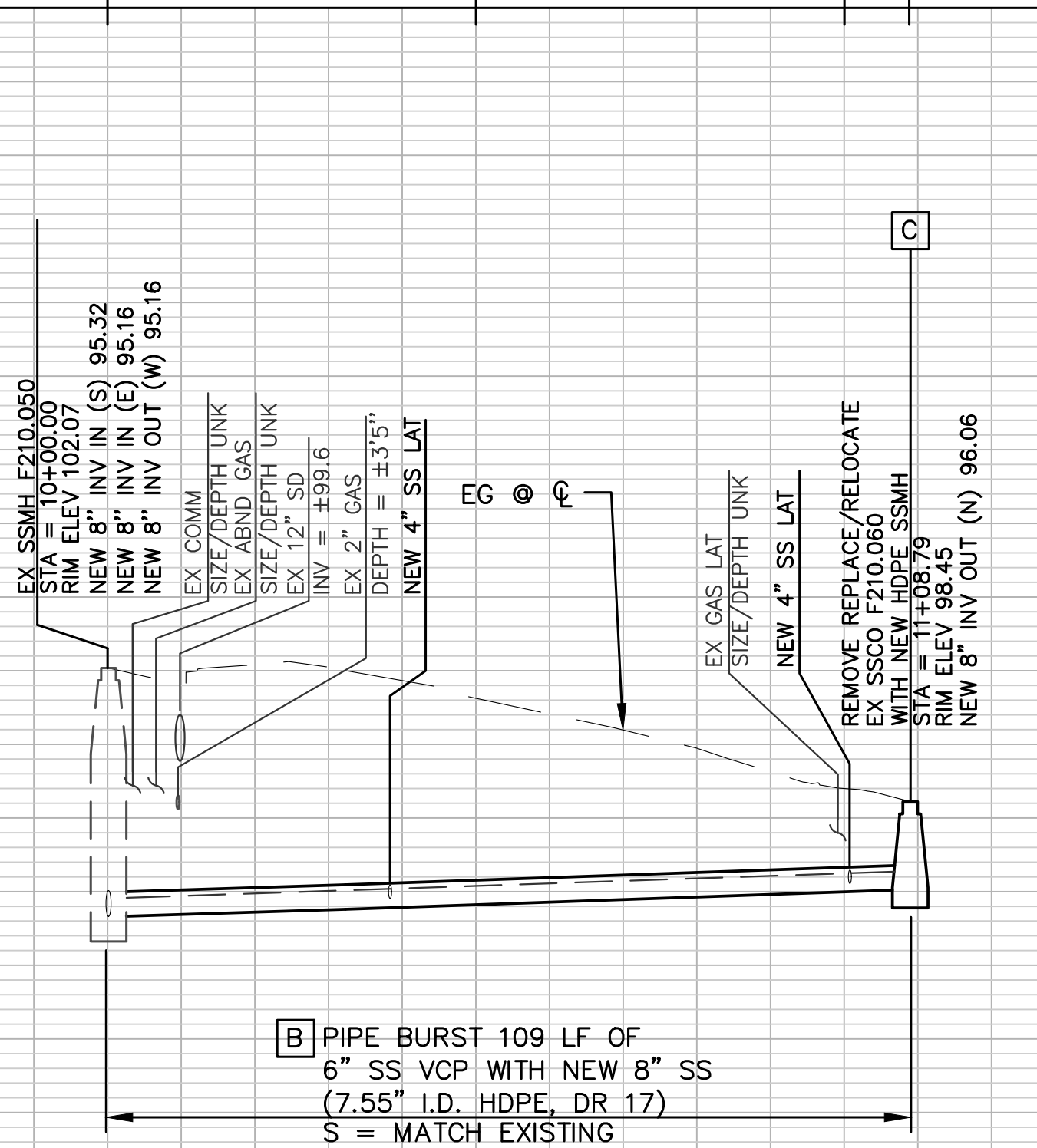
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1" = 20'

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DWG. NO  
PP-17

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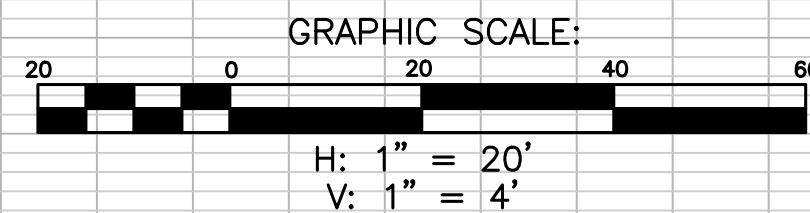
SHT 21 OF 54



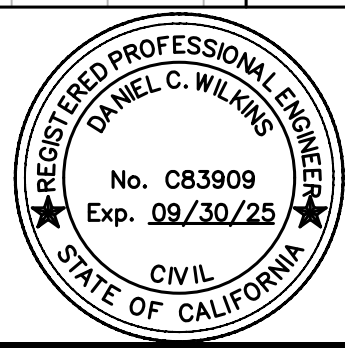
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**1** NOT TO SCALE



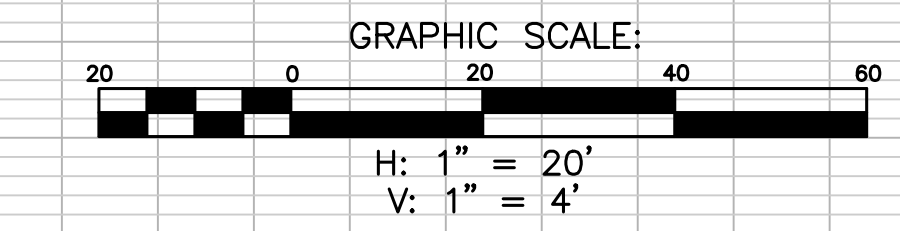
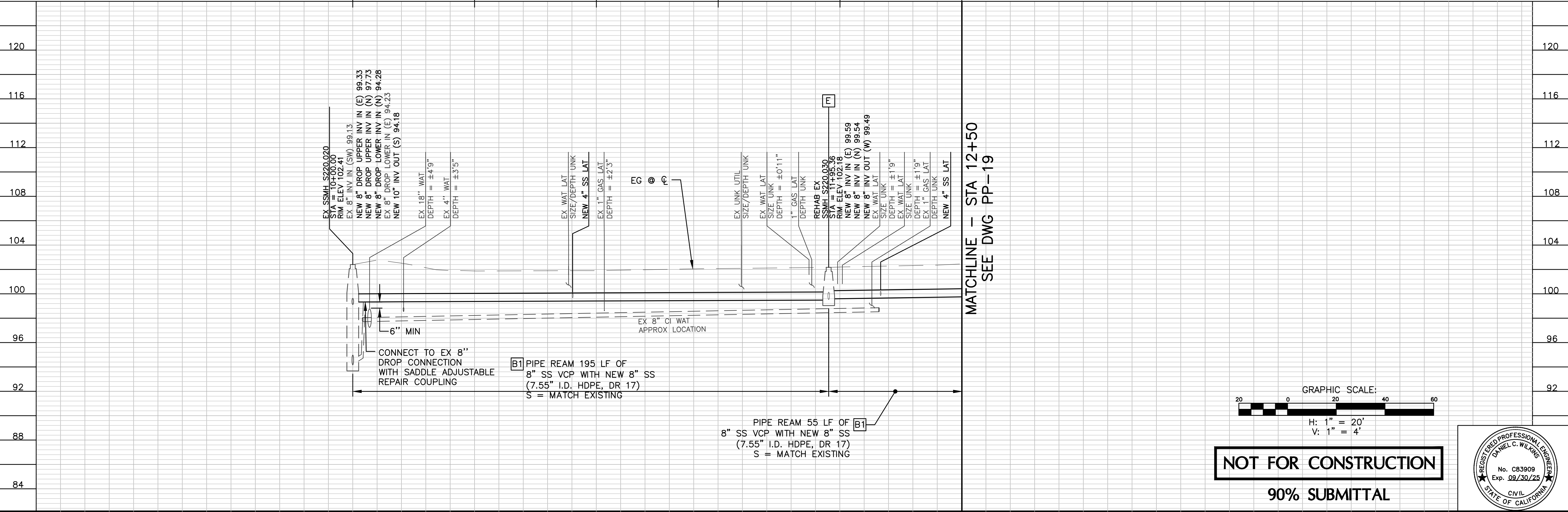
## 90% SUBMITTAL





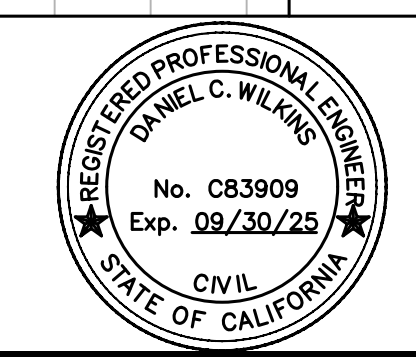
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| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
|---------|------------|------------|-----------|-------------|
| 200     | 2188370.17 | 5961896.93 | 101.82    | MAG IN TC   |



**NOT FOR CONSTRUCTION**

**90% SUBMITTAL**



- NOTES:**
- 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
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  - BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
  - 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).

- LEGEND OF REHABILITATION METHODS**
- A** REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
  - B** REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
  - B1** REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
  - C** REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
  - C** REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
  - D** REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
  - E** REHABILITATE EX SSMH PER RVSD STD DWG SD-13
  - F** PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
  - G** 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.
- CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY 809 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.

| NO. | DATE | BY | DESCRIPTION |
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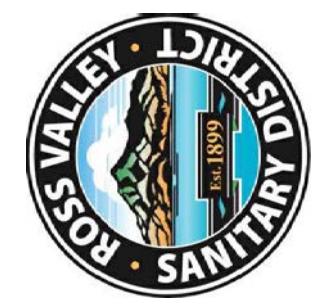
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**DRAWN BY:**  
MPV

**DESIGNED BY:**  
JAC

**CHECKED BY:**  
DCW

**DATE:** 09/04/24



**west valley**  
CONSTRUCTION  
SINCE 1958

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

**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**SIR FRANCIS DRAKE BLVD NORTH**  
**STA 10+00 TO STA 12+50**

**DATE:**  
SEPT 05, 2024

**PROJECT ID:**  
371282

**SCALE:**  
1" = 20'

**DWG. NO**  
PP-18

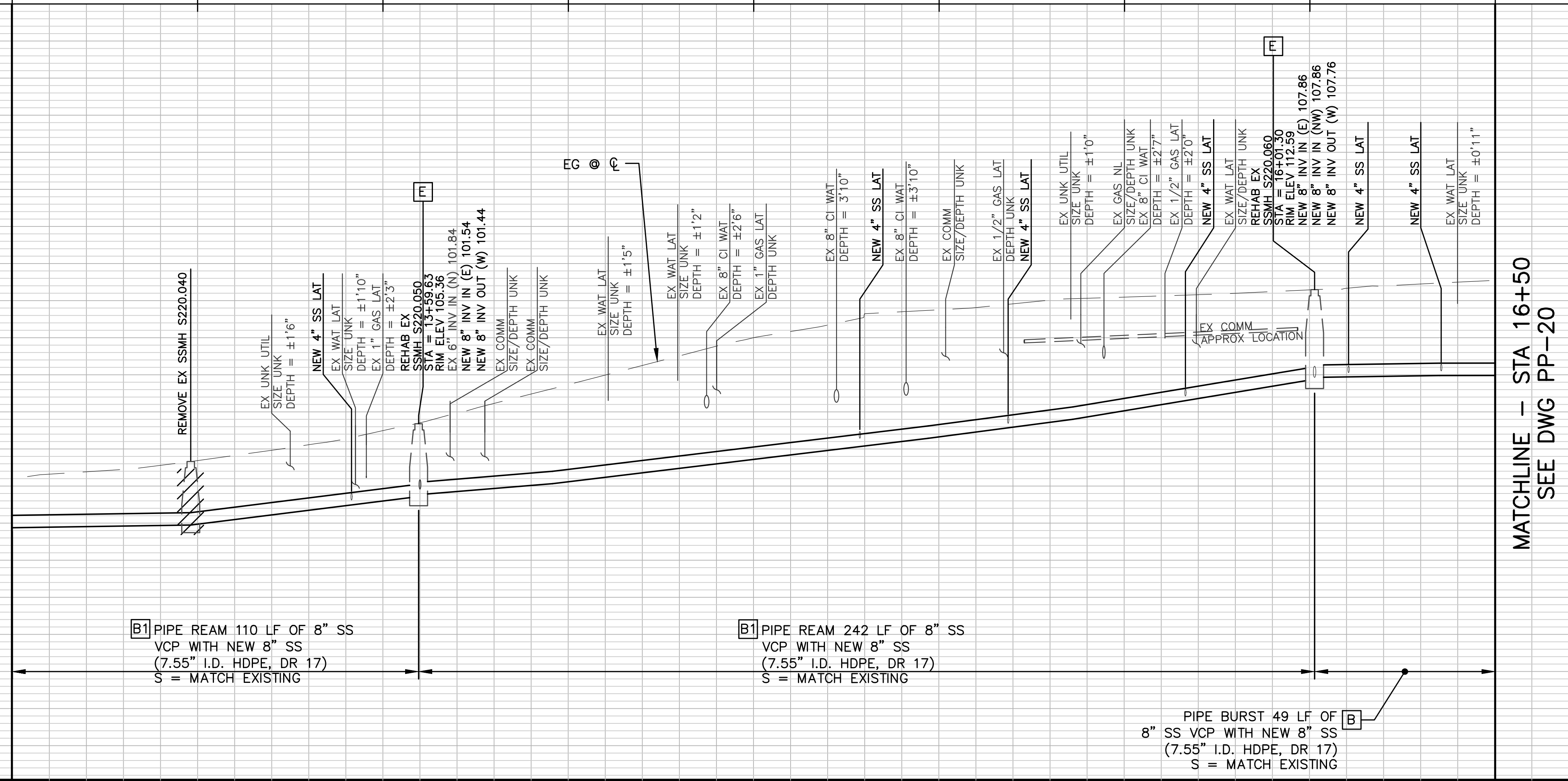
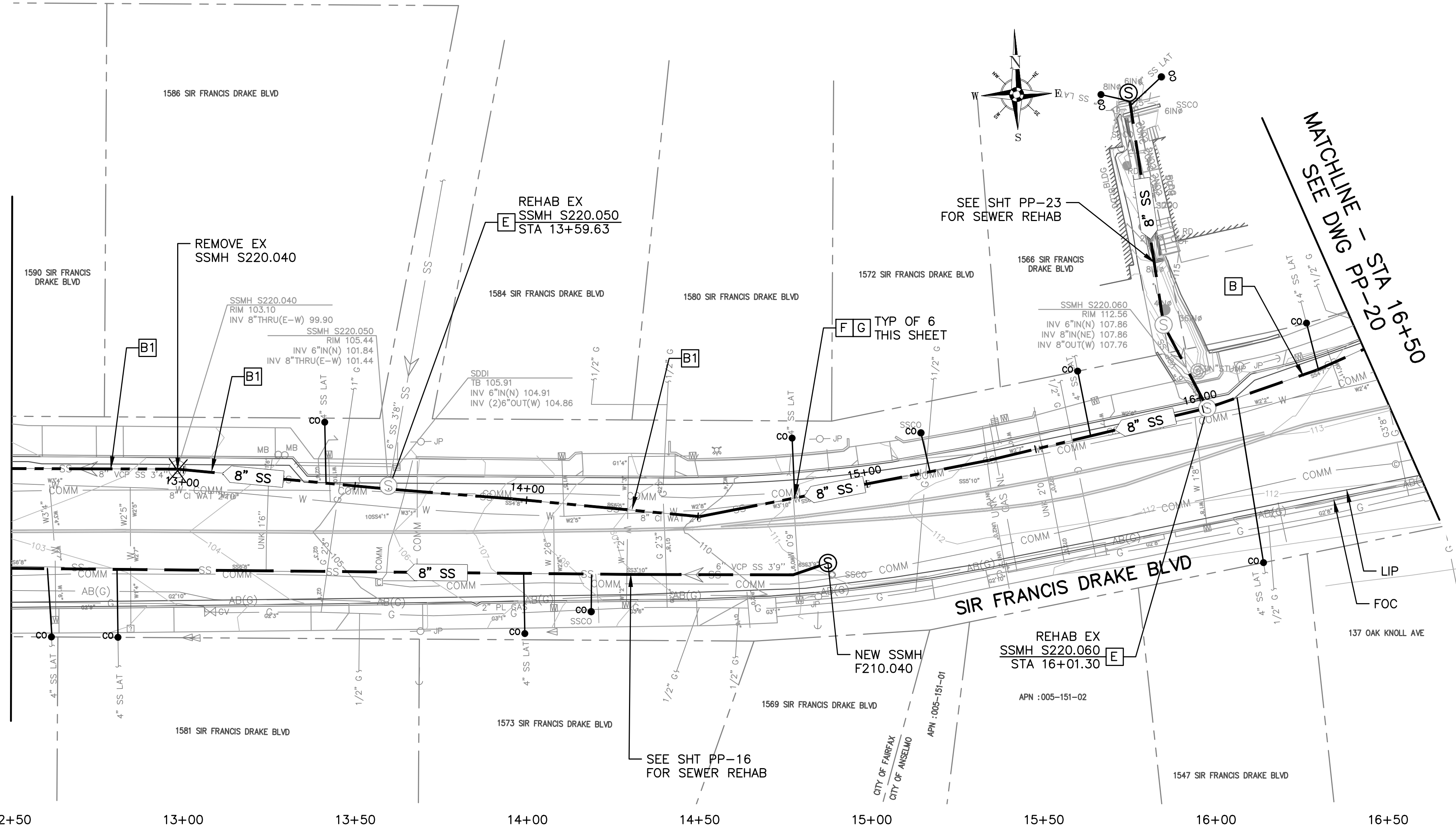
**SHT** 22 **OF** 54



\\reason\Engineering Data\external PROJECTS\171282 RVS0 FYZA-25 CSP\8.0 DESIGN\B Design\22-26 PP-18 To PP-22 - SA STD9 NORTH.dwg Save Date: 9/5/2024 2:20 PM Plot Date: 9/5/2024 2:20 PM JosephC

MATCHLINE - STA 12+50  
SEE DWG PP-18

MATCHLINE - STA 12+50  
SEE DWG PP-18



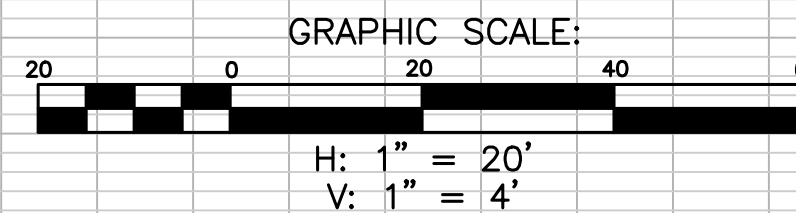
MATCHLINE - STA 16+50  
SEE DWG PP-20

### LEGEND OF REHABILITATION METHODS

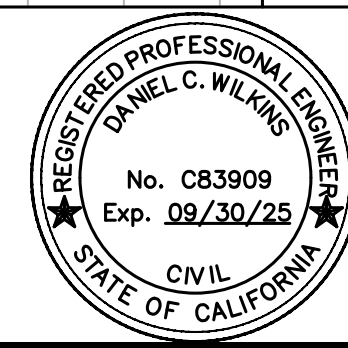
- A** REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
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- CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY 809 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.
- G** 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.

#### NOTES:

- 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
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**NOT FOR CONSTRUCTION**  
**90% SUBMITTAL**



**west valley**  
CONSTRUCTION  
SINCE 1958  
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www.westvalleyconstruction.com

**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**SIR FRANCIS DRAKE BLVD NORTH**  
**STA 12+50 TO STA 16+50**

DATE:  
**SEPT 05, 2024**  
PROJECT ID:  
**371282**  
SCALE:  
**1" = 20'**  
DWG. NO  
**PP-19**  
SHT **23** OF **54**

| NO. |  | DATE | BY | DESCRIPTION |
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DRAWN BY:  
**MPV**  
DESIGNED BY:  
**JAC**  
CHECKED BY:  
**DCW** 09/04/24

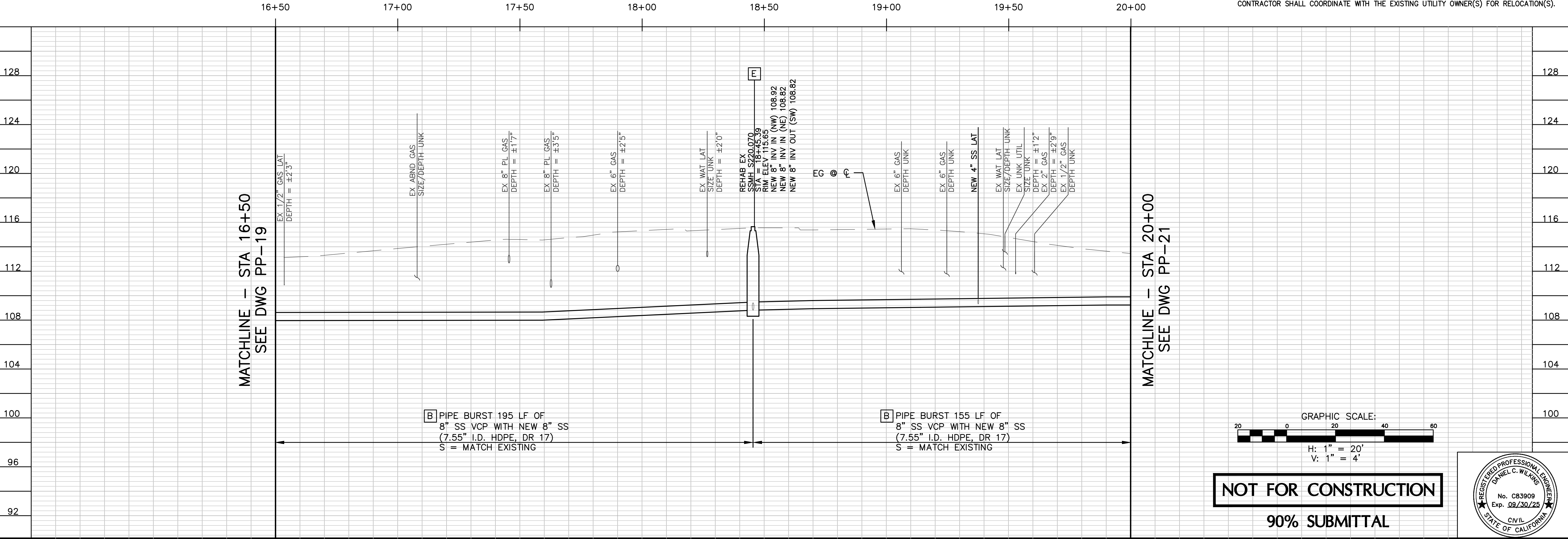
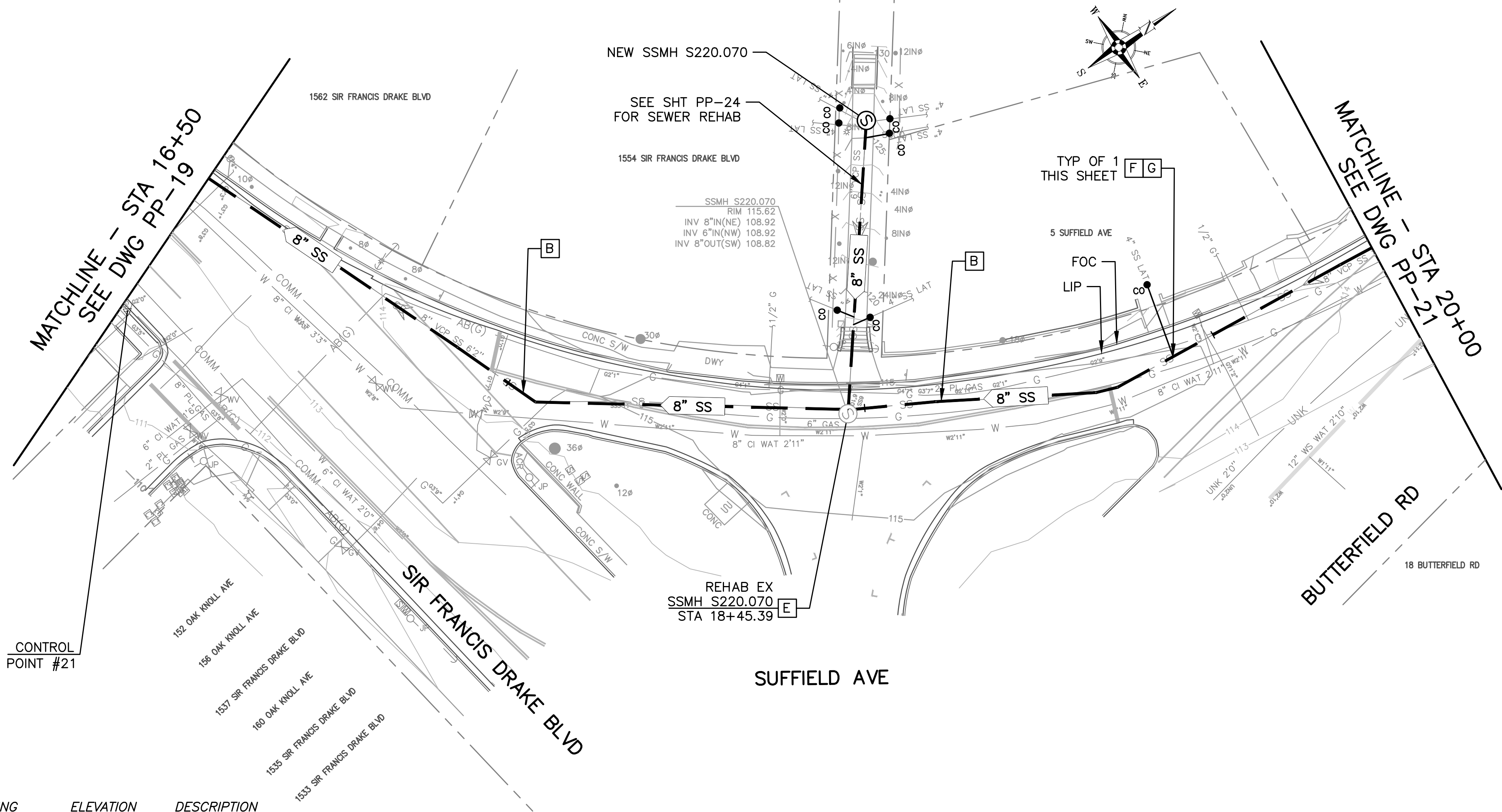




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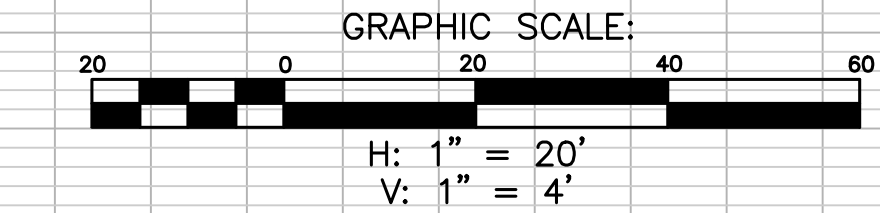
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NOT FOR CONSTRUCTION

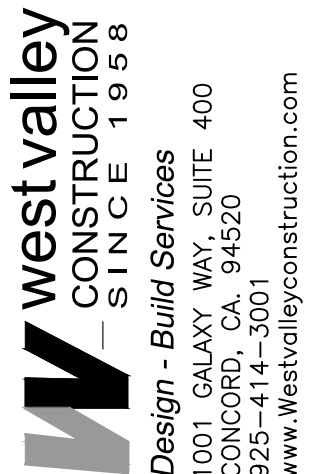
90% SUBMITTAL



LEGEND OF REHABILITATION METHODS

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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
SIR FRANCIS DRAKE BLVD  
STA 16+50 TO STA 20+00

|             |               |
|-------------|---------------|
| DATE:       | SEPT 05, 2024 |
| PROJECT ID: | 371282        |
| SCALE:      | 1" = 20'      |
| DWG. NO     | PP-20         |
| SHT         | 24 OF 54      |

| NO. | DATE | BY | DESCRIPTION |
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DRAWN BY: MPV  
DESIGNED BY: JAC  
CHECKED BY: DCW 09/04/24





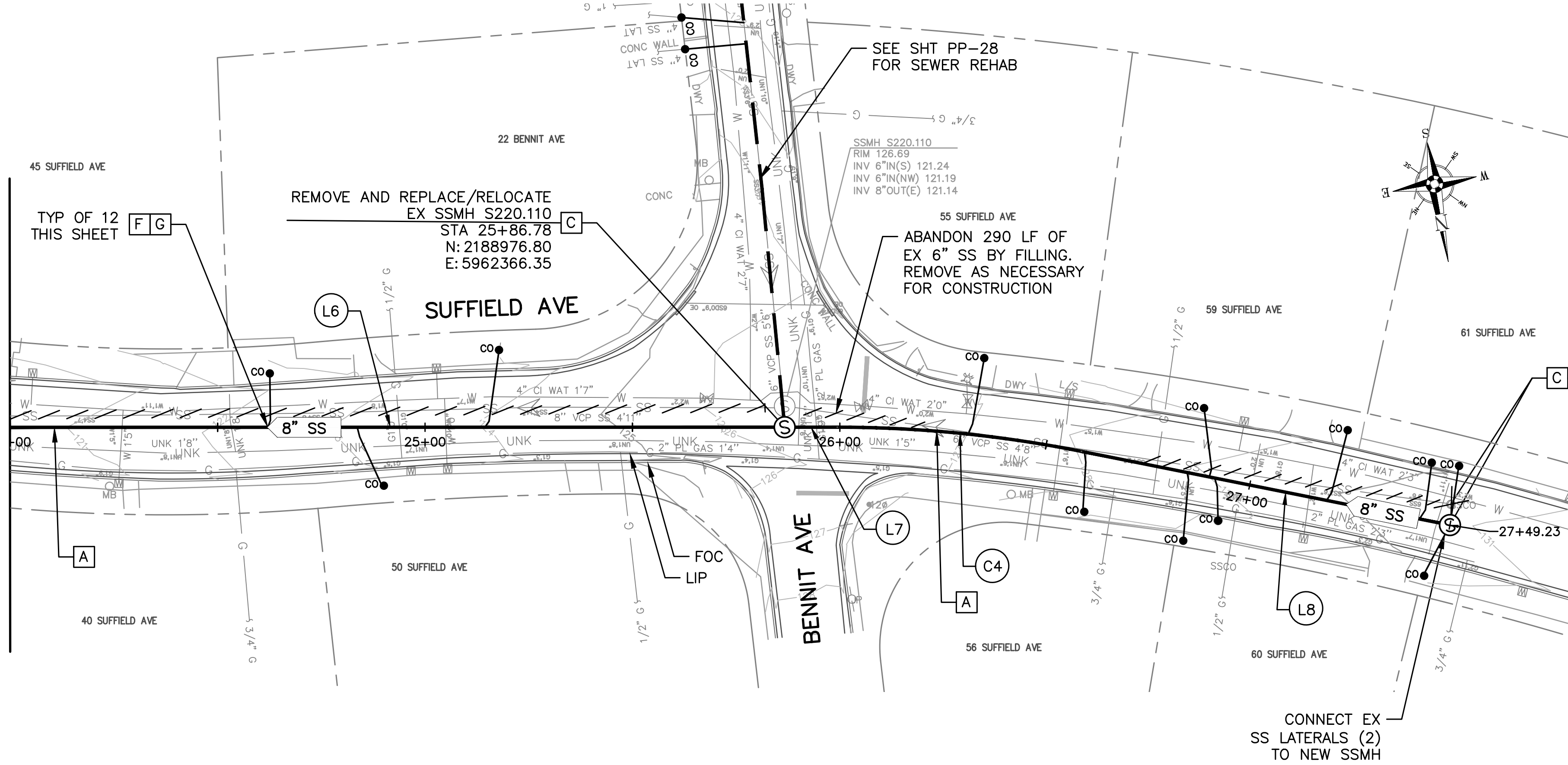




\\recon\Engineering Data\WIL EXTERNAL PROJECTS\171282 RVS0 FYZ-25 CSP\8.0 DESIGN\B. Design\22-26 PP-18 To PP-22 - SA STD9 NORTH.dwg Save Date: 9/5/2024 2:21 PM Plot Date: 9/5/2024 2:21 PM JosephC

MATCHLINE - STA 24+00  
SEE DWG PP-21

MATCHLINE - STA 24+00  
SEE DWG PP-21



REMOVE AND REPLACE/RELOCATE  
EX SSCO S220.120 WITH NEW SSMH  
STA 27+49.23  
N: 2189027.90  
E: 5962212.49

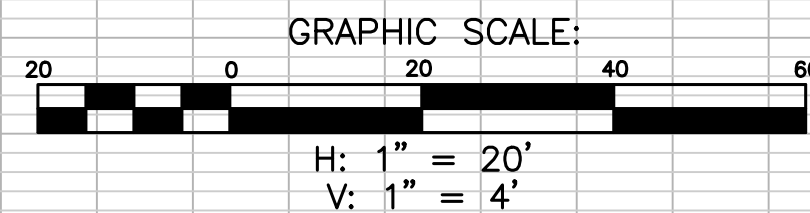
## LEGEND OF REHABILITATION METHODS

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- B** REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
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- F** PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
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### NOTES:

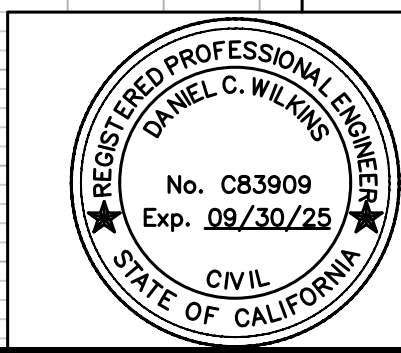
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| SUFFIELD AVE NEW SEWER LINE AND CURVE TABLE |         |             |           |         |         |           |   |          |   |
|---|---------|-------------|-----------|---------|---------|-----------|---|----------|---|
| SEGMENT                                     | LENGTH  | BEARING     | DELTA     | RADIUS  | TANGENT | START STA | START POINT<br>N = 2188793.29<br>E = 5962779.29 | END STA  | END POINT<br>N = 2188798.73<br>E = 5962771.27 |
| L1  | 9.69'   | N55°51'39"W |           |         |         | 21+20.87  |   | 21+30.56 |   |
| C1  | 38.04'  |             | 10°53'50" | 200.00' | 19.08'  | 21+30.56  | N = 2188798.73<br>E = 5962771.27                | 21+68.60 | N = 2188822.93<br>E = 5962742.00              |
| L3  | 1.58'   | N45°37'29"W |           |         |         | 22+34.57  | N = 2188869.62<br>E = 5962695.38                | 22+36.15 | N = 2188870.72<br>E = 5962694.25              |
| C2  | 51.62'  |             | 14°47'20" | 200.00' | 25.96'  | 22+36.15  | N = 2188970.72<br>E = 5962694.25                | 22+87.77 | N = 2188901.69<br>E = 5962653.13              |
| L4  | 47.73'  | N60°24'49"W |           |         |         | 22+87.77  | N = 2188901.69<br>E = 5962653.13                | 23+35.50 | N = 2188925.25<br>E = 5962611.62              |
| L5  | 20.48'  | N68°23'22"W |           |         |         | 23+35.50  | N = 2188925.25<br>E = 5962611.62                | 23+55.99 | N = 2188932.80<br>E = 5962592.58              |
| C3  | 40.57'  |             | 11°37'18" | 200.00' | 20.35'  | 23+55.99  | N = 2188932.80<br>E = 5962592.58                | 23+96.55 | N = 2188943.82<br>E = 5962553.61              |
| L6  | 190.15' | N80°00'41"W |           |         |         | 23+96.55  | N = 2188943.82<br>E = 5962553.61                | 25+86.70 | N = 2188976.80<br>E = 5962366.35              |
| L7  | 12.70'  | N80°00'00"W |           |         |         | 25+86.70  | N = 2188976.80<br>E = 5962366.35                | 25+99.40 | N = 2188979.01<br>E = 5962353.84              |
| C4  | 59.25'  |             | 11°18'55" | 300.00' | 29.72'  | 25+99.40  | N = 2188979.01<br>E = 5962353.84                | 26+58.65 | N = 2188994.97<br>E = 5962296.88              |
| L8  | 90.59'  | N68°41'05"W |           |         |         | 26+58.65  | N = 2188994.97<br>E = 5962296.88                | 27+49.23 | N = 2189027.90<br>E = 5962212.49              |



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**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**SUFFIELD AVE**  
**STA 24+00 TO END**

DATE:  
**SEPT 05, 2024**

PROJECT ID:  
**371282**

SCALE:  
**1" = 20'**

DWG. NO.  
**PP-22**

SHT **26** OF **54**

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DRAWN BY:  
**MPV**

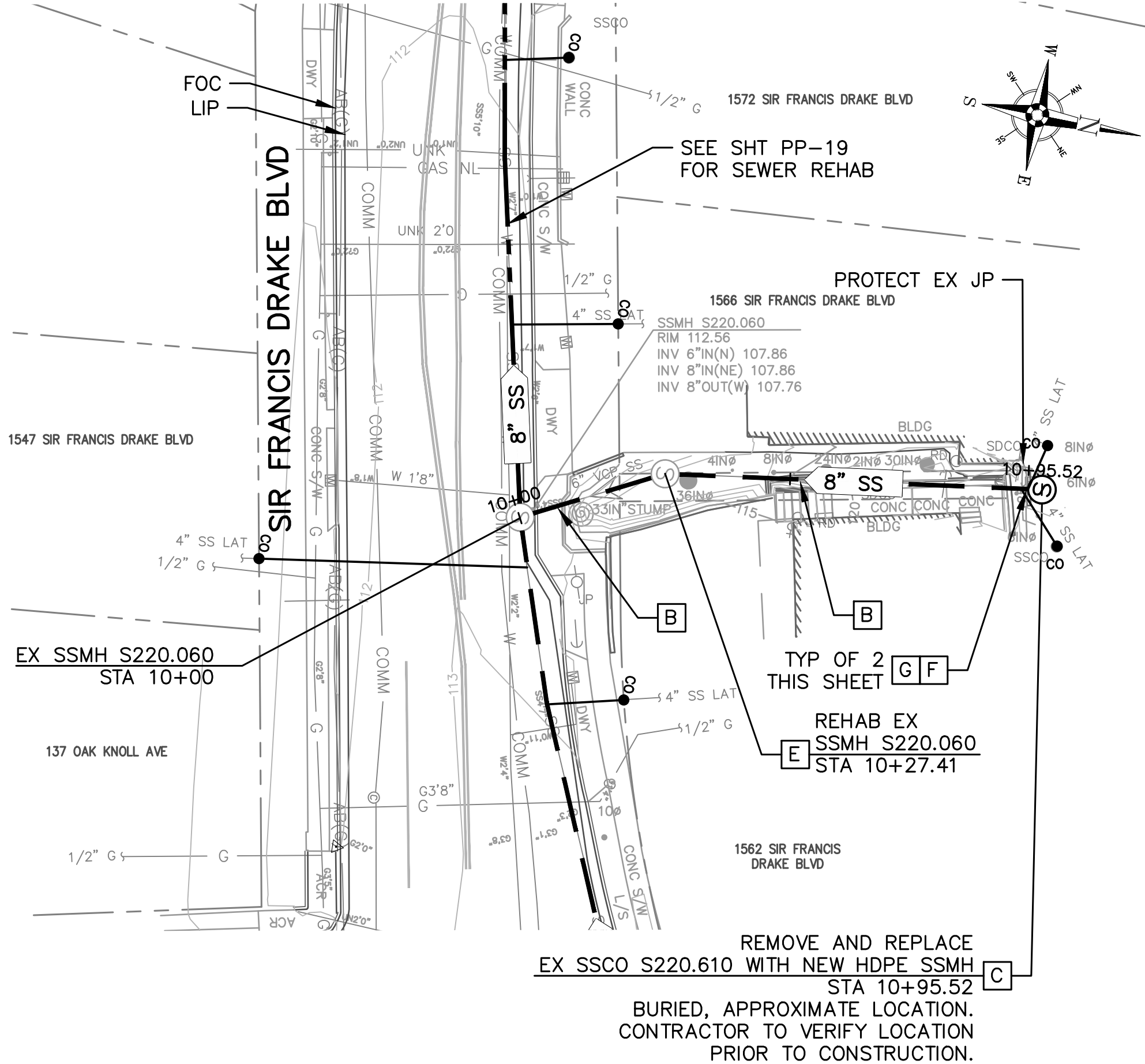
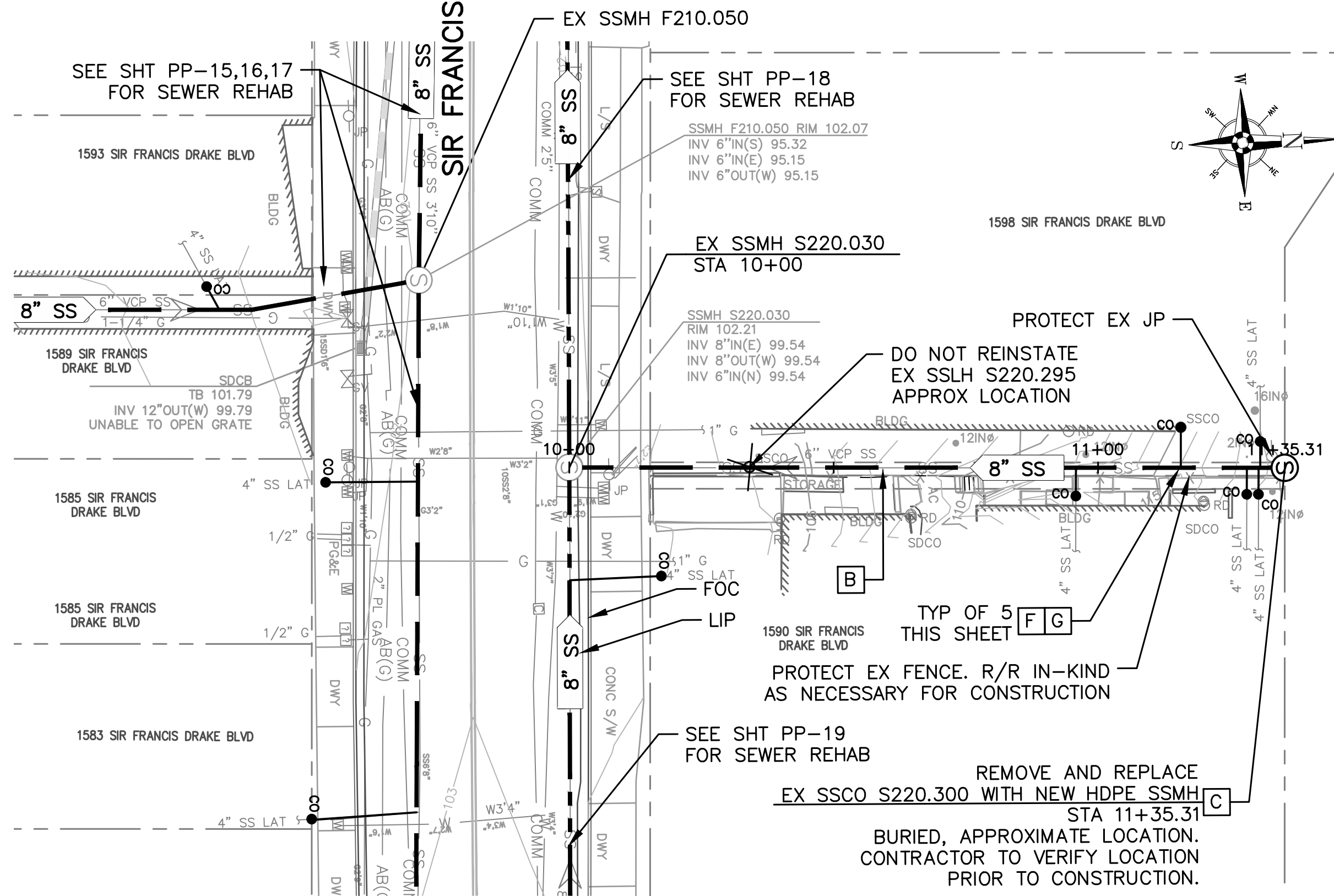
DESIGNED BY:  
**JAC**

CHECKED BY:  
**DCW**

**09/04/24**







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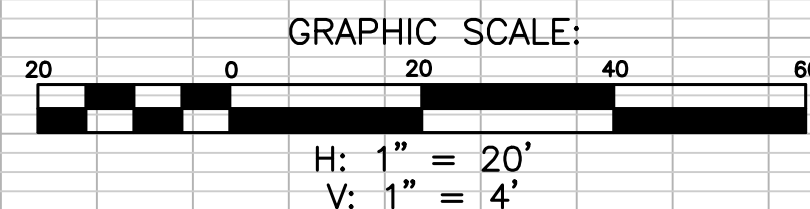
DRAWN BY: MPV  
DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24



