STATE OF CALIFORNIA

CITY OF PLACERVILLE
ENGINEERING DEPARTMENT

NOTICE TO BIDDERS, CONTRACT, AND PROPOSAL

BOOK 2 OF 2

FOR CONSTRUCTION OF

GIOVANNI ROAD SEWER LINE REPLACEMENT PROJECT
MEASURE H PROJECT

City Project Number: 42224

April, 2026

Bids Open: 2:00 PM, June 18, 2026
Placerville City Hall
Engineering Department
3101 Center Street, 3rd Floor
Placerville, CA 95667

For use in connection with California Department of Transportation, Standard Specifications **Dated 2025**, and Caltrans Standard Plans, City of Placerville Standard Plans, State of California Labor Surcharge and Equipment Rental Rates, and Director of Industrial Relations General Prevailing Wage Rates.

CITY OF PLACERVILLE, CALIFORNIA
ENGINEERING DEPARTMENT

GIOVANNI ROAD SEWER LINE REPLACEMENT PROJECT
MEASURE H&L PROJECT
CIP# 42224

The Special Provisions contained herein have been prepared by or under the direction of the following Registered Persons:

Registered Professional Engineer (Civil)

CITY OF PLACERVILLE, CALIFORNIA
ENGINEERING DEPARTMENT

GIOVANNI ROAD SEWER LINE REPLACEMENT PROJECT
CIP# 42224

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ORGANIZATION

Special provisions are under headings that correspond with the main-section headings of the Standard Specifications. A main-section heading is a heading shown in the table of contents of the Standard Specifications.

Each special provision begins with a revision clause that describes or introduces a revision to the Standard Specifications as revised by any revised standard specification.

Any paragraph added or deleted by a revision clause does not change the paragraph numbering of the Standard Specifications for any other reference to a paragraph of the Standard Specifications.

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DIVISION I GENERAL PROVISIONS

1 GENERAL

Add to section 1-1.01:

The work embraced herein shall be done in accordance with the Standard Specifications of the Department of Transportation dated 2025, hereinafter referred to as the Standard Specifications, and the Standard Plans of the Department of Transportation dated 2025 supplemented by the Revised Standard Plans of the Department of Transportation as of April 16th, 2021, hereinafter referred to as the Standard Plans, insofar as the same may apply and in accordance with the following Special Provisions.

The components of the Contract Documents are intended to supplement each other. In the event of a conflict in the Contract Documents, the following order of precedence will govern interpretation of the Contract:

1. Field instruction or other written directives
2. Addenda
3. Special Provisions
4. Giovanni Road Sewer Line Replacement Project CIP# 42224 Project Plans
5. Standard Specifications
6. Standard Plans

Add to section 1-1.07B:

A term not defined in the Contract Documents or Standard Specifications has the meaning defined in Means Illustrated Construction Dictionary, Condensed Version, Second Edition.

Approval of the Contract: Execution of the Contract by the City Council of the City of Placerville.

Caltrans/Department of Transportation: Department of Transportation as defined in the St & Hwy Code § 20 and authorized in St & Hwy Cod § 90; its authorized representatives.

City: The City of Placerville, a municipal corporation of the State of California.

CCTV: Closed-circuit television.

City Council: City Council of the City of Placerville, State of California.

Contract: Written and executed Contract as approved by the City Council between the City of Placerville and the Contractor.

Contract Documents: Plans, Notice to Bidders, Special Provisions, and Proposal and Agreement

Contractor: Person of business or its legal representative approved by the City Council and entering into a Contract with the City of Placerville for performance of the work.

Department: The City of Placerville except that any reference to the Department's forms, websites, manuals, guides, and test methods. These shall be defined as forms, websites, manuals, guides, and test methods of Caltrans.

Design Engineer: R.E.Y. Engineers, Inc. and their subconsulting engineers.

Director: The City Engineer for the City of Placerville.

EID: El Dorado Irrigation District.

Engineer: The Resident Engineer of the City acting either directly or through properly authorized agents; such agents acting within the scope of the particular duties delegated to them.

Inspector or City Inspector: An authorized agent acting on behalf of the City Engineer and within the scope of the particular duties delegated to him/her.

Plans: The Plans are specific details and dimensions particular to the work and are supplemented by the Standard Plans insofar as they may apply. This term is used interchangeably for the Giovanni Road Sewer Line Replacement Project CIP# 42224 plans.

Project Plans: The Project Plans are specific details and dimensions particular to the work and are supplemented by the Standard Plans insofar as they may apply. This term is used interchangeably for the Giovanni Road Sewer Line Replacement Project CIP# 42224 plans.

Special Provisions: The Special Provisions are specific clauses required by the City setting forth conditions of requirements peculiar to the work and supplementary to the Standard Specifications of the State of California.

Standard Plans: 2025 Standard Plans of the State of California, Department of Transportation and the current Revised Standard Plans as of 2025.

Standard Specifications: 2025 Standard Specifications of the State of California, Department of Transportation (Caltrans) and the current Revised Standard Specifications as of September 1st, 2019.

State: The State of California, including its agencies, departments or divisions whose conduct or action is related to the work or when referenced in the Standard Specifications "State" shall mean the City of Placerville, including its authorized officers, agents, consultants, and volunteers.

Project: The work as contemplated in these documents and Project Plans.

Proposal: The un-approved offer as submitted to the City for contemplation for the completion of the Project.

USDOT: The United States of America Department of Transportation.

Add to section 1-1.09:

This project is in a freeze-thaw area.

Add to section 1-1.11:

Websites, Addresses, and Telephone Numbers

Reference or Agency or Department Unit	Website	Address	Telephone no.
Quest CDN	https://www.questcdn.com/	--	-
El Dorado County Fire Protection	http://www.eldoradocountyfire.com	4040 Carson Road Camino, CA	(530) 644-9630
Placerville Police Department	http://www.cityofplacerville.org/depts/police	730 Main Street Placerville, CA	(530) 642-5210
Placerville Downtown Association	http://www.placerville-downtown.org	--	(530) 672-3436
El Dorado Transit Authority	http://www.eldoradotransit.com/	6565 Commerce Way Diamond Springs, CA	(530) 642-5383
Placerville Union School District Transportation Department	https://www.pusdk8.us/page/bus-routes	2877 Schnell School Rd Placerville, CA 95667	(530) 622-6244

Replace the paragraph in section 1-1.12 with:

Make checks and bonds payable to the City of Placerville.

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2 BIDDING

Replace the paragraphs in section 2-1.06A with:

Standard Specifications and Standard Plans may be viewed at the Caltrans Office Engineer Web Site and may be purchased at the Publication Distribution Unit.

The Notice to Bidders, Special Provisions, Proposal and Agreement, and any Project Plans may be viewed and obtained at the locations stated in the Notice to Bidders.

Replace the paragraphs in section 2-1.33A with:

Complete forms in Bid book. Submit forms with your bid.

Except where stated acceptable elsewhere, do not fax submittals.

Failure to submit the forms and information as specified may result in a non-responsive bid.

Add to section 2-1.33A:

You must either submit with your bid the BIDDER'S LIST OF SUBCONTRACTORS or email to Cory Schiestel, City of Placerville Engineering Department or email cschiestel@cityofplacerville.org within 24 hours after bid opening. Failure to do so results in a nonresponsive bid.

Replace the last paragraph of section 2-1.34 with:

If using a bidder's bond, you must use the form in the Proposal section.

Replace the paragraph in section 2-1.47 with:

The Department may grant bid relief under Public Contracts Code § 5100 et seq. Submit any request for bid relief to Cory Schiestel, City of Placerville Engineering Department or email cschiestel@cityofplacerville.org. The Relief of Bid Request form is available at the Caltrans Web site.

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3 CONTRACT AWARD AND EXECUTION

Replace the paragraphs in section 3-1.04 with:

The Department reserves the right to reject any or all bids or any parts thereof and waive any irregularities or informalities in any bid or in the bidding to the extent permitted by law and to make awards in all or part of the best interest of the Department. No bidder may withdraw his/her bid for a period of sixty (60) days after the date set for the bid opening. Bid protests must be submitted in writing to the attention of the City Clerk before 4:00 pm of the 3rd calendar day following the bid opening.

If the Department awards the contract, the award is made to the lowest responsible bidder for the total of all the base bid items within 60 days after bid opening. The Department may extend the specified award period if the bidder agrees. The Department retains the right to remove any and/or all additive alternative to or from the plans as they see fit.

Barring some unforeseen irregularity, Notice of Award will be sent to the lowest responsive bidder after approval by the City Council.

^^

4 SCOPE OF WORK

Replace the paragraphs in section 4-1.13 with:

4-1.13 CLEANUP
4-1.13A General

Section 4-1.13 includes specifications for daily, weekly, and final cleanup.

The Contractor must locate and negotiate terms of use for their staging area.

If at any time the cleaning of the job site and/or staging area(s) is not performed to the satisfaction of the City and the Engineer, the Contractor will be notified and shall immediately return to the project site and perform satisfactory cleaning. If the Contractor is unable to perform cleaning activities in a timely matter as determined by the City, the cleaning may be performed for the Contractor at their expense.

4-1.13A(1) Daily Cleanup

At the end of each working day, return all materials and equipment to approved staging areas. All rubbish and debris shall be completely removed from the project site. If pedestrian and/or vehicular signage is required during non-working hours, signage shall be placed to the satisfaction of the City and Engineer.

If Contractor utilizes cold mix asphalt (CMA) for temporary ramping or paving, the Contractor is responsible for maintaining the cold mix during non-working hours. Cold mix shall be properly compacted by an approved compaction device. Equipment tires or vehicle tires shall not be used for compaction of CMA, unless otherwise approved by the engineer.

Contractor shall use vactor trucks or other approved equipment to prevent domestic water from entering the storm drain system.

The Contractor is responsible for maintaining vehicular and pedestrian traffic equal to or better than pre-construction conditions at all time. Repair and replace all striping affected by the day's work. Crosswalk and lane striping must be visible at all times.

All cleaning activities must be completed prior to opening of lane and/or roadway. The Contractor shall schedule work and cleaning activities to ensure streets can be reopened within the timeframes specified in the Contract Documents.

4-1.13A(2) Weekly Cleanup

Contractor Shall perform Daily Cleanup per Section 4-1.13A(1).

At the end of each work week, remove all equipment and materials from daily staging area(s) and transport them to an approved staging area.

All staging areas shall be cleaned to the satisfaction of the City and Engineer.

4-1.13A(3) Final Cleanup

Contractor Shall perform Daily Cleanup per Section 4-1.13A(1) and Weekly Cleanup per Section 4-1.13A(2).

Before final inspection, leave the job site neat and presentable and dispose of:

1. Rubbish and debris
2. Excess materials
3. Falsework
4. Temporary structures
5. Equipment

Do not remove warning, regulatory, or guide signs until Contract acceptance unless otherwise directed by the Engineer.

4-1.13A(4) Payment

There is no specific bid item for Cleanup. Cleanup shall be considered included in all other bid items and no additional payment will be made therefore.

^^

5 CONTROL OF WORK

Replace section 5-1.20D with:

5-1.20D Permits

1. The Contractor shall be responsible for the application process and fees associated with obtaining all permits required for the commencement and execution of the project, including but not limited to, work within any street right of way, storm water pollution prevention, discharge of construction water into the local drainage system, right-of-entry, excavation and trench safety. Any work performed within the City right-of-way will require encroachment permits. The Contractor shall obtain a no-fee encroachment permit from the City. The Contractor is responsible for any forms, submittals, and fees necessary to obtain encroachment permits.

2. The Contractor must obtain a water use permit for construction water. Construction meters require a one-thousand dollars ($1,465) deposit. The closest City of Placerville water infrastructure is a fire hydrant located on Morrene Drive. Otherwise, the Contractor can request a water use permit with El Dorado Irrigation (EID) for closer proximity to the project site.

Replace the paragraphs in section 5-1.23A with:

5-1.23A GENERAL
5-1.23A(1) Submittal Procedure

Section 5-1.23 includes specifications for action and informational submittals.

Any submittal not specified as an informational submittal is an action submittal.

Accompany each submittal with a Submittal form, which contains the following information:

1. Contractor's name and the name of Subcontractor or supplier who prepared the submittal.

2. The project name and identifying number.
3. Description of the submittal and reference to the Contract requirement or technical specification section and paragraph number being addressed.

Electronic submittals are preferred. Provide original hard copies to the Engineer upon request. If hard copies are submitted in lieu of an electronic submittal, submit the number and type of copies for each submittal and follow the procedures described below or in other paragraphs in this Section. Submit three copies of submittals not covered in this Section.

1. Designation of Superintendent: Submit three copies for information. Include name, address, home telephone number, and a brief resume.
2. List of Subcontractors and Major Suppliers: Submit three copies for information. Include address, telephone number, and name of responsible party.
3. Subcontractors'/Suppliers'/Manufacturers' Affidavits. Submit three copies for items specified in the Technical Specifications.

The City or Engineer rejects a submittal if it has any error or any omission.

Failure to provide submittals requested by the Engineer constitutes contract noncompliance on that item of work and may be deducted in accordance with Sections 5-1.30 and 9-1.16E.

Convert foreign language documents to English and U.S. customary units.

5-1.23A(2) Schedule of Submittals

Submit three (3) copies for information. No copy will be returned.

At the pre-construction meeting, submit a Schedule of Submittals showing the date by which each submittal required for Product Review or Product Information will be made. Identify the items that will be included in each submittal by listing the item or group of items and the Specification Section and paragraph number under which they are specified. Indicate whether the submittal is required for Product Review of Proposed Equivalents, Shop Drawings, Product Data or Samples or required for Product Information only.

5-1.23A(3) Plan of Operations

Submit three (3) copies.

Before beginning on site work, submit a plan showing Contractor's intended use of the Work site, including on site storage of materials, on site handling of materials, and field offices.

5-1.23A(5) Shop Drawing, Product Data and Sample Submitted for Product Review

This paragraph covers submittal of Shop Drawings, Product Data and Samples required for the Engineer's review referred to as Product Review submittals for the Technical Specifications of the contract documents. Submittals required for information only are referred to as Product Information submittals in the Technical Specifications and are covered in section 5-1.23A(7).

Number and type of submittals:

1. Shop Drawings: Submit three (3) clear, sharp high contrast copies one of which will be marked, stamped and returned to the Contractor. The Contractor shall make and distribute the required number of additional copies to its superintendent, subcontractors and suppliers. Shop drawings must comply with section 5-1.23B(2).
2. Product Data: Submit three (3) clear copies. One copy will be marked, stamped and returned. The Contractor shall make and distribute the required number of additional copies to its superintendent, subcontractors and suppliers.

The Contractor shall make all Product Review submittals early enough to allow adequate time for the Engineer's review, for manufacture and for delivery at the construction site without causing delay to the Work. Submittals shall be made early enough to allow for unforeseen delays such as:

1 Failure to obtain Favorable Review because of inadequate or incomplete submittal or because the item submitted does not meet the requirements of the Contract Documents.
2 Delays in manufacture.
3 Delays in delivery.

Content of Submittals:

1. Each submittal shall include all of the items and material required for a complete assembly, system or Specification Section.
2. Submittals shall contain all of the physical, technical and performance data required by the specifications or necessary to demonstrate conclusively that the items comply with the requirements of the Contract Documents.
3. Provide verification that the physical characteristics of items submitted, including size, configuration, clearances, mounting points, utility connection points and service access points, are suitable for the space provided and are compatible with other interrelated items that are existing or have or will be submitted.
4. Label each Product Data Submittal, Shop Drawing and Sample with the information required in paragraph 5-1.23A(1)1. of this Section. Highlight or mark every page of every copy of all
5. Product Data submittals to show the specific items being submitted and all options included or choices offered.
6. Additional requirements for Product Review submittals are contained in the Technical Specification sections.
7. Designation of work as "by others," shown on Shop Drawings, shall mean that the work will be the responsibility of the Contractor rather than the subcontractor or supplier who has prepared the Shop Drawings.

Requirements for Contractor Designed Items:

Verify that products delivered meet requirements of Contract Documents.

Compatibility of Equipment and Material:

1. Similar items, equipment, devices or products furnished under a single specification section shall all be made by the same maker and have interchangeable parts.
2. In addition, but only if so stated in each affected Specification Section, similar items furnished under two or more Specification Sections shall be made by the same maker and have interchangeable parts.
3. All similar materials or products that are interrelated or used together in an assembly shall be compatible with each other.

Requirements for the Contractor's review and stamping of submittals prepared by the Contractor or by Subcontractors or suppliers prior to submitting them to the Engineer. The Contractor warrants:

1. Work or items submitted are complete, accurate and meet the requirements of the Contract Documents, or else any deviations are identified and described in a separate letter accompanying the submittal form.
2. Work or items submitted have been coordinated with and meet the requirements of other submittals, field conditions and the Work as a while and quantities and dimensions are correct.
3. Proposed Equivalent items are at least equal in quality, utility and appearance to the first specified item, or else any deviations are identified in a separate letter accompanying the submittal form.
4. Adjustments to other work required to accommodate Proposed Equivalent items including second named items have been delineated on the submittal and will be made at the Contractor’s expense.
5. This submittal includes all items needed for a particular specification section or assembly for which submittals are required.

Submittals that contain deviations from the requirements of the Contract Documents shall be accompanied by a separate letter explaining the deviations. The Contractor's letter shall:

1. Cite the specific Contract requirement including the Specification Section and paragraph number for which approval of a deviation is sought.
2. Describe the proposed alternate material, item or construction and explain its advantages and/or disadvantages to the Owner.
3. State the reduction in Contract Price if any that is offered to the Owner.

Engineer's Review Procedure and Meaning:

The Engineer will stamp and mark each Product Review submittal prior to returning it to the Contractor. The stamp will indicate whether or not the review was favorable and what action is required of the Contractor. Review categories" Approved" and "Approved as Corrected" both indicate Favorable Review.

The Engineer's Favorable Review is contingent on the Contractor's warranties. Favorable Review is also contingent on:

1. The compatibility of items included in a submittal with other related or interdependent items included in previous or future submittals.
2. Future submittal of items related to or required to be part of this submittal that were not included with this submittal.

