

City of San Diego

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Phone No. (619) 533-3426
J. Gallardo / D. Hernandez / K. Stewart

BIDDING DOCUMENTS



FOR

COLLEGE AREAS SWR & AC WTR MAIN REPL

BID NO.: K-22-2059-DBB-3
SAP NO. (WBS/IO/CC): B-16022, B-16025
CLIENT DEPARTMENT: 2000
COUNCIL DISTRICT: 9
PROJECT TYPE: JA, KB

THIS CONTRACT WILL BE SUBJECT TO THE FOLLOWING:

- PHASED-FUNDING
- THE CITY'S SUBCONTRACTING PARTICIPATION REQUIREMENTS FOR SLBE PROGRAM
- PREVAILING WAGE RATES: STATE FEDERAL
- APPRENTICESHIP

BID DUE DATE:

2:00 PM

APRIL 26, 2022

CITY OF SAN DIEGO'S ELECTRONIC BIDDING SITE, PLANETBIDS

<http://www.sandiego.gov/cip/bidopps/index.shtml>

ENGINEER OF WORK

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineer:

M. Salcedo
1) Registered Engineer

3/1/22
Date

Seal:



Sheila Bose
2) For City Engineer

3/2/22
Date

Seal:



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REQUIRED DOCUMENTS SCHEDULE DURING BIDDING AND AWARDING

The Bidder's attention is directed to the City's Municipal Code §22.0807(e), (3)-(5) for important information regarding grounds for debarment for failure to submit required documentation.

The specified Equal Opportunity Contracting Program (EOCP) forms are available for download from the City's web site at:

<http://www.sandiego.gov/eoc/forms/index.shtml>

ITEM	DOCUMENT TO BE SUBMITTED	WHEN DUE	FROM
1.	Bid Bond (PDF via PlanetBids)	At Time of Bid	ALL BIDDERS
2.	Contractors Certification of Pending Actions	At Time of Bid	ALL BIDDERS
3.	List of Subcontractors for Alternate Items	At Time of Bid	ALL BIDDERS
4.	Mandatory Disclosure of Business Interests	At Time of Bid	ALL BIDDERS
5.	Debarment and Suspension Certification for Prime Contractors	At Time of Bid	ALL BIDDERS
6.	Debarment and Suspension Certification for Subcontractors, Suppliers & Mfgs	At Time of Bid	ALL BIDDERS
7.	Bid Bond (Original)	By 5PM 3 working days after bid opening	ALL BIDDERS
8.	SLBE Good Faith Effort Documentation	By 5 PM 3 working days after bid opening	ALL BIDDERS
9.	Form AA60 – List of Work Made Available	By 5 PM 3 working days after bid opening with Good Faith Effort (GFE) documentation	ALL BIDDERS
10.	Phased Funding Schedule Agreement	Within 10 working days of receipt by the bidder of the Notice of Intent to Award	AWARDED BIDDER

ITEM	DOCUMENT TO BE SUBMITTED	WHEN DUE	FROM
11.	If the Contractor is a Joint Venture: <ul style="list-style-type: none"> • Joint Venture Agreement • Joint Venture License 	Within 10 working days of receipt by bidder of contract forms	AWARDED BIDDER
12.	Payment & Performance Bond: Certificates of Insurance & Endorsements	Within 10 working days of receipt by bidder of contract forms and NOI	AWARDED BIDDER
13.	Signed Contract Agreement Page	Within 3 working days of receipt by bidder of Contract Agreement	AWARDED BIDDER
14.	Listing of "Other Than First Tier" Subcontractors	Within 10 working days of receipt by bidder of contract forms	AWARDED BIDDER

NOTICE INVITING BIDS

1. **SUMMARY OF WORK:** This is the City of San Diego's (City) solicitation process to acquire Construction services for **College Areas Swr & AC Wtr Main Repl.** For additional information refer to Attachment A.
2. **FULL AND OPEN COMPETITION:** This solicitation is subject to full and open competition and may be bid by Contractors on the City's approved Prequalified Contractors List. For information regarding the Contractors Prequalified list visit the City's web site: <http://www.sandiego.gov>.
3. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$13,440,000.**
4. **BID DUE DATE AND TIME ARE: APRIL 26, 2022 AT 2:00 PM.**
5. **PREVAILING WAGE RATES APPLY TO THIS CONTRACT:** Refer to Attachment D.
6. **LICENSE REQUIREMENT:** To be eligible for award of this contract, Prime contractor must possess the following licensing classifications: **A or C34 & C42**
 - 6.1. **ADDITIONAL LICENSE REQUIREMENTS:** See **Appendix G** - Long Term Maintenance and Monitoring Agreement for **C-27** requirement.
7. **SUBCONTRACTING PARTICIPATION PERCENTAGES:** Subcontracting participation percentages apply to this contract.
 - 7.1. The City has incorporated **mandatory** SLBE-ELBE subcontractor participation percentages to enhance competition and maximize subcontracting opportunities. For the purpose of achieving the mandatory subcontractor participation percentages, a recommended breakdown of the SLBE and ELBE subcontractor participation percentages based upon certified SLBE and ELBE firms has also been provided to achieve the mandatory subcontractor participation percentages:

1. SLBE participation	8.3%
2. ELBE participation	14.0%
3. Total mandatory participation	22.3%
 - 7.2. The Bid may be declared non-responsive if the Bidder fails to meet the following requirements:
 - 7.2.1. Include SLBE-ELBE certified subcontractors at the overall mandatory participation percentage identified in this document; OR
 - 7.2.2. Submit Good Faith Effort (GFE) documentation, saved in searchable Portable Document Format (PDF), demonstrating the Bidder made a good faith effort to conduct outreach to and include SLBE-ELBE Subcontractors as required in

this solicitation by 5 PM 3 Working Days after the Bid opening if the overall mandatory participation percentage is not met.

All submittals in searchable PDF shall be submitted electronically within the prescribed time identified in the contract documents via PlanetBids by invitation to the point of contact named in the bid provided by the Contract Specialist to all bidders.

8. AWARD PROCESS:

- 8.1. The Award of this contract is contingent upon the Contractor's compliance with all conditions of Award as stated within these documents and within the Notice of Intent to Award.
- 8.2. Upon acceptance of bids and determination of the apparent low bidder, the City will prepare the contract documents for execution within approximately 21 days of the date of the bid opening. The City will then award the contract upon receipt of properly signed Contract, bonds, and insurance documents.
- 8.3. This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form by the City Attorney's Office.
- 8.4. The low Bid will be determined by the Base Bid plus all the Alternates.
- 8.5. Once the low bid has been determined, the City may, at its sole discretion, award the contract for the Base bid alone or for the Base bid plus one or more alternates.

9. SUBMISSION OF QUESTIONS:

- 9.1. The Director (or Designee) of the Purchasing & Contracting Department is the officer responsible for opening, examining, and evaluating the competitive Bids submitted to the City for the acquisition, construction and completion of any public improvement except when otherwise set forth in these documents. Any questions related to this solicitation shall be submitted to:

RRiego@sandiego.gov

- 9.2. Questions received less than 14 days prior to the date for opening of Bids may not be considered.
- 9.3. Questions or clarifications deemed by the City to be material shall be answered via issuance of an addendum and posted to the City's online bidding service.
- 9.4. Only questions answered by formal written addenda shall be binding. Oral and other interpretations or clarifications shall be without legal effect. It is the Bidder's responsibility to be informed of any addenda that have been issued and to include all such information in its Bid.

- 10. SUPPLEMENTAL AGREEMENTS:** Supplemental agreements attached to this contract for items of Work such as revegetation maintenance/monitoring or emulsion aggregate slurry shall be signed by the BIDDER at time of award of the primary BID. The signed agreements shall be accompanied by the proper bonds and insurance as specified in 1-7.2., "CONTRACT BONDS," 5-4, "INSURANCE," and 5-4.11 WORKERS' COMPENSATION INSURANCE. Bonds shall be in the amount of the total Contract Price for all Work including the supplemental agreements.
- 10.1. Partial Release of Performance Bond and Labor and Materialmen's Bond:** For information regarding partial release of bonds for this Contract, see Supplementary Special Provisions, **Appendix G**.
- 11. PHASED FUNDING:** For Phased Funding Conditions, see Attachment B.
- 12. ADDITIVE/DEDUCTIVE ALTERNATES:**
- 12.1.** The additive/deductive alternates have been established to allow the City to compare the cost of specific portions of the Work with the Project's budget and enable the City to make a decision whether to incorporate these portions prior to award. The award will be established as described in the Bid. The City reserves the right to award the Contract for the Base Bid only or for the Base Bid plus one or more Alternates.
- 12.2.** For water pipeline projects, the Plans typically show all cut and plug and connection work to be performed by City Forces. However, Bidders shall refer to Bidding Documents to see if all or part of this work will be performed by the Contractor.

INSTRUCTIONS TO BIDDERS

1. PREQUALIFICATION OF CONTRACTORS:

- 1.1. Contractors submitting a Bid must be pre-qualified for the total amount proposed, including all alternate items, prior to the date of submittal. Bids from contractors who have not been pre-qualified as applicable and Bids that exceed the maximum dollar amount at which contractors are pre-qualified may be deemed **non-responsive** and ineligible for award.
- 1.2. The completed application must be submitted online no later than 2 weeks prior to the bid opening.
- 1.3. **Joint Venture Bidders Cumulative Maximum Bidding Capacity:** For projects with an engineer's estimate of \$30,000,000 or greater, Joint Ventures submitting bids may be deemed responsive and eligible for award if the cumulative maximum bidding capacity of the individual Joint Venture entities is equal to or greater than the total amount proposed.
 - 1.3.1. Each of the entities of the Joint Venture must have been previously prequalified at a minimum of \$15,000,000.
 - 1.3.2. Bids submitted with a total amount proposed of less than \$30,000,000 are not eligible for Cumulative Maximum Bidding Capacity prequalification. To be eligible for award in this scenario, the Joint Venture itself or at least one of the Joint Venture entities must have been prequalified for the total amount proposed.
 - 1.3.3. Bids submitted by Joint Ventures with a total amount proposed of \$30,000,000 or greater on a project with an engineer's estimate of less than \$30,000,000 are not eligible for Cumulative Maximum Bidding Capacity prequalification.
 - 1.3.4. The Joint Venture designated as the Apparent Low Bidder shall provide evidence of its corporate existence and furnish good and approved bonds in the name of the Joint Venture within 14 Calendar Days of receipt by the Bidder of a form of contract for execution.
- 1.4. Complete information and links to the on-line prequalification application are available at:

<http://www.sandiego.gov/cip/bidopps/prequalification>
- 1.5. Due to the City's responsibility to protect the confidentiality of the contractors' information, City staff will not be able to provide information regarding contractors' prequalification status over the telephone. Contractors may access real-time information about their prequalification status via their vendor profile on [PlanetBids™](#).

2. **ELECTRONIC FORMAT RECEIPT AND OPENING OF BIDS:** Bids will be received in electronic format (eBids) EXCLUSIVELY at the City of San Diego's electronic bidding (eBidding) site, at: <http://www.sandiego.gov/cip/bidopps/index.shtml> and are due by the date, and time shown on the cover of this solicitation.
- 2.1. **BIDDERS MUST BE PRE-REGISTERED** with the City's bidding system and possess a system-assigned Digital ID in order to submit an electronic bid.
- 2.2. The City's bidding system will automatically track information submitted to the site including IP addresses, browsers being used and the URLs from which information was submitted. In addition, the City's bidding system will keep a history of every login instance including the time of login, and other information about the user's computer configuration such as the operating system, browser type, version, and more. Because of these security features, Contractors who disable their browsers' cookies will not be able to log in and use the City's bidding system.
- 2.3. The City's electronic bidding system is responsible for bid tabulations. Upon the bidder's or proposer's entry of their bid, the system will ensure that all required fields are entered. **The system will not accept a bid for which any required information is missing.** This includes all necessary pricing, subcontractor listing(s) and any other essential documentation and supporting materials and forms requested or contained in these solicitation documents.
- 2.4. **BIDS REMAIN SEALED UNTIL BID DEADLINE.** eBids are transmitted into the City's bidding system via hypertext transfer protocol secure (https) mechanism using SSL 128-256 bit security certificates issued from Verisign/Thawte which encrypts data being transferred from client to server. Bids submitted prior to the "Bid Due Date and Time" are not available for review by anyone other than the submitter who has until the "Bid Due Date and Time" to change, rescind or retrieve its proposal should it desire to do so.
- 2.5. **BIDS MUST BE SUBMITTED BY BID DUE DATE AND TIME.** Once the bid deadline is reached, no further submissions are accepted into the system. Once the Bid Due Date and Time has lapsed, bidders, proposers, the general public, and City staff are able to immediately see the results on line. City staff may then begin reviewing the submissions for responsiveness, EOCB compliance and other issues. The City may require any Bidder to furnish statement of experience, financial responsibility, technical ability, equipment, and references.
- 2.6. **RECAPITULATION OF THE WORK.** Bids shall not contain any recapitulation of the Work. Conditional Bids may be rejected as being non-responsive. Alternative proposals will not be considered unless called for.

2.7. BIDS MAY BE WITHDRAWN by the Bidder only up to the bid due date and time.

2.7.1. Important Note: Submission of the electronic bid into the system may not be instantaneous. Due to the speed and capabilities of the user's internet service provider (ISP), bandwidth, computer hardware and other variables, it may take time for the bidder's submission to upload and be received by the City's eBidding system. It is the bidder's sole responsibility to ensure their bids are received on time by the City's eBidding system. The City of San Diego is not responsible for bids that do not arrive by the required date and time.

2.8. ACCESSIBILITY AND AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE: To request a copy of this solicitation in an alternative format, contact the Purchasing & Contracting Department, Public Works Division Contract Specialist listed on the cover of this solicitation at least five (5) working days prior to the Bid/Proposal due date to ensure availability.

3. ELECTRONIC BID SUBMISSIONS CARRY FULL FORCE AND EFFECT:

3.1. The bidder, by submitting its electronic bid, acknowledges that doing so carries the same force and full legal effect as a paper submission with a longhand (wet) signature.

3.2. By submitting an electronic bid, the bidder certifies that the bidder has thoroughly examined and understands the entire Contract Documents (which consist of the plans and specifications, drawings, forms, affidavits and the solicitation documents), and that by submitting the eBid as its bid proposal, the bidder acknowledges, agrees to and is bound by the entire Contract Documents, including any addenda issued thereto, and incorporated by reference in the Contract Documents.

3.3. The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certification, forms and affidavits submitted as part of this bid are true and correct.

3.4. The Bidder agrees to the construction of the project as described in Attachment "A-Scope of Work" for the City of San Diego, in accordance with the requirements set forth herein for the electronically submitted prices. The Bidder guarantees the Contract Price for a period of 120 days from the date of Bid opening. The duration of the Contract Price guarantee shall be extended by the number of days required for the City to obtain all items necessary to fulfill all conditions precedent.

4. BIDS ARE PUBLIC RECORDS: Upon receipt by the City, Bids shall become public records subject to public disclosure. It is the responsibility of the respondent to clearly identify any confidential, proprietary, trade secret or otherwise legally privileged information contained within the Bid. General references to sections of the California Public Records Act (PRA) will not suffice. If the Contractor does not provide applicable case law that clearly establishes that the requested information is exempt from the disclosure requirements of the PRA, the City

shall be free to release the information when required in accordance with the PRA, pursuant to any other applicable law, or by order of any court or government agency, and the Contractor will hold the City harmless for release of this information.

5. CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM:

5.1. **Prior** to the Award of the Contract or Task Order, you and your Subcontractors and Suppliers must register with the City’s web-based vendor registration and bid management system. For additional information go to:

<http://www.sandiego.gov/purchasing/bids-contracts/vendorreg>

5.2. The City may not award the contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified in the Notice of Intent to Award letter, the City reserves the right to rescind the Notice of Award / Intent to Award and to make the award to the next responsive and responsible bidder / proposer.

6. JOINT VENTURE CONTRACTORS: Provide a copy of the Joint Venture agreement and the Joint Venture license to the City within 14 Calendar Days after receiving the Contract forms.

7. INSURANCE REQUIREMENTS:

7.1. All certificates of insurance and endorsements required by the contract are to be provided upon issuance of the City’s Notice of Intent to Award letter.

7.2. Refer to sections 5-4, “INSURANCE” of the Supplementary Special Provisions (SSP) for the insurance requirements which must be met.

8. REFERENCE STANDARDS: Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards:

Title	Edition	Document Number
Standard Specifications for Public Works Construction (“The GREENBOOK”) http://www.greenbookspecs.org/	2021	ECPI010122-01
City of San Diego Standard Specifications for Public Works Construction (“The WHITEBOOK”)* https://www.sandiego.gov/ecp/edocref/greenbook	2021	ECPI010122-02
City of San Diego Standard Drawings* https://www.sandiego.gov/ecp/edocref/standarddraw	2021	ECPI010122-03
Citywide Computer Aided Design and Drafting (CADD) Standards https://www.sandiego.gov/ecp/edocref/drawings	2018	PWPI010119-04
California Department of Transportation (CALTRANS) Standard Specifications https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications	2018	PWPI030119-05

Title	Edition	Document Number
CALTRANS Standard Plans https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications	2018	PWPI030119-06
California Manual on Uniform Traffic Control Devices Revision 6 (CA MUTCD Rev 6) https://dot.ca.gov/programs/safety-programs/camutcd/camutcd-files	2014	PWPI060121-10
<p>NOTE: *Available online under Engineering Documents and References at: https://www.sandiego.gov/ecp/edocref/</p> <p>*Electronic updates to the Standard Drawings may also be found in the link above</p>		

9. **CITY'S RESPONSES AND ADDENDA:** The City, at its discretion, may respond to any or all questions submitted in writing via the City's eBidding web site in the **form of an addendum**. No other responses to questions, oral or written shall be of any force or effect with respect to this solicitation. The changes to the Contract Documents through addenda are made effective as though originally issued with the Bid. The Bidders shall acknowledge the receipt of Addenda at the time of bid submission.
10. **CITY'S RIGHTS RESERVED:** The City reserves the right to cancel the Notice Inviting Bids at any time, and further reserves the right to reject submitted Bids, without giving any reason for such action, at its sole discretion and without liability. Costs incurred by the Bidder(s) as a result of preparing Bids under the Notice Inviting Bids shall be the sole responsibility of each bidder. The Notice Inviting Bids creates or imposes no obligation upon the City to enter a contract.
11. **CONTRACT PRICING:** This solicitation is for a Lump Sum contract with Unit Price provisions as set forth herein. The Bidder agrees to perform construction services for the City of San Diego in accordance with these contract documents for the prices listed below. The Bidder further agrees to guarantee the Contract Price for a period of 120 days from the date of Bid opening. The duration of the Contract Price guarantee may be extended, by mutual consent of the parties, by the number of days required for the City to obtain all items necessary to fulfill all contractual conditions.
12. **SUBCONTRACTOR INFORMATION:**
- 12.1. **LISTING OF SUBCONTRACTORS.** In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act" of the California Public Contract Code, the Bidder shall provide the **NAME** and **ADDRESS** of each Subcontractor who will perform work, labor, render services or who specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also state within the description, whether the subcontractor is a **CONSTRUCTOR, CONSULTANT** or **SUPPLIER**. The Bidder shall state the **DIR REGISTRATION NUMBER** for all subcontractors and shall further state within the description, the **PORTION** of the work which will be performed by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement

may result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions – General - Section 3-2, "Self Performance", which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which Bidders are seeking recognition towards achieving any mandatory, voluntary (or both) subcontracting participation goals.

Additionally, pursuant to California Senate Bill 96 and in accordance with the requirements of Labor Code sections 1771.1 and 1725.5, by submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the California Department of Industrial Relations (DIR). **The Bidder shall provide the name, address, license number, DIR registration number of any Subcontractor – regardless of tier** - who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement pursuant to the contract.

- 12.2. LISTING OF SUPPLIERS.** Any Bidder seeking the recognition of Suppliers of equipment, materials, or supplies obtained from third party Suppliers towards achieving any mandatory or voluntary (or both) subcontracting participation goals shall provide, at a minimum, the **NAME, LOCATION (CITY), DIR REGISTRATION NUMBER** and the **DOLLAR VALUE** of each supplier. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for materials and supplies unless vendor manufactures or substantially alters materials and supplies, in which case, 100% will be credited. The Bidder is to indicate within the description whether the listed firm is a supplier or manufacturer. If no indication is provided, the listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage.
- 12.3. LISTING OF SUBCONTRACTORS OR SUPPLIERS FOR ALTERNATES.** For subcontractors or suppliers to be used on additive or deductive alternate items, in addition to the above requirements, bidder shall further note "ALTERNATE" and alternate item number within the description.
- 13. SUBMITTAL OF "OR EQUAL" ITEMS:** See Section 4-6, "Trade Names" in The WHITEBOOK and as amended in the SSP.
- 14. AWARD:**
- 14.1.** The Award of this contract is contingent upon the Contractor's compliance with all conditions precedent to Award.
- 14.2.** Upon acceptance of a Bid, the City will prepare contract documents for execution within approximately 21 days of the date of the Bid opening and award the Contract approximately within 7 days of receipt of properly executed Contract, bonds, and insurance documents.

- 14.3.** This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form the City Attorney's Office.
- 15. SUBCONTRACT LIMITATIONS:** The Bidder's attention is directed to Standard Specifications for Public Works Construction, Section 3-2, "SELF-PERFORMANCE" in The GREENBOOK and as amended in the SSP which requires the Contractor to self-perform not less than the specified amount. Failure to comply with this requirement shall render the bid **non-responsive** and ineligible for award.
- 16. AVAILABILITY OF PLANS AND SPECIFICATIONS:** Contract Documents may be obtained by visiting the City's website: <http://www.sandiego.gov/cip/>. Plans and Specifications for this contract are also available for review in the office of the City Clerk or Purchasing & Contracting Department, Public Works Division.
- 17. ONLY ONE BID PER CONTRACTOR SHALL BE ACCEPTED:** No person, firm, or corporation shall be allowed to make, file, or be interested in more than one (1) Bid for the same work unless alternate Bids are called for. A person, firm or corporation who has submitted a sub-proposal to a Bidder, or who has quoted prices on materials to a Bidder, is not hereby disqualified from submitting a sub-proposal or quoting prices to other Bidders or from submitting a Bid in its own behalf. Any Bidder who submits more than one bid will result in the rejection of all bids submitted.
- 18. SAN DIEGO BUSINESS TAX CERTIFICATE:** The Contractor and Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, First floor and submit to the Contract Specialist upon request or as specified in the Contract Documents. Tax Identification numbers for both the Bidder and the listed Subcontractors must be submitted on the City provided forms within these documents.
- 19. BIDDER'S GUARANTEE OF GOOD FAITH (BID SECURITY) FOR DESIGN-BID-BUILD CONTRACTS:**
- 19.1.** For bids \$250,000 and above, bidders shall submit Bid Security at bid time. Bid Security shall be in one of the following forms: a cashier's check, or a properly certified check upon some responsible bank; or an approved corporate surety bond payable to the City of San Diego for an amount of not less than 10% of the total bid amount.
- 19.2.** This check or bond, and the monies represented thereby, will be held by the City as a guarantee that the Bidder, if awarded the contract, will in good faith enter into the contract and furnish the required final performance and payment bonds.
- 19.3.** The Bidder agrees that in the event of the Bidder's failure to execute this contract and provide the required final bonds, the money represented by the cashier's or certified check will remain the property of the City; and the Surety agrees that it will pay to the City the damages, not exceeding the sum of 10% of the amount of the Bid, that the City may suffer as a result of such failure.

- 19.4.** At the time of bid submission, bidders must upload and submit an electronic PDF copy of the aforementioned bid security. Whether in the form of a cashier's check, a properly certified check or an approved corporate surety bond payable to the City of San Diego, the bid security must be uploaded to the City's eBidding system. By 5PM, 3 working days after the bid opening date, all bidders must provide the City with the original bid security.
- 19.5.** Failure to submit the electronic version of the bid security at the time of bid submission AND failure to provide the original by 5PM, 3 working days after the bid opening date shall cause the bid to be rejected and deemed **non-responsive**.

Due to circumstances related to Covid-19, until further notice, all original bid bond submittals must be received by 5 PM, 3 working days after bid opening.

Upon circumstances returning to normal business as usual, the original bid bond shall once again be due by 5 PM the day after bid opening.

Original Bid Bond shall be submitted to:
Purchasing & Contracting Department, Public Works Division
1200 3rd Ave., Suite 200, MS56
San Diego, California, 92101
To the Attention of the Contract Specialist on the Front Page of this solicitation.

20. AWARD OF CONTRACT OR REJECTION OF BIDS:

- 20.1.** This contract may be awarded to the lowest responsible and reliable Bidder.
- 20.2.** Bidders shall complete ALL eBid forms as required by this solicitation. Incomplete eBids will not be accepted.
- 20.3.** The City reserves the right to reject any or all Bids, to waive any informality or technicality in Bids received, and to waive any requirements of these specifications as to bidding procedure.
- 20.4.** Bidders will not be released on account of their errors of judgment. Bidders may be released only upon receipt by the City within 3 Working Days of the bid opening, written notice from the Bidder which shows proof of honest, credible, clerical error of a material nature, free from fraud or fraudulent intent; and of evidence that reasonable care was observed in the preparation of the Bid.
- 20.5.** A bidder who is not selected for contract award may protest the award of a contract to another bidder by submitting a written protest in accordance with the San Diego Municipal Code.
- 20.6.** The City of San Diego will not discriminate in the award of contracts with regard to race, religion creed, color, national origin, ancestry, physical handicap, marital status, sex or age.

20.7. Each Bid package properly signed as required by these specifications shall constitute a firm offer which may be accepted by the City within the time specified herein.

20.8. The City reserves the right to evaluate all Bids and determine the lowest Bidder on the basis of the base bid and any proposed alternates or options as detailed herein.

21. BID RESULTS:

21.1. The availability of the bids on the City's eBidding system shall constitute the public announcement of the apparent low bidder. In the event that the apparent low bidder is subsequently deemed non-responsive or non-responsible, a notation of such will be made on the eBidding system. The new ranking and apparent low bidder will be adjusted accordingly.

21.2. To obtain the bid results, view the results on the City's web site, or request the results by U.S. mail and provide a self-addressed, stamped envelope. If requesting by mail, be sure to reference the bid name and number. The bid tabulations will be mailed to you upon their completion. The results will not be given over the telephone.

22. THE CONTRACT:

22.1. The Bidder to whom award is made shall execute a written contract with the City of San Diego and furnish good and approved bonds and insurance certificates specified by the City within 14 days after receipt by Bidder of a form of contract for execution unless an extension of time is granted to the Bidder in writing.

22.2. If the Bidder takes longer than 14 days to fulfill these requirements, then the additional time taken shall be added to the Bid guarantee. The Contract shall be made in the form adopted by the City, which includes the provision that no claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.

22.3. If the Bidder to whom the award is made fails to enter into the contract as herein provided, the award may be annulled and the Bidder's Guarantee of Good Faith will be subject to forfeiture. An award may be made to the next lowest responsible and reliable Bidder who shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made.

22.4. Pursuant to the San Diego City Charter section 94, the City may only award a public works contract to the lowest responsible and reliable Bidder. The City will require the Apparent Low Bidder to (i) submit information to determine the Bidder's responsibility and reliability, (ii) execute the Contract in form provided by the City, and (iii) furnish good and approved bonds and insurance certificates specified by the City within 14

Days, unless otherwise approved by the City, in writing after the Bidder receives notification from the City, designating the Bidder as the Apparent Low Bidder and formally requesting the above mentioned items.

- 22.5.** The award of the Contract is contingent upon the satisfactory completion of the above-mentioned items and becomes effective upon the signing of the Contract by the Mayor or designee and approval as to form by the City Attorney's Office. If the Apparent Low Bidder does not execute the Contract or submit required documents and information, the City may award the Contract to the next lowest responsible and reliable Bidder who shall fulfill every condition precedent to award. A corporation designated as the Apparent Low Bidder shall furnish evidence of its corporate existence and evidence that the officer signing the Contract and bond for the corporation is duly authorized to do so.
- 23. EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK:** The Bidder shall examine carefully the Project Site, the Plans and Specifications, other materials as described in the Special Provisions, Section 3-9, "TECHNICAL STUDIES AND SUBSURFACE DATA", and the proposal forms (e.g., Bidding Documents). The submission of a Bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of work, the quantities of materials to be furnished, and as to the requirements of the Bidding Documents Proposal, Plans, and Specifications.
- 24. CITY STANDARD PROVISIONS:** This contract is subject to the following standard provisions. See The WHITEBOOK for details.
- 24.1.** The City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace.
- 24.2.** The City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act.
- 24.3.** The City of San Diego Municipal Code §22.3004 for Contractor Standards.
- 24.4.** The City of San Diego's Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776.
- 24.5.** Sections 1777.5, 1777.6, and 1777.7 of the State of California Labor Code concerning the employment of apprentices by contractors and subcontractors performing public works contracts.
- 24.6.** The City's Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code (SDMC).
- 24.7.** The City's Information Security Policy (ISP) as defined in the City's Administrative Regulation 90.63.

25. PRE-AWARD ACTIVITIES:

- 25.1.** The contractor selected by the City to execute a contract for this Work shall submit the required documentation as specified herein and in the Notice of Intent to Award. Failure to provide the information as specified may result in the Bid being rejected as **non-responsive**.
- 25.2.** The decision that bid is non-responsive for failure to provide the information required within the time specified shall be at the sole discretion of the City.

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

S.C. Valley Engineering, Inc., a corporation, as principal, and Western Surety Company, a corporation authorized to do business in the State of California, as Surety, hereby obligate themselves, their successors and assigns, jointly and severally, to The City of San Diego a municipal corporation in the sum of **Ten Million Three Hundred Three Thousand Two Hundred Seventy Four Dollars and Ten Cents (\$10,303,274.10)** for the faithful performance of the annexed contract, and in the sum of **Ten Million Three Hundred Three Thousand Two Hundred Seventy Four Dollars and Ten Cents (\$10,303,274.10)** for the benefit of laborers and materialmen designated below.

Conditions:

If the Principal shall faithfully perform the annexed contract with the City of San Diego, California, then the obligation herein with respect to a faithful performance shall be void; otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials for or performing labor in the execution of this contract, and shall pay all amounts due under the California Unemployment Insurance Act then the obligation herein with respect to laborers and materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit of all persons, firms and corporations entitled to file claims under the provisions of Article 2. Claimants, (iii) public works of improvement commencing with Civil Code Section 9100 of the Civil Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby waives notice of same.

The Surety shall pay reasonable attorney's fees should suit be brought to enforce the provisions of this bond.

The Surety expressly agrees that the City of San Diego may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal.

The Surety shall not utilize the Principal in completing the improvements and work specified in the Agreement in the event the City terminates the Principal for default.

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND (continued)

THE CITY OF SAN DIEGO

APPROVED AS TO FORM

Mara W. Elliott, City Attorney

By: 

By: 

Print Name: Claudia C. Abarca
Director
Purchasing & Contracting Department

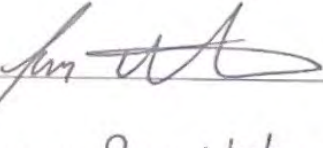
Print Name: Bonny Hou
Deputy City Attorney

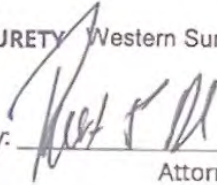
Date: September 14, 2022

Date: September 15, 22

CONTRACTOR S.C. Valley Engineering, Inc.

SURETY Western Surety Company

By: 

By: 
Attorney-In-Fact

Print Name: Sam Waitnen

Print Name: Robert P. Dole

Date: 7/1/2022

Date: 6/27/2022

Dole & Sons, Inc. dba Paul Dole Insurance Company
PO Box 400, Bonita, CA 91908

Local Address of Surety

(619) 475-5200

Local Phone Number of Surety

\$ 62,090.00

Premium

30163721

Bond Number

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

County of San Diego }

On June 27, 2022 before me, Patti Ewert, Notary Public,
Date Insert Name of Notary exactly as it appears on the official seal

personally appeared Robert P. Dole
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature Patti Ewert
Signature of Notary Public, Patti Ewert



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Robert P. Dole

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing:
Western Surety Company

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer is Representing:

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Daniel P Dole, John T Dole, Robert P Dole, Michael Dole, Adam Dole, Patti Ewert, Individually

of Bonita, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 22nd day of June, 2021.



WESTERN SURETY COMPANY

Paul T. Bruflat

Paul T. Bruflat, Vice President

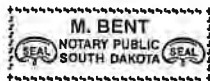
State of South Dakota }
County of Minnehaha }

ss

On this 22nd day of June, 2021, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires

March 2, 2026



M. Bent

M. Bent, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 27 day of June, 2022.



WESTERN SURETY COMPANY

L. Nelson

L. Nelson, Assistant Secretary

ATTACHMENTS

ATTACHMENT A
SCOPE OF WORK

SCOPE OF WORK

1. **SCOPE OF WORK:** Construction of the College Area Sewer and AC Water Main Replacement project consists of the replacement of 1,706.99 linear feet (ft) of existing sewer mains and the construction of 3,059.29 linear feet of new sewer mains; the replacement of 2,575.38 linear feet (ft) of existing water mains and the construction of 482.72 linear feet of new water main; curb ramps, resurfacing and all other work and appurtenances in accordance with these specifications.
 - 1.1. The Work shall be performed in accordance with:
 - 1.1.1. The Notice Inviting Bids and Plans numbered **39946-01-D** through **39946-34-D**, inclusive.
2. **LOCATION OF WORK:** The location of the Work is as follows:

Appendix E – Location Map.
3. **CONTRACT TIME:** The Contract Time for completion of the Work including the Plant Establishment Period, shall be **262 Working Days**.

ATTACHMENT B
PHASED FUNDING PROVISIONS

PHASED FUNDING PROVISIONS

1. PRE-AWARD

- 1.1. Within 10 Working Days of the Notice of Intent to Award, the Contractor must contact the Project Manager to discuss fund availability for each phase and shall also submit the following:
 - 1.1.1. Construction Cost Loaded Schedule in accordance with 6-1, "CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK" and 7-3, "PAYMENT.
- 1.2. Contractor's failure to perform any of the following may result cancelling the award of the Contract:
 - 1.2.1. Meeting with the City's Project Manager to discuss the Phased Funding Schedule.
 - 1.2.2. Agreeing to a Phased Funding Schedule within **thirty** days of meeting with the City's Project Manager.

2. POST-AWARD

- 2.1. Do not start any construction activities for the next phase until the Notice to Proceed (NTP) has been issued by the City. The City will issue a separate NTP for each phase.
- 2.2. The City may issue the NTP for a subsequent phase before the completion of the preceding phase.

PHASED FUNDING SCHEDULE AGREEMENT

The particulars left blank below, such as the total number of phases and the amounts assigned to each phase, will be completed with funding specific information from the Pre-Award Schedule and Construction Cost Loaded Schedule submitted to and approved by the City.

BID NUMBER: K-22-2059-DBB-3

CONTRACT OR TASK TITLE: COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT

CONTRACTOR: S.C. VALLEY ENGINEERING, INC.

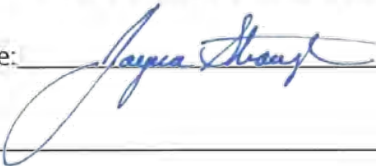
Funding Phase	Phase Description	Phase Start	Phase Finish	Not-to- Exceed Amount
1	Replacement of 1,706.99 linear feet (ft) of existing sewer mains and the construction of 3,059.29 linear feet of new sewer mains, including associated laterals, manholes, cleanouts and other appurtenances. (Sheets 39946-01-D through 39946-06-D, 33946-23-D through 39946-34)	NTP	07/31/2023	\$7,000,000.00 (B-16025, Sewer)
	Replacement of 2,575.38 linear feet (ft) of existing water mains and the construction of 482.72 linear feet of new water main; curb ramps, resurfacing and all other work and appurtenances. (Sheets 39946-12-D through 39946-13-D)			\$200,000.00 (B-16022, Water)
				<u>Phase 1 Total =</u> \$7,200,000.00
2	Replacement of 1,706.99 linear feet (ft) of existing sewer mains and the construction of 3,059.29 linear feet of new sewer mains, including associated laterals, manholes, cleanouts and other appurtenances. (Sheets 39946-07-D through 39946-10-D)	08/01/2023	NOC	\$1,962,379.82 (B-16025, Sewer)
	Replacement of 2,575.38 linear feet (ft) of existing water mains and the construction of 482.72 linear feet of new water main; curb ramps, resurfacing and all other work and appurtenances. (Sheets 39946-14-D through 39946-22-D)			\$1,140,894.28 (B-16022, Water)
				<u>Phase 2 Total =</u> \$3,103,274.10
Contract Total				Ph 1 = \$7,200,000.00 Ph 2 = \$3,103,274.10 Total = \$10,303,274.10

Notes:

- 1) WHITEBOOK section 7-3.10, "Phased Funding Compensation" applies.
- 2) The total of all funding phases shall be equal to the TOTAL BID PRICE as shown on BID SCHEDULE 1 - PRICES.
- 3) This PHASED FUNDING SCHEDULE AGREEMENT will be incorporated into the CONTRACT and shall only be revised by written modifications to the CONTRACT.

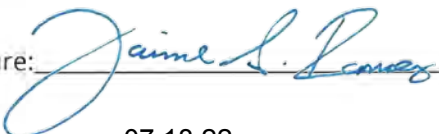
CITY OF SAN DIEGO

PRINT NAME: Jayna Straughn
Construction Senior Engineer

Signature: 

Date: _____
07/18/2022

PRINT NAME: Jaime A. Ramos
Design Senior Engineer

Signature: 

Date: 07.18.22

CONTRACTOR

PRINT NAME: Samuel Wathen

Title: President

Signature: 

Date: 07/12/2022

ATTACHMENT C
EQUAL OPPORTUNITY CONTRACTING PROGRAM

EQUAL OPPORTUNITY CONTRACTING PROGRAM (EOCP)

SECTION A - GENERAL REQUIREMENTS

A. INTRODUCTION.

1. This document sets forth the following specifications:
 - a) The City's general EOCP requirements for all Construction Contracts.
 - b) Special Provisions for Contracts subject to SLBE and ELBE requirements only.
2. Additional requirements may apply for state or federally funded projects.
3. These requirements shall be included as Contract provisions for all Subcontracts.
4. The City specified forms, instructions, and guides are available for download from the EOCP's web site at: <http://www.sandiego.gov/eoc/forms/index.shtml>

B. GENERAL.

1. The City of San Diego promotes equal employment and subcontracting opportunities.
2. The City is committed to ensuring that taxpayer dollars spent on public Contracts are not paid to businesses that practice discrimination in employment or subcontracting.
3. The City encourages all companies seeking to do business with the City to share this commitment.

C. DEFINITIONS.

1. For the purpose of these requirements: Terms "Bid" and "Proposal", "Bidder" and "Proposer", "Subcontractor" and "Subconsultant", "Contractor" and "Consultant", "Contractor" and "Prime Contractor", "Consultant" and "Professional Service Provider", "Suppliers" and "Vendors", "Suppliers" and "Dealers", and "Suppliers" and "Manufacturers" may have been used interchangeably.
2. The following definitions apply:
 - a) **Emerging Business Enterprise (EBE)** - A for-profit business that is independently owned and operated; that is not a subsidiary or franchise of another business and whose gross annual receipts do not exceed the amount set by the City Manager and that meets all other criteria set forth in regulations implementing Municipal Code Chapter 2, Article 2, Division 36. The City Manager shall review the threshold amount for EBEs on an annual basis and adjust as necessary to reflect changes in the marketplace.
 - b) **Emerging Local Business Enterprise (ELBE)** - A Local Business Enterprise that is also an Emerging Business Enterprise.

- c) **Minority Business Enterprise (MBE)** - A certified business that is at least fifty-one percent (51%) owned by one or more minority individuals, or, in the case of a publicly owned business at least fifty-one percent (51%) of the stock is owned by one or more minority individuals; and (2) whose daily business operations are managed and directed by one or more minorities owners. Minorities include the groups with the following ethnic origins: African, Asian Pacific, Asian Subcontinent, Hispanic, Native Alaskan, Native American, and Native Hawaiian.
- d) **Women Business Enterprise (WBE)** - A certified business that is at least fifty-one percent (51%) owned by a woman or women, or, in the case of a publicly owned business at least fifty-one percent (51%) of the stock is owned by one or more women; and (2) whose daily business operations are managed and directed by one or more women owners.
- e) **Disadvantaged Business Enterprise (DBE)** - a certified business that is at least fifty-one percent (51%) owned by socially and economically disadvantaged individuals, or, in the case of a publicly owned business at least fifty-one percent (51%) of the stock is owned by one or more socially and economically disadvantaged individuals; and (2) whose daily business operations are managed and directed by one or more socially and economically disadvantaged owners.
- f) **Disabled Veteran Business Enterprise (DVBE)** - A certified business that is at least fifty-one percent (51%) owned by one or more disabled veterans; and (2) business operations must be managed and controlled by one or more disabled veterans. Disabled Veteran is a veteran of the U.S. military, naval, or air service; the veteran must have a service-connected disability of at least 10% or more; and the veteran must reside in California.
- g) **Other Business Enterprise (OBE)** - Any business which does not otherwise qualify as a Minority, Woman, Disadvantaged, or Disabled Veteran Business Enterprise.
- h) **Small Business Enterprise (SBE)** - A for-profit business that is independently owned and operated; that is not a subsidiary or franchise of another business and whose gross annual receipts do not exceed the amount set by the City Manager and that meets all other criteria set forth in regulations implementing Municipal Code Chapter 2, Article 2, Division 36. The City Manager shall review the threshold amount for SBEs on an annual basis and adjust as necessary to reflect changes in the marketplace. A business certified as a Micro Business (MB) or a Disabled Veteran Business Enterprise (DVBE) by the State of California and that has provided proof of such certification to the City Manager shall be deemed to be an SBE.

- i) **Small Local Business Enterprise (SLBE)** - A Local Business Enterprise that is also a Small Business Enterprise.

D. CITY'S EQUAL OPPORTUNITY COMMITMENT.

1. Nondiscrimination in Contracting Ordinance.

- a) You, your Subcontractors, and Suppliers shall comply with the requirements of the City's Nondiscrimination in Contracting Ordinance, San Diego Municipal Code §§22.3501 through 22.3517.

You shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring, or treatment of subcontractors, vendors, or suppliers. You shall provide equal opportunity for Subcontractors to participate in subcontracting opportunities. You understand and agree that the violation of this clause shall be considered a material breach of the Contract and may result in Contract termination, debarment, or other sanctions.

You shall include the foregoing clause in all Contracts between you and your Subcontractors and Suppliers.

- b) **Disclosure of Discrimination Complaints.** As part of its Bid or Proposal, you shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against you in a legal or administrative proceeding alleging that you discriminated against your employees, Subcontractors, vendors, or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.
- c) Upon the City's request, You agree to provide to the City, within 60 Calendar Days, a truthful and complete list of the names of all Subcontractors and Suppliers that you have used in the past 5 years on any of your Contracts that were undertaken within the San Diego County, including the total dollar amount paid by you for each Subcontract or supply Contract.
- d) You further agree to fully cooperate in any investigation conducted by the City pursuant to the City's Nondiscrimination in Contracting Ordinance, Municipal Code §§22.3501 through 22.3517. You understand and agree that violation of this clause shall be considered a material breach of the Contract and may result in remedies being ordered against you up to and including contract termination, debarment, and other sanctions for the violation of the provisions of the Nondiscrimination in Contracting Ordinance. You further understand and agree that the procedures, remedies, and sanctions provided for in the Nondiscrimination in Contracting Ordinance apply only to violations of the Ordinance.

E. EQUAL EMPLOYMENT OPPORTUNITY OUTREACH PROGRAM.

1. You, your Subcontractors, and Suppliers shall comply with the City's Equal Employment Opportunity Outreach Program, San Diego Municipal Code §§22.2701 through 22.2707.

You shall not discriminate against any employee or applicant for employment on any basis prohibited by law. You shall provide equal opportunity in all employment practices. You shall ensure that your Subcontractors comply with this program. Nothing in this section shall be interpreted to hold you liable for any discriminatory practices of your Subcontractors.

You shall include the foregoing clause in all Contracts between you and your Subcontractors and Suppliers.

2. If the Contract is competitively solicited, the selected Bidder shall submit a Work Force Report (Form BB05) within 10 Working Days after receipt by the Bidder to the City for approval as specified in the Notice of Intent to Award letter.
3. The selected Bidder shall submit an Equal Employment Opportunity Plan if a Work Force Report is submitted and if the City determines that there are under-representations when compared to County Labor Force Availability data.
4. If the selected Bidder submits an Equal Employment Opportunity Plan, it shall include the following assurances:
 - a) You shall maintain a working environment free of discrimination, harassment, intimidation, and coercion at all Sites and in all facilities at which your employees are assigned to Work.
 - b) You shall review your EEO Policy annually with all on-Site supervisors involved in employment decisions.
 - c) You shall disseminate and review your EEO Policy with all employees at least once a year, post the policy statement and EEO posters on all company bulletin boards and job sites, and document every dissemination, review, and posting with a written record to identify the time, place, employees present, subject matter, and disposition of meetings.
 - d) You shall review, at least annually, all supervisors' adherence to and performance under the EEO Policy and maintain written documentation of these reviews.
 - e) You shall discuss your EEO Policy Statement with Subcontractors with whom you anticipate doing business, including the EEO Policy Statement in your Subcontracts, and provide such documentation to the City upon request.

- f) You shall document and maintain a record of all Bid solicitations and outreach efforts to and from Subcontractors, contractor associations, and other business associations.
- g) You shall disseminate your EEO Policy externally through various media, including the media of people of color and women, in advertisements to recruit. Maintain files documenting these efforts and provide copies of these advertisements to the City upon request.
- h) You shall disseminate your EEO Policy to union and community organizations.
- i) You shall provide immediate written notification to the City when any union referral process has impeded your efforts to maintain your EEO Policy.
- j) You shall maintain a current list of recruitment sources, including those outreaching to people of color and women, and provide written notification of employment opportunities to these recruitment sources with a record of the organizations' responses.
- k) You shall maintain a current file of names, addresses and phone numbers of each walk-in applicant, including people of color and women, and referrals from unions, recruitment sources, or community organizations with a description of the employment action taken.
- l) You shall encourage all present employees, including people of color and women employees, to recruit others.
- m) You shall maintain all employment selection process information with records of all tests and other selection criteria.
- n) You shall develop and maintain documentation for on-the-job training opportunities, participate in training programs, or both for all of your employees, including people of color and women, and establish apprenticeship, trainee, and upgrade programs relevant to your employment needs.
- o) You shall conduct, at least annually, an inventory and evaluation of all employees for promotional opportunities and encourage all employees to seek and prepare appropriately for such opportunities.
- p) You shall ensure that the company's working environment and activities are non-segregated except for providing separate or single-user toilets and necessary changing facilities to assure privacy between the sexes.