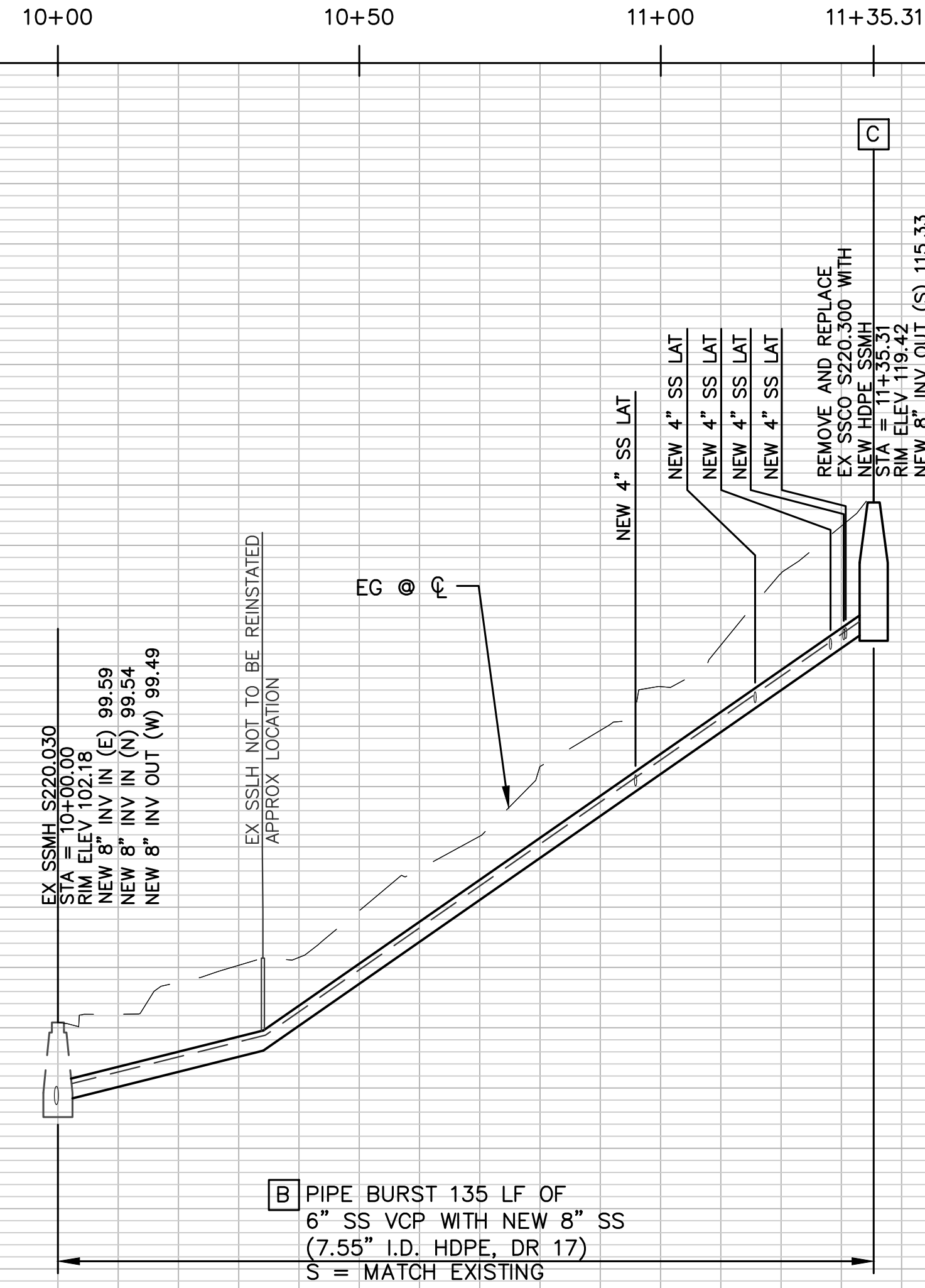
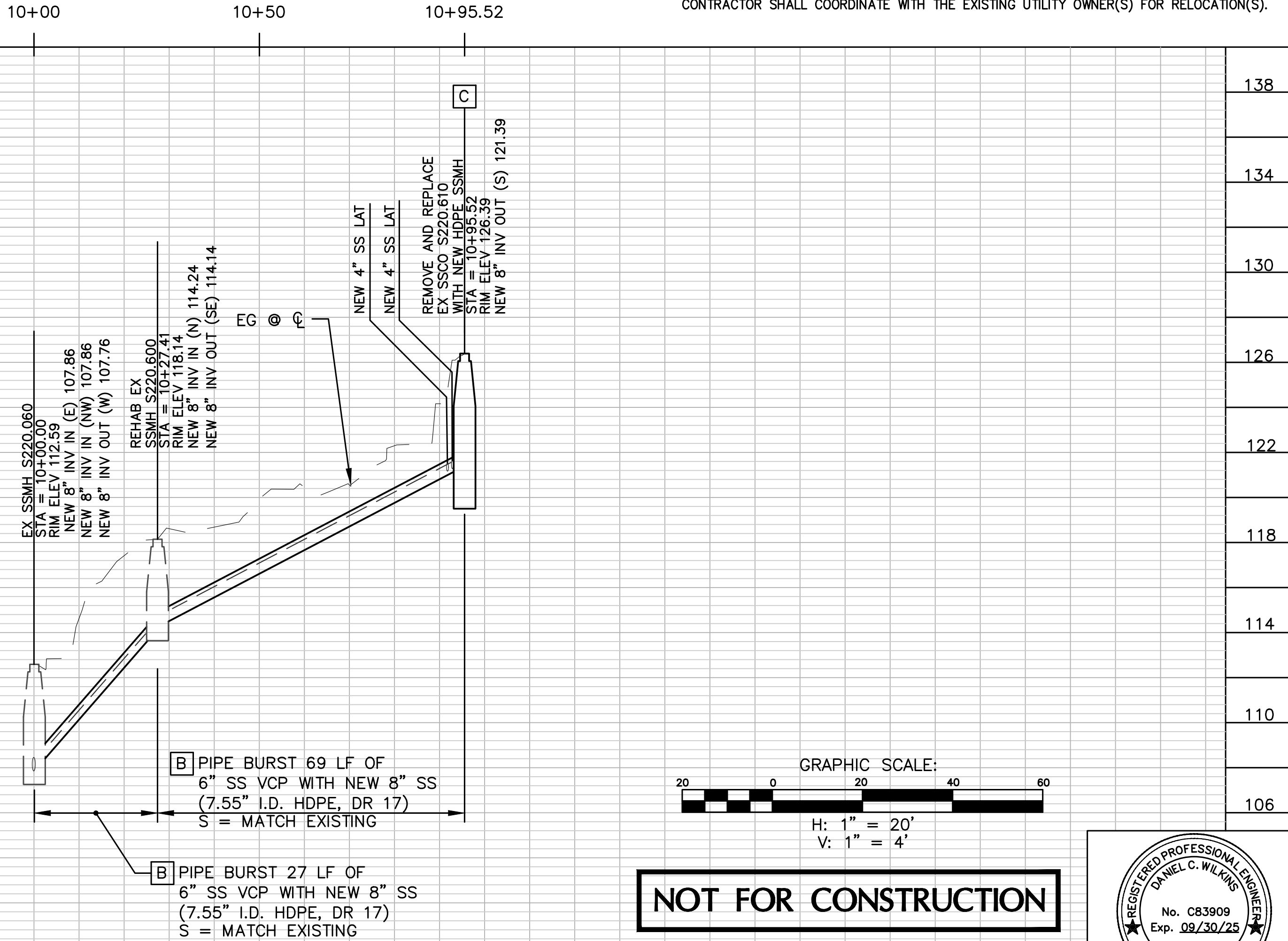
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**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**1590/1562 SIR FRANCIS DRAKE BLVD**  
**EASEMENT**

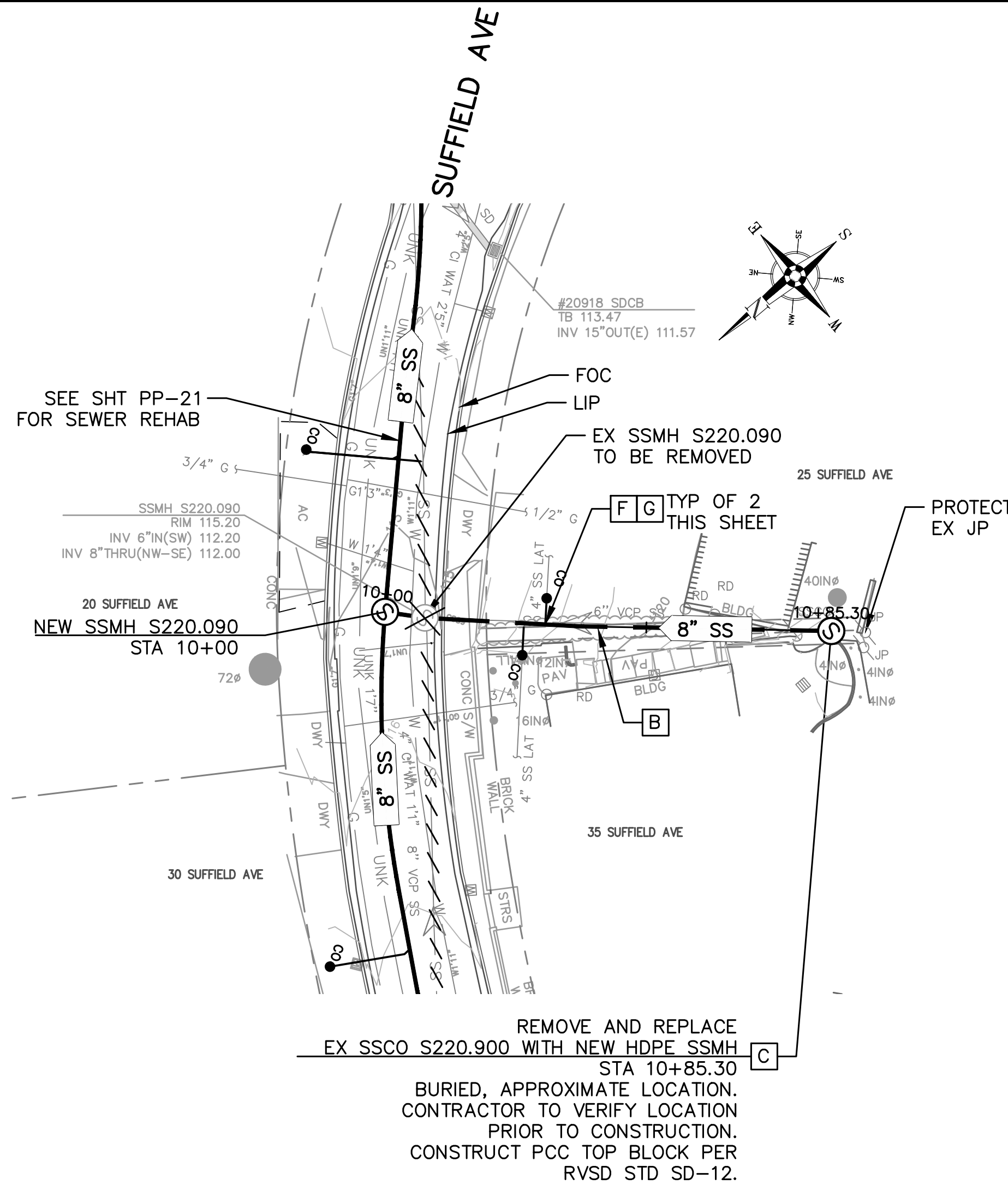
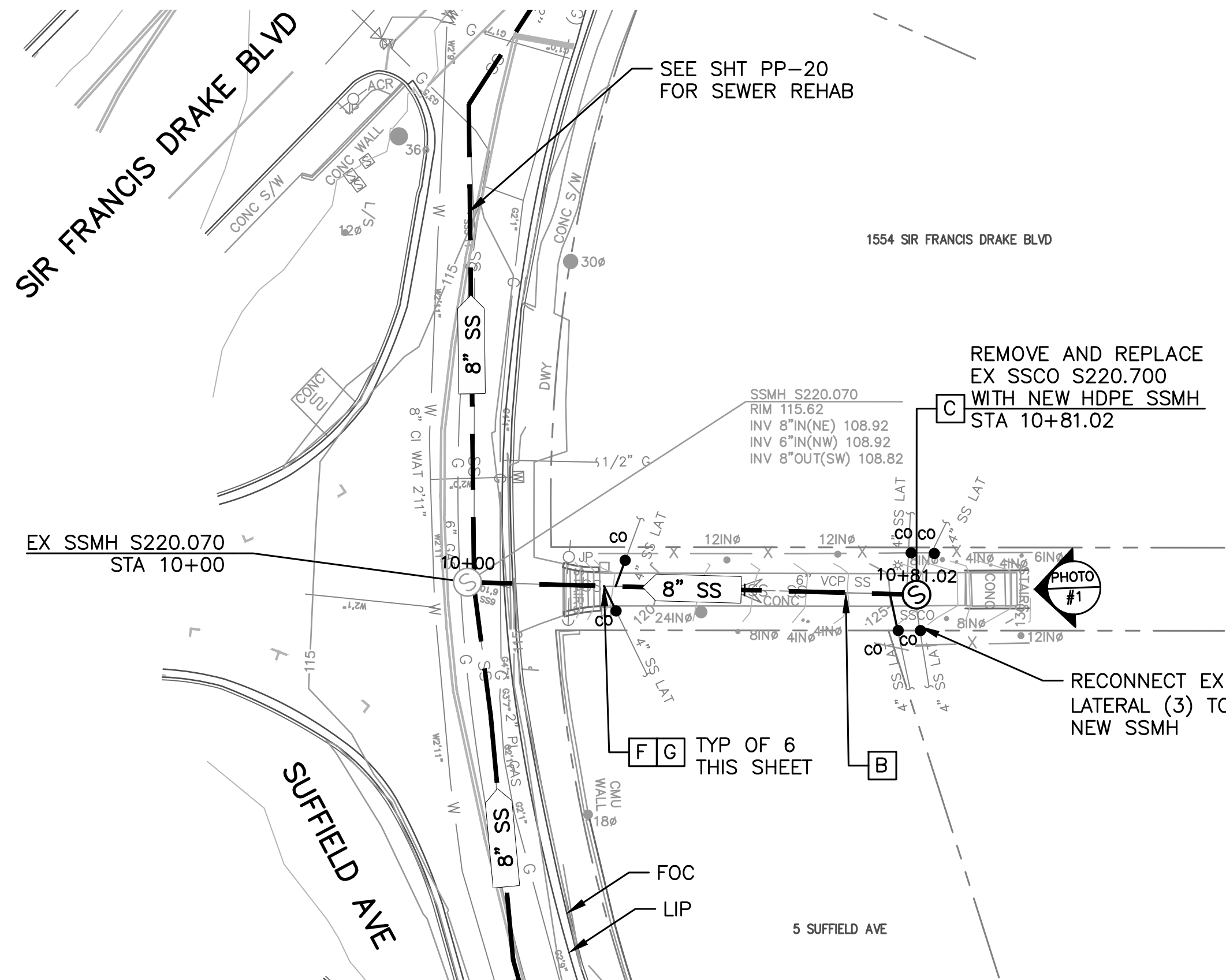
DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-23  
SHT 27 OF 54



**NOT FOR CONSTRUCTION**  
**90% SUBMITTAL**





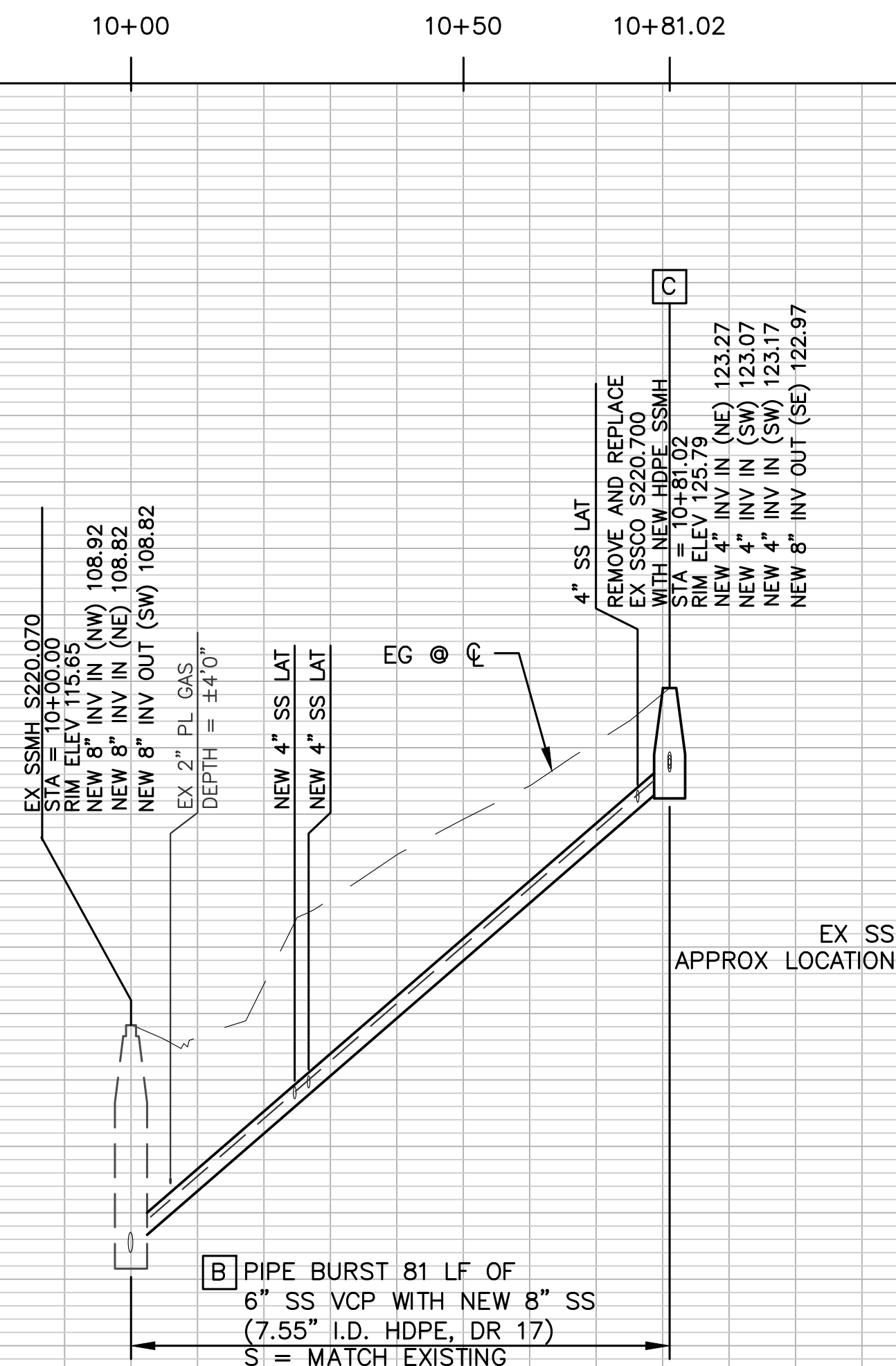


## LEGEND OF REHABILITATION METHODS

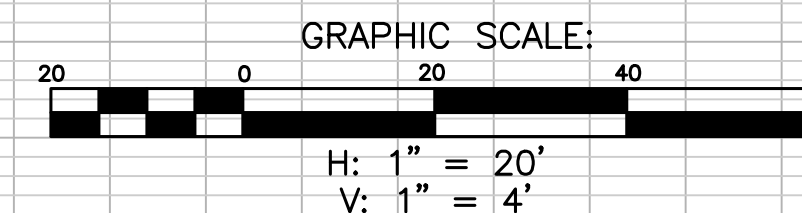
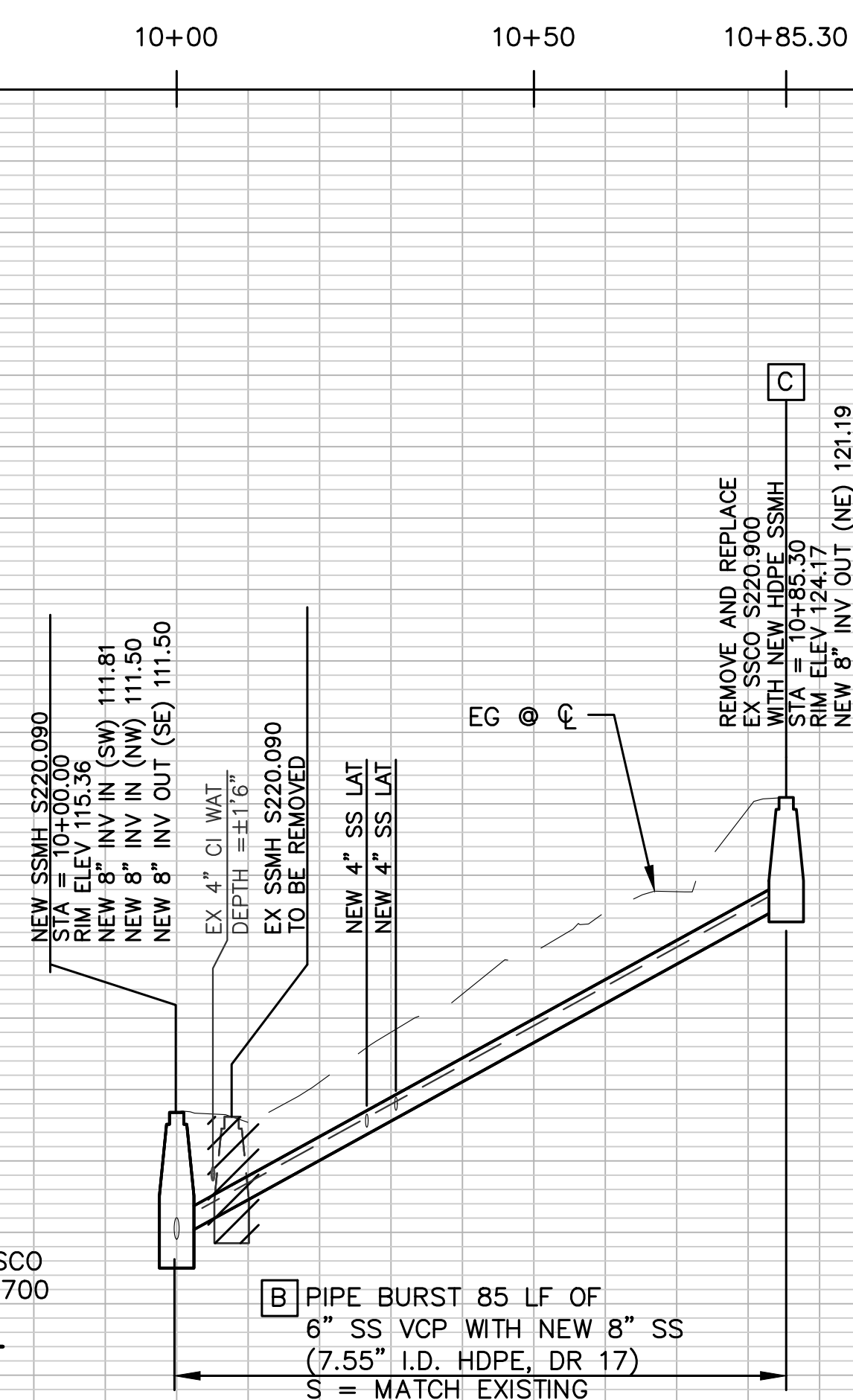
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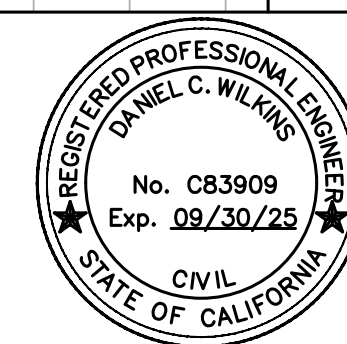


**PHOTO EX SEWER**  
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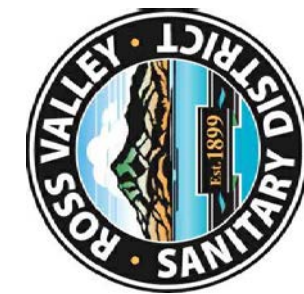
DRAWN BY:

MP<sup>2</sup>

DESIGNED BY:

JAC

DCW 09/04/24



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**CROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT**

DATE:  
SEPT 05, 2024  
PROJECT ID:  
371282  
SCALE:  
1" = 20'  
DWG. NO  
PP-24  
SHT 28 OF 54



\\nascon\Engineering Data\VI. EXTERNAL PROJECTS\1. PROJECTS\371282 RVSD FY24-25 CSP\8.0 DESIGN\B. Design\29 PP-25 - SA 35 SUFFIELD AVE.dwg Save Date: 9/5/2024 11:57 AM Plot Date: 9/5/2024 11:57 AM JosephC

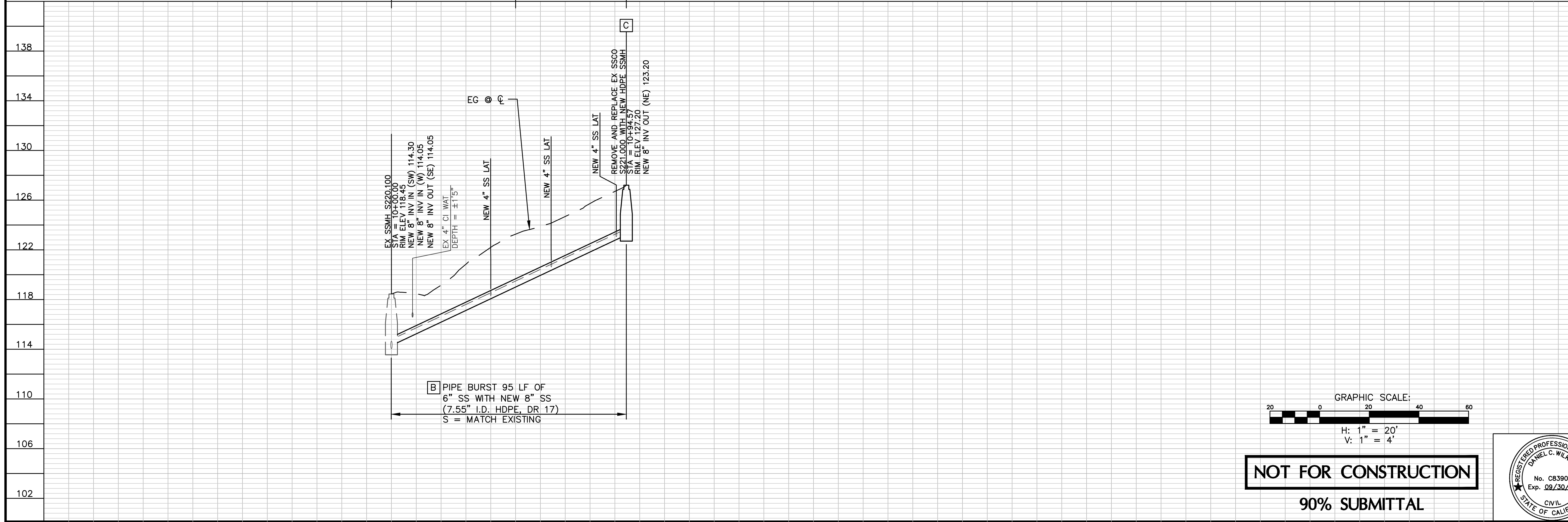
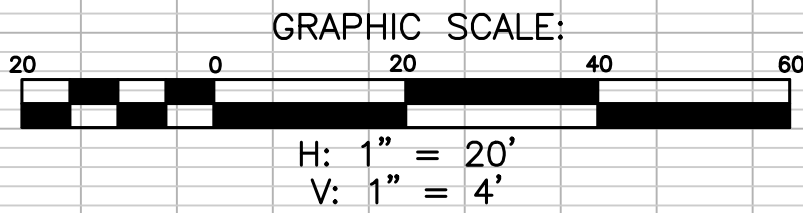


PHOTO 1  
EX SEWER  
NOT TO SCALE

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- NOTES:
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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
35 SUFFIELD AVE  
EASEMENT  
STA 10+00 TO END

DATE:  
SEPT 05, 2024  
PROJECT ID:  
371282  
SCALE:  
1" = 20'  
DWG. NO  
PP-25  
SHT 29 OF 54

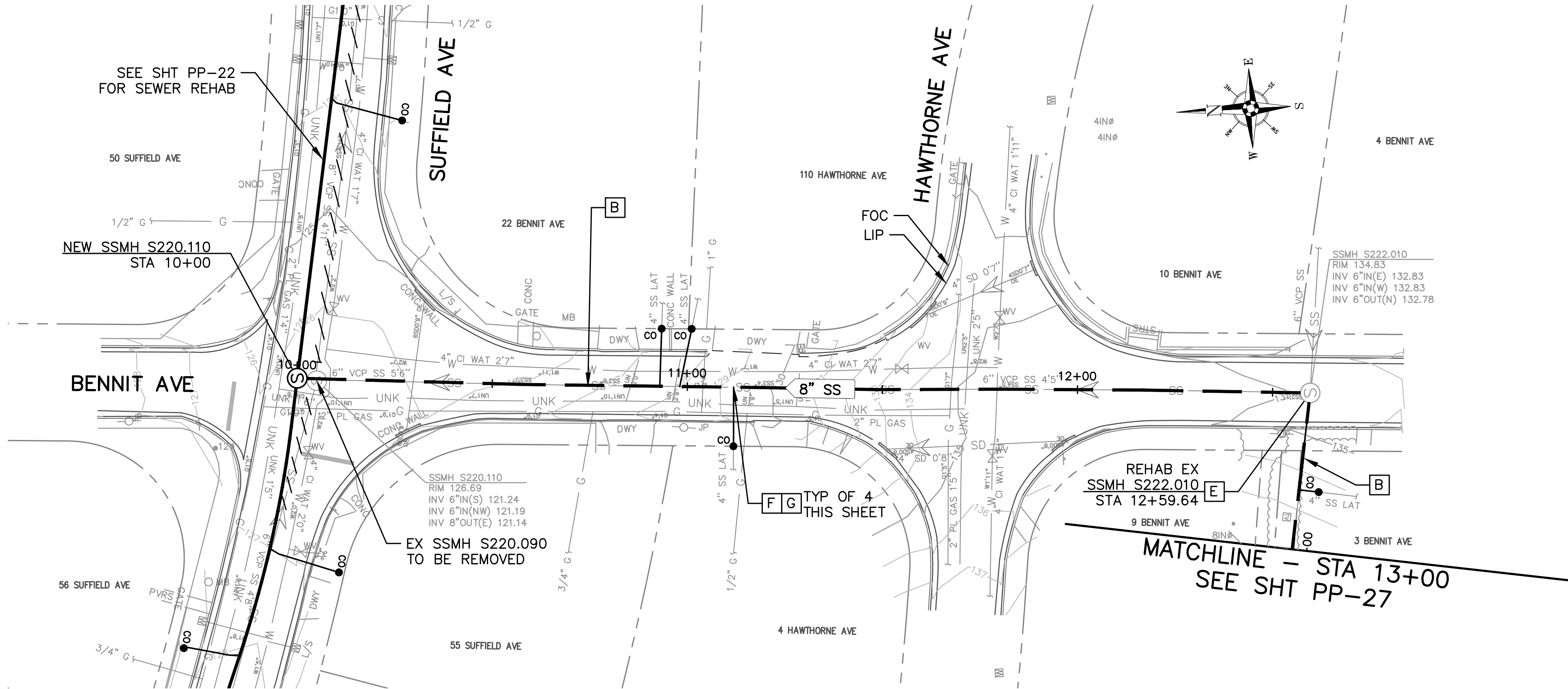
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DRAWN BY:  
MPV  
DESIGNED BY:  
JAC  
CHECKED BY:  
DCW 09/04/24





\\nascon\Engineering Data\external PROJECTS\171282 RSD FY24-25 CSP\8.0 DESIGN\B Design\30 PP-26 - SA BENNIT.dwg Save Date: 9/5/2024 3:36 PM Plot Date: 9/5/2024 3:36 PM JosephnC

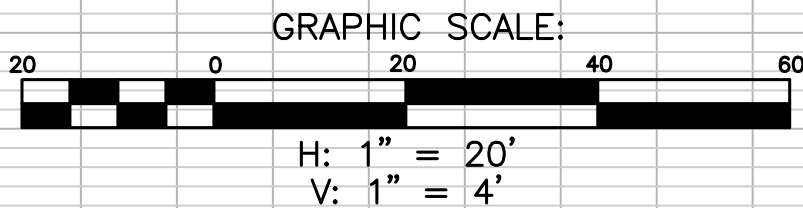


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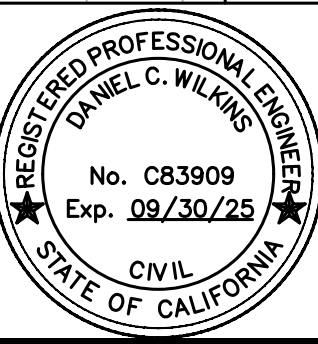
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PP-26  
SHT 30 OF 54



DRAWN BY:  
MPV  
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\\nascon\Engineering Data\VI. EXTERNAL PROJECTS\1. PROJECTS\371282 RVSD FY24-25 CSP\8.0 DESIGN\B. Design\31 PP-27- SA BENNIT EASEMENT Sewer Date: 9/5/2024 3:39 PM Plot Date: 9/5/2024 3:39 PM JosephC

MATCHLINE - STA 13+00  
SEE SHT PP-26

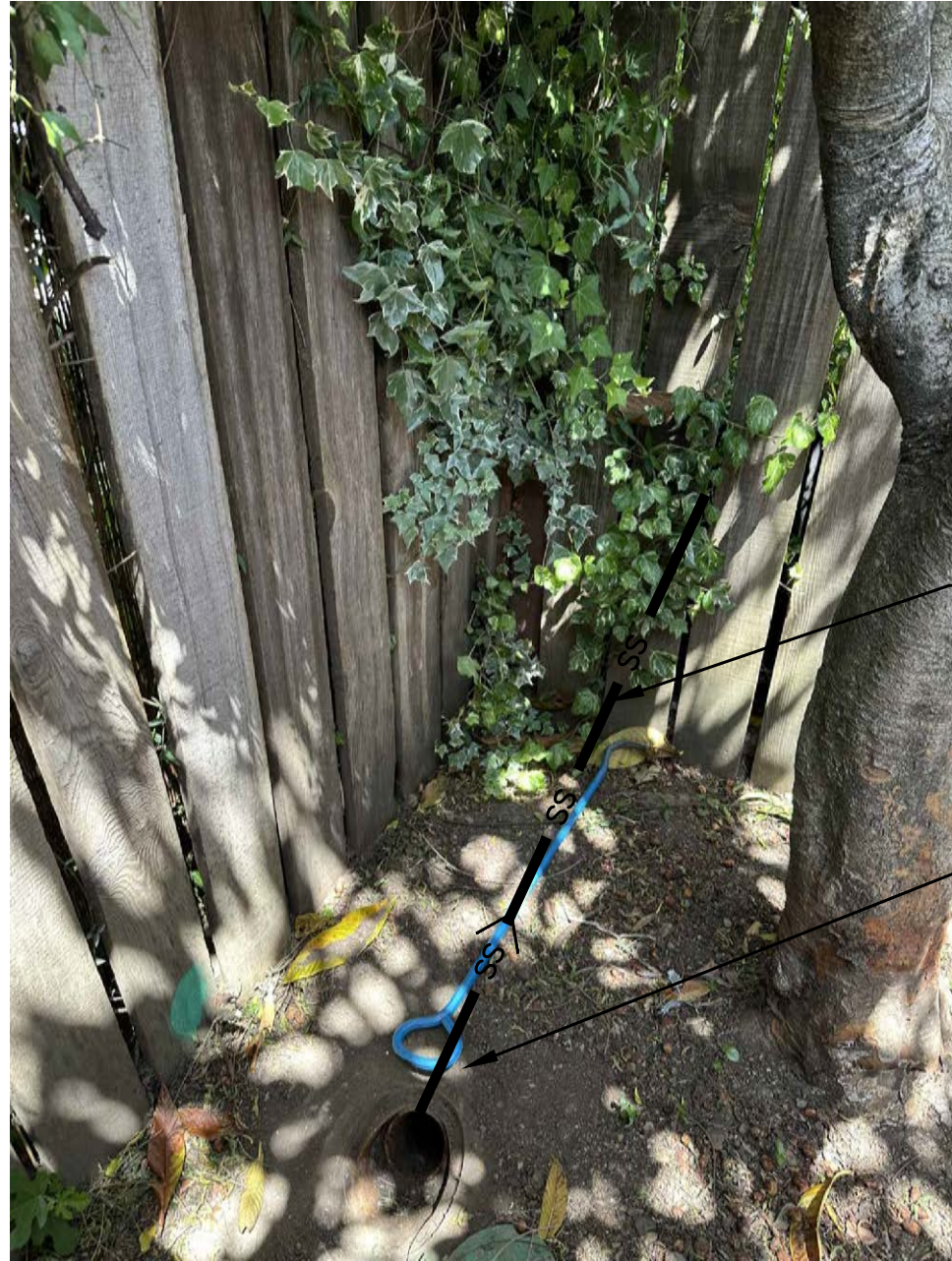
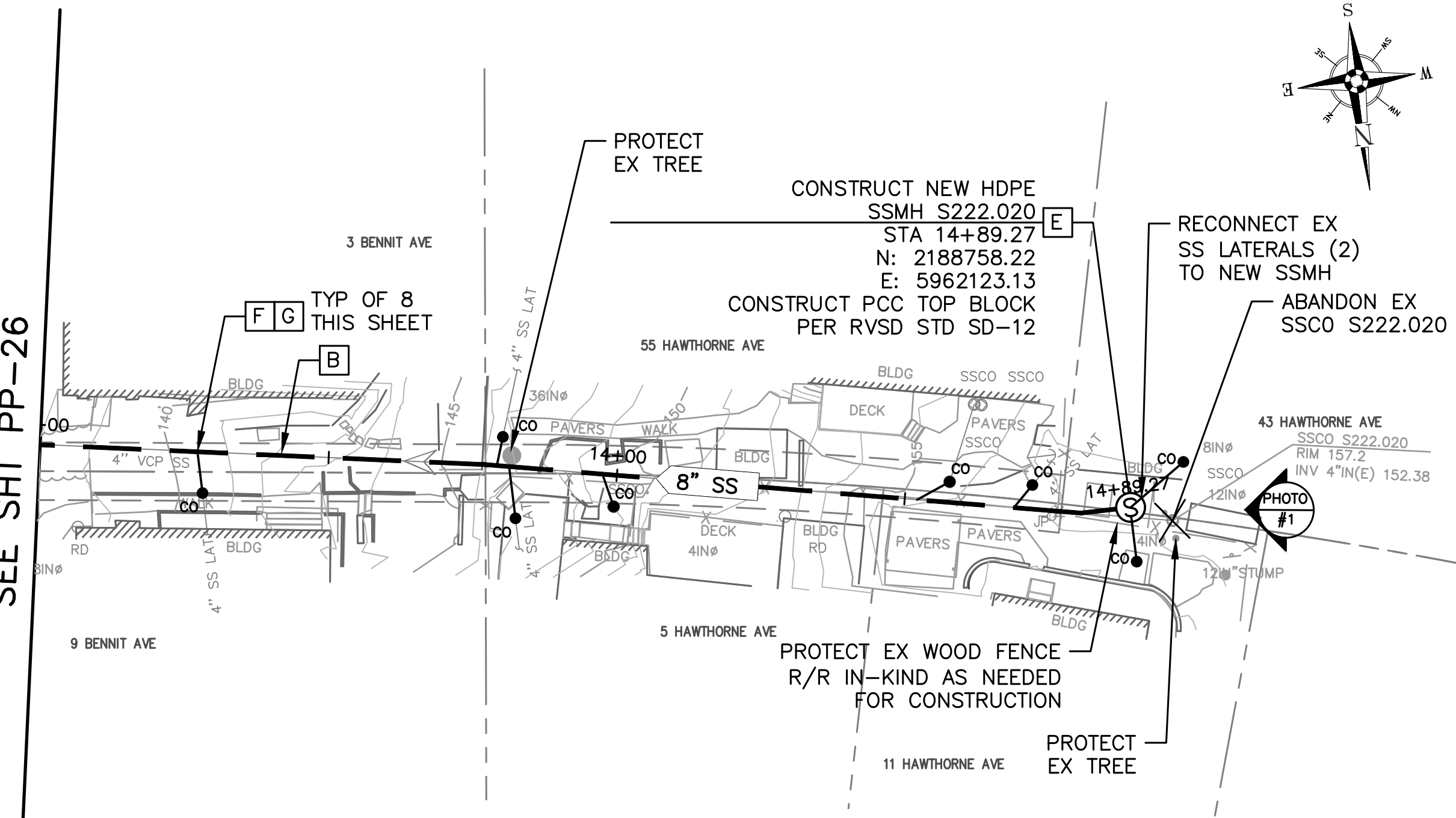


PHOTO 1 EX SEWER  
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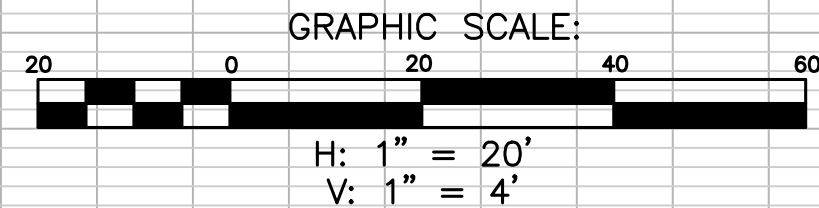
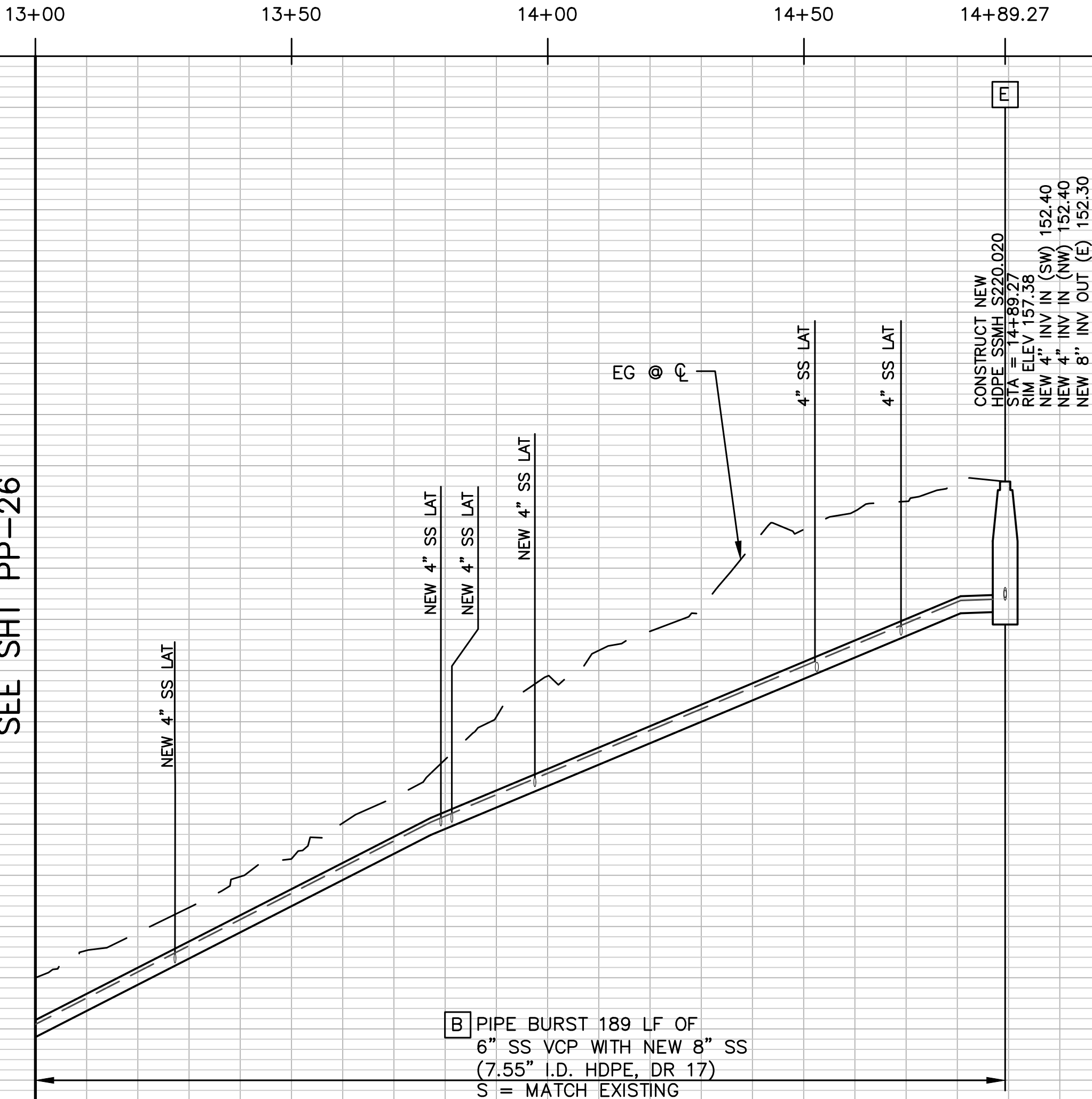
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MATCHLINE - STA 13+00  
SEE SHT PP-26



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**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**BENNIT AVE EASEMENT**  
**STA 13+00 TO END**

DATE:  
**SEPT 05, 2024**  
PROJECT ID:  
**371282**  
SCALE:  
**1" = 20'**  
DWG. NO  
**PP-27**  
SHT **31** OF **54**

| NO. | DATE | BY | DESCRIPTION |
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**MPV**  
DESIGNED BY:  
**JAC**  
CHECKED BY:  
**DCW 09/04/24**

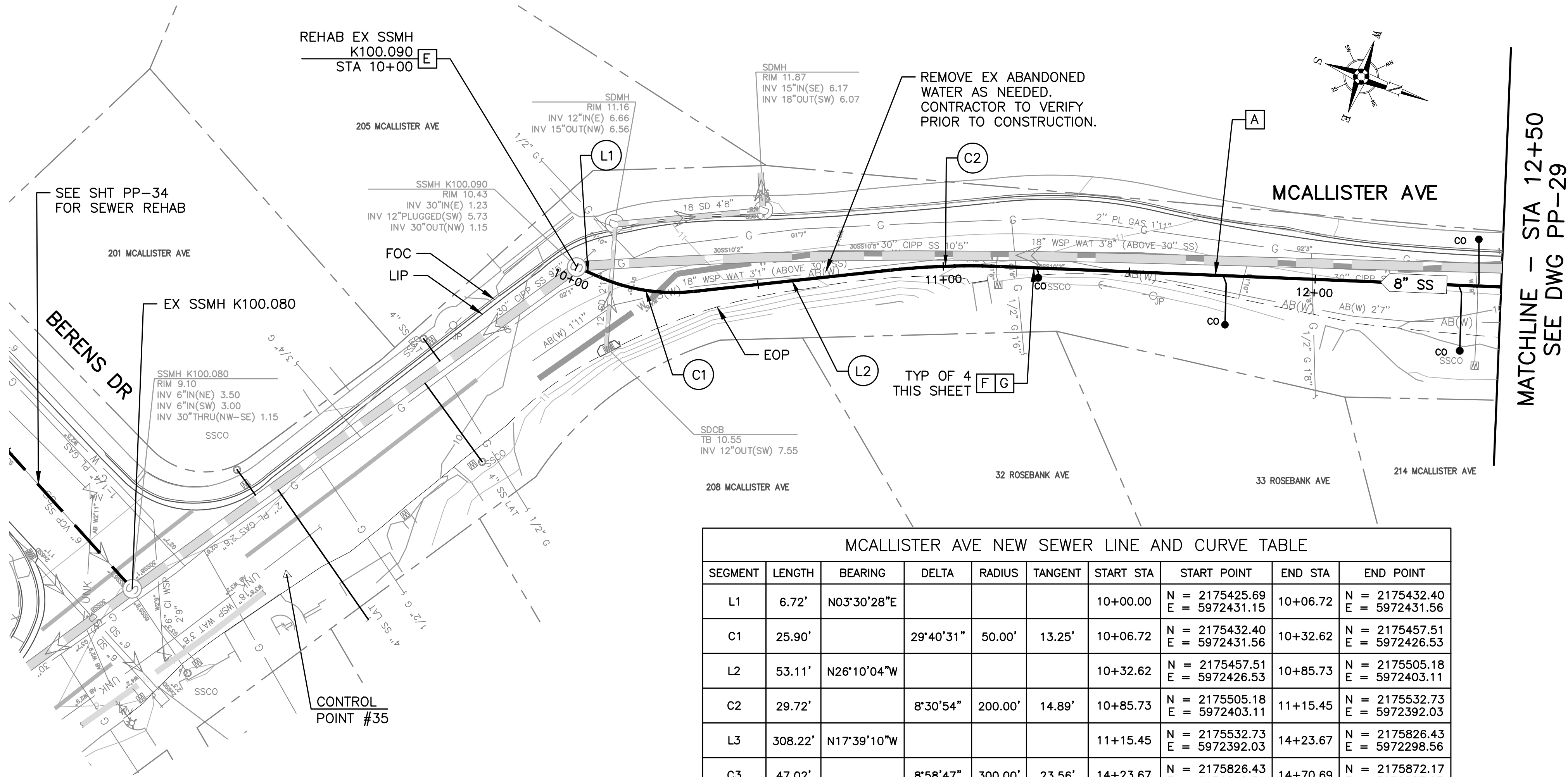




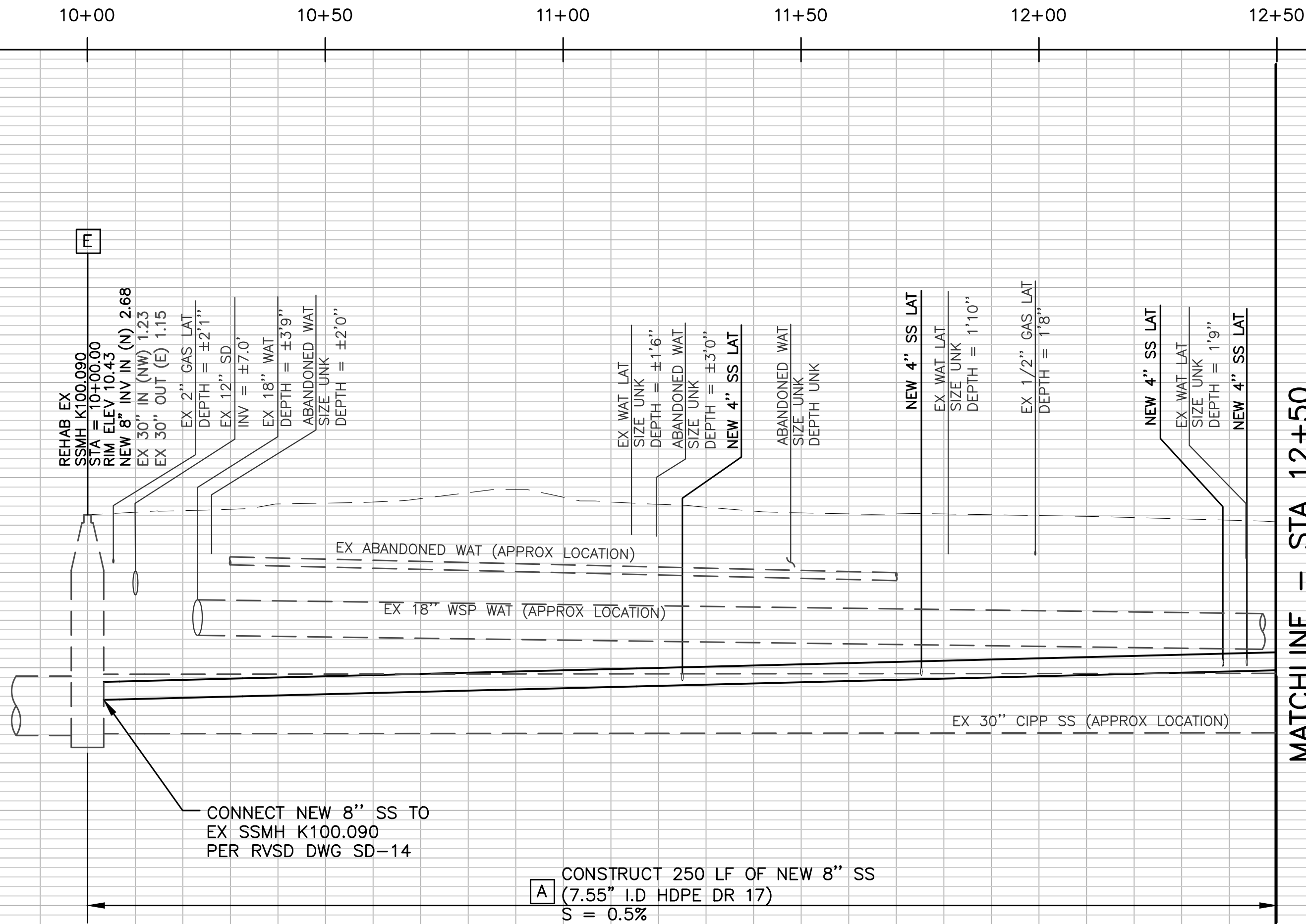
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SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
|---------|------------|------------|-----------|-------------|
| 35      | 2175380.83 | 5972535.54 | 9.19      | MAG         |



| MCALLISTER AVE NEW SEWER LINE AND CURVE TABLE |         |             |           |         |         |           |                                  |          |                                  |
|---|---------|-------------|-----------|---------|---------|-----------|----------------------------------|----------|----------------------------------|
| SEGMENT                                       | LENGTH  | BEARING     | DELTA     | RADIUS  | TANGENT | START STA | START POINT                      | END STA  | END POINT                        |
| L1  | 6.72'   | N03°30'28"E |           |         |         | 10+00.00  | N = 2175425.69<br>E = 5972431.15 | 10+06.72 | N = 2175432.40<br>E = 5972431.56 |
| C1  | 25.90'  |             | 29°40'31" | 50.00'  | 13.25'  | 10+06.72  | N = 2175432.40<br>E = 5972431.56 | 10+32.62 | N = 2175457.51<br>E = 5972426.53 |
| L2  | 53.11'  | N26°10'04"W |           |         |         | 10+32.62  | N = 2175457.51<br>E = 5972426.53 | 10+85.73 | N = 2175505.18<br>E = 5972403.11 |
| C2  | 29.72'  |             | 8°30'54"  | 200.00' | 14.89'  | 10+85.73  | N = 2175505.18<br>E = 5972403.11 | 11+15.45 | N = 2175532.73<br>E = 5972392.03 |
| L3  | 308.22' | N17°39'10"W |           |         |         | 11+15.45  | N = 2175532.73<br>E = 5972392.03 | 14+23.67 | N = 2175826.43<br>E = 5972298.56 |
| C3  | 47.02'  |             | 8°58'47"  | 300.00' | 23.56'  | 14+23.67  | N = 2175826.43<br>E = 5972298.56 | 14+70.69 | N = 2175872.17<br>E = 5972287.87 |
| L4  | 9.66'   | N08°40'22"W |           |         |         | 14+70.69  | N = 2175872.17<br>E = 5972287.87 | 14+80.35 | N = 2175881.72<br>E = 5972286.41 |