Favorable Review of a submittal does not constitute approval or deletion of items required as part of the submittal but not included with the submittal. Favorable Review of items included in the submittal does not constitute deletion of specified features, options or accessories that were not included in the submittal or that are included as part of the contract.

The action required by the Contractor for each category of review is as follows:

1. **NO EXCEPTIONS**. NO RESUBMITTAL REQUIRED.
2. **MAKE CORRECTIONS NOTED**. The submittal is approved as corrected by the reviewer. The contractor is responsible for incorporating the reviewer’s corrections. The corrected submittal complies with the Contract Documents.
3. **REVISE & RESUBMIT**. The Contractor shall revise and resubmit the submittal as noted or required to comply with the Contract Documents.
4. **REJECTED**. The item submitted does not comply with the Contract Documents in a major way. Resubmit items that comply with the requirements of the Contract Documents.

The letter of transmittal accompanying the returned Product Review submittal may contain numbered notes. Marking a corresponding number on a Shop Drawing or Product Data submittal shall have the same effect as applying the entire note to the submittal.

Re-submittals that contain changes that were not requested by the Engineer on the previous submittal shall be accompanied by a letter explaining the revised items.

Favorable Review required prior to proceeding. Proceeding without a Favorable Review will be considered unauthorized work per section 5-1.30.

Do not proceed with manufacture, fabrication, delivery or installation of items prior to obtaining the Engineers Favorable Review of Product Review submittals.

Any work performed by the Contractor in advance of an approved submittal for said work is done so at the Contractor’s sole risk.

Intent and Limitation on Engineer's Review:

The Contractor has primary responsibility for submitting and providing work that complies with the requirements of the Contract Documents. That responsibility cannot be delegated in whole or in part to subcontractors or suppliers. Neither the Engineer's Favorable Review nor the Engineer's failure to notice or

comment on deficiencies in the Contractor's submittals shall relieve the Contractor from the duty to provide work, which complies with the requirements of the Contract Documents.

5-1.23A(6) Proposed Equivalents

Submittal for Proposed Equivalent products or materials shall comply with the submittal requirements for Shop Drawings, Product Data, and Samples submitted for Product Review in this Section. Bidders wanting to use “or approved equal items” may submit a Substitution Request Form no later than five (5) days after the issuance of the Notice to Proceed.

Time of Submittal:

1. Submittal of Proposed Equivalents shall be received within five (5) days of the Notice to Proceed. The Engineer may agree to a later submittal date if requested in writing within five (5) days of the Notice to Proceed. The request shall identify the item, providing the Specification reference, and proposed manufacturer and model number of the item that will be submitted and the proposed submittal date.
2. The Engineer's agreement to a later submittal date shall be in writing and shall not be construed as Favorable Review or acceptance of the manufacturer or item proposed.

Content of submittals shall be the same as that required for Product Data, Shop Drawings and Samples submitted for Product Review in another paragraph of this Section. In addition, the Contractor shall provide information on several recent similar installations of the item to verify its suitability. The information shall include the project name and location, the Owner's name, address, telephone number and name of a knowledgeable person to contact for information on performance of the product.

When the Contractor has listed specific maker's products submitted with its Bid no changes will be permitted without submittal of acceptable evidence justifying the change and the Engineer's written approval.

If a non-equivalent substitute is submitted for review, it shall be accompanied by a proposed reduction in Contract Price which shall include the increased cost of Engineering service required to evaluate the proposed substitute (which shall be paid to the Owner whether or not the substitute is accepted) plus the greater of 1) the difference in price between the first specified item and the item submitted and 2) the difference in value to the Owner between the two items.

5-1.23A(7) Product Information Submittals

1. Submit three (3) copies. No copies will be returned.
2. Product Information submittals are required for the Owner's permanent records and will be used for future maintenance, repair, modification or replacement work. Product Information submittals will be examined only to verify that the required submittals have been made; they will NOT be reviewed for compliance with the Contract Documents.
3. Make Product Information submittals prior to delivering material, products or items for which Product Information submittals are required.
4. The Contractor has the sole and exclusive responsibility for furnishing products and work that meets the requirements of the Contract Documents.
5. The Engineer reserves the right to comment on any submittal and to reject any product or work delivered, installed or otherwise at any time that the Engineer become aware that it is defective or does not meet the requirements of the Contract Document.

5-1.23A(8) Manufacture Certificates

1. Submit three (3) copies.
2. When specified in Technical Specification section, submit manufacturers' certificate to Engineer for review. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate. Certificates may be recent or previous test results on material or Product, but must be acceptable to the Engineer.

Replace Section 5-1.26 with:

5-1.26 CONSTRUCTION SURVEYS

5-1.26A General

The contractor must set construction stakes and markers to establish the lines and grades required for the completion of the work on the plans and as specified in the Standard Specifications and these Special Provisions and as necessary for the Engineer to check lines, grades, alignment and elevations.

All procedures, methods, and typical stake markings shall be in accordance with Chapter 12, Construction Surveys, of the Caltrans "Survey Manual." Copies of the "Survey Manual" may be purchased from Caltrans Publications Unit, 1900 Royal Oaks Drive, Sacramento, and California 95815, (916) 445-3520.

Staking must be performed under the direction of a licensed surveyor or registered civil engineer with the authority to perform land surveying.

5-1.26B Grade Quality Control

Use a GNSS rover, robotic total station equipment, or a level to check the grades at the frequencies shown in the following table: **Grade Checking Requirements**

Type of work	Area or distance represented by the grade checking	Frequency (number of grade points)
Earthwork for cut and fill slopes ≤15 feet	200 feet	2
Earthwork for cut and fill slopes >15 feet	1,000 sq yd	1
Rough grading	1,000 sq yd	1
Trenching	100 feet	6
Subgrade	1 mi	30
Subbase layer	1 mi	50
Base layer	1 mi	100
Curb and gutter	100 feet	6
Concrete barrier	100 feet	5
Finishing roadway	1,000 sq yd	2

Increase the frequency of grade checking of a roadway:

1. Wherever its curve radius is 500 feet or less
2. In areas of a superelevation transition
3. At intersections

Notify the Engineer when an area is ready for line and grade inspection. Submit the grade checking results on a Grade Checking Report form as an informational submittal.

5-1.26C Payment

Construction surveys (contractor provided construction staking) shall be paid for under the Construction Staking bid item. Progress payments will be made based upon the percentage of work items requiring staking staked by that point. No additional compensation will be made for resetting stakes.

Replace the paragraphs in section 5-1.27E with:

Maintain separate records for change order work costs.

Submit change order bills to the Engineer.

Add to the end of section 5-1.32:

Personal vehicles of the Contractor's employees must not be parked on the traveled way or shoulders, including sections closed to traffic.

Add between the 2nd and 3rd paragraphs of section 5-1.36C(3):

Utilities shown on the Project Plans as being relocated or rearranged by others will be relocated or rearranged by others, but the Contractor shall coordinate those efforts with the utility owner(s) to ensure no schedule impacts or delays. Contact information for those utility purveyors are as follows:

1. PG&E: Josh Berger (209) 986-0184
2. AT&T: Nathan Dixon (916) 296-6359
3. Comcast: Cameron Alves (916) 200-9060
4. EID: Patrick Kalvass (530) 642-4054

Replace the paragraphs in section 5-1.46 with:

When you complete the work, request the Engineer's final inspection. You will be notified, in writing, of any defects or deficiencies to be remedied. Correct all defects and deficiencies within 5 working days of notification and notify the Engineer all defects and deficiencies have been addressed. When notified that the work is complete, the Engineer will again inspect the work to ensure compliance with the Contract Documents.

If the Engineer determines that the work is complete, the Engineer recommends to the City Council that the Contract be accepted and the Notice of Completion be recorded to accept the Contract. Immediately after Contract acceptance, you are relieved from:

1. Maintenance and protection duties
2. Responsibility for injury to persons or property or damage to the work occurring after Contract acceptance expect as specified in section 6-3.06.

^^

6 CONTROL OF MATERIALS

Add to section 6-1.01:

No materials are allowed to be stockpiled in the State or City Right of Way unless a written request is made to Caltrans or the City in advance. The Contractor is responsible for maintaining and final cleaning after work and restoring the Right of Way to its original condition.

The Contractor shall provide a list of all hazardous materials to be used within the State Right of Way to Caltrans before materials are used.

The Contractor shall provide a list of all hazardous materials to be used within the City Right of Way to the City before materials are used.

^^

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Replace the 11th paragraph of section 7-1.02K(3) with:

Submit certified payroll records to the Engineer and upload to the Department of Industrial Relations.

Add to section 7-1.02K(6)(a):

All Personnel shall wear hard hats and ANSI Class II or higher visibility garments as appropriate.

Add to section 7-1.03:

Contractor to pay special attention to any scheduled events in the Project area. Contractor to coordinate with the Highway 50 Association Wagon Train event (www.hwy50wagontrain.com) and ensure Project area is clean, safe, and available for the scheduled event which occurred in early June in previous years. The Highway 50 Association's contact number is (530) 677-2871.

Contractor shall notify the City, El Dorado Disposal, El Dorado County Fire District, Placerville Police Department, Placerville Downtown Association, El Dorado County Transit Authority, Placerville Union School District, and local US Post Office three (3) weeks prior to start of construction and two (2) weeks prior to any partial road closures. Notifications shall be by E-mail and copies of the notifications shall be provided to the City.

Any interruption of a transit route or temporary relocation of a transit stop shall be coordinated with applicable operator (El Dorado Transit Authority, Placerville Union School District, etc.) one (1) week prior.

Each day, the Contractor is to leave the site in a condition that is acceptable as directed by the Engineer.

Add to section 7-1.04:

At all times, Contractor shall maintain pedestrian, local vehicular traffic, and emergency vehicle traffic and maintain all ADA paths of travel per ADA regulations for access to all residential and commercial property, unless written approval is otherwise obtained from the City allowing for reduced access.

Public traffic shall be allowed to pass through the work area at all times, unless a closure plan has been approved in writing by the City.

Contractor shall allow for passage of emergency vehicles at all times.

See Section 12 for traffic control requirements.

Add to section 7-1.06F:

New certificates of insurance are subject to City approval.

^^

8 PROSECUTION AND PROGRESS

Add to section 8-1.02C(1):

Before or at the preconstruction conference, submit a CPM baseline schedule.

Replace the 1st paragraph of section 8-1.02C(6) with:

Submit an updated schedule at all weekly construction meetings that includes the status of work completed to date and the work yet to be performed as planned. Each updated schedule must comply with section 8-1.02B(3).

Replace the paragraphs in section 8-1.02D(10) with:

There is no specific bid item for project schedules and no additional payment will be made therefore.

Replace the 3rd sentence of the 1st paragraph of section 8-1.03 with:

You may not start work prior to the preconstruction conference.

Replace the 1st and 2nd paragraphs of section 8-1.04B with:

The contractor shall begin construction on the date specified on the Notice to Proceed (NTP), which is anticipated to be August 2026. All preconstruction submittals must be approved prior to starting job site activities. The Contractor is encouraged to submit preconstruction submittals prior to receiving the NTP to allow for proper review and approval of the submittals.

^^

9 PAYMENT

Delete section 9-1.11.

Add to section 9-1.16D(1):

Mobilization is part of the Mobilization/Demobilization bid item and includes, but is not limited to, preparing and maintaining a schedule per the Standard Specifications and these Special Provisions and construction and maintenance of staging area(s) and laydown yards(s). Demobilization is part of the Mobilization/Demobilization bid item and includes, but is not limited to, issuing a hard copy and/or digital set of as-built plans to the Engineer within 10 working days after substantial completion notification and restoring staging area(s) and laydown yard(s) to pre-construction conditions.

Add to section 9-1.16D(2):

Final compensation will be delayed until as-built plans are submitted and approved.

Add to section 9-1.16E(3):

The City returns performance-failure withholds in the progress payment following the correction of non-compliance.

Replace the paragraphs in section 9-1.16F with:

The City will withhold 5 percent of all progress payments as retention. Retention will be paid to the Contractor on Final Payment.

In accordance with Part 5 (§ 22300), Division 2 of the Public Contract Code, a Contractor may substitute securities for retention moneys withheld by a public agency to ensure performance under this Contract. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the City of Placerville, or with a state or federally chartered bank, as the escrow agent, who shall then pay such moneys to the Contractor, and upon satisfactory completion of the Contract, the securities shall be returned to the Contractor. No substations will be accepted until:

1. the City approves the securities and their value,
2. the parties have entered into an escrow agreement (if the securities are to be held in escrow) in a form substantially similar to that under § 22300,
3. all documentation necessary for assignment of the securities to the City or to the escrow agent are delivered in a form satisfactory to the City.

If the Contractor has substituted securities for any of the retention, the City may request that such securities be revalued from time to time, but not more often than monthly, at the expense of the Contractor. Such revaluation will be made by a person or entity designated by the City and approved by the Contractor. If such a revaluation results in a determination that the securities have a market value less than the amount of retention for which they were substituted, then the amount of the retention required under the Contract will be increased by such difference in market value.

Such increased retention will be withheld from the next progress payment(s) due to the Contractor under the Contract.

The Contractor, or subcontractor, shall return all monies withheld in retention from a subcontractor within 30

days after receiving retention payment with Final Payment. Federal law (49CFR26.29) requires that any delay or postponement of payment over 30 days may take place only for good cause and with the City's prior written approval. Any violation of this provision shall subject the violating Contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the Business and Professions Code. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial, remedies otherwise available to the Contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor, deficient subtract performance, or noncompliance by a subcontractor.

^^

DIVISION II GENERAL CONSTRUCTION

10 GENERAL

Replace "RESERVED" in section 10-1.05 with the following:

10-1.05A COORDINATION AND JOINING OF WORK

The Contractor shall be responsible for coordinating the work of the various contractors, subcontractors, and trades employed on the work. He shall adjust, correct, and coordinate his work with the work of others so that no discrepancies will result or unnecessary delays occur.

If completion is delayed because of any acts of omissions of any other contractors or subcontractors, the Contractor shall on that account have no claim against the City for extra compensation or time.

Where work of one trade or subcontractor joins or is installed upon the work of another trade or subcontractor, there shall be no discrepancy in mating or joining such work, which shall be done and finished in a good and workmanlike manner. In joining one kind of work with another, the marring or damaging of either shall be corrected at no expense to the City.

Should improper work of any trade be covered by that of another, it shall be the Contractor's responsibility to correct the improper work and to adjust costs between the various contractors or subcontractors, without cost to the City.

The City shall not be responsible for any damages suffered or costs incurred by the Contractor or any other contractor, subcontractor, or worker, resulting directly or indirectly from the award or performance or attempted performance of any other contract or contracts on the work, or caused by any decision by the City respecting the order of precedence in the performance of the contracts awarded for the completions of the work.

The Contractor shall be responsible to other contractors or City forces engaged in work on the site or adjacent thereto for all damages to their work, or persons employed thereon, or delays to their work, resulting from Contractor's failure to complete the work within the time for completion. Contractor shall adjust and coordinate his work with that of others so that no discrepancies result in the whole work, and shall defend and indemnify the City from all claims arising therefrom.

12 TEMPORARY TRAFFIC CONTROL

Add to the section 12-1.01:

Along with the project schedule, the Contractor shall submit a construction staging/sequencing plan for review and obtain approval by the Engineer prior to the start of construction.

The staging/sequencing plan must:

1. Take into account material ordering and lead times.
2. Break work impacting the flow of traffic and/or access to residents or businesses into stages.
3. Only allow one stage to be under active construction at a time.
4. Identify any impacted bicycle or pedestrian facilities/circulation.
5. Identify any impacted driveways, businesses, or residences.
6. Ensure a minimum of one driveway to each parking lot or parcel remains open at all times.
7. Ensure a minimum of one-half of a driveway remains open at all times where only one driveway to a business or residence exists, unless otherwise approved by the Engineer.
8. Require notice to parcel owners, businesses, and residents ten (10) working days in advance of when vehicle access will be altered or utility outages are to take place. Notice to parcel owners must include details of work, start date, and duration of work to take place in front of their property. This notice may be in the form of door-hangers, flyers, or other format deemed acceptable by the Engineer.

The Contractor shall submit traffic control plans, including closure plans, for review and obtain approval prior to any construction activities requiring temporary traffic control. The Engineer shall review and approve all traffic control systems, including hardware and location/placement, prior to beginning construction activities each workday.

Contractor shall provide and maintain traffic control devices, flaggers and all other necessary items per this section, the Caltrans Traffic Manual, and California MUTCD where applicable. The Contractor will be responsible for the maintenance of all traffic control items and equipment during and outside of working hours.

All provisions shall be in place to allow residents to have safe access to their houses at all times.

Replace the paragraph in section 12-1.04 with:

There is no separate bid item for flagging, so that work shall be included within the Traffic Control System bid item and no additional compensation will be allowed therefore. The Contractor shall be responsible for the entire cost of flagging and is responsible for including that cost in the Traffic Control System bid item.

The development of all staging/sequencing plans, traffic control plans, and bicycle and pedestrian handling plans shall be paid for under the Traffic Control System bid item and no additional compensation will be allowed therefore.

The Traffic Control System bid item includes all tools, equipment, materials, and labor necessary to implement the contractor-developed traffic control plan(s) and bicycle and pedestrian circulation plan(s), and install and remove all temporary construction area signage. This includes, but is not limited to, all temporary and semi-permanent construction area signs, temporary signals, flaggers, temporary signal control and maintenance, barricades, cones, and K-rail concrete barriers used in the implementation of the traffic control plans and bicycle and pedestrian circulation plans and all other incidental work associated with the Traffic Control System.

Replace the paragraph in section 12-3.11D with:

Construction Area Sign (Measure H & L Tax) shall be placed at the start of the job and protected throughout construction. Payment shall be per each unit.

Add to section 12-4.02A(2):

Labor Day is a designated holiday that is observed on September 7th. Martin Luther King Jr. Day is a designated holiday that is observed on the 3rd Monday in January. The day after Thanksgiving is a designated holiday that is observed the day after Thanksgiving Day. Christmas Eve is a designated holiday that is observed on December 24th.