F. SUBCONTRACTING.

1. The City encourages all eligible business enterprises to participate in City contracts as a Contractor, Subcontractor, and joint venture partner with you, your Subcontractors, or your Suppliers. You are encouraged to take positive

steps to diversify and expand your Subcontractor solicitation base and to offer subcontracting opportunities to all eligible business firms including SLBEs, ELBEs, MBEs, WBEs, DBEs, DVBEs, and OBEs.

2. For Subcontractor participation level requirements, see the Contract Documents where applicable.
3. For the purposes of achieving the mandatory Subcontractor participation percentages, City percentage calculations will not account for the following:
 - a) "Field Orders" and "City Contingency" Bid items.
 - b) Alternate Bid items.
 - c) Allowance Bid items designated as "EOC Type II".
4. Allowance Bid items designated as "EOC Type I" will be considered as part of the Base Bid and will be included in the percentage calculation.
5. Each joint venture partner shall be responsible for a clearly defined Scope of Work. In addition, an agreement shall be submitted and signed by all parties identifying the extent to which each joint venture partner shares in ownership, control, management, risk, and profits of the joint venture.

G. LISTS OF SUBCONTRACTORS AND SUPPLIERS.

1. You shall comply with the Subletting and Subcontracting Fair Practices Act, Public Contract Code §§4100 through 4113, inclusive.
2. You shall list all Subcontractors who will receive more than 0.5% of the total Bid amount or \$10,000, whichever is greater on the form provided in the Contract Documents (Subcontractors list).
3. The Subcontractors list shall include the Subcontractor's name, telephone number including area code, physical address, Scope of Work, the dollar amount of the proposed Subcontract, the California contractor license number, the Public Works contractor registration number issued pursuant to Section 1725.5 of the Labor Code, and the Subcontractor's certification status with the name of the certifying agency.
4. The listed Subcontractor shall be appropriately licensed pursuant to Contractor License Laws.
5. For Design-Build Contracts, refer to the RFQ and RFP for each Project or Task Order.

H. SUBCONTRACTOR AND SUPPLIER SUBSTITUTIONS.

1. Listed Subcontractors and Suppliers shall not be substituted without the Express authorization of the City or its duly authorized agent.
2. Request for Subcontractor or Supplier substitution shall be made in writing to Purchasing & Contracting Department, Public Works Division, Attention Contract Specialist, 1200 3rd Ave., Suite 200, MS56, San Diego, CA 92101 with a copy to the Engineer.

3. The request shall include a thorough explanation of the reason(s) for the substitution, including dollar amounts and a letter from each substituted Subcontractor or Supplier stating that they (the Subcontractors or Suppliers) release all interest in working on the Project and written confirmation from the new Subcontractor or Supplier stating that they agree to work on the Project along with the dollar value of the Work to be performed.
4. Written approval of the substitution request shall be received by you or from the City or its authorized officer prior to any unlisted Subcontractor or Supplier performing Work on the Project.
5. Substitution of Subcontractors and Suppliers without authorization shall subject you to those penalties set forth in Public Contract Code §4110.
6. Requests for Supplier substitution shall be made in writing at least 10 Days prior to the provision of materials, supplies, or services by the proposed Supplier and shall include proof of written notice to the originally listed Supplier of the proposed substitution.
7. A Contractor whose Bid is accepted shall not:
 - a) Substitute a person as Subcontractor or Supplier in place of the Subcontractor or Supplier listed in the original bid, except that the City, or it's duly authorized officer, may consent to the substitution of another person as a Subcontractor or Supplier in any of the following situations:
 - i. When the Subcontractor or Supplier listed in the Bid, after having a reasonable opportunity to do so, fails or refuses to execute a written Contract for the scope of work specified in the subcontractor's bid and at the price specified in the subcontractor's bid, when that written contract, based upon the general terms, conditions, plans, and specifications for the project involved or the terms of the subcontractor's written bid, is presented to the subcontractor by the prime contractor.
 - ii. When the listed Subcontractor or Supplier becomes insolvent or the subject of an order for relief in bankruptcy.
 - iii. When the listed Subcontractor or Supplier fails or refuses to perform his or her subcontract.
 - iv. When the listed Subcontractor fails or refuses to meet bond requirements as set forth in Public Contract Code §4108.
 - v. When you demonstrate to the City or it's duly authorized officer, subject to the provisions set forth in Public Contract Code §4107.5, that the name of the Subcontractor was listed as the result of an inadvertent clerical error.
 - vi. When the listed Subcontractor is not licensed pursuant to Contractor License Law.

- vii. When the City, or its duly authorized officer, determines that the Work performed by the listed Subcontractor or that the materials or supplies provided by the listed Supplier are substantially unsatisfactory and not in substantial accordance with the Plans and specifications or that the Subcontractor or Supplier is substantially delaying or disrupting the progress of the Work.
 - viii. When the listed Subcontractor is ineligible to work on a public works project pursuant to §§1777.1 or 1777.7 of the Labor Code.
 - ix. When the City or its duly authorized agent determines that the listed Subcontractor is not a responsible contractor.
- b) Permit a Contract to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original Subcontractor, Supplier listed in the original Bid without the consent of the City, or its duly authorized officer.
 - c) Other than in the performance of "Change Orders" causing changes or deviations from the Contract, sublet or subcontract any portion of the Work, or contract for materials or supplies in excess of 0.5% of your total bid or \$10,000, whichever is greater, as to which his or her original Bid did not designate a Subcontractor or Supplier.
8. Following receipt of notice from you of the proposed substitution of a Subcontractor or Supplier, the listed Subcontractor or Supplier who has been so notified shall have 5 Working Days within which to submit written objections to the substitution to the Contract Specialist with a copy to the Engineer. Failure to file these written objections shall constitute the listed Subcontractor or Supplier's consent to the substitution. If written objections are filed, the City shall give notice in writing of at least 5 Working Days to the listed Subcontractor or Supplier of a hearing by the City on your request for substitution.

I. PROMPT PAYMENT.

- 1. You or your Subcontractors shall pay to any subcontractor, not later than 7 Calendar Days of receipt of each progress payment, unless otherwise agreed to in writing, the respective amounts allowed you on account of the Work performed by the Subcontractors, to the extent of each Subcontractor's interest therein. In cases of Subcontractor performance deficiencies, you shall make written notice of any withholding to the Subcontractor with a copy to the Contracts Specialist. Upon correction of the deficiency, you shall pay the Subcontractor the amount previously withheld within 14 Calendar Days after payment by the City.
- 2. Any violation of California Business and Professions Code, §7108.5 concerning prompt payment to Subcontractors shall subject the violating Contractor or

Subcontractor to the penalties, sanctions, and other remedies of that section. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to you or your Subcontractor in the event of a dispute involving late payment or nonpayment by the Prime Contractor, deficient subcontract performance, or noncompliance by a Subcontractor.

J. PROMPT PAYMENT OF FUNDS WITHHELD TO SUBCONTRACTORS.

1. The City will hold retention from you and will make prompt and regular incremental acceptances of portions, as determined by the Engineer, of the Work and pay retention to you based on these acceptances.
2. You or your Subcontractors shall return all monies withheld in retention from a Subcontractor within 30 Calendar Days after receiving payment for Work satisfactorily completed and accepted including incremental acceptances of portions of the Work by the City.
3. Federal law (49CFR26.29) requires that any delay or postponement of payment over 30 Calendar Days may take place only for good cause and with the City's prior written approval. Any violation of this provision by you or your Subcontractor shall subject you or your Subcontractor to the penalties, sanctions, and other remedies specified in §7108.5 of the Business and Professions Code.
4. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to you or your Subcontractor in the event of a dispute involving late payment or nonpayment by you, deficient subcontract performance, or noncompliance by a Subcontractor.

K. CERTIFICATION.

1. The City accepts certifications of DBE, DVBE, MBE, SMBE, SWBE, or WBE by any of the following certifying agencies:
 - a) Current certification by the State of California Department of Transportation (CALTRANS) as DBE, SMBE, or SWBE.
 - b) Current MBE, WBE, or DVBE certification from the California Public Utilities Commission.
 - c) DVBE certification is received from the State of California's Department of General Services, Office of Small and Minority Business.
 - d) Current certification by the City of Los Angeles as DBE, WBE, or MBE.
 - e) Subcontractors' valid proof of certification status (copies of MBE, WBE, DBE, or DVBE certifications) shall be submitted as required.

L. CONTRACT RECORDS AND REPORTS.

1. You shall maintain records of all subcontracts and invoices from your Subcontractors and Suppliers for work on this project. Records shall show

name, telephone number including area code, and business address of each Subcontractor, Supplier, and joint venture partner, and the total amount actually paid to each firm. Project relevant records, regardless of tier, may be periodically reviewed by the City.

2. You shall retain all records, books, papers, and documents pertinent to the Contract for a period of not less than 5 years after Notice of Completion and allow access to said records by the City's authorized representatives.
3. You shall submit the following reports using the City's web-based contract compliance (Prism® portal):
 - a. **Monthly Payment.** You shall submit Monthly Payment Reporting by the 10th day of the subsequent month. Incomplete and/or delinquent reporting may cause payment delays, non-payment of invoices, or both.
4. The records maintained under item 1, described above, shall be consolidated into a Final Summary Report, certified as correct by an authorized representative of the Contractor. The Final Summary Report shall include all subcontracting activities and be sent to the EOCP Program Manager prior to Acceptance. Failure to comply may result in assessment of liquidated damages or withholding of retention. The City will review and verify 100% of subcontract participation reported in the Final Summary Report prior to approval and release of final retention to you. In the event your Subcontractors are owed money for completed Work, the City may authorize payment to subcontractor via a joint check from the withheld retention.

EQUAL OPPORTUNITY CONTRACTING PROGRAM (EOCP)

SECTION B - SLBE-ELBE SUBCONTRACTING REQUIREMENTS

THESE SPECIAL PROVISIONS SUPPLEMENT THE POLICIES AND REQUIREMENTS ESTABLISHED BY THE CITY OF SAN DIEGO EQUAL OPPORTUNITY CONTRACTING PROGRAM SPECIFIED IN THE CITY'S GENERAL EOCP REQUIREMENTS.

A. GENERAL.

1. It is the City's policy to encourage greater availability, capacity development, and contract participation by SLBE and ELBE firms in City contracts. This policy is, in part, intended to further the City's compelling interest to stimulate economic development through the support and empowerment of the local community, ensure that it is neither an active nor passive participant in marketplace discrimination, and promote equal opportunity for all segments of the contracting community.
2. The City is committed to maximizing subcontracting opportunities for all qualified and available firms.
3. This policy applies to City-funded construction contracts. Bidders shall be fully informed of this policy as set forth in these specifications. Mandatory or voluntary subcontracting percentages, Bid Discounts, and restricted competitions are specified in the Contract Documents.
4. You shall make subcontracting opportunities available to a broad base of qualified Subcontractors and shall achieve the minimum SLBE-ELBE Subcontractor participation identified for your project.
5. Failure to subcontract the specified minimum (mandatory) percentages of the Bid to qualified available SLBE-ELBE Subcontractors will cause a Bid to be rejected as non-responsive unless the Bidder has demonstrated compliance with the affirmative steps as specified in the City's document titled "Small Local Business (SLBE) Program, INSTRUCTIONS FOR BIDDERS COMPLETING THE GOOD FAITH EFFORT SUBMITTAL" and has submitted documentation showing that all required positive efforts were made prior to the Bid submittal due date. The required Good Faith Effort (GFE) documentation shall be submitted to the Contract Specialist. The instructions for completing the good faith effort submittal can be found on the City's website:
<https://www.sandiego.gov/sites/default/files/legacy/eoc/pdf/slbegefinst.pdf>
6. The current list of certified SLBE-ELBE firms and information for completing the GFE submittal can be found on the City's EOC Department website:
<http://www.sandiego.gov/eoc/programs/slbe.shtml>
7. These requirements may be waived, at the City's sole discretion, on projects deemed inappropriate for subcontracting participation.

B.

DEFINITIONS.

1. The following definitions shall be used in conjunction with these specifications:

- a) **Bid Discount** – Additional inducements or enhancements in the bidding process that are designed to increase the chances for the selection of SLBE firms in competition with other firms.
- b) **Commercially Useful Function** – An SLBE-ELBE performs a commercially useful function when it is responsible for the execution of the Work and is carrying out its responsibilities by actually performing, managing, and supervising the Work involved. To perform a commercially useful function, the SLBE-ELBE shall also be responsible, with respect to materials and supplies used on the Contract, for negotiating price, determining quantity and quality, ordering the material, and installing (where applicable) and paying for the material itself.

To determine whether an SLBE-ELBE is performing a commercially useful function, an evaluation will be performed of the amount of Work subcontracted, normal industry practices, whether the amount the SLBE-ELBE firm is to be paid under the contract is commensurate with the Work it is actually performing and the SLBE-ELBE credit claimed for its performance of the Work, and other relevant factors. Specifically, an SLBE-ELBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of meaningful and useful SLBE-ELBE participation, when in similar transactions in which SLBE-ELBE firms do not participate, there is no such role performed.

- c) **Good Faith Efforts (GFE)** – Documentation of the Bidder’s intent to comply with SLBE Program goals and procedures included in the City’s SLBE Program, Instructions for Completing Good Faith Effort Submittal available from the City’s EOCP website or the Contract Specialist.
- d) **Independently Owned, Managed, and Operated** – Ownership of a SLBE-ELBE firm shall be direct, independent, and by individuals only. Business firms that are owned by other businesses or by the principals or owners of other businesses that cannot themselves qualify under the SLBE-ELBE eligibility requirements shall not be eligible to participate in the Program. Moreover, the day-to-day management of the SLBE-ELBE firm shall be direct and independent of the influence of any other businesses that cannot themselves qualify under the SLBE-ELBE eligibility requirements.
- e) **Joint Venture** – An association of two or more persons or business entities that is formed for the single purpose of carrying out a single defined business enterprise for which purpose they combine their

capital, efforts, skills, knowledge, or property. Joint ventures shall be established by written agreement to qualify for this program.

- f) **Local Business Enterprise (“LBE”)** – A firm having a Principal Place of Business and a Significant Employment Presence in San Diego County, California that has been in operation for 12 consecutive months and a valid business tax certificate. This definition is subsumed within the definition of Small Local Business Enterprise.
- g) **Minor Construction Program** – A program developed for bidding exclusively among SLBE-ELBE Construction firms.
- h) **Principal Place of Business** – A location wherein a firm maintains a physical office and through which it obtains no less than 50% of its overall customers or sales dollars.
- i) **Protégé** – A firm that has been approved and is an active participant in the City’s Mentor-Protégé Program and that has signed the required program participation agreement and has been assigned a mentor.
- j) **Significant Employee Presence** – No less than 25% of a firm’s total number of employees are domiciled in San Diego County.

C. SUBCONTRACTOR PARTICIPATION.

- 1. For the purpose of satisfying subcontracting participation requirements, only 1st tier SLBE–ELBE Subcontractors will be recognized as participants in the Contract according to the following criteria:
 - a) For credit to be allowed toward a respective participation level, all listed SLBE-ELBE firms shall have been certified by the Bid due date.
 - b) The Subcontractor shall perform a commercially useful function for credit to be allowed toward subcontractor participation levels. The Subcontractor shall be required by you to be responsible for the execution of a distinct element of the Work and shall carry out its responsibility by actually performing and supervising its own workforce.
 - c) If the Bidder is seeking the recognition of materials, supplies, or both towards achieving any mandatory subcontracting participation level, the Bidder shall indicate on Form AA40 – Named Equipment/Material Supplier List with the Bid the following:
 - i. If the materials or supplies are obtained from a SLBE-ELBE manufacturer, the Bidder will receive 100% of the cost of the materials or supplies toward SLBE participation. For the purposes of counting SLBE-ELBE participation, a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the Contract and of the general character described by the specifications.

- ii. If the materials or supplies are obtained from a SLBE-ELBE supplier, the Bidder will receive 60% of the cost of the materials or supplies toward SLBE participation. For the purposes of counting SLBE-ELBE participation a Supplier is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the Contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a supplier, the firm shall be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A person may be a supplier in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business if the person both owns and operates distribution equipment for the products. Any supplementing of the suppliers' own distribution equipment shall be by a long-term lease agreement and shall not be on an ad hoc or contract-by-contract basis.
 - iii. If the materials or supplies are obtained from a SLBE-ELBE, which is neither a manufacturer nor a supplier, the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, fees or transportation charges for the delivery of materials or supplies required on a job site will be counted toward SLBE-ELBE participation, provided the fees are reasonable and not excessive as compared with fees customarily allowed for similar services. No portion of the cost of the materials and supplies themselves will be counted toward SLBE-ELBE participation.
- d) If the Bidder is seeking the recognition of SLBE-ELBE Trucking towards achieving any mandatory subcontracting participation level, the Bidder shall indicate it on Form AA35 – List of Subcontractors with the Bid. The following factors will be evaluated in determining the credit to be allowed toward the respective participation level:
- i. The SLBE-ELBE shall be responsible for the management and supervision of the entire trucking operation for which it is getting credit on a particular Contract and there shall not be a contrived arrangement for the purpose of counting SLBE-ELBE participation.
 - ii. The SLBE-ELBE shall itself own and operate at least 1 fully licensed, insured, and operational truck used on the Contract.

- iii. The SLBE-ELBE receives credit for the total value of the transportation services it provides on the Contract using trucks it owns, insures, and operates using drivers it employs.
- iv. The SLBE-ELBE may lease trucks from another SLBE-ELBE firm including an owner-operator who is certified as a SLBE-ELBE. The SLBE-ELBE who leases trucks from another SLBE-ELBE receives credit for the total value of the transportation services the lessee SLBE-ELBE provides on the contract.
- v. The SLBE-ELBE may also lease trucks from a non-SLBE-ELBE firm, including an owner-operator. The SLBE-ELBE who leases trucks from a non-SLBE-ELBE is entitled to credit for the total value of transportation services provided by non-SLBE-ELBE lessees not to exceed the value of transportation services provided by SLBE-ELBE owned trucks on the contract. Additional participation by non-SLBE-ELBE lessees receive credit only for the fee or commission it receives as a result of the lease arrangement.
- vi. A lease shall indicate that the SLBE-ELBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the SLBE-ELBE so long as the lease gives the SLBE-ELBE absolute priority for use of the leased truck.

D. SLBE-ELBE SUBCONTRACTOR PARTICIPATION PERCENTAGES.

1. Contracts valued at \$1,000,000 and above will be considered Major Public Works Contracts and will include a mandatory Subcontractor participation requirement for SLBE-ELBE firms.
 - a) The Bidder shall achieve the mandatory Subcontractor participation requirement or demonstrate GFE.
 - b) The Bidders shall indicate the participation on Forms AA35 - List of Subcontractors and AA40 - Named Equipment/Material Supplier List as applicable regardless of the dollar value.
 - c) An SLBE-ELBE Bidder may count its own participation toward achieving the mandatory goal as long as the SLBE-ELBE Bidder performs 51% of the Contract Price.
2. Contracts Valued over \$500,000 and under \$1,000,000 will also be considered Major Public Works Contracts and will include the mandatory subcontractor participation requirements described above and the following:
 - a) 5% bid discount for SLBE-ELBE firms.
 - b) Non-certified Contractor will receive 5% bid discount if they achieve the specified mandatory Subcontracting participations.

- c) Bid discounts shall not apply if the award will result in a total contract cost of \$50,000 in excess of the apparent lowest Bid.
 - d) In the event of a tie bid between a SLBE-ELBE Bidder and a non-SLBE-ELBE Bidder, the SLBE-ELBE Bidder will be awarded the Contract.
 - e) In the event of a tie bid between a discounted Bid and a non-discounted Bid, the discounted Bid will be awarded the Contract.
- 3. Contracts valued over \$250,000 up to \$500,000 will be considered Minor Public Works Contracts and will be awarded through a competitive Bid process open only to City certified SLBE-ELBE firms. If there are no bidders or no responsible bidders, the Contract will be made available to all Bidders and will be subject to requirements listed in items 1 and 2 for Major Public Works Contracts above.
 - 4. Contracts valued at \$250,000 and below will also be considered Minor Public Works Contracts and will be awarded through a competitive bid process open only to City certified ELBEs unless there are less than 2 firms available at which it will be awarded through a competitive process open only to the City certified SLBE-ELBE firms. If there are no bidders or no responsible bidders, the Contract will be made available to all Bidders and subject to requirements listed in items 1 and 2 for Major Public Works Contracts above.

E. JOINT VENTURES.

- 1. The City may allow for Joint Venture bid discounts on some Contracts. Contracts that allow for Joint Venture bid discounts will be designated in Bid documents. A firm that is bidding or competing for City Contracts may partner with a certified SLBE or ELBE to compete for Contracts as a Joint Venture.
- 2. A Joint Venture shall be between two entities with the same discipline or license as required by the City. Joint ventures will receive bid discounts depending on the SLBE or ELBE percentage of participation. To be eligible for a discount, a Joint Venture Agreement shall be approved by the City at the time of Bid submittal. The maximum allowable discount shall be 5%. The parties shall agree to enter in the relationship for the life of the projects.
- 3. Joint Venture shall submit a Joint Venture Management Plan, a Joint Venture Agreement, or both at least 2 weeks prior to the Bid due date. Copies of the Joint Venture applications are available upon request to the Contract Specialist. Each agreement or management plan shall include the following:
 - a) Detailed explanation of the financial contribution for each partner.
 - b) List of personnel and equipment used by each partner.
 - c) Detailed breakdown of the responsibilities of each partner.
 - d) Explanation of how the profits and losses will be distributed.
 - e) Description of the bonding capacity of each partner.
 - f) Management or incentive fees available for any one of the partners (if any).

4. Each Joint Venture partner shall perform a Commercially Useful Function. An SLBE or ELBE that relies on the resources and personnel of a non-SLBE or ELBE firm will not be deemed to perform a Commercially Useful Function.
5. Each Joint Venture partner shall possess licenses appropriate for the discipline for which a proposal is being submitted. If a Joint Venture is bidding on a single trade project, at the time of bid submittal, each Joint Venture partner shall possess the requisite specialty license for that trade bid.
6. The SLBE or ELBE partner shall clearly define the portion of the Work to be performed. This Work shall be of the similar type of Work the SLBE or ELBE partner performs in the normal course of its business. The Joint Venture Participation Form shall specify the Bid items to be performed by each individual Joint Venture partner. Lump sum Joint Venture participation shall not be acceptable.
7. Responsibilities of the SLBE or ELBE Joint Venture Partner:
 - a) The SLBE or ELBE partner shall share in the control, management responsibilities, risks and profits of the Joint Venture in proportion with the level of participation in the project.
 - b) The SLBE or ELBE partner shall perform Work that is commensurate with its experience.
 - c) The SLBE or ELBE partner shall use its own employees and equipment to perform its portion of the Work.
 - d) The Joint Venture as a whole shall perform Bid items that equal or exceed 50% of the Contract Price, excluding the cost of manufactured items, in order to be eligible for a Joint Venture discount.

F. MAINTAINING PARTICIPATION LEVELS.

1. Credit and preference points are earned based on the level of participation proposed prior to the award of the Contract. Once the Project begins you shall achieve and maintain the SLBE-ELBE participation levels for which credit and preference points were earned. You shall maintain the SLBE-ELBE percentages indicated at the Award of Contract and throughout the Contract Time.
2. If the City modifies the original Scope of Work, you shall make reasonable efforts to maintain the SLBE-ELBE participation for which creditor preference points were earned. If participation levels will be reduced, approval shall be received from the City prior to making changes.
3. You shall notify and obtain written approval from the City in advance of any reduction in subcontract scope, termination, or substitution for a designated SLBE-ELBE Subcontractor. Failure to do so shall constitute a material breach of the Contract.
4. If you fail to maintain the SLBE-ELBE participation listed at the time the Contract is awarded and have not received prior approval from the City, the

City may declare you in default and will be considered grounds for debarment under Chapter 2, Article 2, Division 8, of the San Diego Municipal Code.

G. SUBCONTRACTING EFFORTS REVIEW AND EVALUATION.

1. Documentation of your subcontracting efforts will be reviewed by EOC to verify that you made subcontracting opportunities available to a broad base of qualified Subcontractors, negotiated in good faith with interested Subcontractors, and did not reject any bid for unlawful discriminatory reasons. The EOC review is based on the federal “Six Good Faith Efforts” model.
2. The GFEs are required methods to ensure that all ELBE and SLBE firms have had the opportunity to compete for the City’s Public Works procurements. The Six Good Faith Efforts, also known as affirmative steps, attract and utilize ELBE and SLBE firms:
 - a) Ensure ELBE firms are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities.
 - b) Make information of forthcoming opportunities available to SLBE-ELBE firms and arrange time for Contracts and establish delivery schedules, where requirements permit, in a way that encourages and facilitates participation by SLBE-ELBE firms in the competitive process. This includes posting solicitations for Bids or proposals to SLBE-ELBE firms for a minimum of 10 Working Days before the Bid or Proposal due date.
 - c) Consider in the contracting process whether firms competing for large Contracts could subcontract with SLBE-ELBE firms.
 - d) Encourage contracting with a consortium of ELBE-SLBE firms when a Contract is too large for one of these firms to handle individually.
 - e) Use the services and assistance of the City’s EOC Office and the SLBE-ELBE Directory.
 - f) If you award subcontracts, require your Subcontractors to take the steps listed above.

H. GOOD FAITH EFFORT DOCUMENTATION.

1. If the specified SLBE-ELBE Subcontractor participation percentages are not met, you shall submit information necessary to establish that adequate GFEs were taken to meet the Contract Subcontractor participation percentages. See the City’s document titled “Small Local Business (SLBE) Program, INSTRUCTIONS FOR BIDDERS COMPLETING THE GOOD FAITH EFFORT SUBMITTAL.” The instructions for completing the good faith effort submittal can be found on the City’s website:

<https://www.sandiego.gov/sites/default/files/legacy/eoc/pdf/slbegfeinst.pdf>

I. SUBCONTRACTOR SUBSTITUTION.

1. Evidence of fraud or discrimination in the substitution of Subcontractors will result in sanctions including assessment of penalty fines, termination of Contract, or debarment. This section does not replace applicable California Public Contract Code.

J. FALSIFICATION OF SUB-AGREEMENT AND FRAUD.

1. Falsification or misrepresentation of a sub-agreement as to company name, Contract amount or actual Work performed by Subcontractors, or any falsification or fraud on the part your submission of documentation and forms pursuant to this program, will result in sanctions against you including assessment of penalty fines, termination of the Contract, or debarment. Instances of falsification or fraud which are indicative of an attempt by you to avoid subcontracting with certain categories of Subcontractors on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability shall be referred to the Equal Opportunity Contracting Program's Investigative Unit for possible violations of Article 2, Division 35 of the City Administrative Code, §§22.3501 et seq. (Nondiscrimination in Contracting).

K. RESOURCES.

1. The current list of certified SLBE-ELBE firms and information for completing the GFE submittal can be found on the City's EOC Department website:
<http://www.sandiego.gov/eoc/programs/slbe.shtml>
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ATTACHMENT D
PREVAILING WAGE

PREVAILING WAGE

1. **PREVAILING WAGE RATES:** Pursuant to San Diego Municipal Code section 22.3019, construction, alteration, demolition, repair and maintenance work performed under this Contract is subject to State prevailing wage laws. For construction work performed under this Contract cumulatively exceeding \$25,000 and for alteration, demolition, repair and maintenance work performed under this Contract cumulatively exceeding \$15,000, the Contractor and its subcontractors shall comply with State prevailing wage laws including, but not limited to, the requirements listed below.
 - 1.1. **Compliance with Prevailing Wage Requirements.** Pursuant to sections 1720 through 1861 of the California Labor Code, the Contractor and its subcontractors shall ensure that all workers who perform work under this Contract are paid not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations (DIR). This includes work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work.
 - 1.1.1. Copies of such prevailing rate of per diem wages are on file at the City and are available for inspection to any interested party on request. Copies of the prevailing rate of per diem wages also may be found at <http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>. Contractor and its subcontractors shall post a copy of the prevailing rate of per diem wages determination at each job site and shall make them available to any interested party upon request.
 - 1.1.2. The wage rates determined by the DIR refer to expiration dates. If the published wage rate does not refer to a predetermined wage rate to be paid after the expiration date, then the published rate of wage shall be in effect for the life of this Contract. If the published wage rate refers to a predetermined wage rate to become effective upon expiration of the published wage rate and the predetermined wage rate is on file with the DIR, such predetermined wage rate shall become effective on the date following the expiration date and shall apply to this Contract in the same manner as if it had been published in said publication. If the predetermined wage rate refers to one or more additional expiration dates with additional predetermined wage rates, which expiration dates occur during the life of this Contract, each successive predetermined wage rate shall apply to this Contract on the date following the expiration date of the previous wage rate. If the last of such predetermined wage rates expires during the life of this Contract, such wage rate shall apply to the balance of the Contract.
 - 1.2. **Penalties for Violations.** Contractor and its subcontractors shall comply with California Labor Code section 1775 in the event a worker is paid less than the prevailing wage rate for the work or craft in which the worker is employed. This shall be in addition to any other applicable penalties allowed under Labor Code sections 1720 – 1861.

- 1.3. Payroll Records.** Contractor and its subcontractors shall comply with California Labor Code section 1776, which generally requires keeping accurate payroll records, verifying and certifying payroll records, and making them available for inspection. Contractor shall require its subcontractors to also comply with section 1776. Contractor and its subcontractors shall submit weekly certified payroll records online via the City's web-based Labor Compliance Program. Contractor is responsible for ensuring its subcontractors submit certified payroll records to the City.
- 1.3.1.** Contractor and their subcontractors shall also furnish records specified in Labor Code section 1776 directly to the Labor Commissioner in the manner required by Labor Code section 1771.4.
- 1.4. Apprentices.** Contractor and its subcontractors shall comply with California Labor Code sections 1777.5, 1777.6 and 1777.7 concerning the employment and wages of apprentices. Contractor is held responsible for the compliance of their subcontractors with sections 1777.5, 1777.6 and 1777.7.
- 1.5. Working Hours.** Contractor and their subcontractors shall comply with California Labor Code sections 1810 through 1815, including but not limited to: (i) restrict working hours on public works contracts to eight hours a day and forty hours a week, unless all hours worked in excess of 8 hours per day are compensated at not less than 1½ times the basic rate of pay; and (ii) specify penalties to be imposed on contractors and subcontractors of \$25 per worker per day for each day the worker works more than 8 hours per day and 40 hours per week in violation of California Labor Code sections 1810 through 1815.
- 1.6. Required Provisions for Subcontracts.** Contractor shall include at a minimum a copy of the following provisions in any contract they enter into with a subcontractor: California Labor Code sections 1771, 1771.1, 1775, 1776, 1777.5, 1810, 1813, 1815, 1860 and 1861.
- 1.7. Labor Code Section 1861 Certification.** Contractor in accordance with California Labor Code section 3700 is required to secure the payment of compensation of its employees and by signing this Contract, Contractor certifies that "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract."
- 1.8. Labor Compliance Program.** The City has its own Labor Compliance Program authorized in August 2011 by the DIR. The City will withhold contract payments when payroll records are delinquent or deemed inadequate by the City or other governmental entity, or it has been established after an investigation by the City or other governmental entity that underpayment(s) have occurred. For questions or assistance, please contact the City of San Diego's Prevailing Wage Unit at 858-627-3200.

- 1.9. Contractor and Subcontractor Registration Requirements.** This project is subject to compliance monitoring and enforcement by the DIR. A contractor or subcontractor shall not be qualified to bid on, be listed in a bid or proposal, subject to the requirements of section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to Labor Code section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.
- 1.9.1.** A Contractor's inadvertent error in listing a subcontractor who is not registered pursuant to Labor Code section 1725.5 in response to a solicitation shall not be grounds for filing a bid protest or grounds for considering the bid non-responsive provided that any of the following apply: (1) the subcontractor is registered prior to bid opening; (2) within twenty-four hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in Labor Code section 1725.5; or (3) the subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.
- 1.9.2.** By submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the DIR in compliance with Labor Code sections 1771.1 and 1725.5, and Contractor shall provide proof of registration for themselves and all listed subcontractors to the City at the time of bid or proposal due date or upon request.
- 1.10. Stop Order.** For Contractor or its subcontractors engaging in the performance of any public work contract without having been registered in violation of Labor Code sections 1725.5 or 1771.1, the Labor Commissioner shall issue and serve a stop order prohibiting the use of the unregistered contractors or unregistered subcontractor(s) on ALL public works until the unregistered contractor or unregistered subcontractor(s) is registered. Failure to observe a stop order is a misdemeanor.
- 1.11. List of all Subcontractors.** The Contractor shall provide the list of subcontractors (regardless of tier), along with their DIR registration numbers, utilized on this Contract prior to any work being performed; and the Contractor shall provide a complete list of all subcontractors with each invoice. Additionally, Contractor shall provide the City with a complete list of all subcontractors (regardless of tier) utilized on this contract within ten working days of the completion of the contract, along with their DIR registration numbers. The City shall withhold final payment to Construction Management Professional until at least thirty (30) days after this information is provided to the City.
- 1.12. Exemptions for Small Projects.** There are limited exemptions for installation, alteration, demolition, or repair work done on projects of \$25,000 or less. The Contractor shall still comply with Labor Code sections 1720 et. seq. The only recognized exemptions are listed below:
- 1.12.1.** Registration. The Contractor will not be required to register with the DIR for small projects. (Labor Code section 1771.1).

- 1.12.2.** Certified Payroll Records. The records required in Labor Code section 1776 shall be required to be kept and submitted to the City of San Diego, but will not be required to be submitted online with the DIR directly. The Contractor will need to keep those records for at least three years following the completion of the Contract. (Labor Code section 1771.4).
- 1.12.3.** List of all Subcontractors. The Contractor shall not be required to hire only registered subcontractors and is exempt from submitting the list of all subcontractors that is required in section 1.11 above. (Labor code section 1773.3).

ATTACHMENT E
SUPPLEMENTARY SPECIAL PROVISIONS

SUPPLEMENTARY SPECIAL PROVISIONS

The following Supplementary Special Provisions (SSP) modifies the following documents:

1. The **2021 Edition** of the Standard Specifications for Public Works Construction (The "GREENBOOK").
2. The **2021 Edition** of the City of San Diego Standard Specifications for Public Works Construction (The "WHITEBOOK"), including the following:
 - a) General Provisions (A) for all Construction Contracts.

SECTION 1 – GENERAL, TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

1-2 TERMS AND DEFINITIONS. To the "WHITEBOOK", item 55, "Normal Working Hours", ADD the following:

The **Normal Working Hours** are **7:00 AM to 5:00 PM**.

SECTION 3 – CONTROL OF THE WORK

3-2 SELF-PERFORMANCE. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall perform, with your own organization, Contract Work amounting to at least **35%** of the Base Bid.

3-9 TECHNICAL STUDIES AND SUBSURFACE DATA. To the "WHITEBOOK", ADD the following:

5. In preparation of the Contract Documents, the designer has relied upon the following reports (also attached as appendices) of explorations and tests at the Work Site:
 - a) Twining - Geotechnical – Preliminary Geotechnical Investigation – April 10, 2018.
 - b) Twining - Geotechnical – Response to City of San Diego LDR-Geology Environmental Review – September 16, 2020.
 - c) RECON – Historical Resources Survey for the College Area Sewer and AC Water Project – August 18, 2020.
 - d) RECON – Biological Technical Report for the College Area Sewer and AC Water Project – August 19, 2020.
 - e) RECON – Jurisdictional Waters/Wetland Delineation Report for the College Area AC Water and Sewer Project – February 11, 2019.

f) PSOMAS – Design Technical Memorandum – August 19, 2021.

6. The reports listed above are available for review, See Appendices L through Q, of this contract document.

3-10 SURVEYING. To the “GREENBOOK” and “WHITEBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

3-10 SURVEYING (DESIGN-BID-BUILD).

3-10.1 General.

1. You shall provide all required site layout and general grade checking work not specified in 3-10.2, “Survey Services Provided by City”.
2. Notify the City, in writing, at least 2 Working Days prior to requesting survey services provided by the City.

3-10.2 Survey Services Provided by City.

1. Unless otherwise noted, monument perpetuation, including mark-outs, will be performed by the City. Coordination of these services will be your duty, through the Resident Engineer. If, at any time, an existing survey monument is, or will be, destroyed or disturbed during the course of construction you shall notify the Resident Engineer so that the monument is preserved or perpetuated in accordance with state law.
2. The following surveying services, as defined in Cal. Bus. & Prof. Code §8726, shall be provided by the City:
 - a) Locating or establishing a minimum of 4 project geodetic survey control points that provide horizontal and vertical reference values for site feature and structure layout reference locations.
 - b) Locating, establishing, or reestablishing project site boundary lines, survey monuments, right-of-way lines, or easement lines.
 - c) Locating or establishing building design structure locations (building corners or envelope limits) sufficient for structure construction.

3-10.3 Payment.

1. The payment for site layout and general grade checking Work, coordination, and preservation of all survey related marks shall be included in the Contract Price.

SECTION 4 - CONTROL OF MATERIALS

4-3.4 Specialty Inspection Paid for by the Contractor. To the “WHITEBOOK”, ADD the following:

2. The specialty inspections required are listed as follows:
 - a) Steel Welding

4-6 TRADE NAMES. To the “WHITEBOOK”, ADD the following:

11. You shall submit your list of proposed substitutions for an “equal” item **no later than 5 Working Days after the issuance of the Notice of Intent to Award** and on the City’s Product Submittal Form available at:

<https://www.sandiego.gov/ecp/edocref/>

SECTION 5 – LEGAL RELATIONS AND RESPONSIBILITIES

5-4 INSURANCE. To the “GREENBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

5-4 INSURANCE.

1. The insurance provisions herein shall not be construed to limit your indemnity and defense duties set forth in the Contract.

5-4.1 Policies and Procedures.

1. You shall procure the insurance described below, at your sole cost and expense, to provide coverage against claims for loss including injuries to persons or damage to property, which may arise out of or in connection with the performance of the Work by you, your agents, representatives, officers, employees or Subcontractors.
2. Insurance coverage for property damage resulting from your operations is on a replacement cost valuation. The market value will not be accepted.
3. You shall maintain this insurance as required by this Contract and at all times thereafter when you are correcting, removing, or replacing Work in accordance with this Contract. Your duties under the Contract, including your indemnity obligations, are not limited to the insurance coverage required by this Contract.
4. If you maintain broader coverage or higher limits than the minimums shown below, City requires and shall be entitled to the broader coverage or the higher limits maintained by you. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to City.
5. Your payment for insurance shall be included in the Contract Price you bid. You are not entitled to any additional payment from the City to cover your insurance, unless the City specifically agrees to payment in writing. Do not begin any Work under this Contract or allow any Subcontractors to begin work, until you have provided, and the City has approved, all required insurance.
6. Policies of insurance shall provide that the City is entitled to 30 days advance written notice of cancellation or non-renewal of the policy or 10 days advance written notice for cancellation due to non-payment of premium. Maintenance of specified insurance coverage is a material element of the Contract. Your

failure to maintain or renew coverage and to provide evidence of renewal during the term of the Contract may be treated by the City as a material breach of the Contract.

5-4.2 Types of Insurance.

5-4.2.1 General Liability Insurance.

1. Commercial General Liability Insurance shall be written on the current version of the ISO Occurrence form CG 00 01 07 98 or an equivalent form providing coverage at least as broad.
2. The policy shall cover liability arising from premises and operations, XCU (explosions, underground, and collapse), independent contractors, products/completed operations, personal injury and advertising injury, bodily injury, property damage, and liability assumed under an insured’s contract (including the tort liability of another assumed in a business contract).
3. There shall be no endorsement or modification limiting the scope of coverage for either “insured vs. insured” claims or contractual liability. You shall maintain the same or equivalent insurance for at least 10 years following completion of the Work.
4. All costs of defense shall be outside the policy limits. Policy coverage shall be in liability limits of not less than the following:

<u>General Annual Aggregate Limit</u>	<u>Limits of Liability</u>
Other than Products/Completed Operations	\$10,000,000
Products/Completed Operations Aggregate Limit	\$10,000,000
Personal Injury Limit	\$5,000,000
Each Occurrence	\$5,000,000

5-4.2.2 Commercial Automobile Liability Insurance.

1. You shall provide a policy or policies of Commercial Automobile Liability Insurance written on the current version of the ISO form CA 00 01 12 90 or later version or equivalent form providing coverage at least as broad in the amount of \$1,000,000 combined single limit per accident, covering bodily injury and property damage for owned, non-owned, and hired automobiles (“Any Auto”).
2. All costs of defense shall be outside the limits of the policy.

5-4.2.3 Workers’ Compensation Insurance and Employers Liability Insurance.

1. In accordance with the provisions of California Labor Code section 3700, you shall provide, at your expense, Workers’ Compensation Insurance and

Employers Liability Insurance to protect you against all claims under applicable state workers' compensation laws. The City, its elected officials, and employees will not be responsible for any claims in law or equity occasioned by your failure to comply with this requirement.

2. Statutory Limits shall be provided for Workers' Compensation Insurance as required by the state of California, and Employer's Liability Insurance with limits of no less than \$1,000,000 per accident for bodily injury or disease.
3. By signing and returning the Contract, you certify that you are aware of the provisions of California's Workers' Compensation laws, including Labor Code section 3700, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance, and that you will comply with these provisions before commencing the Work..

5-4.2.4 Contractors Pollution Liability Insurance.

1. You shall procure and maintain at your expense or require your Subcontractor, as described below, to procure and maintain Contractors Pollution Liability Insurance applicable to the Work being performed, with a limit no less than \$2,000,000 per claim or occurrence and \$4,000,000 aggregate per policy period of one year.
2. All costs of defense shall be outside the limits of the policy.
3. You shall obtain written approval from the City for any insurance provided by your Subcontractor instead of you.
4. For approval of a substitution of your Subcontractor's insurance, you shall certify that all activities for which the Contractors Pollution Liability Insurance will provide coverage will be performed exclusively by the Subcontractor providing the insurance. The deductible shall not exceed \$25,000 per claim unless the City has provided prior, written approval.
5. Occurrence based policies shall be procured before the Work commences. Claims Made policies shall be procured before the Work commences, shall be maintained for the Contract Time, and shall include a 12-month extended Claims Discovery Period applicable to this contract or the existing policy or policies that shall continue to be maintained for 12 months after the completion of the Work without advancing the retroactive date.

5-4.2.5 Contractors Hazardous Transporters Pollution Liability Insurance.

1. You shall procure and maintain at your expense or require your Subcontractor, as described below, to procure and maintain Contractors Hazardous Transporters Pollution Liability Insurance, including contractual liability coverage to cover liability arising out of transportation of hazardous or toxic, materials, substances, or any other pollutants by you or any Subcontractor in an amount no less than \$2,000,000 limit per occurrence and \$4,000,000 aggregate per policy period of one year.

2. All costs of defense shall be outside the limits of the policy.
3. You shall obtain written approval from the City from any insurance provided by a Subcontractor instead of you..
4. To obtain City approval of a Subcontractor's insurance coverage in lieu of the Contractor's insurance, the Contractor shall certify that all activities under the Contractor's Hazardous Transporters Pollution Liability Insurance will be performed exclusively by the Subcontractor providing the insurance. The deductible shall not exceed \$25,000 per claim without prior approval of the City
5. Occurrence based policies shall be procured before the Work commences. Claims Made policies shall be procured before the Work commences, shall be maintained for the duration of this contract, and shall include a 12-month extended Claims Discovery Period applicable to this Contract or the existing policy or policies that shall continue to be maintained for 12 months after the completion of the Work under this Contract without advancing the retroactive date.

5-4.2.8 Architects and Engineers Professional Insurance (Errors and Omissions Insurance).

1. For Contracts with required engineering services, including Design-Build and preparation of engineered Traffic Control Plans (TCP) by you, you shall keep or require all of your employees and Subcontractors, who provide professional engineering services under Contract, to provide to the City proof of Professional Liability coverage with a limit of no less than **\$1,000,000** per claim and **\$2,000,000** aggregate per policy period of one year.
2. You shall ensure the following:
 - a) The policy retroactive date is on or before the date of commencement of the Project.
 - b) The policy will be maintained in force for a period of three years after completion of the Project or termination of the Contract, whichever occurs last. You agree that, for the time period specified above, there will be no changes or endorsements to the policy that affect the specified coverage.
3. If professional engineering services are to be provided solely by the Subcontractor, you shall:
 - a) Certify this to the City in writing, and
 - b) Agree in writing to require the Subcontractor to procure Professional Liability coverage in accordance with the requirements set forth here.

5-4.3 Rating Requirements. Except for the State Compensation Insurance Fund, all insurance required by this Contract shall be carried only by responsible insurance

companies with a rating of, or equivalent to, at least "A-, VI" by A.M. Best Company, that are authorized by the California Insurance Commissioner to do business in the state of California, and that have been approved by the City.

5-4.3.1 Non-Admitted Carriers. The City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the state of California and is included on the List of Approved Surplus Lines Insurers (LASLI list).

All policies of insurance carried by non-admitted carriers shall be subject to all of the requirements for policies of insurance provided by admitted carriers described in this Contract.

5-4.4 Evidence of Insurance. You shall furnish the City with original Certificates of Insurance, including all required amendatory endorsements (or copies of the applicable policy language effecting coverage required by this clause), prior to your commencement of Work under this Contract. In addition, The City reserves the right to require complete, certified copies of all required insurance policies, including endorsements, required by these specifications, at any time.

5-4.5 Policy Endorsements.

5-4.5.1 Commercial General Liability Insurance.

5-4.5.1.1 Additional Insured. To the fullest extent permitted by law and consistent with the limiting provisions set forth at California Civil Code section 2782, California Insurance Code section 11580.04, and any applicable successor statutes limiting indemnification of public agencies that bind the City, the policy or policies shall be endorsed to include as an Additional Insured the City and its respective elected officials, officers, employees, agents, and representatives, with respect to liability arising out of:

- i. Ongoing operations performed by you or on your behalf,
- ii. your products,
- iii. your work, e.g., your completed operations performed by you or on your behalf, or
- iv. premises owned, leased, controlled, or used by you.