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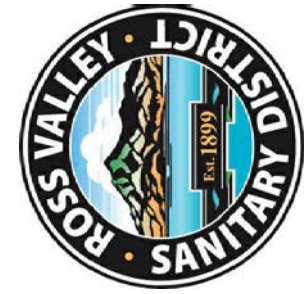
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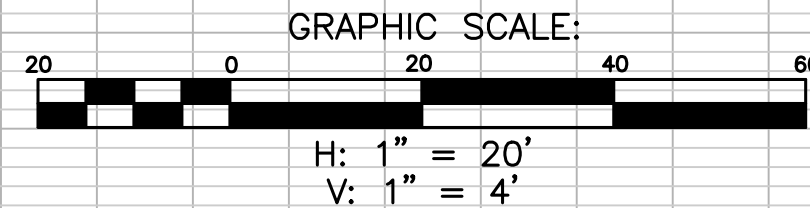
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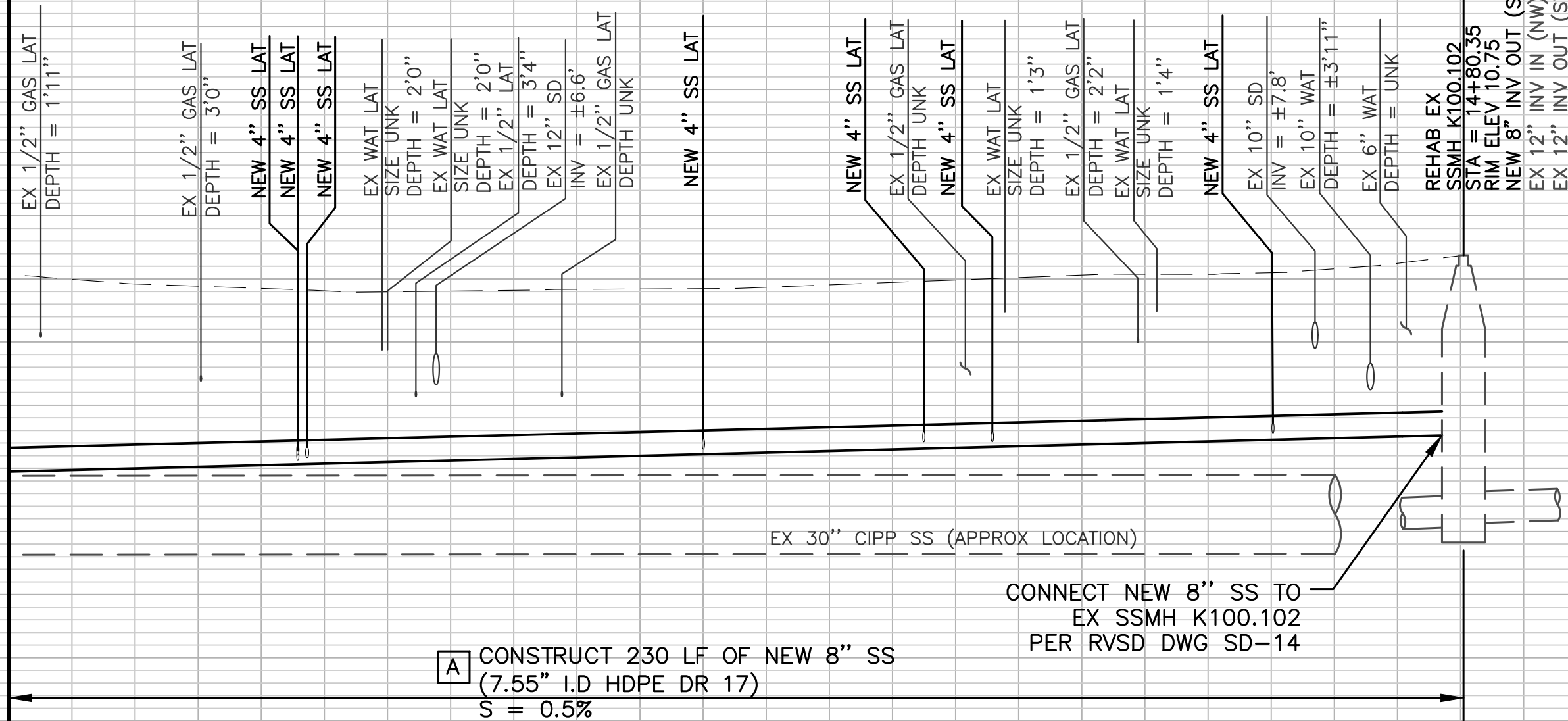


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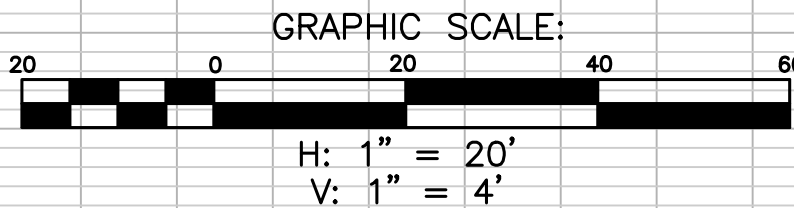


NOTE TO CONTRACTOR  
SEE SHT PP-28 FOR LINE/CURVE TABLE

LEGEND OF REHABILITATION METHODS

- A REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- B REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- B1 REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- C REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- D REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
- E REHABILITATE EX SSMH PER RVSD STD DWG SD-13
- F PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- G 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.

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



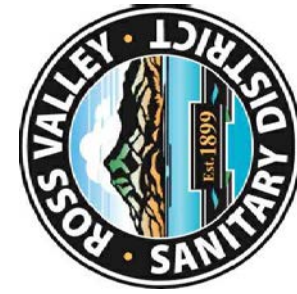
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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
MCALLISTER AVE  
STA 12+50 TO END

DATE:  
SEPT 05, 2024  
PROJECT ID:  
371282  
SCALE:  
1" = 20'  
PP-29  
SHT 33 OF 54



DRAWN BY:  
JAC  
DESIGNED BY:  
JAC  
CHECKED BY:  
DCW 09/04/24

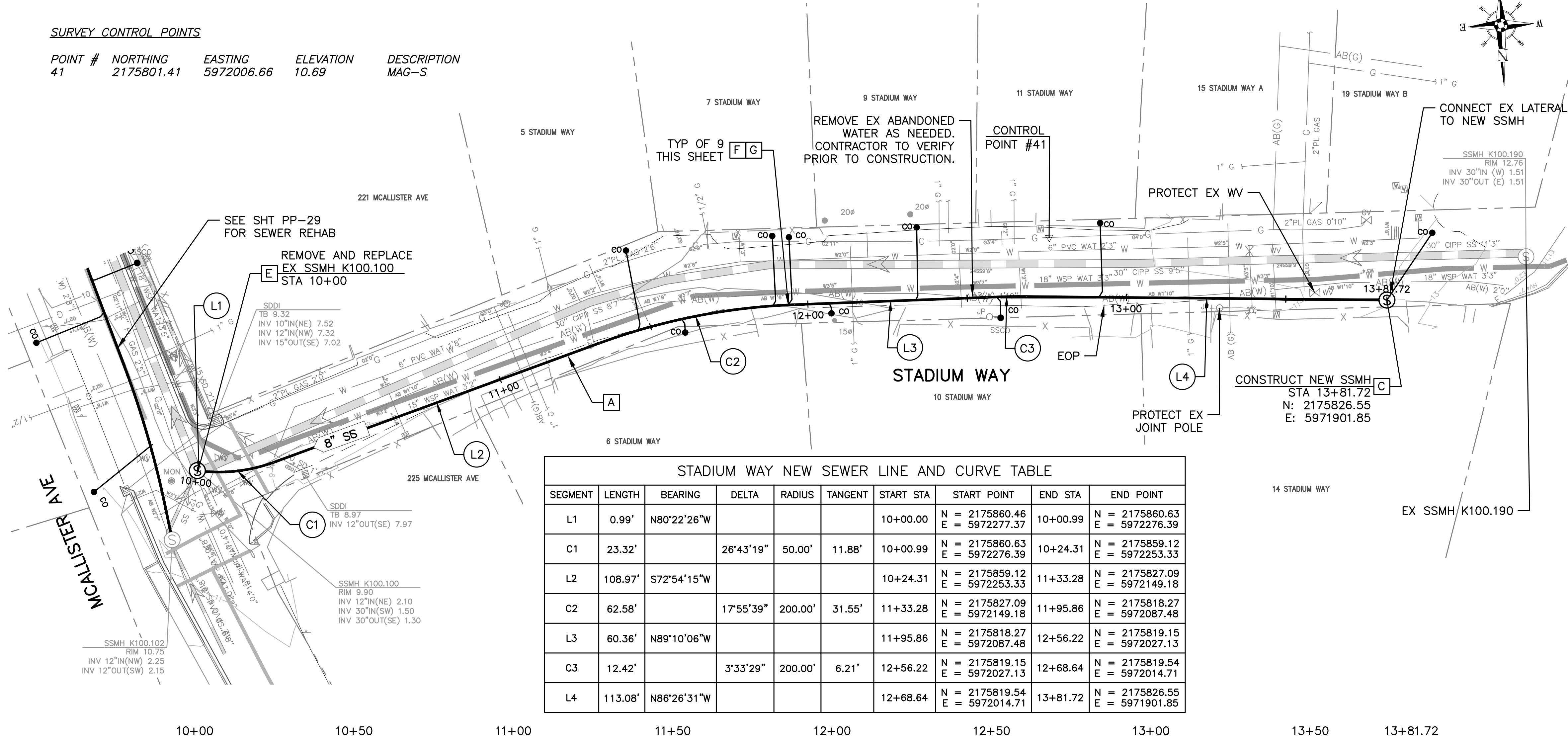
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| NO. | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
|     |      |    |             |
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SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
|---------|------------|------------|-----------|-------------|
| 41      | 2175801.41 | 5972006.66 | 10.69     | MAG-S       |



| STADIUM WAY NEW SEWER LINE AND CURVE TABLE |         |             |           |         |         |           |   |          |   |
|--|---------|-------------|-----------|---------|---------|-----------|---|----------|---|
| SEGMENT                                    | LENGTH  | BEARING     | DELTA     | RADIUS  | TANGENT | START STA | START POINT<br>N = 2175860.46<br>E = 5972277.37 | END STA  | END POINT<br>N = 2175860.63<br>E = 5972276.39 |
| L1   | 0.99'   | N80°22'26"W |           |         |         | 10+00.00  |   | 10+00.99 |   |
| C1   | 23.32'  |             | 26°43'19" | 50.00'  | 11.88'  | 10+00.99  | N = 2175860.63<br>E = 5972276.39                | 10+24.31 | N = 2175859.12<br>E = 5972253.33              |
| L2   | 108.97' | S72°54'15"W |           |         |         | 10+24.31  | N = 2175859.12<br>E = 5972253.33                | 11+33.28 | N = 2175827.09<br>E = 5972149.18              |
| C2   | 62.58'  |             | 17°55'39" | 200.00' | 31.55'  | 11+33.28  | N = 2175827.09<br>E = 5972149.18                | 11+95.86 | N = 2175818.27<br>E = 5972087.48              |
| L3   | 60.36'  | N89°10'06"W |           |         |         | 11+95.86  | N = 2175818.27<br>E = 5972087.48                | 12+56.22 | N = 2175819.15<br>E = 5972027.13              |
| C3   | 12.42'  |             | 3°33'29"  | 200.00' | 6.21'   | 12+56.22  | N = 2175819.15<br>E = 5972027.13                | 12+68.64 | N = 2175819.54<br>E = 5972014.71              |
| L4   | 113.08' | N86°26'31"W |           |         |         | 12+68.64  | N = 2175819.54<br>E = 5972014.71                | 13+81.72 | N = 2175826.55<br>E = 5971901.85              |

LEGEND OF REHABILITATION METHODS

- A** REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- B** REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- B1** REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
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- CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY 809 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CHRISTY 8107 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT.
- G** CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING LIVE SANITARY SEWER LATERALS ALONG SEWER MAINS BY DYE TESTING AND SONDE AND REINSTATE LIVE LATERALS TO NEW SEWER MAIN.

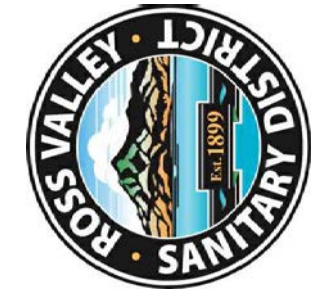
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| NO. |  | DATE | BY | DESCRIPTION |
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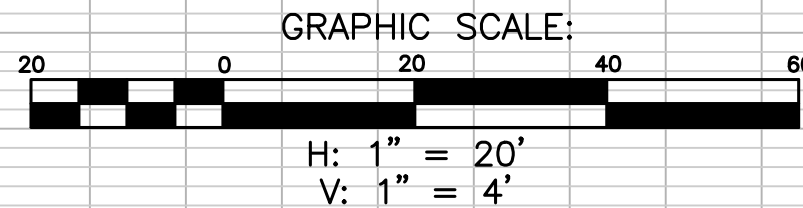
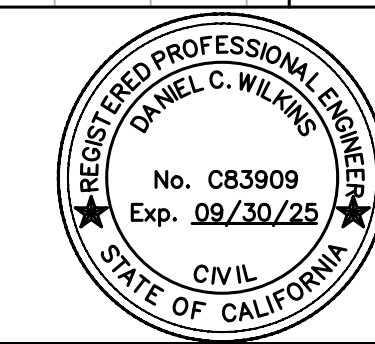
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JAC  
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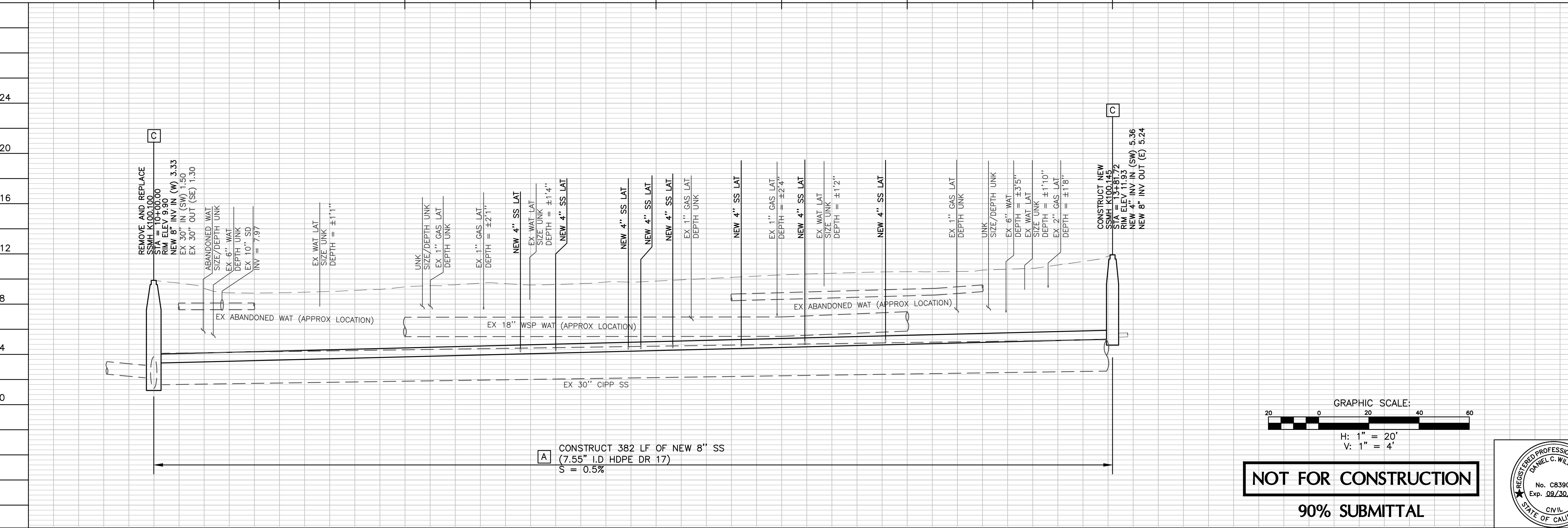
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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
STADIUM WAY  
STA 10+00 TO END

DATE:  
SEPT 05, 2024  
PROJECT ID:  
371282  
SCALE:  
1" = 20'  
DWG. NO.  
PP-30  
SHT 34 OF 54



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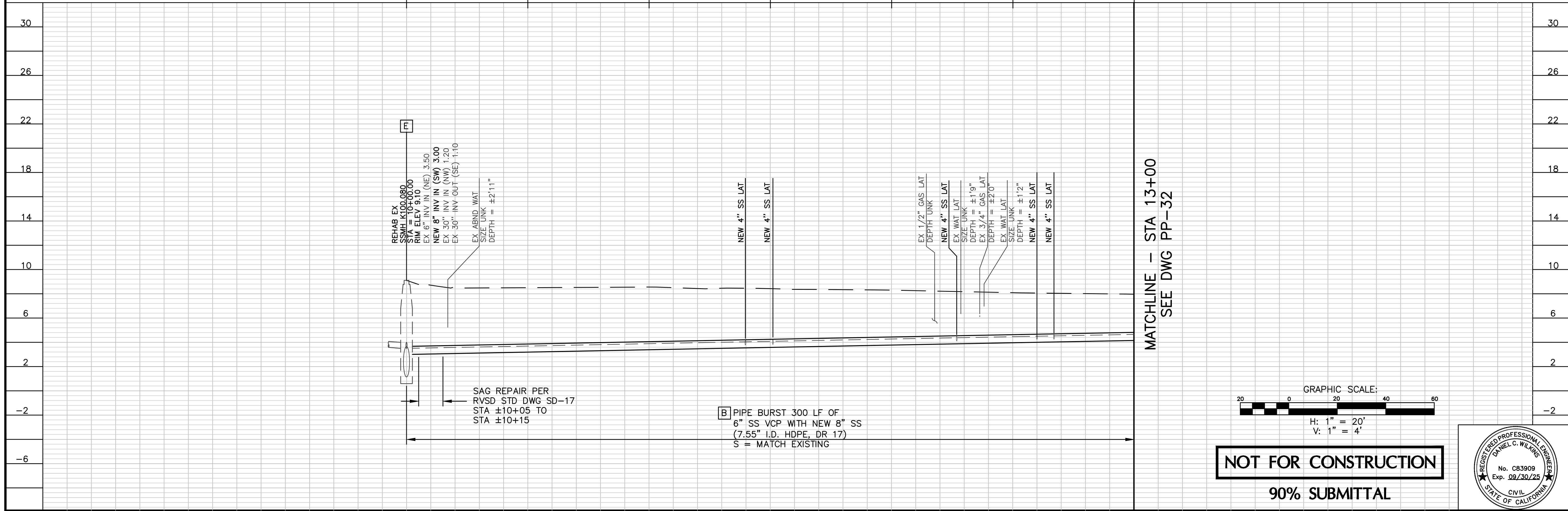




\\nascon\Engineering Data\external PROJECTS\171282 RVS0 FYZ--25 CSP\8.0 DESIGN\B. Design\35--36 PP--31 To PP--32 - KT MCALLISTER W.dwg Save Date: 9/5/2024 12:01 PM Plt Date: 9/5/2024 12:01 PM JosephC

SURVEY CONTROL POINTS

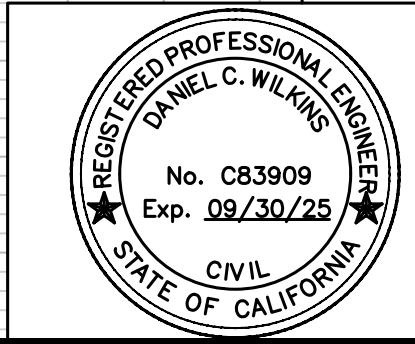
| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
|---------|------------|------------|-----------|-------------|
| 35      | 2175380.83 | 5972535.54 | 9.19      | MAG         |



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

**NOT FOR CONSTRUCTION**

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LEGEND OF REHABILITATION METHODS

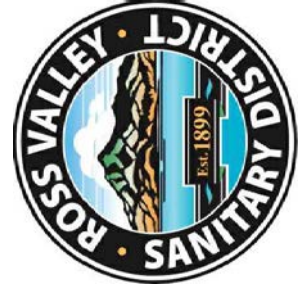
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| NO.         | DATE | BY |  |
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DESIGNED BY: JAC  
CHECKED BY: DCW 09/04/24



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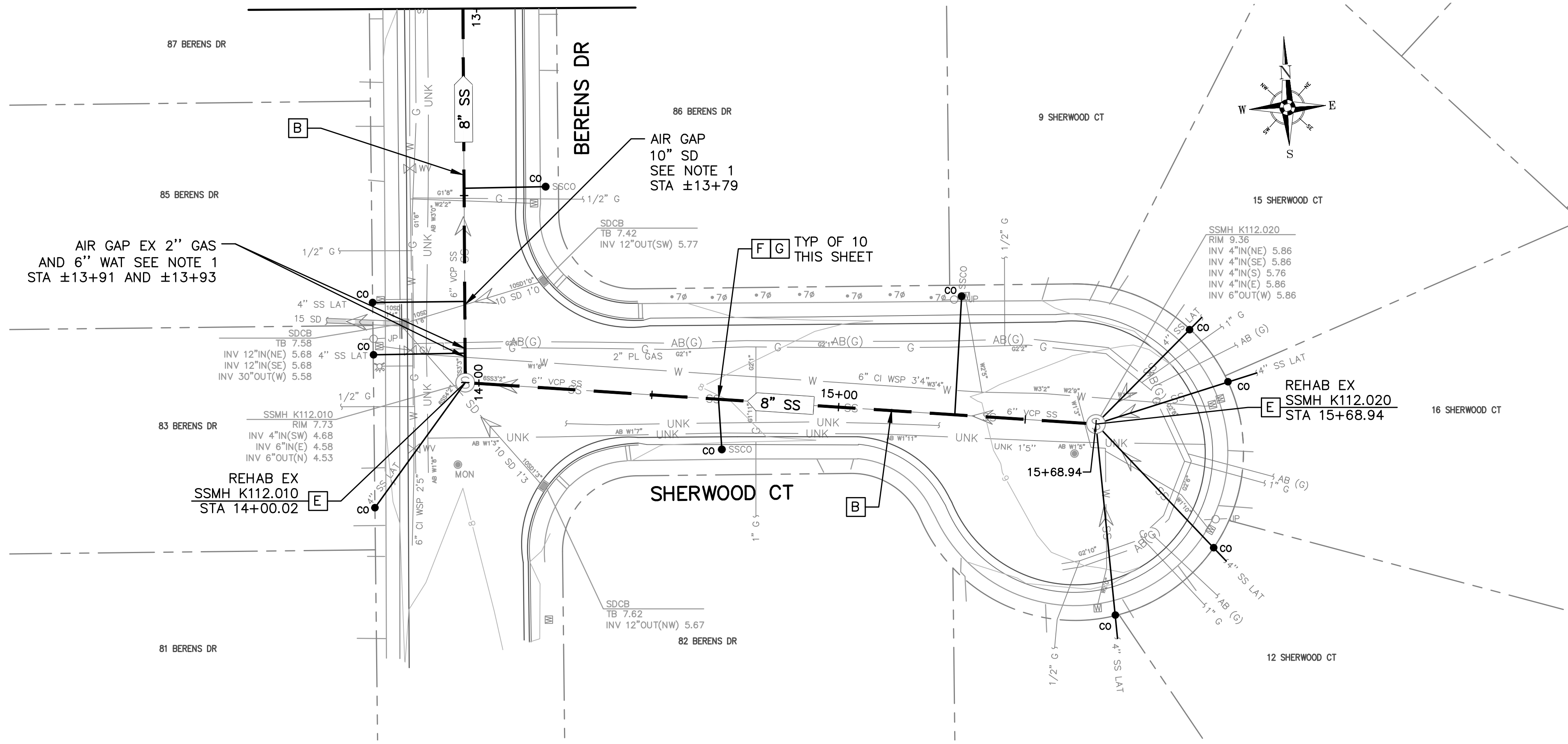
**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**BERENS DR**  
**STA 10+00 TO STA 13+00**

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-31  
SHT 35 OF 54



\\nascon\Engineering Data\WIL\EXTERNAL PROJECTS\1\_PROJECTS\371282 RVS0 FYZ-25 CSP\8.0 DESIGN\B. Design\35-36 PP-31 To PP-32 - KT MCALLISTER W.dwg Save Date: 9/5/2024 12:01 PM Plot Date: 9/5/2024 12:01 PM JosephC

MATCHLINE - STA 13+00  
SEE DWG PP-31



LEGEND OF REHABILITATION METHODS

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DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24

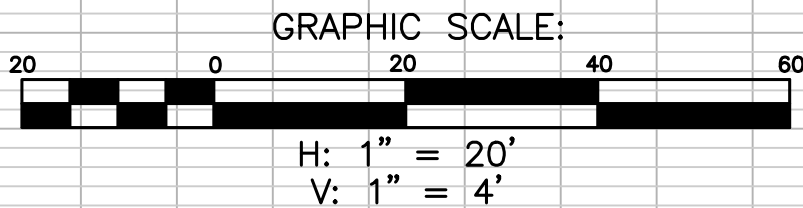
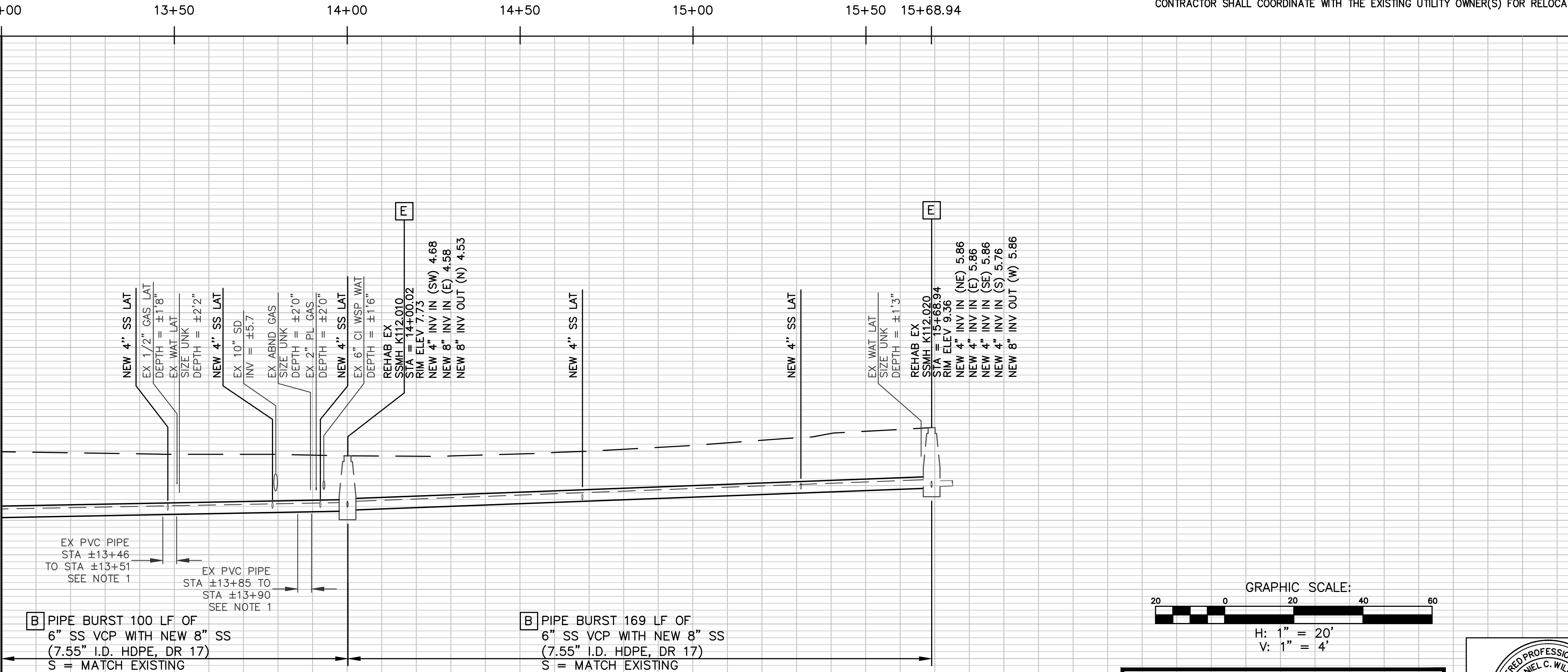


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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
BERENS DR  
STA 13+00 TO END

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-32  
SHT 36 OF 54

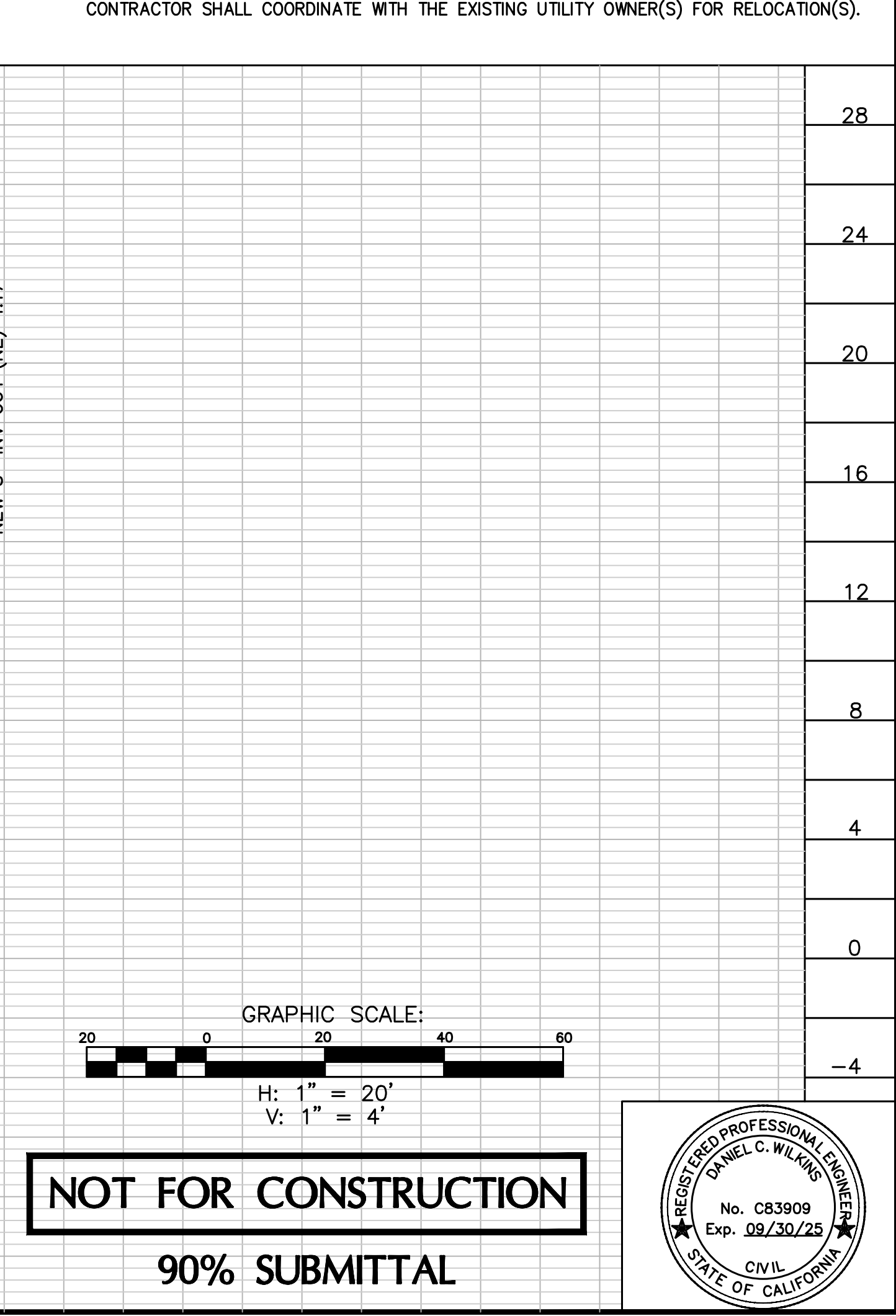
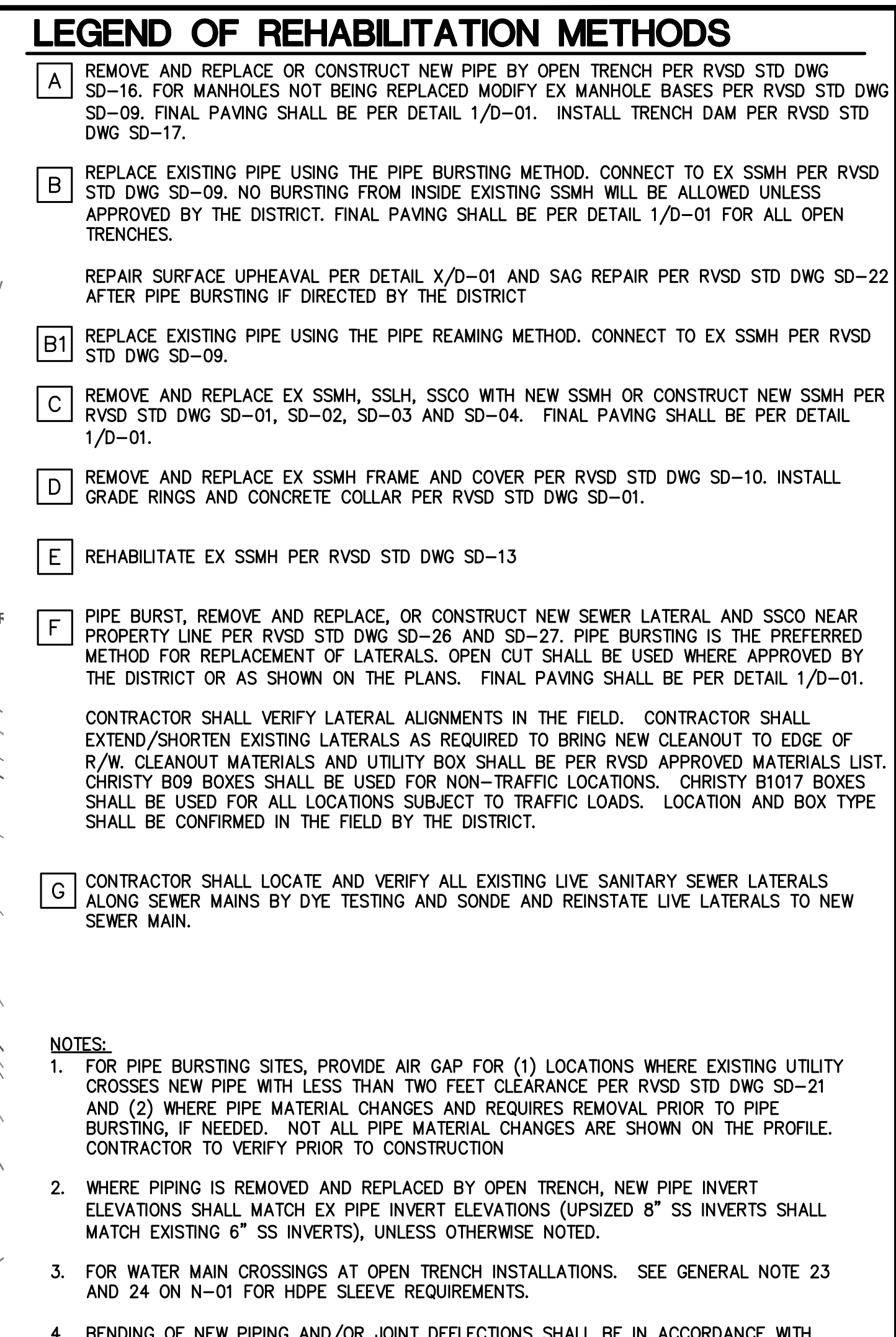
MATCHLINE - STA 13+00  
SEE DWG PP-31



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ALLEY SANITATION DISTRICT  
0024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
LANCASTER AVE  
STA. 10+00 TO END

DATE:  
SEPT 05, 2024

PROJECT ID:  
371282

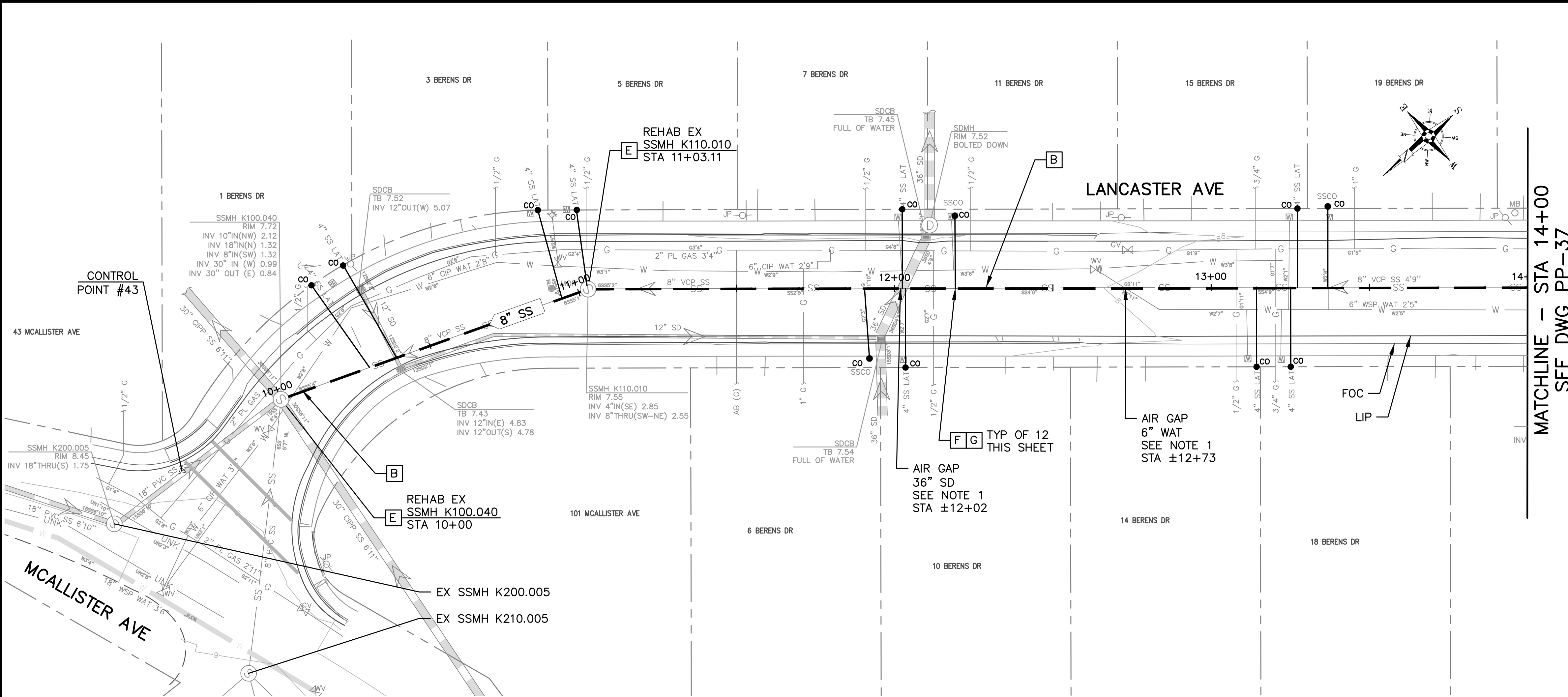
SCALE:  
1" = 20'

DWG. NO  
PP-33

SHT 37 OF 54

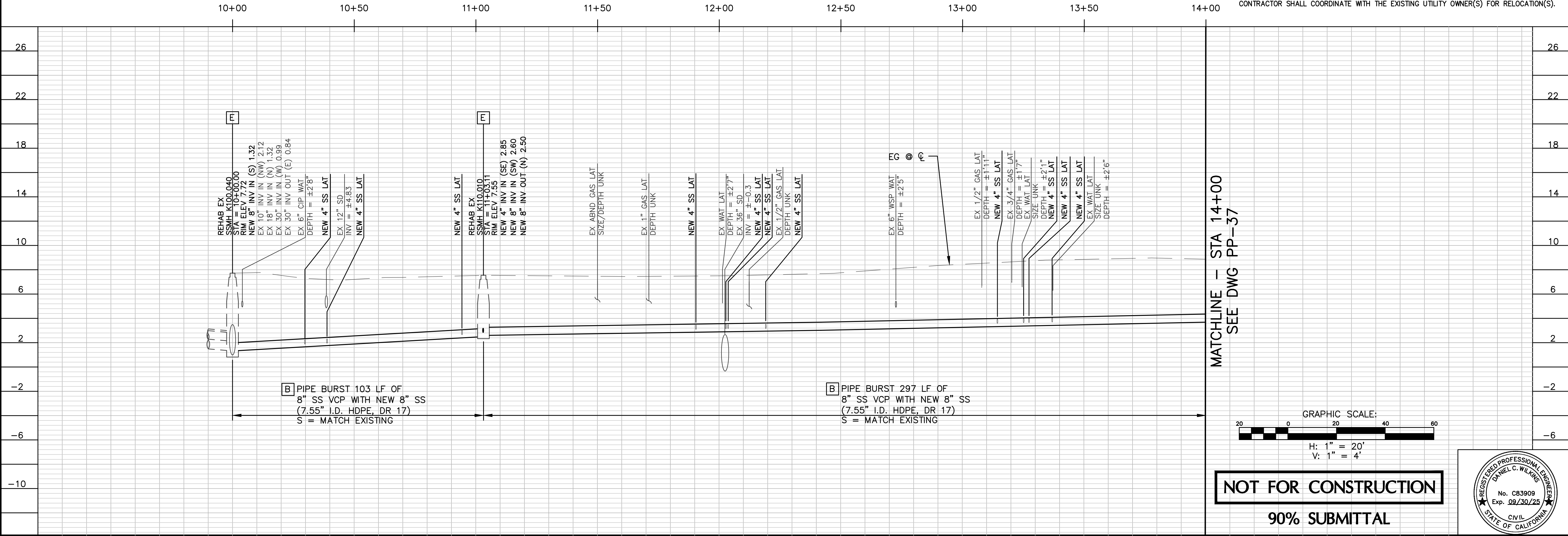


\\nascon\Engineering Data\VL\EXTERNAL PROJECTS\1\_PROJECTS\371282 RVS0 FYZ4-25 CSP\8.0 DESIGN\B\_Design\38-40 PP-34 To PP-36 - KT BERENS.dwg Save Date: 9/5/2024 12:02 PM Plot Date: 9/5/2024 12:02 PM JosephC



SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
|---------|------------|------------|-----------|-------------|
| 43      | 2174899.26 | 5973259.89 | 7.48      | MAG-S       |



### LEGEND OF REHABILITATION METHODS

|    |  |
|----|--|
| A  | REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.  |
| B  | REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.   |
|    | REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT  |
| B1 | REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.  |
| C  | REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.  |
| D  | REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.   |
| E  | REHABILITATE EX SSMH PER RVSD STD DWG SD-13  |
| F  | PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.   |
|    | CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY 809 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CHRISTY 81017 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT. |
| G  | 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.   |

### NOTES:

- 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
- 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.
- FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS. SEE GENERAL NOTE 23 AND 24 ON N-01 FOR HDPE SLEEVE REQUIREMENTS.
- BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
- 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).