Replace "Reserved" in section 12-5 with:

12-5.01 GENERAL

Contractor shall notify the City, El Dorado Disposal, El Dorado County Fire District, Placerville Police Department, Placerville Downtown Association, El Dorado County Transit Authority, the local US Post Office and Placerville Union School District Transportation Division 48 hours prior to any lane closures, including partial road closures.

Replace "Reserved" in section 12-6.03D(1) with:

Temporary markers and/or markings shall be installed by the Contractor for any existing crosswalk line, limit line, arrow, and other legend or traffic lane line removed or damaged by the work activity prior to the end of the work shift and before opening the lanes for traffic.

Requirements for Placing Temporary Pavement Markings and Striping

Existing Striping	Temporary Striping
12-inch crosswalk line	3 – 4 inch white stripes appearing as 1– 12 inch stripe
8-inch solid line	1 – 4 inch white solid stripe
4-inch broken white	1 – 4 inch white stripe (typically 7' long, 17' gaps*)
4-inch broken yellow	1 – 4 inch yellow stripe (typically 7' long, 17' gaps*)
Double yellow	2 – 4 inch yellow solid stripes 3 inches apart

* Consult Chapter 3 of the California MUTCD for further details. The dimensions for broken lines apply for streets with posted speed limits of 35 MPH or less. For speed limits of 40 MPH or more, the dimensions are for 12' long stripes with 36' gaps.

For Temporary Marking and Temporary Striping materials, refer to the *"Temporary (Removable) Striping and Pavement Marking Tape (180 days or less)"* section of the Authorized Materials List for Signing and Delineation Materials from Caltrans.

Replace the 1st Paragraph of section 12-6.04 with:

There is no specific bid item for temporary traffic striping or pavement markings. The work shall be considered included in all other bid items and no additional compensation will be made therefore.

Replace Section 12-8 with:

12-8 CONSTRUCTION ZONE STANDARDS

12-8.01 GENERAL
12-8.01A Summary

Contractor is responsible for maintaining a safe work area during and after working hours.

12-8.02 Maintaining Traffic
12-8.02A Tow-Away Lanes

Contractor shall be responsible for keeping "Tow-Away No Stopping" traffic lanes clear during the effective hours posted.

12-8.02B Metal Plating

Any temporary metal plating and metal bridging shall be coated with a non-skid and rust inhibitive product. Examples of non-skid metal plating are surfaces with waffle or herringbone pattern undulations. Plating shall be installed with no edges or corners sticking up and with no bouncing or shifting. Plates shall be secured

against shifting by tack welding, or fasteners. Any non-skid product shall have a friction factor of 0.35 or greater as measured by the California Test 342.

Plates shall be free of any openings greater than ¼ inch.

12-8.02C Transitioning (Ramping)

Whenever the grade difference between the existing pavement and the excavated area is greater than ¼ inch, Contractor shall provide longitudinal and transverse transitions prior to opening the lanes to traffic. The maximum slope on these transitions shall be 1:18. Transitions shall be installed with hot mix asphalt. This section applies to newly constructed roadway base, manholes, metal plating, bridging, trenching etc.

Cold mix asphalt may be used in lieu of hot mix asphalt for temporary ramping. The contractor is responsible for maintaining cold mix asphalt at all times and complying with ADA regulations if applicable. Cold mix shall comply with Sections 4-1.13 and 7-1.04.

12-8.03 Security and Contractor Property

The Contractor shall be responsible for the security of all Contractor property including, but not limited to, equipment, material that has not yet been installed, and tools. If the Contractor fails to properly lock, store, and secure equipment, tools, materials, etc., his property may be stolen. The Contractor shall do his best to deter trespassing onto the project and staging areas. No additional payment shall be made for added security measures. No additional payment shall be made for equipment, tools, materials, or any other property of the Contractor that is lost or stolen.

^^

13 WATER POLLUTION CONTROL

Add to section 13-2.04:

All work associated with the Contractor-developed Water Pollution Control Program shall be paid under Water Pollution Control Plan bid item.

Delete first paragraph in section 13-7.03D

^^

15 EXISTING FACILITIES

Add to section 15-1.01:

The types, locations, sizes and/or depths of existing underground utilities as shown on the Contract Documents were obtained from sources of varying reliability. The Contractor is cautioned that only actual excavation will reveal the types, extent, sizes, locations and depths of such underground utilities. A reasonable effort has been made to locate and delineate all known underground utilities. However, the City can assume no responsibility for the completeness or accuracy of its delineation of such underground utilities nor for the existence of other buried objects or utilities which may be encountered but which are not shown on these Plans. The majority of the utilities shown on the Plans were drafted per locations indicated on the respective purveyors' facility maps. Additionally, survey crews collected manholes, drain inlets, and dry utility boxes.

The Contractor shall contact the Underground Service Alert (U.S.A.) two working days in advance of performing any excavation work by calling the toll-free number 1-800-227-2600.

Locations of utility services and laterals are not always provided by utility companies and when shown are approximate (unless potholed). Nothing herein shall be deemed to require the City to indicate the presence of existing utility services, laterals, or appurtenances whenever their presence can be inferred from other visible facilities such as buildings, meters, junction boxes, valves, service facilities, identification markings and other indicators on or adjacent to the work. Potholing to locate services, laterals, and related appurtenances will be at the discretion of the Contractor and no separate bid item will be included for such pothole excavations.

Payment will not be made for potholes performed by the Contractor to "locate and protect" known utilities.

It is anticipated that the existing storm drain pipe may contain Asbestos (ACP).

Add to section 15-1.03A:

Any existing improvements, sanitary sewage facilities, water facilities, landscaped areas, etc., damaged as a result of the Contractor's construction activities shall be replaced by the Contractor at no cost to the City. Any utilities damaged during the removal of the pipes indicated in the Project Plans must be repaired to the satisfaction of the utility owner.

The existing underground pipes proposed to be removed shall be removed completely and excess material shall be disposed of off-site in a safe and legal manner. The Contractor shall backfill and compact the trench as required immediately after completing removal of the existing underground facilities to the subgrade level to minimize hazardous conditions.

Hazardous material shall be removed following the below procedure:

1.0 GENERAL

This section includes procedures required when encountering hazardous materials at the Work site.

2.0 REFERENCES

A. California Health and Safety Code, Section 25117.

B. State of California Code of Regulations (CCR).

1. Title 8. Industrial Relations.

a. Division 1. Department of Industrial Relations.

2. Title 22. Social Security

a. Division 4. Environmental Health.

b. Division 4.5. Environmental Health Standards for the Management of Hazardous Waste.

C. United States Code of Federal Regulation (CFR), Title 29 and Title 40.

1. 29 CFR 1910.1000.

2. 29 CFR 1910.134.

3.0 SUBMITTALS

Submit laboratory reports, hazardous material removal plans, and certifications.

4.0 HAZARDOUS MATERIALS PROCEDURES

A. Hazardous materials are those defined by the State of California Health and Safety Code, Section 25117.

B. When Hazardous Materials Including Contaminated Soil Have Been Found:

1. Initiate Contaminated Soil Management Plan found in Appendix F of these specifications.

2. Notify immediately Construction Manager, and other affected persons.

3. Notify such agencies as are required to be notified by Laws and Regulations with the times stipulated by such Laws and Regulations.

4. Designate a Certified Industrial Hygienist to issue pertinent instructions and recommendations for protection of workers and other affected persons' health and safety.

5. Identify and contact subcontractors and licensed personnel qualified to undertake storage, removal, transportation, disposal, and other remedial work required by, and in accordance with laws and regulations.

C. Forward to Construction Manager, copies of reports, permits, receipts, and other documentation related to remedial work.

D. Assume responsibility for worker health and safety, including health and safety of Subcontractors and their workers.

1. Instruct workers on recognition and reporting of materials that may be hazardous.

E. File requests for adjustments to Contract Times and Contract Price due to the finding of Hazardous Materials in the Work site in accordance with Section 00700.

1. Minimize delays by continuing performance of the Work in areas not affected by hazardous materials operations.

5.0 ASBESTOS MATERIALS

A. It is the specific intent of these Contract Documents to exclude from the Work any and all products or materials containing asbestos. No new products containing asbestos shall be incorporated in the Work.

B. The Contractor is made aware that the existing water and sewer pipelines in the project area are made of Asbestos Concrete (AC). The Contractor shall anticipate the need for removal of sections of the existing pipeline during tie-ins to the existing system and abandonment of the existing pipelines where indicated on the plans.

C. All Asbestos Concrete (AC) Pipe shall be handled and disposed of according to California Code of Regulations (CCR) Tile 8, Section 1529; or most current regulations. Contractor shall provide a plan for disposal of the AC pipe and provide evidence of proper disposal to the Construction Manager.

Add to section 15-1.04 PAYMENT:

Payment to handle hazardous material shall be included in various items of work.

^^

DIVISION III EARTHWORK AND LANDSCAPE

17 GENERAL

Add to section 17-1.04:

There is no specific pay item for grading. Payment for grading is included in the payment of various other bid items and no additional compensation will be made therefore.

^^

19 EARTHWORK

Add to section 19-1.01A:

Contractor is to conform to the grades as indicated on the Project Plans.

Replace section 19-2.03E with:

Only excavation tools and equipment will be permitted for roadway excavation. Other methods of excavation including blasting, chemical expanders, or hydraulic splitters will not be allowed.

Roadway excavation shall follow the recommendations of the Geotechnical report and shall include but not be limited to removing excess loose dirt, rock, and other debris in order to reach the necessary depth for the roadway section as shown on the improvement plans.

Add to section 19-2.04 with:

Excavation, embankment, and export required for other bid items shall be included in those bid items.

Replace paragraphs in section 19-3.04 with:

There is no separate bid item for structure excavation and backfill, but all structure excavation and backfill must still meet the requirements of Section 19-3.

^^^

DIVISION IV SUBBASES AND BASES

26 AGGREGATE BASES

Replace 2nd paragraph of section 26-1.02A with:

Unless otherwise noted on the plans or in these special provisions, aggregate used for Class 2 AB shall be ¾" and must comply with the ¾" maximum gradation in Section 26-1.02B.

Recycled AB and/or appropriately ground and blended material generated from Remove Base and Surfacing activities can be used in lieu of Class 2 AB under the minor concrete items, as approved by the Engineer.

Add to section 26-1.04:

Payment will not be made for any Class 2 AB outside of the limits determined by the Engineer. No additional payment will be made for Class 2 AB depths greater than what is indicated on the Project Plans unless otherwise directed or approved by the Engineer.

Class 2 AB placed under HMA for the construction of roadways shall be paid for under the Class 2 AB bid item. Scarification and recompacting of the subgrade material, where necessary, to place the Class 2 AB under the HMA shall be included in the Class 2 AB bid item. The payment quantity for the Class 2 AB bid

item is the theoretical volume of Class 2 AB placed under the HMA measured in cubic yards. Class 2 AB used for the construction of all other bid items is included in those bid items and no additional compensation shall be made therefore.

No additional compensation shall be made if the AB section is increased to accommodate variable depth bedrock.

^^

DIVISION V SURFACINGS AND PAVEMENTS

39 ASPHALT CONCRETE

Delete items 2, 3, 4, and 5 in section 39-2.01A(1).

Add to section 39-2.01A(1):

Hot mix asphalt (HMA) for this Project will be Type A HMA.

Add to 1st paragraph of section 39-2.01C(4)(a):

If it is impractical or impossible for longitudinal joints to match the lane lines, then the Contractor shall limit the paving seams to the least amount practical.

Replace section 39-2.01D with:

39-2.01D Payment
Payment for tack coat is included in the payment for hot mix asphalt (HMA). HMA required for the HMA Overlay (Conform) shown on the plans is included in the payment for hot mix asphalt (HMA).

Type A HMA for the roadway shall be paid for under the Type A HMA bid item. The payment quantity for Type A HMA shown on the Bid Item List is measured based on the combined mixture weight. If recorded batch weights are printed automatically, the bid item for Type A HMA is measured by using the printed batch weights, provided:

1. Total aggregate and supplemental fine aggregate weight per batch is printed. If supplemental fine aggregate is weighed cumulatively with the aggregate, the total aggregate batch weight must include the supplemental fine aggregate weight.
2. Total virgin asphalt binder weight per batch is printed.
3. Each truckload's zero tolerance weight is printed before weighing the first batch and after weighing the last batch.
4. Time, date, mix number, load number and truck identification is correlated with a load slip.
5. Copy of the recorded batch weights is certified by a licensed weigh master and submitted.

Payment will not be made for any Type A HMA outside of the limits determined by the Engineer. No additional payment will be made for Type A HMA depths greater than what is indicated on the Project Plans unless otherwise directed or approved by the Engineer.

The Engineer does not adjust the unit price for an increase or decrease in the pre-paving grinding quantity.

Payment will not be made for any HMA used as a temporary paving surface.

Payment for AC Dike (Caltrans Type E) shall be paid for on a per linear foot and includes the cost to procure the HMA.

Payment for AC Grind & HMA Overlay (Conform) shall be included in the Hot Mix Asphalt (Type A) bid item.

Replace section 39-2.02B(3) with:

Asphalt binder used in HMA Type A must be PG 64-16.

^^

51 CONCRETE STRUCTURES

Replace paragraphs in section 51-7.01D with:

Payment for the 48” SSMH bid item includes all items associated with installing the sewer manholes, including but not limited to, excavation, structural concrete, shoring and bracing, Class 2 AB, backfill, miscellaneous metal and all other incidental work associated with installing 48” SSMH. The payment quantity for 48” SSMH is based on the number of manholes installed.

SSMH shall be constructed in accordance with EID.

Install a shallow manhole per Sacramento Areas Sewer District Standard Detail MH-07. Coordinate with City Inspector if this is required.

^^

52 REINFORCEMENT

Replace paragraphs in section 52-1.04 with:

There is no separate bid item for reinforcing steel. Reinforcing steel shall be considered included in the various bid items that require it and no additional compensation will be allowed therefore.

^^

64 DIVISION VII DRAINAGE FACILITIES

64 PLASTIC PIPE

Add to the 1st paragraph of section 64-2.02A:

All storm drain pipe must be Reinforced Concrete Pipe (RCP) Type V. It is anticipated that cover will be less than standard and the contractor shall refer to County of Sacramento’s standard detail 9-1 for Cover Less than Standard. Compacted Class 2 AB may be utilized over crushed rock.

Add to section 64-2.04:

RCP Type V shall be measured and paid per linear foot for Remove & Replace SD Pipe (12”) delineated by pipe size. The payment quantity for the Remove & Replace SD Pipe (12”) bid items is the length of pipe measured parallel to the ground surface along the centerline of the trench at the finished grade. The Remove & Replace SD Pipe (12”) bid items include all equipment, tools, materials, and labor to install RCP pipes including, but not limited to, trench excavation; removal of existing SD pipe; concrete cap finish due to less than standard cover, shoring; bracing; dewatering; placing and compacting bedding, pipe zone, initial backfill and final backfill material; installing the pipe; connecting to the existing and proposed storm drain systems (pipes, manholes, inlets, structures, etc.); testing; temporary surface restoration, including temporary striping; and all other incidental work to install new 12” RCP.

^^

70 MISCELLANEOUS DRAINAGE FACILITIES

Add to section 70-5.01C:

Modified Trash Rack shall be per Caltrans Standard Plan D75C and D77B or an approved equal. A custom inlet trash rack can be made but shall require a submittal for review and must be attached properly to the new storm drain pipe.

Add to sectin 70-5.01D:

Modified Trash Rack shall be paid on per each unit installed. It includes all labor, material, and equipment necessary to procure, construct, and install the modified trash rack.

Replace paragraph in section 70-5.02B (5):

The flared end section must be the same material type as the drainage facility that it is attached to.

Add to section 70-5.02D

12” Flared End Section shall be paid on per each unit installed. It includes all labor, material, and equipment necessary to procure, construct, and install.

Replace paragraph in section 70-5.05D:

^^

71 EXISTING DRAINAGE FACILITIES

Add to section 71-1.03:

Existing drainage facilities not scheduled for removal shall be protected in place. The existing drainage area shall be cleaned to remove organic material and remove loose sediment.

Replace “Not Used” in section 71-1.04 with:

There is no separate bid item for the material used to backfill the trenches, holes, depressions, pits, etc. caused by removing, salvaging, reconstructing, abandoning, destroying, modifying, resetting, relocating, adjusting, relaying, remodeling, and rehabilitating existing drainage facilities and no additional compensation will be allowed therefore.

Add to section 71-2.04:

The payment quantity for clean invert and sidewalls shall restore the area to existing slope conditions and to remove organic material from the area. This item shall be paid as Lump sum as determined by a City representative.

^^

DIVISION VIII MISCELLANEOUS CONSTRUCTION

72 SLOPE PROTECTION

Add to section 72-2.04 Payment

Rocks Stabilization (Class III) shall also include the cost associated with all work involved with placing fabric as shown on the improvement plans.

^^

75 MISCELLANEOUS METAL

Replace section 75-1.04 with:

There is no specific bid item for miscellaneous metal material. Miscellaneous metal materials shall be paid under the various bid items requiring miscellaneous metal materials and no additional compensation will be allowed therefore.

Replace section 75-2.04 with:

There is no specific bid item for manhole frames. or drainage inlet frames and grates. Manhole frames shall be paid under the various bid items requiring manhole frames no additional payment shall be made, therefore.

^^

77 LOCAL INFRASTRUCTURE

Replace "Reserved" in section 77-1 with:

77-1 TRENCH EXCAVATION, BACKFILL, AND COMPACTION

77-1.01 GENERAL

77-1.01A Summary

This section governs the work for trench excavation, backfill, and compaction for underground pipeline work including, but not limited to, the installation of PVC sewer pipe, and removal and installation of sewer services and appurtenances.

77-1.01B Submittals

Upon request, the following items shall be submitted and approved by the Engineer:

1. Test results showing gradation, durability, and sand equivalent of pipe zone material.
2. Permit and notification form for excavations 5 feet or more in depth as required by Cal-OSHA, including any trench excavation or shoring plans.

The testing frequency and location shall be approved by the Engineer.