5-4.5.1.2 Primary and Non-Contributory Coverage. The policy shall be endorsed to provide that the coverage with respect to operations, including the completed operations, if appropriate, of the Named Insured is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives. Further, it shall provide that any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

5-4.5.1.3 Project General Aggregate Limit. The policy or policies shall be endorsed to provide a Designated Construction Project General Aggregate Limit that will apply only to the Work. Only claims payments which arise from the Work shall reduce the Designated Construction Project General Aggregate Limit. The Designated Construction Project General Aggregate Limit shall be in addition to the aggregate limit provided for the products-completed operations hazard.

5-4.5.2 Workers' Compensation Insurance and Employers Liability Insurance.

5-4.5.2.1 Waiver of Subrogation. The policy or policies shall be endorsed to provide that the insurer will waive all rights of subrogation against the City and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from Work performed by the Named Insured for the City.

5-4.5.3 Contractors Pollution Liability Insurance Endorsements.

5-4.5.3.1 Additional Insured. To the fullest extent permitted by law and consistent with the limiting provisions set forth at California Civil Code section 2782, California Insurance Code section 11580.04, and any applicable successor statutes limiting indemnification of public agencies that bind the City, the policy or policies shall be endorsed to include as an Additional Insured the City and its respective elected officials, officers, employees, agents, and representatives, with respect to liability arising out of:

- a. Ongoing operations performed by you or on your behalf,
- b. your products,
- c. your work, e.g., your completed operations performed by you or on your behalf, or
- d. premises owned, leased, controlled, or used by you.

5-4.5.3.2 Primary and Non-Contributory Coverage. The policy or policies shall be endorsed to provide that the insurance afforded by the Contractors Pollution Liability Insurance policy or policies is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives with respect to operations including the completed operations of the Named Insured. Any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

5-4.5.3.2 Severability of Interest. For Contractors Pollution Liability Insurance, the policy or policies shall provide that your insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability and shall provide cross-liability coverage.

5-4.5.4 Contractors Hazardous Transporters Pollution Liability Insurance Endorsements.

5-4.5.4.1 Additional Insured. To the fullest extent permitted by law and consistent with the limiting provisions set forth at California Civil Code section 2782, California Insurance Code section 11580.04, and any applicable successor statutes limiting indemnification of public agencies that bind the City, the policy or policies shall be endorsed to include as an Additional Insured the City and its respective elected officials, officers, employees, agents, and representatives, with respect to liability arising out of:

- a. Ongoing operations performed by you or on your behalf,
- b. your products,
- c. your work, e.g., your completed operations performed by you or on your behalf, or
- d. premises owned, leased, controlled, or used by you.

5-4.5.4.2 Primary and Non-Contributory Coverage. The policy or policies shall be endorsed to provide that the insurance afforded by the Contractors Pollution Liability Insurance policy or policies is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives with respect to operations including the completed operations of the Named Insured. Any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

5-4.5.4.2 Severability of Interest. For Contractors Hazardous Transporters Pollution Liability Insurance, the policy or policies shall provide that your insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability, and shall provide cross-liability coverage.

5-4.6 Deductibles and Self-Insured Retentions. You shall disclose deductibles and self-insured retentions to the City at the time the evidence of insurance is provided. The City may require you to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or City.

5-4.7 Reservation of Rights. The City reserves the right, from time to time, to review your insurance coverage, limits, deductibles, and self-insured retentions to determine if they are acceptable to the City. The City will reimburse you, without overhead, profit, or any other markup, for the cost of additional premium for any coverage requested by the Engineer, but not required by this Contract.

5-4.8 Notice of Changes to Insurance. You shall notify the City, in writing, 30 days prior to any material change to the policies of insurance provided under this Contract. This written notice is in addition to the requirements of paragraph 8 of Section 5-4.1. Policies of insurance shall provide that the City is entitled to 30 days advance written notice of cancellation or non-renewal of the policy or 10 days advance written notice for cancellation due to non-payment of premium. Maintenance of specified insurance coverage is a material element of the Contract. Your failure to maintain or renew coverage and to provide evidence of renewal during the term of the Contract may be treated by the City as a material breach of the Contract.

5-4.9 Excess Insurance. Policies providing excess coverage shall follow the form of the primary policy or policies, including, all endorsements.

ADD:

5-10.1.3 Weekly Updates Recipients.

1. Submit a weekly correspondence with updates, traffic control issues and locations, lane closures, and any other pertinent information (with additional contact names given during award process) to the following recipients:

Sheila Bose, Senior Engineer, Sbose@san Diego.gov

Jericho Gallardo, Project Manager, JGallardo@san Diego.gov

James Piel III, Project Engineer, JRPiel@san Diego.gov

Resident Engineer, TBD, XXX@san Diego.gov

5-10.3 Exclusive Community Liaison Services. To the "WHITEBOOK", ADD the following:

2. You shall retain an Exclusive Community Liaison for the Project that shall implement Work in accordance with the specifications described in 5-10.2 "Community Outreach Services" and 5-10.3 "Exclusive Community Liaison Services".

SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK

6-1.1 Construction Schedule. To the "WHITEBOOK", ADD the following:

3. Refer to the Sample City Invoice materials in **Appendix D – Sample City Invoice with Cash Flow Forecast** and use the format shown.
4. The **120 Calendar Day** Plant Establishment Period is included in the stipulated Contract Time and shall begin with the acceptance of installation of the vegetation plan in accordance with Section 801-6, "MAINTENANCE AND PLANT ESTABLISHMENT".

6-1.2.1 Construction Phasing. To the "WHITEBOOK", ADD the following:

3. All construction work related to plan sheets C-1 through C-4 (College Glen Sewer Easement) shall be completed as first order of work. Contractor to

make arrangements through the Residential Engineer to coordinate all construction activities.

ADD:

6-6.1.1

Environmental Document.

1. The City of San Diego has prepared a **Mitigated Negative Declaration** for **College Areas Swr & AC Wtr Main Repl**, Project No. **646068**, as referenced in the Contract Appendix. You shall comply with all requirements of the **Mitigated Negative Declaration** as set forth in **Appendix A**.
2. The San Diego Regional Water Quality Control Board has prepared a **Notice of Applicability (NOA)** for **College Areas Swr & AC Wtr Main Repl**, Project No. **646068**, as referenced in the Contract Appendix. You shall comply with all requirements of the **Notice of Applicability (NOA)** as set forth in **Appendix K**.
3. The State Water Resources Control Board has prepared a **Water Quality Order** for **College Areas Swr & AC Wtr Main Repl**, Project No. **2004-0004-DWQ**, as referenced in the Contract Appendix. You shall comply with all requirements of the **Water Quality Order** as set forth in **Appendix J**.
4. Compliance with the City's environmental document shall be included in the Contract Price, unless separate bid items have been provided.

6-6.2.2

Paleontological Monitoring Program. To the "WHITEBOOK", ADD the following:

3. You shall retain a qualified paleontologist for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the paleontologist monitor. Notify the Engineer before noon of the Working Day before monitoring is required. See 3-5, "INSPECTION" for details.

SECTION 7 – MEASUREMENT AND PAYMENT

7-3.11

Compensation Adjustments for Price Index Fluctuations. To the "WHITEBOOK", ADD the following:

5. This Contract is not subject to the provisions of The "WHITEBOOK" for Compensation Adjustments for Price Index Fluctuations for paving asphalt.

SECTION 209 – PRESSURE PIPE

209-1.1.1

General. To the "WHITEBOOK", ADD the following:

2. PVC products, specifically type C900 and C905, as manufactured or distributed by J-M Manufacturing Company or JM Eagle shall not be used on the Contract for pressurized pipe.
3. Refer to AWWA C900-16 for all references to AWWA C905.

SECTION 300 – CONSTRUCTION METHODS

300-1.4 **General.** To the “WHITEBOOK”, item 1, DELETE in its entirety and SUBSTITUTE with the following:

The lump sum Bid item for “Clearing and Grubbing” shall include full compensation for the removal and disposal of all the resulting materials within the designated access paths.

SECTION 306 – OPEN TRENCH CONDUIT CONSTRUCTION

ADD:

306-1.1 **High-line Phasing.**

1. Build the Project in accordance with the water high-lining phasing shown on the Plans and in phases as follows:
 - a) Phase I: Campanile Dr (from Baja Dr to Campanile Way)
 - b) Phase II: Campanile Dr (from cul-de-sac to Campanile Way)
 - c) Phase III: Campanile Way (from cul-de-sac to Campanile Dr)
 - d) Phase IV: Baja Dr (from cul-de-sac to Campanile Dr)

306-7.8.2.1 **General.** To the “WHITEBOOK”, item 2, DELETE in its entirety and SUBSTITUTE with the following:

2. Pressure testing of pipe and fittings at the lowest elevation shall be performed at 150% of the specified test pressure and no less than 100% of the specified test pressure at the highest elevation.
 - a) Specified test pressure for Class 305 pipe shall be 200 psi and is tested at 300 psi.

306-16.6 **Payment.** To the WHITEBOOK, ADD to the following:

The payment for manhole vault installation shall be included in the Bid item for “Manhole No. 4, No. 21 & No. 24 Vault Installation” and shall include all material associated. See plan sheets for details.

SECTION 307 – JACKING AND TUNNELING

ADD:

307-1.1 **General.** To the “GREENBOOK”, ADD the following:

The Contractor will be responsible for submitting means and methods for pipe installation to City for approval and obtaining the final approved permit necessary to perform the work, which shall include OSHA tunneling permits and disposal permits for each operation as required. The Underground Tunnel Classifications are provided

in **Appendix R**. The Contractor shall provide all labor, equipment, materials, and incidentals to tunneling operations.

See **Appendix R** for soil information as well as discussions, tables, and references related to trenchless installation.

The terms 'shaft' and 'pit', as well as, 'jacking' and 'launch', are intended to be used interchangeably, and can be interpreted as the same thing. Additionally, the Contractor shall submit working drawings showing details of the following:

The Contractor must submit plans for each trenchless operation/setup, including the following:

1. The tunneling method, size and shape of jacking and receiving shafts, shoring design plans, thrust block design, including structural calculations signed and stamped by CA registered professional engineer, and shaft backfill and shoring removal method.
2. Layout, access and dimensions of work site, depth and dimensions of launching and receiving pits; including jacking equipment within the pit/shaft and aboveground equipment at each location. The areas provided in the construction plans are approximate areas available to the contractor only and shown schematically. All contractor's equipment and operations must be restricted to existing easement and approved temporary construction area, as shown in construction plans.
3. Grade and alignment controls, and design of the navigation system including operating parameters, monitoring recording and QA/QC requirements. Manufacturer's specifications, manuals, and any drawings of the navigation system.
4. Estimated daily volume of spoils generated and means and methods for field measurement and verification. Upon completion of the tunneling, Contractor shall provide a Boring Record stamped by a California registered professional engineer.
5. Casing pipe size and material for each operation, including design, layout and material for grout and grout port locations for pressure grouting the outside diameter immediately after the casing had been bored in place.
6. Ground surface and subsurface settlement monitoring program plan.
7. Dewatering plan, as applicable for each operation.
8. Traffic Control Working Drawings as applicable for each operation.

9. Schedule for each operation, including but not limited to excavation, casing and carrier pipe installation, and backfill operations.
10. No less than 21-calendar days prior to planned mobilization of personnel and equipment for jack and bore operations, Contractor shall verify with the Construction Manager and submit written documentation that all permits, State Tunneling Permits, and other applicable Tunneling Permits have been obtained and are in good standing.
11. Carrier Pipe Installation Plan, description of procedure, including casing spacers as applicable, and methods for grouting installation for filling the annular space between the casing and carrier pipe. Methods and procedures for protecting the carrier pipe during annular space filling shall be identified, including PVC pipe protection measures for heat of hydration, as applicable.
12. Contingency Plans: Submit a proposed contingency plan for potential situations that may occur during tunneling operations, including but not limited to, the following scenarios:
 - A. Ground improvement plans when required at portals and/or behind thrust block/reaction wall due to weak and unstable soil conditions.
 - B. Obstruction removal plan.
 - C. Tunneling operations cause settlement or heave beyond the maximum allowable tolerance. A comprehensive plan should be provided describing specific actions that will be taken to ensure that roadway safety is not compromised, and that the roadway is refurbished in accordance with City standard requirements.
 - D. The inflow of surface or groundwater exceeds the allowable inflow during shaft penetrations.

Contractor shall fully investigate existing conditions prior to commencing excavation or pipeline installation. Subsurface conditions are described in the Soils Report. Additional subsurface investigations may be provided by Contractor at no additional cost to City.

Additional Requirements:

Joints: All joints of the carrier pipe within the casing shall be per approved plans in accordance with the manufacturer's recommendations.

Carrier Pipe Support: The Contractor shall position casing spacers or wood skids to prevent excessive sag, bending and shear stresses in the piping in accordance with the manufacturer's recommendations.

Carrier Pipe and Testing of the Pipe: Contractor shall take measures necessary to protect the PVC carrier pipe against heat of hydration during filling of the annular space. Hydrostatic testing of the carrier pipe shall be completed prior to the filling of the annular space between the casing and carrier pipe. Hydrostatic testing shall be performed in accordance with manufacturer's recommendations and specifications.

Carrier Pipe Tolerance: Allowable grade deviations in horizontal and vertical alignments of the carrier pipe shall be zero "0".

Casing Pipe: The casing pipe shall be at a minimum ASTM A283, Grade C or ASTM A36 steel and shall comply with requirements in SSPWC 207-24.

The Contractor may select a greater casing diameter or thickness for the method of Work and loading involved, site conditions, and possible interferences at no additional cost to the City.

Driving ends of steel shall be properly protected using jacking head and steel casing and shall be jacked true to grade and alignment shown on Plans with allowable maximum deviation in grade of ± 1 inch at the ends of each segment of jacked steel casing and with an allowable maximum horizontal deviation in alignment of 0.50 feet at the ends of each segment of jacked steel casing.

Jacking and Receiving Pits: The excavations for the boring or jacking operations shall be adequately shored to safeguard existing substructures, roadways, storm drain channels, and surface improvements and to ensure against ground movement in the vicinity of the jack supports. Contractor shall be responsible for providing Shoring systems, including design plans and calculations stamped by a CA registered professional engineer, and must be approved by the City. Water control measures shall be provided in accordance with the requirements specified in Section 306-5 Dewatering in the Greenbook. Launching and receiving shafts have been sited and shown diagrammatically on the Plans with general consideration to underground utility conflicts, construction work area limits in Appendix O and the Project Biological Technical Report (BTR), right of way limits, environmental constraints, all without warranting that such siting and diagrammatic sizing has mitigated conflicts with existing facilities or optimized the selected means and methods for construction. The Contractor shall determine the exact size and configuration of the shafts to satisfy its selected means and methods, access to the site and work, and existing site conditions.

Jacking and receiving pits shall be provided in such manner as to provide safe working conditions and to protect any adjacent facilities or structures in accordance with all CAL/OSHA safety requirements. Sheet piling shall be adequate to withstand added loads and vibrations due to traffic.

After jacking equipment and excavated materials from boring and jacking operations have been removed from the jacking and receiving pits, the CONTRACTOR shall

prepare the bottom of the pits as a pipe foundation. All loose and disturbed materials below pipe grade shall be removed to undisturbed earth and shall be filled and re-compacted.

Contractor is responsible to restore surface to pre-construction condition, including final grade, vegetation, and other surface features.

307-1.7 Payment. To the "GREENBOOK", Delete in its entirety and ADD the following:

1. Payment for tunneling installation via jack and bore of new sewer main shall be paid for as bid item per lineal foot of pipe. The unit price paid as shown in the bid schedule for installation of "Sewer Main by Jacking Operation with Steel Casing" of various carrier and casing pipe sizes shall include full compensation for furnishing, installing, and testing the PVC sanitary sewer pipe complete in place, as discussed herein in accordance with the Contract Documents and Manufacturer's requirements including, all labor, tools, material, equipment, compliance with applicable construction and safety codes and standards, and all other work required for tunneling operations complete in place, including monitoring and inspection, site coordination and access, tunnel permitting, furnishing and installing casing pipe and carrier pipe, filling annular space between carrier pipe and casing, filling annular space between casing and soil, spoils off-haul, couplings, fittings, jointing materials, utility company coordination.
2. Payment for launch shaft installation shall be paid for as bid item per each shaft. The unit price paid per each shown in the bid schedule for installation of the "Jack and Bore Launching Pit" shall include full compensation for furnishing, installing, and testing complete in place, as discussed herein in accordance with the Contract Documents including, all labor, tools, material, equipment and all other work required for the launch shaft installation, monitoring and inspection, permitting, trenching, shoring design plans, thrust block design and calculations, furnishing and installing of jacking pit, shoring and excavation work for pits, dewatering, site coordination and access, protection of existing utilities, spoils off-haul, furnishing and installing all pipe, couplings, fittings, jointing materials, pipe embedment, compaction, backfill, pavement and surface restoration, including curb, gutter, sidewalk, ac pavement, utility company coordination.
3. Payment for receiving shaft installation shall be paid for as bid item per each shaft. The unit price paid per lump sum shown in the bid schedule for installation of the "Jack and Bore Receiving Pit" shall include full compensation for furnishing, installing, and testing complete in place, as discussed herein in accordance with the Contract Documents including, all labor, tools, material, equipment and all other work required for the receiving shaft installation, monitoring and inspection, permitting, trenching, shoring design plans and calculations, furnishing and installing of receiving pit, shoring and excavation work for pits, dewatering, site coordination and access, protection of existing

utilities, spoils off-haul, furnishing and installing all pipe, couplings, fittings, jointing materials, pipe embedment, compaction, backfill, pavement and surface restoration, including curb, gutter, sidewalk, ac pavement, utility company coordination. Payment based on approved schedule of values submitted at preconstruction meeting.

307-1.8 Jacking Polymer Concrete Pipe.

307-1.8.1 Material. Polymer Concrete Pipe material shall be in accordance with Section 207-26, "POLYMER CONCRETE PIPE" in the Greenbook.

307-1.8.2 Installation. The installation of pipe and fittings shall be in accordance with the project plans and specifications and the manufacturer's recommended practices.

307-1.8.3 Pipe Handling. Textile slings, union anchor lifting devices or other suitable materials and/or a forklift are recommended.

307-1.8.4 Jointing.

1. Pipe end, gasket and sealing surfaces shall be inspected for damage and cleaned of all debris.
2. Apply joint lubricant to the sleeve coupling interior and the elastomeric gasket. Use only lubricants approved by the pipe manufacturer.
3. Use suitable equipment and end protection to push the pipes together.
4. Do not exceed joining or pushing forces recommended by the manufacturer.

307-1.8.5 Field Tests.

1. **Pressure Testing and Leakage Testing.** Testing shall conform to 306-7.8.2, "PRESSURE TESTING AN LEAKAGE INSPECTION".

307-1.8.6 Tolerances. Tolerances shall be in accordance with 307-1.5, "Tolerances".

307-1.8.7 Measurement and Payment. The measurement and payment for Polymer Concrete Pipe shall be in accordance with 307-1.6, "Measurement" and 307-1.7, "Payment".

SECTION 402 – UTILITIES

402-2 PROTECTION. To the "WHITEBOOK", item 2, ADD the following:

- g) Refer to **Appendix H - Advanced Metering Infrastructure (AMI) Device Protection** for more information on the protection of AMI devices.

SECTION 800 – MATERIALS

800-1.2.5 Mulch. To the "WHITEBOOK", item 3, subsection "i", ADD the following:

Type 9 Mulch shall be 2 or 4 inches maximum in size.

SECTION 1001 – CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs)

1001-1 **GENERAL.** To the “WHITEBOOK”, ADD the following:

8. Based on a preliminary assessment by the City, this Contract is subject to **WPCP.**
-

SUPPLEMENTARY SPECIAL PROVISIONS
APPENDICES

APPENDIX A
MITIGATED NEGATIVE DECLARATION



THE CITY OF SAN DIEGO

MITIGATED NEGATIVE DECLARATION

Project No. 646068
SCH No.: 2021020341

SUBJECT: COLLEGE AREA SEWER & WATER GROUP SDP

The project proposes a Site Development Permit for impacts to environmentally sensitive land for the replacement and abandonment of vitrified clay (VC) sewer mains and asbestos cement (AC) water mains and construction of new mains and associated appurtenances. The project includes the following: replace-in-place approximately 1,707 linear feet (LF) of VC sewer main with open trench and trenchless methods; construct approximately 3,059 LF of sewer main; abandon approximately 3,075 LF of sewer main; replace-in-place approximately 2,575 linear feet of water main; construct approximately 483 linear feet of new PVC water main; and abandon approximately 118 linear feet of water main. Appurtenances and accessory structures associated with the project include nine proposed launching/receiving pits, ten new manholes, three new vault structures, and five replaced fire hydrants. The project is located within the developed right-of-way along Campanile Way, Campanile Drive, Baja Drive and 54th Street and within an undeveloped canyon south of Baja Drive and east of Collwood Boulevard. The project site is situated along an unnamed tributary to Alvarado Creek in the College Community Planning Area within Council District 9.

I. PROJECT DESCRIPTION:

See attached Initial Study.

II. ENVIRONMENTAL SETTING:

See attached Initial Study.

III. DETERMINATION:

The City of San Diego conducted an Initial Study which determined that the proposed project could have a significant environmental effect in the following areas(s): **Biological Resources**. Subsequent revisions in the project proposal create the specific mitigation identified in Section V of this Mitigated Negative Declaration. The project as revised now avoids or mitigates the potentially significant environmental effects previously identified, and the preparation of an Environmental Impact Report will not be required.

IV. DOCUMENTATION:

The attached Initial Study documents the reasons to support the above Determination.

V. MITIGATION, MONITORING AND REPORTING PROGRAM (MMRP):

A. GENERAL REQUIREMENTS

Plan Check Phase (prior to permit issuance)

1. Prior to the issuance of a Notice To Proceed (NTP) for a subdivision, or any construction permits, such as Demolition, Grading or Building, or beginning any construction related activity on-site, the Development Services Department (DSD) Director's Environmental Designee (ED) shall review and approve all Construction Documents (CD), (plans, specification, details, etc.) to ensure the MMRP requirements are incorporated into the design.

2. In addition, the ED shall verify that the MMRP Conditions/Notes that apply ONLY to the construction phases of this project are included VERBATIM, under the heading, **"ENVIRONMENTAL/MITIGATION REQUIREMENTS."**

3. These notes must be shown within the first three (3) sheets of the construction documents in the format specified for engineering construction document templates as shown on the City website:

<https://www.sandiego.gov/development-services/forms-publications/design-guidelines-templates>

4. The **TITLE INDEX SHEET** must also show on which pages the "Environmental/Mitigation Requirements" notes are provided.

5. SURETY AND COST RECOVERY – The Development Services Director or City Manager may require appropriate surety instruments or bonds from private Permit Holders to ensure the long-term performance or implementation of required mitigation measures or programs. The City is authorized to recover its cost to offset the salary, overhead, and expenses for City personnel and programs to monitor qualifying projects.

Post Plan Check (After permit issuance/Prior to start of construction)

6. PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO BEGINNING ANY WORK ON THIS PROJECT. The PERMIT HOLDER/OWNER is responsible to arrange and perform this meeting by contacting the CITY RESIDENT ENGINEER (RE) of the Field Engineering Division and City staff from MITIGATION MONITORING COORDINATION (MMC). Attendees must also include the Permit holder's Representative(s), Job Site Superintendent and the following consultants:

Qualified Biologist

Note:

Failure of all responsible Permit Holder's representatives and consultants to attend shall require an additional meeting with all parties present.

CONTACT INFORMATION:

- a) The PRIMARY POINT OF CONTACT is the **RE** at the **Field Engineering Division – 858-627-3200**
- b) For Clarification of ENVIRONMENTAL REQUIREMENTS, it is also required to call **RE and MMC at 858-627-3360**

7. MMRP COMPLIANCE: This Project, Project Tracking System (PTS) #646068 and /or Environmental Document # 646068, shall conform to the mitigation requirements contained in the associated Environmental Document and implemented to the satisfaction of the DSD’s Environmental Designee (MMC) and the City Engineer (RE). The requirements may not be reduced or changed but may be annotated (i.e. to explain when and how compliance is being met and location of verifying proof, etc.). Additional clarifying information may also be added to other relevant plan sheets and/or specifications as appropriate (i.e., specific locations, times of monitoring, methodology, etc.).

Note:

Permit Holder’s Representatives must alert RE and MMC if there are any discrepancies in the plans or notes, or any changes due to field conditions. All conflicts must be approved by RE and MMC BEFORE the work is performed.

8. OTHER AGENCY REQUIREMENTS: Evidence of compliance with all other agency requirements or permits shall be submitted to the RE and MMC for review and acceptance prior to the beginning of work or within one week of the Permit Holder obtaining documentation of those permits or requirements. Evidence shall include copies of permits, letters of resolution or other documentation issued by the responsible agency.

***United States Army Corps of Engineers 404 Authorization
Regional Water Quality Control Board 401 Certification
California Fish and Wildlife Section 1600 Permit***

9. MONITORING EXHIBITS

All consultants are required to submit a monitoring exhibit to RE and MMC. The monitoring exhibit shall be a 11x17 reduction of the appropriate construction plan, such as site plan, grading, landscape, etc., marked to clearly show the specific areas including the **LIMIT OF WORK**, scope of that discipline’s work, and notes indicating when in the construction schedule that work will be performed. When necessary for clarification, a detailed methodology of how the work will be performed shall be included.

10. OTHER SUBMITTALS AND INSPECTIONS:

The Permit Holder/Owner’s representative shall submit all required documentation, verification letters, and requests for all associated inspections to the RE and MMC for approval per the following schedule:

DOCUMENT SUBMITTAL/INSPECTION CHECKLIST		
Issue Area	Document Submittal	Associated Inspection/Approvals/Notes

General	Consultant Qualification Letters	Prior to Preconstruction Meeting
General	Consultant Construction Monitoring Exhibits	Prior to or at Preconstruction Meeting
Biology	Biologist Limit of Work Verification	Limit of Work Inspection
Biology	Biology Reports	Biology/Habitat Restoration Inspection
Final Approval	Request for Final Approval	1 week after request

B. SPECIFIC MMRP ISSUE AREA CONDITIONS/REQUIREMENTS

BIOLOGICAL RESOURCES

Prior to Construction Prior to the start of construction, the owner/permittee shall demonstrate to the satisfaction of MMC that the following mitigation measures have been satisfied:

BIO-1: Direct Impacts to Sensitive Vegetation Communities To mitigate for direct impacts to sensitive vegetation communities, the following mitigation would be required based on the City's mitigation ratios (City of San Diego 2018).

Wetland Impacts and Mitigation

Vegetation Community	Impacts (acres)	Ratios*	Mitigation Required (acres)
Non-Native Riparian	0.104	2:1	0.208
Disturbed Wetland (Vegetated)	0.004	2:1	0.008
Disturbed Wetland (Artificial hydrology)	0.013	NA	-
Total	0.121	-	0.216

Upland Impacts and Mitigation

Vegetation Community	Tier	Impacts (acres)	Ratio	Mitigation Required (acres)
Maritime Succulent Scrub	I	-	1:1	-
Diegan Coastal Sage Scrub	II	0.112	1:1	0.112
Disturbed Coastal Sage Scrub	II	0.033	1:1	0.033
Eucalyptus Woodland	IV	0.002	-	-
Disturbed Land	IV	0.095	-	-
Ornamental Plantings	IV	0.181	-	-
Urban/Developed Land	IV	0.205	-	-
Total	-	0.628	-	0.145

*Mitigation would occur within the Multi Habitat Planning Area (MHPA). All impacts would occur outside the MHPA

Impacts to Tier I and II upland vegetation communities would be mitigated with credits at the Otay Mesa mitigation site managed by City Public Utilities Department. Wetland creation credits would be acquired at the PUD-managed San Diego River mitigation site. Wetland enhancement credits would be acquired at the PUD-managed Rancho Mission Canyon Wetland Enhancement site.

BIO-2: Biologist Verification The owner/permittee shall provide a letter to the City's Mitigation Monitoring Coordination (MMC) section stating that a Project Biologist (Qualified Biologist) as defined in the City of San Diego's Biological Guidelines (2018), has been retained to implement the project's biological monitoring program. The letter shall include the names and contact information of all persons involved in the biological monitoring of the project.

BIO-3: Preconstruction Meeting - The Qualified Biologist shall attend the preconstruction meeting, discuss the project's biological monitoring program, and arrange to perform any follow up mitigation measures and reporting including site-specific monitoring, restoration or revegetation, and additional fauna/flora surveys/salvage.

- 1. Biological Documents** - The Qualified Biologist shall submit all required documentation to MMC verifying that any special mitigation reports including but not limited to, maps, plans, surveys, survey timelines, or buffers are completed or scheduled per City Biology Guidelines, Multiple Species Conservation Program (MSCP), Environmentally Sensitive Lands Ordinance (ESL), project permit conditions; California Environmental Quality Act (CEQA); endangered species acts (ESAs); and/or other local, state or federal requirements.
- 2. BCME** -The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit (BCME) which includes the biological documents in C above. In addition, include: restoration/revegetation plans, plant salvage/relocation requirements (e.g., coastal cactus wren plant salvage, burrowing owl exclusions, etc.), avian or other wildlife surveys/survey schedules (including general avian nesting and USFWS protocol), timing of surveys, wetland buffers, avian construction avoidance areas/noise buffers/ barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City ADD/MMC. The BCME shall include a site plan, written and graphic depiction of the project's biological mitigation/monitoring program, and a schedule. The BCME shall be approved by MMC and referenced in the construction documents.

BIO-4: Avian Protection Requirements - To avoid any direct impacts to the coastal California gnatcatcher and avian species identified as a listed, candidate, sensitive, or special status species in the MSCP, removal of habitat that supports active nests in the proposed area of disturbance should occur outside of the breeding season for these species (February 1 to September 15).

If removal of habitat in the proposed area of disturbance must occur during the breeding season, the Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The applicant shall submit the results of the pre-construction survey to City DSD for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines and applicable State and Federal Law (i.e. appropriate follow up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's MMC Section and Biologist shall verify and approve that all

measures identified in the report or mitigation plan are in place prior to and/or during construction.

BIO-5: Resource Delineation - Prior to construction activities, the Qualified Biologist shall supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological habitats and verify compliance with any other project conditions as shown on the BCME. This phase shall include flagging plant specimens and delimiting buffers to protect sensitive biological resources (e.g., habitats/flora & fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.

BIO-6: Education – Prior to commencement of construction activities, the Qualified Biologist shall meet with the owner/permittee or designee and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside of the approved construction area and to protect sensitive flora and fauna (e.g., explain the avian and wetland buffers, flag system for removal of invasive species or retention of sensitive plants, and clarify acceptable access routes/methods and staging areas, etc.).

II. During Construction

BIO-7: Monitoring- All construction (including access/staging areas) shall be restricted to areas previously identified, proposed for development/staging, or previously disturbed as shown on “Exhibit A” and/or the BCME. The Qualified Biologist shall monitor construction activities as needed to ensure that construction activities do not encroach into biologically sensitive areas, or cause other similar damage, and that the work plan has been amended to accommodate any sensitive species located during the pre-construction surveys. Biological monitoring shall occur within designated areas during critical times such as vegetation removal, the installation of best management practices (BMPs), and fencing to protect native species, and to ensure that all avoidance and minimization measures are properly constructed and followed.

The Qualified Biologist shall document field activity via the Consultant Site Visit Record (CSVR). The CSVR shall be e-mailed to MMC on the 1st day of monitoring, the 1st week of each month, the last day of monitoring, and immediately in the case of any undocumented condition or discovery.

BIO-8: Subsequent Resource Identification - The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna onsite (e.g., flag plant specimens for avoidance during access, etc.). If active nests or other previously unknown sensitive resources are detected, all project activities that directly impact the resource shall be delayed until species specific local, state or federal regulations have been determined and applied by the Qualified Biologist.

III. Post Construction Measures

BIO - 9: In the event that impacts exceed previously allowed amounts, additional impacts shall be mitigated in accordance with City Biology Guidelines, ESL and MSCP, State CEQA, and other applicable local, state and federal law. The Qualified Biologist shall submit a final BCME/report to the satisfaction of the City ADD/MMC within 30 days of construction completion.

VI. PUBLIC REVIEW DISTRIBUTION:

Draft copies or notice of this Mitigated Negative Declaration were distributed to:

Federal Government

U.S. Fish & Wildlife Service
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers

State of California

State Clearinghouse
California Department of Fish and Wildlife
Regional Water Quality Control Board, Region 9

City of San Diego

Mayor's Office
Councilmember Elo Rivera - District 9
City Attorney's Office
Wetland Advisory Board
Development Services Department
 Jamie Kennedy, EAS
 Karen Bucey, Project Management
 Philip Lizzi, Planning
 Khanh Hyunh, Engineering
 Patrick Thomas, Geology
 Sam Johnson, MMC
Engineering & Capital Projects Department
 Sheila Bose
 Gretchen Eichar
 Tom Park
Planning Department
 Nathen Causman, Community Planner
 Dan Monroe, MSCP

College Area

Anthony Fulton, Facilities Planning & Management, San Diego State University
Jose Reynoso, Chair, College Area Community Planning Group
Jim Jennings
Mrs. Barclay, Malcom A. Love Library, San Diego State University
V.P. Business & Financial Affairs, San Diego State University
Editor, Daily Aztec, San Diego State University

Other Interested Parties

Sierra Club
San Diego Audubon Society
Jim Peugh
California Native Plant Society

Endangered Habitats League
John Stump
Dan Ross

VII. RESULTS OF PUBLIC REVIEW:

- () No comments were received during the public input period.
- () Comments were received but did not address the accuracy or completeness of the draft environmental document. No response is necessary and the letters are incorporated herein.
- (✓) Comments addressing the accuracy or completeness of the draft environmental document were received during the public input period. The letters and responses are incorporated herein.

Copies of the draft Mitigated Negative Declaration, the Mitigation, Monitoring and Reporting Program and any Initial Study material may be reviewed online at www.sandiego.gov/ceqa, or purchased for the cost of reproduction.



Jamie Kennedy
Senior Planner
Development Services Department

February 19, 2021

Date of Draft Report

April 1, 2021

Date of Final Report

Analyst: Jamie Kennedy

Attachments:

- Initial Study Checklist
- Figure 1a-b: Project Location on Aerial Photograph

Comment Letter A

Response A



San Diego County Archaeological Society, Inc.

Environmental Review Committee

9 March 2021

A-1. Comments noted. No further response is required.

To: Mr. Jamie Kennedy
 Development Services Department
 City of San Diego
 1222 First Avenue, Mail Station 501
 San Diego, California 92101

Subject: Draft Mitigated Negative Declaration
 College Area Sewer and Water Group SDP
 Project No. 646068

Dear Mr. Kennedy:

I have reviewed the subject DMND on behalf of this committee of the San Diego County Archaeological Society.

A-1

Based on the information contained in the DMND and RECON Environmental's report, we concur with the mitigation recommendations by RECON and the detailed mitigation measures included in the DMND.

Thank you for the opportunity to participate in the public review of this project's environmental documents.

Sincerely,

James W. Royle, Jr., Chairperson
Environmental Review Committee

cc: RECON
SDCAS President
File

P.O. Box 81106 San Diego, CA 92138-1106 (858) 538-0935

INITIAL STUDY CHECKLIST

1. Project title/Project number: College Area Sewer & Water Group SDP / 646068
2. Lead agency name and address: City of San Diego, 1222 First Avenue, MS-501, San Diego, California 92101
3. Contact person and phone number: Jamie Kennedy/ (619) 446-5379
4. Project location: The project is located within the developed right-of-way along Campanile Way, Campanile Drive, Baja Drive and 54th Street and within an undeveloped canyon south of Baja Drive and east of Collwood Boulevard. The project is within the Mission San Diego Land Grant of the U.S. Geological Survey (USGS) 7.5-minute topographic map, La Mesa quadrangle. The project site is situated along an unnamed tributary to Alvarado Creek in the College Community Planning Area within Council District 9.

See attached location map.

5. Project Applicant/Sponsor's name and address: City of San Diego Engineering & Capital Projects Department, 525 B Street, San Diego, CA 92101
6. General/Community Plan designation: City of San Diego Public Right-of-Way (PROW) and Single Family Residential community plan designation
7. Zoning: The project is within the Single Family Residential (RS-1-1) zone and developed public right-of-way. The project will not result in a change in any zone and is consistent with all underlying zoning regulations.
8. Description of project (Describe the whole action involved, including but not limited to, later phases of the project, and any secondary, support, or off-site features necessary for its implementation.):

The project proposes a Site Development Permit for impacts to environmentally sensitive land for the replacement and abandonment of vitrified clay (VC) sewer mains and asbestos cement (AC) water mains and construction of new mains and associated appurtenances. The project includes the following: replace-in-place approximately 1,707 linear feet (LF) of VC sewer main with open trench and trenchless methods; construct approximately 3,059 LF of sewer main; abandon approximately 3,075 LF of sewer main; replace-in-place approximately 2,575 linear feet of water main; construct approximately 483 linear feet of new PVC water main; and abandon approximately 118 linear feet of water main.

Nine launching/receiving pits are proposed for seven trenchless construction pipeline segments. The launching pits will be approximately 20 feet by 10 feet, and the receiving pits will be approximately 10 feet by 10 feet. Temporary construction area(s) of varying sizes will surround each launching/receiving pit.

Ten new manholes will also be added and eight manholes will be abandoned. A vault structure with a depth of 26 feet will replace the existing deep manhole on 54th Street. A vault structure with a depth of 32 feet will be added on 54th Street. New manhole footprints will be approximately 5 feet by 5 feet for each manhole. Five fire hydrants are to be replaced.

Following project sewer and water work, temporary construction impacts will be regraded to pre-existing conditions and revegetated with native upland and wetland container plants and hydroseed mix, to meet the erosion control requirements in the Landscape Standards. The revegetated habitat would provide a higher-value habitat than the impacted habitat. All revegetated areas will be required to comply with a 25-month monitoring, maintenance, and reporting program to ensure the revegetation areas meet a minimum 50% native plant material cover, maximum 5% non-native herbaceous cover, no CAL-IPC listed species, and 80 percent container plant survival rate at the end of 25-months.

9. Surrounding land uses and setting:

The project is located within the developed right-of-way along Campanile Way, Campanile Drive, Baja Drive and 54th Street, and within an undeveloped canyon south of Baja Drive and east of Collwood Boulevard. The project area occurs within residential development and within an undeveloped canyon that falls within the residential development. The undeveloped canyon occurs within the southeastern portion of a larger mosaic of urban canyons around Interstate 8 and Fairmount Avenue. The project site is situated along an unnamed tributary to Alvarado Creek. The MHPA is situated about 125 feet south of the western portion of the project.

Access to the project site along Chaparral Way and Collwood Boulevard is through an existing unpaved 8-foot wide maintenance access path. The project will require increasing the width of the access path to 10 feet.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

United States Army Corps of Engineers Section 404 Permit, California Regional Water Quality Control Board Section 401 Certification, and California Department of Fish and Wildlife Section 1600 Permit.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

The Lipay Nation of Santa Ysabel, Jamul Indian Village, and San Pascual Band of Mission Indians of Kumeyaay Nation Native American tribes which are traditionally and culturally affiliated with the project area have requested consultation with the City of San Diego pursuant to Public Resources Code section 21080.3.1. These tribes were notified of the opportunity to consult with the City of San Diego on the proposed project and either did not

respond within 30 days or responded that they do not have any comments for this project. Consultation began October 26, 2020 and concluded on November 25, 2020.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|---|--|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Noise | <input type="checkbox"/> Utilities/Service System |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Mandatory Findings Significance | <input type="checkbox"/> Wildfire |

DETERMINATION: (To be completed by Lead Agency)

Based on this initial evaluation:

- The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required.
- Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or (MITIGATED) NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or (MITIGATED) NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.)
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
- 4) “Negative Declaration: Less Than Significant with Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses”, as described in (5) below, may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or (mitigated) negative declaration. *Section 15063(c)(3)(D)*. In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are “Less Than Significant With Mitigation Measures Incorporated”, describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
 - a. The significance criteria or threshold, if any, used to evaluate each question; and
 - b. The mitigation measure identified, if any, to reduce the impact to less than significant.

I. AESTHETICS – Would the project:

- a) Have a substantial adverse effect on a scenic vista?

Most of the proposed work on the sewer and water systems would be below existing ground level and at ground level for manholes. All trenching for pipes would be filled to match the adjacent natural grade of the canyon and all ground disturbances would be re-vegetated with a native hydroseed mix and container plants. Therefore, the proposed project would have no significant impacts to scenic vistas, and no mitigation would be required.

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

The project would not damage any existing scenic rock outcroppings or historic buildings as none of these features are located within the boundaries of the proposed project. Furthermore, the project site is not located near a state scenic highway. See I. a), as well as V. a) for detail on historic resources. No impact would occur.

- c) Substantially degrade the existing visual character or quality of the site and its surroundings?

See answer to I. a) and I. b) above. No impact would occur.

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

The project does not include any new or modified light sources such as new or replacement streetlights, and the project would not utilize highly reflective materials. In addition, no substantial sources of light would be generated during project construction, as construction activities would occur during daylight hours. The project would also be subject to the City's Outdoor Lighting Regulations per Municipal Code Section 142.0740. No impact would occur.

II. AGRICULTURAL AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. – Would the project:

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

The project would occur in a natural canyon and within paved public roads which are not zoned or mapped for agricultural use or farmland. In addition, agricultural land is not present in the vicinity of the project. No impact would occur.

- b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?

Refer to II. a). No impact would occur.

- c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The project would occur in a natural canyon and within paved public roads which are not designated as forest land or timberland. In addition, forest land and timberland are not present in the vicinity of the project. No impact would occur.

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

Refer to II. c). No impact would occur.

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

The project does not propose a change in land use and would not result in the conversion of Farmland since no Farmland exists within, or in the vicinity, of the project boundaries. No impact would occur.

III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations – Would the project:

- a) Conflict with or obstruct implementation of the applicable air quality plan?

The replacement, abandonment, and construction of sewer and water infrastructure would not involve any future actions that would generate air quality emissions as a result of the proposed use (e.g. vehicle miles traveled). However, emissions would occur during the construction phase of the project and could increase the amount of harmful pollutants entering the air basin. Emissions would be minimal and would only occur temporarily during construction. Additionally, the construction equipment typically involved in sewer/water projects is small-scale and generates relatively few

emissions. When appropriate, dust suppression methods would be included as project components. As such, the project would not conflict with the region's air quality plan; impacts are less than significant, and no mitigation is required.

- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Refer to III. b). Impacts are less than significant, and no mitigation is required.

- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

As described above, construction operations could temporarily increase the emissions of dust and other pollutants. However, construction emissions would be temporary, and implementation of Best Management Practices would reduce potential impacts related to construction activities to below a level of significance. The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable federal or state ambient air quality standards. Impacts are less than significant, and no mitigation is required.

- d) Create objectionable odors affecting a substantial number of people?

Operation of construction equipment and vehicles could generate odors associated with fuel combustion. These odors would dissipate into the atmosphere upon release and would remain temporarily in proximity to the construction equipment and vehicles. Project odors would not affect a substantial number of people; thus, impacts are less than significant, and no mitigation is required.

IV. BIOLOGICAL RESOURCES – Would the project:

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

Direct Impacts

“Biological Technical Report” (BTR) was prepared August 25, 2020 by Recon. The BTR analyzed the direct and indirect impacts of the proposed project on the biological and jurisdictional resources located in the vicinity of the project.

The proposed project will result in direct impacts to upland habitat which is summarized in the table below. **Wetland Impacts and Mitigation**

Vegetation Community	Impacts (acres)	Ratios*	Mitigation Required (acres)
Non-Native Riparian	0.104	2:1	0.208
Disturbed Wetland (Vegetated)	0.004	2:1	0.008
Disturbed Wetland (Artificial hydrology)	0.013	NA	-
Total	0.121	-	0.216

Upland Impacts and Mitigation

Vegetation Community	Tier	Impacts (acres)	Ratio	Mitigation Required (acres)
Maritime Succulent Scrub	I	-	1:1	-
Diegan Coastal Sage Scrub	II	0.112	1:1	0.112
Disturbed Coastal Sage Scrub	II	0.033	1:1	0.033
Eucalyptus Woodland	IV	0.002	-	-
Disturbed Land	IV	0.095	-	-
Ornamental Plantings	IV	0.181	-	-
Urban/Developed Land	IV	0.205	-	-
Total	-	0.628	-	0.145

*Mitigation would occur within the Multi Habitat Planning Area (MHPA). All impacts would occur outside the MHPA

Impacts to Tier I and II upland vegetation communities would be mitigated with credits at the Otay Mesa mitigation site managed by City Public Utilities Department. Wetland creation credits would be acquired at the PUD-managed San Diego River mitigation site. Wetland enhancement credits would be acquired at the PUD-managed Rancho Mission Canyon Wetland Enhancement site. Wetland and upland mitigation will result in higher quality habitat than that which would be impacted by the project.

The project would directly impact three sensitive plant species, Nuttall’s scrub oak (CNPS CRPR 1B.1 species), California adolphia (CNPS CRPR 2B.1 species), and San Diego viguiera (CNPS CRPR 4.3 species). Of the 34 Nuttall’s scrub oak within the survey area, 10 would be impacted and are not expected to threaten the local and regional long-term survival of this species. Ten container plants of the species is included in the revegetation plant palette. Impacts to Nuttall’s scrub oak would be less than significant.

Cooper’s hawk has a high potential to forage within survey area and a moderate potential to nest within the survey area. Belding’s orange-throated whiptail species was not observed in the biological survey, but there is moderate potential for the species to occur in the coastal sage scrub, maritime succulent scrub, and disturbed land in the project area. In order to ensure adequate protection for these species, project activities shall be conducted in accordance with federal and state nesting bird regulations. With these measures in place, impacts on Cooper’s hawk and Belding’s orange-throated whiptail would be less than significant.

Implementation of the Mitigation and Monitoring Requirements identified in Section V of this Mitigated Negative Declaration (MND) would reduce potentially significant direct impacts to habitat and special status wildlife to a less than significant level.

Indirect Impacts

Per the project’s BRR, indirect impacts to may occur from the construction of project features, including fugitive dust, noise, and erosion. However, the project will incorporate dust control, noise control, and erosion control measures including a Stormwater Pollution Prevention Plan and revegetation of temporary impact areas following construction. No significant indirect impacts would occur.

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

Refer to IV. a) regarding direct impacts to wetland vegetation. The proposed project will be required to obtain permits for work within US and state jurisdictional wetlands and non-wetland waters from the Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife prior to project implementation. Impacts to wetlands, including riparian habitat, would be less than significant with the incorporation of biology mitigation measures in the MMRP of this MND.

- c) Have a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Refer to IV. a) and b). Impacts to wetlands would be less than significant with the incorporation of biology mitigation measures in the MMRP of this MND.