MATCHLINE - STA 14+00  
SEE DWG PP-37

MATCHLINE - STA 14+00  
SEE DWG PP-37

GRAPHIC SCALE:

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

NOT FOR CONSTRUCTION

90% SUBMITTAL

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

| NO. | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
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DRAWN BY: MPV  
DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24

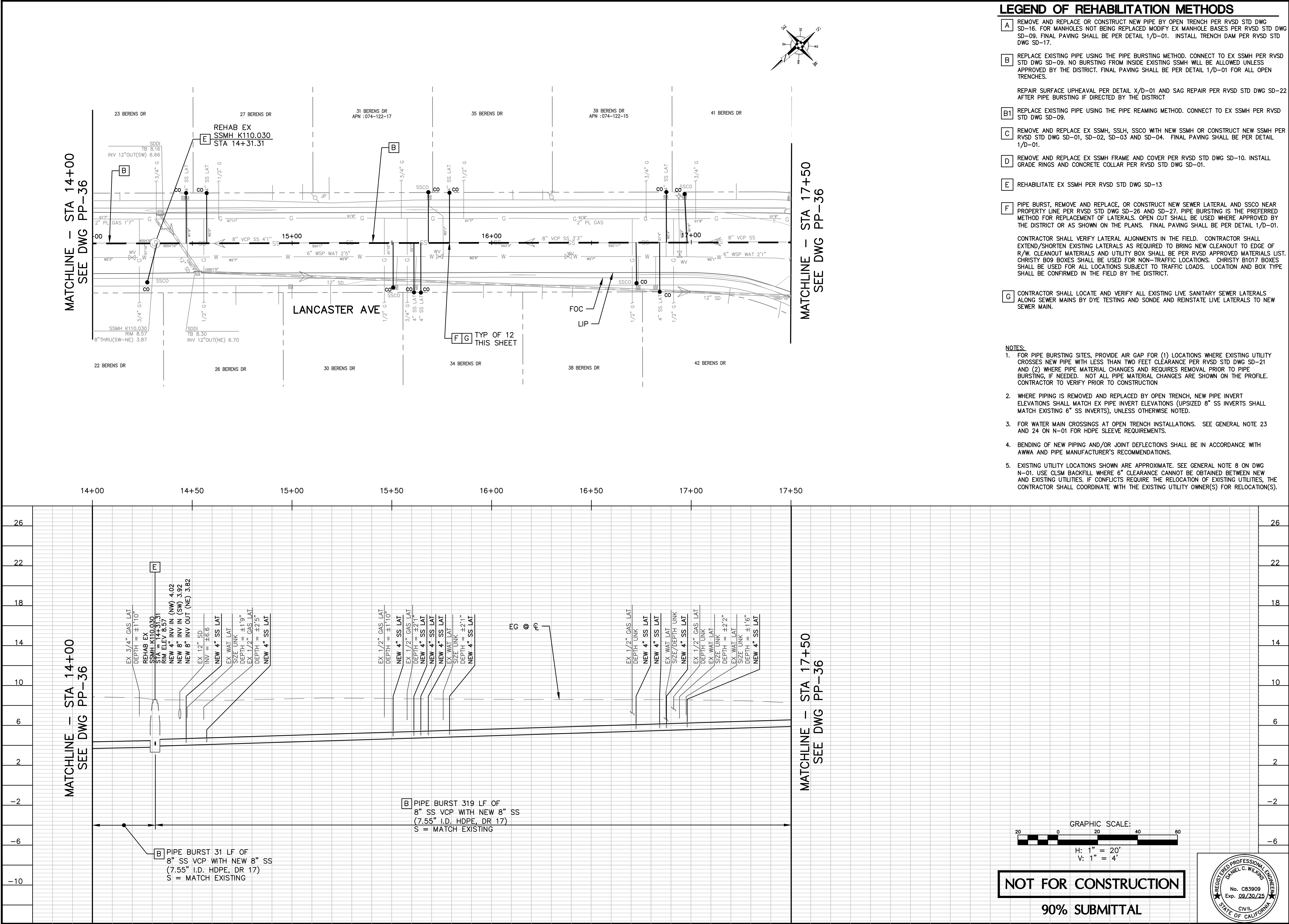
west valley  
CONSTRUCTION  
SINCE 1968  
Design - Build Services  
1001 GALAXY WAY, SUITE 400  
CONCORD, CA. 94520  
925-414-3001  
www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
LANCASTER AVE  
STA 10+00 TO STA 14+00

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-34  
SHT 38 OF 54



\\recon\Engineering Data\WIL EXTERNAL PROJECTS\1\_PROJECTS\371282 RVSD FYZA-25 CSP\8.0 DESIGN\38-40 PP-34 To PP-36 - KT BERENS.dwg Save Date: 9/5/2024 12:02 PM Plot Date: 9/5/2024 12:02 PM JosephC



### LEGEND OF REHABILITATION METHODS

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GRAPHIC SCALE:

20 0 20 40 60

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

**NOT FOR CONSTRUCTION**

**90% SUBMITTAL**



| NO. | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
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DRAWN BY: MPV  
DESIGNED BY: JAC  
CHECKED BY: DCW

09/04/24



**west valley**  
CONSTRUCTION  
SINCE 1968  
Design - Build Services  
1001 GALAXY WAY, SUITE 400  
CONCORD, CA. 94520  
925-414-3001  
www.Westvalleyconstruction.com

**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**LANCASTER AVE**  
**STA 14+00 17+50**

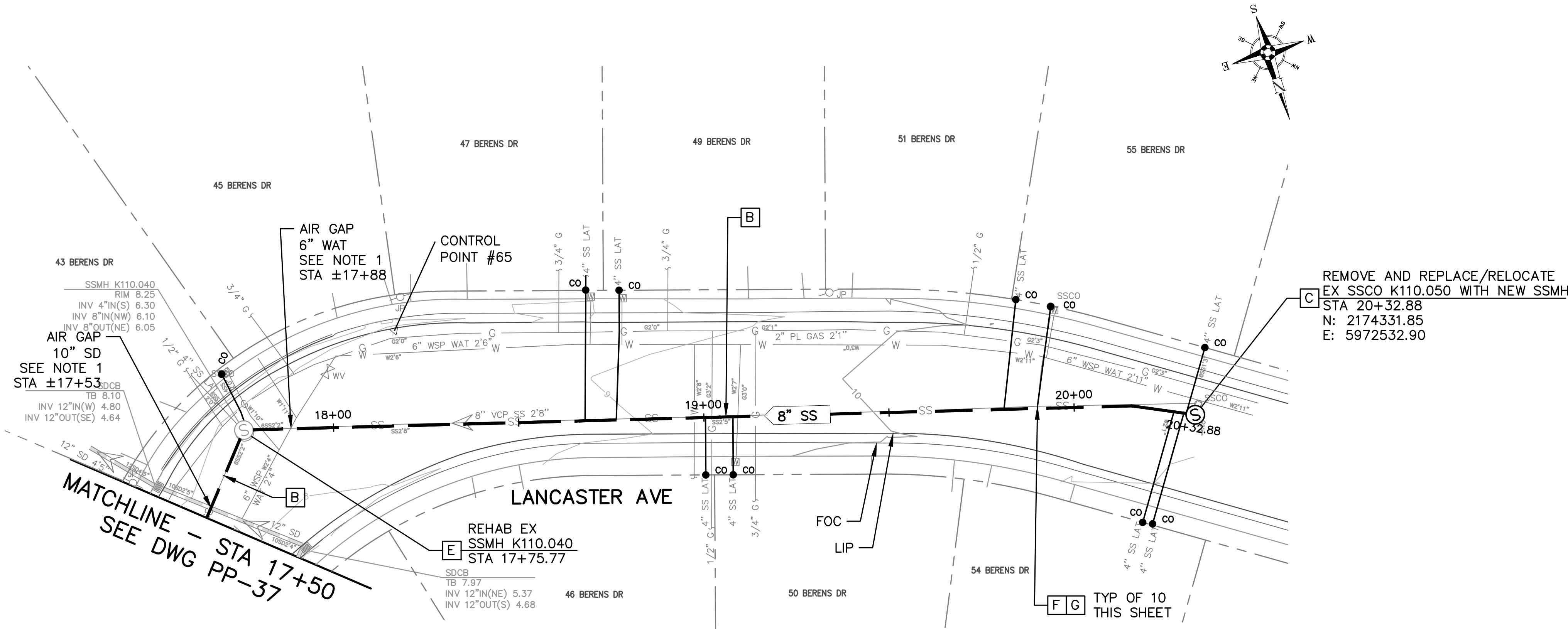
DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-35  
SHT 39 OF 54



\\nascon\Engineering Data\VI\EXTERNAL PROJECTS\1\_PROJECTS\171282 RVSD FYZ-25 CSP\8.0 DESIGN\38-40 PP-34 To PP-36 - KT BERENS.dwg Save Date: 9/5/2024 3:42 PM Plt Date: 9/5/2024 3:42 PM JosephC

SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION    |
|---------|------------|------------|-----------|----------------|
| 65      | 2174243.39 | 5972731.47 | 30.40     | FD 1IN IP OPEN |



LEGEND OF REHABILITATION METHODS

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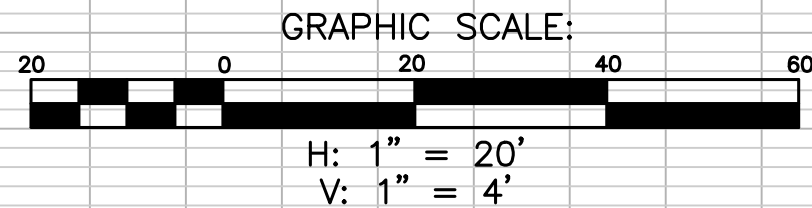
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|--------------|----------|
| DRAWN BY:    | MPV      |
| DESIGNED BY: | JAC      |
| CHECKED BY:  | DCW      |
| DATE:        | 09/04/24 |



west valley CONSTRUCTION SINCE 1968  
Design - Build Services  
1001 GALAXY WAY, SUITE 400  
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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
LANCASTER AVE  
STA 17+50 TO END

|             |               |
|-------------|---------------|
| DATE:       | SEPT 05, 2024 |
| PROJECT ID: | 371282        |
| SCALE:      | 1" = 20'      |
| DWG. NO     | PP-36         |
| SHT         | 40 OF 54      |



NOT FOR CONSTRUCTION  
90% SUBMITTAL

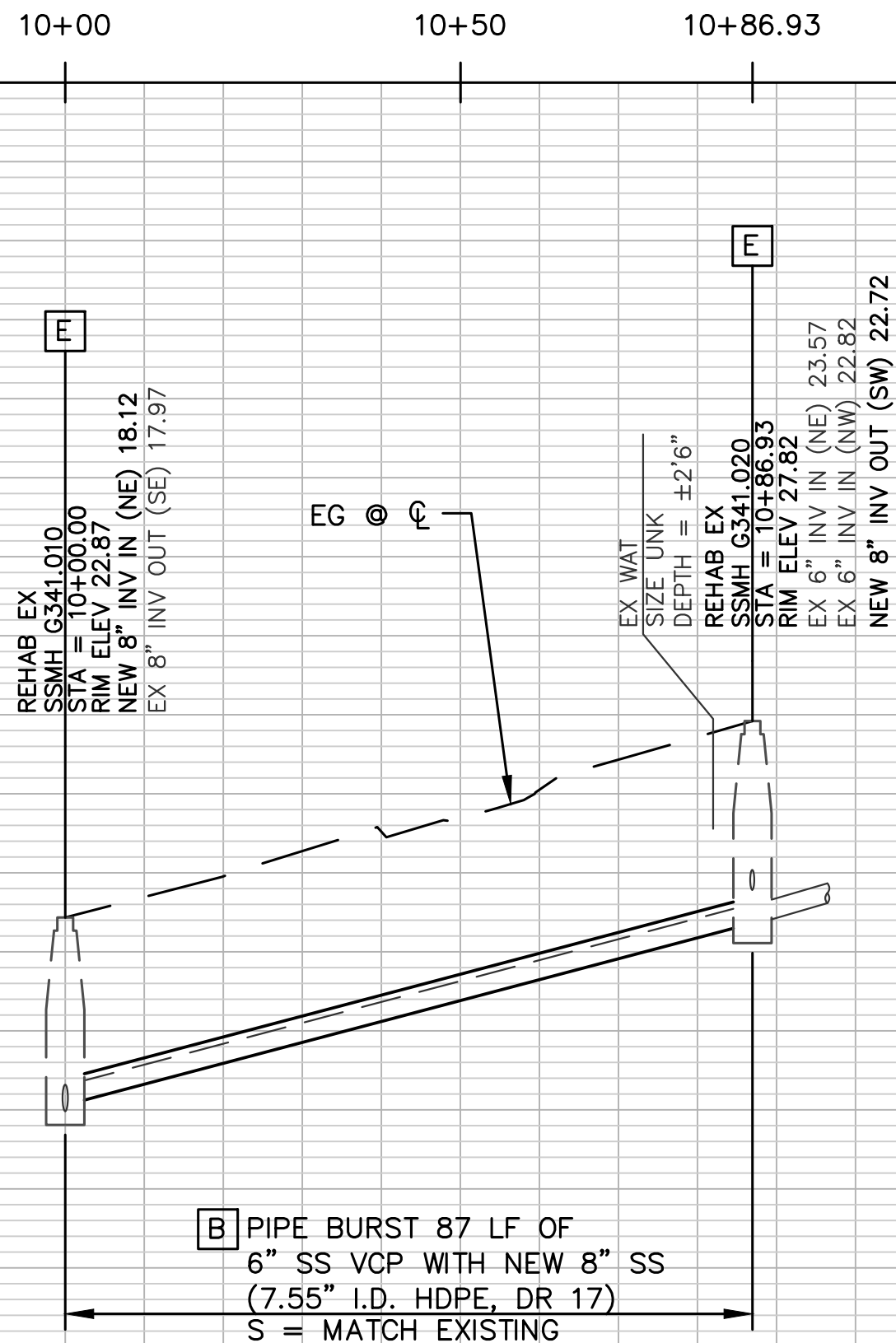
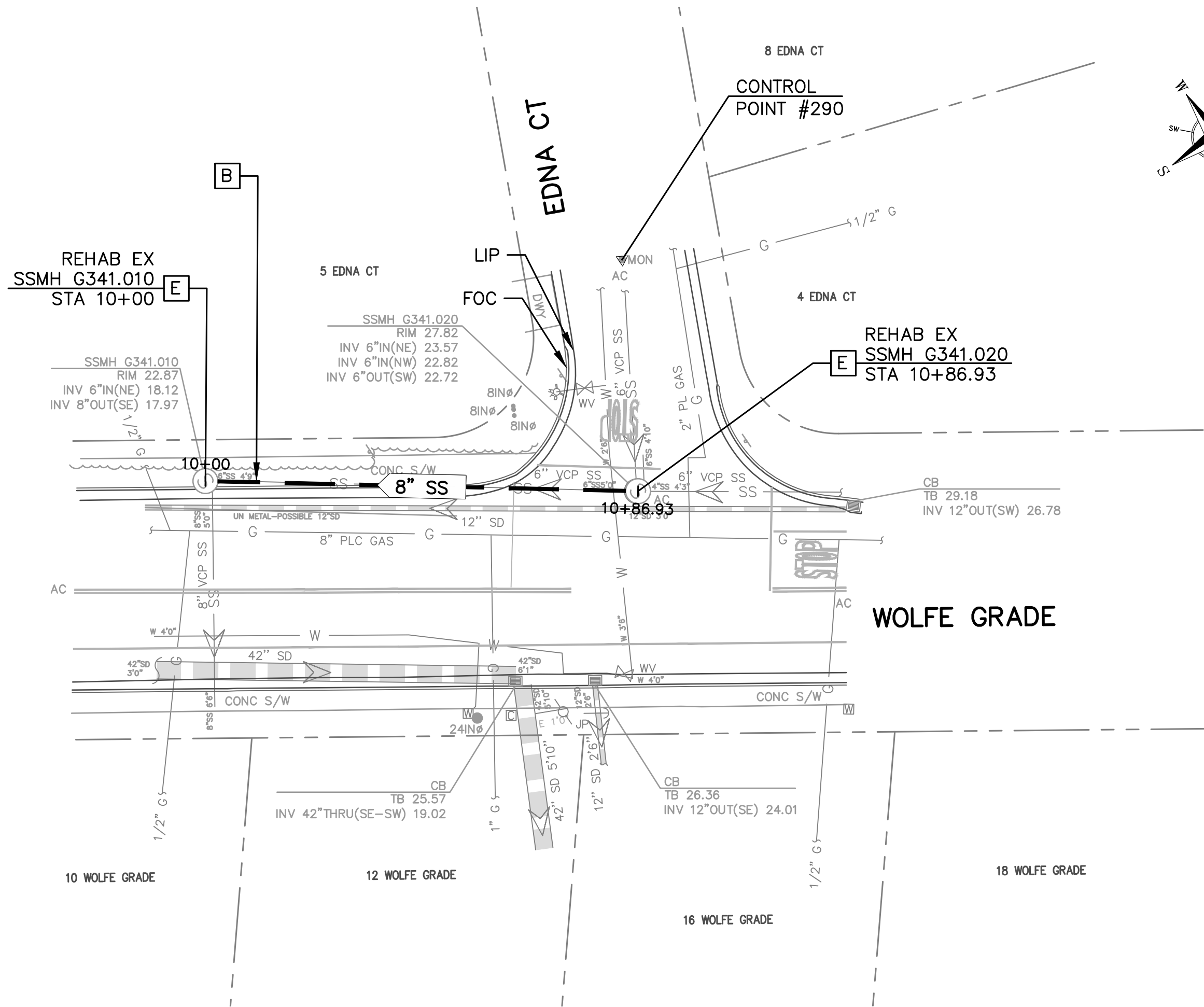




\\nascon\Engineering Data\WIL EXTERNAL PROJECTS\1\_EXTERNAL PROJECTS\371282 RSD FYZ-25 CSP\8.0 DESIGN\B Design\41 PP-37 - KTW WOLFE GRADE.dwg Save Date: 9/5/2024 12:03 PM Plot Date: 9/5/2024 12:03 PM Joseph C

SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION     |
|---------|------------|------------|-----------|-----------------|
| 290     | 2176202.49 | 5974162.32 | 30.40     | FD 11IN IP OPEN |



LEGEND OF REHABILITATION METHODS

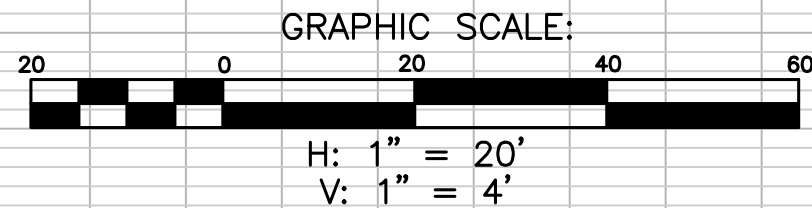
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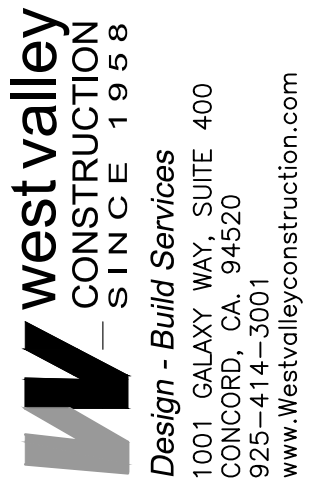
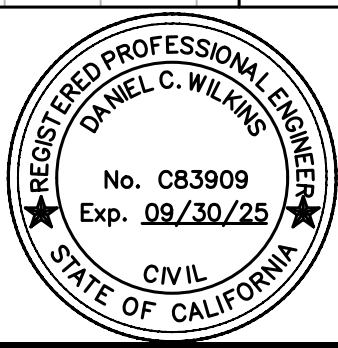
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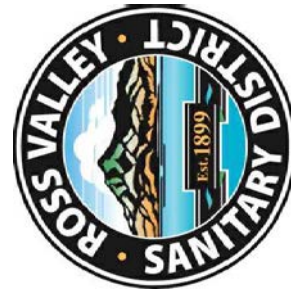
ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
WOLFE GRADE  
STA 10+00 TO END

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-37  
SHT 41 OF 54

| NO. | DATE | BY | DESCRIPTION |
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DRAWN BY: MPV  
DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24



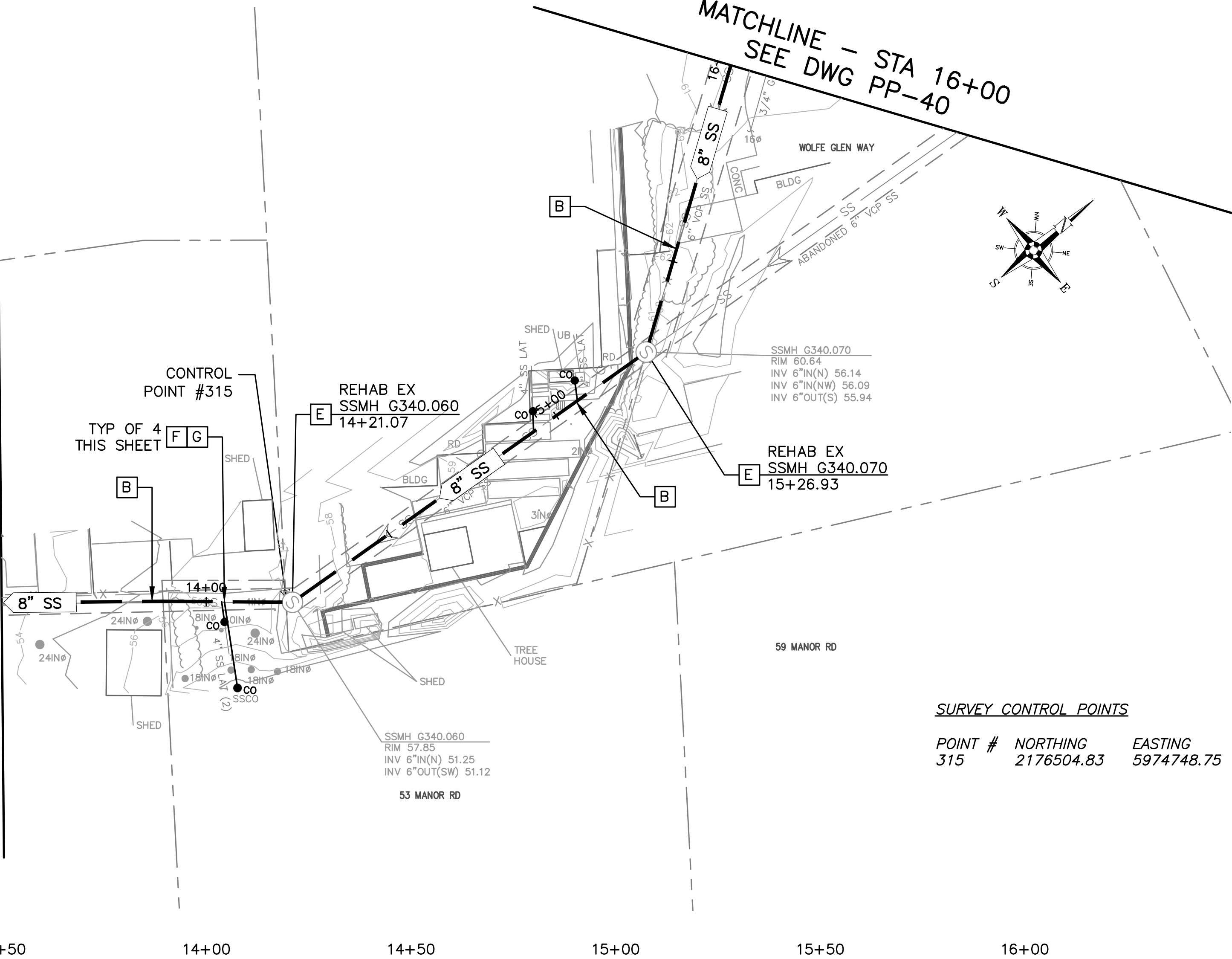






\\reason\Engineering Data\18. EXTERNAL PROJECTS\17282 RVS0 FYZ-25 CSP\8.0 DESIGN\8. Design\2-49 PP-38 To PP-45 - KTW WOLF.dwg Save Date: 9/5/2024 4:19 PM Plt Date: 9/5/2024 4:19 PM JosephC

MATCHLINE - STA 13+50  
SEE DWG PP-38



SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
|---------|------------|------------|-----------|-------------|
| 315     | 2176504.83 | 5974748.75 | 50.15     | 0.5IN REBAR |

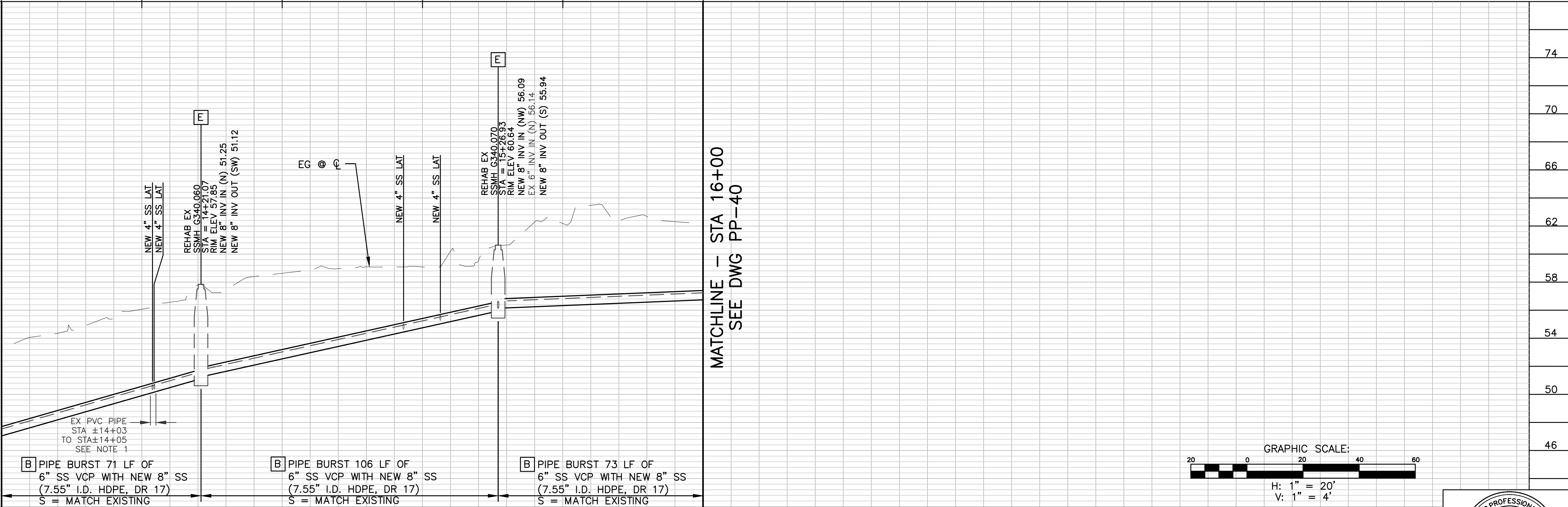
**LEGEND OF REHABILITATION METHODS**

- [A] REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- [B] REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- [B1] REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- [C] REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- [D] REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
- [E] REHABILITATE EX SSMH PER RVSD STD DWG SD-13
- [F] PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY 809 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CHRISTY 51017 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT.
- [G] 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.

NOTES:

- 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
- 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.
- FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS. SEE GENERAL NOTE 23 AND 24 ON N-01 FOR HDPE SLEEVE REQUIREMENTS.
- BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
- 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).

MATCHLINE - STA 13+50  
SEE DWG PP-38



**NOT FOR CONSTRUCTION**

**90% SUBMITTAL**



**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**KENTDALE LN EASEMENT**  
**STA 13+50 TO 16+00**

DATE:  
**SEPT 05, 2024**

PROJECT ID:  
**371282**

SCALE:  
**1" = 20'**

DWG. NO  
**PP-39**

SHT **43** OF **54**



**west valley**  
**CONSTRUCTION**  
SINCE 1968  
Design - Build Services  
1001 GALAXY WAY, SUITE 400  
CONCORD, CA. 94520  
925-414-3001  
www.Westvalleyconstruction.com

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DRAWN BY:  
**MPV**

DESIGNED BY:  
**JAC**

CHECKED BY:  
**DCW**

DATE:  
**09/04/24**

DESCRIPTION

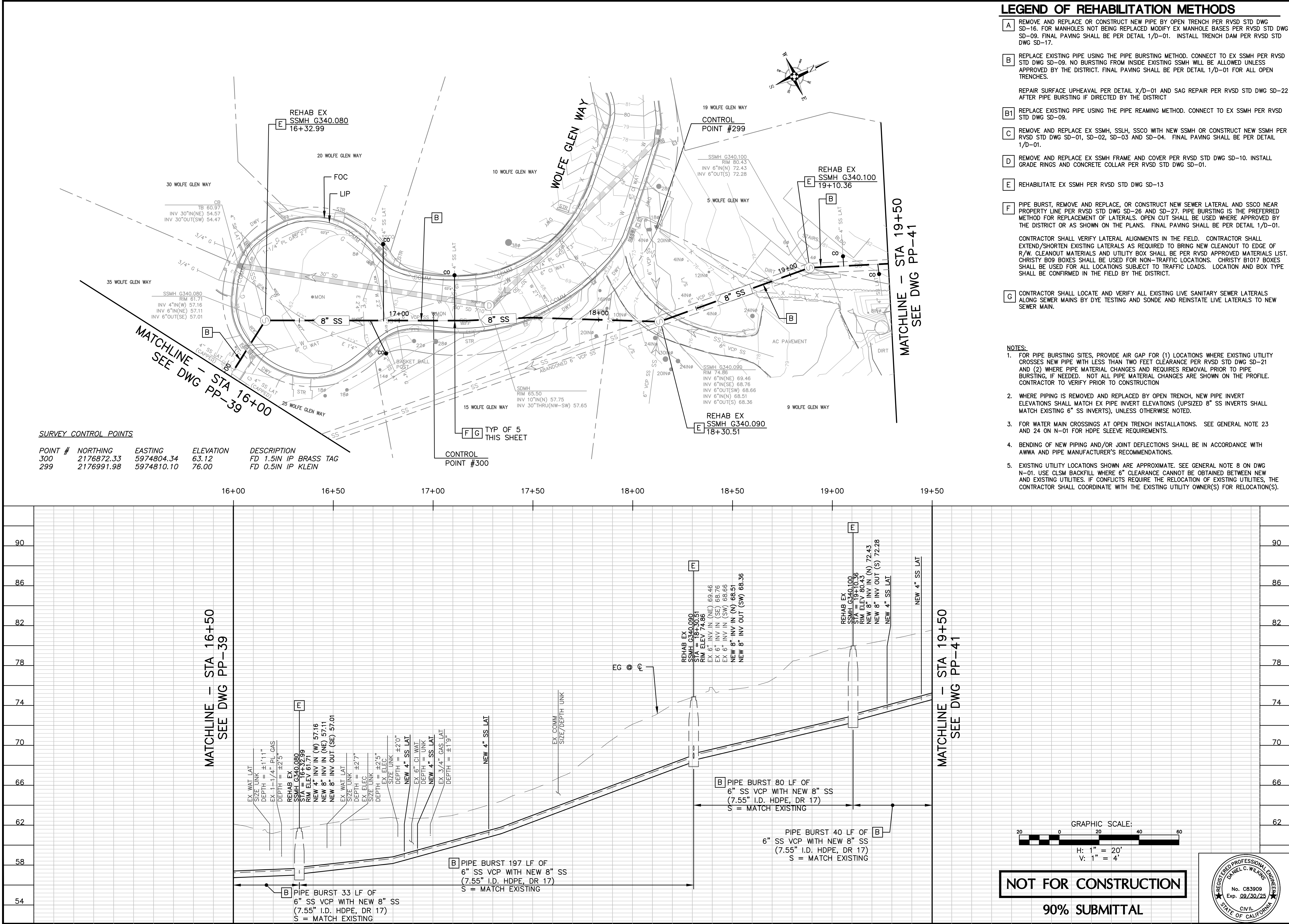
BY

DATE

NO.



\\reason\Engineering Data\VL\EXTERNAL PROJECTS\17282 RVS0 FYZ4-25 CSP\8.0 DESIGN\B Design\V2-48 PP-38 To PP-45 - KTW WOLF.dwg Save Date: 9/5/2024 4:19 PM Plt Date: 9/5/2024 4:19 PM JosephC

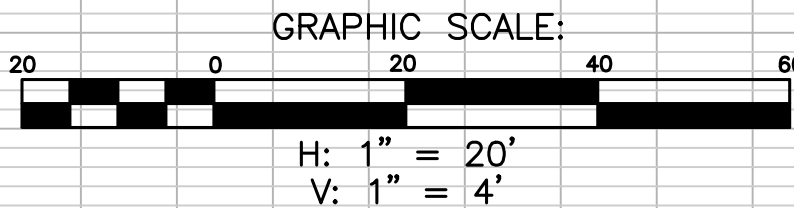


LEGEND OF REHABILITATION METHODS

- [A] REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- [B] REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
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- [B1] REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
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NOTES:

- 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
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NOT FOR CONSTRUCTION

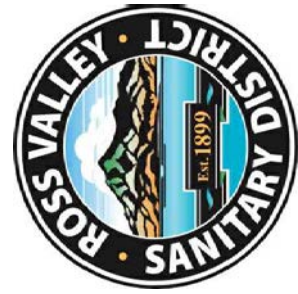
90% SUBMITTAL



| NO. |  | DATE | BY | DESCRIPTION |
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DRAWN BY: MPV  
DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24

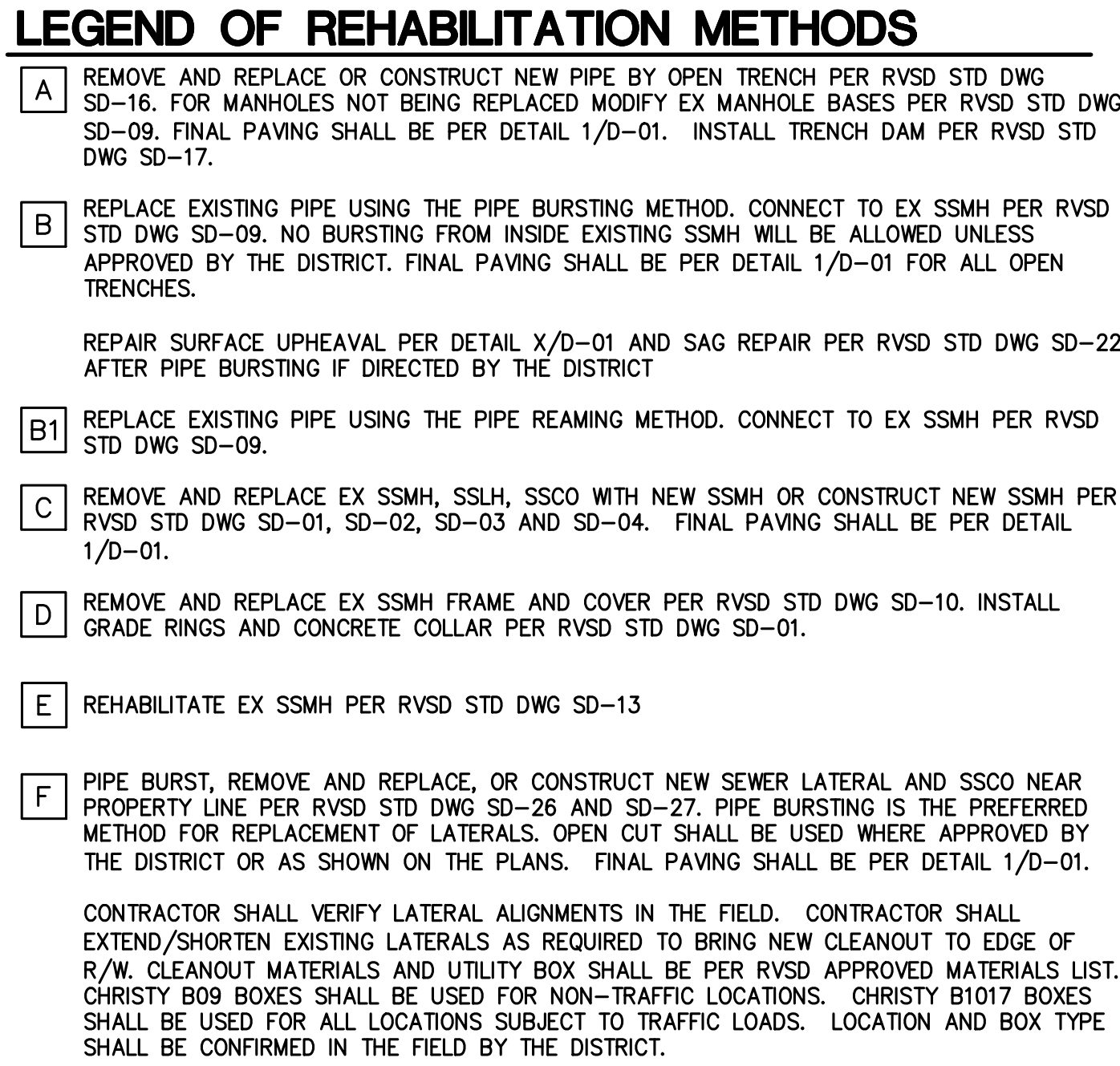


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CONCORD, CA. 94520  
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www.WestValleyConstruction.com

ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
WOLFE GLEN WAY  
STA 16+00 TO 19+50

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-40  
SHT 44 OF 54





- [illegible]

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DRAWN BY:  
MPV

DESIGNED BY:  
JAC

CHECKED BY:  
DCW 09/04/24



**west valley**  
CONSTRUCTION  
SINCE 1958

*Design - Build Services*

1001 GALAXY WAY, SUITE 400  
CONCORD, CA. 94520  
925-414-3001  
[www.Westvalleyconstruction.com](http://www.Westvalleyconstruction.com)

**ALLEY SANITATION DISTRICT  
2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
WOLFE GLEN WAY**

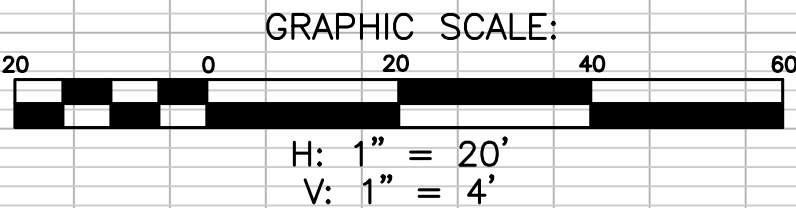
DATE:  
SEPT 05, 2024

PROJECT ID:  
371282

SCALE:  
1" = 20'

DWG. NO  
PP-41

SHT 45 OF 54



NOT FOR CONSTRUCTION

90% SUBMITTAL





\\recon\Engineering Data\external PROJECTS\171282 RVS0 FYZ-25 CSP\8.0 DESIGN\B Design\V2-49 PP-38 To PP-45 - KTW WOLF.dwg Save Date: 9/5/2024 4:20 PM Plot Date: 9/5/2024 4:20 PM JosephC

MATCHLINE - STA 23+50  
SEE DWG PP-41

MATCHLINE - STA 23+50  
SEE DWG PP-41

MATCHLINE - STA 27+50  
SEE DWG PP-43

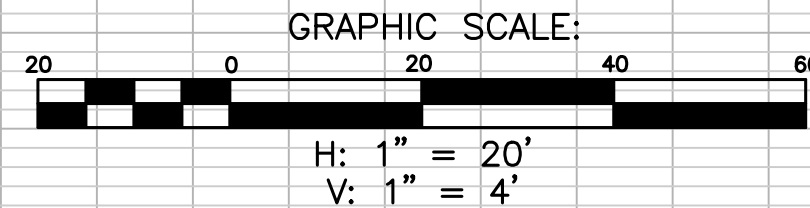
MATCHLINE - STA 27+50  
SEE DWG PP-43

## LEGEND OF REHABILITATION METHODS

- A** REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
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- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
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- G** 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.

### NOTES:

- 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
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NOT FOR CONSTRUCTION

90% SUBMITTAL



**west valley**  
CONSTRUCTION  
SINCE 1968  
Design - Build Services  
1001 GALAXY WAY, SUITE 400  
CONCORD, CA 94520  
925-414-3001  
www.Westvalleyconstruction.com

**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**WOLFE CANYON RD**  
**STA 23+50 TO 27+50**

DATE:  
**SEPT 05, 2024**  
PROJECT ID:  
**371282**  
SCALE:  
**1" = 20'**  
DWG. NO  
**PP-42**  
SHT **46** OF **54**



DRAWN BY:  
**MPV**  
DESIGNED BY:  
**JAC**  
CHECKED BY:  
**DCW** 09/04/24

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| NO. | DATE | BY | DESCRIPTION |
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\\recon\Engineering Data\WIL EXTERNAL PROJECTS\171282 RVSD FYZA-25 CSP\8.0 DESIGN\B Design\V2-48 PP-38 To PP-45 - KTW WOLF.dwg Save Date: 9/5/2024 4:20 PM Plot Date: 9/5/2024 4:20 PM JosephC

MATCHLINE - STA 27+50  
SEE DWG PP-42

NOTE TO CONTRACTOR  
SEE SHT PP-44 FOR LINE/CURVE TABLE

SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION       |
|---------|------------|------------|-----------|-------------------|
| 25797   | 2177867.82 | 5975334.35 | 143.13    | IP W ALUMINUM CAP |

27+50

28+00

28+50

29+00

29+50

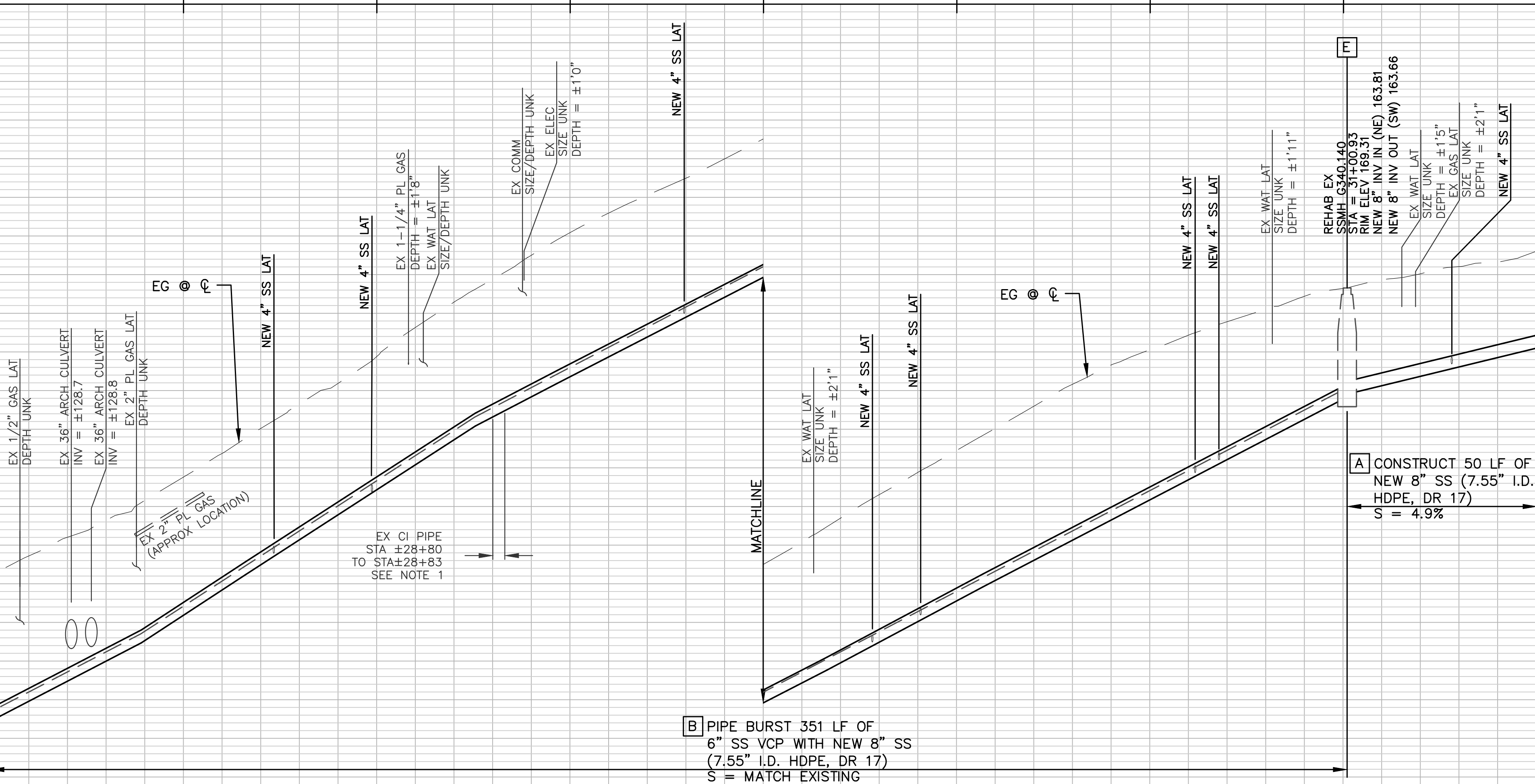
30+00

30+50

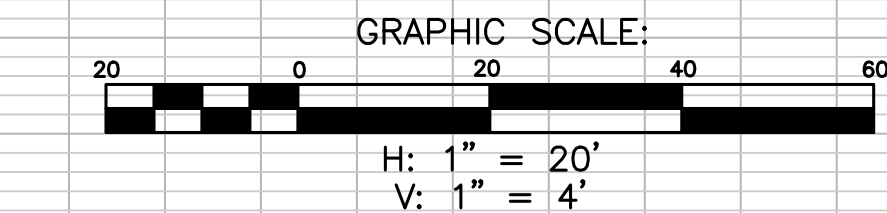
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31+50

MATCHLINE - STA 27+50  
SEE DWG PP-42

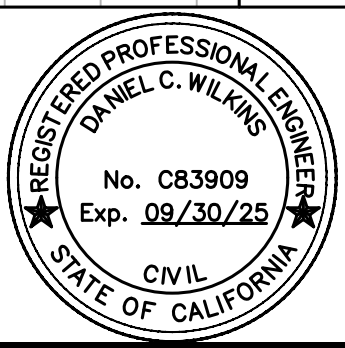


MATCHLINE - STA 31+50  
SEE DWG PP-44



NOT FOR CONSTRUCTION

90% SUBMITTAL



**LEGEND OF REHABILITATION METHODS**

- A** REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
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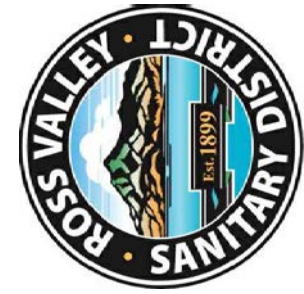
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DRAWN BY: MPV  
DESIGNED BY: JAC  
CHECKED BY: DCW  
DATE: 09/04/24



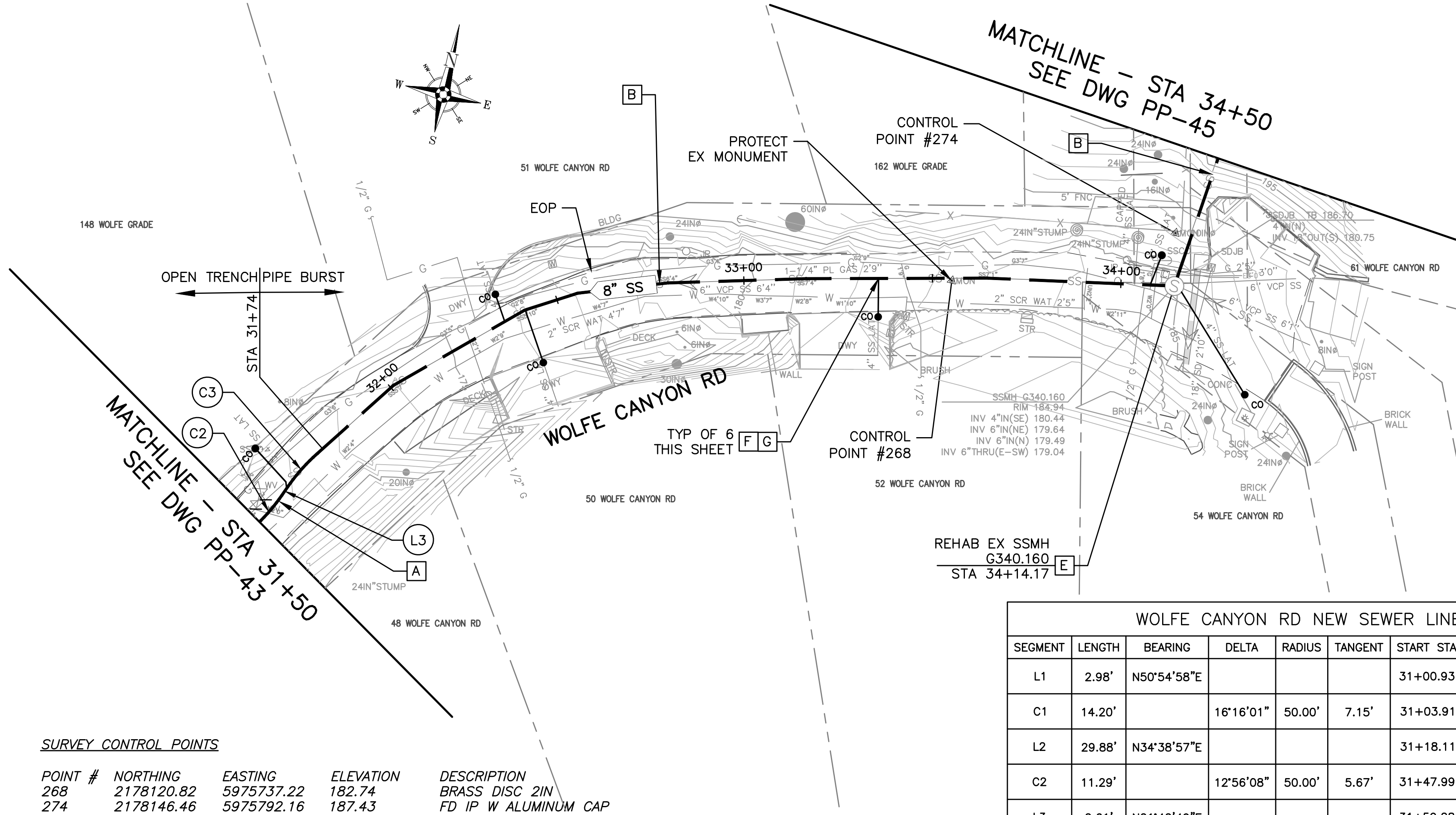
**west valley**  
CONSTRUCTION  
SINCE 1968  
Design - Build Services  
1001 GALAXY WAY, SUITE 400  
CONCORD, CA. 94520  
925-414-3001  
www.Westvalleyconstruction.com

**ROSS VALLEY SANITATION DISTRICT**  
**FY2024/25 GRAVITY SEWER**  
**REHABILITATION PROJECT**  
**WOLFE CANYON RD**  
**STA 27+50 TO 31+50**

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-43  
SHT 47 OF 54



\\recon\Engineering Data\WV\EXTERNAL PROJECTS\171282 RVS0 FYZ4-25 CSP\8.0 DESIGN\B. Design\W2-49 PP-38 To PP-45 - KTW WOLF.dwg Save Date: 9/5/2024 4:21 PM Plt Date: 9/5/2024 4:21 PM JosephC



SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION          |
|---------|------------|------------|-----------|----------------------|
| 268     | 2178120.82 | 5975737.22 | 182.74    | BRASS DISC 2IN       |
| 274     | 2178146.46 | 5975792.16 | 187.43    | FD IP W ALUMINUM CAP |

LEGEND OF REHABILITATION METHODS

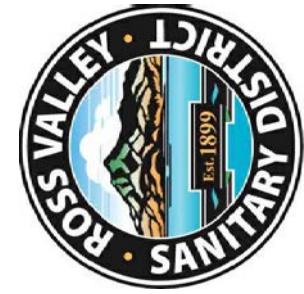
- A REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- B REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- B1 REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- B1 REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- C REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- D REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
- E REHABILITATE EX SSMH PER RVSD STD DWG SD-13
- F PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- G 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.