77-1.02 MATERIALS

77-1.02A Trench Excavation

Excavation is unclassified. The Contractor shall complete all excavations regardless of the type of materials encountered. The Contractor shall make his own estimate of the kind and extent of the various materials which will be encountered in the excavation.

77-1.02B Pipe Zone

Material for the pipe zone shall be 3/4 inch Class II Aggregate Base per Section 26.

77-1.02C Backfill

Material for the backfill from 12 inches above the top of the pipe to subgrade shall be ¾ inch Class 2 Aggregate Base per section 26.

77-1.03 CONSTRUCTION

77-1.03A Excavation

77-1.03A(1) General

Excavation for pipelines, fittings, and appurtenances shall be open trench to the depth and in the direction necessary for the proper installation of the same as shown on the contract drawings or as otherwise approved by the Engineer. Excavation shall only proceed when the necessary materials have been delivered to the site.

The Contractor shall bear all costs of disposing of roots and all other waste materials from the excavation. Material shall be disposed of in such a manner as to meet all requirements of the state, county, and local regulations regarding health, safety, and public welfare. Non-flammable material and flammable material, when burning is not permitted, shall be disposed of off the construction site in an approved location at the Contractor's expense.

The Contractor shall remove obstructions within the trench area or adjacent thereto, such as abandoned concrete structures, logs, and debris of all types, without additional compensation. The Engineer may, if requested, make changes in the trench alignment to avoid major obstructions, if such alignment can be made without adversely affecting the intended function of the facility.

77-1.03A(2) Existing Pavement Removal

Pavement to be removed shall be removed and replaced in the manner prescribed by the Standard Specifications.

Existing pavement, curbs, gutters, sidewalks and driveways to be removed in connection with construction shall be neatly saw cut prior to removal. Saw cuts shall have a minimum depth of one inch in concrete sidewalk.

If the saw cut in a sidewalk or driveway would fall within 12 inches of a construction joint, expansion joint, or edge, the concrete shall be removed and replaced to the joint or edge. If the saw cut would fall within 6 inches of a score mark, the concrete shall be removed and replaced to the score mark. Concrete shall be removed by jackhammer.

77-1.03A(3) Grading and Stockpiling

The Contractor shall control grading in a manner to prevent water running into excavations. Obstructions of surface drainage shall be avoided and means shall be provided whereby storm and wastewater can be uninterrupted in existing gutters, other surface drains, or temporary drains. Material for backfill or for protection of excavation in public roads from surface drainage shall be neatly placed and kept shaped so as to cause the least possible interference with public travel. Free access must be provided to all fire hydrants, water valves, meters and private drives.

77-1.03A(4) Line and Grade

The Contractor shall excavate the trench to the lines and grades shown on the plans. Any deviations shall first be approved by the Engineer.

The trench shall be excavated to a minimum depth of 6 inches below the bottom of the pipe. The sides of the trench shall be excavated and maintained as nearly vertical as is practical.

77-1.03A(5) Trench Support

The trench shall be adequately supported and the safety of workers provided for as required by the standard of the appropriate regulatory agency.

All shoring for open excavations shall conform to the State of California, Department of Industrial Relations, Division of Industrial Safety "Construction Safety Orders."

The Contractor shall be responsible for adequately shored and braced excavations so that the earth will not slide, move or settle, and so that all existing improvements of any kind will be fully protected from damage.

No shoring once installed, shall be removed until the trench has been approved for backfill operations. Removal of shoring shall only be accomplished during backfill operations and in such a manner as to prevent any movement of the ground or damage to the pipe or other structures.

The Contractor shall obtain all permits for any excavations over five feet in depth into which a person is required to descend or any excavation less than five feet in depth in soils where hazardous ground movement may be expected and into which a person is required to descend.

Excavated material shall not be placed closer than two feet from the top edge of the trench. Heavy equipment should not be used or placed near the sides of the trench unless the trench is adequately braced.

77-1.03A(6) Use of Explosives

Blasting is not permitted.

77-1.03A(7) Preservation of Trees

Excavation within the dripline of any tree shall conform to the following. Trees shall not be removed outside of fill or excavated areas, except as authorized by the Engineer.

Tree roots larger than 2 inches in diameter shall not be cut and shall be kept moist during exposure. For damaged or severed root systems, trees shall be trimmed to compensate for the decreased root system. Trimming shall be done to the satisfaction of the Inspector. All roots shall be neatly cut with saw or sharp cutter.

77-1.03A(8) Dewatering

The Contractor shall provide and maintain, at all times during construction, ample means and devices with which to promptly remove and properly dispose of all water from any source entering the excavations or other parts of the work. Dewatering shall be accomplished by methods which will ensure a dry excavation and preservation of the final lines and grades of the bottoms of excavations. Said methods may include well points, cofferdams, sump pumps, suitable rock or gravel placed below the required bedding for drainage and pumping purposes, temporary pipelines and other means, all subject to the approval of the Engineer.

Dewatering for the structures and pipelines shall commence when groundwater is first encountered and shall continue until the backfill at the pipe zone has been completed.

The Contractor shall dispose of the water from the work in a suitable manner without damage to adjacent property. No water shall be drained into work built or under construction without prior consent of the Engineer. Water shall be disposed in such a manner as not to be a menace to public health.

The Contractor shall be responsible to obtain all required Local and State Permits.

Dewatering is incidental to other items of work and no additional compensation will be allowed for dewatering.

77-1.03A(9) Correction of Faulty Grades

Any over-excavation carried below the grade as specified or shown, shall be rectified by Class 2 AB and shall be compacted to provide a firm and unyielding subgrade and/or foundation, as directed by the Engineer.

77-1.03A(10) Structure Protection

Temporary support, adequate protection, and maintenance of all underground and surface structures, drains, sewers, and other obstructions encountered in the progress of the work shall be furnished by the Contractor at his expense and subject to the approval of the Engineer. Any structure that has been disturbed shall be restored upon completion of the work.

77-1.03A(11) Trench Width and Grade

The width of the trench within the pipe zone shall be such that the clear space between the barrel of the pipe and the trench wall shall not exceed the amount shown in the standard details. In general, the following shall be adhered to:

Nominal Pipe Diameter	Trench Width Minimum	Trench Width Maximum
12” or less	O.D. + 12”	O.D. + 18”
greater than 12”	O.D. + 18”	O.D. + 24”

Trench widths in excess of those specified must have prior written approval.

77-1.03A(12) Maximum Length of Open Trench

Unless otherwise specified or directed by the Engineer, the maximum length of open trench during working hours shall be 500 feet, or the distance necessary to accommodate twice the amount of pipe installed in a single day, whichever is greater. The maximum length of open trench appropriately covered during non-working hours is the distance necessary to accommodate the amount of pipe installed in a single day. The distance is the collective length of any location, including open excavation, pipe laying and appurtenant construction, and backfill, which has not been temporarily resurfaced. Failure by the Contractor to comply with the limitations specified herein may result in an order to halt progress of the work until compliance has been achieved. The Contractor shall provide proper barricades for excavated areas.

Open trenches must be appropriately covered during non-working hours. Open trenches are not allowed during the scheduled events listed in section 7-1.03. Prior to those events, all trenches must be temporarily resurfaced to the satisfaction of the Engineer.

77-1.03A(13) Rock Excavation

Excavation of unrippable rock requiring a larger excavator and/or hydraulic hammering will be paid for as an additional cost above and beyond the cost for excavation and trenching for ordinary excavation. The City Engineer will determine when rock excavation for unrippable rock is required per the definition below.

Definition of Rock: Rock encountered during the course of excavation which is sufficiently hard that it cannot be removed using a Caterpillar 320 class excavator or equivalent using conventional methods shall be deemed inexcavatable. Rock deemed inexcavatable shall be removed by substantial means such as reciprocating hydraulic hammers and shall conform to this specification.

77-1.03A(14) Payment:

There is no separate bid item for trench excavation. Trench excavation shall be considered incidental to other items of work and no additional compensation will be allowed therefore.

77-1.03B Trench Foundation

77-1.03B(1) General

The trench bottom shall be graded to provide a smooth, firm and stable foundation at every point throughout the length of the pipe. Should large gravel and cobbles be encountered at the trench bottom or pipe subgrade, they shall be removed from beneath the pipe and replaced with clean imported sand which shall be compacted to provide uniform support and a firm foundation.

77-1.03B(2) Foundations in Poor Soil

If excessively wet, soft, spongy, unstable, or similarly unsuitable material is encountered at the surface upon which the bedding material is to be placed, the unsuitable material shall be removed to a depth as determined in the field by the Engineer. The Contractor's attention is called to section 77-7.03A(8), regarding his/her responsibilities in maintaining adequate dewatering procedures to ensure that an otherwise stable foundation will not be rendered unfit due to accumulation of water.

77-1.03C Backfill and Compaction

77-1.03C(1) General

Backfill shall be completed within the shortest possible time so that the construction area or street can be opened to traffic. If for any reason construction of the pipeline or appurtenances thereto is delayed, the City may require that the trench be backfilled and such areas or streets opened to traffic.

77-1.03C(2) Pipe Zone

After completion of the trench excavation and proper preparation of the foundation, 6 inches of bedding material shall be placed on the trench bottom for support under the pipe. Bell holes shall be dug to provide adequate clearance between the pipe bell and the bedding material. All pipes shall be installed in such a manner as to insure full support of the pipe barrel over its entire length. After the pipe is adjusted for line and grade and the joint is made, the remainder of the pipe bedding shall be placed to the limits as shown on the Drawings. All bedding material shall be compacted 90% as measured by Test Method California 231, prior to placement of subsequent backfill.

When bedding material is selected material or imported sand, the pipe bedding backfill shall be brought to optimum moisture content and shall be placed by hand in layers not exceeding 3 inches in thickness to the centerline (string line) of the pipe and each layer shall be solidly tamped with the proper tools so as not to injure, damage, or disturb the pipe. Backfilling shall be carried on simultaneously on each side of the pipe to assure proper protection of the pipe.

Each lift shall be "walked in" and supplemented by slicing with a shovel to ensure that all voids around the pipe have been completely filled. Mechanical compaction such as "pogo sticks" or "wackers", as approved, shall be used for compaction of pipe zone.

77-1.03C(3) Initial Backfill

The remaining portion of the trench shall be backfilled, compacted, and/or consolidated by approved methods to obtain a 95% compaction as measured by CTM 231. Backfill shall be Class 2 AB..

When backfill is placed mechanically, the backfill material shall be pushed onto the slope of the backfill previously placed and allowed to slide down into the trench. The Contractor shall not push backfill into the trench in such a way as to permit free fall of the material until at least 18 inches of cover is provided over the top of the pipe. Under no circumstances shall sharp, heavy pieces of materials be allowed to be dropped directly onto the pipe or the tamped material around the pipe. Backfill shall be placed in layers not exceeding 8 inches and compacted by an approved method.

Heavy duty compacting equipment having an overall weight in excess of 125 pounds shall not be used until backfill has been completed to a depth of 2 feet over the top of the pipe.

If hydro-hammer is used for compaction of overlying materials, at least 4 feet of backfill must be placed over the top of pipe prior to its use. This is required to ensure that the pipe is not damaged.

77-1.03C(4) Final Backfill

Final backfill placed in trenches shall be compacted to a density of not less than 95%.

Backfill shall be placed in layers not exceeding 8 inches, compacted and brought up to the subgrade.

77-1.03D Excess Excavated Material

The Contractor shall make the necessary arrangements for, and shall remove and dispose of all excess excavated material. All surplus material not required for backfill or fill shall be disposed of by the Contractor outside the limits of the public right-of-way and/or easements at no liability to the City. Excess material becomes property of the Contractor and is incidental to other items of work.

No excavated material shall be deposited on private property unless written permission from the owner thereof is secured by the Contractor. Before the City will accept the work as being completed, the Contractor shall file a written release signed by all property owners with whom he has entered into agreements for disposal of excess excavated material absolving the District from any liability connected therewith.

Full compensation for haul-off and disposal of native trench material is included in the prices paid per linear foot of the respective sizes, grades, and types of pipes listed in the contract, and no additional compensation will be paid.

77-1.03E Restoration of Damaged Surfaces or Property

If any pavement, trees, shrubbery, landscaping, fences, poles, or other property and surface structures have been damaged, removed, or disturbed by the Contractor, whether deliberately or through failure to carry out

the requirements of the contract documents, state laws, municipal ordinances, or the specific direction of the City, or through failure to employ usual and reasonable safeguards, such property and surface structures shall be replaced or repaired in-kind at the expense of the Contractor.

77-1.03F Final Clean-Up

After backfill has been completed, the right-of-way shall be dressed smooth and left in a neat and presentable condition to the satisfaction of the Engineer.

77-1.04 PAYMENT

There is no separate bid item for the material, equipment, or labor used to backfill the trenches, holes, depressions, pits, etc. or restoration of surfaces caused by removing, salvaging, abandoning, destroying, modifying, adjusting, rehabilitating existing or installing new drainage or sanitary sewer facilities and no additional compensation will be allowed therefore. Backfill of trenches and restoration of surfaces shall be considered incidental to other items of work.

77-5 SANITARY SEWER

77-5.01 PVC PIPE AND FITTINGS (GRAVITY SEWER)

This section of the specifications will govern the furnishing and installation of PVC pipe material and fittings; including laying, jointing, bedding, testing and approvals. All incidentals and appurtenant operations necessary for the construction of pipelines shall be done in strict accordance with the drawings and other terms and conditions of the contract.

The contractor shall also furnish all equipment, tools, labor and materials required to rearrange sewers, conduits, ducts, pipes, or other structures as may be necessary to provide installation as shown and specified.

All standard specifications, i.e., ASTM, etc., made a portion of these specifications by reference shall be the latest edition and revision thereof.

The contractor shall be responsible for all material furnished by him and shall replace it at his own expense, should the material be defective in manufacture or damaged in handling after delivery by the manufacturer. This shall include the furnishing of all material and labor required to replace defective material discovered prior to final acceptance of the work.

Pipe surfaces shall be free from nicks, scratches and other blemishes. The joining surfaces of pipe spigots and of integral bell and sleeve reinforced bell sockets shall be free from gouges or other imperfections that might cause leakage.

77-5.02 Storage and Care

The contractor shall be responsible for the safe storage of material furnished by or to him and accepted by him, and intended for the work, until it has been incorporated in the completed project. The interior of all pipe and fittings shall be kept free from dirt and foreign matter at all times.

Pipe shall be stored at the job site in unit packages provided by the manufacturer. Caution shall be exercised to avoid compression, damage or deformation to bell ends of the pipe. If pipe is to be exposed to direct sunlight for more than 14 days, pipe must be covered with an opaque material while permitting adequate air circulation above and around the pipe to prevent excessive heat accumulation.

Gaskets shall be protected from excessive exposure to heat, direct sunlight, ozone, oil and grease. Solvent cement when used shall be stored in tightly sealed containers away from excessive heat.

77-5.03 Submittals

Submittals shall be provided for the following items plus all additional items required in the specifications for the particular type of pipe:

1. Pipe and jointing material
2. Fittings
3. Specialties
4. Sewer Bypass Plan

77-5.04 MATERIALS

Polyvinyl Chloride (PVC) Pipe
PVC pipe and fittings shall be made in accordance to ASTM D-3034 or ASTM F679, and ASTM D1784 in both physical, dimensional and chemical requirements. Pipe shall be green unless otherwise approved.

Each standard or random length of pipe shall be clearly marked with the following:
1. Manufacturer's name
2. Nominal pipe size, i.e. 6-inch
3. Cell classification or material code; i.e. 12454-B
4. Dimension ratio; i.e. SDR35
5. Product type; i.e. Type PSM
6. Standard specification designation; i.e. 03034
7. Production code

The SDR shall be 26, unless otherwise stated on the Project Plans.

The standard laying length shall be 20 feet (plus/minus) 1 inch. A maximum of 15% may be furnished in random lengths of not less than 10 feet each. At locations where the water main crosses the sewer main, the sewer pipe shall be installed such that an 18’ minimum length stick of pipe is centered at the crossing.

Pipe joints shall be constructed with an integral bell and spigot with an elastomeric gasket push-on-type joint. Each spigot shall have a reference mark to facilitate pipe assembly. The gasket shall be contained in a machined groove on the pipe spigot such that when compressed the gasket will not displace and will form a positive, water tight seal. The gasket shall meet all requirements of ASTM F-477; pipe lubricant shall be listed with NSF (National Sanitation Foundation).
Solvent cement joints are strictly prohibited.

Material samples shall be taken at the beginning of production and tested for compliance to ASTM D-3034 or ASTM F794.

Product Quality - The following tests shall be performed on a sample of pipe.

1. Flattening - Three specimens of pipe per pipe size furnished, minimum of 6 inches long, shall be flattened between parallel plates in a suitable press until the distance between the plates is 40% of the outside diameter of the pipe. The rate of loading shall be uniform and such that the compression is completed within 2-5 minutes. Remove the load, and examine the specimens for splitting, cracking, or breaking.
2. Pipe Stiffness - The pipe stiffness shall be determined utilizing procedures similar to those outlined in ASTM D2412. The stiffness of pipe shall be determined at a 5% deflection datum. Test specimens shall be a minimum of two pipe diameters or 4 feet in length, whichever is less.
3. Joint Tightness - Joint tightness shall be tested in accordance with ASTM D3212.
The manufacturer shall provide a certificate of conformance for the above tests. Tests shall be performed on materials and products from the same lot of those furnished to the project.
4. Plant Inspection - The District may require inspection of production of the pipe. When requested, the manufacturer shall provide advance notice of when and where production of materials will begin.

Warning tape shall be two-inch wide green non-metallic tape marked “sewerline.”

All fittings shall be as manufactured and furnished by the pipe supplier or approved equal and have bell and/or spigot configurations compatible with the pipe.

77-5.05 CONSTRUCTION

Handling and transportation of pipe shall be in accordance with the pipe manufacturer's published instructions.

Heavy canvas or nylon slings of suitable strength shall be used for lifting and supporting materials. Chains or cables shall not be used.

Pipe and fittings shall not be stored on rocks or gravel, or other hard material which might damage the pipe.