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

Per the project’s BTR, the project area would not be considered a wildlife movement corridor. Although the survey area contains a canyon with a drainage and riparian vegetation, it is heavily constrained by residential development and neighborhood streets on all sides. The project does not propose any new permanent barriers such as fencing that would preclude wildlife movement. Further, the project work would occur below ground and would result in no obstructions through this area. As such, no impacts on wildlife corridors would occur with project operations. In order to preserve sensitive biological habitats adjacent to project impacts, fencing or equivalent is

recommended during project construction activities as a mitigation measure. Temporary fencing would not be a significant impact to wildlife movement. No mitigation is required.

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

The project is located 125 feet north of the MHPA and has demonstrated compliance with the City of San Diego Subarea Plan MHPA Land Use Agency Guidelines, which ensures adverse effects to the MHPA do not result with project implementation. The project would comply with all local policies and ordinances protecting biological resources including the City of San Diego Multiple Species Conservation Program and the Biology Guidelines. Impacts would be less than significant.

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

Refer to IV. a), b), and e). The project would not conflict with any local conservation plans including the MSCP City of San Diego Subarea Plan. Impacts would be less than significant.

V. CULTURAL RESOURCES – Would the project:

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

The purpose and intent of the Historical Resources Regulations of the Land Development Code (Chapter 14, Division 3, and Article 2) is to protect, preserve and, where damaged, restore the historical resources of San Diego. The regulations apply to all proposed development within the City of San Diego when historical resources are present on the premises. Before approving discretionary projects, CEQA requires the Lead Agency to identify and examine the significant adverse environmental effects which may result from that project. A project that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (sections 15064.5(b) and 21084.1). A substantial adverse change is defined as demolition, destruction, relocation, or alteration activities, which would impair historical significance (sections 15064.5(b)(1)). Any historical resource listed in, or eligible to be listed in the California Register of Historical Resources, including archaeological resources, is considered to be historically or culturally significant.

Archaeological Resources

“Historical Resources Survey for the College Area Sewer and AC Water Project” was prepared by Recon. August 18, 2020. The survey resulted in finding no cultural material. Historic aerial photographs indicate that the project area has been disturbed to some extent since 1953 and that slopes were manufactured on either side of the project area. The possibility of significant historical resources being present within the proposed project is considered low and construction monitoring is not recommended. Based on the conclusions and recommendations of the Historical Resources Survey, the project would have a less than significant impact on archaeological resources and no mitigation is required.

Built Environment

The proposed work will not impact any built environment designated historical resources. No mitigation is required.

- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

See response to V. a). Impacts are less than significant, and no mitigation is required.

- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

“Preliminary Geotechnical Investigation College Area Sewer and AC Water Main Replacement, 54th Street & Campanile Way” was prepared by Twining Geotechnical, February 26, 2018. The project site is underlain by artificial fill, alluvium, Mission Valley Formation, and Stadium Conglomerate as indicated by the project’s geotechnical investigation. The City of San Diego Land Development Manual General Grading Guidelines for Paleontological Resources indicate that the Mission Valley Formation and Stadium Conglomerate have a high potential for the discovery of paleontological resources.

San Diego Municipal Code Section 142.0501 (Paleontological Resources Requirements for Grading Activities) requires paleontological monitoring for grading 1,000 cubic yards or greater and 10 feet or greater in depth, in a High Resource Potential Geologic Deposit/Formation/Rock Unit. Since project grading is estimated to be approximately than 1,385 cubic yards within High Resource Potential formations, paleontological monitoring would be required during project grading. Impacts are less than significant with monitoring incorporated, and no mitigation measures are required.

- d) Disturb and human remains, including those interred outside of dedicated cemeteries?

No cemeteries, formal or informal, have been identified on or adjacent to the project site. While there is a possibility of encountering human remains during project construction activities, if remains are found monitoring would be required. In addition, per CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5), if human remains are discovered during construction, work would be required to halt in that area and no soil would be exported off-site until a determination could be made regarding the provenance of the human remains via the County Coroner and other authorities as required. Compliance with state regulations would ensure impacts are less than significant and no mitigation required.

VI. ENERGY – Would the project:

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

During project construction, the Air Resources Board regulates idling for commercial motor vehicles to reduce unnecessary consumption of energy under 13 CCR § 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Locally, Administrative Regulation 90.72 Motive Equipment Idling Reduction Policy applies to all City employees operating motive equipment owned or leased by the City of San Diego, which states idling of motive equipment shall be prohibited unless "mission necessary". Through implementation of these measures, energy consumption during construction would be less than significant.

The replacement, abandonment, and construction of sewer and water infrastructure would result in minimal energy utilization during operation. Energy usage may incrementally increase at local pump stations, but no work would occur at pump stations as a result of the project. Energy impacts, if any, would be minimal and less than significant. No mitigation is required.

- b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The project is consistent with the General Plan and Community Plan's underlying land use and zoning designations, and appropriately implements the Climate Action Plan checklist. See also section VIII, Greenhouse Gas Emissions. Because the project does not conflict with or obstruct the Climate Action Plan, no impact would occur.

VII. GEOLOGY AND SOILS – Would the project:

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

The project geotechnical investigation "City of San Diego Task 15GT14 - College Area Sewer and AC Water Main Replacement" was prepared by Twining Geotechnical February 26, 2018. Based on review of readily available geologic literature, active or potentially active faults do not cross the subject site. Accordingly, the possibility of surface rupture at the site due to faulting is considered low. In addition, the project would be designed and constructed in accordance with current engineering practice and building codes which would ensure that potential impacts from regional active faults would remain less than significant. Therefore, risks from rupture of a known earthquake fault would be less than significant.

- ii) Strong seismic ground shaking?

See VII. a) i) above.

- iii) Seismic-related ground failure, including liquefaction?

The project's geotechnical investigation determined that the project site is underlain by loose to medium dense fill, alluvial soils, and formational materials consisting of dense to very dense cobble conglomerate. Groundwater was not encountered within the depths drilled. The potential for liquefaction is considered low and no mitigation is required.

- iv) Landslides?

The project geotechnical investigation response "City of San Diego Task 15GT14 – College Area Sewer" was prepared by Twining Geotechnical September 16, 2020. The potential for deep seated slope stability problems at the site is considered low. In the undeveloped canyon there is the potential for shallow sloughing and slumping of slope materials exposed if slope grading is altered extensively. The work is planned as trenchless to limit impacts in this undeveloped canyon. The sloping canyon section of the sewer main will not be constructed by cut and cover grading methods. Therefore the proposed type of trenchless construction would not measurably destabilize neighboring properties. In addition, the site is mapped in Landslide Susceptibility Area "2" – Marginally Susceptible (Tan, 1995). Extensive grading is not proposed and jack and bore or auger boring methods are not recommended. Therefore, the project would not expose people or structures to substantial adverse effects including the risk of loss, injury or death as a result of landslides.

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

All trenching for pipe replacement in natural areas would be backfilled and all disturbed areas would be revegetated with appropriate non-invasive, low water use, container plants and a hydroseed mix to control erosion in accordance with the project Revegetation Plan. Additionally, appropriate Best Management Practices would be utilized during project construction to prevent soil erosion. As such, the project would not result in a substantial amount of soil erosion or loss of topsoil.

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

Please see VII. a) i) above. In addition, the project is located within the following geologic units: Artificial Fill, Alluvium, Mission Valley Formation, and Stadium Conglomerate. The project alignment will be adequately stable following completion of construction. In addition, proper engineering design and utilization of standard construction practices would ensure that the potential impacts would be less than significant.

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

Refer to VII. a). In addition, the design of any near-term and/or future pipeline projects would utilize proper engineering design and utilization of standard construction practices would ensure that the potential for impacts would be less than significant.

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

No septic or alternative wastewater systems are proposed since the scope of the project is to replace, abandon, and install new sewer and water pipes. No impact would occur.

VIII. GREENHOUSE GAS EMISSIONS – Would the project:

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

In December 2015, the City adopted a Climate Action Plan (CAP) that outlines the actions that City will undertake to achieve its proportional share of State greenhouse gas (GHG) emission reductions. The CAP is a plan for the reduction of GHG emissions in accordance with CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project’s incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.

This Checklist is part of the CAP and contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Implementation of these measures would ensure that new development is consistent with the CAP’s assumptions for relevant CAP strategies toward achieving the identified GHG reduction targets. Projects that are consistent with the CAP as determined using this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions.

Under Step 1 of the CAP Checklist the proposed project is consistent with the existing General Plan and Community Plan land use designations, and zoning designations for the project site. Therefore, the proposed project is consistent with the growth projections and land use assumptions used in the CAP.

Furthermore, completion of the Step 2 of the CAP Checklist for the project demonstrates that the CAP strategies for reduction in GHG emissions are not applicable to the project because it is a sewer and water project with that will not require a Certificate of Occupancy from the Building Official. Therefore, the project has been determined to be consistent with the City of San Diego Climate Action Plan, would result in a less than significant impact on the environment with respect to Greenhouse Gas Emissions, and further GHG emissions analysis and mitigation would not be required.

- b) Conflict with an applicable plan, policy, or regulation adopted for the purpose

of reducing the emissions of greenhouse gases?

Refer to VIII. a)

IX. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

- a) Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials?

Construction of the project may require the use of hazardous materials (e.g. fuels, lubricants, solvents, etc.) which would require proper storage, handling, use and disposal; however, these conditions would not occur during routine construction within the PROW. Construction specifications would include requirements for the contractor regarding where routine handling or disposal of hazardous materials could occur and what measures to implement in the event of a spill from equipment. Compliance with contract specifications would ensure that potential hazards are minimized to below a level of significance.

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

Staff searched the State Water Resources Control Board GeoTracker website, and there are no Leaking Underground Storage Tank (LUST) or other cleanup sites, hazardous waste sites, or land disposal sites within or adjacent to the project. In the event that construction activities encounter underground contamination, the contractor would be required to implement section 5-15 of the City's "WHITEBOOK" for "Encountering or Releasing Hazardous Substances" of the City of San Diego Standard Specifications for Public Works Construction which is included in all construction documents and would ensure the proper handling and disposal of any contaminated soils in accordance with all applicable local, state, and federal regulations. Compliance with these requirements would minimize the risk to the public and the environment; therefore, impacts would remain less than significant.

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

Portions of the project alignment are within one-quarter mile of Saint Diego State University and would involve trenching or excavation activities that could result in the release of hazardous emissions if unanticipated contamination is encountered within the PROW. However, compliance with section 5-15 of the City's "WHITEBOOK" is required and ensures that appropriate protocols are followed pursuant to County DEH requirements should any hazardous conditions be encountered. As such, impacts regarding the handling or discovery of hazardous materials, substances or waste within close proximity of a school would be below a level of significance with implementation of the measures required pursuant to the contract specifications and County DEH oversight.

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

See IX. a)-c) above. Additionally, the project alignment is not on a list of hazardous materials locations compiled pursuant to Government Code Section 65962.5. No impact would occur.

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

Portions of the project alignment are within the Airport Influence Area -Review Area 2 of the San Diego International Airport (SDIA) Land Use Compatibility Plan, and within the FAA Part 77 Notification Area for SDIA. Since the proposed project involves linear underground work on sewer and water pipe, it would not introduce any new features that would result in a safety hazard for people residing or working in the area or create a flight hazard. No impact would occur.

- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

The project site is not within proximity of a private airstrip. No impact would occur.

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction of the proposed project may temporarily affect traffic circulation within the project Area of Potential Effect (APE) and its adjoining roads. An approved Traffic Control Plan would be implemented during construction which would allow emergency plans to be employed. Therefore, the project would not physically interfere with and adopted emergency response plan or emergency evacuation plan, and no impact would occur.

- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The proposed project would be located within a natural canyon. However, the proposed sewer and water infrastructure would not introduce any new features that are combustible or would increase the risk of fire. Revegetation of the disturbed canyon areas will be completed in accordance with the

brush management regulations of the San Diego Municipal Code which would reduce potential impacts to a less than significant level.

X. HYDROLOGY AND WATER QUALITY - Would the project:

- a) Violate any water quality standards or waste discharge requirements?

Potential impacts to existing water quality standards associated with the proposed project would include minimal short-term construction-related erosion sedimentation but would not include any long-term operational storm water impacts. The project would be required to comply with the City's Storm Water Standards Manual and all requirements of the most current Regional Water Quality Control Board municipals storm water (MS4) permit. Engineers from the Engineering & Capital Projects Department would be responsible for compliance with all storm water regulations. The proposed project would not violate any existing water quality standards or waste discharge requirements; thus, no impact would occur.

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The project does not use groundwater, nor would it create new impervious surfaces that would interfere with groundwater recharge; therefore, no impact would occur.

- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?

See X. a). All areas that are trenched would be backfilled to match adjacent natural grade. All disturbed areas, including temporary construction access and staging, would be re-vegetated with a native hydroseed mix and non-invasive, low water use container plants to minimize soil erosion. Temporary irrigation would be provided for a period sufficient to establish plant material. Project design would minimize impacts to wetland waters by including steel plates over concrete-lined portions of the drainage, trenchless design methods, and siting the proposed access path outside of wetland waters where practical due to surrounding slopes. Compliance with local, state, and federal storm water regulations would ensure that any alterations to the drainage system in the project area would reduce potential impacts from erosion or siltation to less than significant.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface

runoff in a manner, which would result in flooding on- or off-site?

See X. c). Since this is a sewer and water infrastructure project, and the majority of project features will be constructed underground, backfilled, and revegetated, post-project runoff will remain similar to pre-project runoff. The proposed project does not include any features that would increase the risk associated with flooding beyond those of existing conditions; therefore, impacts would be less than significant.

- e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

See X. c)-d). The project would be required to comply with all local and regional storm water quality standards during construction using approved Best Management Practices (BMPs), which would ensure that water quality is not degraded. Therefore, impacts would be less than significant, and no mitigation is required.

- f) Otherwise substantially degrade water quality?

See X. c) - e).

- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

The project does not propose housing. No impact would result.

- h) Place within a 100-year flood hazard area, structures that would impede or redirect flood flows?

See X. c)-d). The project does not propose any structures that would significantly impede flood flows as it is a linear underground sewer and water project. Impacts are less than significant.

XI. LAND USE AND PLANNING – Would the project:

- a) Physically divide an established community?

The project would involve replacing and installing utility infrastructure primarily underground and would not introduce any new features that could divide an established community.

- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted

for the purpose of avoiding or mitigating an environmental effect?

The project would be consistent with all applicable land use plans, policies, or regulations of an agency with jurisdiction over the project and would not conflict with any land use plans. No impact would occur.

- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

See also responses in Section IV, Biological Resources. The western proposed impact area occurs approximately 125 feet north and downslope from the edge of the MHPA preserve area of the City of San Diego Multiple Species Conservation Program (MSCP). Therefore, no direct impacts within the MHPA are anticipated. The project BTR explains in detail how the project complies with MHPA Land Use Adjacency Guidelines. Impacts would be less than significant.

XII. MINERAL RESOURCES - Would the project:

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

The project is not located in an MRZ 2 classification area. The site is not large enough to allow an economically feasible aggregate mining operation (less than 10 acres). The site is not being used for the recovery of mineral resources. Therefore, the project would not result in the loss of mineral resources, and no impact would occur.

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

The areas around the proposed project alignment are not designed by the General Plan or other local, state or federal land use plan for mineral resources recovery. No impact would occur.

XII. NOISE - Would the project result in:

- a) Generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The project would not result in the generation of operational noise levels in excess of existing standards or existing ambient noise levels in the vicinity of the project. No impact would occur.

- b) Generation of, excessive ground borne vibration or ground borne noise levels?

The project would not result in the generation of operational ground borne vibration or noise levels in excess of existing standards or ambient levels. No impact would occur.

- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Refer to XIII. a)-b). No impact would occur.

- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing without the project?

The project would result in temporary construction noise and is required to comply with the San Diego Municipal Code, Chapter 5, Article 9.5, (§59.5.0404 Construction Noise). This section specifies that it is unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays (with exception of Columbus Day and Washington’s Birthday), or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise. In addition, the project would be required to conduct any construction activity so as to not cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 a.m. to 7:00 p.m. Noise impacts would be less than significant.

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

The project is not within a noise contour of the San Diego International Airport Land Use Compatibility Plan. The project itself would not generate operational noise. Compliance with OSHA standards will ensure the project workers would not be exposed to excessive noise levels. Therefore, impacts would be less than significant.

- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The project site is not located within the vicinity of a private airstrip. No impact would occur.

XIV. POPULATION AND HOUSING – Would the project:

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The project scope does not include the construction of new homes and businesses or new or extended roads. The project is primarily replacement of existing infrastructure and includes

installation of limited new sewer and water infrastructure. However, the project would not induce significant population growth or require the construction of any new infrastructure beyond the project itself.

- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No such displacement would result, and no impact would occur.

- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No such displacement would result, and no impact would occur.

XV. PUBLIC SERVICES

- a) Would the project result in substantial adverse physical impacts associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:

- i) Fire protection
- ii) Police protection
- iii) Schools
- iv) Parks
- v) Other public facilities

The project would not result in adverse physical impacts of fire facilities or adversely affect existing levels of fire or police services. The project would not require the construction or expansion of a fire, police, school, park, or other public facility. No impact would occur.

XVI. RECREATION

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

The project would not adversely affect the availability of and/or need for new or expanded recreational resources. No impact would occur.

- b) Does the project include recreational facilities or require the construction or expansion of recreational facilities,

which might have an adverse physical effect on the environment?

See XV a) and XVI a). No impact would occur.

XVII. TRANSPORTATION/TRAFFIC – Would the project?

- a) Conflict with an adopted program, plan, ordinance or policy addressing the transportation system, including transit, roadways, bicycle and pedestrian facilities?

The sewer and water infrastructure project would not conflict with an applicable plan, ordinance or policy addressing the transportation system including transit, roadway, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Construction of the proposed project may temporarily affect traffic circulation within the project Area of Potential Effect (APE) and its adjoining roads. However, an approved Traffic Control Plan would be implemented during construction such that traffic circulation would not be substantially impacted. Therefore, the project would not result in any significant transportation/traffic impact.

- b) Result in VMT exceeding thresholds identified in the City of San Diego Transportation Study Manual?

During project construction, primarily heavy-duty trucks will be utilized. CEQA Guidelines Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks, rather than heavy construction vehicles. During project operation the project is considered a small project that will result in less than 300 daily trips. During operation minimal trips would be generated from infrequent maintenance activities. The project is not required to perform a transportation VMT CEQA analysis. Impacts from VMT are presumed to be less than significant and no mitigation is required.

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

The sewer and water infrastructure would not include any design features that would substantially increase hazards or incompatible uses. Impacts would be less than significant.

- d) Result in inadequate emergency access?

See XVII a). The project would not result in inadequate emergency access; impacts would be temporary and less than significant.

XVIII. TRIBAL CULTURAL RESOURCES – Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is

geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Refer to Section V. b). No tribal cultural resources as defined by Public Resources Code section 21074 have been identified on the project site. Furthermore, the project site was not determined to be eligible for listing on either the State or local register of historical resources. The Lipay Nation of Santa Ysabel, Jamul Indian Village, and San Pascual Band of Mission Indians of Kumeyaay Nation Native American tribes which are traditionally and culturally affiliated with the project area have requested consultation with the City of San Diego pursuant to Public Resources Code section 21080.3.1. These tribes were notified of the opportunity to consult with the City of San Diego on the proposed project and responded that they do not have any comments for this project. Consultation began June 11, 2020 and concluded on July 11, 2020. Therefore, the project will not impact Tribal Cultural Resources and no mitigation is required.

- b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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No significant resources pursuant to subdivision (c) of Public Resources Code Section 5024.1 have been identified on the project site. See discussion in V. a).

XIV. UTILITIES AND SERVICE SYSTEMS – Would the project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The project sewer and water improvements would be consistent with applicable requirements of the Regional Quality Control Board with respect to wastewater treatment. No impact would occur.

- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The proposed project would result in improvements to the sewer and water infrastructure. It would not affect water delivery systems and would not require the construction or new water or wastewater treatment facilities in addition to the project.

- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The project is a sewer and water infrastructure project that would not require the construction of new storm water drainage facilities or expansion of existing facilities. No impact would occur.

- d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Construction of the proposed project would not increase the demand for water. No impact would occur.

- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Refer to XIV. c)

- f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Construction of the project would result in the removal of the existing outdated pipelines, but otherwise is presumed to generate minimal waste. Project waste would be disposed of in accordance with all applicable local and state regulations pertaining to solid waste including the permitted capacity of the landfill serving the project area. Demolition or construction materials which can be recycled shall comply with the City's Construction and Demolition Debris Ordinance. Operation of the project would not generate waste and, therefore, would not affect the permitted capacity of the landfill serving the project area.

- g) Comply with federal, state, and local statutes and regulation related to solid waste?

Refer to XIV. f). Any solid waste generated during construction related activities would be recycled or disposed of in accordance with all applicable local, state and federal regulations.

XX. WILDFIRE – Would the project:

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

The 2017 San Diego County Multi-Jurisdictional Hazard Mitigation Plan (SDHMP) is the San Diego region's plan toward greater disaster resilience in accordance with section 322 of the Disaster Mitigation Act of 2000. The project would not conflict with the goals, objectives, and actions of the SDHMP. Per Action 1.D.6, High fire hazard areas shall have adequate access for emergency vehicles.

The project is partially located in a Very High Fire Hazard Severity Zone (VHFHSZ). A traffic control plan would be provided per Standard Specifications for Public Works Construction, which would allow access for emergency vehicles. At least 48 hours in advance of closing, partially closing or reopening, any street, alley, or other public thoroughfare, the Police, Fire, Traffic and Engineering Departments shall be contacted. Therefore, the project would not conflict with emergency response and would not substantially impair an adopted emergency response plan. Impacts would be less than significant.

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

While the project is located partially in a VHFHSZ, implementation of fire safety procedures in the Standard Specifications for Public Works Construction would reduce the potential for exacerbating fire risk due to construction activities to a less than significant level. In addition, the project is required to implement SDMC §142.0412 Brush Management regulations. The rehabilitation, replacement, and construction of sewer and water infrastructure would not impact the risk of wildfire during operation. The project would not significantly exacerbate wildfire risks, and no mitigation is required.

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

The project is currently serviced by existing infrastructure which would service the site during and after construction. The project area has adequate fire hydrant services and street access. No new infrastructure is proposed to support the project that may exacerbate fire risk. Impacts would be less than significant, and no mitigation is required.

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

Within areas of vegetated land cover, the project revegetation plan revegetates all impact areas, in accordance with the City's Landscape Regulations and Land Development Code. The project would

not expose people or structures to significant risk from flooding or landslide as a result of runoff, post-fire instability, or drainage changes.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE –

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

Although the proposed project could have significant impacts to sensitive biological resources, these impacts would be mitigated to a less than significant level by the mitigation measures identified in the Mitigation Monitoring and Reporting Program in Section V of the MND. These mitigation requirements are also consistent with the MSCP City of San Diego Subarea Plan. As stated in the initial study checklist, the project would result in less than significant impacts on archaeological, tribal cultural, and paleontological resources. Historical built environmental resources would not be impacted by the project as stated in the Initial Study.

- b) Does the project have impacts that are individually limited but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

The City of San Diego MSCP Subarea Plan addresses cumulative impacts on biological resources throughout San Diego. Since the mitigation measures identified in Section V of the MND are consistent with the avoidance and mitigation requirements for listed species, and the mitigation ratio requirements, of the Subarea Plan, the proposed project is consistent with the Subarea Plan. As a result, project implementation would not result in any individually limited, but cumulatively significant impacts to these resources. Based on the project's consistency with the Climate Action Plan it would not result in cumulatively considerable environmental impacts relative to greenhouse gas emissions.

Furthermore, when considering all potential environmental impacts of the proposed project, including impacts identified as less than significant in the Initial Study Checklist, together with the impacts of other present, past and reasonably foreseeable future projects, there would not be a cumulatively considerable impact on the environment.

- c) Does the project have environmental effects that will cause substantial

adverse effects on human beings,
either directly or indirectly?

As evidenced by the Initial Study Checklist, the project does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

**INITIAL STUDY CHECKLIST
REFERENCES**

I. Aesthetics / Neighborhood Character

- City of San Diego General Plan; City of San Diego Land Development Municipal Code
- Community Plans: College Area

II. Agricultural Resources & Forest Resources

- City of San Diego General Plan
- U.S. Department of Agriculture, Soil Survey - San Diego Area, California, Part I and II, 1973
- California Agricultural Land Evaluation and Site Assessment Model (1997)
- Site Specific Report:

III. Air Quality

- California Clean Air Act Guidelines (Indirect Source Control Programs) 1990
- Regional Air Quality Strategies (RAQS) - APCD
- Site Specific Report:

IV. Biology

- City of San Diego, Multiple Species Conservation Program (MSCP), Subarea Plan, 1997
- City of San Diego, MSCP, "Vegetation Communities with Sensitive Species and Vernal Pools" Maps, 1996
- City of San Diego, MSCP, "Multiple Habitat Planning Area" maps, 1997
- Community Plan - Resource Element
- California Department of Fish and Game, California Natural Diversity Database, "State and Federally-listed Endangered, Threatened, and Rare Plants of California," January 2001
- California Department of Fish and Game, California Natural Diversity Database, "State and Federally-listed Endangered and Threatened Animals of California," January 2001
- City of San Diego Land Development Code Biology Guidelines
- Site Specific Report:
Biological Technical Report for the College Area Sewer and AC Water Project, prepared August 25, 2020 by RECON

College Area Sewer and AC Water Project (B-16025) Revegetation Plan

V. Cultural Resources (includes Historical Resources and Built Environment)

- City of San Diego Historical Resources Guidelines
- City of San Diego Archaeology Library
- Historical Resources Board List
- Community Historical Survey:
- Site Specific Report: Historical Resources Survey for the College Area Sewer and AC Water Project, prepared by RECON. August 18, 2020

VI. Energy

- City of San Diego Climate Action Plan, December 2015
- CAP Consistency Checklist prepared for Group Job 968, 2019

VII. Geology/Soils

- City of San Diego Seismic Safety Study
- U.S. Department of Agriculture Soil Survey - San Diego Area, California, Part I and II, December 1973 and Part III, 1975
- Site Specific Report:
City of San Diego Task 15GT14 - College Area Sewer and AC Water Main Replacement, prepared by Twining Geotechnical February 26, 2018

- City of San Diego Task 15GT14 – College Area Sewer (Master Contract # H156366)
San Diego, California Response to City of San Diego LDR-Geology Environmental Review, prepared by Twining Geotechnical September 16, 2020

VIII. Greenhouse Gas Emissions

- Site Specific Report: Climate Action Plan Consistency Checklist for College Area Sewer & Water Group (PTS No. 646068), prepared by City of San Diego Engineering & Capital Projects Department

IX. Hazards and Hazardous Materials

- San Diego County Hazardous Materials Environmental Assessment Listing
- San Diego County Hazardous Materials Management Division
- FAA Determination
- State Assessment and Mitigation, Unauthorized Release Listing, Public Use Authorized
- Airport Land Use Compatibility Plan
- Site Specific Report:

X. Hydrology/Drainage

- Flood Insurance Rate Map (FIRM)
- Federal Emergency Management Agency (FEMA), National Flood Insurance Program-Flood Boundary and Floodway Map
- Clean Water Act Section 303(b) list, http://www.swrcb.ca.gov/tmdl/303d_lists.html
- City of San Diego Drainage Design Manual
- City of San Diego Storm Water Standards Manual
- Site Specific Report:

XI. Land Use and Planning

- City of San Diego General Plan
- North Park Community Plan
- Airport Land Use Compatibility Plan
- City of San Diego Zoning Maps
- FAA Determination:
- Other Plans:

XII. Mineral Resources

- California Department of Conservation - Division of Mines and Geology, Mineral Land Classification 1996
- Division of Mines and Geology, Special Report 153 - Significant Resources Maps

- City of San Diego General Plan: Conservation Element
- Site Specific Report:

XIII. Noise

- City of San Diego General Plan
- Community Plan
- San Diego International Airport - Lindbergh Field CNEL Maps
- Brown Field Airport Master Plan CNEL Maps
- Montgomery Field CNEL Maps
- San Diego Association of Governments - San Diego Regional Average Weekday Traffic Volumes
- San Diego Metropolitan Area Average Weekday Traffic Volume Maps, SANDAG
- Site Specific Report:

XIV. Paleontological Resources

- City of San Diego Paleontological Guidelines
- Deméré, Thomas A., and Stephen L. Walsh, "Paleontological Resources City of San Diego," Department of Paleontology San Diego Natural History Museum, 1996
- Kennedy, Michael P., and Gary L. Peterson, "Geology of the San Diego Metropolitan Area, California. Del Mar, La Jolla, Point Loma, La Mesa, Poway, and SW 1/4 Escondido 7 1/2 Minute Quadrangles," *California Division of Mines and Geology Bulletin* 200, Sacramento, 1975
- Kennedy, Michael P., and Siang S. Tan, "Geology of National City, Imperial Beach and Otay Mesa Quadrangles, Southern San Diego Metropolitan Area, California," Map Sheet 29, 1977
- Site Specific Report:

XV. Population / Housing

- City of San Diego General Plan
- Community Plan
- Series 11/Series 12 Population Forecasts, SANDAG
- Other:

XVI. Public Services

- City of San Diego General Plan
- Community Plan

XVII. Recreational Resources

- City of San Diego General Plan
- Community Plan
- Department of Park and Recreation
- City of San Diego - San Diego Regional Bicycling Map
- Additional Resources:

XVIII. Transportation / Traffic

- City of San Diego General Plan
- Community Plan:
- San Diego Metropolitan Area Average Weekday Traffic Volume Maps, SANDAG
- San Diego Region Weekday Traffic Volumes, SANDAG

Site Specific Report:

XIX. Utilities

Site Specific Report:

XX. Water Quality

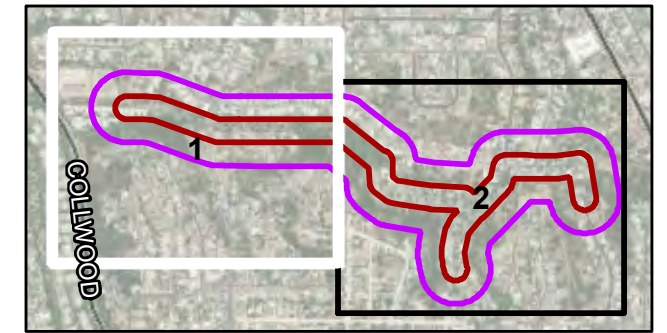
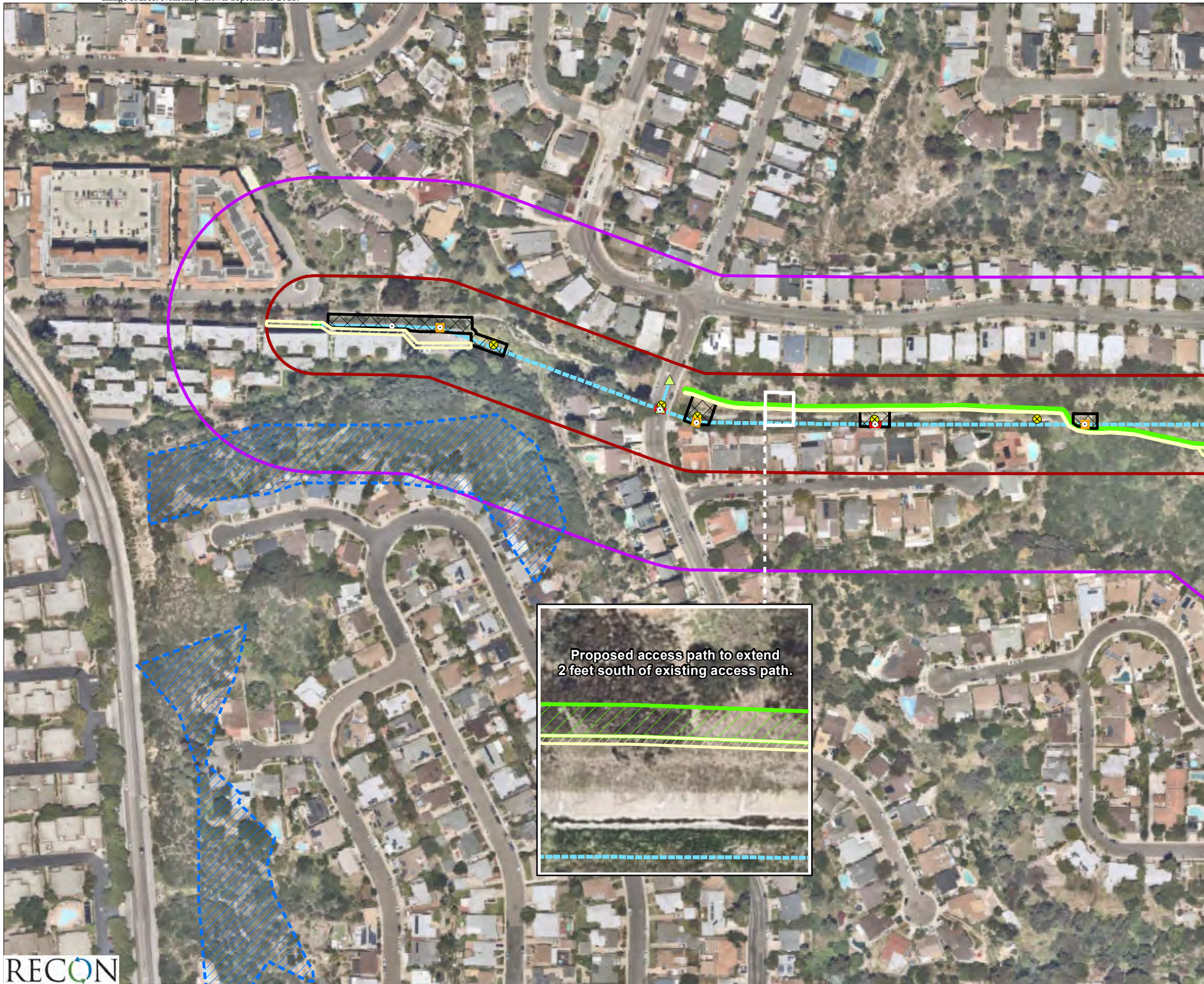
Clean Water Act Section 303(b) list, http://www.swrcb.ca.gov/tmdl/303d_lists.html

California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by Order Nos. R9-2015-0001 and R9-2015-0100 (NPDES permit)

Site Specific Report:

XXI. Wildfire

San Diego County Multi-Jurisdictional Hazard Mitigation Plan, 2017



- Vegetation Survey Area
- Wildlife Survey Area
- City of San Diego MHPA
- Project Features**
- Proposed Sewer Main Replacement - Trenchless
- Proposed Sewer Main Replacement
- Existing Manhole
- ⊗ Existing Manhole to be Abandoned
- Existing Access Path (8' wide)
- Permanent Impacts**
- Proposed Manhole (5'x5')
- ▲ Proposed Vault (13'x11'8")
- Proposed Access Path
- Temporary Impacts**
- Launching Pit (10'x20')
- Receiving Pit (10'x10')
- Temporary Construction Area

Proposed access path to extend
2 feet south of existing access path.

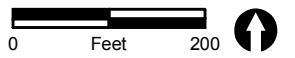
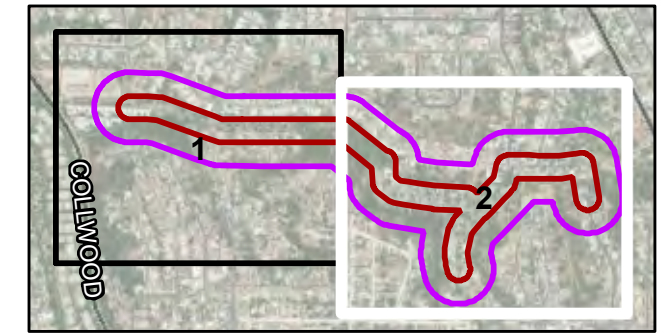
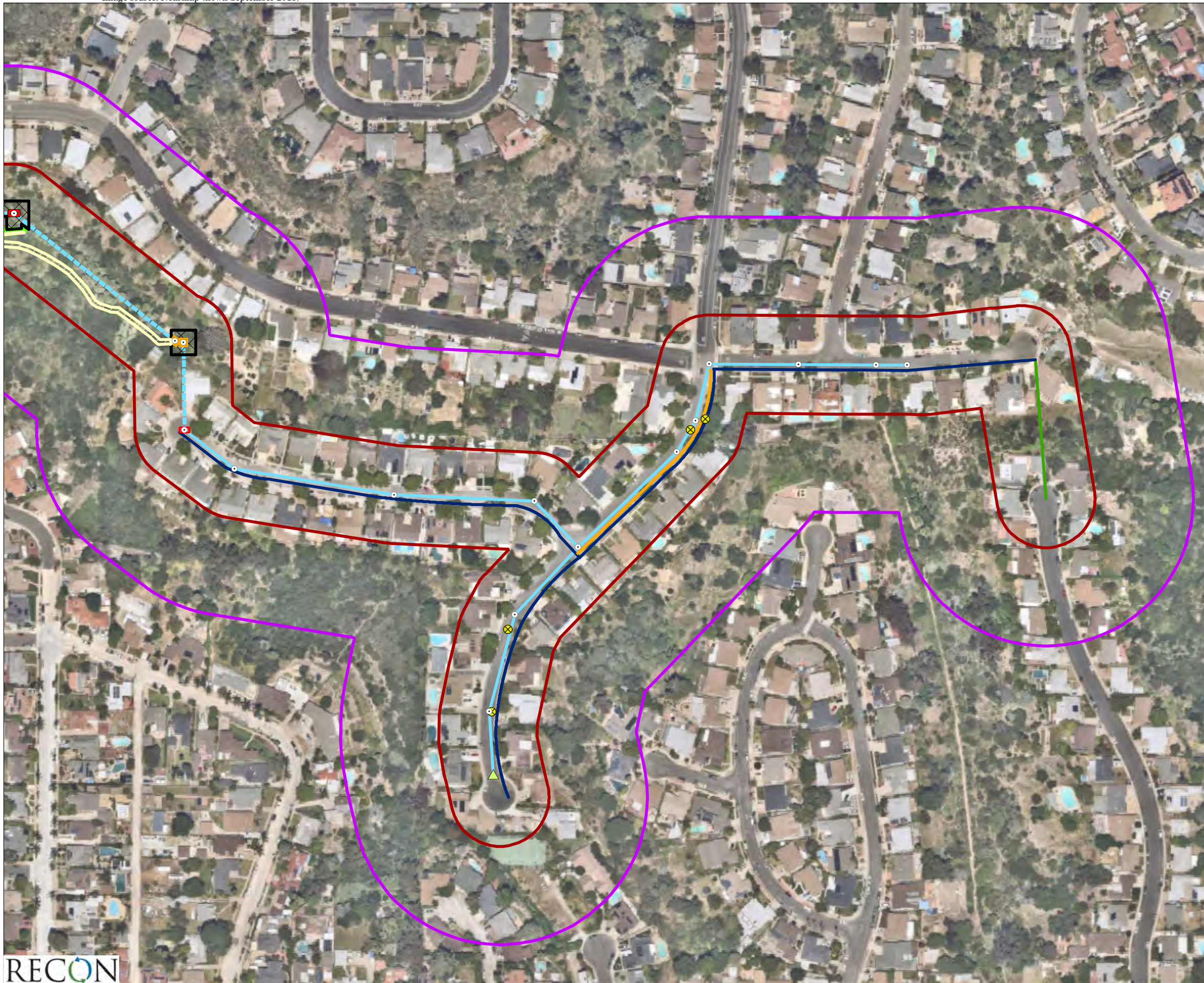


FIGURE 1a
Project Location on Aerial Photograph



- Vegetation Survey Area
- Wildlife Survey Area
- Project Features**
- Proposed Dual 8" Water Main
- Proposed 8" Water Main Replacement
- Water Main to be Abandoned
- Proposed Sewer Main Replacement
- Proposed Sewer Main Replacement - Trenchless
- ✕ Existing Manhole to be Abandoned
- Existing Access Path (8' wide)
- Permanent Impacts**
- Proposed Manhole (5'x5')
- ▲ Proposed Vault (13'x11'8")
- Proposed Access Path
- Temporary Impacts**
- Launching Pit (10'x20')
- Receiving Pit (10'x10')
- Temporary Construction Area

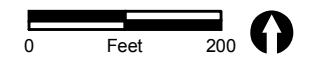


FIGURE 1b
Project Location on Aerial Photograph

APPENDIX B
FIRE HYDRANT METER PROGRAM

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER DI 55.27	DEPARTMENT Water Department
SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 1 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

1. **PURPOSE**

1.1 To establish a Departmental policy and procedure for issuance, proper usage and charges for fire hydrant meters.

2. **AUTHORITY**

2.1 All authorities and references shall be current versions and revisions.

2.2 San Diego Municipal Code (NC) Chapter VI, Article 7, Sections 67.14 and 67.15

2.3 Code of Federal Regulations, Safe Drinking Water Act of 1986

2.4 California Code of Regulations, Titles 17 and 22

2.5 California State Penal Code, Section 498B.0

2.6 State of California Water Code, Section 110, 500-6, and 520-23

2.7 Water Department Director

Reference

2.8 State of California Guidance Manual for Cross Connection Programs

2.9 American Water Works Association Manual M-14, Recommended Practice for Backflow Prevention

2.10 American Water Works Association Standards for Water Meters

2.11 U.S.C. Foundation for Cross Connection Control and Hydraulic Research Manual

3. **DEFINITIONS**

3.1 **Fire Hydrant Meter:** A portable water meter which is connected to a fire hydrant for the purpose of temporary use. (These meters are sometimes referred to as Construction Meters.)

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- 3.2 **Temporary Water Use:** Water provided to the customer for no longer than twelve (12) months.
- 3.3 **Backflow Preventor:** A Reduced Pressure Principal Assembly connected to the outlet side of a Fire Hydrant Meter.

4. **POLICY**

- 4.1 The Water Department shall collect a deposit from every customer requiring a fire hydrant meter and appurtenances prior to providing the meter and appurtenances (see Section 7.1 regarding the Fees and Deposit Schedule). The deposit is refundable upon the termination of use and return of equipment and appurtenances in good working condition.
- 4.2 Fire hydrant meters will have a 2 ½" swivel connection between the meter and fire hydrant. The meter shall not be connected to the 4" port on the hydrant. All Fire Hydrant Meters issued shall have a Reduced Pressure Principle Assembly (RP) as part of the installation. Spanner wrenches are the only tool allowed to turn on water at the fire hydrant.
- 4.3 The use of private hydrant meters on City hydrants is prohibited, with exceptions as noted below. All private fire hydrant meters are to be phased out of the City of San Diego. All customers who wish to continue to use their own fire hydrant meters must adhere to the following conditions:
 - a. Meters shall meet all City specifications and American Water Works Association (AWWA) standards.
 - b. Customers currently using private fire hydrant meters in the City of San Diego water system will be allowed to continue using the meter under the following conditions:
 - 1. The customer must submit a current certificate of accuracy and calibration results for private meters and private backflows annually to the City of San Diego, Water Department, Meter Shop.

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2. The meter must be properly identifiable with a clearly labeled serial number on the body of the fire hydrant meter. The serial number shall be plainly stamped on the register lid and the main casing. Serial numbers shall be visible from the top of the meter casing and the numbers shall be stamped on the top of the inlet casing flange.
3. All meters shall be locked to the fire hydrant by the Water Department, Meter Section (see Section 4.7).
4. All meters shall be read by the Water Department, Meter Section (see Section 4.7).
5. All meters shall be relocated by the Water Department, Meter Section (see Section 4.7).
6. These meters shall be tested on the anniversary of the original test date and proof of testing will be submitted to the Water Department, Meter Shop, on a yearly basis. If not tested, the meter will not be allowed for use in the City of San Diego.
7. All private fire hydrant meters shall have backflow devices attached when installed.
8. The customer must maintain and repair their own private meters and private backflows.
9. The customer must provide current test and calibration results to the Water Department, Meter Shop after any repairs.
10. When private meters are damaged beyond repair, these private meters will be replaced by City owned fire hydrant meters.

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11. When a private meter malfunctions, the customer will be notified and the meter will be removed by the City and returned to the customer for repairs. Testing and calibration results shall be given to the City prior to any re-installation.
 12. The register shall be hermetically sealed straight reading and shall be readable from the inlet side. Registration shall be in hundred cubic feet.
 13. The outlet shall have a 2 ½ “National Standards Tested (NST) fire hydrant male coupling.
 14. Private fire hydrant meters shall not be transferable from one contracting company to another (i.e. if a company goes out of business or is bought out by another company).
- 4.4 All fire hydrant meters and appurtenances shall be installed, relocated and removed by the City of San Diego, Water Department. All City owned fire hydrant meters and appurtenances shall be maintained by the City of San Diego, Water Department, Meter Services.
- 4.5 If any fire hydrant meter is used in violation of this Department Instruction, the violation will be reported to the Code Compliance Section for investigation and appropriate action. Any customer using a fire hydrant meter in violation of the requirements set forth above is subject to fines or penalties pursuant to the Municipal Code, Section 67.15 and Section 67.37.
- 4.6 Conditions and Processes for Issuance of a Fire Hydrant Meter**
- Process for Issuance
- a. Fire hydrant meters shall only be used for the following purposes:
 1. Temporary irrigation purposes not to exceed one year.

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2. Construction and maintenance related activities (see Tab 2).
 - b. No customer inside or outside the boundaries of the City of San Diego Water Department shall resell any portion of the water delivered through a fire hydrant by the City of San Diego Water Department.
 - c. The City of San Diego allows for the issuance of a temporary fire hydrant meter for a period not to exceed 12 months (365 days). An extension can only be granted in writing from the Water Department Director for up to 90 additional days. A written request for an extension by the consumer must be submitted at least 30 days prior to the 12 month period ending. No extension shall be granted to any customer with a delinquent account with the Water Department. No further extensions shall be granted.
 - d. Any customer requesting the issuance of a fire hydrant meter shall file an application with the Meter Section. The customer must complete a "Fire Hydrant Meter Application" (Tab 1) which includes the name of the company, the party responsible for payment, Social Security number and/or California ID, requested location of the meter (a detailed map signifying an exact location), local contact person, local phone number, a contractor's license (or a business license), description of specific water use, duration of use at the site and full name and address of the person responsible for payment.
 - e. At the time of the application the customer will pay their fees according to the schedule set forth in the Rate Book of Fees and Charges, located in the City Clerk's Office. All fees must be paid by check, money order or cashiers check, made payable to the City Treasurer. Cash will not be accepted.
 - f. No fire hydrant meters shall be furnished or relocated for any customer with a delinquent account with the Water Department.
 - g. After the fees have been paid and an account has been created, the

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meter shall be installed within 48 hours (by the second business day). For an additional fee, at overtime rates, meters can be installed within 24 hours (within one business day).