- NOTES:
- 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
  - 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.
  - FOR WATER MAIN CROSSINGS AT OPEN TRENCH INSTALLATIONS. SEE GENERAL NOTE 23 AND 24 ON N-01 FOR HDPE SLEEVE REQUIREMENTS.
  - BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
  - 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).

| NO. |  | DATE | BY | DESCRIPTION |
|-----|--|------|----|-------------|
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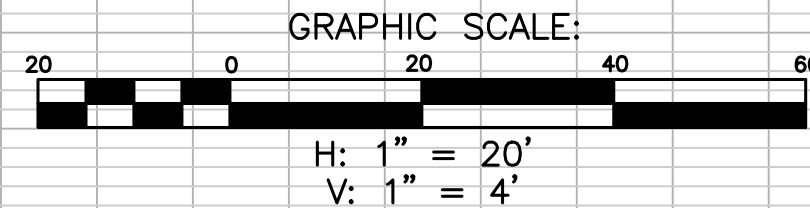
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DESIGNED BY: JAC  
CHECKED BY: DCW  
09/04/24



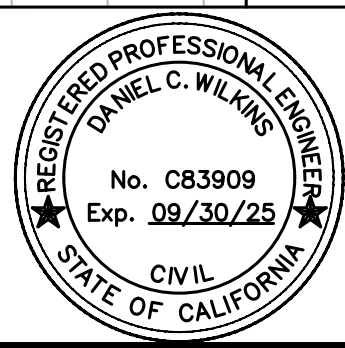
west valley CONSTRUCTION SINCE 1958  
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ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
WOLFE CANYON RD  
STA 31+50 TO 34+50

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-44  
SHT 48 OF 54



NOT FOR CONSTRUCTION  
90% SUBMITTAL





\\reason\Engineering Data\WIL\EXTERNAL PROJECTS\171282 RVSD FYZ-25 CSP\8.0 DESIGN\B Design\2-49 PP-38 To PP-45 - KTW WOLF.dwg Save Date: 9/5/2024 4:21 PM Plt Date: 9/5/2024 4:21 PM JosephC

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION          |
|---------|------------|------------|-----------|----------------------|
| 280     | 2178245.61 | 5975771.68 | 214.75    | FD IP W ALUMINUM CAP |
| 278     | 2178322.84 | 5975755.67 | 233.45    | FD IP W ALUMINUM CAP |

SURVEY CONTROL POINTS

MATCHLINE - STA 34+50  
SEE DWG PP-44

MATCHLINE - STA 34+50  
SEE DWG PP-46

[B] PIPE BURST 185 LF OF  
6" SS VCP WITH NEW 8" SS  
(7.55" I.D. HDPE, DR 17)  
S = MATCH EXISTING

REHAB EX  
SSMH G340.180  
STA 36+35.34  
CONSTRUCT PCC TOP BLOCK  
PER RVSD STD SD-12.

[B] PIPE BURST 64 LF OF  
6" SS VCP WITH NEW 8" SS  
(7.55" I.D. HDPE, DR 17)  
S = MATCH EXISTING

EX C1 PIPE  
STA ±37+06  
TO  
STA ±37+12  
SEE NOTE 1

[B] PIPE BURST 175 LF OF  
6" SS VCP WITH NEW 8" SS  
(7.55" I.D. HDPE, DR 17)  
S = MATCH EXISTING

NOT FOR CONSTRUCTION  
90% SUBMITTAL

PHOTO  
1  
NOT TO SCALE

EX SEWER

GRAPHIC SCALE:  
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 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- [B] REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- [B1] REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- [C] REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- [D] REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
- [E] REHABILITATE EX SSMH PER RVSD STD DWG SD-13
- [F] PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY 809 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. CHRISTY 51017 BOXES SHALL BE USED FOR ALL LOCATIONS SUBJECT TO TRAFFIC LOADS. LOCATION AND BOX TYPE SHALL BE CONFIRMED IN THE FIELD BY THE DISTRICT.
- [G] 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.

NOTES:

- 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
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- BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
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Design - Build Services  
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CONCORD, CA 94520  
925-414-3001  
www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
WOLFE GRADE  
STA 34+50 TO END

DATE:  
SEPT 05, 2024  
PROJECT ID:  
371282  
SCALE:  
1" = 20'  
DWG. NO  
PP-45  
SHT 49 OF 54

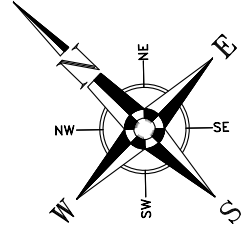
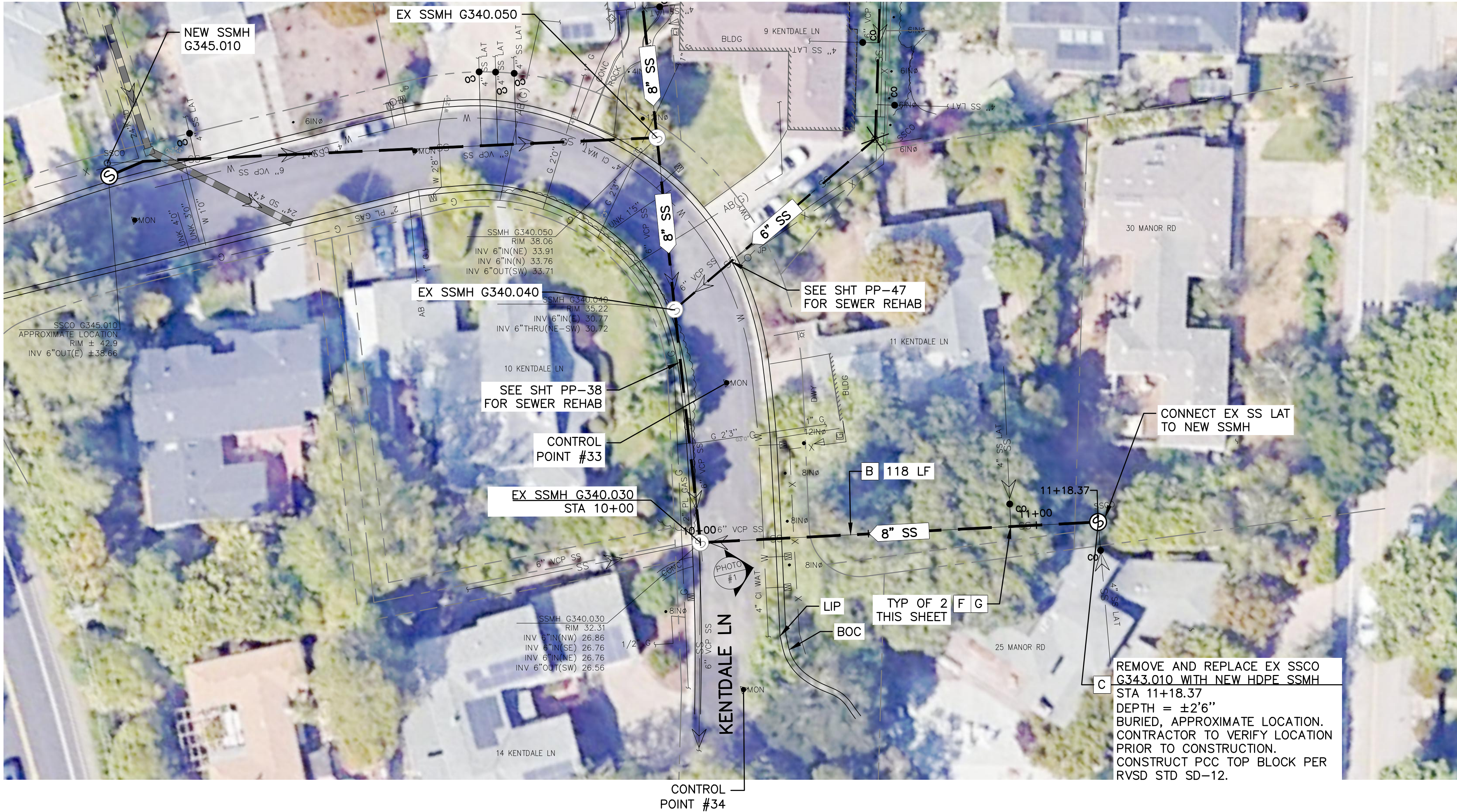
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DRAWN BY:  
JAC  
DESIGNED BY:  
JAC  
CHECKED BY:  
DCW 09/04/24





\\nason\Engineering Data\171282 RVS0 F24-25 CSP\8.0 DESIGN\B Design\50 PP-46 - KTW 11 KENTDALE LN.dwg Save Date: 9/5/2024 2:48 PM Plt Date: 9/5/2024 2:48 PM JosephC



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 X/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- B REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL X/D-01 FOR ALL OPEN TRENCHES.
- B1 REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- C REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL X/D-01.
- D REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
- E REHABILITATE EX SSMH PER RVSD STD DWG SD-13
- F PIPE BURST. REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL X/D-01.
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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, SCHEDULE 80 PVC WITH SEWER POPPER TYPE 2 BACKWATER PREVENTION DEVICE. 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.

- FOR PIPE BURSTING/PIPE REAMING SITES DISCONNECT AND RECONNECT SEWER LATERALS PER RVSD STD DWG SD-33 AND SD-34.
- NOTES:
- 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
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SURVEY CONTROL POINTS

| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION        |
|---------|------------|------------|-----------|--------------------|
| 33      | 2176303.97 | 5974593.20 | 34.25     | FD 11IN IP OPEN    |
| 34      | 2176236.99 | 5974531.06 | 31.23     | FD 0.75IN IP W PIN |



PHOTO EX SEWER  
1 NOT TO SCALE

NOT FOR CONSTRUCTION

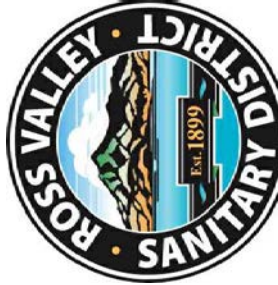
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ROSS VALLEY SANTARY DISTRICT  
FY24/25 GRAVITY SEWER  
IMPROVEMENTS PROJECT  
11 KENTDALE LN  
EASEMENT  
STA 10+00 TO END

DATE:  
SEPT 5, 2024  
PROJECT ID:  
371282  
SCALE:  
1"=4.20'  
DWG. NO  
PP-46  
SHT 50 OF 54

west valley  
CONSTRUCTION  
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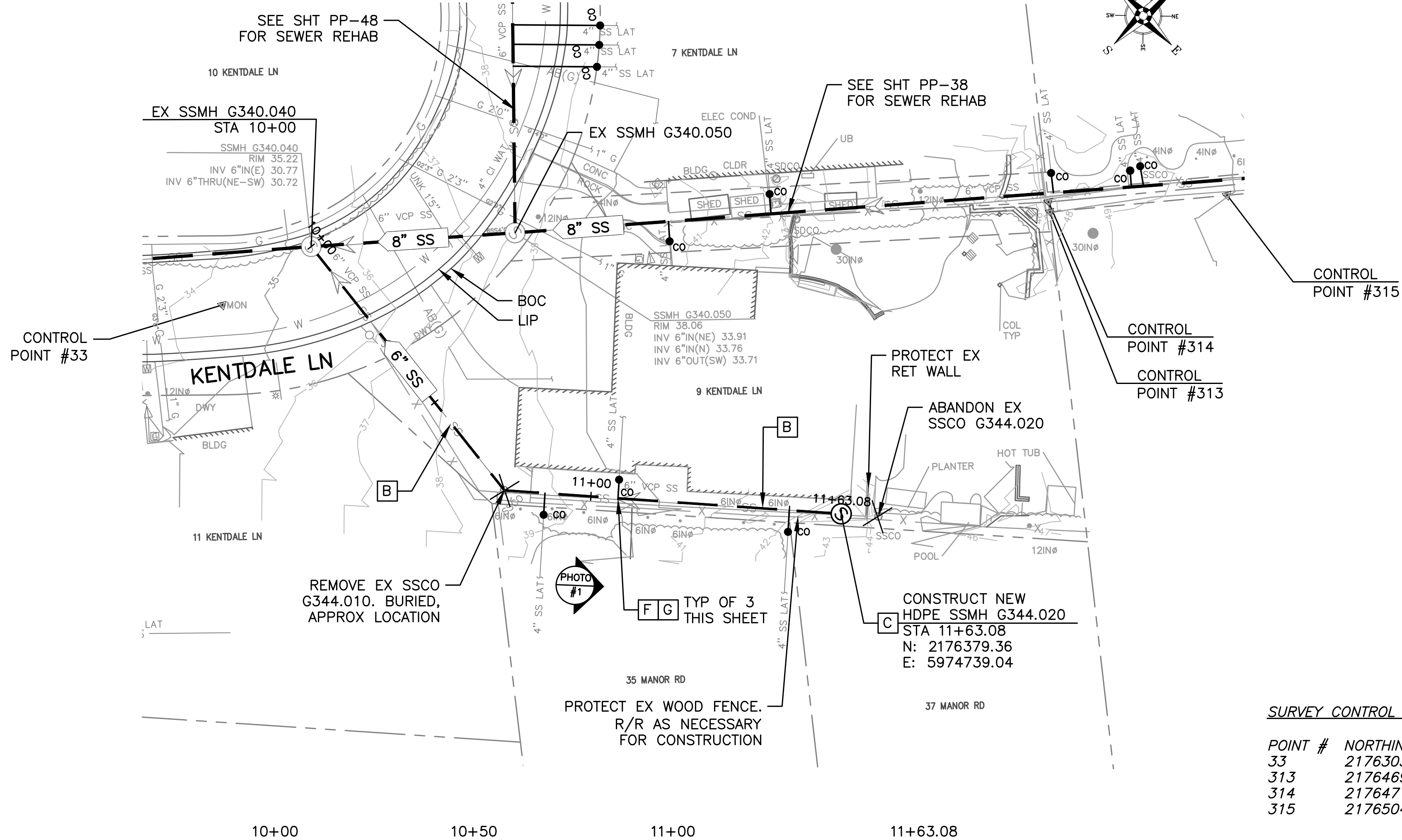
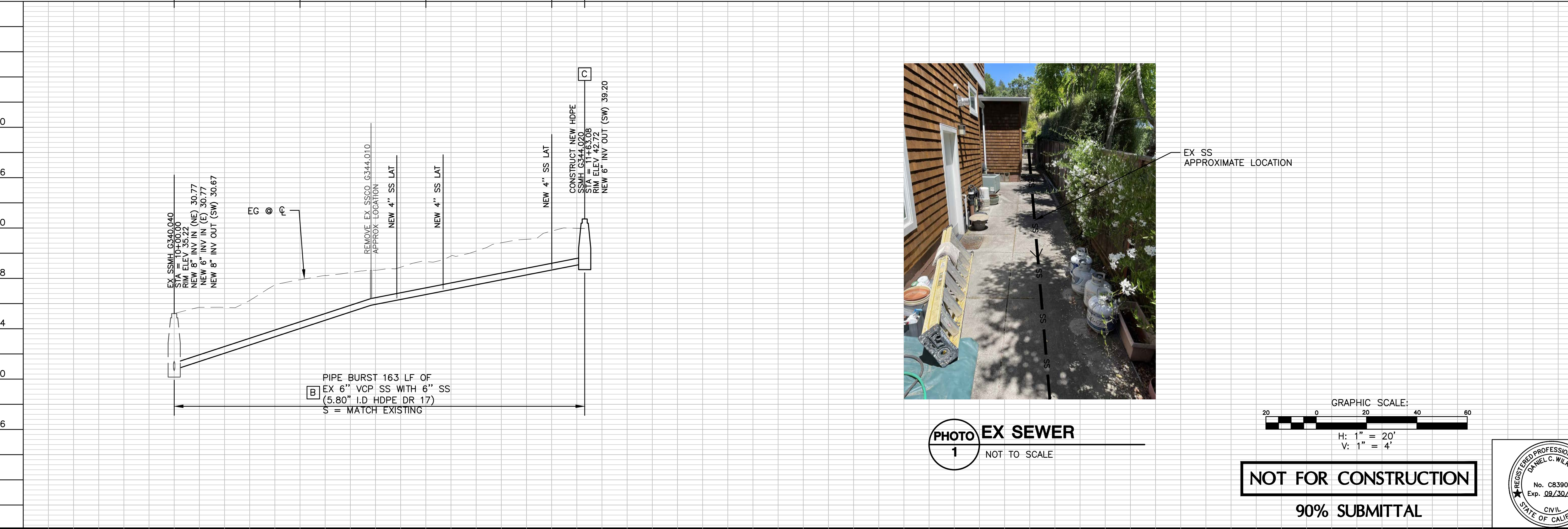
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JAC  
DESIGNED BY:  
JAC  
CHECKED BY: DATE:  
DCW 09/04/24

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| NO. | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
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\\reason\Engineering Data\external PROJECTS\171282 RSD FYZ-25 CSP\8.0 DESIGN\B Design\51 PP-47 - KTW 9 KENDALE LN.dwg Save Date: 9/5/2024 2:49 PM Plt Date: 9/5/2024 2:49 PM JosephC

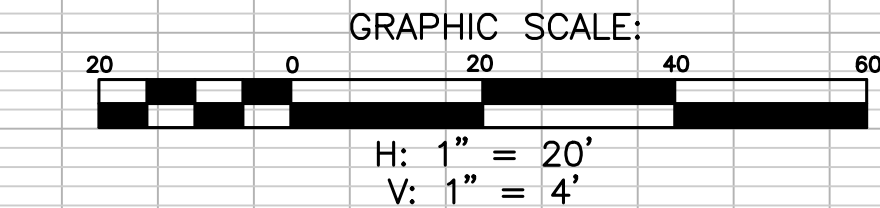


SURVEY CONTROL POINTS

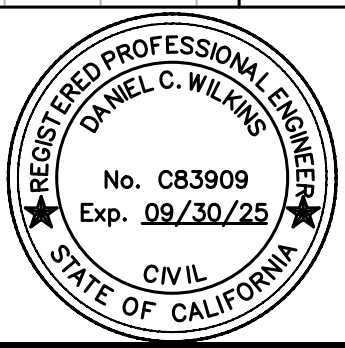
| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION     |
|---------|------------|------------|-----------|-----------------|
| 33      | 2176303.97 | 5974593.20 | 34.25     | FD 11IN IP OPEN |
| 313     | 2176469.87 | 5974720.88 | 48.05     | 0.5IN REBAR     |
| 314     | 2176471.33 | 5974718.83 | 48.03     | 0.5IN REBAR     |
| 315     | 2176504.83 | 5974748.75 | 50.15     | 0.5IN REBAR     |



PHOTO  
1  
EX SEWER  
NOT TO SCALE



NOT FOR CONSTRUCTION  
90% SUBMITTAL

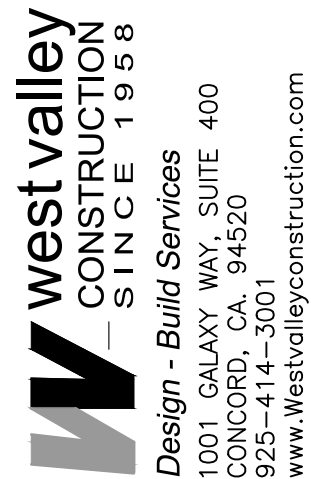


LEGEND OF REHABILITATION METHODS

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- B** REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT
- B1** REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- C** REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
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- F** PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
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- G** 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.

NOTES:

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

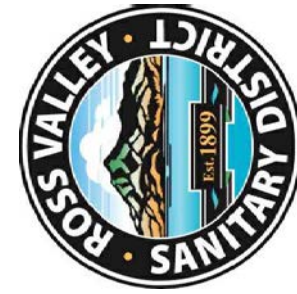


ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
9 KENDALE LN  
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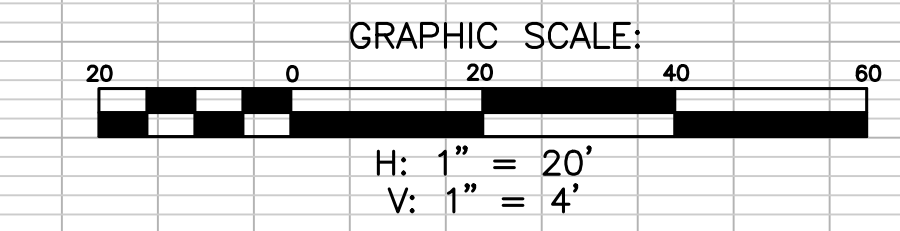
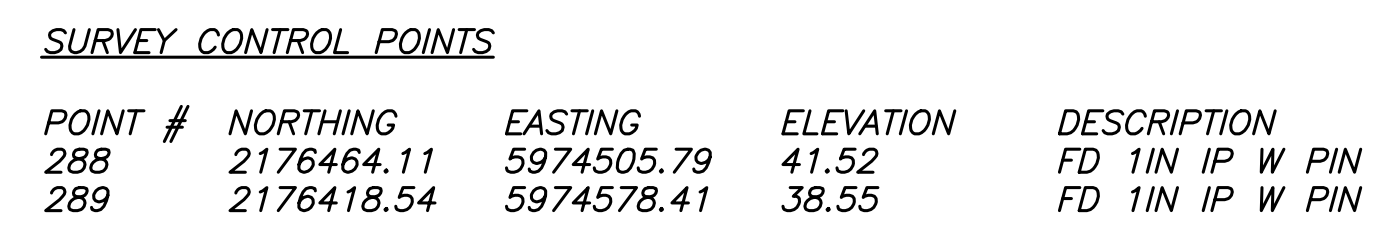
DATE:  
SEPT 05, 2024  
PROJECT ID:  
371282  
SCALE:  
1" = 20'  
DWG. NO  
PP-47  
SHT 51 OF 54

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DRAWN BY:  
JAC  
DESIGNED BY:  
JAC  
CHECKED BY:  
DCW 09/04/24

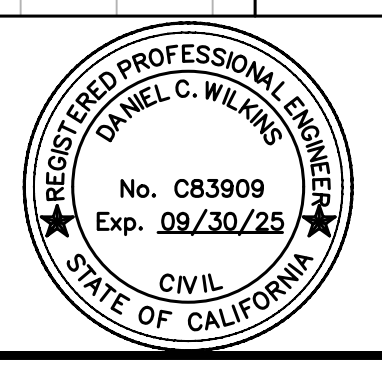






**NOT FOR CONSTRUCTION**

**90% SUBMITTAL**



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

B REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.

REPAIR SURFACE UPHEAVAL PER DETAIL X/D-01 AND SAG REPAIR PER RVSD STD DWG SD-22 AFTER PIPE BURSTING IF DIRECTED BY THE DISTRICT

B1 REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.

C REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.

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

E REHABILITATE EX SSMH PER RVSD STD DWG SD-13

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

CONTRACTOR SHALL VERIFY LATERAL ALIGNMENTS IN THE FIELD. CONTRACTOR SHALL EXTEND/SHORTEN EXISTING LATERALS AS REQUIRED TO BRING NEW CLEANOUT TO EDGE OF R/W. CLEANOUT MATERIALS AND UTILITY BOX SHALL BE PER RVSD APPROVED MATERIALS LIST. CHRISTY B09 BOXES SHALL BE USED FOR NON-TRAFFIC LOCATIONS. 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.

G 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.

1. FOR PIPE BURSTING SITES, PROVIDE AIR GAP FOR (1) LOCATIONS WHERE EXISTING UTILITY CROSSES NEW PIPE WITH LESS THAN TWO FEET CLEARANCE PER RVSD SD 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
2. WHERE PIPING IS REMOVED AND REPLACED BY OPEN TRENCH, NEW PIPE INVERT ELEVATIONS SHALL MATCH EX PIPE INVERT ELEVATIONS (UPSIZED 8" SS INVERTS SHALL MATCH EXISTING 6" SS INVERTS), UNLESS OTHERWISE NOTED.
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4. BENDING OF NEW PIPING AND/OR JOINT DEFLECTIONS SHALL BE IN ACCORDANCE WITH AWWA AND PIPE MANUFACTURER'S RECOMMENDATIONS.
5. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. SEE GENERAL NOTE 8 ON DWG N-01. USE CLSM BACKFILL WHERE 6" CLEARANCE CANNOT BE OBTAINED BETWEEN NEW AND EXISTING UTILITIES. IF CONFLICTS REQUIRE THE RELOCATION OF EXISTING UTILITIES, THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING UTILITY OWNER(S) FOR RELOCATION(S).

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DRAWN BY:  
JAC

DESIGNED BY:  
JAC

CHECKED BY:  
DCW 09/04/24



**west valley**  
CONSTRUCTION  
— SINCE 1958

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1001 GALAXY WAY, SUITE 400  
CONCORD, CA. 94520  
925-414-3001  
[www.Westvalleyconstruction.com](http://www.Westvalleyconstruction.com)

**ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
5 KENTDALE LN  
STA 10+00 TO END**

DATE:  
**SEPT 05, 2024**

PROJECT ID:  
**371282**

SCALE:  
**1" = 20'**

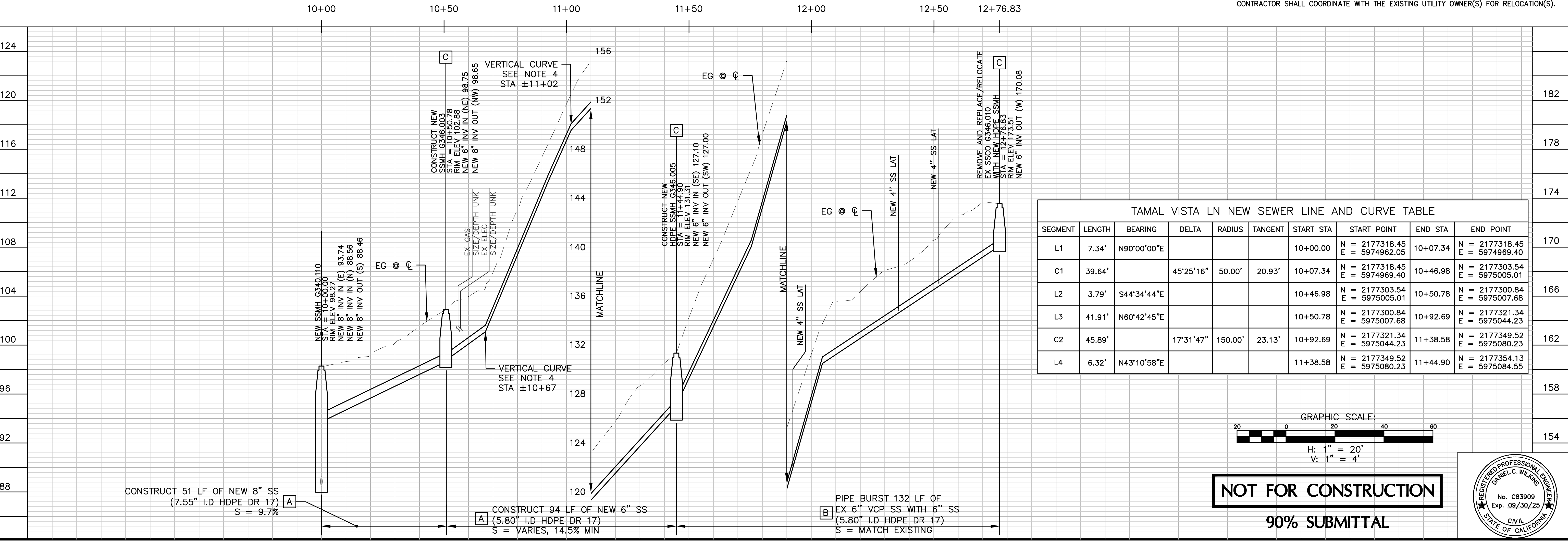
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**PP-48**

SHT **52** OF **54**

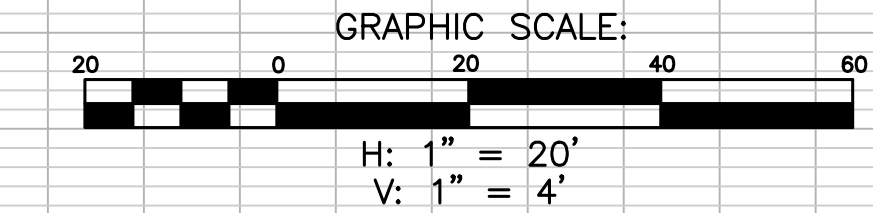


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| POINT # | NORTHING   | EASTING    | ELEVATION | DESCRIPTION |
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| 231     | 2177309.56 | 5974907.15 | 99.04     | IP PC       |



NOT FOR CONSTRUCTION  
90% SUBMITTAL



DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-49  
SHEET 53 OF 54

## LEGEND OF REHABILITATION METHODS

- A** REMOVE AND REPLACE OR CONSTRUCT NEW PIPE BY OPEN TRENCH PER RVSD STD DWG SD-16. FOR MANHOLES NOT BEING REPLACED MODIFY EX MANHOLE BASES PER RVSD STD DWG SD-09. FINAL PAVING SHALL BE PER DETAIL 1/D-01. INSTALL TRENCH DAM PER RVSD STD DWG SD-17.
- B** REPLACE EXISTING PIPE USING THE PIPE BURSTING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09. NO BURSTING FROM INSIDE EXISTING SSMH WILL BE ALLOWED UNLESS APPROVED BY THE DISTRICT. FINAL PAVING SHALL BE PER DETAIL 1/D-01 FOR ALL OPEN TRENCHES.
- B1** REPLACE EXISTING PIPE USING THE PIPE REAMING METHOD. CONNECT TO EX SSMH PER RVSD STD DWG SD-09.
- C** REMOVE AND REPLACE EX SSMH, SSLH, SSCO WITH NEW SSMH OR CONSTRUCT NEW SSMH PER RVSD STD DWG SD-01, SD-02, SD-03 AND SD-04. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- D** REMOVE AND REPLACE EX SSMH FRAME AND COVER PER RVSD STD DWG SD-10. INSTALL GRADE RINGS AND CONCRETE COLLAR PER RVSD STD DWG SD-01.
- E** REHABILITATE EX SSMH PER RVSD STD DWG SD-13.
- F** PIPE BURST, REMOVE AND REPLACE, OR CONSTRUCT NEW SEWER LATERAL AND SSCO NEAR PROPERTY LINE PER RVSD STD DWG SD-26 AND SD-27. PIPE BURSTING IS THE PREFERRED METHOD FOR REPLACEMENT OF LATERALS. OPEN CUT SHALL BE USED WHERE APPROVED BY THE DISTRICT OR AS SHOWN ON THE PLANS. FINAL PAVING SHALL BE PER DETAIL 1/D-01.
- G** 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.

- NOTES:**
- 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.
  - 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.
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| NO. | DATE | BY | DESCRIPTION |
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DRAWN BY: JAC  
DESIGNED BY: JAC  
CHECKED BY: JAC  
DCW 09/04/24



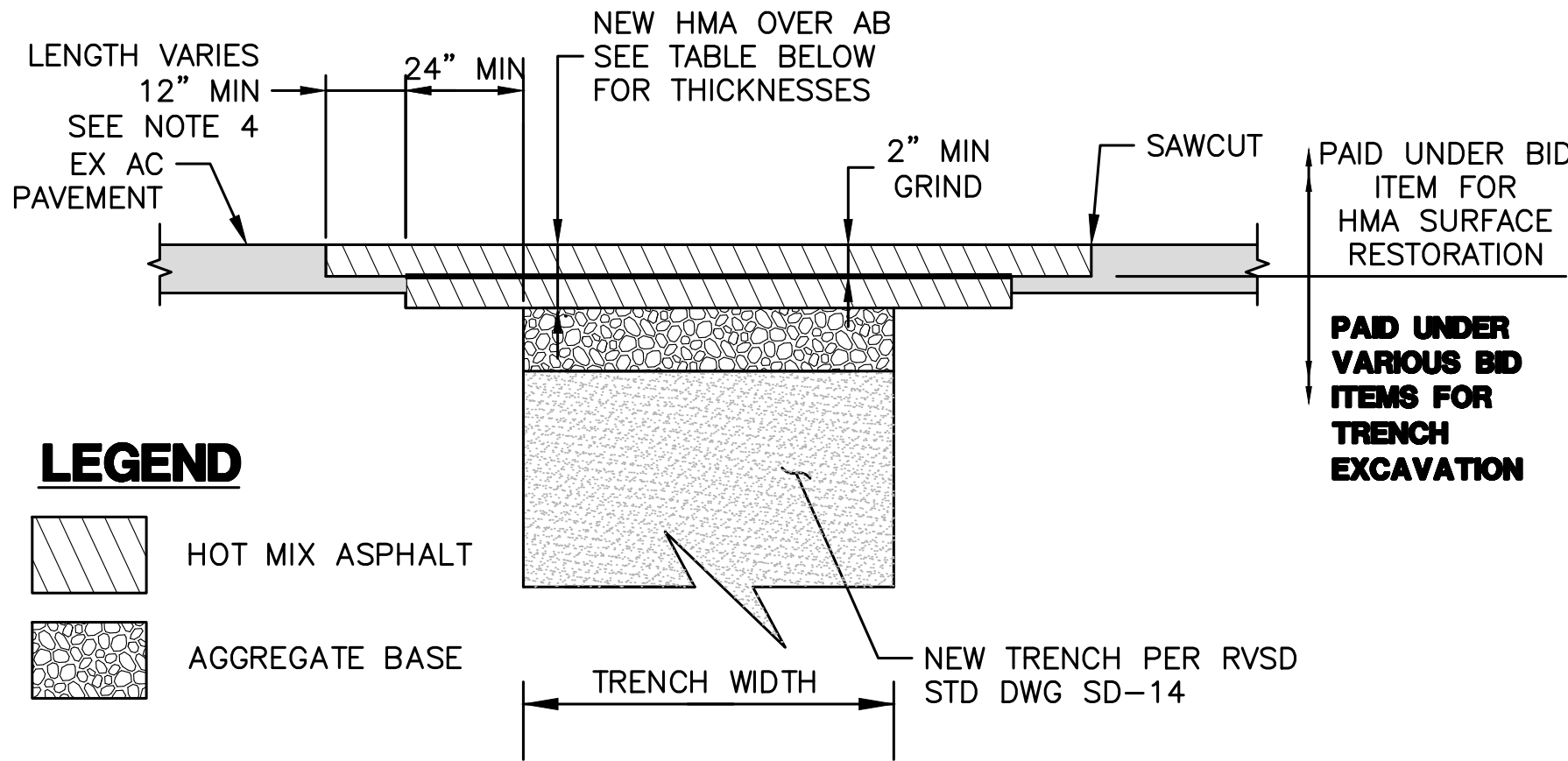
west valley  
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CONCORD, CA 94520  
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www.Westvalleyconstruction.com

ROSS VALLEY SANITATION DISTRICT  
FY2024/25 GRAVITY SEWER  
REHABILITATION PROJECT  
TAMAL VISTA LN  
STA 10+00 TO END

DATE: SEPT 05, 2024  
PROJECT ID: 371282  
SCALE: 1" = 20'  
DWG. NO: PP-49  
SHEET 53 OF 54



\\nascon\Engineering Data\VL\EXTERNAL PROJECTS\1\_PROJECTS\371282 RVSD FY24-25 GSP\8.0 DESIGN\B. Design\84 D-01 - DETAILS.dwg Save Date: 9/5/2024 3:03 PM Plot Date: 9/5/2024 3:03 PM JosephC



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

NOTES

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

1

FINAL PAVING REQUIREMENTS

- NOT TO SCALE

NOT FOR CONSTRUCTION

90% SUBMITTAL



ROSS VALLEY SANITARY DISTRICT  
FY24/25 GRAVITY SEWER  
IMPROVEMENTS PROJECT  
CONSTRUCTION DETAILS

DATE: SEPT 5, 2024  
PROJECT ID: 371282  
SCALE: N.T.S.  
DWG. NO: D-01  
SHT 54 OF 54

westvalley  
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10000 WILSON BLVD, SUITE 400  
CONCORD, CA 94520  
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DESIGNED BY: JAC  
CHECKED BY: DCW DATE: 09/04/24

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| NO. | DATE | BY | DESCRIPTION |
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## **Attachment D**

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### 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.
4. Work along McAllister Avenue occurs adjacent to the Corte Madera Creek spur and suitable nesting habitat for California Ridgway's Rail (CRR) and California Black Rail (CBR). The CRR and CBR nesting season is January 15 through August 31. Work will occur within this portion of the Project site outside of the nesting season (i.e. between September 1 through January 14).



## **Attachment E**

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### CalEEMod Input Tables and Output Report

Attachment E: CalEEMod Input Tables and Output Report

Table 1. CalEEMod Project Description

| Inputs                     | Total Project  |      | Daily Rate      |      | Note  |
|----------------------------|----------------|------|-----------------|------|---|
|                            | Quantity       | Unit | Quantity        | Unit |   |
| Duration                   |                |      |                 |      |   |
| Construction               | 360 days       | --   | --              | --   |   |
|                            | 12.0 months    | --   | --              | --   |   |
| Working days               | 265 days       | --   | --              |      | 22 working days per month                                     |
| Area                       |                |      |                 |      |   |
| Total Project Area         | 26,728 sq feet |      | 74 sq feet/day  |      | Maximum area disturbed  |
|                            | 0.61 acres     |      | 0.002 acres/day |      |   |
| Project Length             | 14,904 feet    | --   | --              |      | Sum of pipelines in project scope                             |
|                            | 3 mile         | --   | --              |      |   |
| Workers                    |                |      |                 |      |   |
| Workers onsite each day    | 8 workers      | --   | --              |      | 6 to 8 workers on site per day (8 workers to be conservative) |
| Worker roundtrips each day | 16 roundtrips  | --   | --              |      | Two roundtrips to/from site per worker each day               |
| Material                   |                |      |                 |      |   |
| Volume Import              | 2,710 CY       |      |                 |      | Volume of soil/material imported over the total project.      |
| Volume Export              | 2,900 CY       |      |                 |      | Volume of soil/material exported over the total project.      |

**Notes**

Inputs were received from RVSD (October 2024).

sq feet = square feet



Attachment E: CalEEMod Input Tables and Output Report

Table 2. CalEEMod Project Inputs

| Phase   |              | Equipment        |    |             |                     |           | Hauling Trucks (Average trucks/day) <sup>1</sup> |                 |                     |                 |                           |
|---|--------------|------------------|----|-------------|---------------------|-----------|--|-----------------|---------------------|-----------------|---------------------------|
| Activity  | Working Days | Type             | HP | Number/ day | Operating hours/day | Fuel Type | Material Import                                  | Material Export | Equipment/ Delivery | Cement/ Asphalt | Onsite Truck <sup>2</sup> |
| Site Preparation  | 15           | Excavator        | 70 | 1           | 2                   | Diesel    | 0  | 0               | 0                   | 0               | 1                         |
| Construction (New Pipe Locations and Open Cut Excavation) | 40           | Bypass pump      | 11 | 1           | 8                   | Diesel    |  |                 |                     |                 |                           |
|   |              | Concrete Saw     | 10 | 1           | 1                   | Gasoline  | 1  | 1               | 1                   | 0               | 1                         |
|   |              | Dumper/Tender    | 16 | 1           | 2                   | Diesel    |  |                 |                     |                 |                           |
|   |              | Excavator        | 70 | 1           | 2                   | Diesel    |  |                 |                     |                 |                           |
| Construction (Manhole Rehab)                              | 45           | Bypass pump      | 11 | 1           | 8                   | Diesel    |  |                 |                     |                 |                           |
|   |              | Concrete Saw     | 10 | 1           | 1                   | Gasoline  | 1  | 1               | 1                   | 1               | 1                         |
|   |              | Dumper/Tender    | 16 | 1           | 2                   | Diesel    |  |                 |                     |                 |                           |
|   |              | Excavator        | 70 | 1           | 2                   | Diesel    |  |                 |                     |                 |                           |
| Pipe Bursting   | 110          | Bypass pump      | 11 | 1           | 8                   | Diesel    |  |                 |                     |                 |                           |
|   |              | Concrete Saw     | 10 | 1           | 1                   | Gasoline  | 1  | 1               | 2                   | 0               | 1                         |
|   |              | Excavator        | 70 | 1           | 2                   | Diesel    |  |                 |                     |                 |                           |
| Paving  | 55           | Paving Equipment | 89 | 1           | 2                   | Diesel    |  |                 |                     |                 |                           |
|   |              | Rollers          | 36 | 1           | 1                   | Diesel    | 1  | 1               | 1                   | 1               | 1                         |
|   |              | Sweepers         | 36 | 1           | 1                   | Diesel    |  |                 |                     |                 |                           |
|   |              | Skid Steer       | 71 | 1           | 2                   | Diesel    |  |                 |                     |                 |                           |

**Notes**

Inputs were received from RVSD (October 2024).

HP = horsepower

<sup>1</sup> = CalEEMod assumes haul truck capacity is 16 cubic yards.

<sup>2</sup> = Onsite truck includes water truck.