All rubber gaskets shall be stored in a cool, well-ventilated place and should not be exposed to the direct rays of the sun. Gaskets shall not be allowed in contact with oils, fuels, petroleum, or solvents.

Pipe shall be laid in accordance with the pipe manufacturer's published instructions, as complimented and modified herein and in the Project Plans.

The interior of pipes shall be clean of foreign materials before sections of pipe are installed and shall be protected to prevent entry of foreign materials after installation.

Open ends of installed pipe shall be sealed with watertight plugs or other approved means at times when pipe installation is not in progress.

Ground water shall not be allowed to enter the pipe.

All pipe and fittings shall be carefully examined for cracks and other defects just prior to installation. Spigot ends shall be examined with particular care as this area is the most vulnerable to damage from handling. Defective pipe or fittings shall be laid aside for inspection by the Engineer, who will prescribe corrective repairs or rejection.

Proper implements, tools, and equipment, satisfactory to the City, shall be provided and used by the Contractor, for the safe and convenient performance of the work.

Pipe laying shall proceed upgrade with spigot ends pointing in the direction of flow. After a section of pipe has been lowered into the prepared trench, the Contractor shall clean the end of the pipe to be joined, the inside of the joint, and the rubber ring immediately before joining the pipe. The assembly of the joint shall be made in accordance with the recommendations of the manufacturer of the type of joint used. The bell and spigot joint shall be pushed "home" in line with the installation band. If a piece has been cut, the usable end shall be clearly marked to show the proper amount of installation distance. All special tools and appliances required for jointing assembly shall be provided by the Contractor.

After the joint has been made, the Contractor shall check pipe for alignment and grade. The trench bottom shall form a continuous and uniform bearing and support along the length of the pipe between joints. Sufficient pressure in making the joint shall be applied to assure proper pipe alignment and joint makeup. Sufficient pipe zone material shall be placed to secure the pipe and prevent movement before the next joint is installed.

When pipe is laid within a movable trench shield, all necessary precautions shall be taken to prevent pipe joints from pulling apart when moving the shield ahead.

Precautions shall be taken to prevent excavated or other foreign material from getting into the pipe during the laying operation. At all times, when laying operations are not in progress, or whenever the workers are absent from the job, the Contractor shall close and block the open end of the last laid section of pipe to prevent entry of foreign material or creep of the gasketed joints.

Pipes which are stubbed off for manhole construction or for connection by others shall be plugged or closed off with temporary plugs as specified in the manhole specifications.

The Contractor shall take all precautions necessary to prevent the "uplift" or floating of the line prior to the completion of the backfilling operation.

Sewer pipe is to connect to manholes with a water tight boot or approved water tight ring.

Where pipe is connected to manholes or concrete structures, connections shall be made so that the standard pipe joint is located not more than 2 feet from the outside edge of the structure unless otherwise shown.

Field cuts and connections shall be in accordance with the pipe manufacturer's published instructions.

The cutting of pipe for fittings or closure pieces shall be done in a neat and workmanlike manner without damage to the pipe so as to leave a smooth end at right angles to the axis of the pipe. The pipe shall be marked around its entire circumference prior to cutting to assure a square cut. A factory-finished beveled end shall be used as a guide for proper bevel angle and depth of bevel plus the distance to the insertion reference mark. The end shall be beveled using manufacturer recommendations. Sharp edges on the leading edge of the bevel shall be rounded off with a file.

Sewer services shall be installed as shown on the Project Plans and per section 3.12 of the El Dorado Irrigation District Sewer Design Standards. Construction of sewer services includes all items necessary for the execution and completion of this work including, but not limited to sawcutting of existing surfacing, excavation, hand excavation including potholing to determine the location of existing sewer laterals before trenching, restoration of existing improvements (such as landscaping and hardscape, etc.), locating wire, connection to existing structures, dewatering, pipe provision and installation, bedding, backfill, including imported backfill, aggregate base material, compaction of bedding material beneath and around the main and at the locations of active lateral connections, pipe cleaning, and installation, temporary and permanent resurfacing as needed, testing of new sewer line, and all other work necessary to install the sewer service pipe complete and in place. Connection of new service laterals to existing services shall be done in such a way that sewer services are not interrupted for more than two hours to any property or user.

This method includes the excavation of trenches large enough to remove the existing pipe and accommodate the installation of new service line in-place.

Any utilities damaged during the removal and replacement of sewer laterals must be repaired to the satisfaction of the utility owner.

The Contractor will restore all landscaped areas to their original condition or better as shown on the Plans and to the satisfaction of the Engineer. Any landscaped areas that were damaged by the Contractor and not shown for replacement on the Plans will be restored to the satisfaction of the Engineer at the Contractor's expense. While restoring the landscape, the Contractor will take care to protect the existing landscape.

The proposed sewer services connecting to existing services will include all work involved in excavating, exposing, cutting and connecting to the existing sewer service at the locations shown on the Project Plans.

Connect to Existing Sanitary Sewer Manhole includes all items necessary for the execution and completion of this work including, but not limited to, sawcutting of existing surfacing, excavation, coring into the existing manhole, connecting the new pipe to the new core in the manhole with a flexible rubber boot or approved watertight ring, watertight mechanical plugs, backfill, including imported backfill, and aggregate base material backfill, compaction of backfill, temporary surface pavement, permanent surface pavement or concrete. Contractor is to cut, shape and slope the new invert channel in the existing concrete bench for smooth flow from new sanitary sewer connection. Connect to Existing Sewer Manhole shall be made in accordance with the improvement plans and requirements of El Dorado Irrigation District.

Sewer manholes and cleanouts shall be constructed per details shown on the Project Plans and per Section 3.10 and 3.11, respectively, of the El Dorado Irrigation District Sewer Design Standards. Manhole plugs are to be constructed per the Project Plans.

77-5.06 TESTING

VIDEO TEST

The contractor shall CCTV (video) the mainline once installed to make sure all joint connections, laterals, and manholes are properly connected.

All sewer collectors and service laterals shall be T.V. inspected prior to pavement placement in accordance with the following:

1. All sewer pipelines are installed, backfilled, and compacted.
2. All manholes are in place, all channeling is complete, and pipelines are accessible from manholes, and testing completed.
3. Final sub grade is complete and accepted by the County.
4. Pipelines to be inspected have been cleaned and flushed.

After the above work is complete, the contractor shall schedule the video inspection. The video test shall be done in the presence of the city's inspector. Water shall be introduced into the new pipe prior to inspection. During the video for service, some water must be flowing for camera orientation. The camera shall have a device to measure water depths.

The following observations from television inspections will be considered defects in the construction of sewer pipelines and will require correction prior to retesting at the contractor's expense:

1. Low spots, ½-inch or greater
2. Joint separations
3. Cocked joints present in straight runs or on the wrong side of pipe curves
4. Cracled or damaged pipe
5. Dropped joints
6. Infiltration
7. Protruding laterals
8. Debris or other foreign objects
9. Other obvious deficiencies
10. Irregular condition without logical explanation
11. Standing Water in service laterals

If no deficiencies are observed, the work will be considered satisfactory.

The inspection shall be recorded and a Flash drive with current video standards (minimum of 15 megapixel) shall be given to the City.

The City reserves the right to require another test of any repair after corrective work is complete.

MANHOLE TESTING
Test all manholes to ensure they meet of *ASTM C1244* requirements before acceptance. Test manholes after manhole assembly and installation of the pipe entering or exiting the manhole but prior to backfill. Repair and retest the manhole at no additional cost to the City if the manhole fails the test. Repeat this procedure until the manhole passes the required test. The City may also require a manhole to be tested using this method after backfilling if there is reason to suspect that the manhole has been disturbed during the backfilling operation or at other times during construction.

Prepare the manhole by plugging the incoming and outgoing pipes past the first flex joint located outside of the manhole base.

The following is the test procedure:

1. Place the test head at the top of the manhole in accordance with the manufacturer's recommendations.

2. Draw a vacuum of 10" of mercury on the manhole, close the valve on the vacuum line of the test head, and shut off the vacuum pump. Measure the time for the vacuum to drop to nine inches of mercury.

3. The manhole passes the test if the time for the vacuum to drop from 10 inches to nine inches of mercury meets or exceeds the values shown in Table 314-1. In

addition to the minimum time, nine inches of mercury must be held for at least one minute.

The contractor must supply a 4-inch diameter vacuum gauge for this test with maximum scale divisions of 0.1 psi and an accuracy of 0.04 psi. Accuracy and calibration of the gauge must be certified by a reliable testing firm at 6-month intervals or when requested by the City. During testing, locate the vacuum gauge, so it is readily visible.

Table 314-1: Minimum Manhole Vacuum Test Times

Depth (ft)	Diameter (in)		
	48	60	72
	Time in Seconds		
8	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

Spark test lined manholes, in accordance with the manufacturer's recommendations. All welders must be approved and certified by the manufacturer.

Coordination with the local residence shall take place prior to testing to alert them not to use any sewer features to limit any flow and chance for there to be a blockage. Alerting the local residence shall take place three (3) working days prior to the planned test and you shall alert the City Engineer prior to testing.

77-5.07 PAYMENT

The payment quantity for 4" and 6" PVC SDR-26 Sanitary Sewer Pipe bid items is the length of the pipe installed measured parallel to the ground surface along the centerline of the trench at the finished grade in linear feet. The bid items for 4" and 6" PVC SDR-26 Sanitary Sewer Pipe include all tools, equipment, materials, and labor necessary to remove the existing pipe and install the pipe including, but not limited to, video test fabrication, freighting, and furnishing of the pipe; sawcutting; excavation; spoiling; dewatering; shoring; removal and disposal of the existing pipe and trench material; temporary plating; bedding; placement; fittings; connecting to the existing sanitary sewer system (service line, pipe, manhole, etc.); restrained joints; backfilling; compacting of backfill; testing; temporary surface restoration, as necessary; and all incidental work in the installation of the new pipeline.

Connect to (E)Sanitary Sewer Manhole bid item shall be paid for on a per unit basis. Measurement will be based on the actual number of connections made to existing sanitary sewer manholes as determined by actual count.

48" Sanitary Sewer Manhole bid item shall be paid for on a per unit basis, as one complete installed unit, including manhole base, cast iron ring, frame and cover. Measurement will be based on the actual number of manholes installed as determined by actual count. The contract unit price per each Sanitary Sewer Manhole shall include full compensation for labor, materials, tools and equipment and for doing all work for the complete installation of the sanitary sewer manhole, including excavation, backfill and compaction, manhole testing and temporary surface restoration, complete in place, all as specified in the Standard Specifications,

these special provisions, El Dorado Irrigation District Sewer Design Standards and as directed by the Engineer, and no additional compensation will be allowed.

Cleanout shall be paid for on a per unit basis, as one complete installed unit. Measurement will be based on the actual number of cleanouts installed as determined by actual count. The contract unit price per each Cleanout shall include full compensation for labor, materials, tools and equipment and for doing all work for the removal and complete installation of the cleanout, including excavation, backfill and compaction, and temporary surface restoration, complete in place, all as specified in the Standard Specifications, these special provisions, El Dorado Irrigation District Sewer Design Standards and as directed by the Engineer, and no additional compensation will be allowed.

Couplings and verification of existing sewer pipe size shall be paid and included in various bid items.

Manhole Plug shall be paid for on a per unit basis, as one complete installed unit. Measurement will be based on the actual number of plugs installed as determined by actual count. The contract unit price per each plug shall include full compensation for labor, materials, tools and equipment and for doing all work for manhole plug per the Project Plans and as directed by the Engineer, and no additional compensation will be allowed.

4” Sanitary Sewer Service and Cleanout bid item shall be paid for on a per unit basis. Measurement shall be based on the service locations identified on the plans. The contract unit price paid for the various 4” Sewer Service bid items shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved, and in place, as specified per section 3.12 of the El Dorado Irrigation District Sewer Design Standards, these Special Provisions, and as directed by the City Engineer, and no additional compensation will be allowed.

Sewer bypass plan shall be included in the various bid items, if required, so no additional compensation will be allowed therefore. Coordination with residences can be completed to stop sewage from being ran through the pipe when cut and exposed.

Connect to existing 4” sanitary sewer pipe shall be included in various bid items of work.

Cut & Cap SS Pipe shall be paid on a per unit basis.

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DIVISION IX TRAFFIC CONTROL DEVICES

81 MISCELLANEOUS TRAFFIC CONTROL DEVICES

Replace section 81-1.04 with:

All miscellaneous traffic control devices shall be paid under the Traffic Control System bid item.

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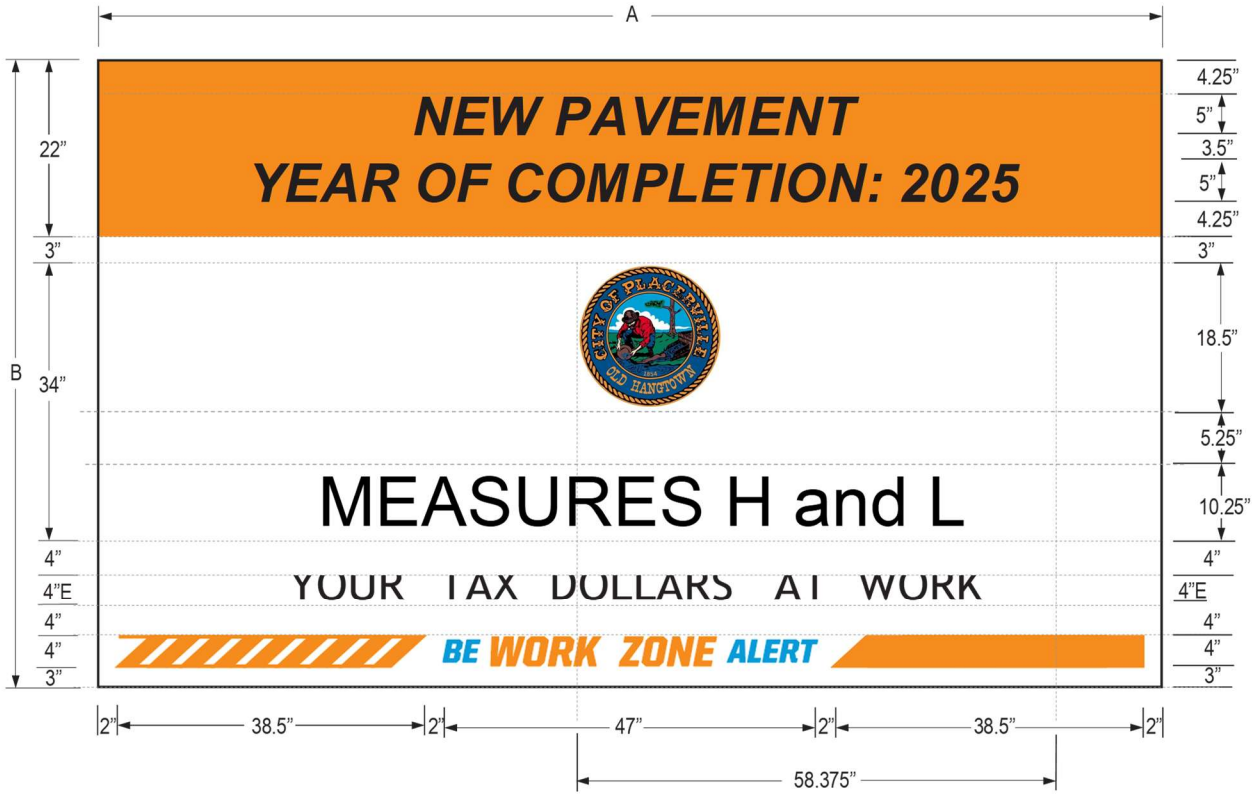
82 SIGNS AND MARKERS

Replace the paragraphs in section 82-3.04 with:

Each sign installation is one (1) measurement unit, regardless of the number of posts or sign panels involved. Installation of new roadside signs shall be paid for under the Roadside Sign bid item and includes the work necessary to furnish and install the new sign(s) and post(s). Contractor shall submit a mock draft of the sign prior to procuring.

Placement and location of Roadside Sign “Private Road” shall be coordinated with city inspector.

Construction Area Sign (Measure H & L Sales Tax) shall be procured and follow the example shown below: in Contractor shall submit a draft of the sign prior to procurement.



Modified C50B(CA)

NOTES:

1. Provided dimensions are for the 132"x78" sign panel.
   For the 96"x60" sign panel, multiply each horizontal dimension of the 132"x78" sign panel by approximately 0.728 and each vertical dimension by approximately 0.769. Adjust spacing as needed.
   For the 48"x30" sign panel, multiply each horizontal dimension of the 132"x78" sign panel by approximately 0.364 and each vertical dimension by approximately 0.385. Adjust spacing as needed.
2. See Special Provisions for project description and year of completion. Specify when ordering.
3. Local Agency logo(s) placement and spacing can be adjusted as needed.

ENGLISH UNITS (inches)

A	B
132	78
96	60
48	30

ALTERNATE PROJECT DESCRIPTION (LINE 1)

NEW PAVEMENT
NEW CARPOOL LANE
BRIDGE MAINTENANCE
BRIDGE RESTORATION
NEW BIKING/WALKING PATHS
BROADBAND INSTALLATION
IMPROVED DRAINAGE SYSTEM

COLORS:
LEGEND - BLACK (ARIAL BOLD ITALIC IN HEADER)
BACKGROUND - WHITE AND FLUORESCENT ORANGE
BE WORK ZONE ALERT RIBBON: PANTONE #299 BLUE AND ORANGE
ALL COLORS TO BE RETROREFLECTIVE, EXCEPT FOR BLACK

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DIVISION XI MATERIALS

90 CONCRETE

Add to section 90-1.01A:

All concrete shall be air entrained as this project is located within a freeze-thaw area.

Replace "Reserved" in section 90-1.01C(1) with:

For each load of concrete delivered to the job site, the contractor shall submit quality control records from the concrete supplier identifying air content per California Test 504 or comparable ASTM test method. The concrete supplier shall have an authorized representative on-site during concrete pours to check and/or dose the concrete to ensure air content meets project specifications.

Replace the 4th sentence in the 1st paragraph of section 90-4.01C(3) with:

Allow 15 days for review.