4.7 Relocation of Existing Fire Hydrant Meters

- a. The customer shall call the Fire Hydrant Meter Hotline (herein referred to as "Hotline"), a minimum of 24 hours in advance, to request the relocation of a meter. A fee will be charged to the existing account, which must be current before a work order is generated for the meter's relocation.
- b. The customer will supply in writing the address where the meter is to be relocated (map page, cross street, etc). The customer must update the original Fire Hydrant Meter Application with any changes as it applies to the new location.
- c. Fire hydrant meters shall be read on a monthly basis. While fire hydrant meters and backflow devices are in service, commodity, base fee and damage charges, if applicable, will be billed to the customer on a monthly basis. If the account becomes delinquent, the meter will be removed.

4.8 Disconnection of Fire Hydrant Meter

- a. After ten (10) months a "Notice of Discontinuation of Service" (Tab 3) will be issued to the site and the address of record to notify the customer of the date of discontinuance of service. An extension can only be granted in writing from the Water Department Director for up to 90 additional days (as stated in Section 4.6C) and a copy of the extension shall be forwarded to the Meter Shop Supervisor. If an extension has not been approved, the meter will be removed after twelve (12) months of use.
- b. Upon completion of the project the customer will notify the Meter Services office via the Hotline to request the removal of the fire hydrant meter and appurtenances. A work order will be generated

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for removal of the meter.

- c. Meter Section staff will remove the meter and backflow prevention assembly and return it to the Meter Shop. Once returned to the Meter Shop the meter and backflow will be tested for accuracy and functionality.
- d. Meter Section Staff will contact and notify Customer Services of the final read and any charges resulting from damages to the meter and backflow or its appurtenance. These charges will be added on the customer's final bill and will be sent to the address of record. Any customer who has an outstanding balance will not receive additional meters.
- e. Outstanding balances due may be deducted from deposits and any balances refunded to the customer. Any outstanding balances will be turned over to the City Treasurer for collection. Outstanding balances may also be transferred to any other existing accounts.

5. **EXCEPTIONS**

- 5.1 Any request for exceptions to this policy shall be presented, in writing, to the Customer Support Deputy Director, or his/her designee for consideration.

6. **MOBILE METER**

- 6.1 Mobile meters will be allowed on a case by case basis. All mobile meters will be protected by an approved backflow assembly and the minimum requirement will be a Reduced Pressure Principal Assembly. The two types of Mobile Meters are vehicle mounted and floating meters. Each style of meters has separate guidelines that shall be followed for the customer to retain service and are described below:

- a) **Vehicle Mounted Meters:** Customer applies for and receives a City owned Fire Hydrant Meter from the Meter Shop. The customer mounts the meter on the vehicle and brings it to the Meter Shop for

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inspection. After installation is approved by the Meter Shop the vehicle and meter shall be brought to the Meter Shop on a monthly basis for meter reading and on a quarterly basis for testing of the backflow assembly. Meters mounted at the owner's expense shall have the one year contract expiration waived and shall have meter or backflow changed if either fails.

b) **Floating Meters:** Floating Meters are meters that are not mounted to a vehicle. **(Note: All floating meters shall have an approved backflow assembly attached.)** The customer shall submit an application and a letter explaining the need for a floating meter to the Meter Shop. The Fire Hydrant Meter Administrator, after a thorough review of the needs of the customer, (i.e. number of jobsites per day, City contract work, lack of mounting area on work vehicle, etc.), may issue a floating meter. At the time of issue, it will be necessary for the customer to complete and sign the "Floating Fire Hydrant Meter Agreement" which states the following:

- 1) The meter will be brought to the Meter Shop at 2797 Caminito Chollas, San Diego on the third week of each month for the monthly read by Meter Shop personnel.
- 2) Every other month the meter will be read and the backflow will be tested. This date will be determined by the start date of the agreement.

If any of the conditions stated above are not met the Meter Shop has the right to cancel the contract for floating meter use and close the account associated with the meter. The Meter Shop will also exercise the right to refuse the issuance of another floating meter to the company in question.

Any Fire Hydrant Meter using reclaimed water shall not be allowed use again with any potable water supply. The customer shall incur the cost of replacing the meter and backflow device in this instance.

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7. **FEE AND DEPOSIT SCHEDULES**

7.1 **Fees and Deposit Schedules:** The fees and deposits, as listed in the Rate Book of Fees and Charges, on file with the Office of the City Clerk, are based on actual reimbursement of costs of services performed, equipment and materials. These deposits and fees will be amended, as needed, based on actual costs. Deposits, will be refunded at the end of the use of the fire hydrant meter, upon return of equipment in good working condition and all outstanding balances on account are paid. Deposits can also be used to cover outstanding balances.

All fees for equipment, installation, testing, relocation and other costs related to this program are subject to change without prior notification. The Mayor and Council will be notified of any future changes.

8. **UNAUTHORIZED USE OF WATER FROM A HYDRANT**

8.1 Use of water from any fire hydrant without a properly issued and installed fire hydrant meter is theft of City property. Customers who use water for unauthorized purposes or without a City of San Diego issued meter will be prosecuted.

8.2 If any unauthorized connection, disconnection or relocation of a fire hydrant meter, or other connection device is made by anyone other than authorized Water Department personnel, the person making the connection will be prosecuted for a violation of San Diego Municipal Code, Section 67.15. In the case of a second offense, the customer's fire hydrant meter shall be confiscated and/or the deposit will be forfeited.

8.3 Unauthorized water use shall be billed to the responsible party. Water use charges shall be based on meter readings, or estimates when meter readings are not available.

8.4 In case of unauthorized water use, the customer shall be billed for all applicable charges as if proper authorization for the water use had been obtained, including but not limited to bi-monthly service charges, installation charges and removal charges.

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- 8.5 If damage occurs to Water Department property (i.e. fire hydrant meter, backflow, various appurtenances), the cost of repairs or replacements will be charged to the customer of record (applicant).

Water Department Director

- Tabs: 1. Fire Hydrant Meter Application
2. Construction & Maintenance Related Activities With No Return To Sewer
3. Notice of Discontinuation of Service

APPENDIX

Administering Division: Customer Support Division

Subject Index: Construction Meters
Fire Hydrant
Fire Hydrant Meter Program
Meters, Floating or Vehicle Mounted
Mobile Meter
Program, Fire Hydrant Meter

Distribution: DI Manual Holders



Application for Fire Hydrant Meter (EXHIBIT A)

(For Office Use Only)

NS REQ	FAC#
DATE	BY

METER SHOP (619) 527-7449

Meter Information

Application Date	Requested Install Date:
------------------	-------------------------

Fire Hydrant Location: (Attach Detailed Map//Thomas Bros. Map Location or Construction drawing.) <u>Zip:</u>	T.B.	G.B. (CITY USE)
Specific Use of Water:		
Any Return to Sewer or Storm Drain, if so, explain:		
Estimated Duration of Meter Use: <input type="text"/>	<input type="checkbox"/>	Check Box if Reclaimed Water

Company Information

Company Name:			
Mailing Address:			
City:	State:	Zip:	Phone: ()
*Business license#		*Contractor license#	
A Copy of the Contractor's license OR Business License is required at the time of meter issuance.			
Name and Title of Billing Agent: <small>(PERSON IN ACCOUNTS PAYABLE)</small>			Phone: ()
Site Contact Name and Title:			Phone: ()
Responsible Party Name:			Title:
Cal ID#			Phone: ()
Signature:		Date:	
<small>Guarantees Payment of all Charges Resulting from the use of this Meter. Insures that employees of this Organization understand the proper use of Fire Hydrant Meter</small>			

Fire Hydrant Meter Removal Request	Requested Removal Date:
Provide Current Meter Location if Different from Above:	
Signature:	Title: Date:
Phone: ()	Pager: ()

<input type="checkbox"/> City Meter	<input type="checkbox"/> Private Meter
Contract Acct #:	Deposit Amount: \$ 936.00 Fees Amount: \$ 62.00
Meter Serial #	Meter Size: 05 Meter Make and Style: 6-7
Backflow #	Backflow Size: Backflow Make and Style:
Name:	Signature: Date:

WATER USES WITHOUT ANTICIPATED CHARGES FOR RETURN TO SEWER

Auto Detailing
Backfilling
Combination Cleaners (Vactors)
Compaction
Concrete Cutters
Construction Trailers
Cross Connection Testing
Dust Control
Flushing Water Mains
Hydro Blasting
Hydro Seeing
Irrigation (for establishing irrigation only; not continuing irrigation)
Mixing Concrete
Mobile Car Washing
Special Events
Street Sweeping
Water Tanks
Water Trucks
Window Washing

Note:

1. If there is any return to sewer or storm drain, then sewer and/or storm drain fees will be charges.

Date

Name of Responsible Party
Company Name and Address
Account Number: _____

Subject: Discontinuation of Fire Hydrant Meter Service

Dear Water Department Customer:

The authorization for use of Fire Hydrant Meter # _____, located at (*Meter Location Address*) ends in 60 days and will be removed on or after (*Date Authorization Expires*). Extension requests for an additional 90 days must be submitted in writing for consideration 30 days prior to the discontinuation date. If you require an extension, please contact the Water Department, or mail your request for an extension to:

City of San Diego
Water Department
Attention: Meter Services
2797 Caminito Chollas
San Diego, CA 92105-5097

Should you have any questions regarding this matter, please call the Fire Hydrant Hotline at (619) _____ - _____.

Sincerely,

Water Department

APPENDIX C

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Waterstops (Special Condition)
10. Epoxy coated bar reinforcement
11. Plain and reinforcing steel
12. Structural steel
13. Structural timber and lumber
14. Treated timber and lumber
15. Lumber and timber
16. Aluminum pipe and aluminum pipe arch
17. Corrugated steel pipe and corrugated steel pipe arch
18. Structural metal plate pipe arches and pipe arches
19. Perforated steel pipe
20. Aluminum underdrain pipe
21. Aluminum or steel entrance tapers, pipe downdrains, reducers, coupling bands and slip joints
22. Metal target plates
23. Paint (traffic striping)
24. Conductors
25. Painting of electrical equipment
26. Electrical components
27. Engineering fabric
28. Portland Cement
29. PCC admixtures
30. Minor concrete, asphalt
31. Asphalt (oil)
32. Liquid asphalt emulsion
33. Epoxy

APPENDIX D

SAMPLE CITY INVOICE WITH CASH FLOW FORECAST

WBS #:	B18108
Date Submitted:	10/10/2018
NTP Date:	3/23/2018
Final Statement of WD Date:	5/23/2020
Contract #:	K-XX-XXXX-XXX-X
Contract Amount:	\$5,617,000

Construction Cash Flow Forecast
 "Sewer and Water Group Job 965 (W)"

Year	January	February	March	April	May	June	July	August	September	October	November	December
2018				15,000	25,000	52,000	52,000	100,000	10,000	100,000	100,000	100,000
2019	10,000	10,000	85,000	58,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000	1,000,000
2020	100,000	100,000	100,000	1,000,000	1,000,000							
2021												
2022												
2023												
2024												
2025												

SAMPLE REFERENCE

APPENDIX E
LOCATION MAP

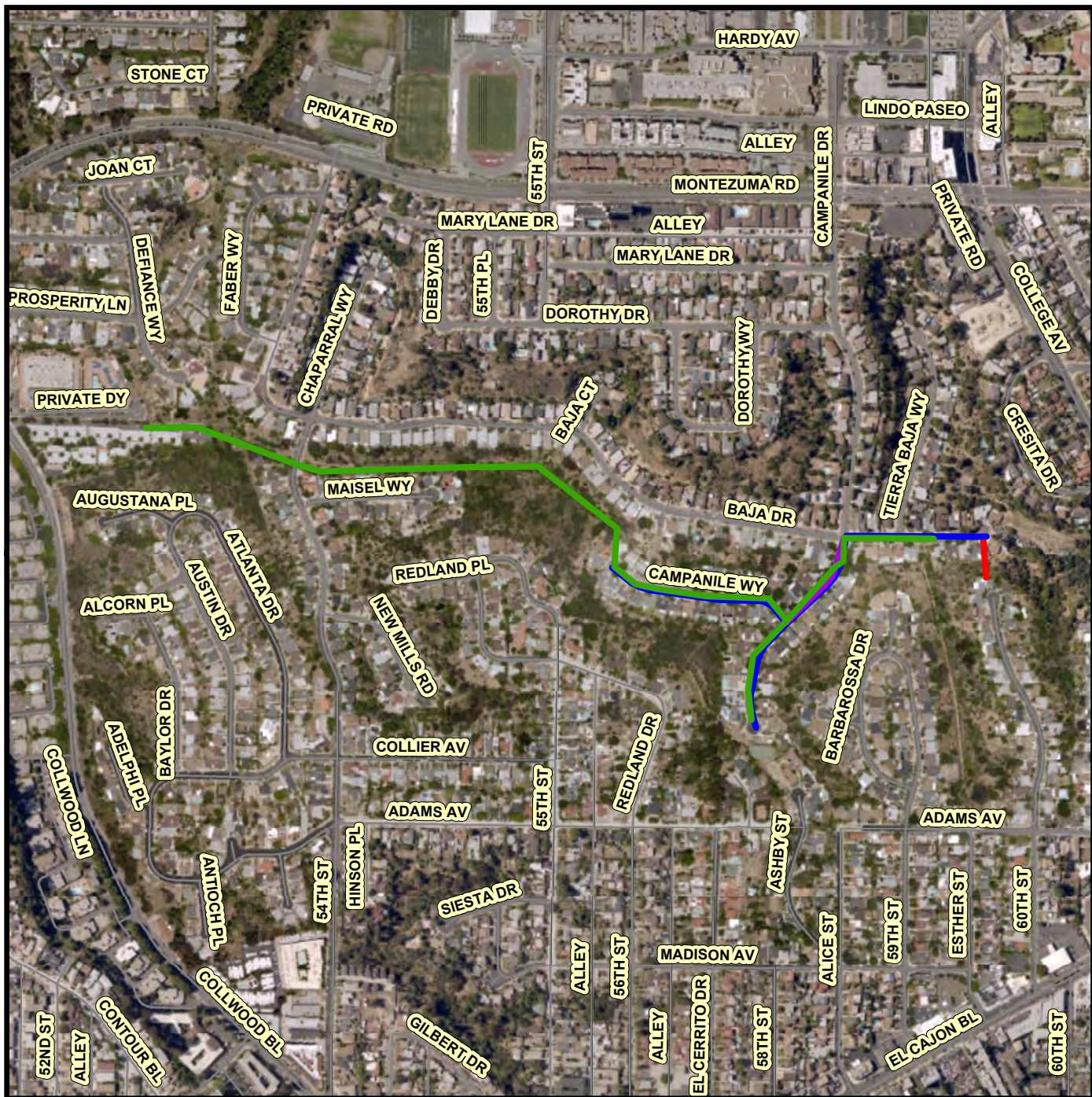
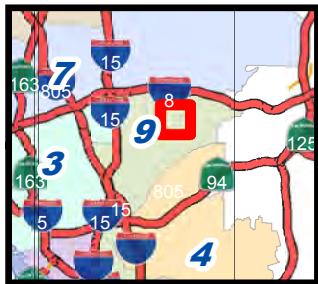
COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT

SENIOR ENGINEER
SHEILA BOSE
619-533-4698

PROJECT MANAGER
JERICHO GALLARDO
619-533-7523

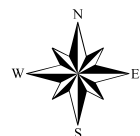
PROJECT ENGINEER
JAMES PIEL
619-533-4167

FOR QUESTIONS ABOUT THIS PROJECT
Call: 619-533-4207
Email: engineering@saniego.gov



Legend

- PROPOSED_SEWER_MAIN_REPLACEMENT
- PROPOSED_8__WATER_MAIN_REPLACEMENT
- PROPOSED_DUAL_8__WATER_MAIN
- Water_To_Be_Abandoned



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APPENDIX F
PALEONTOLOGICAL CONSTRUCTION MONITORING REQUIREMENTS

Paleontological Construction Monitoring Requirements

PALEONTOLOGICAL MONITORING AND REPORTING PROGRAM (PMRP):

- I. **GENERAL REQUIREMENTS.** Post Plan Check (After permit issuance/Prior to start of construction).
 - A. **PRE CONSTRUCTION MEETING IS REQUIRED TEN (10) WORKING DAYS PRIOR TO BEGINNING ANY WORK ON THIS PROJECT.**
 1. The Contractor is responsible to arrange and perform this meeting by contacting the City Resident Engineer (RE)/Construction Manager (CM) of the Construction Management and Field Engineering (CMFE) Division and City staff from Mitigation Monitoring Coordination (MMC). Attendees shall also include the Contractor's representative(s), job site superintendent, and the paleontologist.
 2. NOTE: Failure of all responsible Contractor's representatives and paleontological monitor to attend the pre-construction meeting shall require an additional focused meeting with all parties present.
 3. CONTACT INFORMATION:
 - a) The primary point of contact is the RE/CM at the CMFE Division at 858-627-3200.
 - b) For clarification of environmental requirements, call the RE/CM and MMC at 858-627-3360.
 - B. **PMRP COMPLIANCE.**
 1. This Project shall conform to the City's paleontological monitoring requirements, as further specified below, in accordance with the City of San Diego's Land Development Code – Grading Regulations, Section 142.0151, and implemented to the satisfaction of MMC and RE/CM. The requirements shall not be reduced or changed but may be annotated (i.e. to explain when and how compliance is being met and location of verifying proof, etc.). Additional clarifying information may also be added to other relevant plan sheets and/or specifications as appropriate (i.e., specific locations, times of monitoring, methodology, etc).
 2. NOTE: Contractor shall alert RE/CM and MMC if there are any discrepancies in the plans or notes, or any changes due to field conditions. All conflicts shall be approved by RE/CM and MMC before the Work is performed.
 - C. **MONITORING EXHIBIT.**
 1. Contractor Engineering and Capital Projects Department's consultant (if applicable) is required to submit, to RE/CM and MMC, a paleontological monitoring exhibit on a 11 x 17 inch reduction of the appropriate construction plan, such as site plan, grading, landscape, etc., marked to clearly show the Limits of Work, scope of that discipline's work (i.e. delineation showing work area(s) requiring paleontological monitoring), and notes indicating when in the construction schedule that work will be performed. When necessary for

clarification, a detailed methodology of how the work will be performed shall be included.

D. OTHER SUBMITTALS AND INSPECTIONS.

1. The Contractor or Engineering and Capital Projects Department’s consultant (if applicable) shall submit all required documentation, verification letters, and requests for all associated inspections to the RE/CM and MMC for approval per the following schedule:

DOCUMENT SUBMITTAL/INSPECTION CHECKLIST:

ISSUE AREA	DOCUMENT SUBMITTAL	ASSOCIATED INSPECTION, APPROVALS, NOTES
Paleontology	Principal Investigator & Paleontological Monitors Qualification Letters	Prior to Pre-Construction Meeting
Paleontology	Site-Specific Records Search	Prior to Pre-Construction Meeting
Paleontology	Paleontological Monitoring Exhibit	Prior to, or at, the Pre-Construction Meeting
Paleontology	Letter of Acknowledgement of Responsibility for Curation	Prior to the Pre-Construction Meeting
Paleontology	Construction Schedule (Monitoring)	Prior to Construction
Paleontology	Paleontology Reports	Paleontology Observation
Final PMRP		Final PMRP Inspection

SPECIFIC PMRP ISSUE AREA CONDITIONS/REQUIREMENTS:

I. PALEONTOLOGICAL RESOURCES.

A. Prior to Permit Issuance or Construction.

1. **Letters of Qualification have been submitted to MMC.**
 - a) Prior to the pre-construction meeting, Engineering and Capital Projects Department shall submit a letter of verification to MMC identifying the Principal Investigator (PI) for the project and the names of all persons involved in the paleontological monitoring program, as defined in the City of San Diego Paleontology Guidelines.

- b) MMC will provide a letter to Engineering and Capital Projects Department confirming the qualifications of the PI and all persons involved in the paleontological monitoring of the project.
- c) Prior to the start of work, Engineering and Capital Projects Department shall obtain approval from MMC for any personnel changes associated with the monitoring program.

B. Prior to Start of Construction.

1. Verification of Records Search.

- a) The PI shall provide verification to MMC that a site-specific records search has been completed. Verification includes, but is not limited to a copy of a confirmation letter from San Diego Natural History Museum, other institution or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
- b) The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.

C. PI Shall Attend Pre-Construction Meetings.

- 1. Prior to beginning any work that requires monitoring, the City or City's representative shall arrange a pre-construction meeting that shall include the PI, Grading Contractor, RE/CM, Building Inspector (BI), if appropriate, and MMC. The qualified paleontologist shall attend any grading/excavation related pre-construction meetings to make comments and/or suggestions concerning the Paleontological Monitoring Program with the RE/CM and/or BI and Grading Contractor.
 - a) If the PI is unable to attend the pre-construction meeting, the Contractor, or Engineering and Capital Projects Department's consultant (if applicable), shall schedule a focused pre-construction meeting with MMC, PI, and RE/CM or BI, if appropriate, prior to the start of any work that requires monitoring.
- 2. Acknowledgement of Responsibility for Curation (Capital Improvement Program Project or Other Public Projects).
 - a) The Contractor, or Engineering and Capital Projects Department's consultant (if applicable), shall submit a letter to MMC, RE/CM and/or BI acknowledging their responsibility for the cost of curation associated with all phases of the paleontological monitoring program.
- 3. Identify Areas to be Monitored.
 - a) Prior to the start of any work that requires monitoring, the PI shall submit a Paleontological Monitoring Exhibit (PME) based on the appropriate construction documents (reduced to 11x17 inch) to MMC and RE/CM and/or BI for approval identifying the areas to be monitored including the delineation of grading/excavation limits. Monitoring shall begin at depths below 10 feet from existing grade or

as determined by the PI in consultation with MMC. The determination shall be based on site-specific records search data which supports monitoring at depths less than ten feet. The PME shall be based on the results of a site-specific records search as well as information regarding existing known soil conditions (native or formation). MMC shall notify the PI that the PME has been approved prior to commencing with any ground-disturbing activities.

4. When Monitoring Will Occur:
 - a) Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE/CM and/or BI indicating when and where monitoring will occur.
 - b) The PI may submit a detailed letter to MMC and RE/CM and/or BI prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as depth of excavation and/or site graded to bedrock, presence or absence of fossil resources, etc., which may reduce or increase the potential for resources to be present.
5. Approval of PME and Construction Schedule.
 - a) After approval of the PME by MMC, the PI shall submit to MMC and RE/CM and/or BI written authorization of the PME and Construction Schedule from the Contractor.

D. During Construction.

1. The Monitor shall be present during Grading/Excavation/Trenching.
 - a) The paleontological monitor shall be present full-time during grading/excavation/trenching activities including, but not limited to, mainline, laterals, jacking and receiving pits, services and all other appurtenances associated with underground utilities as identified on the PME that could result in impacts to formations with high and/or moderate resource sensitivity.
 - b) The Contractor is responsible for notifying the RE/CM and/or BI, PI, and MMC of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the PME.
 - c) The PI may submit a detailed letter to MMC and RE/CM and/or BI during construction requesting a modification to the monitoring program when a field condition such as trenching activities that do not encounter formational soils as previously assumed, and/or when unique/unusual fossils are encountered, which may reduce or increase the potential for resources to be present.

- d) The paleontological monitor shall document field activity via the Consultant Site Visit Record (CSV). The CSV shall be emailed and/or provided hard copy by the Contractor or Engineering and Capital Projects Department's consultant (if applicable) to the RE/CM and/or BI the first day of monitoring, the last day of monitoring, monthly (Notification of Monitoring Completion), and in the case of ANY discoveries. The RE/CM and/or BI shall forward copies to MMC.
2. Discovery Notification Process.
- a) In the event of a discovery, the paleontological monitor shall direct the contractor to temporarily divert trenching activities in the area of discovery and immediately notify the RE/CM and/or BI, as appropriate.
 - b) The paleontological monitor shall immediately notify the PI (unless paleontological monitor is the PI) of the discovery.
 - c) The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC and RE/CM and/or BI within 24 hours by fax or email with photos of the resource in context, if possible.
3. Determination of Significance.
- a) The PI shall evaluate the significance of the resource.
 - i. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC and RE/CM and/or BI indicating whether mitigation is required. The determination of significance for fossil discoveries shall be at the discretion of the PI.
 - ii. If the resource is significant, the PI shall submit a Paleontological Recovery Program (PRP) and obtain written approval of the program from MMC and/or RE/CM and/or BI. PRP and any mitigation must be approved by MMC and RE/CM and/or BI before ground-disturbing activities in the area of discovery will be allowed to resume.
 - Note: For pipeline trenching projects only, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under item 4, "Discovery Process for Significant Resources - Pipeline Trenching Projects".
 - iii. If resource is not significant (e.g., small pieces of broken common shell fragments or other scattered common fossils) the PI shall notify the RE, or BI as appropriate, that a non-significant discovery has been made. The Paleontologist shall continue to monitor the area without notification to MMC unless a significant resource is encountered.

- iv. The PI shall submit a letter to MMC and RE/CM and/or BI indicating that fossil resources will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that no further work is required.
 - Note: For pipeline trenching projects only, if the fossil discovery is limited in size, both in length and depth; the information value is limited and there are no unique fossil features associated with the discovery area, then the discovery should be considered not significant.
 - Note: For pipeline trenching projects only, if significance cannot be determined, the Final Monitoring Report and Site Record shall identify the discovery as Potentially Significant.
4. Discovery Process for Significant Resources - Pipeline Trenching Projects.
- a) Procedures for Documentation, Curation and Reporting. The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance.
 - i. One hundred percent of the fossil resources within the trench alignment and width shall be documented in-situ photographically, drawn in plan view (trench and profiles of side walls), recovered from the trench and photographed after cleaning, then analyzed and curated consistent with Society of Invertebrate Paleontology Standards. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact and so documented.
 - ii. The PI shall prepare a Draft Paleontological Monitoring Report and submit to MMC via the RE/CM and/or BI as indicated in **Section F - Post Construction**.
 - iii. The PI shall be responsible for recording (on the appropriate forms for the San Diego Natural History Museum) the resource(s) encountered during the Paleontological Monitoring Program in accordance with the PMRP. The forms shall be submitted to the San Diego Natural History Museum and included in the Final Paleontological Monitoring Report.
 - iv. The Final Paleontological Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

E. Night and/or Weekend Work.

1. If night and/or weekend work is included in the contract:
 - a) When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the pre-construction meeting. The following procedures shall be followed:
 - i. No Discoveries - In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the CSVR and submit to MMC via the RE/CM and/or BI via email or in person by 8AM on the next business day.
 - ii. Discoveries - All discoveries shall be processed and documented using the existing procedures detailed in **Section D - During Construction**.
 - iii. Potentially Significant Discoveries - If the PI determines that a potentially significant discovery has been made, the procedures detailed under **Section D - During Construction** shall be followed.
 - b) The PI shall immediately contact the RE/CM and/or BI and MMC, or by 8AM on the next business day, to report and discuss the findings as indicated in **Section D - During Construction**, unless other specific arrangements have been made.
2. If night and/or weekend work becomes necessary during the course of construction:
 - a) The Contractor shall notify the RE/CM and/or BI a minimum of 24 hours before the work is to begin.
 - b) The RE/CM and/or BI, as appropriate, shall notify MMC immediately.
3. All other procedures described above shall apply, as appropriate.

F. Post Construction.

1. Preparation and Submittal of Draft Paleontological Monitoring Report.
 - a) The PI shall submit two copies of the Draft Paleontological Monitoring Report (even if negative), prepared to the satisfaction of MMC, which describes the methods, results, analysis, and conclusions of all phases of the Paleontological Monitoring Program (with appropriate graphics) to MMC via the RE/CM and/or BI for review and approval within 90 calendar days following the completion of monitoring.
 - i. For significant or potentially significant paleontological resources encountered during monitoring, as identified by the PI, the Paleontological Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
 - ii. The PI shall be responsible for recording (on the appropriate forms) any significant or potentially significant fossil resources encountered during the Paleontological Monitoring Program

in accordance with the PMRP, and submittal of such forms to the San Diego Natural History Museum with the Final Monitoring Report.

- b) MMC shall return the Draft Monitoring Report to the PI via the RE/CM and/or BI for revision or, for preparation of the Final Report.
- c) The PI shall submit revised Draft Monitoring Report to MMC via the RE/CM and/or BI for approval.
- d) MMC shall provide written verification to the PI and RE/CM and/or BI of the approved report.

2. Handling of Fossil Remains.

- a) The PI shall ensure that all fossils collected are cleaned to the point of curation (e.g., removal of extraneous sediment, repair of broken specimens, and consolidation of fragile/brittle specimens) and catalogued as part of the Paleontological Monitoring Program.
- b) The PI shall ensure that all fossils are analyzed to identify stratigraphic provenance, geochronology, and taphonomic context of the source geologic deposit; that faunal material is taxonomically identified; and that curation has been completed, as appropriate.

3. Curation of Fossil Remains: Deed of Gift and Acceptance Verification.

- a) The PI shall be responsible for ensuring that all fossil remains associated with the monitoring for this project are permanently curated with an accredited institution that maintains paleontological collections (such as the San Diego Natural History Museum).
- b) The PI shall submit the Deed of Gift and catalogue record(s) to the RE/CM and/or BI, as appropriate for donor signature with a copy submitted to MMC.
- c) The RE/CM and/or BI, as appropriate shall obtain signature on the Deed of Gift and shall return to PI with copy submitted to MMC.
- d) The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE/CM and/or BI and MMC.

4. Final Paleontological Monitoring Report(s).

- a) The PI shall submit two copies of the Final Paleontological Monitoring Report to MMC (even if negative), within 90 calendar days after notification from MMC of the approved report.
- b) The RE/CM and/or BI shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC, which includes the Acceptance Verification from the curation institution.

APPENDIX G
LONG-TERM MAINTENANCE AND MONITORING AGREEMENT

LONG-TERM MAINTENANCE AND MONITORING AGREEMENT

This **25-Month Long-Term Maintenance and Monitoring Agreement (LTMMA)** is made and entered into by and between the City of San Diego (City), a municipal corporation, and **S.C. Valley Engineering, Inc.** (Contractor), who may be individually or collectively referred to herein as a "Party" or the "Parties."

RECITALS

- A. Concurrent with execution of this LTMMA, the Parties entered into a general contract (Construction Contract) for the construction of **College Areas Swr & AC Wtr Main Repl (Project)**, WBS/IO number **B-16022 / B-16025**, Bid No. **K-22-2059-DBB-3**.
- B. In accordance with the Construction Contract, the Contractor shall enter into this LTMMA with the City for the purpose of implementing and fulfilling long-term maintenance requirements in accordance with the City of San Diego Municipal Code and the Contract Documents for the specified elopement(s) of **College Areas Swr & AC Wtr Main Repl (Maintenance Requirements)**.
- C. The Contractor is ready and willing to fulfill its maintenance requirements in accordance with the terms of this LTMMA.

NOW, THEREFORE, in consideration of the above recitals and the mutual covenants and conditions set forth herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby set forth their mutual covenants and understandings as follows:

INTRODUCTORY PROVISIONS

- A. **Recitals Incorporated.** The above referenced Recitals are true and correct and are incorporated into this LTMMA by this reference.
- B. **Exhibits Incorporated.** All Exhibits and Attachments referenced in this LTMMA are incorporated into this LTMMA by this reference.
- C. **Contract Term.** This LTMMA shall be effective upon completion of the Plant Establishment Period (PEP) as described in **Section 6-1.1** of **ATTACHMENT E - Supplementary Special Provisions** and **Section 802** of the 2021 GREENBOOK AND WHITEBOOK and it shall be effective until the completion of the Work as described below.
- D. **Terms and Conditions.** This LTMMA is subject to the terms and conditions of the Construction Contract included in the 2021 GREENBOOK, WHITEBOOK, and Special Provisions (**Attachment C, Part 1, and Part 8**) except as otherwise stated in this LTMMA.

E. Partial Release of Payment Bond and Performance Bond.

- 1. Performance of Contract in Two Phases.** There are two separate phases of Work to be performed by the Contractor under this Contract. The first phase covers the Work involved in the original agreement as described in this agreement (“Phase 1 Work”). The second phase covers the work involved in the long-term maintenance of the Re-vegetation/Restoration Area after Phase 1 Work has been completed (“Phase 2 Work”).
- 2. Bond Handling for Contract Phases.** The Payment Bond and the Performance Bond covering Phase 1 Work on this Contract shall remain in full force and effort until completion of that phase is certified. The original Payment Bond and the original Performance Bond covering Phase 1 Work on this Contract shall continue in full force and effort for Phase 2 Work, however the value of each bond may be reduced as follows:

 - 2.1** Completion by the Contractor of all Phase 1 Work shall be evidenced solely by the City Engineer affirming in writing that to the best of their knowledge that all Phase 1 Work has been completed by the Contractor in strict conformity with all City-approved plans and revisions, and that the Phase 1 Work completed by the Contractor meets all applicable standards (“Notice of Completion”).
 - 2.2** Upon issuance by the City Engineer of the Notice of Completion for Phase 1 Work, the Payment Bond for this Project, and the Performance Bond for this Project, may be partially released, and thereby reduced for the Work performed under Phase 1. The remaining payment and performance bond will cover the full cost of Phase 2 Work on this Project, which will be the amount specified in “Section 4: COMPENSATION” in Section 4.1 of this LTMMMA.
- 3. No Partial Release Upon Default.** No Partial Performance Bond Release and Reduction shall be given to the Contractor if the Performance Bond and/or this Agreement is in default on Phase 1 Work.

SECTION 1 - MAINTENANCE CONTRACT SUMMARY

- 1.1. General.** The Contractor shall fulfill the Project's Maintenance Requirements (Work) as identified in the scope of work attached as **Exhibit A** in a manner satisfactory to the City.
- The Contractor shall provide all equipment, labor, and materials necessary to perform the **Work** as described in **Exhibit A**, at the direction of the City.
- 1.2. Schedule of Work.** The Contractor shall follow the Schedule of Work (Schedule) for the maintenance and monitoring period provided in the Plans.
- After receiving notification from the City, the Contractor shall create a comprehensive Schedule of Work (Schedule) for performance of this LTMMA for the City's approval. The Schedule shall include routine work, inspection, and infrequent operations such as repairs, fertilization, aerification, watering, and pruning.
- The City will approve the Schedule prior to the commencement of the Work. The City may require the Contractor to revise the Schedule. The Contractor shall not revise the Schedule unless the revisions have received the prior written approval of the City.
- 1.3. Commencement of Work & Maintenance Period.** This LTMMA shall commence when the City approves of the Work of the Plant Establishment Period and sends notice of the approval to the Contractor in accordance with **Part 8, Section 802** of the Construction Contract and shall continue for **25** months. A copy of the approval form is attached as **Exhibit B**.
- 1.4. License.** The Contractor shall hold the following licenses in good standing:
- 1.4.1. C-27 State Contractor's License.**
 - 1.4.1.1.** Alternatively, the Contractor shall retain the services of a Subcontractor with a **C-27 State Contractor's License**.
 - 1.4.2. Pest Control Advisor's License.**
 - 1.4.2.1.** Alternatively, the Contractor shall retain the services of a licensed Pest Control Advisor.
 - 1.4.3.** Registration with the County Agriculture Commission.
 - 1.4.4.** Qualified Applicator's Certificate for Category B. This shall apply to any person supervising the use of pesticides, herbicides, or rodenticides.
 - 1.4.5.** City of San Diego Business License.
- Prior to performing the Work, the Contractor shall complete and submit to the City the License Data Sheet. **See Exhibit C.**
- 1.5. Hours of Performance.** The Contractor shall perform the Work between the hours of **7:00 AM to 5:00 PM.**, Monday through Friday (Working Hours). The City may, in its sole discretion, grant permission to the Contractor to perform Work during non-Working Hours. Maintenance functions that generate excess noise (operations of power equipment which would cause annoyance to area residents for example) shall not begin before 7:00 a.m.

SECTION 2 - ADMINISTRATION

- 2.1. **Contract Administrator. PURCHASING & CONTRACTING DEPARTMENT, PUBLIC WORKS DIVISION (PWD)** is the Contract Administrator for the LTMMA. The Contractor shall perform the Work under the direction of a designated representative of Purchasing & Contracting Department, Public Works Division. The City will communicate with the Contractor on all matters related to the administration of this LTMMA and the Contractor's performance of the Work rendered hereunder. When this LTMMA refers to communications to or with the City, those communications shall be with the City, unless the City or this LTMMA specifies otherwise. Further, when this LTMMA requires an act or approval by City, that act or approval will be performed by the City.
- 2.2. **Local Office.** The Contractor shall maintain a local office with a company representative who is authorized to discuss matters pertaining to this LTMMA with the City and shall promptly respond and be available during Normal Working Hours. A local office is one located in San Diego County that can be reached by telephone and facsimile. An answering service in conjunction with a company email address for the designated company representative may fulfill this requirement. A mobile telephone shall not fulfill the requirement for a local office. All calls to the Contractor from the City shall be returned within a 1-hour period.
- 2.3. **Emergency Calls.** The Contractor shall have the capability to receive and to respond immediately to calls of an emergency nature. The City shall refer emergency calls to the Contractor for immediate disposition. The Contractor shall provide the City with a 24 hour emergency telephone number for this purpose.
- 2.4. **Staffing.** The Contractor shall furnish supervisory and working personnel capable of promptly accomplishing all Work required under this LTMMA on schedule and to the satisfaction of the City.
- 2.5. **Contractor Inspections.** The Contractor shall perform inspections of the Work site and shall prepare and submit to the City a Punchlist and dates of correction. The Punchlist shall include a comprehensive report of Work performed at the Work site to ensure 100% cover.

SECTION 3: WORK SITE MAINTENANCE

- 3.1. **Use of Chemicals.** The Contractor shall submit to the City for approval sample labels and MSDS for all chemical herbicides, rodenticides, and pesticides proposed for use under this LTRMC. Materials included shall be limited to chemicals approved by the State of California Department of Agriculture.

The use of any chemical shall be based on the recommendations of a licensed pest control advisor. Annual PCA Pesticide Recommendations are required for each pesticide proposed to be used for the Work site covered by this LTRMC. The use of chemicals shall conform to the current San Diego County Department of Agriculture regulations.

No chemical herbicide, rodenticide, or pesticide shall be applied until its use is approved, in writing, by City as appropriate for the purpose and area proposed.

The Contractor shall submit a monthly pesticide use report to the City along with the Contractor's invoices for payment. This report shall include a statement of all applications of herbicides, rodenticides, and pesticides, detailing the chemical used, undiluted quantity, rate of application, applicator's name, and the date and purpose of the application. For months in which no pesticides are applied, state "No Pesticide Used" on the report.

- 3.2. Irrigation Water.** The Contractor shall diligently practice water conservation, including minimizing run-off or other waste. The Contractor shall turn off irrigation systems, if any, during periods of rainfall and at such other times when suspension of irrigation is desirable to conserve water and to remain within the guidelines of good horticultural landscape maintenance practices in accordance with the instructions from the Project Biologist. The Contractor's failure to properly manage and conserve water may result in deductions from the monthly payment to be made to the Contractor or other penalties under this LTMMA.

If the Contractor causes excessive use or waste of irrigation water, the estimated cost of that water shall be deducted from the monthly payment. Further, any monetary fines or other damages assessed to City for the Contractor's failure to follow water conservation regulations imposed by the City, the Public Utilities Department of the City of San Diego, and, where appropriate, the State of California, the County Water Authority, or other legal entities shall be solely the responsibility of the Contractor and may be deducted from the monthly payment to be made to the Contractor under this LTMMA.

- 3.3. Payment for Water.** The Contractor shall pay for the water used in the maintenance of the Work site and this cost is included in the price of this LTMMA.
- 3.4. Satisfactory Progression.** If the Revegetation/Restoration Area is not progressing towards the required performance criteria, as defined in the Scope of Work, in accordance with the Work Schedule, and as determined by City, the City may accordingly adjust monthly payments to the Contractor.

SECTION 4: COMPENSATION

- 1.1. Maximum Compensation.** The compensation for this LTMMA shall not exceed **\$93,265.00. SEE EXHIBIT A.** (Contract Price).
- 1.2. Method of Payment and Reports.** The payments will be made monthly in direct proportion that each month bears to the total value of the Contract Price. As conditions precedent to payment, the Contractor shall submit a detailed invoice and report of maintenance Work performed every month. The Contractor's failure to submit the

required reports or certified payrolls as described in the Construction Contract shall constitute a basis for withholding payment by the City.

- 1.3. Final Payment.** The Contractor shall not receive final payment until the following conditions have been completed to the City's satisfaction:
 - 1.3.1.** The item(s) of the Work subject to this maintenance coverage as specified in **Exhibit A** (Maintenance Items) have been determined to be in compliance with the Construction Contract and this LTMMA.
 - 1.3.2.** The Contractor has provided to the City a signed and notarized Affidavit of Disposal, a copy of which is attached to the Construction Contract, stating that all brush, trash, debris, and surplus materials resulting from the Work have been disposed of in a legal manner.
 - 1.3.3.** The Contractor has provided a final work summary report to the City.
 - 1.3.4.** The Contractor has performed comprehensive and successful testing and checks of the Maintenance Items.

SECTION 5: BONDS AND INSURANCE

- 5.1. Contract Bonds.** Prior to the commencement of Work, the Contractor, at its sole cost and expense, shall provide the following bonds issued by a surety authorized to issue bonds in California satisfactory to the City:
 - 5.1.1.** A Payment Bond (Material and Labor Bond) in an amount not less than the Contract Price for this Bid item, to satisfy claims of material suppliers and mechanics and laborers employed by it on the Work. The Payment Bond shall be maintained by the Contractor in full force and effect until the Work is accepted by City and until all claims for materials and labor are paid and shall otherwise comply with the California Civil Code.
 - 5.1.2.** A Performance Bond in an amount not less than the Contract Price for this bid item to guarantee the faithful performance of all Work within the time prescribed in a manner satisfactory to the City and to guarantee all materials and workmanship will be free from original or developed defects. The Performance Bond shall remain in full force and effect until performance of the Work is completed as set forth in this LTMMA.
- 5.2. Insurance.** The Contractor shall maintain insurance coverage as specified in **Section 5-4, "INSURANCE"** of the Construction Contract at all times during the term of this LTMMA.

The Contractor shall not begin the Work under this LTMMA until they have complied with the following:

5.2.1. Obtain insurance certificates reflecting evidence of insurance:

1. Commercial General Liability
2. Commercial Automobile Liability
3. Worker's Compensation

5.2.2. Confirm that all policies contain the specific provisions required in **Section 5-4, "INSURANCE"**.

The Contractor shall submit copies of any policy upon request by the City.

The Contractor shall not modify any policy or endorsement thereto which increases the City's exposure to loss for the duration of this LTMMA.

SECTION 6: MISCELLANEOUS

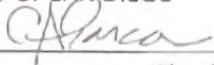
- 6.1. Illness and Injury Prevention Program.** The Contractor shall comply with all the mandates of Senate Bill 198 and shall specifically have a written Injury Prevention Program on file with the City in accordance with all applicable standards, orders, or requirements of California Labor Code, Section 6401.7. This Program shall be on file prior to the performance of any Work.
- 6.2. City Standard Provisions.** This LTMMA is subject to the same standard provisions and Contractor Certification requirements as the Construction Contract.
- 6.3. Taxpayer Identification Number.** I.R.S. regulations require the City to have the correct name, address, and Taxpayer Identification Number (TIN) or Social Security Number (SSN) on file for businesses or persons who provide services or products to the City. This information is necessary to complete Form 1099 at the end of each tax year. As such, the Contractor shall provide the City with a Form W-9 upon execution of this LTMMA.
- 6.4. Assignment.** The Contractor shall not assign the obligations under this LTMMA, whether by express assignment or by sale of the company, nor any monies due or to become due, without the City's prior written approval. Any assignment in violation of this section shall constitute a Default and is grounds for immediate termination of this LTMMA, at the sole discretion of City. In no event shall any putative assignment create a contractual relationship between the City and any putative assignee.
- 6.5. Independent Contractors.** The Contractor and any Subcontractors employed by Contractor shall be independent contractors and not agents of the City. Any provisions of this LTMMA that may appear to give the City any right to direct the Contractor concerning the details of performing the Work, or to exercise any control over such performance, shall mean only that the Contractor shall follow the direction of the City concerning the end results of the performance.
- 6.6. Covenants and Conditions.** All provisions of this LTMMA expressed as either covenants or conditions on the part of the City or the Contractor shall be deemed to be both covenants and conditions.

- 6.7. Jurisdiction and Venue.** The jurisdiction and venue for any suit or proceeding arising out of or concerning this LTMMA, the interpretation or application of any of its terms, or any related disputes shall be the County of San Diego, State of California.
- 6.8. Successors in Interest.** This LTMMA and all rights and obligations created by it shall be in force and effect whether or not any Parties to this LTMMA have been succeeded by another entity and all rights and obligations created by this LTMMA shall be vested and binding on any Party's successor in interest.
- 6.9. Integration.** This LTMMA and the exhibits, attachments, and references incorporated into this LTMMA fully express all understandings of the Parties concerning the matters covered in this LTMMA. No change, alteration, or modification of the terms or conditions of this LTMMA, and no verbal understanding of the Parties, their officers, agents, or employees shall be valid unless made in the form of a written change agreed to in writing by both Parties or by an amendment to this LTMMA agreed to by both Parties. All prior negotiations and agreements shall be merged into this LTMMA.
- 6.10. Counterparts.** This LTMMA may be executed in counterparts, which when taken together shall constitute a single signed original as though all Parties had executed the same page.
- 6.11. No Waiver.** Any failure of either the City or the Contractor to insist upon the strict performance by the other of any covenant, term, or condition of this LTMMA, nor any failure to exercise any right or remedy consequent upon a breach of any covenant, term, or condition of this LTMMA, shall constitute a waiver of any such breach or of such covenant, term, or condition. No waiver of any breach shall affect or alter this LTMMA, and each and every covenant, condition, and term hereof shall continue in full force and effect to any existing or subsequent breach.
- 6.12. Severability.** The unenforceability, invalidity, or illegality of any provision of this LTMMA shall not render any other provision of this LTMMA unenforceable, invalid, or illegal.
- 6.13. Signing Authority.** The representative for each Party signing on behalf of a corporation, partnership, joint venture or governmental entity hereby declares that authority has been obtained to sign on behalf of the corporation, partnership, joint venture, or entity and agrees to hold the other Party or Parties hereto harmless if it is later determined that such authority does not exist.