# RVSD 24-25 GSIP Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field                  | Value                                  |
|-----------------------------|--|
| Project Name                | RVSD 24-25 GSIP                        |
| Construction Start Date     | 3/1/2025                               |
| Lead Agency                 | —                                      |
| Land Use Scale              | Project/site                           |
| Analysis Level for Defaults | County                                 |
| Windspeed (m/s)             | 3.60                                   |
| Precipitation (days)        | 24.0                                   |
| Location                    | 37.988381596814506, -122.5798686775218 |
| County                      | Marin                                  |
| City                        | San Anselmo                            |
| Air District                | Bay Area AQMD                          |
| Air Basin                   | San Francisco Bay Area                 |
| TAZ                         | 918                                    |
| EDFZ                        | 2                                      |
| Electric Utility            | Pacific Gas & Electric Company         |
| Gas Utility                 | Pacific Gas & Electric                 |
| App Version                 | 2022.1.1.28                            |

## 1.2. Land Use Types

| Land Use Subtype    | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---------------------|------|------|-------------|-----------------------|------------------------|--------------------------------|------------|-------------|
| User Defined Linear | 2.82 | Mile | 0.61        | 0.00                  | 0.00                   | —                              | —          | —           |



### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

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

| Un/Mit.             | ROG  | NOx  | CO   | SO2     | PM10T | PM2.5T | CO2e  |
|---------------------|------|------|------|---------|-------|--------|-------|
| Daily, Summer (Max) | —    | —    | —    | —       | —     | —      | —     |
| Unmit.              | 8.71 | 3.67 | 12.8 | 0.01    | 0.73  | 0.31   | 1,646 |
| Daily, Winter (Max) | —    | —    | —    | —       | —     | —      | —     |
| Unmit.              | 4.50 | 3.43 | 8.46 | 0.01    | 0.66  | 0.25   | 1,634 |
| Average Daily (Max) | —    | —    | —    | —       | —     | —      | —     |
| Unmit.              | 2.34 | 1.13 | 3.57 | < 0.005 | 0.22  | 0.09   | 503   |
| Annual (Max)        | —    | —    | —    | —       | —     | —      | —     |
| Unmit.              | 0.43 | 0.21 | 0.65 | < 0.005 | 0.04  | 0.02   | 83.3  |

### 2.2. Construction Emissions by Year, Unmitigated

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

| Year                 | ROG  | NOx  | CO   | SO2     | PM10T | PM2.5T | CO2e  |
|----------------------|------|------|------|---------|-------|--------|-------|
| Daily - Summer (Max) | —    | —    | —    | —       | —     | —      | —     |
| 2025                 | 8.71 | 3.67 | 12.8 | 0.01    | 0.73  | 0.31   | 1,646 |
| Daily - Winter (Max) | —    | —    | —    | —       | —     | —      | —     |
| 2025                 | 4.50 | 3.43 | 8.46 | 0.01    | 0.66  | 0.25   | 1,634 |
| 2026                 | 0.14 | 1.49 | 2.08 | < 0.005 | 0.29  | 0.09   | 788   |
| Average Daily        | —    | —    | —    | —       | —     | —      | —     |
| 2025                 | 2.34 | 1.13 | 3.57 | < 0.005 | 0.22  | 0.09   | 503   |
| 2026                 | 0.01 | 0.11 | 0.15 | < 0.005 | 0.02  | 0.01   | 58.6  |

|        |         |      |      |         |         |         |      |
|--------|---------|------|------|---------|---------|---------|------|
| Annual | —       | —    | —    | —       | —       | —       | —    |
| 2025   | 0.43    | 0.21 | 0.65 | < 0.005 | 0.04    | 0.02    | 83.3 |
| 2026   | < 0.005 | 0.02 | 0.03 | < 0.005 | < 0.005 | < 0.005 | 9.71 |

### 3. Construction Emissions Details

#### 3.1. Site Preparation (2025) - Unmitigated

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

| Location                    | ROG     | NOx     | CO      | SO2     | PM10T   | PM2.5T  | CO2e |
|-----------------------------|---------|---------|---------|---------|---------|---------|------|
| Onsite                      | —       | —       | —       | —       | —       | —       | —    |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —    |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —    |
| Off-Road Equipment          | 0.03    | 0.29    | 0.39    | < 0.005 | 0.02    | 0.01    | 62.0 |
| Dust From Material Movement | —       | —       | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | 0.11    | 0.06    | < 0.005 | 0.02    | < 0.005 | 64.5 |
| Average Daily               | —       | —       | —       | —       | —       | —       | —    |
| Off-Road Equipment          | < 0.005 | 0.01    | 0.02    | < 0.005 | < 0.005 | < 0.005 | 2.55 |
| Dust From Material Movement | —       | —       | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 2.65 |
| Annual                      | —       | —       | —       | —       | —       | —       | —    |
| Off-Road Equipment          | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.42 |
| Dust From Material Movement | —       | —       | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.44 |
| Offsite                     | —       | —       | —       | —       | —       | —       | —    |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —    |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —    |



|               |         |         |         |      |         |         |      |
|---------------|---------|---------|---------|------|---------|---------|------|
| Worker        | 0.06    | 0.05    | 0.56    | 0.00 | 0.13    | 0.03    | 130  |
| Vendor        | 0.00    | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 |
| Hauling       | 0.00    | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 |
| Average Daily | —       | —       | —       | —    | —       | —       | —    |
| Worker        | < 0.005 | < 0.005 | 0.02    | 0.00 | 0.01    | < 0.005 | 5.39 |
| Vendor        | 0.00    | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 |
| Hauling       | 0.00    | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 |
| Annual        | —       | —       | —       | —    | —       | —       | —    |
| Worker        | < 0.005 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | 0.89 |
| Vendor        | 0.00    | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 |
| Hauling       | 0.00    | 0.00    | 0.00    | 0.00 | 0.00    | 0.00    | 0.00 |

### 3.3. Construction (new pipe, open cut) (2025) - Unmitigated

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

| Location                    | ROG     | NOx  | CO   | SO2     | PM10T | PM2.5T  | CO2e |
|-----------------------------|---------|------|------|---------|-------|---------|------|
| Onsite                      | —       | —    | —    | —       | —     | —       | —    |
| Daily, Summer (Max)         | —       | —    | —    | —       | —     | —       | —    |
| Off-Road Equipment          | 4.29    | 1.12 | 5.37 | < 0.005 | 0.10  | 0.08    | 167  |
| Dust From Material Movement | —       | —    | —    | —       | 0.01  | < 0.005 | —    |
| Onsite truck                | < 0.005 | 0.10 | 0.06 | < 0.005 | 0.02  | < 0.005 | 64.6 |
| Daily, Winter (Max)         | —       | —    | —    | —       | —     | —       | —    |
| Off-Road Equipment          | 4.29    | 1.12 | 5.37 | < 0.005 | 0.10  | 0.08    | 167  |
| Dust From Material Movement | —       | —    | —    | —       | 0.01  | < 0.005 | —    |
| Onsite truck                | < 0.005 | 0.11 | 0.06 | < 0.005 | 0.02  | < 0.005 | 64.5 |
| Average Daily               | —       | —    | —    | —       | —     | —       | —    |
| Off-Road Equipment          | 0.47    | 0.12 | 0.59 | < 0.005 | 0.01  | 0.01    | 18.3 |

|                             |         |         |         |         |         |         |      |
|-----------------------------|---------|---------|---------|---------|---------|---------|------|
| Dust From Material Movement | —       | —       | —       | —       | < 0.005 | < 0.005 | —    |
| Onsite truck                | < 0.005 | 0.01    | 0.01    | < 0.005 | < 0.005 | < 0.005 | 7.07 |
| Annual                      | —       | —       | —       | —       | —       | —       | —    |
| Off-Road Equipment          | 0.09    | 0.02    | 0.11    | < 0.005 | < 0.005 | < 0.005 | 3.03 |
| Dust From Material Movement | —       | —       | —       | —       | < 0.005 | < 0.005 | —    |
| Onsite truck                | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 1.17 |
| Offsite                     | —       | —       | —       | —       | —       | —       | —    |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —    |
| Worker                      | 0.06    | 0.04    | 0.62    | 0.00    | 0.13    | 0.03    | 140  |
| Vendor                      | < 0.005 | 0.08    | 0.05    | < 0.005 | 0.02    | < 0.005 | 58.9 |
| Hauling                     | 0.01    | 0.43    | 0.25    | < 0.005 | 0.08    | 0.02    | 312  |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —    |
| Worker                      | 0.06    | 0.05    | 0.56    | 0.00    | 0.13    | 0.03    | 130  |
| Vendor                      | < 0.005 | 0.08    | 0.05    | < 0.005 | 0.02    | < 0.005 | 58.8 |
| Hauling                     | 0.01    | 0.46    | 0.25    | < 0.005 | 0.08    | 0.02    | 312  |
| Average Daily               | —       | —       | —       | —       | —       | —       | —    |
| Worker                      | 0.01    | < 0.005 | 0.06    | 0.00    | 0.01    | < 0.005 | 14.4 |
| Vendor                      | < 0.005 | 0.01    | 0.01    | < 0.005 | < 0.005 | < 0.005 | 6.44 |
| Hauling                     | < 0.005 | 0.05    | 0.03    | < 0.005 | 0.01    | < 0.005 | 34.2 |
| Annual                      | —       | —       | —       | —       | —       | —       | —    |
| Worker                      | < 0.005 | < 0.005 | 0.01    | 0.00    | < 0.005 | < 0.005 | 2.38 |
| Vendor                      | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 1.07 |
| Hauling                     | < 0.005 | 0.01    | 0.01    | < 0.005 | < 0.005 | < 0.005 | 5.66 |

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

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

| Location | ROG | NOx | CO | SO2 | PM10T | PM2.5T | CO2e |
|----------|-----|-----|----|-----|-------|--------|------|
|----------|-----|-----|----|-----|-------|--------|------|



|                             |         |         |         |         |         |         |      |
|-----------------------------|---------|---------|---------|---------|---------|---------|------|
| Onsite                      | —       | —       | —       | —       | —       | —       | —    |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —    |
| Off-Road Equipment          | 4.29    | 1.12    | 5.37    | < 0.005 | 0.10    | 0.08    | 167  |
| Dust From Material Movement | —       | —       | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | 0.10    | 0.06    | < 0.005 | 0.02    | < 0.005 | 64.6 |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —    |
| Average Daily               | —       | —       | —       | —       | —       | —       | —    |
| Off-Road Equipment          | 0.53    | 0.14    | 0.66    | < 0.005 | 0.01    | 0.01    | 20.6 |
| Dust From Material Movement | —       | —       | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | 0.01    | 0.01    | < 0.005 | < 0.005 | < 0.005 | 7.95 |
| Annual                      | —       | —       | —       | —       | —       | —       | —    |
| Off-Road Equipment          | 0.10    | 0.03    | 0.12    | < 0.005 | < 0.005 | < 0.005 | 3.40 |
| Dust From Material Movement | —       | —       | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 1.32 |
| Offsite                     | —       | —       | —       | —       | —       | —       | —    |
| Daily, Summer (Max)         | —       | —       | —       | —       | —       | —       | —    |
| Worker                      | 0.06    | 0.04    | 0.62    | 0.00    | 0.13    | 0.03    | 140  |
| Vendor                      | < 0.005 | 0.16    | 0.09    | < 0.005 | 0.03    | 0.01    | 118  |
| Hauling                     | 0.01    | 0.43    | 0.25    | < 0.005 | 0.08    | 0.02    | 312  |
| Daily, Winter (Max)         | —       | —       | —       | —       | —       | —       | —    |
| Average Daily               | —       | —       | —       | —       | —       | —       | —    |
| Worker                      | 0.01    | 0.01    | 0.07    | 0.00    | 0.02    | < 0.005 | 16.2 |
| Vendor                      | < 0.005 | 0.02    | 0.01    | < 0.005 | < 0.005 | < 0.005 | 14.5 |
| Hauling                     | < 0.005 | 0.06    | 0.03    | < 0.005 | 0.01    | < 0.005 | 38.5 |
| Annual                      | —       | —       | —       | —       | —       | —       | —    |
| Worker                      | < 0.005 | < 0.005 | 0.01    | 0.00    | < 0.005 | < 0.005 | 2.68 |

|         |         |         |         |         |         |         |      |
|---------|---------|---------|---------|---------|---------|---------|------|
| Vendor  | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 2.40 |
| Hauling | < 0.005 | 0.01    | 0.01    | < 0.005 | < 0.005 | < 0.005 | 6.37 |

### 3.7. Pipe bursting and reaming (2025) - Unmitigated

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

| Location                    | ROG     | NOx  | CO      | SO2     | PM10T   | PM2.5T  | CO2e |
|-----------------------------|---------|------|---------|---------|---------|---------|------|
| Onsite                      | —       | —    | —       | —       | —       | —       | —    |
| Daily, Summer (Max)         | —       | —    | —       | —       | —       | —       | —    |
| Off-Road Equipment          | 4.27    | 1.00 | 5.31    | < 0.005 | 0.10    | 0.08    | 151  |
| Dust From Material Movement | —       | —    | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | 0.10 | 0.06    | < 0.005 | 0.02    | < 0.005 | 64.6 |
| Daily, Winter (Max)         | —       | —    | —       | —       | —       | —       | —    |
| Off-Road Equipment          | 4.27    | 1.00 | 5.31    | < 0.005 | 0.10    | 0.08    | 151  |
| Dust From Material Movement | —       | —    | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | 0.11 | 0.06    | < 0.005 | 0.02    | < 0.005 | 64.5 |
| Average Daily               | —       | —    | —       | —       | —       | —       | —    |
| Off-Road Equipment          | 1.29    | 0.30 | 1.60    | < 0.005 | 0.03    | 0.02    | 45.6 |
| Dust From Material Movement | —       | —    | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | 0.03 | 0.02    | < 0.005 | < 0.005 | < 0.005 | 19.4 |
| Annual                      | —       | —    | —       | —       | —       | —       | —    |
| Off-Road Equipment          | 0.23    | 0.05 | 0.29    | < 0.005 | 0.01    | < 0.005 | 7.55 |
| Dust From Material Movement | —       | —    | —       | —       | 0.00    | 0.00    | —    |
| Onsite truck                | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 3.22 |
| Offsite                     | —       | —    | —       | —       | —       | —       | —    |
| Daily, Summer (Max)         | —       | —    | —       | —       | —       | —       | —    |



|                     |         |         |      |         |         |         |      |
|---------------------|---------|---------|------|---------|---------|---------|------|
| Worker              | 0.06    | 0.04    | 0.62 | 0.00    | 0.13    | 0.03    | 140  |
| Vendor              | 0.01    | 0.24    | 0.14 | < 0.005 | 0.05    | 0.01    | 177  |
| Hauling             | 0.01    | 0.43    | 0.25 | < 0.005 | 0.08    | 0.02    | 312  |
| Daily, Winter (Max) | —       | —       | —    | —       | —       | —       | —    |
| Worker              | 0.06    | 0.05    | 0.56 | 0.00    | 0.13    | 0.03    | 130  |
| Vendor              | 0.01    | 0.25    | 0.14 | < 0.005 | 0.05    | 0.01    | 176  |
| Hauling             | 0.01    | 0.46    | 0.25 | < 0.005 | 0.08    | 0.02    | 312  |
| Average Daily       | —       | —       | —    | —       | —       | —       | —    |
| Worker              | 0.02    | 0.01    | 0.16 | 0.00    | 0.04    | 0.01    | 39.5 |
| Vendor              | < 0.005 | 0.07    | 0.04 | < 0.005 | 0.01    | < 0.005 | 53.2 |
| Hauling             | < 0.005 | 0.14    | 0.08 | < 0.005 | 0.02    | 0.01    | 94.0 |
| Annual              | —       | —       | —    | —       | —       | —       | —    |
| Worker              | < 0.005 | < 0.005 | 0.03 | 0.00    | 0.01    | < 0.005 | 6.54 |
| Vendor              | < 0.005 | 0.01    | 0.01 | < 0.005 | < 0.005 | < 0.005 | 8.80 |
| Hauling             | < 0.005 | 0.02    | 0.01 | < 0.005 | < 0.005 | < 0.005 | 15.6 |

### 3.9. Paving (2025) - Unmitigated

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

| Location            | ROG     | NOx  | CO      | SO2     | PM10T   | PM2.5T  | CO2e |
|---------------------|---------|------|---------|---------|---------|---------|------|
| Onsite              | —       | —    | —       | —       | —       | —       | —    |
| Daily, Summer (Max) | —       | —    | —       | —       | —       | —       | —    |
| Daily, Winter (Max) | —       | —    | —       | —       | —       | —       | —    |
| Off-Road Equipment  | 0.08    | 0.78 | 1.16    | < 0.005 | 0.03    | 0.03    | 175  |
| Onsite truck        | < 0.005 | 0.11 | 0.06    | < 0.005 | 0.02    | < 0.005 | 64.5 |
| Average Daily       | —       | —    | —       | —       | —       | —       | —    |
| Off-Road Equipment  | 0.01    | 0.06 | 0.09    | < 0.005 | < 0.005 | < 0.005 | 13.7 |
| Onsite truck        | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 5.05 |
| Annual              | —       | —    | —       | —       | —       | —       | —    |

|                     |         |         |         |         |         |         |      |
|---------------------|---------|---------|---------|---------|---------|---------|------|
| Off-Road Equipment  | < 0.005 | 0.01    | 0.02    | < 0.005 | < 0.005 | < 0.005 | 2.27 |
| Onsite truck        | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.84 |
| Offsite             | —       | —       | —       | —       | —       | —       | —    |
| Daily, Summer (Max) | —       | —       | —       | —       | —       | —       | —    |
| Daily, Winter (Max) | —       | —       | —       | —       | —       | —       | —    |
| Worker              | 0.06    | 0.05    | 0.56    | 0.00    | 0.13    | 0.03    | 130  |
| Vendor              | < 0.005 | 0.17    | 0.09    | < 0.005 | 0.03    | 0.01    | 118  |
| Hauling             | 0.01    | 0.46    | 0.25    | < 0.005 | 0.08    | 0.02    | 312  |
| Average Daily       | —       | —       | —       | —       | —       | —       | —    |
| Worker              | < 0.005 | < 0.005 | 0.04    | 0.00    | 0.01    | < 0.005 | 10.3 |
| Vendor              | < 0.005 | 0.01    | 0.01    | < 0.005 | < 0.005 | < 0.005 | 9.20 |
| Hauling             | < 0.005 | 0.04    | 0.02    | < 0.005 | 0.01    | < 0.005 | 24.4 |
| Annual              | —       | —       | —       | —       | —       | —       | —    |
| Worker              | < 0.005 | < 0.005 | 0.01    | 0.00    | < 0.005 | < 0.005 | 1.70 |
| Vendor              | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 1.52 |
| Hauling             | < 0.005 | 0.01    | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 4.04 |

### 3.11. Paving (2026) - Unmitigated

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

| Location            | ROG     | NOx  | CO      | SO2     | PM10T   | PM2.5T  | CO2e |
|---------------------|---------|------|---------|---------|---------|---------|------|
| Onsite              | —       | —    | —       | —       | —       | —       | —    |
| Daily, Summer (Max) | —       | —    | —       | —       | —       | —       | —    |
| Daily, Winter (Max) | —       | —    | —       | —       | —       | —       | —    |
| Off-Road Equipment  | 0.08    | 0.75 | 1.15    | < 0.005 | 0.03    | 0.03    | 176  |
| Onsite truck        | < 0.005 | 0.11 | 0.06    | < 0.005 | 0.02    | < 0.005 | 63.2 |
| Average Daily       | —       | —    | —       | —       | —       | —       | —    |
| Off-Road Equipment  | 0.01    | 0.06 | 0.09    | < 0.005 | < 0.005 | < 0.005 | 13.1 |
| Onsite truck        | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 4.70 |



|                     |         |         |         |         |         |         |      |
|---------------------|---------|---------|---------|---------|---------|---------|------|
| Annual              | —       | —       | —       | —       | —       | —       | —    |
| Off-Road Equipment  | < 0.005 | 0.01    | 0.02    | < 0.005 | < 0.005 | < 0.005 | 2.16 |
| Onsite truck        | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.78 |
| Offsite             | —       | —       | —       | —       | —       | —       | —    |
| Daily, Summer (Max) | —       | —       | —       | —       | —       | —       | —    |
| Daily, Winter (Max) | —       | —       | —       | —       | —       | —       | —    |
| Worker              | 0.05    | 0.05    | 0.52    | 0.00    | 0.13    | 0.03    | 128  |
| Vendor              | < 0.005 | 0.16    | 0.09    | < 0.005 | 0.03    | 0.01    | 115  |
| Hauling             | 0.01    | 0.44    | 0.25    | < 0.005 | 0.08    | 0.02    | 306  |
| Average Daily       | —       | —       | —       | —       | —       | —       | —    |
| Worker              | < 0.005 | < 0.005 | 0.04    | 0.00    | 0.01    | < 0.005 | 9.57 |
| Vendor              | < 0.005 | 0.01    | 0.01    | < 0.005 | < 0.005 | < 0.005 | 8.59 |
| Hauling             | < 0.005 | 0.03    | 0.02    | < 0.005 | 0.01    | < 0.005 | 22.7 |
| Annual              | —       | —       | —       | —       | —       | —       | —    |
| Worker              | < 0.005 | < 0.005 | 0.01    | 0.00    | < 0.005 | < 0.005 | 1.58 |
| Vendor              | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 1.42 |
| Hauling             | < 0.005 | 0.01    | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 3.76 |

## 4. Operations Emissions Details

### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

| Vegetation          | ROG | NOx | CO | SO2 | PM10T | PM2.5T | CO2e |
|---------------------|-----|-----|----|-----|-------|--------|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —      | —    |
| Total               | —   | —   | —  | —   | —     | —      | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —      | —    |

|        |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|
| Total  | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total  | — | — | — | — | — | — | — |

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

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

| Land Use            | ROG | NOx | CO | SO2 | PM10T | PM2.5T | CO2e |
|---------------------|-----|-----|----|-----|-------|--------|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —      | —    |
| Total               | —   | —   | —  | —   | —     | —      | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —      | —    |
| Total               | —   | —   | —  | —   | —     | —      | —    |
| Annual              | —   | —   | —  | —   | —     | —      | —    |
| Total               | —   | —   | —  | —   | —     | —      | —    |

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

| Species             | ROG | NOx | CO | SO2 | PM10T | PM2.5T | CO2e |
|---------------------|-----|-----|----|-----|-------|--------|------|
| Daily, Summer (Max) | —   | —   | —  | —   | —     | —      | —    |
| Avoided             | —   | —   | —  | —   | —     | —      | —    |
| Subtotal            | —   | —   | —  | —   | —     | —      | —    |
| Sequestered         | —   | —   | —  | —   | —     | —      | —    |
| Subtotal            | —   | —   | —  | —   | —     | —      | —    |
| Removed             | —   | —   | —  | —   | —     | —      | —    |
| Subtotal            | —   | —   | —  | —   | —     | —      | —    |
| —                   | —   | —   | —  | —   | —     | —      | —    |
| Daily, Winter (Max) | —   | —   | —  | —   | —     | —      | —    |
| Avoided             | —   | —   | —  | —   | —     | —      | —    |
| Subtotal            | —   | —   | —  | —   | —     | —      | —    |



|             |   |   |   |   |   |   |   |
|-------------|---|---|---|---|---|---|---|
| Sequestered | — | — | — | — | — | — | — |
| Subtotal    | — | — | — | — | — | — | — |
| Removed     | — | — | — | — | — | — | — |
| Subtotal    | — | — | — | — | — | — | — |
| —           | — | — | — | — | — | — | — |
| Annual      | — | — | — | — | — | — | — |
| Avoided     | — | — | — | — | — | — | — |
| Subtotal    | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — |
| Subtotal    | — | — | — | — | — | — | — |
| Removed     | — | — | — | — | — | — | — |
| Subtotal    | — | — | — | — | — | — | — |
| —           | — | — | — | — | — | — | — |

5. Activity Data

5.1. Construction Schedule

| Phase Name                        | Phase Type                               | Start Date | End Date   | Days Per Week | Work Days per Phase | Phase Description |
|-----------------------------------|--|------------|------------|---------------|---------------------|-------------------|
| Site Preparation                  | Linear, Grubbing & Land Clearing         | 2/1/2025   | 2/22/2025  | 5.00          | 15.0                | —                 |
| Construction (new pipe, open cut) | Linear, Grading & Excavation             | 2/22/2025  | 4/19/2025  | 5.00          | 40.0                | —                 |
| Construction (manhole rehab))     | Linear, Grading & Excavation             | 4/19/2025  | 6/21/2025  | 5.00          | 45.0                | —                 |
| Pipe bursting and reaming         | Linear, Drainage, Utilities, & Sub-Grade | 6/21/2025  | 11/22/2025 | 5.00          | 110                 | —                 |
| Paving                            | Linear, Paving                           | 11/22/2025 | 2/7/2026   | 5.00          | 55.0                | —                 |

5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name                        | Equipment Type           | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|-----------------------------------|--------------------------|-----------|-------------|----------------|---------------|------------|-------------|
| Site Preparation                  | Excavators               | Diesel    | Average     | 1.00           | 2.00          | 70.0       | 0.38        |
| Construction (new pipe, open cut) | Excavators               | Diesel    | Average     | 1.00           | 2.00          | 70.0       | 0.38        |
| Construction (new pipe, open cut) | Dumpers/Tenders          | Diesel    | Average     | 1.00           | 2.00          | 16.0       | 0.38        |
| Construction (new pipe, open cut) | Concrete/Industrial Saws | Gasoline  | Average     | 1.00           | 1.00          | 10.0       | 0.78        |
| Construction (new pipe, open cut) | Pumps                    | Diesel    | Average     | 1.00           | 8.00          | 11.0       | 0.74        |
| Construction (manhole rehab))     | Excavators               | Diesel    | Average     | 1.00           | 2.00          | 70.0       | 0.38        |
| Construction (manhole rehab))     | Dumpers/Tenders          | Diesel    | Average     | 1.00           | 2.00          | 16.0       | 0.38        |
| Construction (manhole rehab))     | Concrete/Industrial Saws | Gasoline  | Average     | 1.00           | 1.00          | 10.0       | 0.78        |
| Construction (manhole rehab))     | Pumps                    | Diesel    | Average     | 1.00           | 8.00          | 11.0       | 0.74        |
| Pipe bursting and reaming         | Pumps                    | Diesel    | Average     | 1.00           | 8.00          | 11.0       | 0.74        |
| Pipe bursting and reaming         | Concrete/Industrial Saws | Gasoline  | Average     | 1.00           | 1.00          | 10.0       | 0.78        |
| Pipe bursting and reaming         | Excavators               | Diesel    | Average     | 1.00           | 2.00          | 70.0       | 0.38        |
| Paving                            | Paving Equipment         | Diesel    | Average     | 1.00           | 2.00          | 89.0       | 0.36        |
| Paving                            | Rollers                  | Diesel    | Average     | 1.00           | 1.00          | 36.0       | 0.38        |
| Paving                            | Sweepers/Scrubbers       | Diesel    | Average     | 1.00           | 1.00          | 36.0       | 0.46        |
| Paving                            | Skid Steer Loaders       | Diesel    | Average     | 1.00           | 2.00          | 71.0       | 0.37        |

### 5.3. Construction Vehicles



### 5.3.1. Unmitigated

| Phase Name                        | Trip Type    | One-Way Trips per Day | Miles per Trip | Vehicle Mix   |
|-----------------------------------|--------------|-----------------------|----------------|---------------|
| Site Preparation                  | —            | —                     | —              | —             |
| Site Preparation                  | Worker       | 16.0                  | 11.7           | LDA,LDT1,LDT2 |
| Site Preparation                  | Vendor       | 0.00                  | 8.40           | HHDT,MHDT     |
| Site Preparation                  | Hauling      | 0.00                  | 20.0           | HHDT          |
| Site Preparation                  | Onsite truck | 2.00                  | 8.00           | HHDT          |
| Pipe bursting and reaming         | —            | —                     | —              | —             |
| Pipe bursting and reaming         | Worker       | 16.0                  | 11.7           | LDA,LDT1,LDT2 |
| Pipe bursting and reaming         | Vendor       | 6.00                  | 8.40           | HHDT,MHDT     |
| Pipe bursting and reaming         | Hauling      | 4.00                  | 20.0           | HHDT          |
| Pipe bursting and reaming         | Onsite truck | 2.00                  | 8.00           | HHDT          |
| Construction (new pipe, open cut) | —            | —                     | —              | —             |
| Construction (new pipe, open cut) | Worker       | 16.0                  | 11.7           | LDA,LDT1,LDT2 |
| Construction (new pipe, open cut) | Vendor       | 2.00                  | 8.40           | HHDT,MHDT     |
| Construction (new pipe, open cut) | Hauling      | 4.00                  | 20.0           | HHDT          |
| Construction (new pipe, open cut) | Onsite truck | 2.00                  | 8.00           | HHDT          |
| Construction (manhole rehab))     | —            | —                     | —              | —             |
| Construction (manhole rehab))     | Worker       | 16.0                  | 11.7           | LDA,LDT1,LDT2 |
| Construction (manhole rehab))     | Vendor       | 4.00                  | 8.40           | HHDT,MHDT     |
| Construction (manhole rehab))     | Hauling      | 4.00                  | 20.0           | HHDT          |
| Construction (manhole rehab))     | Onsite truck | 2.00                  | 8.00           | HHDT          |
| Paving                            | —            | —                     | —              | —             |
| Paving                            | Worker       | 16.0                  | 11.7           | LDA,LDT1,LDT2 |
| Paving                            | Vendor       | 4.00                  | 8.40           | HHDT,MHDT     |
| Paving                            | Hauling      | 4.00                  | 20.0           | HHDT          |
| Paving                            | Onsite truck | 2.00                  | 8.00           | HHDT          |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|------------|--|--|--|--|-----------------------------|
|------------|--|--|--|--|-----------------------------|

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name                        | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|-----------------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|---------------------|
| Site Preparation                  | 0.00                            | 0.00                            | 0.61                 | 0.00                          | —                   |
| Construction (new pipe, open cut) | 2,710                           | 2,900                           | 0.61                 | 0.00                          | —                   |
| Construction (manhole rehab))     | 0.00                            | 0.00                            | 0.61                 | 0.00                          | —                   |
| Pipe bursting and reaming         | 0.00                            | 0.00                            | 0.61                 | 0.00                          | —                   |

### 5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|----------|--------------------|-----------|
|----------|--------------------|-----------|

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|------|--------------|-----|-----|-----|
|------|--------------|-----|-----|-----|



|      |      |     |      |         |
|------|------|-----|------|---------|
| 2025 | 0.00 | 204 | 0.03 | < 0.005 |
| 2026 | 0.00 | 204 | 0.03 | < 0.005 |

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|--------------------------|----------------------|---------------|-------------|
|--------------------------|----------------------|---------------|-------------|

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|--------------------|---------------|-------------|
|--------------------|---------------|-------------|

5.18.2. Sequestration

5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|-----------|--------|------------------------------|------------------------------|
|-----------|--------|------------------------------|------------------------------|

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard               | Result for Project Location | Unit                                       |
|------------------------------|-----------------------------|--|
| Temperature and Extreme Heat | 9.66                        | annual days of extreme heat                |
| Extreme Precipitation        | 18.8                        | annual days with precipitation above 20 mm |
| Sea Level Rise               | —                           | meters of inundation depth                 |

|          |      |                        |
|----------|------|------------------------|
| Wildfire | 7.65 | annual hectares burned |
|----------|------|------------------------|

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

| Climate Hazard               | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|------------------------------|----------------|-------------------|-------------------------|---------------------|
| Temperature and Extreme Heat | N/A            | N/A               | N/A                     | N/A                 |
| Extreme Precipitation        | N/A            | N/A               | N/A                     | N/A                 |



|                         |     |     |     |     |
|-------------------------|-----|-----|-----|-----|
| Sea Level Rise          | N/A | N/A | N/A | N/A |
| Wildfire                | N/A | N/A | N/A | N/A |
| Flooding                | N/A | N/A | N/A | N/A |
| Drought                 | N/A | N/A | N/A | N/A |
| Snowpack Reduction      | N/A | N/A | N/A | N/A |
| Air Quality Degradation | N/A | N/A | N/A | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

| Indicator           | Result for Project Census Tract |
|---------------------|---------------------------------|
| Exposure Indicators | —                               |
| AQ-Ozone            | 10.6                            |
| AQ-PM               | 16.3                            |
| AQ-DPM              | 5.71                            |
| Drinking Water      | 7.43                            |
| Lead Risk Housing   | 49.2                            |
| Pesticides          | 6.72                            |
| Toxic Releases      | 35.6                            |
| Traffic             | 67.8                            |
| Effect Indicators   | —                               |
| CleanUp Sites       | 68.9                            |

|                                 |      |
|---------------------------------|------|
| Groundwater                     | 0.00 |
| Haz Waste Facilities/Generators | 1.80 |
| Impaired Water Bodies           | 12.5 |
| Solid Waste                     | 52.9 |
| Sensitive Population            | —    |
| Asthma                          | 2.43 |
| Cardio-vascular                 | 2.08 |
| Low Birth Weights               | 0.60 |
| Socioeconomic Factor Indicators | —    |
| Education                       | 22.8 |
| Housing                         | 17.9 |
| Linguistic                      | 8.49 |
| Poverty                         | 11.3 |
| Unemployment                    | 17.1 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator              | Result for Project Census Tract |
|------------------------|---------------------------------|
| Economic               | —                               |
| Above Poverty          | 94.85435647                     |
| Employed               | 83.80597973                     |
| Median HI              | 94.07160272                     |
| Education              | —                               |
| Bachelor's or higher   | 94.35390735                     |
| High school enrollment | 25.6255614                      |
| Preschool enrollment   | 64.57076864                     |
| Transportation         | —                               |
| Auto Access            | 70.20402926                     |



|  |             |
|--|-------------|
| Active commuting                             | 86.33388939 |
| Social                                       | —           |
| 2-parent households                          | 76.82535609 |
| Voting                                       | 99.38406262 |
| Neighborhood                                 | —           |
| Alcohol availability                         | 62.85127679 |
| Park access                                  | 81.35506224 |
| Retail density                               | 22.10958553 |
| Supermarket access                           | 27.43487745 |
| Tree canopy                                  | 97.36943411 |
| Housing                                      | —           |
| Homeownership                                | 93.98177852 |
| Housing habitability                         | 85.10201463 |
| Low-inc homeowner severe housing cost burden | 84.60156551 |
| Low-inc renter severe housing cost burden    | 33.31194662 |
| Uncrowded housing                            | 90.74810728 |
| Health Outcomes                              | —           |
| Insured adults                               | 90.15783395 |
| Arthritis                                    | 0.0         |
| Asthma ER Admissions                         | 95.8        |
| 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                     | 88.8        |
| Cognitively Disabled                         | 94.6        |

|                                       |      |
|---------------------------------------|------|
| Physically Disabled                   | 86.7 |
| Heart Attack ER Admissions            | 96.5 |
| Mental Health Not Good                | 0.0  |
| Chronic Kidney Disease                | 0.0  |
| Obesity                               | 0.0  |
| Pedestrian Injuries                   | 40.9 |
| 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                              | 90.9 |
| Elderly                               | 20.7 |
| English Speaking                      | 82.8 |
| Foreign-born                          | 14.6 |
| Outdoor Workers                       | 57.8 |
| Climate Change Adaptive Capacity      | —    |
| Impervious Surface Cover              | 91.9 |
| Traffic Density                       | 78.8 |
| Traffic Access                        | 55.8 |
| Other Indices                         | —    |
| Hardship                              | 7.6  |
| Other Decision Support                | —    |
| 2016 Voting                           | 99.8 |



### 7.3. Overall Health & Equity Scores

| Metric  | Result for Project Census Tract |
|---|---------------------------------|
| CalEnviroScreen 4.0 Score for Project Location (a)                                  | 1.00                            |
| Healthy Places Index Score for Project Location (b)                                 | 98.0                            |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535)           | No                              |
| Project Located in a Low-Income Community (Assembly Bill 1550)                      | No                              |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No                              |

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

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

### 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

### 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

| Screen                              | Justification            |
|-------------------------------------|--------------------------|
| Construction: Construction Phases   | Project specific inputs. |
| Construction: Off-Road Equipment    | Project specific inputs  |
| Construction: Trips and VMT         | Project specific inputs. |
| Construction: On-Road Fugitive Dust | Project specific inputs. |

## **Attachment F**

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### Protected Natural Resources Tables



CALIFORNIA DEPARTMENT OF  
FISH and WILDLIFE **RareFind**

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

Print

Close

**CNDDB Element Query Results**

| Scientific Name                     | Common Name                   | Taxonomic Group | Element Code | Total Occs | Returned Occs | Federal Status      | State Status | Global Rank | State Rank | CA Rare Plant Rank | Other Status  | Habitats  |
|-------------------------------------|-------------------------------|-----------------|--------------|------------|---------------|---------------------|--------------|-------------|------------|--------------------|---|---|
| Acipenser medirostris pop. 1        | green sturgeon - southern DPS | Fish            | AFCAA01031   | 14         | 1             | Threatened          | None         | G2T1        | S1         | null               | AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered                    | Aquatic, Estuary, Marine bay, Sacramento/ San Joaquin flowing waters  |
| Actinemys marmorata                 | northwestern pond turtle      | Reptiles        | ARAAD02031   | 1102       | 3             | Proposed Threatened | None         | G2          | SNR        | null               | BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive    | null  |
| Adela operella                      | Opler's longhorn moth         | Insects         | IILEE0G040   | 14         | 1             | None                | None         | G2          | S2         | null               | null  | Ultramafic, Valley & foothill grassland   |
| Amorpha californica var. napensis   | Napa false indigo             | Dicots          | PDFAB08012   | 123        | 24            | None                | None         | G4T2        | S2         | 1B.2               | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden                                     | Broadleaved upland forest, Chaparral, Cismontane woodland   |
| Amsinckia lunaris                   | bent-flowered fiddleneck      | Dicots          | PDBOR01070   | 93         | 1             | None                | None         | G3          | S3         | 1B.2               | BLM_S-Sensitive, SB_UCBG-UC Botanical Garden at Berkeley, SB_UCSC-UC Santa Cruz               | Cismontane woodland, Coastal bluff scrub, Valley & foothill grassland   |
| Antrozous pallidus                  | pallid bat                    | Mammals         | AMACC10010   | 424        | 2             | None                | None         | G4          | S3         | null               | BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive | Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland |
| Arctostaphylos montana ssp. montana | Mt. Tamalpais manzanita       | Dicots          | PDERI040J5   | 15         | 9             | None                | None         | G3T3        | S3         | 1B.3               | SB_UCBG-UC Botanical Garden at Berkeley   | Chaparral, Ultramafic, Valley & foothill grassland  |
| Arctostaphylos virgata              | Marin manzanita               | Dicots          | PDERI041K0   | 32         | 8             | None                | None         | G2          | S2         | 1B.2               | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture     | Broadleaved upland forest, Chaparral, Closed-cone coniferous forest, North coast coniferous forest  |
| Ardea herodias                      | great blue heron              | Birds           | ABNGA04010   | 156        | 2             | None                | None         | G5          | S4         | null               | CDF_S-Sensitive, IUCN_LC-Least Concern  | Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland  |
| Bombus caliginosus                  | obscure bumble bee            | Insects         | IIHYM24380   | 181        | 5             | None                | None         | G2G3        | S1S2       | null               | IUCN_VU-Vulnerable  | null  |

|                                       |                               |            |            |     |    |            |                      |       |      |      |   |   |
|---------------------------------------|-------------------------------|------------|------------|-----|----|------------|----------------------|-------|------|------|---|---|
| Bombus occidentalis                   | western bumble bee            | Insects    | IIHYM24252 | 306 | 5  | None       | Candidate Endangered | G3    | S1   | null | IUCN_VU-Vulnerable, USFS_S-Sensitive  | null  |
| Calamagrostis crassiglumis            | Thurber's reed grass          | Monocots   | PMPOA17070 | 15  | 1  | None       | None                 | G5Q   | S2   | 2B.1 | null  | Coastal scrub, Freshwater marsh, Marsh & swamp, Wetland   |
| Callophrys mossii marinensis          | Marin elfin butterfly         | Insects    | IILEPE2207 | 4   | 1  | None       | None                 | G4T1  | S2   | null | null  | Redwood   |
| Chloropyron maritimum ssp. palustre   | Point Reyes salty bird's-beak | Dicots     | PDSCR0J0C3 | 80  | 7  | None       | None                 | G4?T2 | S2   | 1B.2 | BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden                    | Marsh & swamp, Salt marsh, Wetland  |
| Chorizanthe cuspidata var. cuspidata  | San Francisco Bay spineflower | Dicots     | PDPGN04081 | 17  | 1  | None       | None                 | G2T1  | S1   | 1B.2 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden                                     | Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub  |
| Cirsium hydrophilum var. vaseyi       | Mt. Tamalpais thistle         | Dicots     | PDAST2E1G2 | 14  | 7  | None       | None                 | G2T1  | S1   | 1B.2 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden                                     | Broadleaved upland forest, Chaparral, Meadow & seep, Ultramafic, Wetland  |
| Coastal Brackish Marsh                | Coastal Brackish Marsh        | Marsh      | CTT52200CA | 30  | 1  | None       | None                 | G2    | S2.1 | null | null  | Marsh & swamp, Wetland  |
| Coastal Terrace Prairie               | Coastal Terrace Prairie       | Herbaceous | CTT41100CA | 8   | 1  | None       | None                 | G2    | S2.1 | null | null  | Coastal prairie   |
| Corynorhinus townsendii               | Townsend's big-eared bat      | Mammals    | AMACC08010 | 635 | 2  | None       | None                 | G4    | S2   | null | BLM_S-Sensitive, CDFW_SSC-Species of Special 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 | 233 | 9  | None       | None                 | G2G3  | S2S3 | null | CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened                                  | Aquatic, Meadow & seep, North coast coniferous forest, Riparian forest  |
| Dirca occidentalis                    | western leatherwood           | Dicots     | PDTHY03010 | 90  | 1  | None       | None                 | G2    | S2   | 1B.2 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden                                     | Broadleaved upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North coast coniferous forest, Riparian forest, Riparian woodland   |
| Eriogonum luteolum var. caninum       | Tiburon buckwheat             | Dicots     | PDPGN083S1 | 26  | 10 | None       | None                 | G5T2  | S2   | 1B.2 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden                                     | Chaparral, Cismontane woodland, Coastal prairie, Ultramafic, Valley & foothill grassland  |
| Eucyclogobius newberryi               | tidewater goby                | Fish       | AFCQN04010 | 127 | 1  | Endangered | None                 | G3    | S3   | null | AFS_EN-Endangered, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened               | Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters, South coast flowing waters  |
| Fissidens pauperculus                 | minute pocket moss            | Bryophytes | NBMUS2W0U0 | 22  | 2  | None       | None                 | G3?   | S2   | 1B.2 | USFS_S-Sensitive  | North coast coniferous forest, Redwood  |
| Fritillaria lanceolata var. tristulis | Marin checker lily            | Monocots   | PMLIL0V0P1 | 32  | 1  | None       | None                 | G5T2  | S2   | 1B.1 | SB_UCSC-UC Santa Cruz   | Coastal bluff scrub, Coastal prairie, Coastal scrub, Ultramafic   |



|  |                                    |         |            |     |   |            |            |      |      |      |  |  |
|--|------------------------------------|---------|------------|-----|---|------------|------------|------|------|------|--|--|
| <i>Gilia millefoliata</i>                          | 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  |
| <i>Helianthella castanea</i>                       | Diablo helianthella                | Dicots  | PDAST4M020 | 107 | 1 | None       | None       | G2   | S2   | 1B.2 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden  | Broadleaved upland forest, Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland          |
| <i>Hemizonia congesta</i> ssp. <i>congesta</i>     | congested-headed hayfield tarplant | Dicots  | PDAST4R0W1 | 52  | 2 | None       | None       | G5T2 | S2   | 1B.2 | SB_UCBG-UC Botanical Garden at Berkeley  | Valley & foothill grassland  |
| <i>Hesperolinon congestum</i>                      | Marin western flax                 | Dicots  | PDLIN01060 | 27  | 2 | Threatened | Threatened | G1   | S1   | 1B.1 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley | Chaparral, Ultramafic, Valley & foothill grassland   |
| <i>Holocarpha macradenia</i>                       | 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  |
| <i>Horkelia tenuiloba</i>                          | thin-lobed horkelia                | Dicots  | PDROS0W0E0 | 27  | 4 | None       | None       | G2   | S2   | 1B.2 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden  | Broadleaved upland forest, Chaparral, Valley & foothill grassland  |
| <i>Kopsiopsis hookeri</i>                          | small groundcone                   | Dicots  | PDORO01010 | 21  | 4 | None       | None       | G4?  | S1S2 | 2B.3 | null   | North coast coniferous forest  |
| <i>Lasiurus cinereus</i>                           | 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 |
| <i>Laterallus jamaicensis coturniculus</i>         | California black rail              | Birds   | ABNME03041 | 304 | 4 | None       | Threatened | G3T1 | S2   | null | BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_EN-Endangered                                       | Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland   |
| <i>Lessingia micradenia</i> var. <i>micradenia</i> | 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   |
| <i>Melospiza melodia samuelis</i>                  | San Pablo song sparrow             | Birds   | ABPBXA301W | 41  | 3 | None       | None       | G5T2 | S2   | null | CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern                       | Salt marsh   |
| <i>Microseris paludosa</i>                         | 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                 |
| <i>Navarretia rosulata</i>                         | Marin County navarretia            | Dicots  | PDPLM0C0Z0 | 15  | 7 | None       | None       | G2   | S2   | 1B.2 | BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden                         | Chaparral, Closed-cone coniferous forest, Ultramafic   |
| Northern Coastal Salt Marsh                        | Northern Coastal Salt Marsh        | Marsh   | CTT52110CA | 53  | 2 | None       | None       | G3   | S3.2 | null | null   | Marsh & swamp, Wetland   |

|  |   |            |            |      |    |            |            |        |      |      |  |  |
|--|---|------------|------------|------|----|------------|------------|--------|------|------|--|--|
| Oncorhynchus kisutch pop. 4              | coho salmon - central California coast ESU    | Fish       | AFCHA02034 | 23   | 1  | Endangered | Endangered | G5T2Q  | S2   | null | AFS_EN-Endangered  | Aquatic  |
| Pentachaeta bellidiflora                 | white-rayed pentachaeta                       | Dicots     | PDAST6X030 | 14   | 6  | Endangered | Endangered | G1     | S1   | 1B.1 | SB_UCBG-UC Botanical Garden at Berkeley  | Ultramafic, Valley & foothill grassland  |
| Plagiobothrys glaber                     | hairless popcornflower                        | Dicots     | PDBOR0V0B0 | 9    | 1  | None       | None       | GX     | SX   | 1A   | null   | Marsh & swamp, Salt marsh, Vernal pool, Wetland  |
| Pleuropogon hooverianus                  | North Coast semaphore grass                   | Monocots   | PMPOA4Y070 | 34   | 1  | None       | Threatened | G2     | S2   | 1B.1 | 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       | G2Q    | S2   | 3.1  | null   | Brackish marsh, Marsh & swamp, Salt marsh, Wetland   |
| Pomatiopsis binneyi                      | robust walker                                 | Mollusks   | IMGASJ9010 | 2    | 1  | None       | None       | G1     | S1   | null | null   | null   |
| Quercus parvula var. tamalpaisensis      | Tamalpais oak                                 | Dicots     | PDFAG051Q3 | 19   | 15 | None       | None       | G4T2   | S2   | 1B.3 | null   | Cismontane woodland, Lower montane coniferous forest   |
| Rallus obsoletus obsoletus               | California Ridgway's rail                     | Birds      | ABNME05011 | 99   | 4  | Endangered | Endangered | G3T1   | S2   | null | CDFW_FP-Fully Protected  | Brackish marsh, Marsh & swamp, Salt marsh, Wetland   |
| Rana boylei pop. 1                       | foothill yellow-legged frog - north coast DPS | Amphibians | AAABH01051 | 1610 | 11 | None       | None       | G3T4   | S4   | null | BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive   | Aquatic, Klamath/North coast flowing waters, Riparian forest, Riparian scrub, Riparian woodland  |
| Reithrodontomys raviventris              | salt-marsh harvest mouse                      | Mammals    | AMAFF02040 | 151  | 4  | Endangered | Endangered | G1G2   | S3   | null | CDFW_FP-Fully Protected, IUCN_EN-Endangered  | Marsh & swamp, Wetland   |
| Serpentine Bunchgrass                    | Serpentine Bunchgrass                         | Herbaceous | CTT42130CA | 22   | 1  | None       | None       | G2     | S2.2 | null | null   | Valley & foothill grassland  |
| Sidalcea calycosa ssp. rhizomata         | Point Reyes checkerbloom                      | Dicots     | PDMAL11012 | 34   | 1  | None       | None       | G5T2   | S2   | 1B.2 | null   | Freshwater marsh, Marsh & swamp, Wetland   |
| Spirinchus thaleichthys pop. 2           | longfin smelt - San Francisco Bay-Delta DPS   | Fish       | AFCHB03040 | 35   | 1  | Endangered | None       | G5TNRQ | S1   | null | null   | Aquatic, Estuary, Marine bay, Sacramento/ San Joaquin flowing waters   |
| Stebbinsoseris decipiens                 | Santa Cruz microseris                         | Dicots     | PDAST6E050 | 19   | 3  | None       | None       | G2     | S2   | 1B.2 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCSC-UC Santa Cruz                                       | Broadleaved upland forest, Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Ultramafic, Valley & foothill grassland |
| Streptanthus batrachopus                 | Tamalpais jewelflower                         | Dicots     | PDBRA2G050 | 8    | 5  | None       | None       | G2     | S2   | 1B.3 | SB_UCSC-UC Santa Cruz  | Chaparral, Closed-cone coniferous forest, Ultramafic   |
| Streptanthus glandulosus ssp. pulchellus | Mt. Tamalpais bristly jewelflower             | Dicots     | PDBRA2G0J2 | 24   | 8  | None       | None       | G4T2   | S2   | 1B.2 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden  | Chaparral, Ultramafic, Valley & foothill grassland   |
| Trachusa gummifera                       | San Francisco Bay Area leaf-cutter bee        | Insects    | IIHYM80010 | 3    | 1  | None       | None       | G1     | S1   | null | null   | null   |
| Trifolium amoenum                        | two-fork clover                               | Dicots     | PDFAB40040 | 26   | 1  | Endangered | None       | G1     | S1   | 1B.1 | SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley, SB_USDA-US Dept of | Coastal bluff scrub, Ultramafic, Valley & foothill grassland   |



|                           |  |          |            |    |   |      |      |    |    |      |                        |   |
|---------------------------|--|----------|------------|----|---|------|------|----|----|------|------------------------|---|
|                           |  |          |            |    |   |      |      |    |    |      | Agriculture            |   |
| Tryonia imitator          | mimic tryonia<br>(=California<br>brackishwater<br>snail) | Mollusks | IMGASJ7040 | 39 | 1 | None | None | G2 | S2 | null | IUCN_DD-Data Deficient | Aquatic, Brackish marsh, Estuary, Lagoon,<br>Marsh & swamp, Salt marsh, Wetland |
| Vespericola<br>marinensis | Marin hesperian  | Mollusks | IMGASA4140 | 23 | 3 | None | None | G2 | S2 | null | null                   | Chaparral, Meadow & seep, North coast<br>coniferous forest, Riparian woodland   |