GEOTECHNICAL INVESTIGATION

Giovanni Sewer Lift Station Access Road
Placerville, California

PREPARED FOR:

R.E.Y. ENGINEERS, INC.
905 SUTTER STREET, SUITE 200
FOLSOM, CALIFORNIA 95630

PREPARED BY:

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GEOCON

GEOCON PROJECT NO. S2680-05-01

MARCH 2026

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. S2787-05-01
March 19, 2026

VIA ELECTRONIC MAIL

Jim Fisher
REY Engineers, Inc.
905 Sutter Street, Suite 200
Folsom, California 95630

Subject: GEOTECHNICAL INVESTIGATION
GIOVANNI SEWER LIFT STATION ACCESS ROAD
PLACERVILLE, CALIFORNIA

Mr. Fisher:

In accordance with your authorization of our proposal (Geocon Proposal No. SA-24-0374-P-GT) dated February 27, 2024, we have performed a geotechnical investigation for the subject project. The project consists of paving the existing gravel access road and installing a new sanitary sewer line and manhole on Giovanni Drive in Placerville, California.

The accompanying report presents our findings, conclusions, and recommendations regarding the geotechnical aspects of the project as presently proposed. In our opinion, no adverse geotechnical conditions are present that would preclude the improvements as planned, provided the recommendations of this report are incorporated into the design and construction of the project.

Please contact us if you have any questions regarding this report or if we may be of further service.

Respectfully Submitted,

GEOCON CONSULTANTS, INC.

Tom DeSimone, PG, CEG
Senior Geologist

PROFESSIONAL GEOLOGIST
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GEOTECHNICAL INVESTIGATION

1.0 PURPOSE AND SCOPE

This report presents the results of our geotechnical investigation for the proposed Giovanni Sewer Lift Station Access Road project located in the City of Placerville in El Dorado County, California. The approximate project location is shown on the attached Vicinity Map, Figure 1.

The purpose of our geotechnical investigation was to evaluate subsurface soil and geologic conditions along the project alignment and provide geotechnical design recommendations for the project as presently proposed.

To prepare this report, we performed the following scope of services:

- Reviewed plans and other available information pertaining to the project. Performed a limited geologic/geotechnical literature review to aid in evaluating the geologic conditions at the site. A list of references is provided in Section 9.0.
- Performed a site reconnaissance to observe existing conditions and features at the site, evaluate exploration equipment access, and mark proposed exploration areas for subsequent utility clearance.
- Notified subscribing utility companies via Underground Service Alert (USA) a minimum of two working days (as required by law) prior to performing exploratory test pits at the site.
- Performed four (4) exploratory test pits (TP1 through TP4) with a Takeuchi TB280FR Mini Excavator to depths ranging between 1½ and 9 feet.
- Obtained representative soil samples from the exploratory test pits.
- Logged the test pits in accordance with the Unified Soil Classification System.
- Upon completion, backfilled the test pits with soil cuttings.
- Performed laboratory tests to evaluate pertinent geotechnical parameters.
- Prepared this summary report.

Approximate exploratory test pit locations are shown on the Site Plan, Figure 2 and Proposed Development Plan, Figure 3. Details of our field exploration program including exploratory test pit logs are presented in Appendix A. Details of our laboratory testing program and test results are presented in Appendix B.

2.0 SITE AND PROJECT DESCRIPTION

The site consists of the existing north-south aligned access road, at the northwest termination of Giovanni Drive in Placerville, California. The existing access road is currently surfaced with gravel and is around 140 feet long. The existing sewer lift station is situated at the base of the hill and was constructed around 2021 (see report cover photo). The adjacent residence to the east is situated about 10 to 15 feet higher than the lift station (Photo 1), and the slope along the east side of the access road consists of residual soil and exposed bedrock. Bedrock was also exposed at the road surface in several locations where the gravel road surfacing had been washed away (Photo 2).

The project consists of paving the existing gravel access road and constructing approximately 175 linear feet of 6-inch-diameter sanitary sewer line, a new manhole, and tie-ins (service laterals) to several nearby residences. The proposed project improvements are shown in the Proposed Development Plan, Figure 3.

3.0 SOIL AND GEOLOGIC CONDITIONS

We identified geologic and soil conditions by observing and sampling exploratory test pits and reviewing the referenced geologic literature (Section 9.0). Soil descriptions below include the USCS symbol where applicable.

3.1 Site and Regional Geology

The site is located within the Sierra Nevada Geomorphic Province of California. According to the *Geologic Map of the Sacramento Quadrangle* (RGM-001A, CDMG, 1981), the site is underlain by Paleozoic metasedimentary rocks of the Calaveras Complex. These rocks generally consist of chert, argillite and slate and often exhibit thin subvertical and sometimes overturned bedding. This is consistent with the results of our field exploration. An excerpt of the regional geologic map including the site is presented as Figure 4.

3.2 Subsurface Conditions

We encountered fill, residual soil, and metasedimentary slate bedrock in our exploratory test pits to the maximum depth explored of approximately 9 feet. The fill material was encountered in Test Pits TP1, TP2 and TP4 and consisted of sandy lean clay with gravel (GC) and silty sand with gravel (SM) to depths between 1 to 4 feet. Below the fill material, residual soil was encountered consisting of sandy

lean clay (CL). In Test Pits TP2 through TP4, excavation refusal was encountered within Calaveras Complex metasedimentary slate (RX) at depths ranging from less than 6 inches (TP2) to approximately 2½ feet. No ultramafic rock or other potential naturally occurring asbestos-containing materials were noted during our field exploration. Photos of our test pits are presented as Photos 3 through 6.

Soil and geologic conditions described in the previous paragraphs are generalized. The exploratory test pit logs included in Appendix A detail soil type, color, moisture, consistency, and USCS classification of the soils encountered at specific locations and elevations.

4.0 GROUNDWATER

We did not encounter groundwater in our test pits (maximum depth of approximately 9 feet) performed on April 12, 2024.

We reviewed available depth-to-groundwater data on the California Department of Water Resources (DWR) *Sustainable Groundwater Management Act (SGMA) Data Viewer* (https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels). The SGMA Data Viewer website indicates that depth to groundwater at the site ranges from approximately 25 to 30 feet.

We expect groundwater/seepage is influenced by site geology, and perched groundwater/seepage may develop at relatively shallow depths at or near the contact between fill, residual soil and formational materials, especially during winter and spring. Seepage can also occur within formational material based on the degree of weathering, fracturing, and bedding characteristics. It should be noted that fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, and other factors. Depth to groundwater can also vary significantly due to localized pumping, irrigation practices, and seasonal fluctuations. Therefore, it is possible that groundwater will be higher or lower than the level observed during our investigation.

5.0 SEISMICITY AND GEOLOGIC HAZARDS

5.1 Regional Active Faults

Based on our research, analyses, and observations, the site is not located on any known “active” earthquake fault trace. In addition, the site is not contained within an Alquist-Priolo Earthquake Fault Zone. Therefore, we consider the potential for ground rupture due to onsite active faulting to be low.

5.2 Ground Shaking

We used the United States Geological Survey (USGS) *Unified Hazard Tool* (https://earthquake.usgs.gov/hazards/interactive/) to estimate the peak ground acceleration (PGA) and modal (most probable) magnitude associated with the 2,475-year return period. The USGS estimated peak ground acceleration (PGA) is 0.245g and the modal magnitude is 6.3.

While listing PGA is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including frequency and duration of motion and soil conditions underlying the site.

5.3 Liquefaction

Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary loss of shear strength due to pore pressure buildup under the cyclic shear stresses associated with intense earthquakes. Primary factors that trigger liquefaction are: moderate to strong ground shaking (seismic source), relatively clean, loose granular soils (primarily poorly graded sands and silty sands), and saturated soil conditions (shallow groundwater). Due to the increasing overburden pressure with depth, liquefaction of granular soils is generally limited to the upper 50 feet of a soil profile.

The site is not located in a currently established State of California Seismic Hazard Zone for liquefaction. Based on the subsurface conditions encountered at the site including shallow bedrock, liquefaction is not a hazard at the site. Mitigation and specific design measures with respect to liquefaction is not necessary.

5.4 Expansive Soil

Based on the results of our field investigation, the near-surface soils consist of predominantly granular materials, bedrock, or lean clay. Based on our experience, these soils are anticipated to have relatively a low expansion potential and should not pose a significant risk for post-construction heave or uplift, provided the soils are properly moisture-conditioned and compacted in accordance with the recommendations of this report.

5.5 Soil Corrosion Screening

We performed pH, resistivity, chloride, and sulfate tests on two samples to generally evaluate the corrosion potential of the soil with respect to proposed subsurface structures. These tests were performed in accordance with California Test Method (CTM) Nos. 643, 422, and 417. The results are presented in Table 3.5A and should be considered for design of underground structures.

TABLE 5.5A
SOIL CORROSION PARAMETER TEST RESULTS
(CALIFORNIA TEST METHODS 643, 417, AND 422)

Sample No.	Sample Depth (ft.)	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)
TP3 Bulk	3	4.45	10,450	7.0	1.3

Note:
ppm = parts per million

Soil with a low pH (higher acidity) is considered corrosive as it can react with lime in cement to leach out soluble reaction products and result in a more porous and weaker concrete. Per Caltrans *Corrosion Guidelines* (Caltrans 2021), soil with a pH of 5.5 or lower may be corrosive to concrete or steel in contact with the ground. Based on the laboratory pH test results and Caltrans criteria, soil at the locations tested does have a higher propensity for corrosion.

Soil resistivity is the measure of the soil's ability to transmit electric current. Corrosion of buried ferrous metal is proportional to the resistivity of the soil. A lower resistivity indicates a higher propensity for transmitting electric currents that can cause corrosion of buried ferrous metal items. In general, the higher the resistivity, the lower the rate for corrosion. Per Caltrans *Corrosion Guidelines*, resistivity serves as an indicator parameter for the possible presence of soluble salts and it is not included as a parameter to define a corrosive area for structures. A minimum resistivity value for soil less than 1,500 ohm-cm may indicate the presence of high quantities of soluble salts and a higher propensity for corrosion. Based on the laboratory minimum resistivity test results and Caltrans criteria, soil at the locations tested does not have a higher propensity for corrosion.

Table 5.5B presents a summary of concrete requirements set forth by the California Building Code (CBC) Section 1904 and American Concrete Institute (ACI) 318 for possible chloride exposure. Chlorides can break down the protective oxide layer on steel surfaces resulting in corrosion. Sources of chloride include, but are not limited to, deicing chemicals, salt, brackish water, seawater, or spray from these sources.

TABLE 5.5B
REQUIREMENTS FOR CONCRETE EXPOSED TO CHLORIDE-CONTAINING SOLUTIONS
(AFTER ACI 318 TABLES 19.3.1.1 and 19.3.2.1)

Chloride Severity	Exposure Class	Condition	Maximum Water to Cement Ratio by Weight	Minimum Compressive Strength (psi)
Not Applicable	C0	Concrete dry or protected from moisture	N/A	2,500
Moderate	C1	Concrete exposed to moisture but not to external sources of chlorides	N/A	2,500
Severe	C2	Concrete exposed to moisture and an external source of chlorides	0.40	5,000

The appropriate Chloride Severity/Exposure Class should be determined by the project designer based on the specific conditions at the location of the proposed structure. Further guidance is provided in ACI 318. Per Caltrans *Corrosion Guidelines*, soil with a chloride concentration of 500 ppm or higher may be corrosive to steel structures or steel reinforcement in concrete. Based on Caltrans criteria, soil at the locations tested is not corrosive with respect to chloride content.

Table 5.5C presents a summary of concrete requirements set forth by CBC Section 1904 and ACI 318 for sulfate exposure. Similar to chlorides, sulfates can break down the protective oxide layer on steel leading to corrosion. Sulfates can also react with lime in cement to soften and crack concrete.

TABLE 5.5C
REQUIREMENTS FOR CONCRETE EXPOSED TO SULFATE-CONTAINING SOLUTIONS
(AFTER ACI 318 TABLES 19.3.1.1 and 19.3.2.1)

Sulfate Severity	Exposure Class	Water-Soluble Sulfate (SO_4) Content		Cement Type (ASTM C 150)	Maximum Water to Cement Ratio by Weight[1]	Minimum Compressive Strength (psi)
		Percent By Mass	Parts Per Million (ppm)			
Not Applicable	S0	$SO_4 < 0.10$	$SO_4 < 1,000$	No Type Restriction	N/A	2,500
Moderate	S1	$0.10 \leq SO_4 < 0.20$	$1,000 \leq SO_4 < 2,000$	II	0.50	4,000
Severe	S2	$0.20 \leq SO_4 \leq 2.00$	$2,000 \leq SO_4 \leq 20,000$	V	0.45	4,500
Very Severe	S3 – Option 1	$SO_4 > 2.00$	$SO_4 > 20,000$	V+Pozzolan or Slag	0.45	4,500
	S3 – Option 2			V	0.40	5,000

Notes:
1. Maximum water to cement ratio limits are different for lightweight concrete, see ACI 318 for details.

Based on the laboratory test results, the Sulfate Severity is classified as “Not Applicable”, and the Exposure Class is S0. The concrete mix design(s) should be developed accordingly. The presence of water-soluble sulfates is not a visually discernible characteristic; therefore, other soil samples from the site could yield different concentrations. Additionally, over time landscaping activities (i.e., addition of fertilizers and other soil nutrients) may affect the concentration.

Geocon does not practice in the field of corrosion engineering and the above information is provided as screening criteria only. If corrosion sensitive improvements are planned, we recommend that further evaluations by a corrosion engineer be performed to incorporate the necessary precautions to avoid premature corrosion on buried metal pipes and metal or concrete structures in direct contact with the soils.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 General

6.1.1 No soil or geologic conditions were encountered during our investigation that would preclude development of the site as planned, provided the recommendations contained in this report are incorporated into the design and construction of the project.

6.1.2 The primary geotechnical constraint identified in our investigation is the presence of near-surface metasedimentary bedrock. Some areas of the site will pose moderate to difficult excavation characteristics. However, based on the currently proposed depths and locations of planned excavations, we anticipate that excavation can be performed using conventional heavy-duty, large grading and excavation equipment. We do not anticipate that blasting will be required. Discussion of anticipated excavation characteristics for each geologic unit is provided in Section 6.3 of this report.

6.1.3 Conclusions and recommendations provided in this report are based on our review of referenced literature, analysis of data obtained from our exploratory field exploration program, laboratory testing program, and our understanding of the proposed project at this time. Geocon should be retained to review the project plans as they develop further, provide engineering consultation as-needed, and perform geotechnical observation and testing services during construction.

6.2 Soil and Excavation Characteristics

6.2.1 We evaluated excavation characteristics in proposed excavation areas by performing exploratory trenches using a Takeuchi TB280FR Mini Excavator. Excavation characteristics will vary at the site depending on location and excavation depths. Table 6.2.1 summarizes anticipated excavation characteristics.

TABLE 6.2.1
ANTICIPATED EXCAVATION CHARACTERISTICS

Geologic Unit	Excavation Characteristics
Fill and Residual Soil	Generally consists of sandy lean clay to silty sand. We anticipate moderate excavation effort with conventional grading equipment. The presence of oversize rock (greater than 6 inches in maximum dimension) should be anticipated and may increase excavation difficulty.

Geologic Unit	Excavation Characteristics
Calaveras Complex – Metasedimentary Rock	We encountered excavation refusal at varying depths within the metasedimentary bedrock unit using a Takeuchi TB280FR Mini Excavator with an 18-inch-wide toothed bucket. If trenching into bedrock is required, difficult excavation characteristics should be anticipated. The weathering profile of the rock at the site varies by location. Weathering of formational material generally decreases with depth and pre-ripping with a large ripping tooth may be required for trenches below the existing residual soil and fill. Large excavators (such as Caterpillar 349 or larger) with a ripping shank or rock trenchers will likely be required for trenching. We note that pre-ripping may generate large cementations that may require further processing to reduce size for use as engineered fill or trench backfill. The metasedimentary bedrock generally excavates as sand and/or sandy gravel with blocky cobble-sized fragments. The presence of oversize rock exceeding 6 inches in maximum dimension should be anticipated and may increase excavation difficulty.

6.2.2 Project excavations may be adjacent to other existing utilities. Excavations should be performed carefully to avoid damaging existing underground utilities and adjacent structures. Adjacent improvements should be monitored by the contractor so that excavation methods and support systems can be modified in a timely manner, if surface deflections are observed.

6.2.3 The condition of existing utility backfill is not known and there is a potential for loose existing backfill adjacent to excavations which can cause excavation sidewall instability and sloughing. The contractor should be aware of the potential for sloughing and have equipment readily available to flatten slopes or install shoring if necessary.

6.2.4 If grading occurs during or after the wet season (typically winter and spring), or in periods of precipitation, in-place and excavated soils will likely be wet. Earthwork contractors should be aware of moisture sensitivity of clayey and fine-grained soils and potential compaction/workability difficulties.

6.2.5 Earthwork and operations in these conditions will likely be difficult with low productivity. Often, a period of at least one month of warm and dry weather is necessary to allow the site to dry sufficiently so that heavy grading equipment can operate effectively. Conversely, during dry summer and fall months, dry clay soils may require additional grading effort (discing, mixing, or other means) to attain proper moisture conditioning.

6.2.6 Due to the fine-grained nature of the near-surface soils, additional drying effort to attain moisture contents suitable for compaction should be anticipated regardless of the time of year. In addition, soils exposed in excavation bottoms may be unstable due to high moisture

content. Mitigation alternatives may include aerating/drying the exposed soils (assuming favorable weather conditions), or chemical treatment (e.g. lime treatment). We can provide specific recommendations during construction based on conditions encountered.

6.3 Excavation, Shoring, and Bracing Considerations

6.3.1 Temporary excavations deeper than 4 feet and entered by workers must meet Cal-OSHA requirements as appropriate. Excavation sloping, benching, the use of trench shields, and the placement of trench spoils should conform to the latest applicable Cal-OSHA standards. The contractor should have a Cal-OSHA-approved "competent person" onsite during excavation to evaluate trench conditions and to make appropriate recommendations where necessary. It is the contractor's responsibility to provide sufficient and safe excavation support as well as protecting nearby utilities, structures, and other improvements which may be damaged by earth movements.