IN WITNESS WHEREOF, this Contract is executed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code 522.3102 authorizing such execution.

Dated this 14th day of September 2022.

THE CITY OF SAN DIEGO

By: 

Claudia C. Abarca

Director

Purchasing & Contract Department

I HEREBY CERTIFY I can legally bind **S.C. Valley Engineering, Inc** and that I have read this entire contract, this 1st day of July, 2022.

By: 

Printed Name: Sam Uetner

Title: President

I HEREBY APPROVE the form of the foregoing Contract this

15th day September of 2022.

Mara W. Elliott, City Attorney

By: 

Printed Name: Bonny Hsu

Deputy City Attorney

EXHIBIT A

SCOPE OF WORK

- I. **Location of Work.** The location of the Work to be performed (Revegetation Area) is shown on Specifications and Drawings numbered **Revegetation Plan – Sheet 1 (Page 167)** through **Revegetation Plan – Sheet 3 (Page 169)** (Specifications), which are incorporated into this Contract by this reference as though fully set forth herein.

- II. **Description of Work.** The Contractor shall maintain and monitor the Revegetation Area during the Monitoring Program in accordance with this Contract. The Revegetation/Restoration Area shall meet the success criteria specified in the Revegetation Plan (located in the bio report) at each of the milestones listed in the Schedule for the maintenance and monitoring period. The Work includes complete landscape maintenance consisting of irrigation, pruning, shaping and training of trees, shrubs, and ground cover plants; fertilization; weed control; control of all plant diseases and pests; and trash removal, and all other maintenance listed in this Contract and as required to maintain the Revegetation Area in a useable condition and to maintain the plant material in a healthy and viable state.

The Work also includes biological monitoring of the Revegetation Area according to the schedule and methods specified in the Revegetation Plan. The monitoring work shall include all reporting tasks specified in the Plan.

- III. **Method of Performing Work.**

- A. **Irrigation.** Irrigation shall be applied to container and salvaged plants in accordance with instructions from the Project Biologist. Irrigation delivery techniques and schedules will vary depending on the availability of a sprinkler irrigation system and weather patterns. Failure of an existing irrigation system to provide full and proper irrigation shall not relieve Contractor of the responsibility to provide adequate irrigation with full and proper coverage of all areas subject to this LTMMA.

1. In areas where an automatic sprinkler system is installed, Contractor shall periodically inspect the operation of the system for any malfunction. The maximum interval between inspections shall not exceed 7 Calendar Days. The Contractor shall maintain all sprinkler systems in such a way as to guarantee proper coverage and full working capability, and shall make whatever adjustments may be necessary to prevent excessive run-off into streets, rights-of-way, or other areas not meant to be irrigated. The cost of wasted water may be charged to Contractor.
2. All areas not adequately covered by a sprinkler system shall be irrigated by a portable irrigation method in accordance with instructions from the Project Biologist. The Contractor shall furnish all hoses, nozzles, sprinklers, etc. necessary to accomplish this supplementary irrigation. The Contractor shall exercise due diligence to prevent water waste, erosion, and

detrimental seepage into existing underground improvements and to existing structures.

3. Irrigation shall be accomplished as follows:
 - a) Turf (if any) shall be irrigated Monday through Friday, as required, to maintain acceptable growth, viability and health, and to encourage deep rooting, in accordance with instructions from the Project Biologist. Additional irrigation shall be performed in the event of unusually hot/dry weather conditions (as are present during Santa Ana conditions, or other times of low humidity or high winds, or during a prolonged high temperature period during summer months).
 - b) Landscaped improved banks and slopes (if any) shall be irrigated Monday through Friday as required to maintain acceptable growth, viability and health, and to encourage deep rooting, in accordance with instructions from the Project Biologist.
 - c) Shrub beds (if any) shall be irrigated as required to maintain acceptable growth, viability and health, and to encourage deep rooting, in accordance with instructions from the Project Biologist. Shrub areas shall be irrigated at a rate which keeps surface runoff to a minimum. The irrigation rate shall be adjusted to the needs of shrub types, seasons and weather conditions.
 - d) Planted and seeded areas shall be irrigated as required to maintain acceptable growth, viability and health, and to encourage deep rooting, in accordance with instructions from the Project Biologist. Planted and seeded areas shall be irrigated at a rate which keeps surface runoff to a minimum. The irrigation rate shall be adjusted to the needs of plant types, seasons and weather conditions.
4. **Maintenance of Irrigation System.** The Contractor shall keep controller and valve boxes (if any) clear of soil and debris and shall maintain the irrigation system at no additional cost to City, including replacement, repair, adjustment, raising or lowering, straightening and any other operation required for the continued proper operation of the system from the "cold" side of the water meter throughout the Revegetation/Restoration Area. The Contractor shall also be responsible for maintaining the painted surfaces of irrigation and lighting controller cabinets as well as the corresponding automatic irrigation battery numbers on the lids of the automatic control valve boxes (if any). The Contractor shall be responsible for light bulb replacements in controller cabinets as necessary.
 - a) Repair or replacement includes: sprinkler system laterals (piping), sprinkler mains (pressure lines), vacuum breakers, sprinkler control valves, sprinkler controllers, sprinkler heads, sprinkler caps, sprinkler head risers, valve covers, boxes and lids (including

electrical pull boxes and lids), valve sleeves and lids, quick coupler valves and hose bibs. Any replacement shall conform to the type and kind of existing system. Any deviation shall be approved in writing by City.

- b) The Contractor shall repair irrigation systems which are damaged or altered in any way, including by acts of God, vandalism, vehicular damage, or theft.

5. **Operation of Automatic Irrigation Controllers.** Where the operation of automatic irrigation controllers is required as part of this LTRMC, the Contractor shall:

- a) Not duplicate any coded City key furnished by City for access and operation of the controller;
- b) Surrender all keys furnished by City, promptly at the end of the term of this LTRMC, or at any time deemed necessary by City to prevent serious loss to City;
- c) protect the security of City's property by keeping controller cabinet and building doors locked at all times; and
- d) refrain from using premises behind locked doors for storage of materials, supplies, or tools except as approved by City.

B. Pruning Shrubs and Ground Cover Plants. The Contractor shall prune all shrubs and ground cover plants growing in the Revegetation Area as required to:

- 1. Maintain plant growth viability and health, and to encourage deep rooting, in accordance with instructions from the Project Biologist.
- 2. Prevent encroachment of passage ways, walks, streets, or view of signs; and
- 3. Prevent encroachment in any manner deemed objectionable by the City.

The Contractor shall remove dead or damaged limbs with sharp pruning tools, with no stubs remaining. The Contractor shall seal any pruning cut which exceeds 2 inches in diameter with an approved pruning paint when required by the City. The Contractor shall perform pruning to permit plants to grow naturally in accordance with their normal growth characteristics except where box hedging is required by the City. The Contractor shall not shear, hedge, or severely prune plants, unless authorized by the City. The Contractor shall not use growth regulators.

C. Tree Maintenance. The Contractor shall maintain all trees and container plants in the revegetation area in accordance with instructions from the Project Biologist. The Contractor shall perform pruning in accordance with instructions from the Project Biologist, when necessary. The Contractor shall not top trees.

- 1. **Potential Hazards.** The Contractor shall notify the City within 24 hours of any tree that shows signs of root heaving or leaning, or is in any manner a

potential safety hazard. The Contractor shall immediately reestablish trees and shrubs that are uprooted due to storms, if possible. If trees or shrubs cannot be reestablished, Contractor shall remove them immediately (including roots) and fill the holes until replacement planting is complete.

2. **Replacement.** The Contractor shall completely remove and replace trees lost due to Contractor's faulty maintenance or negligence, as determined by the City. The Contractor shall replace trees in kind and size as determined by the City. If there is a difference in value between the tree lost and the replacement tree, the City will deduct the difference from payment to be made under this LTMMA. The City shall determine the value of the tree lost using the latest International Society of Arboriculture (I.S.A.) guidelines for value determination.
3. **Staking.** The Contractor shall securely stake any newly planted trees and other trees needing support with two "lodge pole" type stakes placed on opposite sides of the tree outside the root ball and secured to the tree with at least two flexible rubber tree ties. The Contractor shall regularly inspect tree ties and stakes and reposition them as necessary to ensure against girdling and abrasion.

D. Fertilization. The Contractor shall fertilize the Revegetation Area as necessary in accordance with instructions from the Project Biologist. Contractor shall submit to City Material Safety Data Sheets and a schedule of application showing the site, date, and approximate time of fertilizer application (Fertilizer Schedule). The Fertilization Schedule, regardless of its intensity, timing, or the number of sites covered daily or weekly, shall not excuse Contractor from performing any other Work regularly required under this LTMMA. All fertilization shall first be approved by the Project Biologist.

1. The Contractor shall notify the City at least 48 hours before beginning any fertilization. Fertilizer shall be delivered to the site only in the original unopened containers bearing the manufacturer's guaranteed analysis. Damaged packages shall not be accepted. The Contractor shall furnish to the City with duplicate signed, legible copies of all certificates and invoices for all fertilizer to be used for this LTMMA. The invoices shall state the grade, amount and quantity received. Both the copy to be retained by the City and the Contractor's copy shall be signed by the City, on site, before any fertilizer may be used.
2. Fertilizers, if necessary, shall be applied at the direction of the Project Biologist and according to manufacturer's product specifications.
3. If deemed necessary by the City to achieve required results, the Contractor shall apply other materials as directed by the City, including:
 - a) iron chelate;
 - b) soil sulfur;
 - c) gypsum; or

- d) surfactant enzymes such as Sarvon or Naiad.
- 4. The Contractor shall adequately irrigate the fertilized area(s) immediately following the application of fertilizers and/or amendments to force fertilizer material to rest directly on the soil surface. Drip irrigated areas shall be adequately hand watered using quick coupler valves and hoses to dissolve fertilizer.
- E. Weed Removal.** The Contractor shall completely remove weeds from the Revegetation Area, including all turf grass areas, shrub and ground cover areas, planters, tree wells, and cracks in paved areas, including sidewalks, parking lot, gutters and curbs, as shown on the Work Schedule. For the purposes of this Section, "Weed" means any undesirable or misplaced plant. The Contractor shall control Weeds by manual, mechanical, or chemical methods. The City or Project Biologist may restrict the use of chemical weed control in certain areas.

Weed removal in areas with native habitat shall be in accordance with **Section 802 of the Whitebook.**
- F. Disease and Pest Control.** The Contractor shall regularly inspect the Revegetation Area for the presence of disease and insect or rodent infestation. The Contractor shall notify the City within 4 Calendar Days if disease or insect or rodent infestation is discovered. In its notice to the City, the Contractor shall identify the disease, insect, or rodent and specify the control measures to be taken. Upon approval of the City, the Contractor shall implement the approved control measures, exercising extreme caution in the application of all sprays, dusts, or other materials utilized. The Contractor shall continue the approved control measures until the disease, insect, or rodent is controlled to the satisfaction of the City.
 - 1. All individuals who supervise the mixing and application of herbicides, pesticides, and rodenticides on behalf of the Contractor shall possess valid Qualified Applicators Certificate for Category B issued to them by the State Department of Food and Agriculture.
 - 2. The Contractor shall utilize all safeguards necessary during disease, insect or rodent control operations to ensure safety of the public and the employees of the Contractor, in accordance with current standard practices accepted by the State of California Department of Food and Agriculture. If the Contractor is unable to control the pest or disease, a pest control company will be hired and the cost shall be deducted from Contractor's monthly payment.
- G. Plant Replacement.** Except as provided in **Section H** below, the Contractor shall notify the City within 4 Calendar Days of the loss of plant material due to any cause.
 - 1. The Contractor shall, at no cost to the City, replace any tree, shrub, ground cover, or other plant which is damaged or lost as a result of Contractor's

- faulty maintenance or negligence. The size and species of replacement plant materials shall be as directed by the City.
2. If so directed by the City, the Contractor shall replace any plant damaged or lost that is not a result of the Contractor's faulty maintenance or negligence. The size and species of replacement plant materials shall be as directed by City. The City will pay for materials and labor outside of warranty.
 3. The City may determine that certain plants should be replaced in order to ensure maximum ecological health and overall aesthetic appearance of planting in the Revegetation Area. When the City determines such replacement should occur, Contractor shall replace the plants as directed by the City. The City will pay for materials and labor outside of warranty.
- H. Damage Reports.** The Contractor shall notify the City within 24 hours of any damage to the Work Area caused by accident, vandalism, or theft.
- I. Litter.** The Contractor shall promptly dispose of all trash and debris at an appropriate City disposal site. The Contractor shall pay any and all fees associated with the disposal of debris or trash accumulated under the terms of this LTMMA. The Contractor understands that disposal of refuse at City landfills is subject to a fee and that the Refuse Disposal Division can be contacted at (619) 573-1418 for fee information.
1. **Contractor Generated Litter.** The Contractor shall promptly remove all debris generated by the Contractor's pruning, trimming, weeding, edging and other Work required by this LTMMA. Immediately after working in streets, park walks, gutters, driveways, and paved areas, the Contractor shall clean them in accordance with all applicable laws.
 2. **Third Party Generated Litter.** Upon discovery, the Contractor shall remove all litter, including bottles, glass, cans, paper, cardboard, fecal matter, leaves, branches, metallic items, and other debris, from the Work site.
- J. Monitoring.** The Project Biologist will oversee all maintenance operations and conduct qualitative and quantitative biological monitoring of the Revegetation Area according to the schedule and methods described in the Revegetation Plan. The Project Biologist will be responsible for preparing and submitting monitoring reports according to the schedule and instructions in the Revegetation Plan. The Project Biologist shall meet all requirements specified in **Section 802 of the Whitebook.**
- K. Final Site Cleanup.** Prior to completion of the LTMMA, all temporary irrigation materials, BMP's, and signs shall be removed from the site and properly disposed of.

EXHIBIT B

INSERT A COPY OF THE ENGINEER'S FIELD NOTIFICATION WHICH ACCEPTS THE PLANT ESTABLISHMENT PERIOD (PEP) AND ESTABLISHES THE COMMENCEMENT DATE OF THE MONITORING PROGRAM, SEE THE 2021 WHITEBOOK, SECTION 802

EXHIBIT C
LICENSE DATA SHEET

State Contractor License Classification and Number: W24559-A

Name of License Holder: S.C. Valley Engineering, Inc.

Expiration Date: 5/31/2024

City of San Diego Business License Number: B2001005583

Expiration Date: 05/31/2023

GENERAL REVEGETATION NOTES:

- REVEGETATION OF THE PROJECT AREA SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF SAN DIEGO WHITEBOOK, CITY LANDSCAPE STANDARDS, AND CITY SPECIFICATIONS UNDER THE DIRECTION OF THE RESIDENT ENGINEER (RE) ENGINEERING AND CAPITAL PROJECTS (ECP) BIOLOGIST.
- REVEGETATION OF THE SITE WILL INCLUDE TREATMENT AND REMOVAL OF NON-NATIVE VEGETATION, APPLICATION OF NATIVE SEED MIX HYDROSEED SLURRY, INSTALLATION OF NATIVE CONTAINER PLANTINGS, SUPPLEMENTAL IRRIGATION, AND LONG TERM MAINTENANCE.
- THESE PLANS ARE TO BE USED AS A GENERAL GUIDE WITH THE FINAL LAYOUT TO BE DETERMINED ON-SITE BY THE PROJECT BIOLOGIST.
- BRUSH MANAGEMENT ZONES SHALL BE PLANTED IN ACCORDANCE WITH THE LATEST BRUSH MANAGEMENT REQUIREMENTS (SEE TABLE 3 CONTAINER PLANT SPACING AND MAXIMUM HEIGHT REQUIREMENT FOOTNOTES).
- UTILITY LINE EASEMENTS SHALL BE PLANTED IN ACCORDANCE WITH THE LATEST PUBLIC UTILITIES GUIDELINES (E.G., NO PLANTS 10 FEET HIGH OR HIGHER WITHIN 10 FEET OF PIPES, NO PLANTS 5 FOOT HIGH WITHIN 5 FEET OF PIPES, NO THREATENED OR ENDANGERED PLANT SPECIES WITHIN 10 FEET OF PIPES OR WITHIN 3 FEET OF ACCESS PATHS) (SEE TABLE 3 CONTAINER PLANT FOOTNOTES).
- SEED AND CONTAINER PLANTS APPLIED AND/OR INSTALLED WITHIN THE REVEGETATION AREAS SHALL CONSIST OF NATIVE SPECIES LISTED IN TABLES 3 AND 4, OR AS APPROVED BY THE RE AND ECP BIOLOGIST.
- ALL EROSION CONTROL MEASURES/ BEST MANAGEMENT PRACTICES (BMPs) (I.E. JUTE NETTING, STRAW WADDLES, GRAVEL BAGS) WILL BE INSTALLED IMMEDIATELY FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES.
- REVEGETATION ACTIVITIES SUCH AS INSTALLATION OF CONTAINER PLANTS, HYDROSEED APPLICATION, AND TEMPORARY IRRIGATION SHOULD BE CONDUCTED DURING THE RAINY SEASON (OCTOBER TO APRIL) FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE PROJECT AREA IS FREE OF EROSION THROUGHOUT THE 120 DAY PLANT ESTABLISHMENT PERIOD (PEP) AND 25 MONTH MAINTENANCE AND MONITORING PERIOD, INCLUDING MAINTAINING AND REPLACING ALL BMPs AND REPAIRING ALL SOIL EROSION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND PROPERLY DISPOSING OF ALL TRASH AND/OR DEBRIS FROM THE PROJECT AREA THROUGHOUT THE 120 DAY PEP AND 25 MONTH MAINTENANCE AND MONITORING PERIOD.
- CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCE TO PREVENT UNAUTHORIZED ACCESS TO THE PROJECT AREA. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE FENCE THROUGHOUT THE 120 DAY PEP AND 25 MONTH MAINTENANCE AND MONITORING PERIOD.
- CONTRACTOR SHALL REMOVE ALL FENCING, TEMPORARY IRRIGATION LINES, NON-BIODEGRADABLE (PLASTIC MESH) BMPs (E.G. SILT FENCING, STRAW WADDLES, GRAVEL BAGS, ETC), AND ALL APPURTENANCES FOLLOWING ACCEPTANCE OF REVEGETATION BY THE RE AND ECP BIOLOGIST.

SITE PREPARATION:

- 4 TO 6-INCHES OF CLEAN WOOD CHIPS SHALL BE ADDED TO THE ACCESS PATH IN UPLAND AREAS (AREAS OUTSIDE OF THE CHANNEL) FOR EROSION CONTROL (SEE FIGURES FOR LOCATIONS).
- NON-NATIVE SPECIES CURRENTLY OCCUPYING REVEGETATION AREAS SHALL BE REMOVED OR TREATED WITH HERBICIDE PRIOR TO INSTALLATION OF NATIVE PLANT MATERIAL. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT BIOLOGIST REGARDING IDENTIFICATION OF EXOTIC WEED SPECIES TO BE REMOVED/TREATED.
- IF EROSION CONTROL MATERIALS SUCH AS SILT FENCING AND FIBER ROLLS REMAIN ON SITE PRIOR TO PLANTING, THEY MUST BE IN A SERVICEABLE CONDITION. IF THEY ARE DEGRADED, THEY SHOULD BE REPLACED PRIOR TO PLANTING AND HYDROSEEDING.

TEMPORARY IRRIGATION:

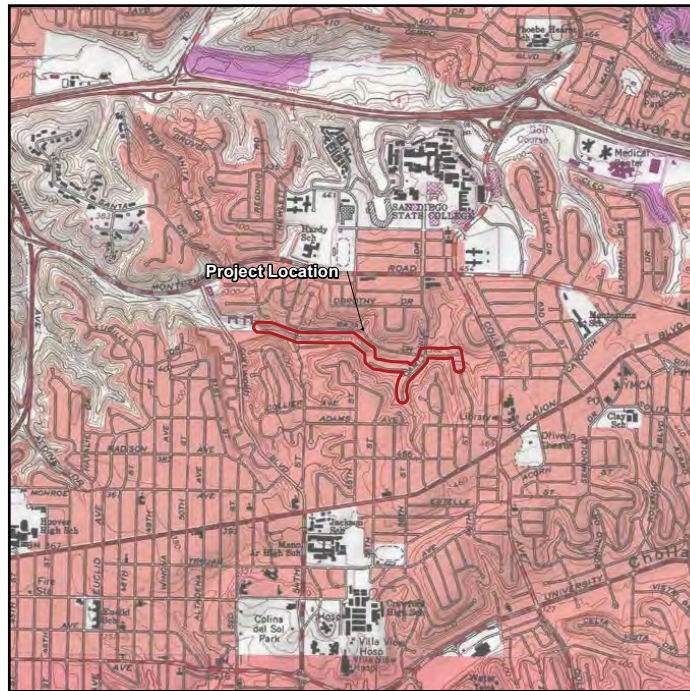
- IF A TEMPORARY ABOVEGROUND IRRIGATION SYSTEM IS USED, TEMPORARY IRRIGATION VIA IRRIGATION LINES AND APPURTENANCES (OR ALTERNATE METHOD APPROVED BY THE RE AND ECP AND PROJECT BIOLOGIST) SHALL BE PROVIDED BY THE CONTRACTOR FOR A PERIOD SUFFICIENT TO ESTABLISH PLANT MATERIAL AND TO PROVIDE VEGETATIVE COVER THAT PREVENTS SOIL EROSION.
- THE AMOUNT OF IRRIGATION MUST BE ADJUSTED WHEN WARRANTED BY SITE CONDITIONS. PROJECT BIOLOGIST AND CONTRACTOR SHALL MONITOR SOIL MOISTURE TO DETERMINE ADEQUACY OF IRRIGATION AND ANY ADDITIONAL IRRIGATION REQUIREMENTS OR MODIFICATIONS.
- IRRIGATION SHALL BE PERFORMED IN A LOW VOLUME, VARYING SPRAY PATTERN THAT AVOIDS RUNOFF, SEEPAGE, AND OVERSPRAY ONTO ADJACENT PROPERTIES, NON-IRRIGATED AREAS, OR ADJACENT NATIVE OR NON-NATIVE VEGETATION.
- THE WATER DELIVERY RATE SHALL BE MATCHED TO THE SLOPE GRADIENT AND THE PERCOLATION RATE OF THE SOIL.
- IRRIGATION SHALL DELIVER WATER SUFFICIENTLY AND UNIFORMLY AND SHALL BE APPROPRIATE TO THE NEEDS OF THE PLANT MATERIALS. OVERWATERING AS EVIDENCED BY SOGGY SOILS, STANDING WATER, RUNOFF, EROSION OR OTHER SIMILAR CONDITIONS SHALL BE MANAGED AND PREVENTED BY THE CONTRACTOR.
- REPAIRS TO THE IRRIGATION SYSTEM DUE TO VANDALISM OR ANY OTHER REASON SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- IRRIGATION SHALL BE DISCONTINUED PRIOR TO THE END OF THE 25 MONTH MAINTENANCE AND MONITORING PERIOD OR EARLIER, AS DIRECTED BY THE RE AND ECP BIOLOGIST.
- IF ALTERNATIVE IRRIGATION METHODS SUCH AS WATERING BY HAND ARE RECOMMENDED AND IMPLEMENTED, ALL VEHICLES SHALL STAY ON PERMANENT ACCESS ROUTES AND SHALL NOT IRRIGATE BEYOND THE REVEGETATION BOUNDARY.

SEED MIX:

- THE UPLAND AND WETLAND SEED MIXTURES (TABLE 4) SHALL BE APPLIED VIA HYDROSEED METHODS AS EVENLY AS POSSIBLE, UNLESS OTHERWISE DIRECTED BY THE PROJECT BIOLOGIST.
- ALL SEED SHALL ORIGINATE WITHIN 25-MILES FROM THE PROJECT VICINITY TO THE EXTENT PRACTICAL, OR AS APPROVED BY THE RE AND ECP BIOLOGIST. CONTRACTOR SHALL RETAIN AND SUBMIT ALL SEED TAGS FOR SEED PRODUCTS TO BE USED TO THE RE AND ECP BIOLOGIST PRIOR TO APPLICATION.

HYDROSEED PROCEDURES:

- HYDROSEEDING SHALL OCCUR ONLY AFTER THE PROJECT BIOLOGIST HAS OBSERVED AND APPROVED PROPER SITE PREPARATION.
- TYPE 9 MULCH (WOOD FIBER) OR BONDED FIBER MATRIX (BFM) SHALL BE APPLIED AT THE MINIMUM RATE OF 1,500 POUNDS PER ACRE, EXCEPT WHEN USED IN CONJUNCTION WITH STRAW MULCH, WHEN IT SHALL BE APPLIED AT A MINIMUM RATE OF 400 POUNDS PER ACRE.
- BONDED FIBER MATRIX (BFM) OR WOOD FIBER SHALL BE UNIFORMLY SPREAD AND "TACKED" WITH A MULCH BINDER (STABILIZING EMULSION) AT A MINIMUM RATE OF 150 POUNDS PER ACRE. THE BINDER SHALL BE AN ORGANIC DERIVATIVE OR PROCESSED ORGANIC ADHESIVE, OR AS DIRECTED BY THE PROJECT BIOLOGIST.
- A WETTING AGENT CONSISTING OF 95 PERCENT ALKYL POLYETHYLENE GLYCOL ETHER SHALL BE APPLIED AS PER MANUFACTURER'S RECOMMENDATIONS, OR AS RECOMMENDED BY THE PROJECT BIOLOGIST.
- EQUIPMENT USED FOR THE APPLICATION OF SLURRY SHALL HAVE A BUILT-IN AGITATION SYSTEM TO SUSPEND AND HOMOGENOUSLY MIX THE SLURRY. THE SLURRY MIX SHALL BE DYED GREEN. THE EQUIPMENT MUST HAVE A PUMP CAPABLE OF APPLYING SLURRY UNIFORMLY.



CONTAINER PLANT PROCEDURES:

- CONTAINER PLANTS SHALL BE PROCURED FROM A NURSERY QUALIFIED TO PROPAGATE AND CARE FOR PLANT SPECIES. SOURCE FOR ANY NATIVE CONTAINER PLANT MATERIALS SHALL ORIGINATE WITHIN 25-MILES FROM THE PROJECT VICINITY TO THE EXTENT PRACTICAL, OR AS APPROVED BY THE RE AND ECP BIOLOGIST.
- CONTAINER PLANT MATERIAL SHALL BE LABELED CLEARLY AND DELIVERED TO THE PROJECT SITE AT THE APPROPRIATE TIME AND IN A HEALTHY AND VIGOROUS CONDITION. THE PROJECT BIOLOGIST SHALL REJECT PLANT MATERIAL DELIVERED PRIOR TO ITS PLANTING DATE. SPECIMENS SHOWING EVIDENCE OF DISEASE, MISHANDLING, DEFECTS, DAMAGE, OVER- OR UNDER-WATERING, OR OTHER DEFICIENCY AT THE TIME OF DELIVERY SHALL BE REJECTED.
- CONTAINER PLANTS SHALL BE ARRANGED BY THE CONTRACTOR IN THE REVEGETATION AREA IN A NATURALLY RANDOM MANNER, OBSERVING MINIMUM SPACING AND LOCATIONS AS INDICATED IN THE PLANTING PALETTE. THE PLACEMENT SHALL BE REVIEWED AND APPROVED BY THE PROJECT BIOLOGIST.
- PLANTING PITS FOR CONTAINER PLANTS SHALL BE APPROXIMATELY 1.5 TIMES AS DEEP AND 3 TIMES AS WIDE AS THE PLANT CONTAINERS. ALL PLANTING PITS SHALL BE FILLED WITH WATER AND ALLOWED TO COMPLETELY DRAIN PRIOR TO PLANT INSTALLATION. THE CONTRACTOR SHALL THEN BACKFILL THE HOLE TO THE APPROPRIATE PLANTING DEPTH, SET PLANTS IN THE CENTER OF THE HOLE, BACKFILL THE HOLE, AND THOROUGHLY SOAK THE SOIL.
- AN APPROXIMATE TWO-FOOT-DIAMETER WATERING BASIN SHALL BE CREATED AROUND EACH INSTALLED ONE-GALLON CONTAINER PLANT.
- CONTRACTOR SHALL SUPPLY ADDITIONAL CONTAINER PLANTS IF NECESSARY TO MEET THE PROJECT SUCCESS CRITERIA SHOWN IN TABLE 1, PER RECOMMENDATION OF THE PROJECT BIOLOGIST.

MAINTENANCE REQUIREMENTS:

- REVEGETATION AREA SHALL BE MAINTAINED UNTIL FINAL APPROVAL, A PERIOD OF NOT LESS THAN 25 MONTHS (TABLE 2), OR AS DETERMINED BY THE RE AND ECP BIOLOGIST. THE 120-DAY PEP SHALL BEGIN FOLLOWING APPROVAL OF SEED APPLICATION AND PLANT INSTALLATION. THE 25-MONTH MAINTENANCE AND MONITORING PERIOD SHALL BEGIN ON THE FIRST DAY FOLLOWING ACCEPTANCE OF 120-DAY PEP BY THE RE AND ECP BIOLOGIST, AND MAY BE EXTENDED AT THE DETERMINATION OF THE RE AND ECP BIOLOGIST.
- PRIOR TO FINAL APPROVAL, THE RE AND ECP BIOLOGIST MAY REQUIRE CORRECTIVE ACTION INCLUDING BUT NOT LIMITED TO WEED ERADICATION AND REMOVAL, REPLANTING, THE PROVISION OR MODIFICATION OF IRRIGATION SYSTEMS, AND THE REPAIR OF ANY SOIL EROSION OR SLOPE SLIPPAGE.
- WEEDING, HERBICIDE, AND/OR PESTICIDE APPLICATION SHALL BE CONDUCTED BY CONTRACTOR AT A MINIMUM OF BI-WEEKLY DURING MONTHS 1 AND 2 AND MONTHLY DURING MONTHS 3 AND 4 OF THE 120 DAY PEP, AND QUARTERLY THROUGHOUT THE 25 MONTH MAINTENANCE AND MONITORING PERIOD. WEEDS SHALL BE PROPERLY DISPOSED OF OFF SITE. CONTRACTOR SHALL OBTAIN APPROVAL FROM RE AND ECP BIOLOGIST PRIOR TO HERBICIDE/PESTICIDE APPLICATION, AND SHALL APPLY HERBICIDE/PESTICIDE PER MANUFACTURER'S RECOMMENDATION AND ANY STATE OF CALIFORNIA GUIDELINES. THE CONTRACTOR MUST POSSESS A PEST CONTROL BUSINESS LICENSE AND HAVE A QUALIFIED APPLICATOR LICENSE TO SUPERVISE HERBICIDE APPLICATIONS.

TABLE 1: SUCCESS CRITERIA¹

UPLAND AND WETLAND REVEGETATION	PERFORMANCE STANDARD			CONTAINER PLANT SURVIVAL
	PERCENT COVER NATIVE VEGETATION ²	PERCENT COVER NONNATIVE VEGETATION		
		HERBACEOUS	CAL-IPC LISTED SPECIES	
YEAR 1	25	<15	0	100
YEAR 2 (25-MONTH)	50	<5	0	80

¹FINAL SUCCESS CRITERIA MAY BE ADJUSTED BY BIOLOGIST IF WARRANTED BASED ON SITE CONDITIONS.

TABLE 2: SUMMARY AND SCHEDULE FOR PROJECT MAINTENANCE, MONITORING, AND REPORTING^{*}

PERIOD	CONTRACTOR RESPONSIBILITIES	PROJECT BIOLOGIST RESPONSIBILITIES	REPORTING AND SUBMITTALS
INSTALLATION	SITE PREPARATION AND PLANT/SEED INSTALLATION PER THESE PLANS OR AS DIRECTED BY THE PROJECT BIOLOGIST.	MONITOR PLANT INSTALLATION FULL TIME TO ENSURE SUCCESSFUL INSTALLATION AND IMPLEMENTATION OF THE REVEGETATION PLAN, INCLUDING ADHERENCE TO THE GUIDELINES OF THE BRUSH MANAGEMENT ZONE AND UTILITY LINE EASEMENTS.	PROJECT BIOLOGIST TO SUBMIT MEMO TO RE WITHIN 21 DAYS OF INSTALLATION COMPLETION. CONTRACTOR TO NOTIFY MITIGATION AND MONITORING COORDINATOR (MMC).
120 DAY PEP	MAINTENANCE ACTIVITIES (WATERING, WEED ABATEMENT, REPLACEMENT PLANTING, MAINTAIN BMP'S) SHALL ENSURE ESTABLISHMENT OF VEGETATION AND SITE REMAINS EROSION FREE. MAINTENANCE ACTIVITIES SHALL OCCUR AS-NEEDED, BUT NOT LESS THAN BI-WEEKLY DURING MONTHS 1 AND 2 AND MONTHLY DURING MONTHS 3 AND 4.	MONITOR REVEGETATION AND PROVIDE MAINTENANCE RECOMMENDATIONS. MONITORING SHALL OCCUR BI-WEEKLY FOR THE FIRST TWO MONTHS, THEN MONTHLY THEREAFTER.	CONTRACTOR TO NOTIFY MMC PRIOR TO THE COMPLETION OF THE 120 DAY PEP FOR SITE INSPECTION. PROJECT BIOLOGIST TO SUBMIT COMPLETION MEMO WITHIN 21 DAYS.
25 MONTH MAINTENANCE AND MONITORING	MAINTENANCE ACTIVITIES (WATERING, WEED ABATEMENT, REPLACEMENT PLANTING, MAINTAIN BMP'S) SHALL FACILITATE THE PROJECT TOWARDS MEETING SUCCESS CRITERIA. MAINTENANCE ACTIVITIES SHALL OCCUR AS-NEEDED, BUT NOT LESS THAN QUARTERLY.	MONITOR REVEGETATION AND PROVIDE MAINTENANCE RECOMMENDATIONS. MONITORING SHALL OCCUR QUARTERLY.	PROJECT BIOLOGIST TO SUBMIT QUARTERLY MONITORING MEMO TO RE. PRIOR TO COMPLETION OF THE 25 MONTH, CONTRACTOR TO CONTACT MMC FOR FINAL SITE VISIT. PROJECT BIOLOGIST TO SUBMIT FINAL MEMO WITHIN 21 DAYS OF COMPLETION OF THE 25 MONTH MONITORING PERIOD.

^{*}IF 25-MONTH SUCCESS CRITERIA ARE NOT MET, THE M&M PROGRAM WILL BE EXTENDED AS REQUIRED. QUARTERLY MAINTENANCE AND MONITORING WITH YEARLY REPORTING SHALL CONTINUE AS NEEDED.

TABLE 3: CONTAINER PLANTS

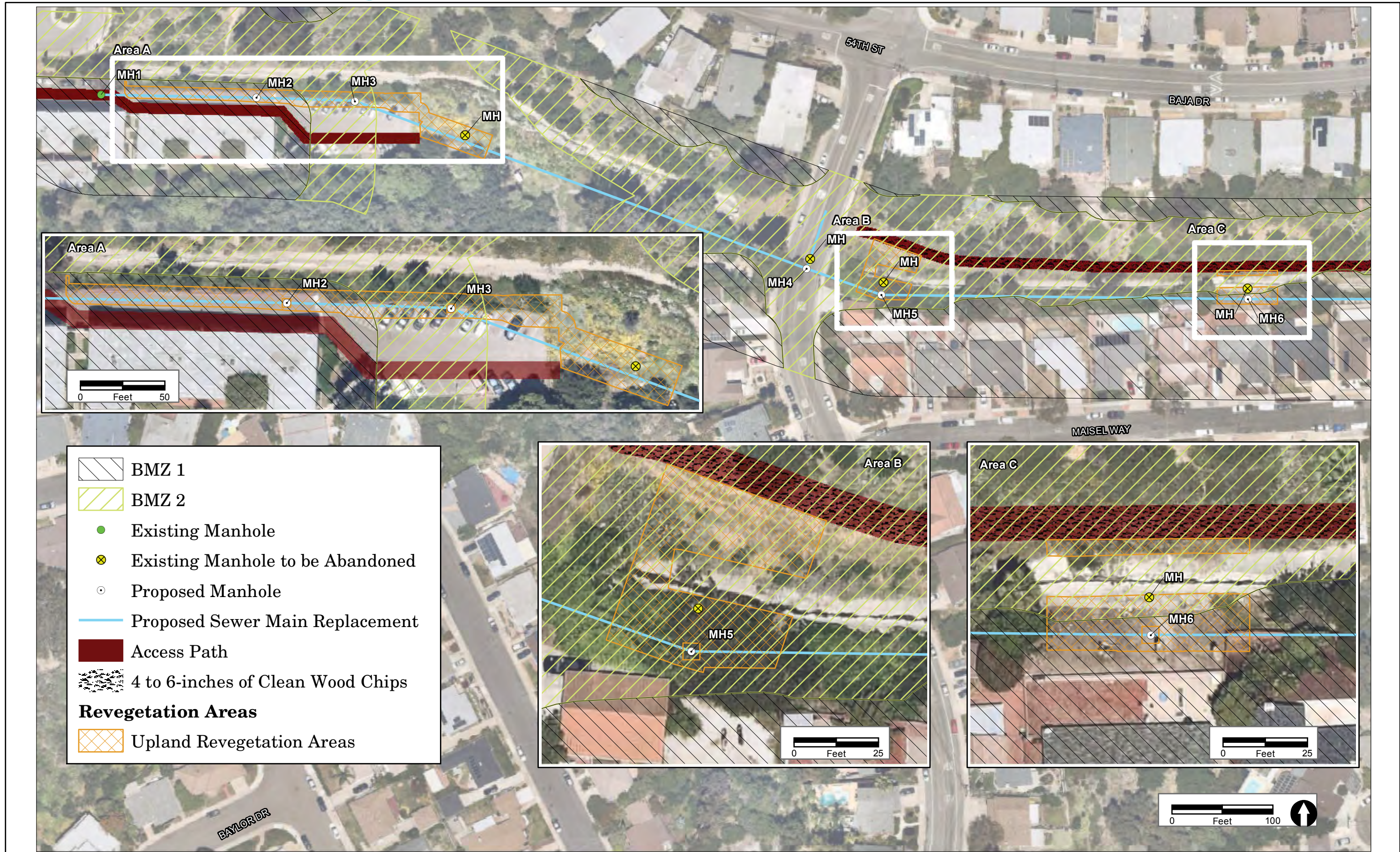
SCIENTIFIC NAME	COMMON NAME	UNIT SIZE	QUANTITY
UPLAND REVEGETATION (0.25 ACRE¹)			
<i>ACMISPON GLABER</i> VAR. <i>GLABER</i>	COASTAL DEERWEED	1-GALLON	30
<i>ARTEMISIA CALIFORNICA</i> ^{2,3}	CALIFORNIA SAGEBRUSH	1-GALLON	20
<i>BOTHRIOCHLOA BARBINODIS</i>	CANE BLUESTEM	1-GALLON	40
<i>ENCELIA CALIFORNICA</i>	CALIFORNIA ENCELIA	1-GALLON	40
<i>ERIOGONUM FASCICULATUM</i> ^{2,3}	CALIFORNIA BUCKWHEAT	1-GALLON	20
<i>ISOCOMA MENZIESII</i>	COASTAL GOLDENBUSH	1-GALLON	20
<i>MUHLENBERGIA RIGENS</i>	DEERGRASS	1-GALLON	40
<i>QUERCUS DUMOSA</i> ^{2,4}	NUTTALL'S SCRUB OAK	1-GALLON	10
<i>SALVIA APIANA</i> ^{2,3}	WHITE SAGE	1-GALLON	20
<i>SALVIA MELLIFERA</i> ^{2,3}	BLACK SAGE	1-GALLON	20
<i>STIPA PULCHRA</i>	FOOTHILL NEEDLE GRASS	ROSE POT	40
TOTAL			300
WETLAND REVEGETATION (0.10 ACRE¹)			
<i>AMBROSIA PSILOSTACHYA</i>	WESTERN RAGWEED	ROSE POTS/ FLATS	25
<i>ANEMOPSIS CALIFORNICA</i>	YERBA MANSO	ROSE POTS	18
<i>ARTEMISIA DOUGLASIANA</i> ²	MUGWORT	1-GALLON	15
<i>BACCHARIS SAROTHIROIDES</i> ^{2,4}	BROOM BACCHARIS	1-GALLON	5
<i>DISTICHLIS SPICATA</i>	SALT GRASS	ROSE POTS/ FLATS	22
<i>ISOCOMA MENZIESII</i> ²	COASTAL GOLDENBUSH	1-GALLON	15
<i>MUHLENBERGIA RIGENS</i>	DEERGRASS	1-GALLON	20
TOTAL			120

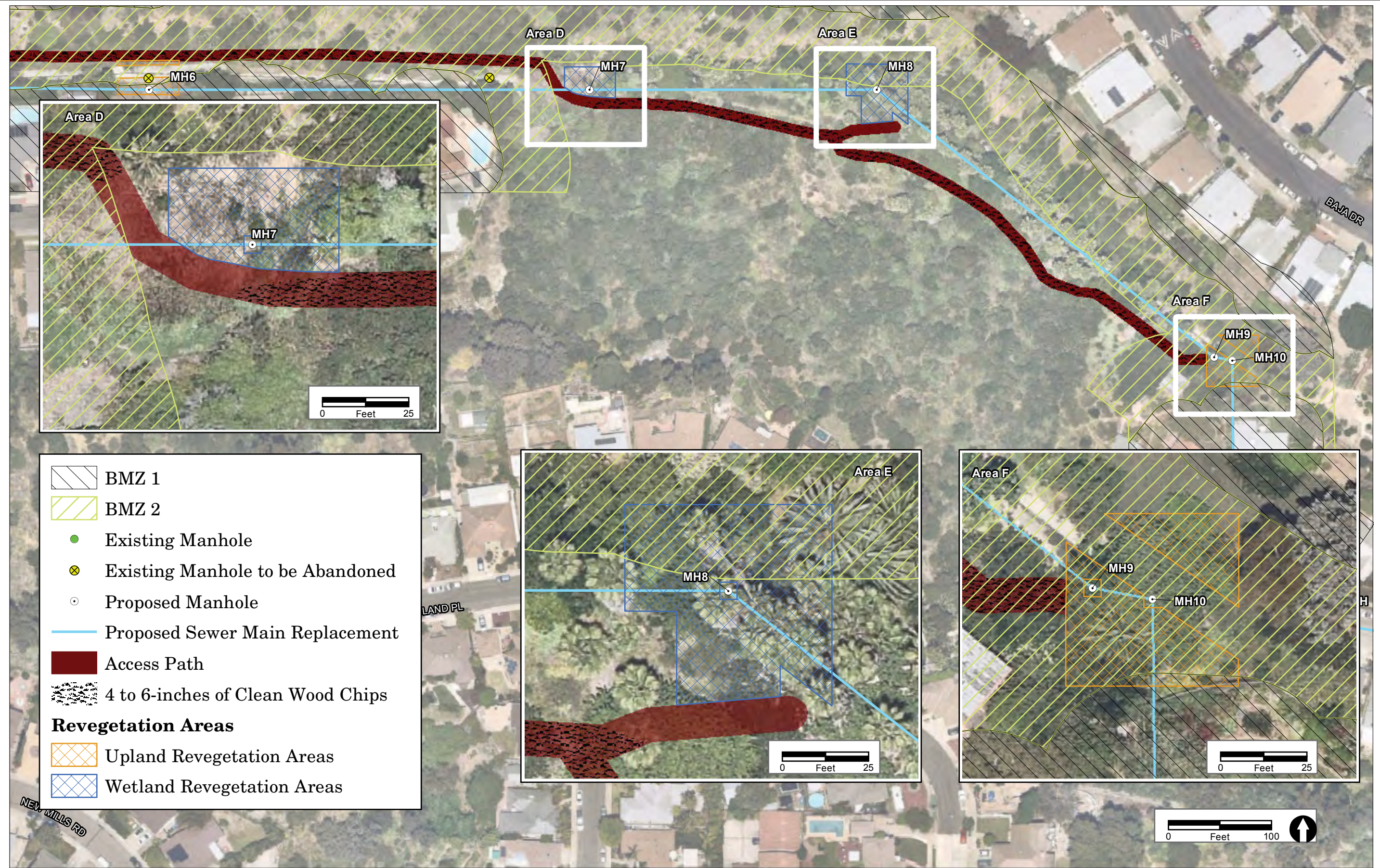
¹BASED ON 1,200 CONTAINER PLANTS PER ACRE
²DO NOT INSTALL THESE SPECIES WITHIN ZONE 1 OF THE BRUSH MANAGEMENT ZONE.
³THESE SPECIES MUST BE INSTALLED AT THE SPACING REQUIRED BY THE BRUSH MANAGEMENT REQUIREMENTS: A. CALIFORNICA – 10 FEET; E. FASCICULATUM – 12 FEET; Q. DUMOSA – 18 FEET; SALVIA SPP. – 12 FEET; A. DOUGLASIANA – 10 FEET; B. SAROTHIROIDES – 20 FEET.
⁴THESE SPECIES MUST BE INSTALLED IN ACCORDANCE TO THE LATEST PUBLIC UTILITIES SEWER DESIGN GUIDELINES FOR ACCESS PATHS AND UTILITY LINE EASEMENTS. NO PLANTS 10 FEET HIGH OR HIGHER WITHIN 10 FEET OF PIPES AND NO THREATENED OR ENDANGERED PLANT SPECIES WITHIN 10 FEET OF PIPES OR WITHIN 3 FEET OF ACCESS PATHS.