CNPS Rare Plant Inventory



Search Results

57 matches found. Click on scientific name for details

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

| CA RARE   |                           |              |                            |                 |          |            |             |            |            |            |            | DATE ADDED  | PHOTO                 |
|---|---------------------------|--------------|----------------------------|-----------------|----------|------------|-------------|------------|------------|------------|------------|---|-----------------------|
| ▲ SCIENTIFIC NAME   | COMMON NAME               | FAMILY       | LIFEFORM                   | BLOOMING PERIOD | FED LIST | STATE LIST | GLOBAL RANK | STATE RANK | PLANT RANK | CA ENDEMIC |            |   |                       |
| <a href="#">Amorpha californica</a> var. <a href="#">napensis</a>   | Napa false indigo         | Fabaceae     | perennial deciduous shrub  | Apr-Jul         | None     | None       | G4T2        | S2         | 1B.2       | Yes        | 2001-01-01 |    | © 2016<br>John Doyen  |
| <a href="#">Amsinckia lunaris</a>                                   | bent-flowered fiddleneck  | Boraginaceae | annual herb                | Mar-Jun         | None     | None       | G3          | S3         | 1B.2       | Yes        | 1974-01-01 |  | © 2011<br>Neal Kramer |
| <a href="#">Arabis blepharophylla</a>                               | coast rockcress           | Brassicaceae | perennial herb             | Feb-May         | None     | None       | G4          | S4         | 4.3        | Yes        | 1974-01-01 |  | © 2011<br>Neal Kramer |
| <a href="#">Arctostaphylos montana</a> ssp. <a href="#">montana</a> | Mt. Tamalpais manzanita   | Ericaceae    | perennial evergreen shrub  | Feb-Apr         | None     | None       | G3T3        | S3         | 1B.3       | Yes        | 1974-01-01 |  | © 2018<br>John Doyen  |
| <a href="#">Arctostaphylos virgata</a>                              | Marin manzanita           | Ericaceae    | perennial evergreen shrub  | Jan-Mar         | None     | None       | G2          | S2         | 1B.2       | Yes        | 1974-01-01 | No Photo Available  |                       |
| <a href="#">Aspidotis carlotta-halliae</a>                          | Carlotta Hall's lace fern | Pteridaceae  | perennial rhizomatous herb | Jan-Dec         | None     | None       | G3          | S3         | 4.2        | Yes        | 1994-01-01 | No Photo Available  |                       |
| <a href="#">Astragalus breweri</a>                                  | Brewer's milk-vetch       | Fabaceae     | annual herb                | Apr-Jun         | None     | None       | G3          | S3         | 4.2        | Yes        | 1974-01-01 | No Photo Available  |                       |
| <a href="#">Calamagrostis crassiglumis</a>                          | Thurber's reed grass      | Poaceae      | perennial rhizomatous herb | May-Aug         | None     | None       | G5Q         | S2         | 2B.1       |            | 1980-01-01 | No Photo Available  |                       |
| <a href="#">Calamagrostis ophitidis</a>                             | serpentine reed grass     | Poaceae      | perennial herb             | Apr-Jul         | None     | None       | G3          | S3         | 4.3        | Yes        | 1974-01-01 | No Photo Available  |                       |






| CA<br>RARE   |                                |                |                             |                   |          |            |             |            |            |            |            |  |
|--|--------------------------------|----------------|-----------------------------|-------------------|----------|------------|-------------|------------|------------|------------|------------|--|
| ▲ SCIENTIFIC NAME  | COMMON NAME                    | FAMILY         | LIFEFORM                    | BLOOMING PERIOD   | FED LIST | STATE LIST | GLOBAL RANK | STATE RANK | PLANT RANK | CA ENDEMIC | DATE ADDED | PHOTO  |
| <a href="#"><i>Calandrinia breweri</i></a>                         | Brewer's calandrinia           | Montiaceae     | annual herb                 | (Jan)Mar-Jun      | None     | None       | G4          | S4         | 4.2        |            | 1994-01-01 | No Photo Available   |
| <a href="#"><i>Calochortus umbellatus</i></a>                      | Oakland star-tulip             | Liliaceae      | perennial bulbiferous herb  | Mar-May           | None     | None       | G3?         | S3?        | 4.2        | Yes        | 1980-01-01 | No Photo Available   |
| <a href="#"><i>Calochortus uniflorus</i></a>                       | pink star-tulip                | Liliaceae      | perennial bulbiferous herb  | Apr-Jun           | None     | None       | G4          | S4         | 4.2        |            | 2010-03-04 | <br>© 2021 Scot Loring      |
| <a href="#"><i>Calystegia collina</i> ssp. <i>oxyphylla</i></a>    | Mt. Saint Helena morning-glory | Convolvulaceae | perennial rhizomatous herb  | Apr-Jun           | None     | None       | G4T3        | S3         | 4.2        | Yes        | 1984-01-01 | No Photo Available   |
| <a href="#"><i>Castilleja ambigua</i> var. <i>ambigua</i></a>      | johnny-nip                     | Orobanchaceae  | annual herb (hemiparasitic) | Mar-Aug           | None     | None       | G5T4        | S3S4       | 4.2        |            | 2009-02-04 | <br>©2011 Dylan Neubauer  |
| <a href="#"><i>Ceanothus gloriosus</i> var. <i>exaltatus</i></a>   | glory brush                    | Rhamnaceae     | perennial evergreen shrub   | Mar-Jun(Aug)      | None     | None       | G4T4        | S4         | 4.3        | Yes        | 2001-01-01 | <br>©2018 John Doyen      |
| <a href="#"><i>Ceanothus pinetorum</i></a>                         | Kern ceanothus                 | Rhamnaceae     | perennial evergreen shrub   | May-Jul           | None     | None       | G3          | S3         | 4.3        | Yes        | 1974-01-01 | <br>©2017 Aaron Schusteff |
| <a href="#"><i>Chloropyron maritimum</i> ssp. <i>palustre</i></a>  | Point Reyes salty bird's-beak  | Orobanchaceae  | annual herb (hemiparasitic) | Jun-Oct           | None     | None       | G4?T2       | S2         | 1B.2       |            | 1974-01-01 | <br>©2017 John Doyen      |
| <a href="#"><i>Chorizanthe cuspidata</i> var. <i>cuspidata</i></a> | San Francisco Bay spineflower  | Polygonaceae   | annual herb                 | Apr-Jul(Aug)      | None     | None       | G2T1        | S1         | 1B.2       | Yes        | 1994-01-01 | No Photo Available   |
| <a href="#"><i>Cirsium hydrophilum</i> var. <i>vaseyi</i></a>      | Mt. Tamalpais thistle          | Asteraceae     | perennial herb              | May-Aug           | None     | None       | G2T1        | S1         | 1B.2       | Yes        | 1974-01-01 | No Photo Available   |
| <a href="#"><i>Cistanthe maritima</i></a>                          | seaside cistanthe              | Montiaceae     | annual herb                 | (Feb)Mar-Jun(Aug) | None     | None       | G3G4        | S3         | 4.2        |            | 1980-01-01 | No Photo Available   |
| <a href="#"><i>Cypripedium californicum</i></a>                    | California lady's-slipper      | Orchidaceae    | perennial rhizomatous herb  | Apr-Aug(Sep)      | None     | None       | G3          | S4         | 4.2        |            | 1980-01-01 | <br>© 2012 Barry Rice     |

| CA<br>RARE  |                                    |                |                            |                 |          |            |             |            |            |            |            |   |
|---|------------------------------------|----------------|----------------------------|-----------------|----------|------------|-------------|------------|------------|------------|------------|---|
| ▲ SCIENTIFIC NAME   | COMMON NAME                        | FAMILY         | LIFEFORM                   | BLOOMING PERIOD | FED LIST | STATE LIST | GLOBAL RANK | STATE RANK | PLANT RANK | CA ENDEMIC | DATE ADDED | PHOTO   |
| <u><a href="#">Dermatocarpon meiophyllizum</a></u>                                  | silverskin lichen                  | Verrucariaceae | foliose lichen (aquatic)   |                 | None     | None       | G3G5        | S3         | 2B.3       |            | 2022-07-14 | No Photo Available  |
| <u><a href="#">Dirca occidentalis</a></u>   | western leatherwood                | Thymelaeaceae  | perennial deciduous shrub  | Jan-Mar(Apr)    | None     | None       | G2          | S2         | 1B.2       | Yes        | 1974-01-01 | <br>© 2017<br>Steve Matson         |
| <u><a href="#">Elymus californicus</a></u>  | California bottle-brush grass      | Poaceae        | perennial herb             | May-Aug(Nov)    | None     | None       | G4          | S4         | 4.3        | Yes        | 1974-01-01 | No Photo Available  |
| <u><a href="#">Eriogonum luteolum</a></u> var. <u><a href="#">caninum</a></u>       | Tiburon buckwheat                  | Polygonaceae   | annual herb                | May-Sep         | None     | None       | G5T2        | S2         | 1B.2       | Yes        | 1974-01-01 | No Photo Available  |
| <u><a href="#">Erysimum franciscanum</a></u>  | San Francisco wallflower           | Brassicaceae   | perennial herb             | Mar-Jun         | None     | None       | G3          | S3         | 4.2        | Yes        | 1974-01-01 | No Photo Available  |
| <u><a href="#">Fissidens pauperculus</a></u>  | minute pocket moss                 | Fissidentaceae | moss                       |                 | None     | None       | G3?         | S2         | 1B.2       |            | 2001-01-01 | <br>©2021<br>Scot Loring         |
| <u><a href="#">Fritillaria lanceolata</a></u> var. <u><a href="#">tristulis</a></u> | Marin checker lily                 | Liliaceae      | perennial bulbiferous herb | Feb-May         | None     | None       | G5T2        | S2         | 1B.1       | Yes        | 1994-01-01 | <br>© 2020<br>Barry Rice         |
| <u><a href="#">Gilia millefoliata</a></u>   | dark-eyed gilia                    | Polemoniaceae  | annual herb                | Apr-Jul         | None     | None       | G2          | S2         | 1B.2       |            | 2001-01-01 | <br>© 2017<br>John Doyen         |
| <u><a href="#">Helianthella castanea</a></u>  | Diablo helianthella                | Asteraceae     | perennial herb             | Mar-Jun         | None     | None       | G2          | S2         | 1B.2       | Yes        | 1974-01-01 | <br>© 2013<br>Christopher Bronny |
| <u><a href="#">Hemizonia congesta</a></u> ssp. <u><a href="#">congesta</a></u>      | congested-headed hayfield tarplant | Asteraceae     | annual herb                | Apr-Nov         | None     | None       | G5T2        | S2         | 1B.2       | Yes        | 1988-01-01 | <br>© 2015<br>Vernon Smith       |
| <u><a href="#">Hesperolinon congestum</a></u>                                       | Marin western flax                 | Linaceae       | annual herb                | Apr-Jul         | FT       | CT         | G1          | S1         | 1B.1       | Yes        | 1974-01-01 | <br>© 2009<br>Neal Kramer        |



| CA RARE PLANT INVENTORY                      |                            |               |  |                 |          |            |             |            |            |            |            |  |
|--|----------------------------|---------------|--|-----------------|----------|------------|-------------|------------|------------|------------|------------|--|
| ▲ SCIENTIFIC NAME                            | COMMON NAME                | FAMILY        | LIFEFORM                               | BLOOMING PERIOD | FED LIST | STATE LIST | GLOBAL RANK | STATE RANK | PLANT RANK | CA ENDEMIC | DATE ADDED | PHOTO  |
| <a href="#">Holocarpha macradenia</a>        | Santa Cruz tarplant        | Asteraceae    | annual herb                            | Jun-Oct         | FT       | CE         | G1          | S1         | 1B.1       | Yes        | 1974-01-01 | <br>© 2011<br>Dylan Neubauer    |
| <a href="#">Horkelia tenuiloba</a>           | thin-lobed horkelia        | Rosaceae      | perennial herb                         | May-Jul(Aug)    | None     | None       | G2          | S2         | 1B.2       | Yes        | 1988-01-01 | <br>© 1994<br>Doreen L. Smith   |
| <a href="#">Hosackia gracilis</a>            | harlequin lotus            | Fabaceae      | perennial rhizomatous herb             | Mar-Jul         | None     | None       | G3G4        | S3         | 4.2        |            | 2004-01-01 | <br>© 2015<br>John Doyen       |
| <a href="#">Iris longipetala</a>             | coast iris                 | Iridaceae     | perennial rhizomatous herb             | Mar-May(Jun)    | None     | None       | G3          | S3         | 4.2        | Yes        | 2006-10-12 | <br>© 2014<br>Aaron Schusteff |
| <a href="#">Juncus acutus ssp. leopoldii</a> | southwestern spiny rush    | Juncaceae     | perennial rhizomatous herb             | (Mar)May-Jun    | None     | None       | G5T5        | S4         | 4.2        |            | 1988-01-01 | <br>© 2019<br>Belinda Lo      |
| <a href="#">Kopsiopsis hookeri</a>           | small groundcone           | Orobanchaceae | perennial rhizomatous herb (parasitic) | Apr-Aug         | None     | None       | G4?         | S1S2       | 2B.3       |            | 1994-01-01 | <br>©2016<br>Vernon Smith     |
| <a href="#">Leptosiphon aureus</a>           | bristly leptosiphon        | Polemoniaceae | annual herb                            | Apr-Jul         | None     | None       | G4?         | S4?        | 4.2        | Yes        | 1994-01-01 | <br>© 2007 Len Blumin         |
| <a href="#">Leptosiphon grandiflorus</a>     | large-flowered leptosiphon | Polemoniaceae | annual herb                            | Apr-Aug         | None     | None       | G3G4        | S3S4       | 4.2        | Yes        | 1994-01-01 | <br>© 2003<br>Doreen L. Smith |
| <a href="#">Lessingia hololeuca</a>          | woolly-headed lessingia    | Asteraceae    | annual herb                            | Jun-Oct         | None     | None       | G2G3        | S2S3       | 3          | Yes        | 1994-01-01 | <br>© 2015<br>Aaron Schusteff |

| CA<br>RARE   |                             |               |                            |                   |          |            |             |            |            |            |            |  |
|--|-----------------------------|---------------|----------------------------|-------------------|----------|------------|-------------|------------|------------|------------|------------|--|
| ▲ SCIENTIFIC NAME  | COMMON NAME                 | FAMILY        | LIFEFORM                   | BLOOMING PERIOD   | FED LIST | STATE LIST | GLOBAL RANK | STATE RANK | PLANT RANK | CA ENDEMIC | DATE ADDED | PHOTO  |
| <a href="#">Lessingia micradenia</a> var. <a href="#">micradenia</a> | Tamalpais lessingia         | Asteraceae    | annual herb                | (Jun)Jul-Oct      | None     | None       | G2T2        | S2         | 1B.2       | Yes        | 1994-01-01 | <br>© 2015<br>Vernon Smith      |
| <a href="#">Microseris paludosa</a>                                  | marsh microseris            | Asteraceae    | perennial herb             | Apr-Jun(Jul)      | None     | None       | G2          | S2         | 1B.2       | Yes        | 2001-01-01 | No Photo Available   |
| <a href="#">Navarretia rosulata</a>                                  | Marin County navarretia     | Polemoniaceae | annual herb                | May-Jul           | None     | None       | G2          | S2         | 1B.2       | Yes        | 1980-01-01 | No Photo Available   |
| <a href="#">Pentachaeta bellidiflora</a>                             | white-rayed pentachaeta     | Asteraceae    | annual herb                | Mar-May           | FE       | CE         | G1          | S1         | 1B.1       | Yes        | 1974-01-01 | No Photo Available   |
| <a href="#">Perideridia gairdneri</a> ssp. <a href="#">gairdneri</a> | Gairdner's yampah           | Apiaceae      | perennial herb             | Jun-Oct           | None     | None       | G5T3T4      | S3S4       | 4.2        | Yes        | 1974-01-01 | <br>©2007<br>Neal Kramer      |
| <a href="#">Plagiobothrys glaber</a>                                 | hairless popcornflower      | Boraginaceae  | annual herb                | Mar-May           | None     | None       | GX          | SX         | 1A         | Yes        | 1974-01-01 | No Photo Available   |
| <a href="#">Pleuropogon hooverianus</a>                              | North Coast semaphore grass | Poaceae       | perennial rhizomatous herb | Apr-Jun           | None     | CT         | G2          | S2         | 1B.1       | Yes        | 1974-01-01 | No Photo Available   |
| <a href="#">Polygonum marinense</a>                                  | Marin knotweed              | Polygonaceae  | annual herb                | (Apr)May-Aug(Oct) | None     | None       | G2Q         | S2         | 3.1        | Yes        | 1974-01-01 | No Photo Available   |
| <a href="#">Quercus parvula</a> var. <a href="#">tamalpaisensis</a>  | Tamalpais oak               | Fagaceae      | perennial evergreen shrub  | Mar-Apr           | None     | None       | G4T2        | S2         | 1B.3       | Yes        | 2001-01-01 | No Photo Available   |
| <a href="#">Ranunculus lobbii</a>                                    | Lobb's aquatic buttercup    | Ranunculaceae | annual herb (aquatic)      | Feb-May           | None     | None       | G4          | S3         | 4.2        |            | 1974-01-01 | No Photo Available   |
| <a href="#">Sidalcea calycosa</a> ssp. <a href="#">rhizomata</a>     | Point Reyes checkerbloom    | Malvaceae     | perennial rhizomatous herb | Apr-Sep           | None     | None       | G5T2        | S2         | 1B.2       | Yes        | 1994-01-01 | No Photo Available   |
| <a href="#">Stebbinsoseris decipiens</a>                             | Santa Cruz microseris       | Asteraceae    | annual herb                | Apr-May           | None     | None       | G2          | S2         | 1B.2       | Yes        | 1974-01-01 | No Photo Available   |
| <a href="#">Streptanthus batrachopus</a>                             | Tamalpais jewelflower       | Brassicaceae  | annual herb                | Apr-Jul           | None     | None       | G2          | S2         | 1B.3       | Yes        | 1974-01-01 | <br>© 2012<br>Aaron Schusteff |



| CA<br>RARE   |   |               |                                  |                    |             |               |                |               |               |               |               |                       |
|--|---|---------------|----------------------------------|--------------------|-------------|---------------|----------------|---------------|---------------|---------------|---------------|-----------------------|
| ▲ SCIENTIFIC<br>NAME                                     | COMMON<br>NAME                          | FAMILY        | LIFEFORM                         | BLOOMING<br>PERIOD | FED<br>LIST | STATE<br>LIST | GLOBAL<br>RANK | STATE<br>RANK | PLANT<br>RANK | CA<br>ENDEMIC | DATE<br>ADDED | PHOTO                 |
| <a href="#">Streptanthus glandulosus ssp. pulchellus</a> | Mt. Tamalpais<br>bristly<br>jewelflower | Brassicaceae  | annual herb                      | May-<br>Jul(Aug)   | None        | None          | G4T2           | S2            | 1B.2          | Yes           | 1980-01-01    | No Photo<br>Available |
| <a href="#">Toxicoscordion fontanum</a>                  | marsh<br>zigadenus                      | Melanthiaceae | perennial<br>bulbiferous<br>herb | Apr-Jul            | None        | None          | G3             | S3            | 4.2           | Yes           | 2001-01-01    | No Photo<br>Available |
| <a href="#">Trifolium amoenum</a>                        | two-fork<br>clover                      | Fabaceae      | annual herb                      | Apr-Jun            | FE          | None          | G1             | S1            | 1B.1          | Yes           | 1974-01-01    | No Photo<br>Available |

Showing 1 to 57 of 57 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 18 November 2024].

# 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<sup>1</sup> 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<sup>2</sup>).

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            |
|--|-------------------|
| <b>Salt Marsh Harvest Mouse</b> <i>Reithrodontomys raviventris</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a> | <b>Endangered</b> |

## Birds

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

## Reptiles

| NAME   | STATUS              |
|--|---------------------|
| <b>Green Sea Turtle</b> <i>Chelonia mydas</i><br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>                                | Threatened          |
| <b>Northwestern Pond Turtle</b> <i>Actinemys marmorata</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/1111">https://ecos.fws.gov/ecp/species/1111</a> | Proposed Threatened |

## Amphibians

| NAME  | STATUS     |
|---|------------|
| <b>California Red-legged Frog</b> <i>Rana draytonii</i><br>Wherever found<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a> | Threatened |

## Fishes

| NAME   | STATUS     |
|--|------------|
| <b>Tidewater Goby</b> <i>Eucyclogobius newberryi</i><br>Wherever found<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/57">https://ecos.fws.gov/ecp/species/57</a> | Endangered |

## Insects

| NAME   | STATUS    |
|--|-----------|
| <b>Monarch Butterfly</b> <i>Danaus plexippus</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a> | Candidate |

## 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>**Showy Indian Clover** *Trifolium amoenum*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6459>**White-rayed Pentachaeta** *Pentachaeta bellidiflora*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7782>

## Critical habitats

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

There are no critical habitats at this location.

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

## Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act<sup>1</sup> and the Migratory Bird Treaty Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats<sup>3</sup>, should follow appropriate regulations and

consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

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-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

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.

| NAME  | BREEDING SEASON        |
|---|------------------------|
| <b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a> | Breeds Jan 1 to Aug 31 |
| <b>Golden Eagle</b> <i>Aquila chrysaetos</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>      | 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.

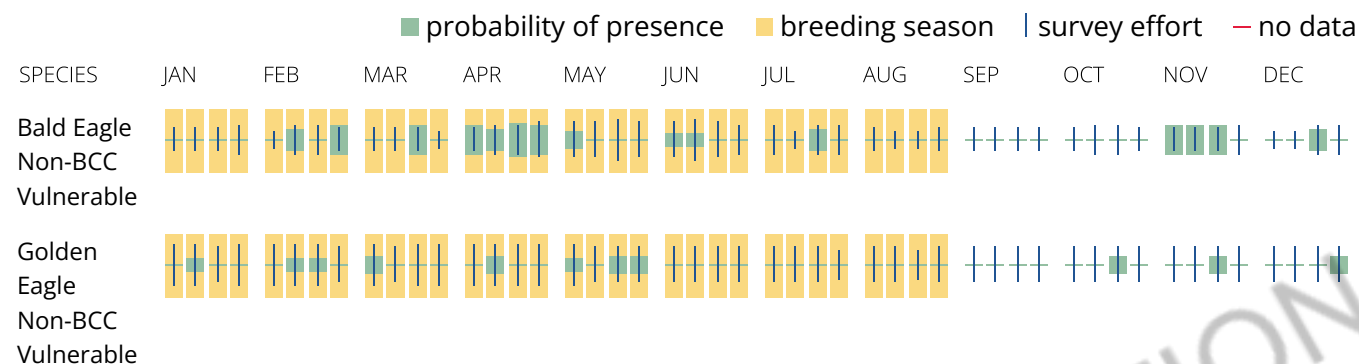
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### 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.



## What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.



# Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats<sup>3</sup> should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON

**Allen's Hummingbird** *Selasphorus sasin*

Breeds Feb 1 to Jul 15

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

<https://ecos.fws.gov/ecp/species/9637>

**Bald Eagle** *Haliaeetus leucocephalus*

Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

**Belding's Savannah Sparrow** *Passerculus sandwichensis beldingi*

Breeds Apr 1 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/8>

**Black Swift** *Cypseloides niger*

Breeds Jun 15 to Sep 10

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

<https://ecos.fws.gov/ecp/species/8878>

**Black-chinned Sparrow** *Spizella atrogularis*

Breeds Apr 15 to Jul 31

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

<https://ecos.fws.gov/ecp/species/9447>

**Bullock's Oriole** *Icterus bullockii*

Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**California Gull** *Larus californicus*

Breeds Mar 1 to Jul 31

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

**California Spotted Owl** *Strix occidentalis occidentalis*

Breeds Mar 10 to Jun 15

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

<https://ecos.fws.gov/ecp/species/7266>



**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.

**Western Screech-owl** *Megascops kennicottii cardonensis*

Breeds Mar 1 to Jun 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**Willet** *Tringa semipalmata*

Breeds elsewhere

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

**Wrentit** *Chamaea fasciata*

Breeds Mar 15 to Aug 10

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

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and



schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

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

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

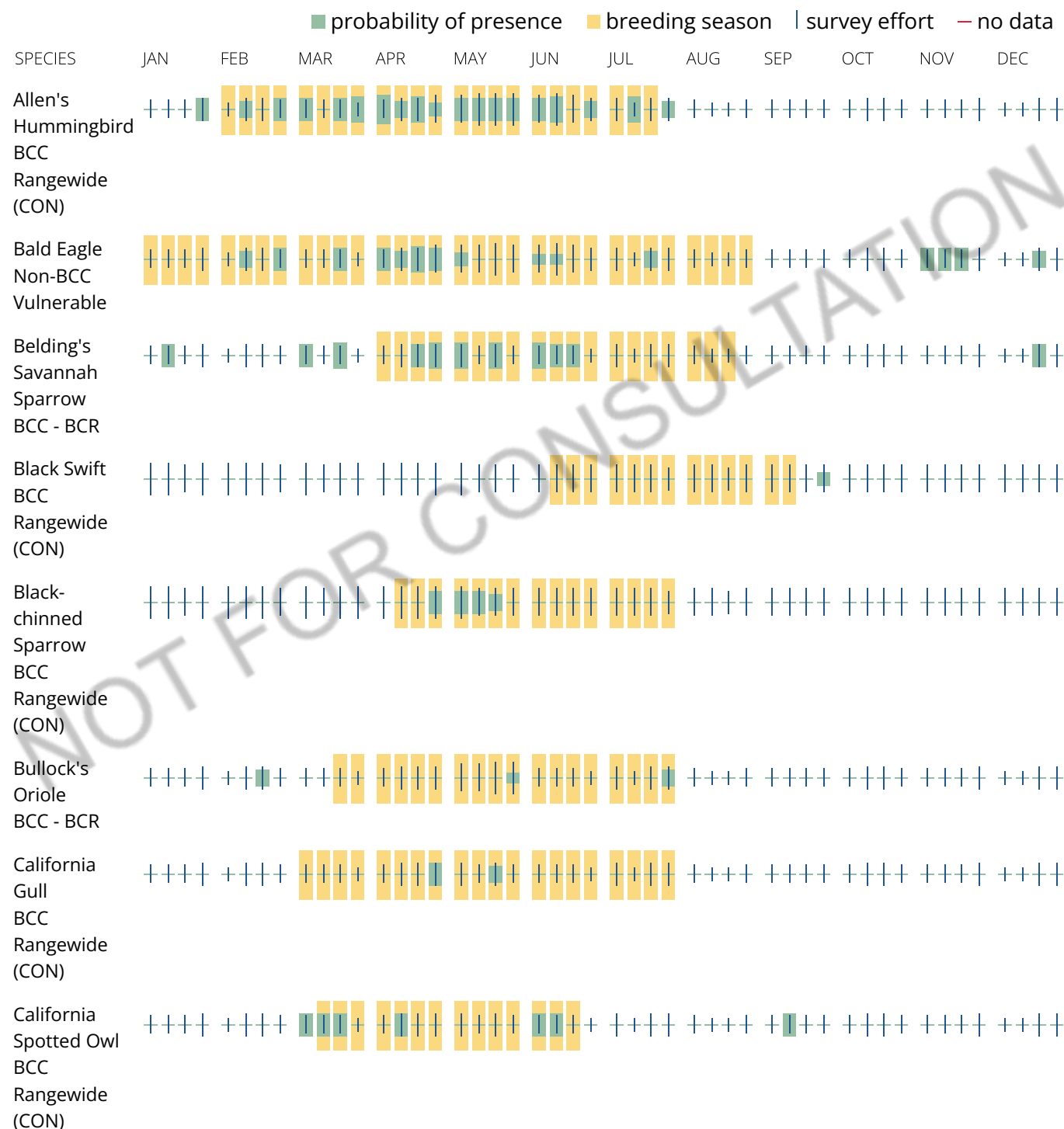
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (—)

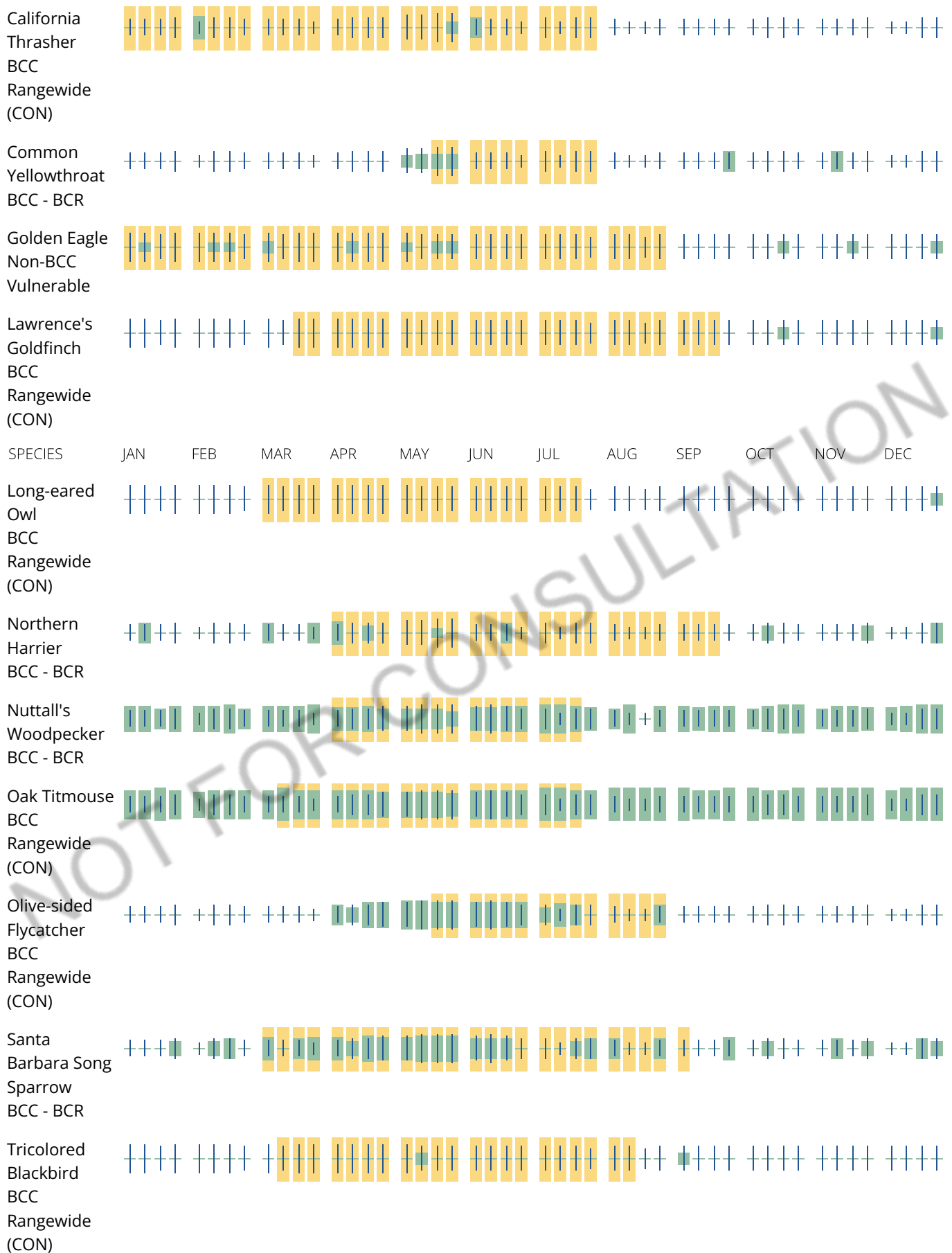
A week is marked as having no data if there were no survey events for that week.

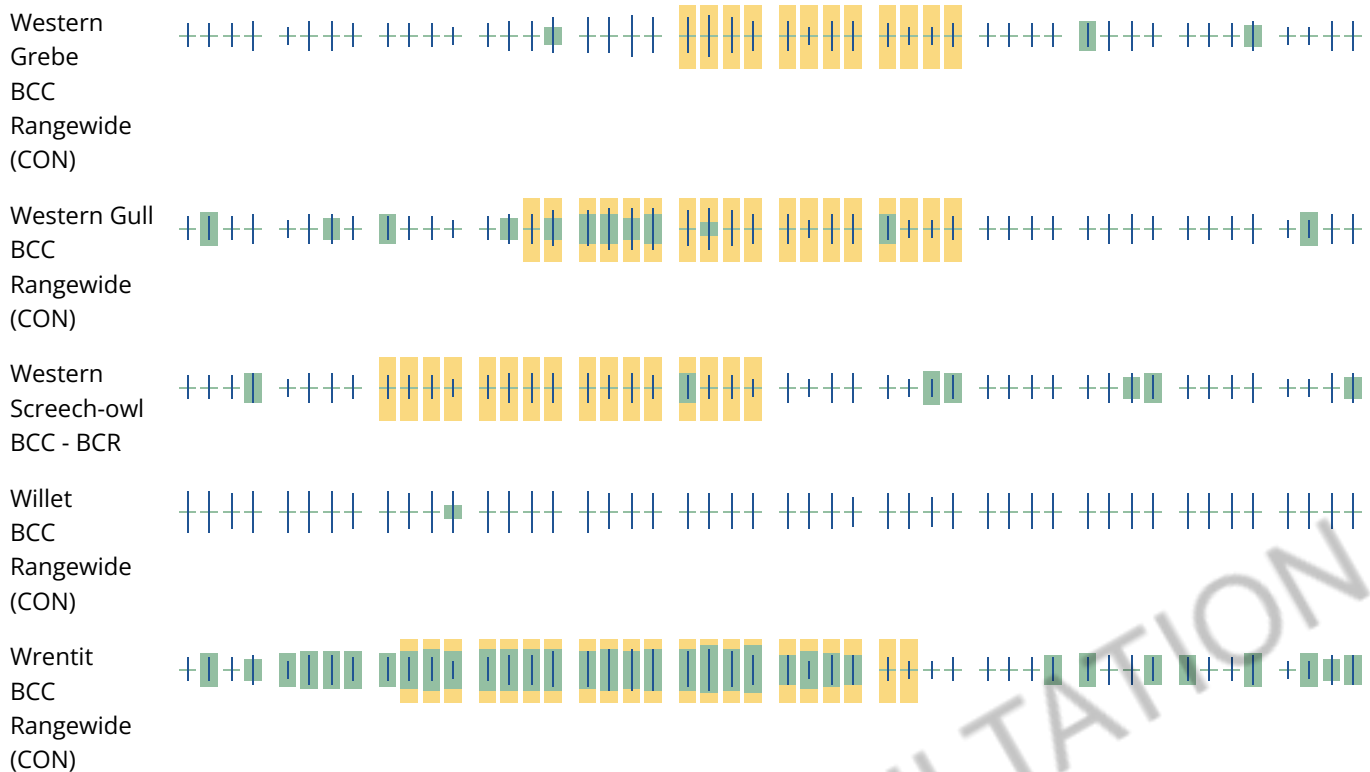
### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.









**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).



## What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

## How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

## Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.



## Fish hatcheries

There are no fish hatcheries at this location.

## Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid 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.

NOT FOR CONSTRUCTION



# 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<sup>1</sup> 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<sup>2</sup>).

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            |
|--|-------------------|
| <b>Salt Marsh Harvest Mouse</b> <i>Reithrodontomys raviventris</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a> | <b>Endangered</b> |

## Birds

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

## Reptiles

| NAME   | STATUS              |
|--|---------------------|
| <b>Green Sea Turtle</b> <i>Chelonia mydas</i><br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>                                | Threatened          |
| <b>Northwestern Pond Turtle</b> <i>Actinemys marmorata</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/1111">https://ecos.fws.gov/ecp/species/1111</a> | Proposed Threatened |

## Amphibians

| NAME  | STATUS     |
|---|------------|
| <b>California Red-legged Frog</b> <i>Rana draytonii</i><br>Wherever found<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a> | Threatened |

## Fishes

| NAME   | STATUS     |
|--|------------|
| <b>Tidewater Goby</b> <i>Eucyclogobius newberryi</i><br>Wherever found<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/57">https://ecos.fws.gov/ecp/species/57</a> | Endangered |

## Insects

| NAME   | STATUS    |
|--|-----------|
| <b>Monarch Butterfly</b> <i>Danaus plexippus</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a> | Candidate |

## 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>**Showy Indian Clover** *Trifolium amoenum*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6459>**White-rayed Pentachaeta** *Pentachaeta bellidiflora*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7782>

## Critical habitats

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

There are no critical habitats at this location.

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

## Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act<sup>1</sup> and the Migratory Bird Treaty Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats<sup>3</sup>, should follow appropriate regulations and



consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

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-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

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.

| NAME  | BREEDING SEASON        |
|---|------------------------|
| <b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a> | Breeds Jan 1 to Aug 31 |
| <b>Golden Eagle</b> <i>Aquila chrysaetos</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>      | 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.

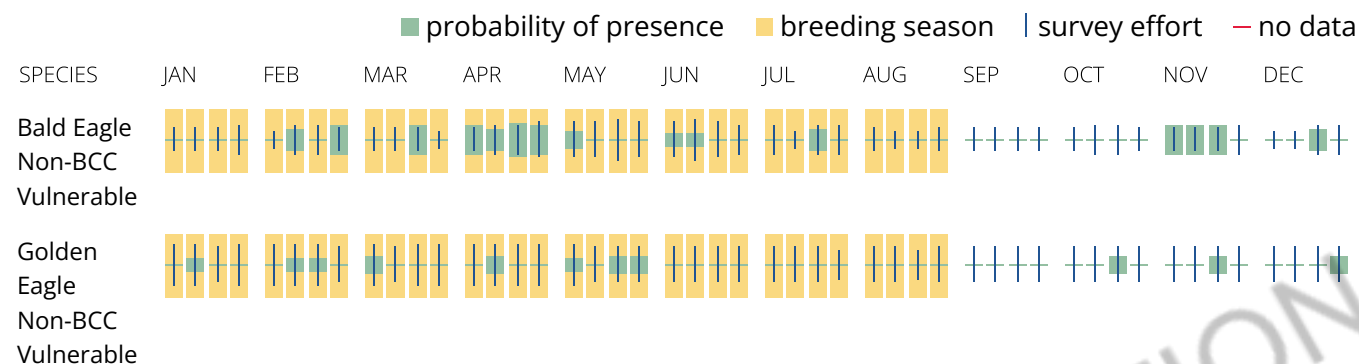
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### 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.



## What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.



# Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats<sup>3</sup> should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON

**Allen's Hummingbird** *Selasphorus sasin*

Breeds Feb 1 to Jul 15

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

<https://ecos.fws.gov/ecp/species/9637>

**Bald Eagle** *Haliaeetus leucocephalus*

Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

**Belding's Savannah Sparrow** *Passerculus sandwichensis beldingi*

Breeds Apr 1 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/8>

**Black Swift** *Cypseloides niger*

Breeds Jun 15 to Sep 10

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

<https://ecos.fws.gov/ecp/species/8878>

**Black-chinned Sparrow** *Spizella atrogularis*

Breeds Apr 15 to Jul 31

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

<https://ecos.fws.gov/ecp/species/9447>

**Bullock's Oriole** *Icterus bullockii*

Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**California Gull** *Larus californicus*

Breeds Mar 1 to Jul 31

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

**California Spotted Owl** *Strix occidentalis occidentalis*

Breeds Mar 10 to Jun 15

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

<https://ecos.fws.gov/ecp/species/7266>

**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.

**Western Screech-owl** *Megascops kennicottii cardonensis*

Breeds Mar 1 to Jun 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**Willet** *Tringa semipalmata*

Breeds elsewhere

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

**Wrentit** *Chamaea fasciata*

Breeds Mar 15 to Aug 10

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

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and

schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

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

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

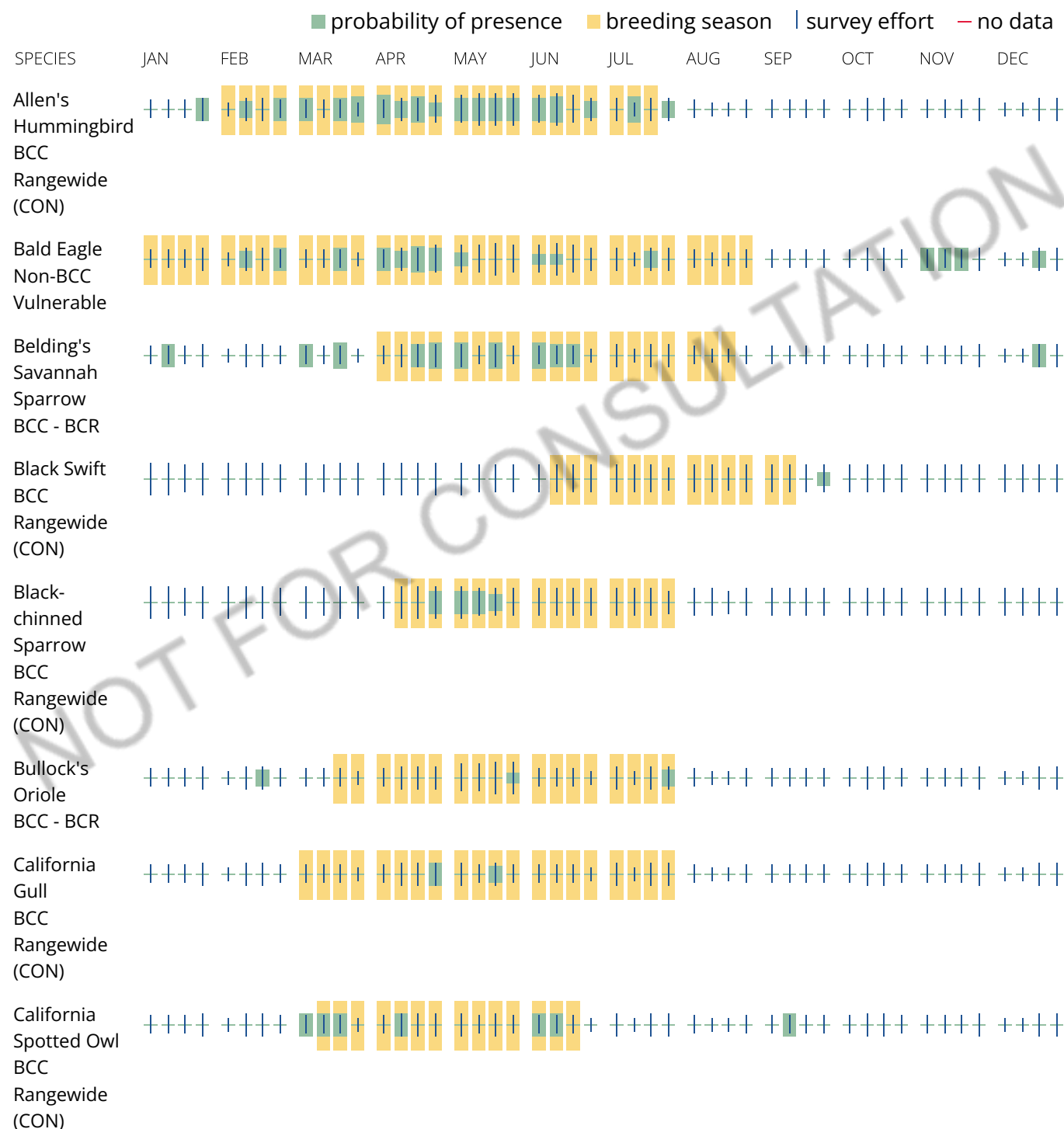
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (—)

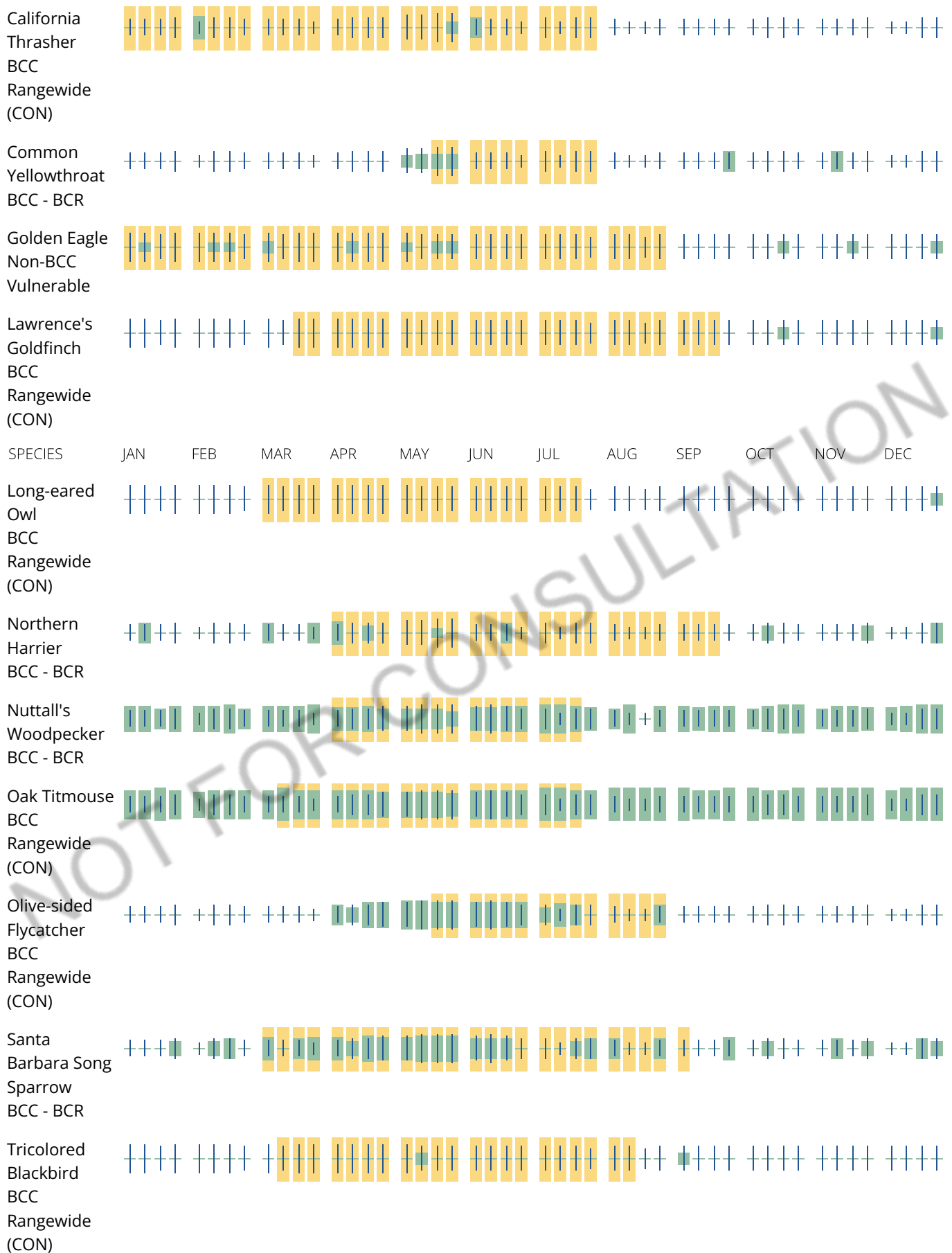
A week is marked as having no data if there were no survey events for that week.