6.3.2 Shoring should be used in areas where temporary slopes must be steeper than those required by Cal/OSHA or where the presence of adjacent improvements prohibits sloping. Design of shoring systems is the responsibility of the contractor. Shoring systems should be inspected daily during construction by qualified contractor personnel. If excessive movement or slippage is noted, the bracing system should be strengthened before personnel are allowed to enter the excavation.

6.3.3 Where a portable safety shield (trench box) is used to protect workers, trench side walls are not directly supported. Thus, the use of a shield should be limited to open areas to minimize the potential of effects on adjacent improvements or ground surface settlement behind the shield. Trench shields should be sized to minimize clearance between the shield and trench side walls. Unsupported trenches should be backfilled immediately after removing the shield.

6.3.4 The excavation support recommendations provided by Cal-OSHA are generally geared towards protecting human life and not necessarily towards preventing damage to nearby structures or surface improvements. The contractor should be responsible for using the proper active shoring systems or sloping to prevent damage to any structure or improvements near underground excavations.

6.3.5 Because of the presence of existing fill within proposed excavation depths, sidewall caving and sloughing is possible during trench excavations. These conditions may require flattening/sloping back trench sidewalls, or enhanced shoring to maintain a stable trench.

6.4 Bearing Conditions/Pipeline Foundation

6.4.1 Based on information obtained from our exploratory test pits, materials exposed at the base of the proposed sewer pipeline trench are anticipated to be suitable for support of bedding materials and the pipe. However, locally soft and/or unstable trench bottom conditions could be present for portions of the alignment within man-made fill (if any), or if seepage or saturated soils are encountered.

6.4.2 We do not anticipate the need for significant trench bottom stabilization. For the pipeline, the weight of pipe, contents, and compacted backfill above the pipe will not result in a significant increase in load over present overburden. Assuming soft and/or unsuitable subgrade areas, if any, are mitigated and the pipeline bedding and haunching materials are properly installed, pipeline settlement should be negligible.

6.5 Underground Utility Backfill

6.5.1 Underground utility trenches should be backfilled with properly compacted material. In areas outside of the roadway, material excavated from trenches should be adequate for use as general backfill above shading provided it does not contain deleterious matter, vegetation, or cementations larger than 3 inches in maximum dimension.

6.5.2 The El Dorado County *Standard Plan 119* requires trenches in existing roadways to be backfilled with ¾-inch Caltrans Class 2 aggregate base (AB) or a 2-sack slurry from the top of the pipe zone to 6 inches below the bottom of the roadway pavement AB section. The area between the bottom of the roadway pavement AB section and 6 inches below, is the subgrade backfill zone which may consist of excavated soils provided they do not contain deleterious matter, organic material, rock, or cementations larger than 3 inches in maximum dimension. Pipe bedding and pipe zone material typically consists of clean sand and is generally defined as material supporting, surrounding, and extending 12 inches above the crown of the pipe. Backfill and bedding materials for metal culverts should conform to the requirements of Caltrans Standard Specifications Section 19-3 and Caltrans Standard Plan A62F or other City/County standards, as applicable.

6.5.3 Imported material should be free of organic material and construction debris and not contain rock larger than 3 inches in greatest dimension. Environmental characteristics and corrosion potential of imported soil materials should also be considered. Proposed import material should be sampled, tested, and approved by the geotechnical engineer of record prior to its transportation to the site. Approval of import material may take up to one week if laboratory testing is required.

6.5.4 Backfill should be placed in loose lifts not exceeding 8 to 10 inches thick, moisture-conditioned at or above optimum, and compacted to at least 90% relative compaction. Compaction should be performed by mechanical means only; jetting of trench backfill is not recommended.

6.5.5 Deep utility trenches are susceptible to settlement of the backfill. Particular care should be taken when compacting backfill around manholes or in confined areas that limit the use of heavy compaction equipment.

6.6 Pavement – Hot Mix Asphalt

6.6.1 We performed Resistance-Value (R-Value) testing on a representative bulk soil sample from proposed at-grade pavement areas. Our testing resulted in an R-Value of 41 (Appendix B), therefore; a design R-value of 40 is considered appropriate for the purpose of pavement design.

6.6.2 Where bedrock is present at or above planned subgrade, we take no exception to adjusting the AB section thickness to accommodate the variable depth to shallow bedrock, provided it is at least 4 inches thick. Hot Mix Asphalt (HMA) should not be paved directly on top of bedrock.

6.6.3 Table 6.6 provides alternative pavement sections based on the design methods of Caltrans' *Highway Design Manual* using a design subgrade soil R-value of 40. We recommend the alternative hot mix asphalt (HMA) pavement sections provided in Table 6.6 for design. The project civil engineer should determine the approximate Traffic Index (TI) based on anticipated traffic conditions.

TABLE 6.6
FLEXIBLE PAVEMENT SECTIONS

Traffic Index	HMA[1] (inches)	AB[2] (inches)
5.0	3	4
6.0	3.5	6
6.5	4	6

Notes:
1. HMA = Hot Mix Asphalt (Type A or B) conforming to Section 39 of Caltrans' latest *Standard Specifications*.
2. AB = Class 2 Aggregate Base conforming to Section 26 of Caltrans' latest *Standard Specifications*.

6.6.4 The recommended pavement section is based on the following assumptions:

1. Class 2 AB has a minimum R-Value of 78 and meets the requirements of Section 26 of the latest Caltrans Standard Specifications.

2. Class 2 AB and subgrade is compacted to 95% or higher relative compaction at or near optimum moisture content. Prior to placing AC, the AB should be proof-rolled with a loaded water truck to verify stability.

3. The subgrade soils possess a minimum R-value of 40.

4. Soil subgrade is moisture conditioned and compacted per the recommendations of this report.

5. Asphalt concrete should conform to Section 39 of the latest Caltrans Standard Specifications.

6.6.5 Where hard bedrock is at or above subgrade elevation, loose fragments and dry, loose surficial soil should be removed to the extent possible, and the subgrade should be moistened to at least the optimum moisture content prior to placing aggregate base (AB). Geocon should observe and approve the exposed bedrock prior to placing AB. In areas where hard bedrock is not exposed at pavement subgrade elevation, standard subgrade preparation would apply. Where possible, prior to placing the AB, the exposed subgrade soil should be scarified at least 6 inches, uniformly moisture-conditioned at least 2% above optimum moisture content and compacted to at least 95% relative compaction.

6.6.6 In all cases, final subgrade should be finished to a smooth, unyielding surface. We further recommend proof rolling the subgrade with a loaded water truck (or similar equipment with high contact pressure) to observe the stability of the subgrade prior to placing AB. Proof rolling should be performed under the observation of our representative.

7.0 FURTHER GEOTECHNICAL SERVICES

7.1 Plan and Specification Review

7.1.1 We should review the improvement plans and specifications prior to final design submittal to assess whether our recommendations have been properly implemented and evaluate if additional analysis and/or recommendations are required.

7.2 Testing and Observation Services

7.2.1 The recommendations provided in this report are based on the assumption that we will continue as Geotechnical Engineer of Record throughout the construction phase. It is important to maintain continuity of geotechnical interpretation and confirm that field conditions encountered are similar to those anticipated during design. If we are not retained for these services, we cannot assume any responsibility for other's interpretation of our recommendations or the future performance of the project.

8.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, the geotechnical consultant should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous materials or environmental contamination was not part of our scope of services.

This report is issued with the understanding that it is the responsibility of the owner or their representative to ensure that the information and recommendations contained herein are brought to the attention of the design team for the project and incorporated into the plans and specifications, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

The recommendations contained in this report should be verified during construction by representatives of the geotechnical consultant. Changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. Additionally, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated partially or wholly by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices used in the site area at this time. No warranty is provided, express or implied.

9.0 REFERENCES

1. American Concrete Institute, ACI 318-19, *Building Code Requirements for Structural Concrete and Commentary*, 2019.

2. American Society of Civil Engineers / Structural Engineering Institute, *ASCE/SEI 7-16, Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, 2017.

3. California Building Standards Commission, *2022 California Building Code*.

4. Caltrans, *Highway Design Manual, Chapter 600*, updated May 20, 2022.

5. Caltrans, *Corrosion Guidelines* (Version 3.2), May 2021

6. CGS, *Earthquake Zones of Required Investigation* website: https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed May 2024.

7. CGS, *Fault Activity Map of California*, https://maps.conservation.ca.gov/cgs/fam/, accessed December 2023.

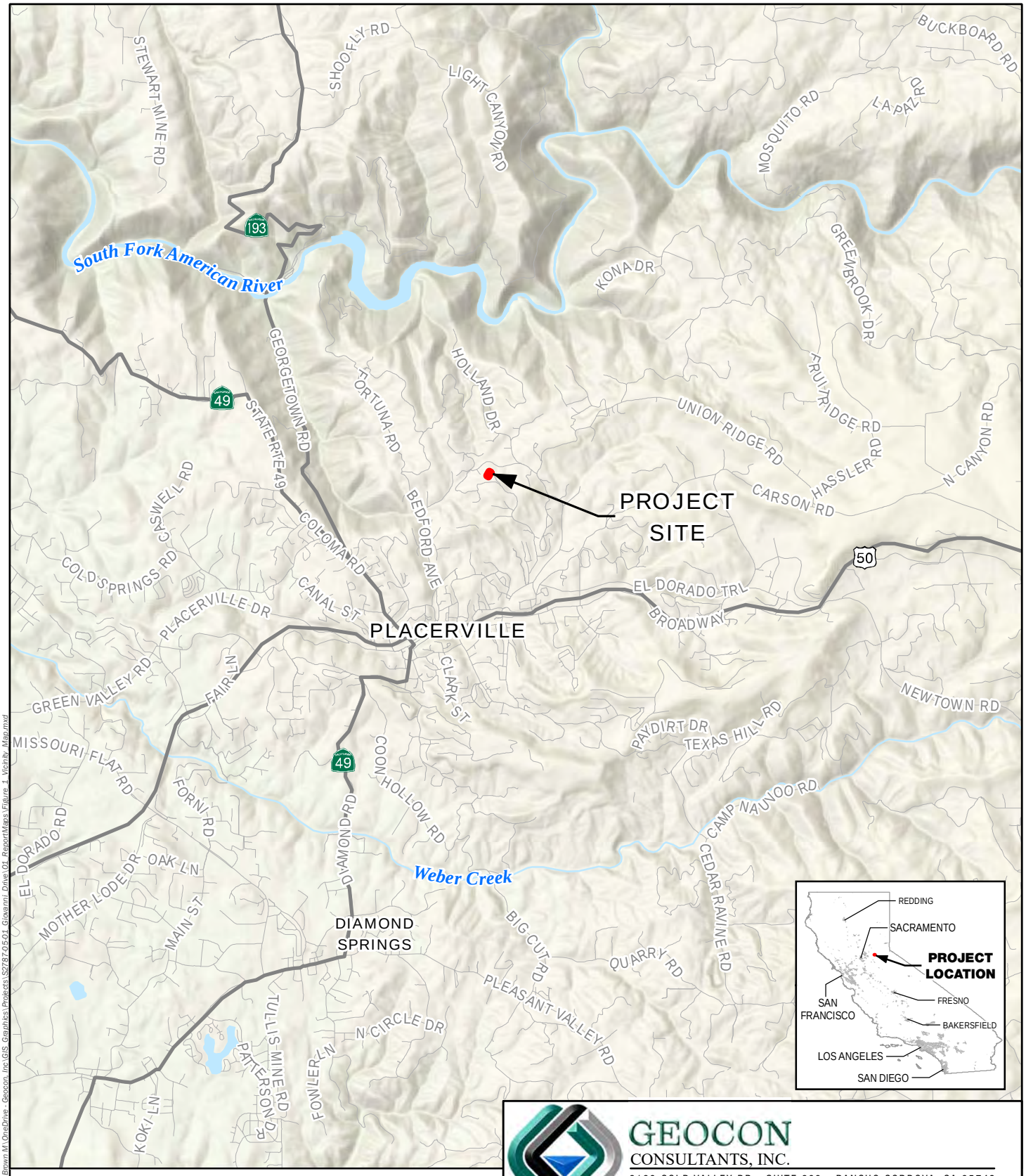
8. CGS, *Regional Geologic Map of the Sacramento 30' X 60' Quadrangle, California, RGM-001A,* Compiled by Wagner, et. al, scale 1:100,000, 1981.

9. Hart, Earl W., Bryant, William A. "Alquist-Priolo Earthquake Fault Zone Program." California Division of Mines and Geology, 1999.

10. Structural Engineers Association of California and Office of Statewide Health Planning and Development, *Seismic Design Maps*, https://seismicmaps.org/, accessed May 2024.

11. United States Geological Survey, *Unified Hazard Tool*, https://earthquake.usgs.gov/hazards/interactive/, accessed May 2024.

12. Unpublished reports, aerial photographs, and maps on file with Geocon.



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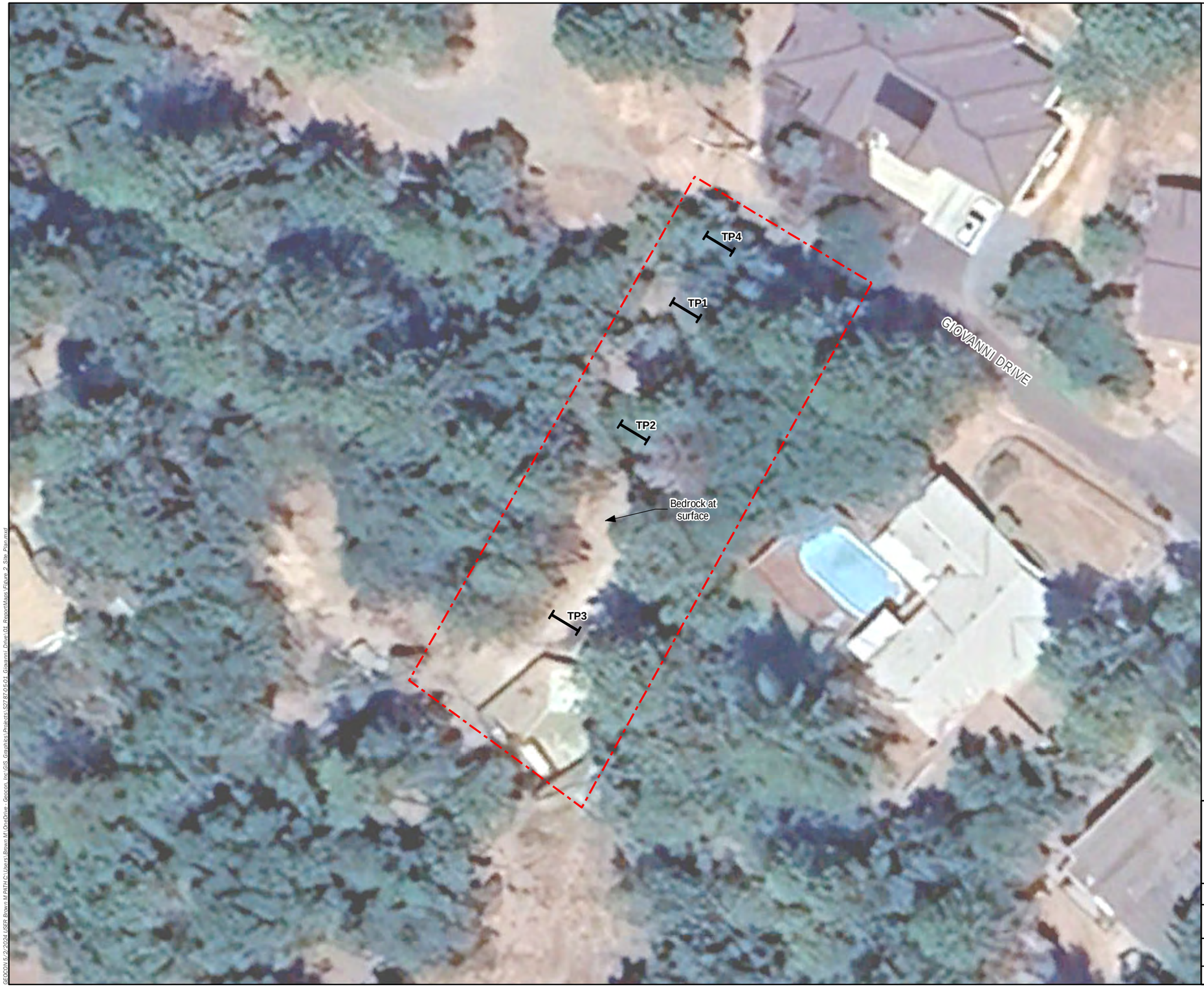
Giovanni Sewer Lift Station Access Road

Placerville,
California

VICINITY MAP

S2787-05-01	March 2026	Figure 1



Legend

TP4 Approximate Test Pit Location

Approximate Site Boundary

N

0 30

Scale in Feet

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Placerville,
California

SITE PLAN

S2787-05-01	March 2026	Figure 2

Legend

TP4 Approximate Test Pit Location

Approximate Site Boundary

Proposed Sewer Improvement Plan by City of Placerville (Jan 2014)

N

0 30

Scale in Feet

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PROPOSED IMPROVEMENT PLAN

S2787-05-01	March 2026	Figure 3

Geologic Map of the Sacramento Quadrangle, California; D.L. Wagner, C.W. Jennings, T.L. Bedrossian, and E.J. Bortugno; 1981

Unit Explantion

Tm	Mehrten Formation
Tg	"Auriferous" Gravels
Jm	Mariposa Formation
Jlr	Logtown Ridge Formation
Pzcc	Calaveras Complex (metasedimentary rocks)
Mzg	Mesozoic granitic rocks

N

0 2,000

Scale in Feet

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GEOLOGIC MAP

S2787-05-01	March 2026	Figure 4

Photo #1: North end of site, looking east.

Photo #2: Metasedimentary rock exposed at surface in access road.