TABLE 4: SEED MIXTURE

SCIENTIFIC NAME	COMMON NAME	QUANTITY (POUNDS)
UPLAND REVEGETATION (0.25 ACRE¹)		
<i>ACMISPON GLABER</i> VAR. <i>GLABER</i>	COASTAL DEERWEED	0.9
<i>DEINANDRIA FASCICULATA</i>	FASCICLED TARWEED	1.0
<i>ENCELIA CALIFORNICA</i>	CALIFORNIA ENCELIA	1.0
<i>ERIOPHYLLUM CONFERTIFLORUM</i> VAR. <i>CONFERTIFLORUM</i>	LONG-STEM GOLDEN-YARROW	1.0
<i>ESCHSCHOLZIA CALIFORNICA</i>	CALIFORNIA POPPY	0.9
<i>LUPINUS HIRSUSSIMILIS</i>	STINGING LUPINE	0.9
<i>PHACELIA CICTUTARIA</i>	CATERPILLAR PHACELIA	0.9
<i>PSEUDOGNAPHALUM BENEOLENS</i>	FRAGRANT EVERLASTING	0.6
<i>STIPA PULCHRA</i>	PURPLE NEEDLE GRASS	1.0
<i>VERBENA LASIOSTACHYS</i>	WESTERN VERVAIN	0.5
TOTAL		8.7
WETLAND REVEGETATION (0.10 ACRE²)		
<i>AMBROSIA PSILOSTACHYA</i>	WESTERN RAGWEED	0.5
<i>ANEMOPSIS CALIFORNICA</i>	YERBA MANSO	0.2
<i>ARTEMISIA DOUGLASIANA</i>	MUGWORT	0.3
<i>DISTICHLIS SPICATA</i>	SALT GRASS	0.5
<i>ISOCOMA MENZIESII</i>	COASTAL GOLDENBUSH	0.5
<i>MUHLENBERGIA RIGENS</i>	DEERGRASS	0.5
TOTAL		2.5

¹BASED ON 35 POUNDS OF SEED PER ACRE
²BASED ON 25 POUNDS OF SEED PER ACRE





APPENDIX H
ADVANCED METERING INFRASTRUCTURE (AMI) DEVICE PROTECTION

Protecting AMI Devices in Meter Boxes and on Street Lights

The Public Utilities Department (PUD) has begun the installation of the Advanced Metering Infrastructure (AMI) technology as a new tool to enhance water meter reading accuracy and efficiency, customer service and billing, and to be used by individual accounts to better manage the efficient use of water. **All AMI devices shall be protected per Section 402-2, "Protection", of the 2021 Whitebook.**

AMI technology allows water meters to be read electronically rather than through direct visual inspection by PUD field staff. This will assist PUD staff and customers in managing unusual consumption patterns which could indicate leaks or meter tampering on a customer's property.

Three of the main components of an AMI system are the:

- A. Endpoints, see Photo 1:

Photo 1



B. AMI Antenna attached to Endpoint (antenna not always required), see Photo 2:



Network Devices, see Photo 3:

Photo 3



AMI endpoints transmit meter information to the AMI system and will soon be on the vast majority of meters in San Diego. These AMI devices provide interval consumption data to the PUD's Customer Support Division. If these devices are damaged or communication is interrupted, this Division will be alerted of the situation. The endpoints are installed in water meter boxes, coffins, and vaults adjacent to the meter. A separate flat round antenna may also be installed through the meter box lid. This antenna is connected to the endpoint via cable. The following proper installation shall be implemented when removing the lid to avoid damaging the antenna, cable, and/or endpoint. Photo 4 below demonstrates a diagram of the connection:

Photo 4



The AMI device ERT/Endpoint/Transmitter shall be positioned and installed as discussed in this Appendix. If the ERT/Endpoint/Transmitter is disturbed, it shall be re-installed and returned to its original installation with the end points pointed upwards as shown below in Photo 5.

The PUD's code compliance staff will issue citations and invoices to you for any damaged AMI devices that are not re-installed as discussed in the Contract Document

Photo 5 below shows a typical installation of an AMI endpoint on a water meter.

Photo 5

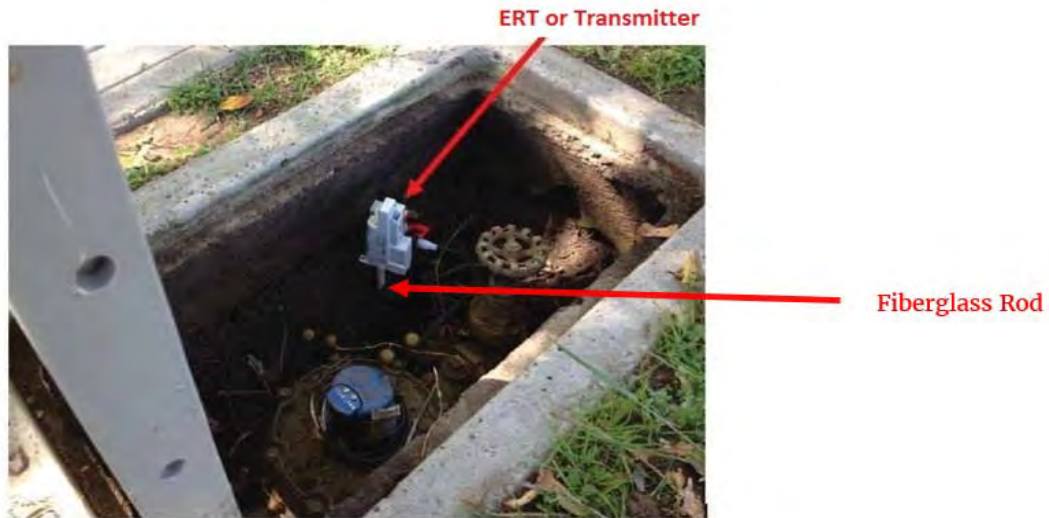


Photo 6 below is an example of disturbance that shall be avoided:

Photo 6



You are responsible when working in and around meter boxes. If you encounter these endpoints, use proper care and do not disconnect them from the registers on top of the water meter. If the lid has an antenna drilled through, do not change or tamper with the lid and inform the Resident Engineer immediately about the location of that lid. Refer to Photo 7 below:

Photo 7



Another component of the AMI system are the Network Devices. The Network Devices are strategically placed units (mainly on street light poles) that collect interval meter reading data from multiple meters for transmission to the Department Control Computer. **If you come across any of these devices on street lights that will be removed or replaced (refer to Photos 8 and 9 below), notify AMI Project Manager Arwa Sayed at (619) 362-0121 immediately.**

Photo 8 shows an installed network device on a street light. On the back of each Network Device is a sticker with contact information. See Photo 9. **Call PUD Water Emergency Repairs at 619-515-3525 if your work will impact these street lights.** These are assets that belong to the City of San Diego and you shall be responsible for any costs of disruption of this network.

Photo 8



Network Device

Photo 9



If you encounter any bad installations, disconnected/broken/buried endpoints, or inadvertently damage any AMI devices or cables, notify the Resident Engineer immediately. The Resident Engineer will then immediately contact the AMI Project Manager, Arwa Sayed, at (619) 362-0121.

APPENDIX I
SITE DEVELOPMENT PERMIT

DOC# 2021-0427579



Jun 09, 2021 04:59 PM

OFFICIAL RECORDS

Ernest J. Dronenburg, Jr.,

SAN DIEGO COUNTY RECORDER

FEES: \$0.00 (SB2 Atkins: \$0.00)

PAGES: 17

RECORDING REQUESTED BY
CITY OF SAN DIEGO
DEVELOPMENT SERVICES
PERMIT INTAKE, MAIL STATION
501

WHEN RECORDED MAIL TO
PROJECT MANAGEMENT
PERMIT CLERK
MAIL STATION 501

INTERNAL ORDER: B-16025.02.06 & B-16022.02.06 SPACE ABOVE THIS LINE FOR RECORDER'S USE

SITE DEVELOPMENT PERMIT APPROVAL NO. 2448882
COLLEGE AREA SEWER AND WATER GROUP JOB - PROJECT NO. 646068: MMRP
DEVELOPMENT SERVICES DEPARTMENT

This Site Development Permit No. 2448882 is granted by the City Council of the City of San Diego to City of San Diego Public Utilities Department, Owner and Permittee, pursuant to San Diego Municipal Code (SDMC) section 126.0502. The site is located along an unnamed tributary to Alvarado Creek in the College Community Planning Area. A portion of the project is located within the developed right-of-way along Campanile Way, Campanile Drive, Baja Drive and 54th Street. The other portion of the project area runs west-east within an undeveloped canyon south of Baja Drive, west of Campanile Way and east of Collwood Boulevard.

Subject to the terms and conditions set forth in this Permit, permission is granted to Owner/Permittee to replacement of 4,765 linear feet of sewer main and 3,058 linear feet of water main, appurtenances and accessory structures through trenching and trenchless methods described and identified by size, dimension, quantity, type, and location on the approved exhibits [Exhibit "A"] dated May 12, 2021, on file in the Development Services Department.

The project shall include:

a. Sewer Main

- 1,707 linear feet of open trench new and replacement mains
- 3,059 linear feet of trenchless new and replacement mains
- 3,075 linear feet of abandoned mains to be slurry filled

b. Water Main

- 2,575 linear feet of open trench new and replacement mains
- 483 linear feet of trenchless new and replacement mains
- 118 linear feet of abandoned mains to be slurry filled

c. Appurtenances and Accessory Structures

- Nine, launching/receiving pits
- 10 new manholes
- Three, vault structures, and
- Five replaced fire hydrants

- d. The open space areas of the project site contain Environmentally Sensitive Lands (ESL) including permanent impacts to City defined wetlands, and, therefore would require a deviation to the ESL regulations pursuant to San Diego Municipal Code (SDMC) Section 126.0502(g)(1)
- e. Public and private accessory improvements determined by the Development Services Department to be consistent with the land use and development standards for this site in accordance with the adopted community plan, the California Environmental Quality Act [CEQA] and the CEQA Guidelines, the City Engineer's requirements, zoning regulations, conditions of this Permit, and any other applicable regulations of the SDMC.

STANDARD REQUIREMENTS:

1. This permit must be utilized within 10 years (120) months after the date on which all rights of appeal have expired. If this permit is not utilized in accordance with Chapter 12, Article 6, Division 1 of the SDMC within the 120-month period, this permit shall be void unless an Extension of Time has been granted. Any such Extension of Time must meet all SDMC requirements and applicable guidelines in effect at the time the extension is considered by the appropriate decision maker. This permit must be utilized by May 25, 2031.
2. No permit for the construction, occupancy, or operation of any facility or improvement described herein shall be granted, nor shall any activity authorized by this Permit be conducted on the premises until:
 - a. The Owner/Permittee signs and returns the Permit to the Development Services Department; and
 - b. The Permit is recorded in the Office of the San Diego County Recorder.
3. While this Permit is in effect, the subject property shall be used only for the purposes and under the terms and conditions set forth in this Permit unless otherwise authorized by the appropriate City decision maker.
4. This Permit is a covenant running with the subject property and all of the requirements and conditions of this Permit and related documents shall be binding upon the Owner/Permittee and any successor(s) in interest.
5. The continued use of this Permit shall be subject to the regulations of this and any other applicable governmental agency.
6. Issuance of this Permit by the City of San Diego does not authorize the Owner/Permittee for this Permit to violate any Federal, State or City laws, ordinances, regulations or policies including, but not limited to, the Endangered Species Act of 1973 (ESA) and any amendments thereto (16 U.S.C. § 1531 et seq.).

7. The Owner/Permittee shall secure all necessary building permits. The Owner/Permittee is informed that to secure these permits, substantial building modifications and site improvements may be required to comply with applicable building, fire, mechanical, and plumbing codes, and State and Federal disability access laws.

8. Construction plans shall be in substantial conformity to Exhibit "A." Changes, modifications, or alterations to the construction plans are prohibited unless appropriate application(s) or amendment(s) to this Permit have been granted.

9. All of the conditions contained in this Permit have been considered and were determined necessary to make the findings required for approval of this Permit. The Permit holder is required to comply with each and every condition in order to maintain the entitlements that are granted by this Permit.

ENVIRONMENTAL/MITIGATION REQUIREMENTS:

10. Mitigation requirements in the Mitigation, Monitoring, and Reporting Program [MMRP] shall apply to this Permit. These MMRP conditions are hereby incorporated into this Permit by reference.

11. The mitigation measures specified in the MMRP and outlined in Mitigated Negative Declaration, No. 646068 shall be noted on the construction plans and specifications under the heading ENVIRONMENTAL MITIGATION REQUIREMENTS.

12. The Owner/Permittee shall comply with the MMRP as specified in the Mitigated Negative Declaration, No. 646068, to the satisfaction of the Development Services Department and the City Engineer. Prior to the issuance of the "Notice to Proceed" with construction, all conditions of the MMRP shall be adhered to, to the satisfaction of the City Engineer.

Biological Resources

CLIMATE ACTION PLAN REQUIREMENTS:

13. Owner/Permittee shall comply with the Climate Action Plan (CAP) Consistency Checklist stamped as Exhibit "A." Prior to issuance of any construction permit, all CAP strategies shall be noted within the first three (3) sheets of the construction plans under the heading "Climate Action Plan Requirements" and shall be enforced and implemented to the satisfaction of the Development Services Department.

MULTIPLE SPECIES CONSERVATION PROGRAM:

14. Prior to issuance of Notice to Proceed, the owner/permittee shall depict the following requirements within the contract specifications and depict on construction documents (as necessary) for the Project Site.

15. **Grading/Land Development/MHPA Boundaries** -Within or adjacent to the MHPA, all manufactured slopes associated with site development shall be included within the development footprint.

16. **Drainage** - All staging and developed/paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials prior to release by incorporating the use of filtration devices, planted swales and/or planted detention/desiltation basins, or other approved temporary and permanent methods that are designed to minimize negative impacts, such as excessive water and toxins into the ecosystems of the MHPA.

17. **Toxics/Project Staging Areas/Equipment Storage** - Projects that use chemicals or generate by-products such as pesticides, herbicides, and animal waste, and other substances that are potentially toxic or impactful to native habitats/flora/fauna (including water) shall incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA. No trash, oil, parking, or other construction/development-related material/activities shall be allowed outside any approved construction limits. Provide a note in/on the CD's that states: "All construction related activity that may have potential for leakage or intrusion shall be monitored by the Qualified Biologist/Owners Representative or Resident Engineer to ensure there is no impact to the MHPA."

18. **Lighting** -All lighting within or adjacent to the MHPA is directed away/shielded from the MHPA or limited to the immediate area and is in compliance with City Outdoor Lighting Regulations per LDC Section 142.0740.

19. **Barriers** -Existing fences/walls; and/or signage along the MHPA boundaries shall remain and or be added to direct public access to appropriate locations, reduce domestic animal predation, protect wildlife in the preserve, and provide adequate noise reduction where needed.

20. **Invasives** - No invasive, non-native plant species shall be introduced into areas within or adjacent to the MHPA.

21. **Brush Management** -Brush management zones will not be greater in size that is currently required by the City's regulations (this includes use of approved alternative compliance). Within Zone 2 the amount of woody vegetation clearing shall not exceed 50 percent of the vegetation existing when the initial clearing is done. Vegetation clearing shall be done consistent with City standards and shall avoid/minimize impacts to covered species to the maximum extent possible. For all new development, regardless of the ownership, the brush management in the Zone 2 area will be the responsibility of a home-owner's association or other private party.

22. **Noise** - Construction noise that exceeds the maximum levels allowed (60 dB or greater at the beginning edge of the habitat) shall be avoided during the breeding seasons for the following: CA gnatcatcher (3/1-8/15).

INFORMATION ONLY:

- The issuance of this discretionary permit alone does not allow the immediate commencement or continued operation of the proposed use on site. Any operation allowed by this discretionary permit may only begin or recommence after all conditions listed on this permit

are fully completed and all required ministerial permits have been issued and received final inspection.

- Any party on whom fees, dedications, reservations, or other exactions have been imposed as conditions of approval of this Permit, may protest the imposition within ninety days of the approval of this development permit by filing a written protest with the City Clerk pursuant to California Government Code-section 66020.
- This development may be subject to impact fees at the time of construction permit issuance.

APPROVED by the City Council of the City of San Diego on May 12, 2021 and Resolution No. CM-7027.

AUTHENTICATED BY THE CITY OF SAN DIEGO DEVELOPMENT SERVICES DEPARTMENT



Karen Bucey
Development Project Manager

**NOTE: Notary acknowledgment
must be attached per Civil Code
section 1189 et seq.**

The undersigned Owner/Permittee, by execution hereof, agrees to each and every condition of this Permit and promises to perform each and every obligation of Owner/Permittee hereunder.

City of San Diego Public Utilities Department
Owner/Permittee

By 

Jericho Gallardo
Associate Engineer

**NOTE: Notary acknowledgments
must be attached per Civil Code
section 1189 et seq.**

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of San Diego)

On June 3, 2021 before me, Silvia Ybarra-Merrill, Notary Public
Date Here Insert Name and Title of the Officer
personally appeared Jericho Gallardo
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature [Handwritten Signature]
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: College Area Sewer and Water Group Job, Project No. 646068:
Document Date: _____ MMRP Number of Pages: _____
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
 Corporate Officer — Title(s): _____
 Partner — Limited General
 Individual Attorney in Fact
 Trustee Guardian or Conservator
 Other: _____
Signer Is Representing: _____

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 Corporate Officer — Title(s): _____
 Partner — Limited General
 Individual Attorney in Fact
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 Other: _____
Signer Is Representing: _____

ORIGINAL

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Date Here Insert Name and Title of the Officer
personally appeared Karen Bucey
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

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Signature of Notary Public

Place Notary Seal Above

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Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
 Corporate Officer — Title(s): _____
 Partner — Limited General
 Individual Attorney in Fact
 Trustee Guardian or Conservator
 Other: _____
Signer Is Representing: _____

Signer's Name: _____
 Corporate Officer — Title(s): _____
 Partner — Limited General
 Individual Attorney in Fact
 Trustee Guardian or Conservator
 Other: _____
Signer Is Representing: _____

ORIGINAL

DEVELOPMENT SERVICES RESOLUTION NO. CM-7027
SITE DEVELOPMENT PERMIT APPROVAL NO. 2448882
COLLEGE AREA SEWER AND WATER GROUP JOB - PROJECT NO. 646068
MMRP

WHEREAS, City of San Diego Public Utilities Department, Owner/Permittee, filed an application with the City of San Diego for a Site Development Permit (SDP) to replace 3,058 linear feet of asbestos cement water main, 4,765 linear feet of vitrified clay sewer main, appurtenances, and accessory structures through trenching and trenchless methods (as described in and by reference to the approved Exhibits "A" and corresponding conditions of approval for the associated Permit No 2448882.;

WHEREAS, the project site is located along an unnamed tributary to Alvarado Creek in the College Community Planning Area. A portion of the project is located within the developed right-of-way along Campanile Way, Campanile Drive, Baja Drive and 54th Street. The other portion of the project area runs west to east within an undeveloped canyon south of Baja Drive, west of Campanile Way and east of Collwood Boulevard in the Residential Single Family (RS-1-7 and RS-1-1) Zones of the College Area Community Plan; and

WHEREAS, on March 12, 2021, the Development Services Department of the City of San Diego considered Site Development Permit No. 2448882 pursuant to the Land Development Code of the City of San Diego; NOW, THEREFORE,

BE IT RESOLVED by the Development Services Department of the City of San Diego, that it adopts the following findings with respect to SDP No. 2448882:

- A. SITE DEVELOPMENT PERMIT SAN DIEGO MUNICIPAL CODE (SDMC) Section 126.0505**
1. Findings for all Site Development Permits:
a. The proposed development will not adversely affect the applicable land use plan.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure

alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The Community Plan Land Use Designations for the project site are Low Density Residential (1-10 Dwelling Unit/Acre) and Open Space. The land designations are implemented through the Residential Single Family (RS-1-7 and RS-1-1) Zones.

The Community Plan Public Facilities Element policy states “The City of San Diego utilizes standard thresholds for determining development impacts to the existing water and wastewater collection systems. The current standards are contained in the Public Utilities “Water Facility Design Guidelines” revised January 2021 and Sewer Design Guideline, revised May 2015. The project is meeting the intent of the community plan by replacement of essential water and sewer service infrastructure to residents and businesses. The infrastructure replacement is consistent with the Community Plan Public Facilities Element. Therefore, the proposed project will not adversely affect the applicable land use plan.

b. The proposed development will not be detrimental to the public health, safety, and welfare.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The project is within public right-of-way, on Open Space land, and is within or adjacent to the Multiple Species Conservation Program (MSCP) area. The proposed project would impact Sensitive Biological Resources, defined as Environmentally Sensitive Lands per SDMC Section 113.0103. The project as proposed would include permanent impacts to City defined wetlands and wetlands buffers and therefore would require deviation from the ESL regulations.

The City's Environmental Analysis Section conducted an environmental review of this site, and accepted the Biological Technical Report prepared by RECON Environmental, dated August 25, 2020. A Mitigated Negative Declaration with Mitigation Monitoring and Reporting Program has been prepared for potentially environmental impacts to biological resources. The project proposes to use mitigation credits within an existing Public Utilities Department (PUD) mitigation site to offset impacts to habitats. On-site revegetation would be implemented for temporary constructions impacts along with storm water best management practices (BMP's).

The public improvement plans shall be reviewed and inspected by the City for compliance with all applicable Water and Sewer Standards. The permit for the project includes Environmental, Climate Action Plan, and Multiple Species Conservation Program conditions as well as exhibits of approval relevant to achieving project compliance with

the applicable regulations of the SDMC in effect for this project. These conditions have been determined as necessary to avoid adverse impacts upon the health, safety and general welfare of persons residing or working in the surrounding area. Further, the project will support continued availability of water and sewer services for the community. Therefore, the proposed development will not be detrimental to the public health, safety, and welfare.

c. The proposed development will comply with the regulations of the Land Development Code including any allowable deviations pursuant to the Land Development Code.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The City's Environmental Analysis Section conducted an environmental review of this site, and accepted the Biological Technical Report prepared by RECON Environmental, dated August 25, 2020. The proposed project would impact Sensitive Biological Resources, defined as ESL per SDMC Section 113.0103. The project as proposed would include permanent impacts to City defined wetlands and wetlands buffers and therefore would require deviation from the ESL regulations. Permanent impacts (for the proposed access path and manholes) are proposed outside of the wetland waters, however, there are approximately 0.114-acres of ESL habitat impacted including 0.006-acres of sensitive wetland habitat and 0.108-acres within Tier I and Tier II habitat. Temporary impacts (for construction staging and launching/receiving pits) would occur to 0.144-acres of ESL habitat. Mitigation is required for impacts to these ESL habitat communities as a result of the project. A Mitigated Negative Declaration with Mitigation Monitoring and Reporting Program has been prepared for potentially environmental impacts to biological resources. The project proposes to use mitigation credits within an existing PUD mitigation site to offset impacts to habitats. On-site revegetation would be implemented for temporary construction impacts along with storm water BMP's.

A portion of the replacement sewer line is located within an open space area classified as MHPA. The work will involve trenchless construction technique in this portion that would result in excavated pits (launching and receiving pits) in order to access the sewer line. The method creates less disturbance overall since the full extent of the sewer line would not be excavated within the sensitive biological area.

This project has been designed in accordance with the applicable regulations of the Land Development Code to minimize disturbance to sensitive habitat to those necessary for replacement of the infrastructure. A Site Development Permit, Mitigated Negative Declaration with Mitigation Monitoring and Reporting Program have been prepared for the project including Environmental, Climate Action Plan, and Multiple Species Conservation Program conditions as well as exhibits of approval relevant to achieving project compliance with the applicable regulations of the SDMC in effect for this project.

Therefore, the proposed development will comply with the regulations of the Land Development Code including any allowable deviations pursuant to the Land Development Code.

2. Supplemental Findings – Environmentally Sensitive Lands

a. The site is physically suitable for the design and siting of the proposed development and the development will result in minimum disturbance to environmentally sensitive lands.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The City's Environmental Analysis Section conducted an environmental review of this site, and accepted the Biological Technical Report prepared by RECON Environmental, dated August 25, 2020. The proposed project would impact Sensitive Biological Resources, defined as ESL per SDMC Section 113.0103. The project as proposed would include permanent impacts to City defined wetlands and wetlands buffers and therefore would require deviation from the ESL regulations. Permanent impacts (for the proposed access path and manholes) are proposed outside of the wetland waters, however, there are approximately 0.114-acres of ESL habitat impacted including 0.006-acres of sensitive wetland habitat and 0.108-acres within Tier I and Tier II habitat. Temporary impacts (for construction staging and launching/receiving pits) would occur to 0.144-acres of ESL habitat. Mitigation is required for impacts to these ESL habitat communities as a result of the project. On-site revegetation would be implemented for temporary construction impacts along with storm water BMP's.

A portion of the replacement sewer line is located within an open space area classified as MHPA. The work will involve trenchless construction technique in this portion that would result in excavated pits (launching and receiving pits) in order to access the sewer line. The method creates less disturbance overall since the full extent of the sewer line would not be excavated within the sensitive biological area.

The project design minimizes disturbance to sensitive habitat and improvements limited to the minimum disturbance necessary to replace the infrastructure. A Site Development Permit, Mitigated Negative Declaration with Mitigation Monitoring and Reporting Program have been prepared including Environmental, Climate Action Plan, and Multiple Species Conservation Program conditions as well as exhibits of approval relevant to achieving project compliance with the applicable regulations of the SDMC in effect for this project. Therefore, the site is physically suitable for the design and siting of the proposed development and the development will result in minimum disturbance to environmentally sensitive lands

b. The proposed development will minimize the alteration of natural land forms and will not result in undue risk from geologic and erosional forces, flood hazards, or fire hazards.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The proposed utility replacement including below ground water and sewer line would be sited within the existing footprint and will not alter existing landforms. Temporary impacts to excavate pits for tunneling work would be restored to pre-project contours. The proposed project construction method would avoid excavation of trenches thereby reducing overall ground disturbance. The project site is within geologic hazard zone 53, defined by the San Diego Municipal Code as "level or sloping terrain, unfavorable geologic structure, low to moderate risk." A Preliminary Geotechnical Investigation was prepared for the City by Twining, Inc., dated February 26, 2018 as well as a Letter Addendum, dated September 16, 2020. The report and addendum conclude that although potentially unstable geologic structure exists at the bottom of the open space area, the potential for the unfavorable geologic structure to impact the project and surrounding area is low due to the proposed trenchless construction methods. There is no evidence of deep-seated landslide observed on or in the immediate vicinity of the site and the risk is considered low. Report recommendations will be incorporated into the design and implemented during construction.

The site is not mapped to be within FEMA Floodplains or 100-year floodplain. Additionally, the site is within the Brush Management Very High Fire Hazard Severity Zone. The site is in conformance with the Fire hazard zones as all proposed structures within the brush management zone will be subterranean and not contribute to fire hazards. Therefore, the proposed development will minimize the alteration of natural land forms and will not result in undue risk from geologic and erosional forces, flood hazards, or fire hazards.

c. The proposed development will be sited and designed to prevent adverse impacts on any adjacent environmentally sensitive lands.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The City's Environmental Analysis Section conducted an environmental review of this site, and accepted the Biological Technical Report prepared by RECON Environmental, dated August 25, 2020. The proposed project would impact Sensitive Biological Resources, defined as ESL per SDMC Section 113.0103. The project as proposed would

include permanent impacts to City defined wetlands and wetlands buffers and therefore would require deviation from the ESL regulations. Permanent impacts (for the proposed access path and manholes) are proposed outside of the wetland waters, however, there are approximately 0.114-acres of ESL habitat impacted including 0.006-acres of sensitive wetland habitat and 0.108-acres within Tier I and Tier II habitat. Temporary impacts (for construction staging and launching/receiving pits) would occur to 0.144-acres of ESL habitat. Mitigation is required for impacts to these ESL habitat communities as a result of the project. On-site revegetation would be implemented for temporary construction impacts along with storm water BMP's.

A portion of the replacement sewer line is located within an open space area classified as MHPA. The work will involve trenchless construction technique in this portion that would result in excavated pits (launching and receiving pits) in order to access the sewer line. The method creates less disturbance overall since the full extent of the sewer line would not be excavated within the sensitive biological area.

The project design minimizes disturbance to sensitive habitat and improvements limited to the minimum disturbance necessary to replace the infrastructure. A Site Development Permit, Mitigated Negative Declaration with Mitigation Monitoring and Reporting Program have been prepared including Environmental, Climate Action Plan, and Multiple Species Conservation Program conditions as well as exhibits of approval relevant to achieving project compliance with the applicable regulations of the SDMC in effect for this project. All improvements are designed to minimize disturbance to the ESL. Therefore, the project will be sited and designed to prevent adverse impact on any adjacent environmentally sensitive lands.

d. The proposed development will be consistent with the City of San Diego's Multiple Species Conservation Program (MSCP) Subarea Plan and Vernal Pool Habitat Conservation Plan (VPHCP).

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

Upon completion of the project there would be minimal above ground facilities related to the project (manholes, curb ramps). Construction methods would minimize disturbance in the MHPA area through the use of tunneling, resulting in less overall disturbance for the project. The site does not contain Vernal Pool Habitat Conservation Plan areas. All improvements are designed to minimize disturbance to the ESL and MHPA areas. Therefore, the project will be sited and designed to prevent adverse impact on any adjacent environmentally sensitive lands.

e. The proposed development will not contribute to the erosion of public beaches or adversely impact local shoreline sand supply.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The project is located approximately six miles from the Pacific Ocean and not near a public beach nor shoreline. Although the project would involve impacts to wetland, these impacts would be mitigated at the PUD-owned San Diego River Wetland Creation site through wetland creation and enhancement credits. On-site revegetation would be implemented for temporary constructions impacts along with storm water BMP's. As a result of the above discussion and with implementation of the Mitigated Negative Document No. 646068 mitigation measures, the proposed development will not contribute to the erosion of public beaches or adversely impact local shoreline sand supply.

f. The nature and extent of mitigation required as a condition of the permit is reasonably related to, and calculated to alleviate, negative impacts created by the proposed development.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The City's Environmental Analysis Section conducted an environmental review of this site, and accepted the Biological Technical Report prepared by RECON Environmental, dated August 25, 2020. The proposed project would impact Sensitive Biological Resources, defined as ESL per SDMC Section 113.0103. The project as proposed would include permanent impacts to City defined wetlands and wetlands buffers and therefore would require deviation from the ESL regulations. Permanent impacts (for the proposed access path and manholes) are proposed outside of the wetland waters, however, there are approximately 0.114-acres of ESL habitat impacted including 0.006-acres of sensitive wetland habitat and 0.108-acres within Tier I and Tier II habitat. Temporary impacts (for construction staging and launching/receiving pits) would occur to 0.144-acres of ESL habitat. Mitigation is required for impacts to these ESL habitat communities as a result of the project. On-site revegetation would be implemented for temporary constructions impacts along with storm water BMP's.

The City's Environmental Analysis Section conducted an environmental review of this site, and accepted the Biological Technical Report prepared by RECON Environmental, dated August 25, 2020. The proposed project would impact Sensitive Biological Resources, defined as ESL per SDMC Section 113.0103. The project as proposed would

include permanent impacts to City defined wetlands and wetlands buffers and therefore would require deviation from the ESL regulations. Permanent impacts (for the proposed access path and manholes) are proposed outside of the wetland waters, however, there are approximately 0.114-acres of ESL habitat impacted including 0.006-acres of sensitive wetland habitat and 0.108-acres within Tier I and Tier II habitat. Temporary impacts (for construction staging and launching/receiving pits) would occur to 0.144-acres of ESL habitat. Mitigation is required for impacts to these ESL habitat communities as a result of the project. A Mitigated Negative Declaration with Mitigation Monitoring and Reporting Program has been prepared for potentially environmental impacts to biological resources. The project proposes to use mitigation credits within existing PUD mitigation sites to offset impacts to habitats. On-site revegetation would be implemented for temporary construction impacts along with storm water BMP's. Therefore, the nature and extent of mitigation required as a condition of the permit is reasonably related to, and calculated to alleviate, negative impacts created by the proposed development.

3. Supplemental Findings - Environmentally Sensitive Lands Deviations

a. There are no feasible measures that can further minimize the potential adverse effects on environmentally sensitive lands.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The project was designed to avoid and minimize impacts to ESL to the extent feasible. It comprises sustainability of existing sewer and water infrastructure located within open space where complete avoidance is not possible and redirection of the pipelines out of the open space and wetlands is not feasible. Impacts to ESL would be mitigated at PUD off-site mitigation lands. The project will implement the conditions of the permit, including Environmental, Climate Action Plan, and Multiple Species Conservation Program conditions as well as exhibits of approval relevant to achieving project compliance with the applicable regulations of the SDMC in effect for this project. As a result, there are no feasible measures that can further minimize the potential adverse effects on environmentally sensitive lands.

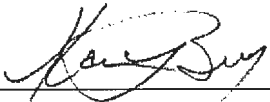
b. The proposed deviation is the minimum necessary to afford relief from special circumstances or conditions of the land, not of the applicant's making.

The proposed project is the replacement of 3,058 linear feet of water main, 4,765 linear feet of sewer main, appurtenances, and accessory structures. The infrastructure alignment follows the placement of the existing facilities along a tributary of Alvarado Creek and public right-of-way areas and will be installed through trenching and trenchless methods.

The project is an underground utility maintenance project designed with trenchless construction methods within the ESL areas to extent feasible to minimize ground disturbance within the previously disturbed footprint. Furthermore, the project has been designed in conformance with all applicable policies and regulations to provide essential public services. The project will implement pre-construction avoidance, minimization measures, construction monitoring, and post-construction reporting to ensure anticipated and any additional impacts incurred are mitigated in accordance applicable regulations. As a result, the proposed deviation is the minimum necessary to afford relief from special circumstances or conditions of land, not of the applicant's making.

The above findings are supported by the minutes, maps and exhibits, all of which are incorporated herein by this reference.

BE IT FURTHER RESOLVED that, based on the findings hereinbefore adopted by the Development Services Department, SDP No. 2448882 is hereby GRANTED by the Development Services Department to the referenced Owner/Permittee, in the form, exhibits, terms and conditions as set forth in Permit No. 2448882, a copy of which is attached hereto and made a part hereof.



Karen Bucey
Development Project Manager
Development Services

Adopted on May 12, 2021

IO#: B-16025.02.06

APPENDIX J

STATE WATER RESOURCES CONTROL BOARD WATER QUALITY ORDER

**STATE WATER RESOURCES CONTROL BOARD
WATER QUALITY ORDER NO. 2004-0004-DWQ**

**STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS
FOR DREDGED OR FILL DISCHARGES TO WATERS DEEMED BY THE
U.S. ARMY CORPS OF ENGINEERS TO BE OUTSIDE OF
FEDERAL JURISDICTION (GENERAL WDRs)**

I. FINDINGS

The State Water Resources Control Board (SWRCB) finds that:

Reasons for issuing these General WDRs

1. Section 13260(a) of the California Water Code (Water Code) requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the waters of the State¹, file a report of waste discharge (ROWD). The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State.
2. California has largely relied upon its authority under section 401 of the federal Clean Water Act (CWA) (33 U.S.C. § 1341) to regulate discharges of dredged or fill material to California waters. That section requires an applicant to obtain “water quality certification” from California that the project will comply with State water quality standards before certain federal licenses or permits may be issued. The permits subject to section 401 include permits for the discharge of dredged or fill materials (CWA section 404 permits) issued by the U.S. Army Corps of Engineers (ACOE).
3. Given the regulatory process employed under section 401, waste discharge requirements under the Porter-Cologne Water Quality Control Act were typically waived for projects that required certification. Regional Water Quality Control Board (RWQCB) waivers also applied to discharges outside of ACOE jurisdiction. However, these waivers expired as of January 1, 2003 pursuant to the requirements of SB 390. These General WDRs regulate some of the activities for which WDRs were previously waived.
4. The certification process under section 401 only applies to those waters that are subject to the reach of the CWA. The CWA applies to “navigable waters,” which are defined in the CWA as “waters of the United States.” The term “waters of the United States” is defined expansively in 33 Code of Federal Regulations (CFR), part 328. In 2001, the U.S. Supreme Court issued a decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) (“*SWANCC*”), which held that certain “isolated” waters are not subject to CWA jurisdiction merely because they are frequented by migratory birds that cross state lines. The full implications of *SWANCC* are yet to be determined in the federal courts, but as a result

¹ “Waters of the State” as defined in Water Code section 13050(e).

of the decision, many projects that previously would have required a section 404 permit now no longer need one. From January 1, 2001 to December 31, 2003, the ACOE disclaimed jurisdiction over 160 water bodies comprising 449 acres of waters of the state, including 251 acres of wetlands, 121 acres of riparian area, and 77 acres of other waters (these figures are under-reported because 24 percent of the jurisdictional disclaimers did not specify the sizes of the disclaimed waterbodies). The prospect of issuing waste discharge requirements for each of the now non-federal waters, especially in a time of budgetary contraction, is daunting. Many of the projects that were traditionally subject to certification requirements involved small discharges with few or no permanent impacts. It is the intent of these General WDRs to regulate a subset of the discharges that have been determined not to fall within federal jurisdiction, particularly those projects involving impacts to small acreage or linear feet and those involving a small volume of dredged material.

5. Wetlands, riparian areas, and headwaters are shallow waters of the state, which are by their nature affected most often and severely by filling and excavation. Regulatory attention to these water bodies is necessitated by the State "No Net Loss" Policy for wetlands (Executive Order W-59-93); the high habitat value of these waters; the basin-wide value of these waters for pollutant removal, floodwater retention, channel stability, and habitat connectivity; the high number of special-status species associated with these waters and their associated habitats; the high percentage of historic losses of these waters in California; the vulnerability of these waters to future impacts from projected population growth and land development; and the high level of public interest in these waters.
6. Water Code section 13263(a) requires that waste discharge requirements (WDRs) be prescribed as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge. Such WDRs must implement any relevant water quality control plans, taking into consideration beneficial uses to be protected, the water quality objectives reasonably required for those purposes, other waste discharges, the need to prevent nuisance, and the provisions of section 13241 of the Water Code.
7. Water Code section 13263(i) authorizes the SWRCB to prescribe general WDRs for a category of discharges if the discharges are produced by the same or similar operations; the discharges involve the same or similar types of waste; the discharges require the same or similar treatment standards; and the discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.
8. The discharges authorized by these General WDRs meet the criteria for general WDRs set forth in Water Code section 13263(i) because they are all produced by dredging or filling operations; they all involve the discharge of earth, rock, or similar solid materials; they are all limited in size per the terms of the WDRs; they all require similar mitigation techniques to avoid, minimize, and/or compensate for their adverse impacts; and they are all relatively small surface water bodies or water body segments that have been deemed by ACOE to be "isolated," do not meet the federal wetland criteria, or are above the "line of ordinary high water" limit of federal jurisdiction. They are appropriately regulated under General WDRs because of their similar nature, large numbers, and amenability to being regulated through the use of similar discharge restrictions, as specified in these General WDRs. Regulation of

such discharges by these General WDRs will allow the SWRCB and RWQCBs to direct limited staff time to larger, more complex, and potentially more damaging discharges to waters deemed to be outside of federal jurisdiction.

Eligibility Criteria

9. These General WDRs are restricted to dredged or fill discharges of not more than two-tenths (0.2) of an acre and 400 linear feet for fill and excavation discharges, and of not more than 50 cubic yards for dredging discharges. Projects that may be covered under these General WDRs include land development, detention basins, disposal of dredged material, bank stabilization, revetment, channelization, and other similar projects. These size maximums help limit the potential environmental impact of the discharges and make them amenable to similar discharge restrictions, while permitting about half of the projects discharging to non-federal waters, as projected from historical data on discharge sizes. The size and volume restrictions are appropriate because larger projects involve a significantly greater risk to the environment and are more appropriately regulated by individual WDRs.

Absent a potential effect on the quality of waters of the state, no notification is required under these General WDRs.² The “quality of waters” refers to chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affects its use.³ Because of the variability, complexity, and interactions of the factors affecting the quality of waters, it is not possible to provide advice on the kind, size, location, or duration of discharges that can affect water quality under all circumstances. Generally, discharges of dredged, fill, or excavated material to a wetland, or to the active channel or bed of a waterbody will require regulation. Discharges to a riparian area or to an area in proximity to a waterbody can affect the quality of the water if they directly or indirectly result in a discharge to the water (e.g., via stormwater flows, during flood events, or by generating pollutants or increased runoff); are associated with a change in the nature of vegetation that could affect water quality (e.g., by affecting pollutant removal, stream shading, or bank stability); or change the hydrologic or geomorphologic characteristics of the waterbody during some flow condition.

These General WDRs do not set a lower size limit below which a Notice of Intent is not required. Neither the Porter-Cologne Water Quality Control Act nor the federal CWA establish a lower size threshold for permitting. If a lower threshold were established in these General WDRs, discharges below that threshold would be subject to regulation under individual WDRs or an individual waiver of WDRs, thus defeating the purpose of these General WDRs. Moreover, size is not the sole factor dictating the value of a wetland or other water. Small, strategically placed waters, or segments of waters, can play important roles in supporting local habitat, habitat connectivity, pollutant removal, floodwater attenuation, and other beneficial uses. In addition, without a reporting requirement, there would be no way for the State to ensure that multiple small discharges will not have significant cumulative effects.

10. Discharges of fill can directly or indirectly destabilize the channel or bed of a receiving water by changing geomorphic parameters, including hydrologic characteristics, sediment characteristics, or stream grade. Such destabilization diminishes the ability of the water body

² Water Code section 13260

³ Water Code section 13050(g)

to support designated beneficial uses. Quantification and mitigation of such impacts may require detailed project-specific analyses. Therefore, these General WDRs do not authorize discharges that could destabilize the channel or bed of a receiving water.

11. In urbanizing basins or other situations, a large number of relatively small projects potentially eligible for these General WDRs, in their aggregate, may adversely impair the ability of the water body to support beneficial uses. Quantification and mitigation of such impacts may require basin-wide analyses. Therefore, these General WDRs do not authorize discharges that, when considered in conjunction with other potential discharges, could cause a significant cumulative effect on water quality or beneficial uses.
12. To the extent they are determined to fall within federal jurisdiction, it is likely that the SWRCB and RWQCBs will continue to regulate dredged or fill discharges primarily through their authority under section 401 of the CWA. Therefore, these General WDRs do not apply to discharges to federal waters that are subject to sections 401 and 404 of the CWA. These General WDRs likewise do not apply to discharges regulated under a section 402 storm water permit.
13. Discharges which could have a significant impact on rare, candidate, threatened, or endangered species require detailed project-specific analysis and individual regulation. Such discharges are therefore not authorized by these General WDRs.
14. Although a discharge may be eligible for coverage under these General WDRs, the RWQCB may elect to regulate the discharge under other WDRs or waivers thereof.
15. Discharges that would be exempt pursuant to section 404(f) of the CWA are waived from these WDRs. This waiver shall not affect a RWQCB's authority to issue individual WDRs or waivers for such discharges if it deems it appropriate.

Mitigation Plan

16. SWRCB Resolution No. 68-16, "Statement Of Policy With Respect To Maintaining High Quality Of Waters In California" ("Antidegradation Policy"), states that discharges to existing high quality waters will be required to meet WDRs which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur, and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.
17. Executive Order W-59-93, dated August 23, 1993, establishes a California Wetlands Conservation Policy including an objective to ensure no overall net loss of and a long term net gain in the quantity, quality, and permanence of wetland acreage and value in California ("No Net Loss Policy").
18. Filling wetlands, riparian areas, headwaters, and other waters causes partial or complete loss of the beneficial uses provided by those waters. To reconcile such losses with the "No Net

Loss” requirements of Executive Order W-59-93 and the “Antidegradation” requirements of SWRCB Resolution No. 68-16, these General WDRs require mitigation plans to ensure that impacts are mitigated through avoidance and minimization and that unavoidable loss of beneficial uses is offset with appropriate compensatory mitigation, including creation, restoration, or (in exceptional cases) preservation of other waters of the state. These mitigation requirements are consistent with those adopted by the U.S. Environmental Protection Agency and the ACOE for regulation of dredged or fill discharges to federal waters under CWA section 404.

19. To comply with the objective of the State “No Net Loss Policy” to ensure the quantity, quality, and permanence of wetland acreage and values in California, and with the “Antidegradation” requirements of SWRCB Resolution No. 68-16, these General WDRs require that compensatory mitigation areas for permanent impacts be subject to a deed restriction or other legal instrument that ensures preservation of the mitigation in perpetuity. These General WDRs do not generally require compensatory mitigation for temporary impacts, because the SWRCB does not anticipate that projects eligible under this order would ordinarily create temporary impacts of a size, severity, and/or duration that would have a significant adverse impact on beneficial uses. The decision in this order to generally require compensatory mitigation only for permanent impacts is not meant to be a precedent for any other SWRCB or RWQCB order.
20. Consistent and equitable application of these General WDRs is in the interest of environmental protection and the applicants. These General WDRs therefore provide guidance to SWRCB and RWQCB staffs regarding factors to evaluate in considering the eligibility of these General WDRs and in evaluating mitigation plans.

Basin Plans

21. All WDRs must implement the RWQCB Water Quality Control Plan (Basin Plan) for the region affected by the discharge. These General WDRs require dischargers to comply with all applicable Basin Plan provisions, including maintaining the protection of beneficial uses and complying with any prohibitions and water quality objectives governing the discharge.

Beneficial Uses

22. Beneficial uses are the most fundamental of the State’s water quality standards. RWQCBs designate appropriate beneficial uses for waters in their regions’ Basin Plans. The beneficial uses for the waters of the State include, but are not limited to, domestic supply, municipal supply, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation, and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

Fees

23. Water Code section 13260(d)(1) requires that each person for whom WDRs have been prescribed pursuant to section 13263 shall submit an annual fee according to a reasonable fee

schedule established by the SWRCB. The schedule of fees for discharges of dredged or fill material is published at California Code of Regulations (CCR) 23 section 2200(a)(2). For activities covered by these General WDRs, the SWRCB anticipates that most of the discharges will be one-time and of short duration. Therefore, only a one-time fee usually will be charged.

California Environmental Quality Act (CEQA)

24. CEQA requires a government agency to comply with certain procedures when it approves or proposes to carry out an activity. (Cal. Code Regs., tit. 14, § 15002(e))
25. Private actions are subject to CEQA if they involve governmental participation, financing, or approval. (Cal. Code Regs., tit. 14, § 15002(c))
26. A Mitigated Negative Declaration in compliance with CEQA has been adopted for these General WDRs.
27. Potential dischargers and all other known interested parties have been notified of the intent to adopt these General WDRs.
28. All comments pertaining to the proposed discharges have been heard and considered in a public meeting.

II. ORDER

A. ELIGIBILITY

IT IS HEREBY ORDERED that only discharges that meet the following criteria shall be enrolled under these General WDRs:

1. The discharge shall not be subject to section 404 of the CWA or section 10 of the federal Rivers and Harbors Act. These General WDRs likewise do not apply to discharges regulated under a section 402 storm water permit.
2. The discharge shall be dredged or fill materials.
3. The discharge shall meet the following size criteria:
 - a. Excavation⁴ and fill activities must not excavate or fill an area greater than two-tenths (0.2) of an acre of waters of the state, and

⁴ “Excavation refers to moving sediment or soil in shallow waters or under no-flow conditions where impacts to beneficial uses are best described by the area of discharge. It typically is done for purposes other than navigation. Examples include trenching for utility lines, other earthwork preliminary to construction, removing sediment to increase channel capacity, and aggregate mining in fresh water.” (Cal. Code Regs., tit. 23, § 2200(a)(2).)