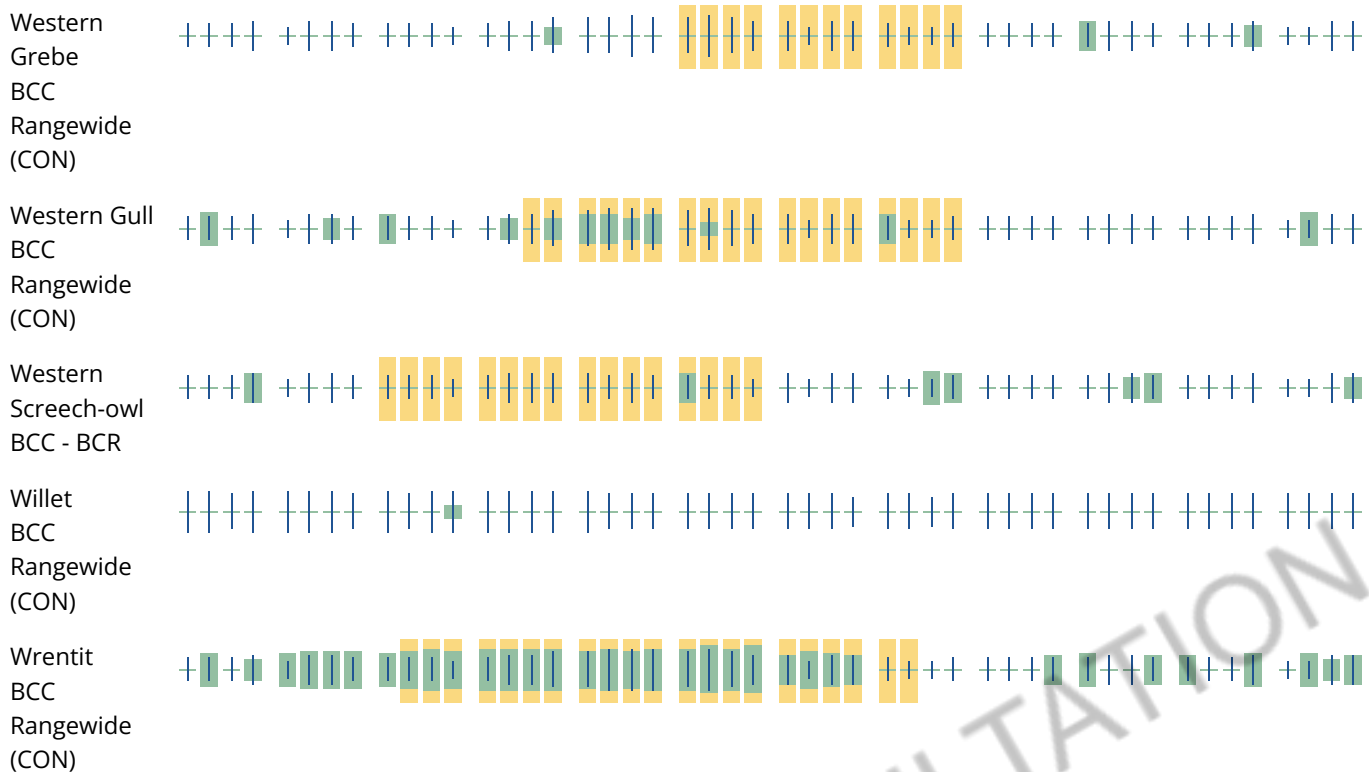
### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.









**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

## How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

## Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.



Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

## Fish hatcheries

There are no fish hatcheries at this location.

## Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

### 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 tubercid 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.

NOT FOR CONSULTATION



# 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<sup>1</sup> 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<sup>2</sup>).

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     |
|--|------------|
| <b>Salt Marsh Harvest Mouse</b> <i>Reithrodontomys raviventris</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a> | Endangered |

## Birds

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

## Reptiles

| NAME   | STATUS              |
|--|---------------------|
| <b>Green Sea Turtle</b> <i>Chelonia mydas</i><br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>                                | Threatened          |
| <b>Northwestern Pond Turtle</b> <i>Actinemys marmorata</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/1111">https://ecos.fws.gov/ecp/species/1111</a> | Proposed Threatened |

## Amphibians

| NAME  | STATUS     |
|---|------------|
| <b>California Red-legged Frog</b> <i>Rana draytonii</i><br>Wherever found<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a> | Threatened |

## Fishes

| NAME   | STATUS     |
|--|------------|
| <b>Tidewater Goby</b> <i>Eucyclogobius newberryi</i><br>Wherever found<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/57">https://ecos.fws.gov/ecp/species/57</a> | Endangered |

## Insects

| NAME   | STATUS    |
|--|-----------|
| <b>Monarch Butterfly</b> <i>Danaus plexippus</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a> | Candidate |

## Flowering Plants

| NAME | STATUS |
|------|--------|
|------|--------|

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

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

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

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

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

## Critical habitats

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

There are no critical habitats at this location.

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

## Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act<sup>1</sup>



and the Migratory Bird Treaty Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats<sup>3</sup>, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

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.

| NAME  | BREEDING SEASON        |
|---|------------------------|
| <b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a> | Breeds Jan 1 to Aug 31 |
| <b>Golden Eagle</b> <i>Aquila chrysaetos</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>      | 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.

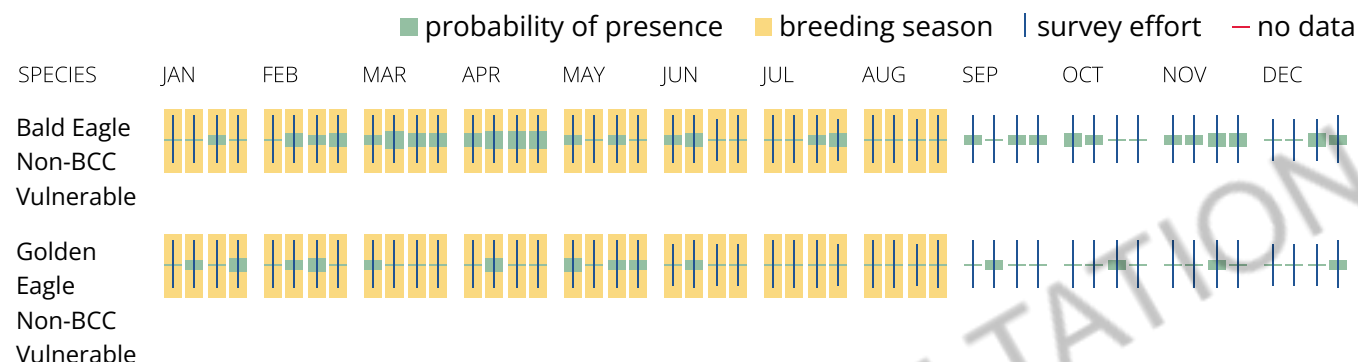
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

## 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.



## What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What if I have eagles on my list?



If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats<sup>3</sup> should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

| NAME  | BREEDING SEASON         |
|---|-------------------------|
| <b>Allen's Hummingbird</b> <i>Selasphorus sasin</i><br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br><a href="https://ecos.fws.gov/ecp/species/9637">https://ecos.fws.gov/ecp/species/9637</a>  | Breeds Feb 1 to Jul 15  |
| <b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a> | Breeds Jan 1 to Aug 31  |
| <b>Belding's Savannah Sparrow</b> <i>Passerculus sandwichensis beldingi</i><br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br><a href="https://ecos.fws.gov/ecp/species/8">https://ecos.fws.gov/ecp/species/8</a>   | Breeds Apr 1 to Aug 15  |
| <b>Black Oystercatcher</b> <i>Haematopus bachmani</i><br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br><a href="https://ecos.fws.gov/ecp/species/9591">https://ecos.fws.gov/ecp/species/9591</a>  | Breeds Apr 15 to Oct 31 |
| <b>Black Swift</b> <i>Cypseloides niger</i><br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br><a href="https://ecos.fws.gov/ecp/species/8878">https://ecos.fws.gov/ecp/species/8878</a>  | Breeds Jun 15 to Sep 10 |
| <b>Black Tern</b> <i>Chlidonias niger surinamensis</i><br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br><a href="https://ecos.fws.gov/ecp/species/3093">https://ecos.fws.gov/ecp/species/3093</a>   | Breeds May 15 to Aug 20 |
| <b>Black Turnstone</b> <i>Arenaria melanocephala</i><br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  | Breeds elsewhere        |

**Black-chinned Sparrow** *Spizella atrogularis*

Breeds Apr 15 to Jul 31

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

<https://ecos.fws.gov/ecp/species/9447>

**Brandt's Cormorant** *Urile penicillatus*

Breeds Apr 15 to Sep 15

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

**Bullock's Oriole** *Icterus bullockii*

Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**California Gull** *Larus californicus*

Breeds Mar 1 to Jul 31

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

**California Spotted Owl** *Strix occidentalis occidentalis*

Breeds Mar 10 to Jun 15

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

<https://ecos.fws.gov/ecp/species/7266>

**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.

**Clark's Grebe** *Aechmophorus clarkii*

Breeds Jun 1 to Aug 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>

**Elegant Tern** *Thalasseus elegans*

Breeds Apr 5 to Aug 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/8561>



**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>

**Heermann's Gull** *Larus heermanni*

Breeds Mar 15 to Aug 31

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

**Lawrence's Goldfinch** *Spinus lawrencei*

Breeds Mar 20 to Sep 20

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

<https://ecos.fws.gov/ecp/species/9464>

**Long-eared Owl** *asio otus*

Breeds Mar 1 to Jul 15

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

<https://ecos.fws.gov/ecp/species/3631>

**Marbled Godwit** *Limosa fedoa*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/9481>

**Northern Harrier** *Circus hudsonius*

Breeds Apr 1 to Sep 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/8350>

**Nuttall's Woodpecker** *Dryobates nuttallii*

Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9410>

**Oak Titmouse** *Baeolophus inornatus*

Breeds Mar 15 to Jul 15

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

<https://ecos.fws.gov/ecp/species/9656>

**Olive-sided Flycatcher** *Contopus cooperi*

Breeds May 20 to Aug 31

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

<https://ecos.fws.gov/ecp/species/3914>

**Red Knot** *Calidris canutus roselaari*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/8880>

**Santa Barbara Song Sparrow** *Melospiza melodia*  
*graminea*

Breeds Mar 1 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/5513>

**Short-billed Dowitcher** *Limnodromus griseus*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/9480>

**Tricolored Blackbird** *Agelaius tricolor*

Breeds Mar 15 to Aug 10

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

<https://ecos.fws.gov/ecp/species/3910>

**Western Grebe** *aechmophorus occidentalis*

Breeds Jun 1 to Aug 31

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

<https://ecos.fws.gov/ecp/species/6743>

**Western Gull** *Larus occidentalis*

Breeds Apr 21 to Aug 25

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

**Western Screech-owl** *Megascops kennicottii cardonensis*

Breeds Mar 1 to Jun 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**Willet** *Tringa semipalmata*

Breeds elsewhere

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

**Wrentit** *Chamaea fasciata*

Breeds Mar 15 to Aug 10

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

NOT FOR CONSULTATION



# 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.

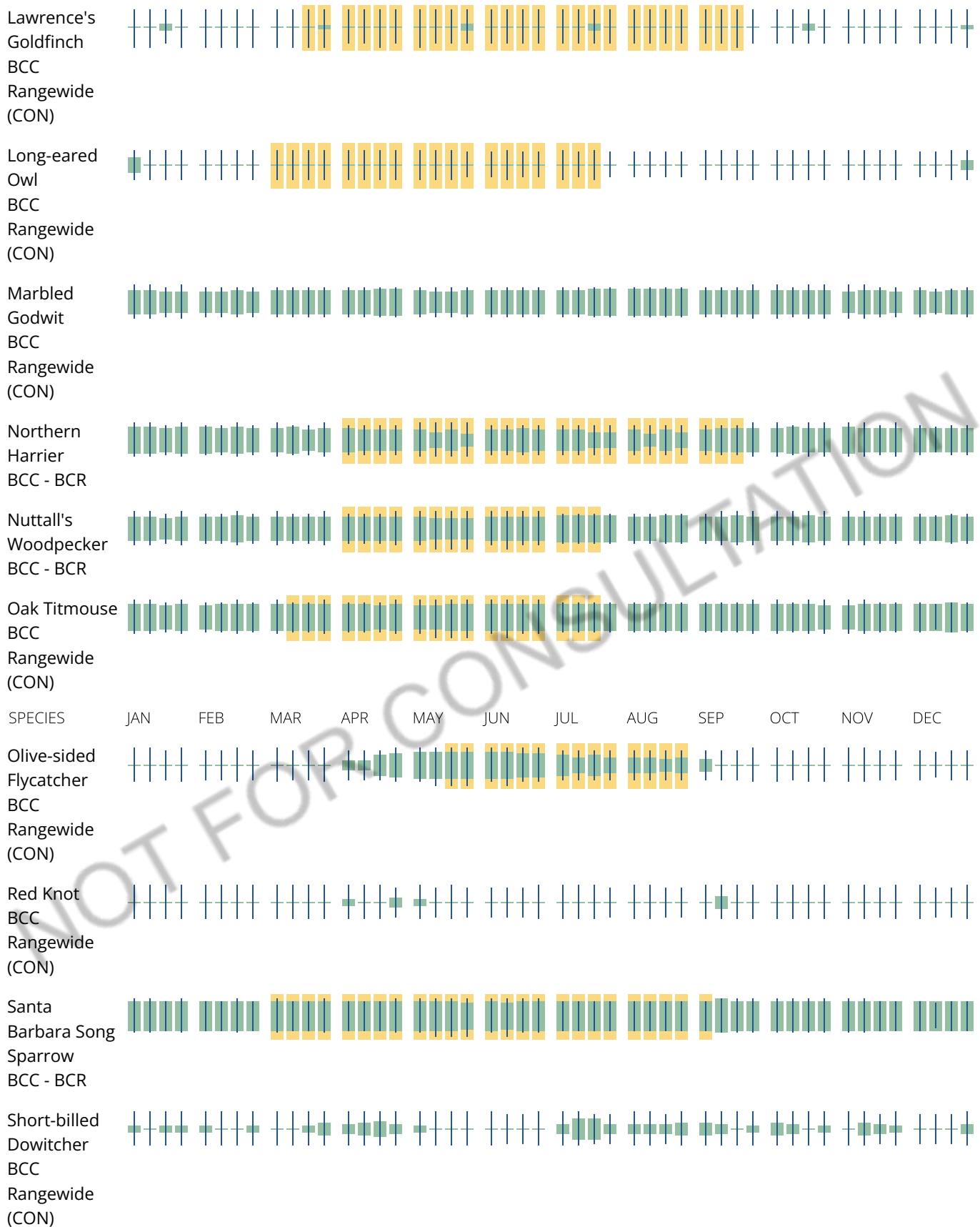
### Survey Timeframe

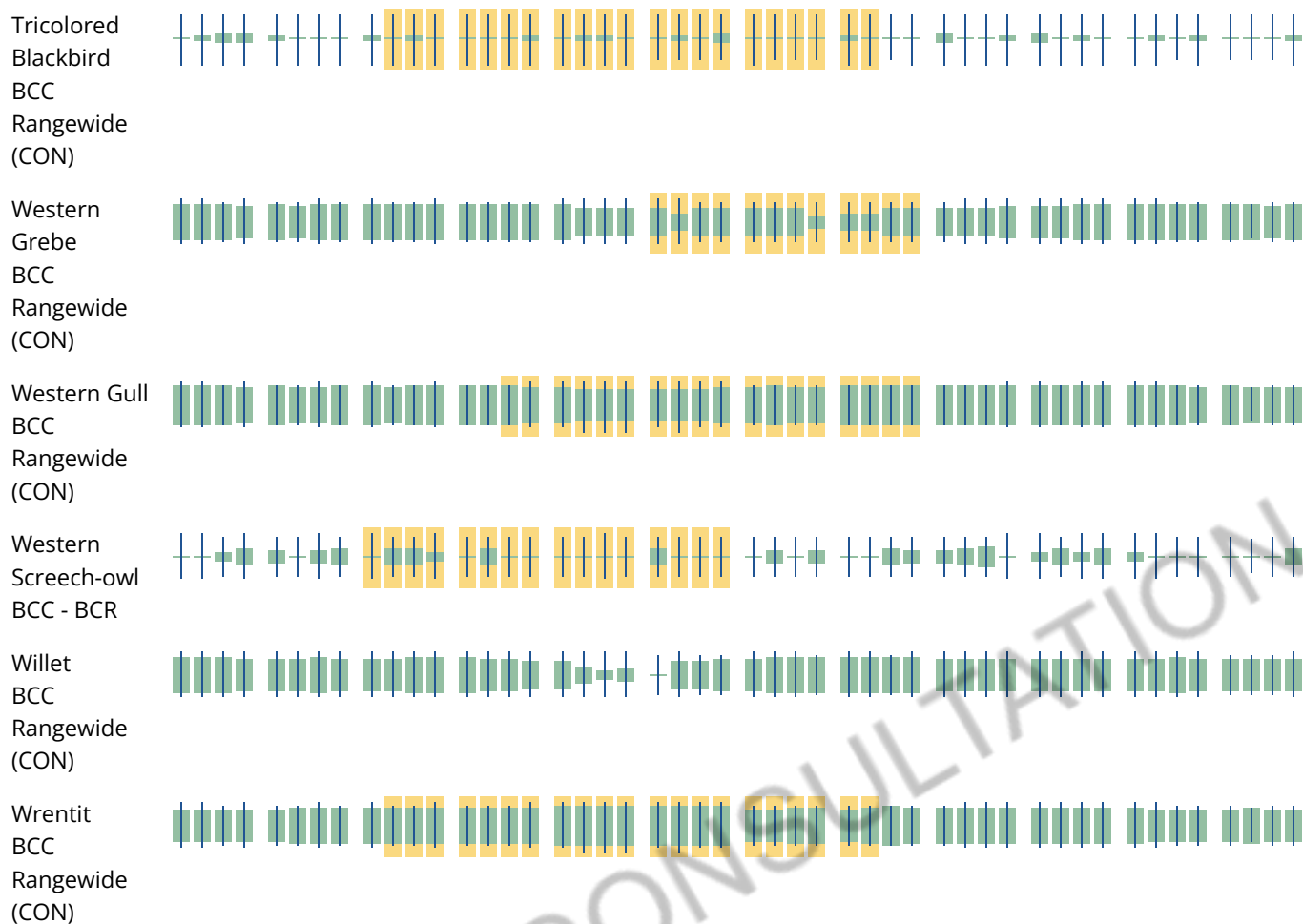
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.











**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species

that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean](#)



[Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

## Fish hatcheries

There are no fish hatcheries at this location.

## Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

### ESTUARINE AND MARINE DEEPWATER

[E1UBL](#)

### ESTUARINE AND MARINE WETLAND

[E2EM1N](#)

[E2SBNh](#)

[E2SBN](#)

[E2USM](#)

[E2SBNx](#)

### RIVERINE

[R4SBA](#)

[R4SBCx](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid 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.



# 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<sup>1</sup> 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<sup>2</sup>).

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     |
|--|------------|
| <b>Salt Marsh Harvest Mouse</b> <i>Reithrodontomys raviventris</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a> | Endangered |

## Birds

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

## Reptiles

| NAME   | STATUS              |
|--|---------------------|
| <b>Green Sea Turtle</b> <i>Chelonia mydas</i><br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>                                | Threatened          |
| <b>Northwestern Pond Turtle</b> <i>Actinemys marmorata</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/1111">https://ecos.fws.gov/ecp/species/1111</a> | Proposed Threatened |

## Amphibians

| NAME  | STATUS     |
|---|------------|
| <b>California Red-legged Frog</b> <i>Rana draytonii</i><br>Wherever found<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a> | Threatened |

## Fishes

| NAME   | STATUS     |
|--|------------|
| <b>Tidewater Goby</b> <i>Eucyclogobius newberryi</i><br>Wherever found<br>There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.<br><a href="https://ecos.fws.gov/ecp/species/57">https://ecos.fws.gov/ecp/species/57</a> | Endangered |

## Insects

| NAME   | STATUS    |
|--|-----------|
| <b>Monarch Butterfly</b> <i>Danaus plexippus</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a> | Candidate |

## Flowering Plants

| NAME | STATUS |
|------|--------|
|------|--------|

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

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

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

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

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

## Critical habitats

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

There are no critical habitats at this location.

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

## Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act<sup>1</sup>



and the Migratory Bird Treaty Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats<sup>3</sup>, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

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.

| NAME  | BREEDING SEASON        |
|---|------------------------|
| <b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a> | Breeds Jan 1 to Aug 31 |
| <b>Golden Eagle</b> <i>Aquila chrysaetos</i><br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br><a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>      | 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.

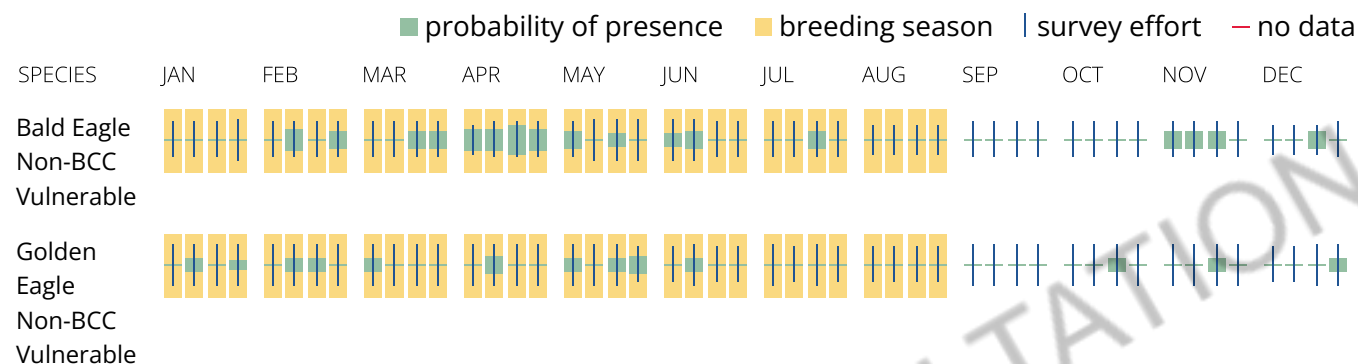
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

## 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.



## What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What if I have eagles on my list?



If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats<sup>3</sup> should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

## NAME

## BREEDING SEASON

**Allen's Hummingbird** *Selasphorus sasin*

Breeds Feb 1 to Jul 15

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

<https://ecos.fws.gov/ecp/species/9637>

**Bald Eagle** *Haliaeetus leucocephalus*

Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

**Belding's Savannah Sparrow** *Passerculus sandwichensis*

Breeds Apr 1 to Aug 15

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>

**Black Oystercatcher** *Haematopus bachmani*

Breeds Apr 15 to Oct 31

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

<https://ecos.fws.gov/ecp/species/9591>

**Black Swift** *Cypseloides niger*

Breeds Jun 15 to Sep 10

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

<https://ecos.fws.gov/ecp/species/8878>

**Black Tern** *Chlidonias niger surinamensis*

Breeds May 15 to Aug 20

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

<https://ecos.fws.gov/ecp/species/3093>

**Black Turnstone** *Arenaria melanocephala*

Breeds elsewhere

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

**Black-chinned Sparrow** *Spizella atrogularis*

Breeds Apr 15 to Jul 31

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

<https://ecos.fws.gov/ecp/species/9447>

**Brandt's Cormorant** *Urile penicillatus*

Breeds Apr 15 to Sep 15

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

**Bullock's Oriole** *Icterus bullockii*

Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**California Gull** *Larus californicus*

Breeds Mar 1 to Jul 31

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

**California Spotted Owl** *Strix occidentalis occidentalis*

Breeds Mar 10 to Jun 15

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

<https://ecos.fws.gov/ecp/species/7266>

**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.

**Clark's Grebe** *Aechmophorus clarkii*

Breeds Jun 1 to Aug 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>

**Elegant Tern** *Thalasseus elegans*

Breeds Apr 5 to Aug 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/8561>



**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>

**Heermann's Gull** *Larus heermanni*

Breeds Mar 15 to Aug 31

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

**Lawrence's Goldfinch** *Spinus lawrencei*

Breeds Mar 20 to Sep 20

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

<https://ecos.fws.gov/ecp/species/9464>

**Long-eared Owl** *asio otus*

Breeds Mar 1 to Jul 15

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

<https://ecos.fws.gov/ecp/species/3631>

**Marbled Godwit** *Limosa fedoa*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/9481>

**Northern Harrier** *Circus hudsonius*

Breeds Apr 1 to Sep 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/8350>

**Nuttall's Woodpecker** *Dryobates nuttallii*

Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9410>

**Oak Titmouse** *Baeolophus inornatus*

Breeds Mar 15 to Jul 15

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

<https://ecos.fws.gov/ecp/species/9656>

**Olive-sided Flycatcher** *Contopus cooperi*

Breeds May 20 to Aug 31

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

<https://ecos.fws.gov/ecp/species/3914>

**Red Knot** *Calidris canutus roselaari*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/8880>

**Santa Barbara Song Sparrow** *Melospiza melodia*  
*graminea*

Breeds Mar 1 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/5513>

**Short-billed Dowitcher** *Limnodromus griseus*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/9480>

**Tricolored Blackbird** *Agelaius tricolor*

Breeds Mar 15 to Aug 10

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

<https://ecos.fws.gov/ecp/species/3910>

**Western Grebe** *aechmophorus occidentalis*

Breeds Jun 1 to Aug 31

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

<https://ecos.fws.gov/ecp/species/6743>

**Western Gull** *Larus occidentalis*

Breeds Apr 21 to Aug 25

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

**Western Screech-owl** *Megascops kennicottii cardonensis*

Breeds Mar 1 to Jun 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**Willet** *Tringa semipalmata*

Breeds elsewhere

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

**Wrentit** *Chamaea fasciata*

Breeds Mar 15 to Aug 10

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

NOT FOR CONSULTATION



# 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.

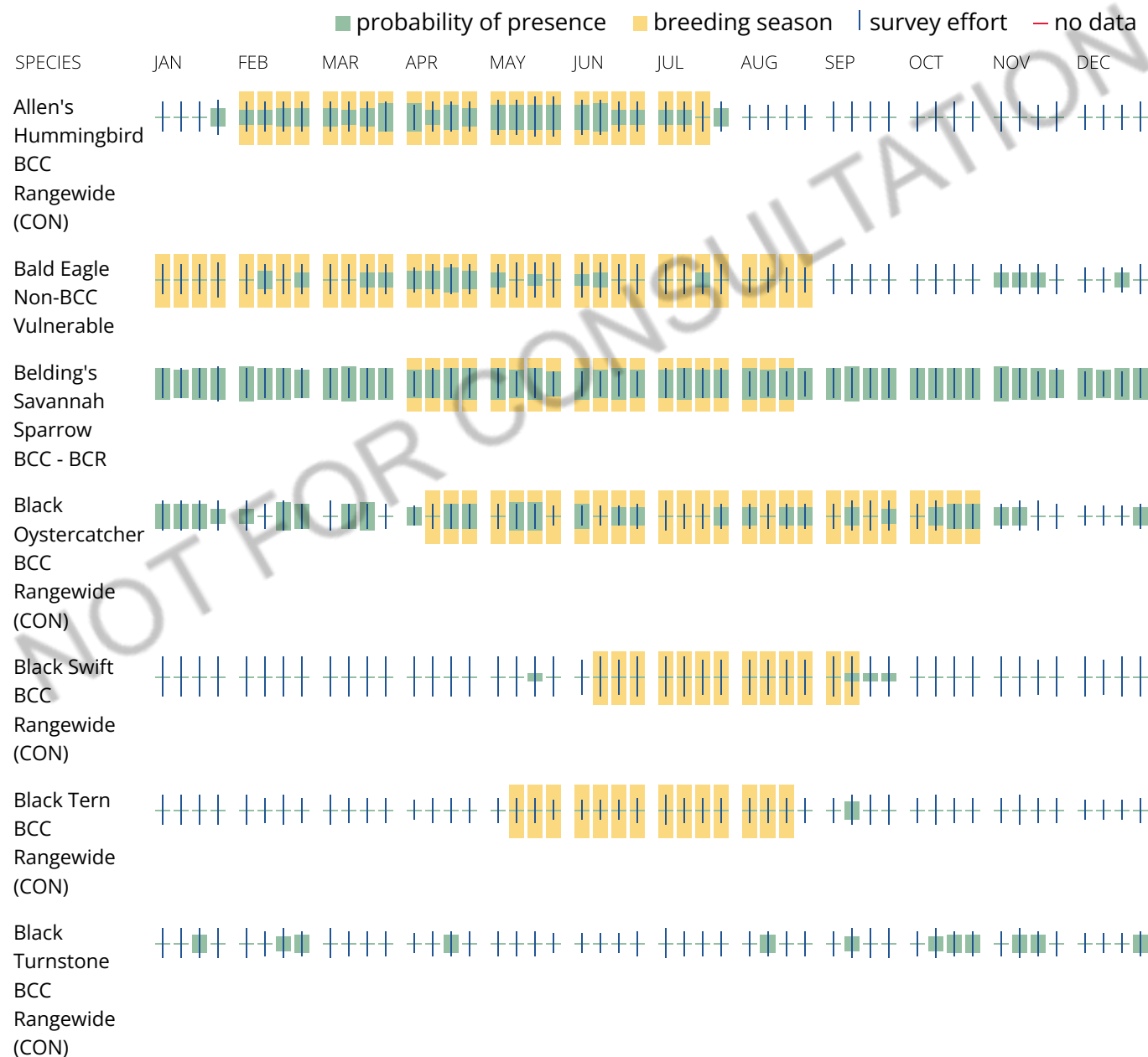
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

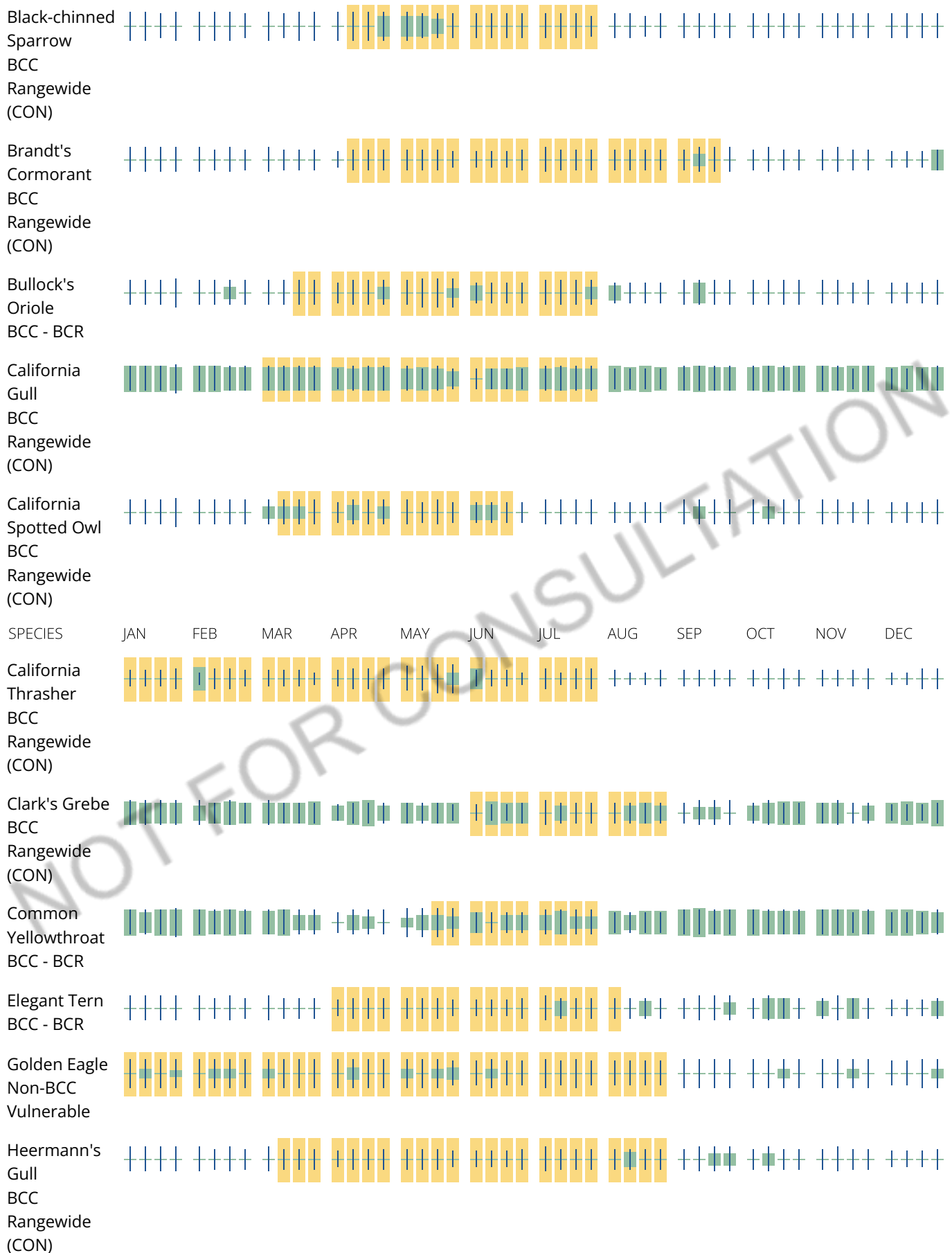
### No Data (-)

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

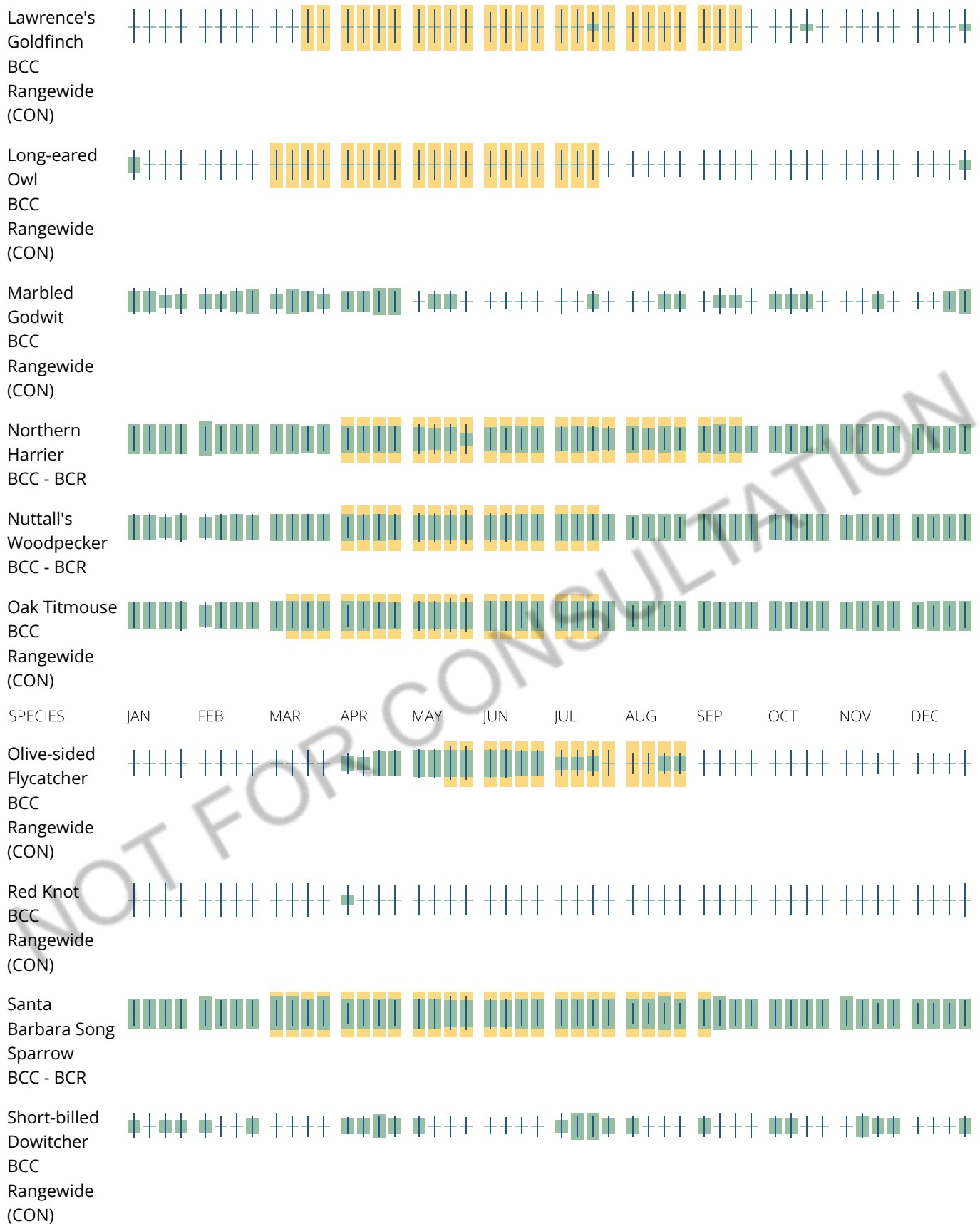
### Survey Timeframe

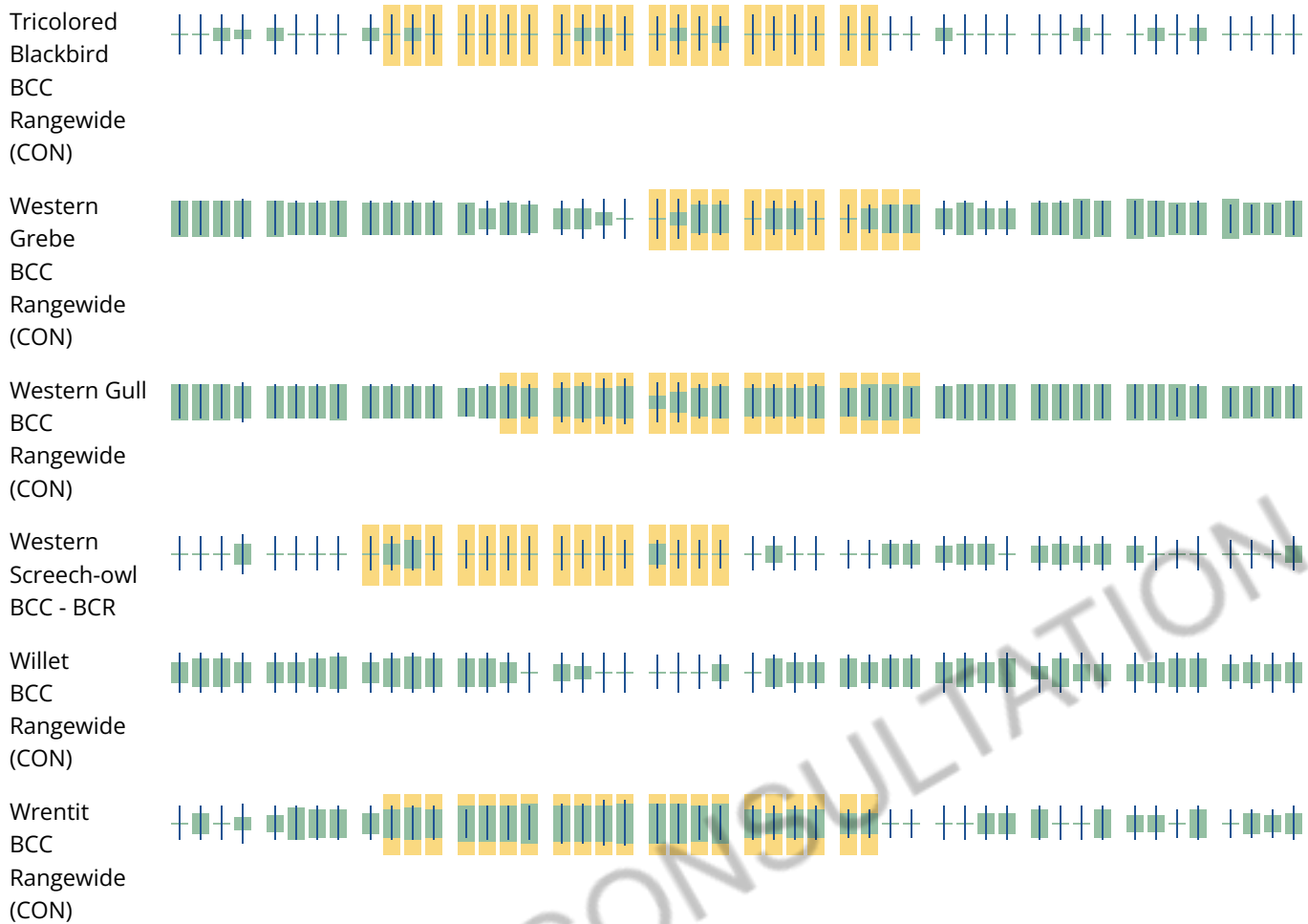
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.











**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species

that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean](#)



[Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

## Fish hatcheries

There are no fish hatcheries at this location.

## Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE WETLAND

[E2SBN](#)

RIVERINE

[R4SBA](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any

particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid 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.



## **Attachment G**

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Summary of Comments on the  
Initial Study/Mitigated Negative  
Declaration



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## MEMORANDUM

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|                     |   |
|---------------------|---|
| <b>To:</b>          | Steve Moore, Ross Valley Sanitary District  |
| <b>From:</b>        | Bridgette DeShields and Sadie McGarvey, Integral Consulting Inc.  |
| <b>Date:</b>        | February 11, 2025   |
| <b>Subject:</b>     | Summary of Comments on the Initial Study/Mitigated Negative Declaration for the FY 2024/2025 Gravity Sewer Improvements Project |
| <b>Project No.:</b> | C1888   |

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## INTRODUCTION

The Ross Valley Sanitary District (RVSD) prepared an Initial Study/Mitigated Negative Declaration (IS/MND) for the FY 2024/2025 Gravity Sewer Improvement Project (#958) (Project) in accordance with the provisions of the California Environmental Quality Act (CEQA).

The Ross Valley Sanitary District (RVSD) FY 2024-2025 Gravity Sewer Improvements Project (#955) (Project) entails the construction and rehabilitation, within the existing alignment, of sanitary sewer mains, manholes, and related appurtenances within the town of Fairfax, unincorporated town of Kentfield, and town of San Anselmo, all of which are within the County of Marin (Attachment B, Figures). The primary goal of this project is to replace aging RVSD infrastructure and reduce inflow and infiltration into the system.

The Project would rehabilitate approximately 14,042 linear feet (LF) of sanitary sewers and install 862 LF of new sanitary sewer with high-density polyethylene (HDPE) pipe ranging in size from 6 to 8 inches. Sewers would be replaced by open-cut removal and replacement (3,994 LF), pipe bursting (8,912 LF), and pipe reaming (1,136 LF) methods. Lower laterals and property-line cleanouts would also be replaced at all locations. Depths of the excavation would vary between 3 and 10 ft.

Work would also include the construction of 33 sanitary sewer manholes to replace existing manholes or construct new manholes. Manhole locations would require excavation and backfill of an area of approximately 8 × 8 ft, with varying depths projected to range from approximately 5 to 10 ft. 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.

Construction is expected to begin in March 2025 and is anticipated to be completed by January 2026. 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 360 consecutive calendar days (265 working days) for construction. Work within McAllister Avenue in Kentfield would take place outside the California Ridgeway's Rail and California Black Rail nesting season (i.e., between September 1 and January 14).

The 30-day public review period for the IS/MND ran from January 10 through February 10, 2025. The State Clearinghouse distributed the document to several state agencies and other organizations. The RVSD posted the document on the RVSD website and published a Notice of Intent in the Marin Independent Journal and through public notice mailers. Comments were invited via email to Philip Benedetti, RSVD Senior Engineer.

One agency, the California Department of Fish and Wildlife (CDFW) submitted comments (attached to this memorandum) on February 4, 2025. The comments on the IS/MND are summarized below along with a summary of changes made to the IS/MND in response to the comments, where necessary.

## **COMMENTS**

The following section is intended to provide a comprehensive review of all received comments that were relevant for evaluating the sufficient completeness of the MND.



**Summary of Comments:** CDFW - Letter dated February 4, 2025 from Erin Chappell, Regional Manager, Bay Delta Region

**COMMENT 1: California Ridgway's rail (IS/MND pages 15, 24) and California black rail**

**Issue:** The IS/MND page 24 states that "California Ridgway's rail...are known to occur within Corte Madera Creek and the adjacent marshlands proximal to the Project site in Kentfield" (Site 4) and states "...work...would occur outside the nesting season such that species associated with the adjacent marshlands would not be impacted by the proposed Project." Additionally, CBR may nest in the same area and there is a nearby record of the species in the California Natural Diversity Database (CNDDDB). However, Mitigation Measure BIO-1 (IS/MND pages 3 and 25) does not require that Project activities at the Kentfield site (Site 4) avoid CRR or CBR nesting season and therefore does not adequately mitigate potential impacts to CRR or CBR to less-than-significant.

**Recommended Mitigation Measures:** To reduce potential impacts to CRR and CBR less-than-significant and comply with Fish and Game Code section 3511 (fully protected avian species) and CESA, CDFW recommends including the following mitigation measure in the MND.

**Mitigation Measure BIO-2 (California Ridgeway's Rail and California Black Rail Surveys and Avoidance):** Work at the Kentfield site within 700 feet of marshlands along McAllister Avenue shall be avoided during the breeding season (January 15 to August 31), each year unless appropriately timed, yearly protocol level surveys are conducted and survey methodology and results are submitted to and accepted in writing by CDFW, or the Project implements noise and visual avoidance measures below. Surveys shall focus on suitable habitat that may be disturbed by Project activities during the breeding season to ensure that CRR or CBR are not nesting in these locations.

If breeding CRR or CBR are determined to be present, no activities, visual disturbance (direct line of sight) and/or an increase in the ambient noise level shall occur within 700 feet of areas where CRR or CBR have been detected during the breeding season.

If work must be done during the breeding season within 700 feet of CRR or CBR nesting habitat, and annual surveys have not documented CRR and CBR absence, noise levels shall not exceed 10 decibels A (dBA) over existing ambient noise levels and a noise attenuating fence and/or visual barrier shall be installed to reduce visual and/or acoustic impacts. In this case, the Project shall prepare a noise and visual avoidance plan and obtain CDFW's written approval of the plan, and implement the CDFW approved plan, prior to conducting Project activities.

**Conclusion:** As stated in the Project description (page 5 of the IS), the discussion of potential for project-related impacts to wildlife (page 24 the IS), and Biological Resources Control Measure 4 (Attachment D), the Project schedule has been designed to avoid impacts to California Ridgway's Rail (*Rallus obsoletus obsoletus*) (CRR) which has been documented as potentially occurring proximal to McAllister Avenue in Kentfield. As noted within CDFW's comment letter, California Black Rail (*Laterallus jamaicensis coturniculus*) (CBR) has been documented as occurring within Hal Brown Park at Creekside. However, this occurrence would be separated from the Project site by one or more barriers to visual or auditory disturbance associated with the Project, including native and ornamental trees/shrubs, fencing, single-family homes and other ancillary residential structures. The proposed Project (including the work window) would not result in impacts to this species.

As the Project would avoid impacts to nesting CRR and CBR, a mitigation measure for either rail species would not be necessary to reduce impacts associated with the Project to a level considered less than significant. Regardless, the IS/MND has been modified to 1) include a work window for Project activities within McAllister Avenue (September 1 – January 14) outside of the CDFW-identified nesting season for CRR and CBR, and 2) clarify that the Project would not result in impacts to CRR or CBR.

#### **COMMENT 2: Lake and Streambed Agreement Notification**

**Issue:** It is unclear if the Project would use trenchless pipe installation methods such as horizontal directional drilling underneath any streams, which could result in a hydraulic fracture releasing drilling fluid into a stream.

**Recommended Mitigation Measures:** To comply with Fish and Game Codes section 1600 et seq., CDFW recommends including the below mitigation measure.

**Mitigation Measure BIO-3 (LSA Notification):** If the Project uses trenchless pipe installation methods such as horizontal directional drilling underneath any streams, the Project shall notify CDFW pursuant to Fish and Game Code section 1600 et seq. and shall comply with the LSA Agreement, if issued (for more information see: <https://wildlife.ca.gov/Conservation/Environmental-Review/LSA> and <https://epims.wildlife.ca.gov/index.do>).

**Conclusion:** As stated on page 26 of the IS, an unnamed creek crosses Wolfe Canyon Road (and the sewer pipeline alignment) at two locations, and pipe replacement activities at these locations would include pipe-bursting methodology to avoid impacts to this water of the U.S./State. Construction methods for all Project locations are provided in the Construction Plans (Attachment C).

Pipe-bursting is the no-impact method preferred at these locations. Pipe bursting does not use drilling fluid and does not include risks for hydraulic fracture, release of drilling fluid, or streambed disturbance. No horizontal directional drilling will occur as part of the Project.