PHOTO 1 & 2

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Photo #3: Test Pit TP3, looking north

Photo #4: Test Pit TP4

Photo #5: Test Pit TP2

Photo #6: Test Pit TP1

PHOTOS 3 THROUGH 6

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APPENDIX A

APPENDIX A

FIELD EXPLORATION

Our geotechnical field exploration was performed on April 12, 2024, and consisted of excavating four exploratory test pits (TP1 through TP4) to depths ranging between 1½ and 9 feet. Approximate test pits locations are shown on the Site Plan (Figure 2) and the Development Plan (Figure 3).

Exploratory borings were performed using a Takeuchi TB280FR Mini Excavator equipped with an 18-inch width bucket. Sampling was accomplished by taking bulk samples from soil cuttings. Upon completion, the borings were backfilled with neat cement grout and capped with black-dyed concrete.

Subsurface conditions encountered in the explorations were visually examined, classified, and logged in general accordance with the American Society for Testing and Materials (ASTM) Practice for Description and Identification of Soils (Visual-Manual Procedure D2488). This system uses the Unified Soil Classification System (USCS) for soil designations. The logs depict the soil and geologic conditions encountered and the depths at which samples were obtained. The logs also include our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, excavation characteristics and other factors. The transition between the materials may be abrupt or gradual. Where applicable, the field logs were revised based on subsequent laboratory testing. A Key to Logs is presented as Figure A1, and logs of test pits TP1 through TP4 are presented as Figures A2 through A5.

UNIFIED SOIL CLASSIFICATION

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS (MORE THAN HALF IS COARSER THAN NO. 200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN NO.4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO.4 SIEVE SIZE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS (MORE THAN HALF IS FINER THAN NO. 200 SIEVE)	SILTS AND CLAYS (LIQUID LIMIT 50% OR LESS)		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50%)		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
	HIGHLY ORGANIC SOILS		PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

BORING/TRENCH LOG LEGEND

- No Recovery
- Shelby Tube Sample
- Bulk Sample
- SPT Sample
- Modified California Sample
- Groundwater Level (At Completion)
- Groundwater Level (Seepage)

PENETRATION RESISTANCE

SAND AND GRAVEL			SILT AND CLAY			
RELATIVE DENSITY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	CONSISTENCY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	COMPRESSIVE STRENGTH (tsf)
VERY LOOSE	0 - 4	0 - 6	VERY SOFT	0 - 2	0 - 3	0 - 0.25
LOOSE	5 - 10	7 - 16	SOFT	3 - 4	4 - 6	0.25 - 0.50
MEDIUM DENSE	11 - 30	17 - 48	MEDIUM STIFF	5 - 8	7 - 13	0.50 - 1.0
DENSE	31 - 50	49 - 79	STIFF	9 - 15	14 - 24	1.0 - 2.0
VERY DENSE	OVER 50	OVER 79	VERY STIFF	16 - 30	25 - 48	2.0 - 4.0
			HARD	OVER 30	OVER 48	OVER 4.0

*NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE LAST 12 INCHES OF AN 18-INCH DRIVE

MOISTURE DESCRIPTIONS

FIELD TEST	APPROX. DEGREE OF SATURATION, S (%)	DESCRIPTION
NO INDICATION OF MOISTURE; DRY TO THE TOUCH	S<25	DRY
SLIGHT INDICATION OF MOISTURE	25≤S<50	DAMP
INDICATION OF MOISTURE; NO VISIBLE WATER	50≤S<75	MOIST
MINOR VISIBLE FREE WATER	75≤S<100	WET
VISIBLE FREE WATER	100	SATURATED

QUANTITY DESCRIPTIONS

APPROX. ESTIMATED PERCENT	DESCRIPTION
<5%	TRACE
5 - 10%	FEW
11 - 25%	LITTLE
26 - 50%	SOME
>50%	MOSTLY

GRAVEL/COBBLE/BOULDER DESCRIPTIONS

CRITERIA	DESCRIPTION
PASS THROUGH A 3-INCH SIEVE AND BE RETAINED ON A NO. 4 SIEVE (#4 TO 3")	GRAVEL
PASS A 12-INCH SQUARE OPENING AND BE RETAINED ON A 3-INCH SIEVE (3"-12")	COBBLE
WILL NOT PASS A 12-INCH SQUARE OPENING (>12")	BOULDER

LABORATORY TEST KEY

CP – COMPACTION CURVE (ASTM D1557)
CR – CORROSION ANALYSIS (CTM 422, 643, 417)
DS – DIRECT SHEAR (ASTM D3080)
EI – EXPANSION INDEX (ASTM D4829)
GSA – GRAIN SIZE ANALYSIS (ASTM D422)
MC – MOISTURE CONTENT (ASTM D2216)
PI – PLASTICITY INDEX (ASTM D4318)
R – R-VALUE (CTM 301)
SE – SAND EQUIVALENT (CTM 217)
TXCU – CONSOLIDATED UNDRAINED TRIAXIAL (ASTM D4767)
TXUU – UNCONSOLIDATED UNDRAINED TRIAXIAL (ASTM D2850)
UC – UNCONFINED COMPRESSIVE STRENGTH (ASTM D2166)

BEDDING SPACING DESCRIPTIONS

THICKNESS/SPACING	DESCRIPTOR
GREATER THAN 10 FEET	MASSIVE
3 TO 10 FEET	VERY THICKLY BEDDED
1 TO 3 FEET	THICKLY BEDDED
3 /8-INCH TO 1 FOOT	MODERATELY BEDDED
1 /4-INCH TO 3 /8-INCH	THINLY BEDDED
/4-INCH TO 1 /4-INCH	VERY THINLY BEDDED
LESS THAN /8-INCH	LAMINATED

STRUCTURE DESCRIPTIONS

CRITERIA	DESCRIPTION
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS AT LEAST /4-INCH THICK	STRATIFIED
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS LESS THAN /4-INCH THICK	LAMINATED
BREAKS ALONG DEFINITE PLANES OF FRACTURE WITH LITTLE RESISTANCE TO FRACTURING	FISSURED
FRACTURE PLANES APPEAR POLISHED OR GLOSSY, SOMETIMES STRIATED	SLICKENSIDED
COHESIVE SOIL THAT CAN BE BROKEN DOWN INTO SMALLER ANGULAR LUMPS WHICH RESIST FURTHER BREAKDOWN	BLOCKY
INCLUSION OF SMALL POCKETS OF DIFFERENT SOIL, SUCH AS SMALL LENSES OF SAND SCATTERED THROUGH A MASS OF CLAY	LENSED
SAME COLOR AND MATERIAL THROUGHOUT	HOMOGENOUS

CEMENTATION/INDURATION DESCRIPTIONS

FIELD TEST	DESCRIPTION
CRUMBLES OR BREAKS WITH HANDLING OR LITTLE FINGER PRESSURE	WEAKLY CEMENTED/INDURATED
CRUMBLES OR BREAKS WITH CONSIDERABLE FINGER PRESSURE	MODERATELY CEMENTED/INDURATED
WILL NOT CRUMBLE OR BREAK WITH FINGER PRESSURE	STRONGLY CEMENTED/INDURATED

IGNEOUS/METAMORPHIC ROCK STRENGTH DESCRIPTIONS

FIELD TEST	DESCRIPTION
MATERIAL CRUMBLES WITH BARE HAND	WEAK
MATERIAL CRUMBLES UNDER BLOWS FROM GEOLOGY HAMMER	MODERATELY WEAK
/8-INCH INDENTATIONS WITH SHARP END FROM GEOLOGY HAMMER	MODERATELY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **ONE** BLOW FROM GEOLOGY HAMMER	STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **COUPLE** BLOWS FROM GEOLOGY HAMMER	VERY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **MANY** BLOWS FROM GEOLOGY HAMMER	EXTREMELY STRONG

IGNEOUS/METAMORPHIC ROCK WEATHERING DESCRIPTIONS

DEGREE OF DECOMPOSITION	FIELD RECOGNITION	ENGINEERING PROPERTIES
SOIL	DISCOLORED, CHANGED TO SOIL, FABRIC DESTROYED	EASY TO DIG
COMPLETELY WEATHERED	DISCOLORED, CHANGED TO SOIL, FABRIC MAINLY PRESERVED	EXCAVATED BY HAND OR RIPPING (Saprolite)
HIGHLY WEATHERED	DISCOLORED, HIGHLY FRACTURED, FABRIC ALTERED AROUND FRACTURES	EXCAVATED BY HAND OR RIPPING, WITH SLIGHT DIFFICULTY
MODERATELY WEATHERED	DISCOLORED, FRACTURES, INTACT ROCK-NOTICEABLY WEAKER THAN FRESH ROCK	EXCAVATED WITH DIFFICULTY WITHOUT EXPLOSIVES
SLIGHTLY WEATHERED	MAY BE DISCOLORED, SOME FRACTURES, INTACT ROCK-NOT NOTICEABLY WEAKER THAN FRESH ROCK	REQUIRES EXPLOSIVES FOR EXCAVATION, WITH PERMEABLE JOINTS AND FRACTURES
FRESH	NO DISCOLORATION, OR LOSS OF STRENGTH	REQUIRES EXPLOSIVES

IGNEOUS/METAMORPHIC ROCK JOINT/FRACTURE DESCRIPTIONS

FIELD TEST	DESCRIPTION
NO OBSERVED FRACTURES	UNFRACTURED/UNJOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1 TO 3 FOOT INTERVALS	SLIGHTLY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 4-INCH TO 1 FOOT INTERVALS	MODERATELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1-INCH TO 4-INCH INTERVALS WITH SCATTERED FRAGMENTED INTERVALS	INTENSELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT LESS THAN 1-INCH INTERVALS; MOSTLY RECOVERED AS CHIPS AND FRAGMENTS	VERY INTENSELY FRACTURED/JOINTED

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KEY TO LOGS | Figure A1

PROJECT NO. **S2787-05-01** PROJECT NAME **Giovanni Sewer Lift Station Access Road**

TEST PIT TP1

ELEV. (MSL.) _____ DATE COMPLETED **4/12/2024**

ENG./GEO. **L. Herbert** DRILLER **Geocon**

EQUIPMENT **Takeuchi TB280FR Mini Excavator** HAMMER TYPE **N/A**

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0				GC	**FILL** Moist, brown to yellowish brown, Sandy Lean CLAY with Gravel and Silt, with roots, gravel appears to be native weathered bedrock				
1									
2									
3									
4	TP1-BULK			CL	**RESIDUAL SOIL** Moist, reddish brown, Sandy Lean CLAY				
5									
6									
7									
8									
9					TEST PIT TERMINATED AT 9 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH SOIL CUTTINGS				

Figure A2, Log of Test Pit, page 1 of 1

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SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S2787-05-01** PROJECT NAME **Giovanni Sewer Lift Station Access Road**

TEST PIT TP2

ELEV. (MSL.) _____ DATE COMPLETED **4/12/2024**

ENG./GEO. **L. Herbert** DRILLER **Geocon**

EQUIPMENT **Takeuchi TB280FR Mini Excavator** HAMMER TYPE **N/A**

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP2-BULK			SM	**FILL** Dry, light brown to yellowish brown, Silty fine to coarse SAND with Gravel, gravel appears to be native weathered bedrock				
1				RX	**CALAVERAS COMPLEX** Moist, grayish to reddish brown, fine grained metasedimentary SLATE, highly weathered; excavates as Clayey SAND; with calcification				
					TEST PIT TERMINATED UPON PRACTICAL REFUSAL AT 1.5 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH SOIL CUTTINGS				

Figure A3, Log of Test Pit, page 1 of 1

GEOCON

SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S2787-05-01** PROJECT NAME **Giovanni Sewer Lift Station Access Road**

TEST PIT TP3

ELEV. (MSL.) _____ DATE COMPLETED **4/12/2024**

ENG./GEO. **L. Herbert** DRILLER **Geocon**

EQUIPMENT **Takeuchi TB280FR Mini Excavator** HAMMER TYPE **N/A**

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP3-BULK			SM	**RESIDUAL SOIL** Dry, light brown to yellowish brown, Silty fine to coarse SAND with Gravel, with twigs				
				RX	**CALAVERAS COMPLEX** Moist, grayish to reddish brown, fine grained metasedimentary SLATE, totally to highly weathered; excavates as Sandy poorly graded GRAVEL				
1									
2									
3					TEST PIT TERMINATED UPON PRACTICAL REFUSAL AT 3 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH SOIL CUTTINGS				

Figure A4, Log of Test Pit, page 1 of 1

IN PROGRESS S2787-05-01 GIOVANNI DRIVE.GPJ 04/12/24

GEOCON

SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S2787-05-01** PROJECT NAME **Giovanni Sewer Lift Station Access Road**

TEST PIT TP4

ELEV. (MSL.) _____ DATE COMPLETED **4/12/2024**

ENG./GEO. **L. Herbert** DRILLER **Geocon**

EQUIPMENT **Takeuchi TB280FR Mini Excavator** HAMMER TYPE **N/A**

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP4-BULK			GP	**FILL** Dry, light to dark brown, Sandy GRAVEL with Clay, gravel rounded and up to 1 inch in diameter				
1					**RESIDUAL SOIL** Moist, reddish brown, Clayey GRAVEL				
2									
3					increasing Gravel size and content				
4					**CALAVERAS COMPLEX** Moist, grayish to reddish brown, fine grained metasedimentary SLATE, highly weathered; excavates as Clayey SAND				
5					TEST PIT TERMINATED UPON PRACTICAL REFUSAL AT 5 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH SOIL CUTTINGS				

Figure A5, Log of Test Pit, page 1 of 1

IN PROGRESS S2787-05-01 GIOVANNI DRIVE.GPJ 04/12/24

GEOCON

SAMPLE SYMBOLS
- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

APPENDIX B

APPENDIX B

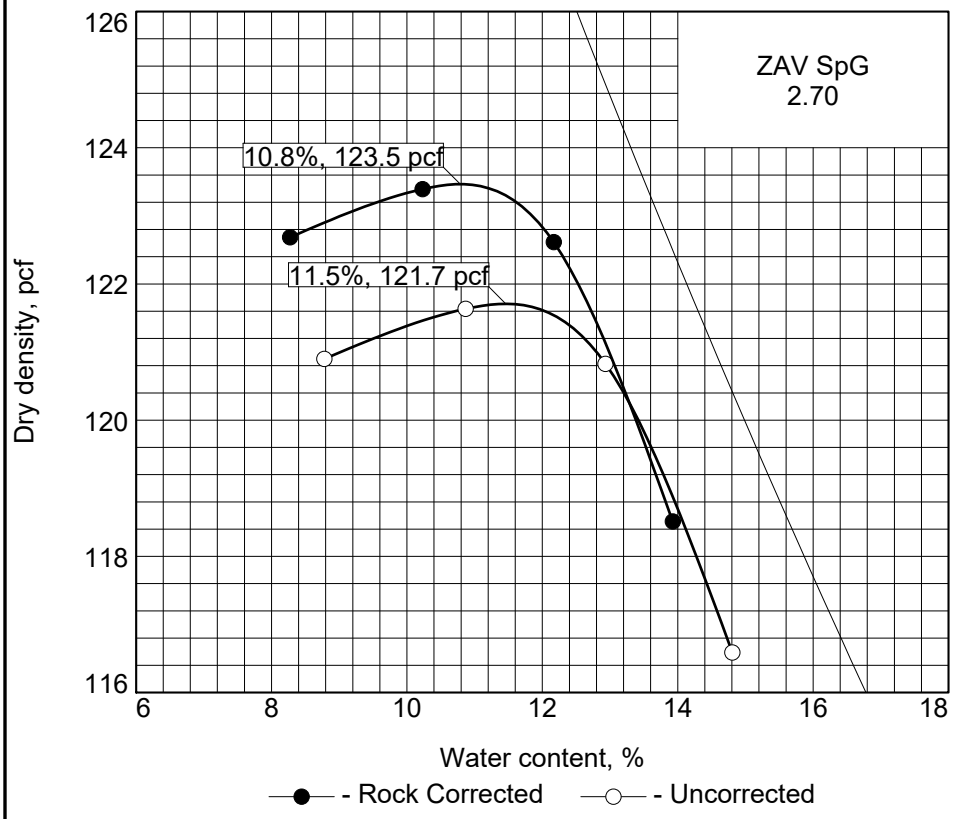
LABORATORY TESTING PROGRAM

Laboratory tests were performed in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. Selected soil samples were tested for their in-place moisture content, plasticity characteristics, grain size distribution, and corrosion parameters. Laboratory test results are presented herein.

TABLE B1
R-VALUE TEST RESULT
ASTM D2844

Sample Number	Sample Depth (feet)	Average Dry Density (pcf)	Average Moisture Content (%)	R-Value
TP1-Bulk	0-5	111.4	16.4	41

COMPACTION TEST REPORT



Curve No.
TP3-Bulk

Test Specification:
ASTM 1557 Method A 2023 Mold PM9
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Preparation Method
Hammer Wt. 10
Hammer Drop 18
Number of Layers 5
Blows per Layer 25
Mold Size 0.03304 cu. ft.

Test Performed on Material Passing #4 **Sieve**

NM **LL** **PI**
Sp.G. (ASTM D 854) 2.7
%>#4 6.2 **%<No.200**
USCS **AASHTO**
Date Sampled
Date Tested 4/30/24
Tested By AD

TESTING DATA

	1	2	3	4	5	6
WM + WS	4013.0	4063.0	4087.0	4048.0		
WM	2042.0	2042.0	2042.0	2042.0		
WW + T #1	2124.0	2171.0	2130.0	2463.0		
WD + T #1	1964.9	1972.9	1895.8	2204.4		
TARE #1	153.0	150.0	85.0	458.0		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	8.3	10.2	12.2	13.9		
DRY DENSITY	122.7	123.4	122.6	118.5		

ROCK CORRECTED TEST RESULTS	UNCORRECTED
Maximum dry density = 123.5 pcf	121.7 pcf
Optimum moisture = 10.8 %	11.5 %

Material Description
Grayish brown sandy lean clay

Remarks:

Project No. S2787-05-01 **Client:**
Project: Giovanni Sewer Lift Station Access Road

○ **Sample Number:** Curve 1

Checked by: MR
Title: Lab Manager

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Figure