- b. Linear excavation and fill activities affecting drainage features and shorelines (e.g., bank stabilization, revetment, and channelization projects), must not excavate or fill more than 400 linear feet of waters of the state, measured parallel to the streambank or shoreline, and
 - c. Dredging⁵ activities must dredge not more than 50 cubic yards within waters of the state.
 - d. These size criteria apply to discharges, which could either permanently or temporarily affect the quality of waters of the state⁶.
 - e. These size criteria apply to complete projects and shall not be used to authorize “piecemealing” of larger discharges. In regulating recurring discharges, e.g., routine maintenance of sedimentation basins, forebays, or similar waters, these criteria shall be applied for each discharge episode.
4. For purposes of defining the size criteria specified in this section, determining fees as required by section II.B.3, and evaluating mitigation proposals as required by section II.B.4 of these General WDRs, the lateral extent of waters of the state shall be determined by the most expansive of the following:
- a. The federal criteria current on the date of adoption of these General WDRs⁷,
 - b. Headwaters, defined as intermittent and ephemeral drainages.
5. The discharge shall not directly or indirectly destabilize a channel or bed of a receiving water. In determining whether a discharge meets this criterion, the RWQCB Executive Officer⁸ will consider potential project-induced changes to:

⁵ “Dredging” refers to removing sediment in deeper water to increase the depth. Impacts to beneficial uses are best described by the volume of the discharge. It typically occurs to facilitate navigation and for aggregate extraction in marine waters.

⁶ Fill or dredged discharges can *permanently* affect the quality of waters of the state when the discharged material will be in place indefinitely and/or by its nature precludes a reasonable assurance that beneficial uses will be fully reestablished. Examples include filling of wetlands or other waters, streambank hardening, channelization, construction of bridge piers and abutments, and ongoing vegetation removal and channel maintenance. Fill or dredged discharges can *temporarily* affect the quality of waters of the state when the discharged material will be in place for a limited time and/or there is a reasonable assurance that beneficial uses will be fully reestablished once the discharge ceases. Examples include temporary fills, excavation for temporary access roads, and one-time vegetation removal or excavation of sediment. Mitigation measures or management practices may be needed to assure that impacts are “temporary” (e.g., reestablishment of natural grade, revegetation, reestablishment of soil permeability to allow vegetative growth, compaction of backfill to assure that utility trenches do not dewater wetlands).

⁷ 33 CFR 328.3(b)-(e), 33 CFR 328.4, 40 CFR 230.41.

⁸ For multi-region projects, the SWRCB Executive Director. The terms Executive Officer or Executive Director as used herein include any designees.

- a. Quantity, velocity, timing, and direction of flow;
 - b. Sediment characteristics;
 - c. Stream grade; and
 - d. Other relevant project-induced changes.
6. The discharge shall not cause in combination with other discharges a significant cumulative effect on water quality or beneficial uses of the waters of the State including, but not limited to, wetlands and headwaters.
 7. The discharge shall not adversely impact, either directly or through habitat modification, any plants or animals identified as candidate, sensitive, or special status species in local or regional plans, policies or regulations; or by the California Department of Fish and Game (DFG), the U.S. Fish and Wildlife Service (USFWS), or the National Marine Fisheries Service (NMFS). The project shall not , substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number of or restrict the range of an endangered, rare or threatened species.
 8. The discharge shall not significantly conflict with any adopted and approved USFWS Habitat Conservation Plan (HCP) or DFG Natural Community Conservation Plan (NCCP).
 9. The discharge shall not adversely impact a significant historical or archeological resource, shall not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, shall not disturb any human remains, and shall not eliminate important examples of the major periods of California history or prehistory.
 10. The discharge shall not cause conflict with existing zoning for agricultural use or a Williamson Act contract.
 11. The discharge, as mitigated, shall not cause significant adverse environmental impacts.
 12. Discharges that would be exempt pursuant to section 404(f) of the CWA are waived from these WDRs. This waiver shall not affect a RWQCB's authority to issue individual WDRs or waivers for such discharges if it deems it appropriate.

B. APPLICATION REQUIREMENTS

IT IS FURTHER ORDERED that dischargers seeking enrollment under these General WDRs shall submit the following to the appropriate RWQCB Executive Officer or, in the case of multi-Region projects, to the SWRCB Water Quality Certification Program Manager at least 45 days prior to any discharge:

1. A Notice of Intent (NOI) to be enrolled under and to comply with these General WDRs.
2. Any CEQA documents that have been prepared for the project.

3. A fee pursuant to Title 23, section 2200 of the CCR.
4. A Mitigation Plan:

The Mitigation Plan shall demonstrate that the discharger will sequentially avoid, minimize, and compensate for the adverse impacts to the affected water bodies' beneficial uses (as defined in the applicable Basin Plan). The Mitigation Plan shall address the following:

- a. Avoidance: No discharge shall be permitted if there is a practicable alternative⁹ to the proposed discharge, which would have less adverse impact to the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences.
- b. Minimization: Unavoidable temporary impacts shall be mitigated by restoring water bodies and vegetation to pre-discharge conditions as quickly as practicable and by taking other practicable measures to reduce the severity and duration of such impacts.
- c. Compensatory mitigation: Discharges resulting in unavoidable permanent impacts to wetlands or headwaters shall ensure "no net loss" of area (acreage), functions, and beneficial use values by providing appropriate compensatory mitigation including creation, restoration, or (in exceptional cases) preservation. The RWQCB Executive Officer/SWRCB Executive Director will consider, at a minimum, the following when reviewing the adequacy of compensatory mitigation:
 - (1) Onsite habitat value
 - (2) Habitat connectivity value
 - (3) Floodwater retention value
 - (4) Pollutant removal value
 - (5) Ratio of area of proposed compensation to proposed loss
 - (6) Proposed revegetation and irrigation plans and success criteria
 - (7) Availability of suitable soils, hydrology, and natural vegetation at the compensation site
 - (8) Monitoring and reporting provisions
 - (9) Contingency plan for failure to achieve success criteria
 - (10) Any other information requested by the RWQCB or SWRCB.

The Mitigation Plan shall demonstrate that all potentially adverse environmental impacts have been mitigated to a less than significant level. The thoroughness of the alternatives analysis and the extent of the proposed mitigation shall be commensurate with the purpose of the discharge, the value and sensitivity of the receiving water(s), and the extent, severity, and duration of the effect on the quality of waters.

⁹ An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded, or managed in order to fulfil the basic purpose of the proposed activity may be considered (this definition is the same as presented in federal regulations at section 230.10(a)(2) of Title 33 of the CFR).

5. Any other additional information requested by the SWRCB or RWQCB to evaluate the proposed dredged or fill discharge.

A discharge shall not be enrolled under these General WDRs unless the RWQCB Executive Officer or SWRCB Executive Director finds that the Mitigation Plan meets the requirements of this section and the discharge meets all other eligibility criteria. The RWQCB Executive Officer or SWRCB Executive Director shall independently determine eligibility, including the adequacy of the Mitigation Plan, but may consider findings and requirements included in other agencies' permits.

C. DISCHARGE REQUIREMENTS

IT IS FURTHER ORDERED that the discharger shall comply with the following:

Prohibitions:

1. The discharge of material is prohibited until the discharger has received a Notice of Applicability (NOA) from the RWQCB Executive Officer or the SWRCB Executive Director or until 45 days after submission of a complete and accurate NOI.¹⁰ If the RWQCB Executive Officer or the SWRCB Executive Director has not issued a Notice of Exclusion (NOE) within 45 days of receiving a complete and accurate NOI, the discharge may proceed.
2. No discharges are authorized under these General WDRs if the discharger has received a NOE from the RWQCB Executive Officer or the SWRCB Executive Director.
3. The discharge shall not cause pollution, contamination, or nuisance as defined in Water Code section 13050.
4. The discharge of material in a manner other than as described in the NOI, the Findings or conditions of these General WDRs, or in the RWQCB Executive Officer or SWRCB Executive Director-approved Mitigation Plan is prohibited.
5. The discharge of substances in concentrations toxic to human, plant, animal, or aquatic life or that produce detrimental physiological responses therein, is prohibited.
6. The discharge of waste classified as "hazardous" or "designated" as defined in Title 22, section 66261 of the CCR, or Water Code section 13173 is prohibited.

Special Provisions:

7. The discharger shall discharge in a manner that is consistent with the information provided in the NOI.

¹⁰ The RWQCB Executive Officer or the SWRCB Executive Director, within 30 days from submittal of the NOI, may find a submittal to be incomplete or inaccurate.

8. The discharger shall comply with the eligibility criteria for these General WDRs.
9. The discharger shall implement the approved Mitigation Plan.
10. Requested amendments to the approved Mitigation Plan must be submitted in writing to the RWQCB Executive Officer and, for multi-region projects, to the SWRCB Water Quality Certification Program Manager. The discharger may not modify operations until the discharger has received written notification that the RWQCB Executive Officer or SWRCB Executive Director has approved the amendment. If the RWQCB Executive Officer or the SWRCB Executive Director does not disapprove the requested amendment within 45 days of receiving the written notification, the changes to the approved Mitigation Plan may be implemented as described in the requested amendment.
11. If mitigation measures do not meet their interim or ultimate success criteria, the discharger shall implement remedial measures that are acceptable to the RWQCB Executive Officer or SWRCB Executive Director.
12. All compensatory mitigation areas shall be subject to a conservation easement, deed restriction, or other legal instrument, which shall ensure preservation of the mitigation in perpetuity. Documentation of the easement, restriction, or other legal instrument shall be submitted to the RWQCB, or to the SWRCB for multi-region projects, before any discharge authorized by these General WDRs occurs.
13. The discharger, if requested by the RWQCB or SWRCB, shall provide certification that supervisory and other responsible operations personnel have received training regarding these General WDRs.
14. Fueling, lubrication, maintenance, operation, and storage of vehicles and equipment shall not result in a discharge or a threatened discharge to water bodies. At no time shall the discharger use vehicles or equipment that leak any substance that might impact water quality. Staging and storage areas for vehicles and equipment shall be located outside of water bodies.
15. Except in compliance with the terms of an NOA for this order, no construction material, spoils, debris, or other substances associated with this project, that may adversely impact water quality, shall be located in a manner which may result in a discharge or threatened discharge to water bodies.
16. Upon completion of the project, the discharger shall complete a Notice of Termination (NOT) requesting to be un-enrolled from these General WDRs.

Standard Provisions:

17. A copy of these General WDRs shall be kept at the project site for reference by project personnel. Personnel shall be familiar with its contents.

18. The discharger shall take all reasonable steps to prevent any discharge in violation of these General WDRs.
19. The discharger shall report promptly to the RWQCB or SWRCB any proposed material change in the character, location, area, and/or volume of the discharge. The discharger shall obtain confirmation from the RWQCB or SWRCB that such proposed modifications do not disqualify the discharger from coverage under these General WDRs. Confirmation or new WDRs shall be obtained before any modifications are implemented. If the RWQCB Executive Officer or the SWRCB Executive Director does not disapprove the proposed change within 45 days of receiving a written report describing the proposed change, the discharge may proceed in accordance with the proposed modifications.
20. These General WDRs do not convey any property rights or exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from liability under federal, State, or local laws, and do not create a vested right to continue to discharge waste.
21. These General WDRs do not relieve the discharger from the responsibility to obtain other necessary local, State, and federal permits, nor do these General WDRs prevent imposition of additional standards, requirements, or conditions by any other regulatory agency.
22. The discharger shall allow the RWQCB or SWRCB, or an authorized representative, upon the presentation of credentials and other documents, as may be required by law, to do the following:
 - a. Enter upon the premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of these General WDRs,
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of these General WDRs,
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under these General WDRs, and
 - d. Sample, photograph, and monitor at reasonable times, for the purpose of assuring compliance with these General WDRs.
23. After notice and opportunity for a hearing, coverage of an individual discharge under these General WDRs may be terminated or modified for cause, including, but not limited to, the following:
 - a. Violation of any term or condition of these General WDRs.
 - b. Obtaining these General WDRs by misrepresentation or failure to disclose all relevant facts.

- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
24. The filing of a request by the discharger for an order modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of these General WDRs.
25. Where the discharger becomes aware that it failed to submit any relevant facts in an NOI or submitted incorrect information in an NOI to the RWQCB or SWRCB, it shall promptly submit such facts or information.
26. The discharger shall furnish, within a reasonable time, any information the RWQCB or SWRCB may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the discharger coverage under these General WDRs. The discharger shall also furnish to the RWQCB or SWRCB, upon request, copies of records required to be kept by these General WDRs.
27. The Water Code provides that any person failing or refusing to furnish technical or monitoring program reports, as required under these General WDRs, or falsifying any information provided in the monitoring reports, is subject to civil liability for each day in which the violation occurs.
28. The discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with these General WDRs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.
29. All reports, notices, or other documents required by these General WDRs or requested by the RWQCB or SWRCB shall be signed by a person described below or by a duly authorized representative of that person.
 - a. For a corporation: by a responsible corporate officer such as (1) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function; (2) any other person who performs similar policy or decision-making functions for the corporation; or (3) the manager of one or more manufacturing, production, or operating facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official.
30. Any person signing a document under Provision II.C.29 shall make the following certification, whether written or implied:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

31. The discharger shall report any discharge of waste that may endanger public health or the environment. Any information shall be provided orally to the RWQCB within 24 hours from the time the discharger becomes aware of the occurrence. A written report shall also be submitted to the RWQCB Executive Officer within five (5) consecutive days of the time the discharger becomes aware of the occurrence. The written report shall contain (a) a description of the noncompliance and its cause; (b) the period of the noncompliance event, including dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and (c) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
32. The discharger shall report all instances of noncompliance not reported under Provision II.C.31 within seven (7) consecutive days of the time the discharger becomes aware of the occurrence. The report shall contain any applicable information listed in Provision II.C.31.
33. The discharger shall comply with all of the conditions of these General WDRs. Any noncompliance with these General WDRs constitutes a violation of the Water Code and is grounds for an enforcement action.
34. The discharger must comply with all applicable Basin Plan provisions, including maintaining the protection of beneficial uses and complying with any prohibitions and water quality objectives governing the discharge. In the event of a conflict between the provisions of these General WDRs and the applicable Basin Plan, the more stringent provisions prevails.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the SWRCB held on May 4, 2004.

AYE:

NO:

ABSENT:

ABSTAIN:

Debbie Irvin
Clerk to the Board

STATE WATER RESOURCES CONTROL BOARD

NOTICE OF INTENT (NOI)

TO ENROLL UNDER AND COMPLY WITH THE TERMS OF WATER QUALITY ORDER NO. 2004-004 DWQ (GENERAL WDRs), STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR DREDGED OR FILL DISCHARGES TO WATERS DEEMED BY THE U.S. ARMY CORPS OF ENGINEERS TO BE OUTSIDE OF FEDERAL JURISDICTION

Mark Only One Item	1. <input type="checkbox"/> New Discharge 2. <input type="checkbox"/> Change of Information-WDID # _____
--------------------	---

I. Owner of the Land

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

II. Billing Address

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

III. Discharger (if different from owner of the land)

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

STATE USE ONLY

WDID: □□□□□□□□□□	Regional Board Office: □□	Date NOI Received: _____	
		Check #: _____	

IV. Site Location

Street (including address, if any)	
Nearest Cross Street(s)	
County:	Total Size of Site (acres):
<p>Latitude/Longitude (Center of Discharge Area) in degrees/minutes/seconds (DMS) to the nearest ½ second or decimal degrees (DD) to four decimals (0.0001 degree)</p> <p>DMS: N. Latitude Deg. _____ Min. _____ Sec. _____</p> <p>W. Longitude Deg. _____ Min. _____ Sec. _____</p> <p>DD: N. Latitude _____</p> <p>W. Longitude _____</p> <p>Attach a map of at least 1:24000 (1" = 2000') detail of the proposed discharge site (e.g., USGS 7.5 minute topographic map).</p>	

V. Discharge Information

Subject	Notes
Name(s) and type(s) of receiving waters:	Receiving water types are: river/streambed, lake/reservoir, ocean/estuary/bay, riparian area, wetland
Eligibility of receiving water. Provide evidence that the water affected by this discharge is deemed to be out side of federal jurisdiction:	U.S. Army Corps of Engineers jurisdictional disclaimer letter, or explanation why such a disclaimer is not needed
Identify all regulatory agencies having jurisdiction over this project. Attach copies of all federal and State license/permit applications or issued copies of licenses/permits from government agencies:	For example: Dept. of Fish and Game Streambed Alteration Agreement, Coastal Commission permit
Proposed project start date:	Expected date of completion:

Project description:		For example: Discharge of riprap; discharge of fill; excavation for a utility line		
Purpose of the entire activity:		For example: Stream-bank erosion control; flood management; residential development		
Characterization of discharges:		What types of constituents will be discharged? Is the sediment contaminated?		
Fill and Excavation Discharges: For each water body type listed below indicate in ACRES the area of the proposed discharge to waters of the state, and identify the impacts(s) as permanent and/or temporary. For linear discharges to drainage features and shorelines, e.g., bank stabilization, revetment, and channelization projects, ALSO specify the length of the proposed discharge to waters of the state IN FEET. ¹				
Water Body Type	Permanent Impact		Temporary Impact	
	Acres	Linear Feet	Acres	Linear Feet
Wetland				
Streambed				
Lake/Reservoir				
Ocean/Estuary/Bay				
Riparian				
Dredging Discharges: Volume (cubic yards) of <u>dredged</u> material to be discharged into waters of the United States.				

¹ For guidance in determining the extent of impacted waters, see General WDRs, section II.A.4

VI. California Environmental Quality Act

Will an environmental impact report or a negative declaration be adopted for this project or has one been adopted?

YES NO

If yes, what is the current status of the environmental impact report or negative declaration?

- Not yet issued for public review.
- In public review.
- Adopted.

Name of lead agency _____

If an environmental impact report or a negative declaration is in public review or has been adopted, enclose the document with this NOI.

Will the discharge occur in, or in immediate proximity to, an area covered by a U.S. Fish and Wildlife Service (USFWS) Habitat Conservation Plan (HCP) or a Department of Fish and Game Natural Community Conservation Plan (NCCP)?

YES NO

Will the discharge occur in, or in immediate proximity to, any habitat of a plant or animal species that has been classified by the Department of Fish and Game, the U.S. Fish and Wildlife Service, or the National Marine Fisheries Service as candidate, sensitive, endangered, rare, or threatened?

YES NO

Will the discharge occur in, or in immediate proximity to, a significant historical or archeological resource, a unique paleontological resource or site, a unique geologic feature, or any human remains?

YES NO

Will the discharge occur in, or in immediate proximity to, land under existing zoning for agricultural use or under a Williamson Act contract?

YES NO

Will the discharge, as mitigated, cause any other significant adverse environmental impact?

YES NO

If you answered “yes” to any of the previous five questions, provide a detailed explanation demonstrating why the discharge is eligible to be enrolled under the General WDRs.

VII. **Additional Submittals.** In accordance with provisions of State Water Resources Control Board (SWRCB) Water Quality Order No. 2004-0004 DWQ, please submit the following with this NOI to the appropriate Regional Water Quality Control Board or, for multi-Region projects, to the SWRCB.

- a. A fee pursuant to California Code of Regulations, Title 23 Section 2200.
- b. A Mitigation Plan, as described in the General WDRs.

VIII. CERTIFICATION

“I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the provisions of these General WDRs will be complied with.”

Signature of Discharger	Title
Printed or Typed Name	Date

STATE WATER RESOURCES CONTROL BOARD

NOTICE OF TERMINATION

**OF DREDGED OR FILL DISCHARGES
TO WATERS DEEMED BY THE U.S. ARMY CORPS OF ENGINEERS
TO BE OUTSIDE OF FEDERAL JURISDICTION
(WATER QUALITY ORDER NO. 2004-0004 DWQ)**

WDID # _____

III. Owner of the Land

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

III. Discharger (if different from owner of the land)

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

III. Site Location

Street (including address, if any)
Nearest Cross Street(s)
County:

IV. Reason For Notice of Termination

Indicate why the discharge should no longer be regulated under WQ Order No. 2004-0004-DWQ.
--

STATE USE ONLY

WDID: <input style="width: 100%;" type="text"/>	Regional Board Office: <input type="checkbox"/>	Date NOT Received: _____ —	Date NOT Processed: _____ —
--	--	-------------------------------------	--------------------------------------

V. CERTIFICATION

<p>“I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”</p>	
Signature of Discharger	Title
Printed or Typed Name	Date

APPENDIX K

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD NOA

San Diego Regional Water Quality Control Board

August 23, 2021

Sent by Email Only

Maya Mazon, Biologist III
 City of San Diego Engineering & Capital Projects
 525 B Street, MS 980A
 San Diego, CA 92101
MMazon@sandiego.gov

**In reply/refer to:
 PID 874862:JHarris**

Subject: Notice of Applicability, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction, Water Quality Order No. 2004-0004-DWQ (General WDRs), for the College Area Sewer and AC Water Main Replacement Project

Ms. Mazon,

On June 15, 2021, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) received the City of San Diego’s notice of intent (NOI) to enroll under and comply with the General WDRs for the College Area Sewer and AC Water Main Replacement Project (Project). **The NOI is complete and the City of San Diego is hereby enrolled as a discharger under the General WDRs**, subject to the terms and conditions of the General WDRs and this Notice of Applicability (NOA). The General WDRs can be accessed electronically at:

https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

General WDRs Enrollment Information

This NOA is applicable to the Discharger, Project Location, and Project Facility, Enrollment, and Administrative Information summarized in Tables 1 through 5 below.

Table 1 – Discharger and Project Information

Discharger	City of San Diego
Name of Project	College Area Sewer and AC Water Main Replacement
Project Location	Channel behind 4902-4962 54 th Street
File No.	R9-2021-0157
CIWQS Reg. Meas. No.	443903
CIWQS Place No. (PIN)	874862
CIWQS Party No.	556507

CELESTE CANTÚ, CHAIR | DAVID GIBSON, EXECUTIVE OFFICER

2375 Northside Drive, Suite 100, San Diego, CA 92108-2700 | www.waterboards.ca.gov/sandiego

Table 2 – Discharge Location

Discharge Point	Waste Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
Unnamed ephemeral stream	Sediment to be excavated and replaced following construction.	32.7671523	-117.076376	Unnamed tributary of the San Diego River

Table 3 – Facility and Enrollment Information

WDID	9 000003707
Project Contact, Title, Phone, and Email	Maya Mazon, Biologist III, (619) 533-4620, MMazon@sandiego.gov
Authorized Person to Sign and Submit Reports	James Arnhart, Project Officer II (619) 533-5275, JArnhart@sandiego.gov
Discharger Mailing Address	525 B Street, Suite 750, MS 908A San Diego, CA 92101
Discharger Billing Address	525 B Street, Suite 750, MS 908A San Diego, CA 92101
Type of Project	Non-Bioengineered Channel Construction and Maintenance
Fee Category	Category A, Fill and Excavation Discharges
Fee Amount	\$2066
Watershed	San Diego River
Receiving Water	Unnamed ephemeral stream
Receiving Water Types	Ephemeral stream and riparian habitat
Permanent Impact Area	0.006 acres
Temporary Impact Area and Length¹	0.102 acres / 126 linear feet
Volume of Dredging Discharge	None

¹ All areas of temporary impacts must be restored to pre-project contours and re-vegetated with native species.

Table 4 – Compensatory Mitigation

Mitigation Bank	San Diego River Stadium Mitigation Bank (establishment credits) Rancho Mission Canyon Wetland Enhancement Site (enhancement credits)
Mitigation Type and Bank Credits to be Purchased	0.108 acres establishment / re-establishment 0.108 acres enhancement

Table 5 – Administrative Information

This NOA was approved by the San Diego Water Board Executive Officer on:	August 23, 2021
This NOA is effective as of:	August 23, 2021

Project Description

The Discharger proposes to repair and replace existing sewer and water lines to improve reliability and meet current engineering standards. The Discharger will upsize and abandon in place vitrified clay sewer mains and asbestos cement water mains; construct new main lines via open trench and trenchless (horizontal boring) methods, construct nine launching/receiving pits, ten new manholes, and one new vault structure; and widen an existing access road.

The Project is anticipated to begin in early 2022 and take approximately 10 months to complete. Construction activities occurring in waters of the State of California (State) will take place for only a small part of this duration. Project maps and plans of the approved Project are enclosed with this letter.

Project activities will result in permanent impacts to 0.006 acres and temporary impacts to 0.102 acres (126 linear feet) of riparian habitat and ephemeral stream channel waters of the State. All waters of the State receiving temporary discharges of fill material will be restored to pre-project contours and re-vegetated with native species. The U.S. Army Corps of Engineers (Corps) has determined that no Corps permit is required for the Project because the waters are outside of federal jurisdiction.

Avoidance, Minimization, and Compensatory Mitigation

The Discharger submitted the *College Area Sewer and AC Water Revegetation Plan*, dated June 2021, and the *Biological Technical Report for the College Area Sewer and AC Water Project*, dated August 2020, which contains details of mitigation credit purchase. Together, these documents satisfy the mitigation plan requirement of section II.B.4 of the General WDRs.

The Discharger reports that the proposed impacts are the minimum necessary to repair the sewer and water lines to prevent future breaks and emergencies. The Project has been designed to avoid waters of the State to the maximum extent practicable. For example, Project personnel and equipment will use an existing paved access path for most of the Project area, and steel plates will be used to cross unvegetated concrete

channels, thus avoiding impacts to waters of the State. The Discharger will implement minimization measures to ensure that all impacts stay within the permitted footprint, including flagging sensitive areas and using construction best management practices (BMPs) such as silt fencing and fiber rolls to prevent runoff or sedimentation.

The Discharger reports that compensatory mitigation for the unavoidable permanent loss of 0.006 acres of jurisdictional waters will be achieved by ensuring a no net loss of area, functions, and beneficial use values through the acquisition of bank credits in the amount of:

- 1.08 acre of establishment of wetland and riparian waters of the United States and/or State at the San Diego River Stadium Wetland Creation Site; and
- 1.08 acres of enhancement of wetland and riparian waters of the U.S. and/or State at the Rancho Mission Canyon Wetland Enhancement Site.

Mitigation for discharges of fill material to waters of the State will be completed by the Discharger at a compensation ratio of 36:1 (area mitigated : area impacted). Both mitigation sites are located in the Mission San Diego Hydrologic Subarea (HSA 907.11).

Additional Conditions

- 1. Mitigation Credit Acquisition. Prior to the start of construction**, the Discharger must provide documentation to the San Diego Water Board verifying the purchase of at least 1.08 acre of credit for establishment of wetland waters of the U.S. and/or State from the San Diego River Stadium Wetland Creation Site and 1.08 acres of credit for enhancement of wetland waters of the U.S. and/or State from the Rancho Mission Canyon Wetland Enhancement Site. The use of an alternate mitigation bank to provide required compensatory mitigation must be approved by the San Diego Water Board before the credits are secured and is subject to the following conditions:
 - a. The permitted Project impacts are located within the service area of the mitigation bank; and
 - b. The appropriate number and resource type of credits are available from the mitigation bank.
- 2. Discharge Commencement Notice.** The Discharger must notify the San Diego Water Board in writing **at least 5 days prior to** the start of Project construction.
- 3. Final Project Completion Report. Within 60 days of completion of the Project**, the Discharger must submit a Final Project Completion Report to the San Diego Water Board. The final report must include the following information:
 - a. Dates of construction initiation and completion;
 - b. Description of BMPs implemented during Project construction;
 - c. Photo documentation of the Project (before, during, and after) and implemented BMPs. Photo documentation must be conducted in accordance with guidelines posted at:

https://www.waterboards.ca.gov/sandiego/water_issues/programs/401_certification/docs/401c/401PhotoDocRB9V713.pdf

In addition, photo documentation must include GPS coordinates for each of the photo points referenced; and

- d. As-built drawings of the Project, no bigger than 11”X17.”
4. **Termination of Discharge.** Upon completion of the Project, the Discharger is required under Provision II.C.16 of the General WDRs to complete the Notice of Termination form contained in Attachment 2 of the General WDRs and submit it to the San Diego Water Board requesting termination of enrollment. The Project is subject to annual fees in accordance with California Code of Regulations, title 23, section 2200(a)(3) until all requirements in the General WDRs and this NOA are met and the enrollment in the General WDRs is terminated.

Electronic Document Submittal

The Discharger must submit all reports and information required under this Certification in electronic format to SanDiego@waterboards.ca.gov. Documents over 50 megabytes will not be accepted via e-mail and must be placed on a disc or flash drive and delivered to the San Diego Water Board, 2375 Northside Drive, San Diego, CA 92108. Electronic documents must be submitted as text searchable PDF files. When submitting electronic documents to the San Diego Water Board, the following identification number must be added to the header or subject line that provides the subject description and project name: **PIN 874862:jharris**.

For questions or comments regarding this Notice of Applicability or the requirements of the General WDRs, please contact Jill Harris at Jill.Harris@waterboards.ca.gov or (619) 521-8050.

Respectfully,

David W. Gibson
Digitally signed by
David W. Gibson
Date: 2021.08.23
09:49:11 -07'00'

DAVID W. GIBSON
Executive Officer

Enclosures: Figure 1: Regional Location Map
Figure 2: Projection Vicinity Map
Figure 3: Impacts to Jurisdictional Waters

DWG:db;jlh

CC: via email only

JR Sundberg
RECON Environmental, Inc.
JRSundberg@reconenvironmental.com

California Department of Fish and Wildlife, South Coast Region
Lake and Streambed Alteration Program
Kelly Fisher
Kelly.Fisher@wildlife.ca.gov

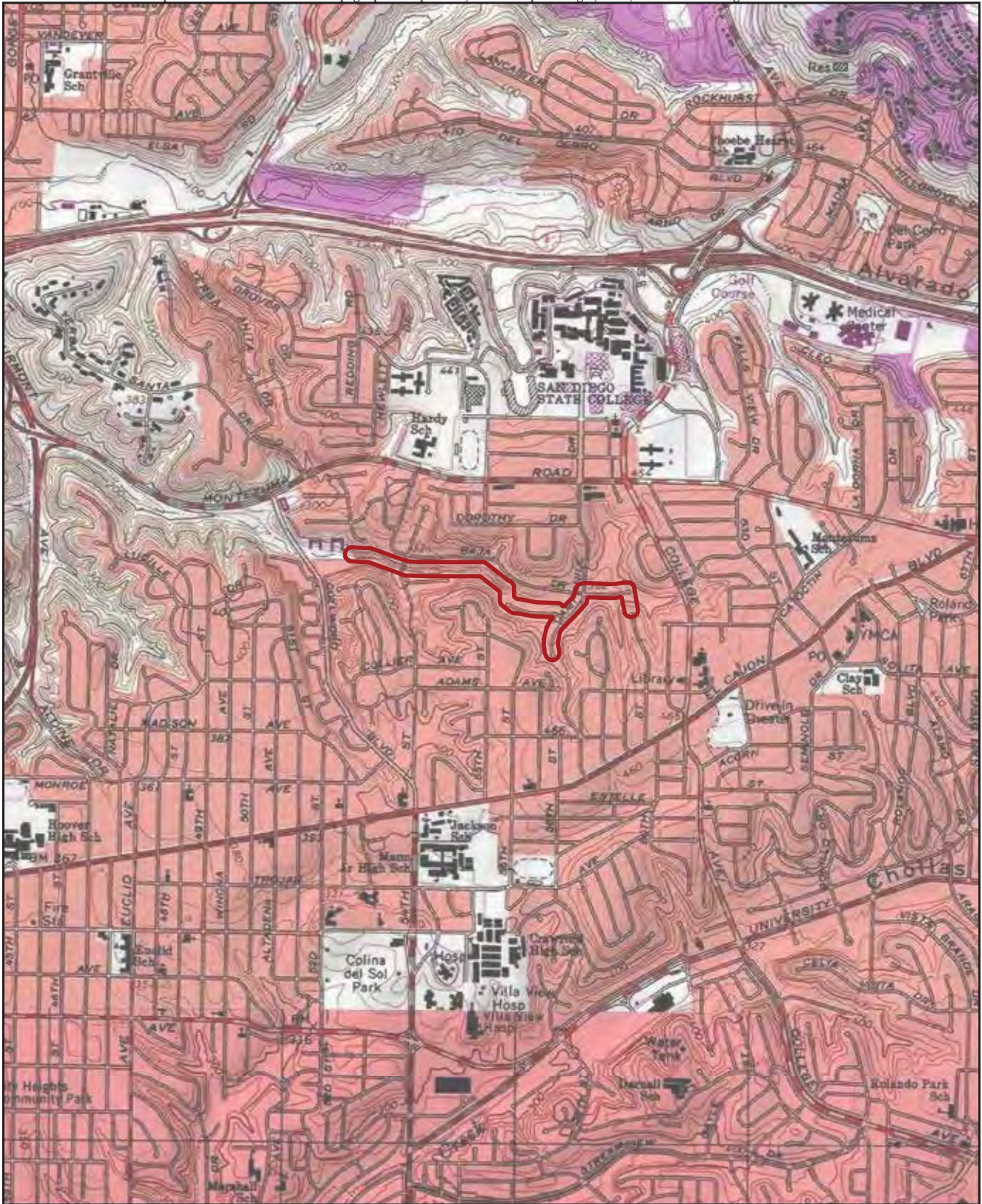
U.S. EPA, Region 9, Wetlands Section
R9cwa401@epa.gov

State Water Resources Control Board
Division of Water Quality
401 Water Quality Certification and Wetlands Unit
Stateboard401.Stateboard401@waterboards.ca.gov



***** Project Location

FIGURE 1
Regional Location



 Vegetation Survey Area

FIGURE 2

Project Vicinity on USGS Map

Image source: Nearmap (flown September 2018)



Project Survey Area

- Sample Point
- OHWM Sample Locations

Jurisdictional Waters

- CDFW and RWQCB Wetland Waters of the State, City Wetland
- USACE Non-wetland Waters, CDFW Streambed, RWQCB Non-wetland Waters of the State
- USACE Non-wetland Waters, CDFW Streambed, RWQCB Non-wetland Waters of the State, City Wetland
- USACE Wetland Waters, CDFW and RWQCB Wetland Waters of the State, City Wetland

Project Features

- Proposed 8" Water Main Replacement
- Proposed Sewer Main Replacement
- - - Proposed Sewer Main Replacement - Trenchless
- Existing Manhole
- ⊗ Existing Manhole to be Abandoned
- ▭ Existing Access Path (8' wide)

Permanent Impacts

- Proposed Manhole (5'x5')
- ▲ Proposed Vault (13'x11'8")
- ▨ Proposed Access Path

Temporary Impacts

- ▨ Launching Pit (10'x20')
- ▨ Receiving Pit (10'x10')
- ⊗ Temporary Construction Area*

* USACE/RWQCB/CDFW non-wetland waters that occur within an unvegetated concrete-lined channel will not be impacted as steel plates will be used for vehicle access over the top of the channel.



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FIGURE 3
Impacts to Jurisdictional Waters

APPENDIX L

TWINING GEOTECHNICAL – PRELIMINARY GEOTECHNICAL INVESTIGATION

Preliminary Geotechnical Investigation

City of San Diego Task 15GT14 - College Area Sewer
and AC Water Main Replacement
54th Street & Campanile Way
San Diego, California

Prepared for:

City of San Diego
525 B Street, Suite 750 (MS 908A)
San Diego, CA 92101

April 10, 2018

Project No.: 180004.2

April 10, 2018
Project No. 180004.2

Tamina Igartua
Project Engineer
City of San Diego
525 B Street, Suite 750 (MS 908A)
San Diego, CA 92101

Subject: Preliminary Geotechnical Investigation
College Area Sewer and AC Water main replacement - Task 15GT14
54th Street
San Diego, California

Dear Ms. Igartua,

In accordance with your request and authorization, we are presenting the results of our geotechnical engineering evaluation for the above-referenced project in the College Area neighborhood of the City of San Diego, California. The purpose of this investigation was to evaluate the subsurface conditions at the proposed sewer pipeline locations and to provide geotechnical engineering recommendations for the College Area Sewer and AC water main replacement project.

Please note that the recommendations presented within the report are based on assumptions stated herein. Should conditions encountered during installation and construction differs from those assumed in our analyses, or should the proposed project change, our recommendations may need to be modified accordingly.

We appreciate the opportunity to be of service on this project. Should you have any questions regarding this report, or if we can be of further service, please do not hesitate to contact the undersigned.

Respectfully submitted,
TWINING, INC.



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- Appendix A – Field Exploration
- Appendix B – Laboratory Testing

1. INTRODUCTION

This report presents the results of our preliminary geotechnical investigation performed for the College Area Sewer and Water Main Replacement project within the College Area neighborhood of the City of San Diego, California. The approximate locations of the proposed sewer pipelines are shown in Figure 1, Project Location Map. The purpose of this study was to evaluate the subsurface conditions at the project site and provide geotechnical engineering recommendations for the design and construction of the proposed sewer and water mains.

2. PROJECT DESCRIPTION

According to the information presented in the construction plans prepared by the City of San Diego *Plans for the Construction of College Area Sewer and AC Water Group, 60% Design*, undated, (Sheets 39946-01-D to 05-D) that the sewer portion of the project (this project) consists of installation of a new pipeline between the existing 10-inch sewer lateral at the west end of cul-de-sac of Campanile Way west toward 54th Street, and continuing west along the existing canyon and concrete lined channel to the vicinity of Collwood Villas apartment complex where the existing sewer manhole #1 is located. Sewer manhole #1 is the western termination of this project. According to the design plans, the proposed sewer line will replace an existing vitrified clay pipeline using the trenchless installation method. The trenchless method is proposed for an 18 inch diameter pipe between Station 1+00 and 24+14.79. Pipe bursting will be used for a 15 inch diameter pipe in the Campanile Way cul-de-sac area between Station 24.+14.79 and 27+00. Depth of the proposed sewer installation along the alignment ranges from 7 feet to 26 feet. The objective of the geotechnical investigation is to obtain information regarding the existing subsurface condition and the feasibility of trenchless installation as well as recommendations for various methods (i.e. jack & bore, micro-tunneling, etc.).

3. SITE DESCRIPTION

College Area Sewer and Water Main Replacement project is located within the College West neighborhood in the Mid-City area of City of San Diego. The area is characterized by considerable undulating topography and the slope ranges from 1:30 (vertical: horizontal) to 1:1.5 (H:V). In general, the project vicinity corresponds to a residential area with single- family homes and multi-family dwellings and paved streets and sidewalks. Most of the proposed alignment lies on the existing Storm Drain easement which is densely vegetated. The alignment has elevation ranges from 273 feet to 345 feet above from mean sea level (MSL). Review of historical aerial photographs indicates that the majority of the pipe alignment is within a previously existing canyon drainage that was subsequently surrounded by development. Latitudes for the site coordinates ranges from 32.7659 to 32.7676 and Longitude ranges from -117.0816 to -117.0752.

4. SCOPE OF SERVICES

Our scope of services for this project consisted of the following:

- Review of readily available background data, including project plans provided by the City of San Diego, in-house geotechnical data, geotechnical literature, and, geologic and topographic maps relevant to the project.
- Discussion with City of San Diego representatives and selection of five boring locations for the subsurface investigation.

- Obtaining boring permits from the San Diego County Department of Environmental Health (DEH).
- Performance of a site reconnaissance to observe the general surface conditions at the project site and mark out the boring locations.
- Notification of Underground Service Alert (USA) a minimum of 72 hours prior to excavation.
- Performance of a subsurface evaluation consisting of drilling and sampling five exploratory borings.
- Laboratory testing on selected bulk and relatively undisturbed samples to evaluate the geotechnical engineering properties of the on-site soils.
- Review and analysis of data collected from our site reconnaissance, subsurface explorations, and laboratory testing. Specifically, our analyses included the following:
 - Evaluation of general subsurface conditions and description of types, distribution, and engineering characteristics of subsurface materials;
 - Evaluation of current and historical groundwater conditions at the site and potential impact on design and construction;
 - Evaluation of project feasibility and suitability of on-site soils for fill materials;
 - Development of general recommendations for earthwork, including requirements for placement of compacted fill; and,
 - Recommendations for temporary excavations, shoring design and trenchless installation.

Preparation of this report summarizing the results of our findings and presenting our conclusions and geotechnical recommendations for the design and construction of the proposed improvements.

5. FIELD EXPLORATION AND LABORATORY TESTING

5.1. Field Exploration

Field explorations were performed on January 17th and January 25th, 2018. The subsurface conditions were evaluated by drilling five borings to approximate depths ranging from 10.5 feet to 26.5 feet below existing ground surface (bgs). The borings were drilled using a UNIMOG truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers. Twining also used track mounted drill rig (FRASTE) in two locations (B-4 and B-5) due to limited accessibility. The approximate locations of the exploratory borings are shown on Figure 2, Boring Location Map. The logs of borings are presented in Appendix A, Field Exploration. Cross sections of the anticipated geologic conditions are presented on Figures 6A through 6D. Note that due to terrain and property access issues, Borings B-2 through B-4 were drilled north of the proposed sewer alignment; anticipated geologic contacts were projected to the cross sections. Geologic contacts noted on the cross sections are considered approximate.

Relatively undisturbed samples were obtained using a modified California split spoon sampler. Standard Penetration Tests (SPTs) were performed to obtain disturbed soil samples using a split barrel sampler. The samplers were driven using a 140-pound, automatic-drop hammer falling approximately 30 inches. The blow counts were recorded and the materials encountered in the borings were logged by our field personnel. The number of blows required to drive the sampler 12 inches was recorded and are presented on the boring logs in Appendix A. After completion, the

borings were backfilled in accordance with San Diego County Department of Environmental Health (SDCDEH) requirements and the street borings were capped with rapid-set concrete with black dye.

5.2. Laboratory Testing

Laboratory tests were performed on selected samples obtained from the borings in order to aid in the soil classification and to evaluate the engineering properties of the soils. The laboratory tests included: in-situ moisture and dry density, maximum density, Atterberg limits, sieve analyses, direct shear and corrosivity evaluation. In-situ moisture content and density data are presented on the boring logs in Appendix A. A description of the laboratory tests performed as well as the test results are shown in Appendix B.

6. GEOLOGY AND SUBSURFACE CONDITIONS

6.1. Regional Geologic Setting

The site is located in the Peninsular Ranges Geomorphic Province (PRGP) of California. The Peninsular Range Province is characterized by northwest trending mountain ranges separated by a series of sub-parallel fault zones associated with the San Andreas Fault System. Within the PRGP, the mountain ranges generally consist of Cretaceous igneous rocks of the Peninsular Ranges Batholith and Jurassic metasediments and metavolcanics, and the topographically lower areas in the coastal region typically consist of marine and terrestrial sedimentary rocks (Kennedy and Peterson, 1975). In the coastal region of San Diego County, Quaternary and late Tertiary age folding and tilting has occurred in areas adjacent to the active Rose Canyon fault zone and a few randomly oriented and scattered small scale faults exist throughout the region (Kennedy and Peterson, 1975; Treiman, 1993; Tan and Kennedy, 2008). The site is located within the PRGP coastal region.

6.2. Tectonic Setting

The tectonic setting of the San Diego is influenced by plate boundary interaction between the Pacific and North American lithospheric plates. This crustal interaction occurs along a broad zone of northwest-striking, predominantly right-slip faults that span the width of the Peninsular Ranges and extend offshore into the California Continental Borderland Province. At the latitude of San Diego (project site), this extends from the San Clemente fault zone, located approximately 54 miles southwest offshore of the San Diego coastline, to the San Andreas fault, located about 85 miles northeast of San Diego (California Geological Society, 2010).

Geologic, geodetic, and seismic data indicate that the faults along the eastern margin of the plate boundary, including the San Andreas, San Jacinto, and Imperial faults, are currently the most active. These active faults are located in the Imperial Valley and are the dominant structures in accommodating the majority of motion between the two adjacent plates. A smaller portion of the relative plate motion is being accommodated by northwest-striking active faults to the west, including the Elsinore, Newport-Inglewood-Rose Canyon, and offshore faults. The offshore faults include the Coronado Bank, San Diego Trough, and San Clemente faults zones.

6.3. Site Geology and Subsurface Conditions

The project site is underlain by artificial fill, Quaternary-aged alluvium, and gravel/cobble conglomerates associated with the Tertiary-aged Mission Valley Formation and Stadium Conglomerate. These materials have been mapped by Kennedy (1975) and Kennedy and Tan

(2008). At the exploratory locations, the alluvial and formational materials are mantled by artificial fill soils likely associated with residential streets and utility construction. The regional geology is presented in Figure 3. The geologic units observed are described below from youngest to oldest.

6.3.1. Artificial Fill (Unmapped)

Artificial fill was encountered in the upper portions of the borings. At the boring locations the fill soils were generally composed of brown to dark brown, silty to clayey sand, with gravel and cobbles. The fill encountered was generally damp to moist, to locally wet, loose to medium dense. The thickness of fill encountered is approximately 2 to 6 feet. Abundant cobbles were observed on the surface around the boring locations of B-1 through B-4. Some cobbles were noted up to 8 inches in diameter. A portion of the fill is considered suitable for reuse as backfill for the jacking and receiving pits, and trench cut and cover methods, if opted, provided the fill is screened of over-sized cobbles.

6.3.2. Alluvium (Unmapped)

Alluvial soils were encountered at borings extending to depths ranging from 5 feet to 13 feet bgs. The alluvium generally consisted of dark brown to reddish brown, damp, silty sand to sandy gravel. The alluvium is generally loose to dense, with few to abundant cobbles. The alluvium is underlain by formational sedimentary units (Mission Valley Formation or Stadium Conglomerate), as noted below. Also, note that cobbles in the area of the borings were up to 8 inches in diameter.

6.3.3. Mission Valley Formation (Tmv)

The Mission Valley Formation encountered at the eastern portion of the site, as mapped and described by Kennedy (1975) and Kennedy and Tan (2008) as predominantly a marine sandstone unit, resting conformable upon the Stadium Conglomerate. A tongue of cobble conglomerate within the sandstone that is similar to the Stadium Conglomerate was encountered in boring B-5 at a depth of 13 feet. At the boring location, the formational materials consisted of tan, damp, sandy gravel conglomerate. Due to the drilling method, only gravel fragments were recovered. Based on observations, cobble sized rock is also present.

6.3.4. Stadium Conglomerate (Tst)

The Stadium Conglomerate encountered at the western $\frac{3}{4}$'s of the site is described by Kennedy (1975) and Kennedy and Tan (2008) as the one of the three partly intertonguing and partly time equivalent formations of the Poway Group. These rocks, which are mainly nonmarine in their easternmost exposures and nearshore marine and lagoonal in their westernmost exposures, crop out in the westernmost part of the El Cajon quadrangle. The formation, per Kennedy, consists of massive cobble conglomerate with a dark yellowish brown, coarse grained sandstone matrix. Conglomerate is moderately well sorted with an average clast size in the cobble size range.

At the boring locations (B-1 through B-4), this sedimentary unit was composed of cobbles and gravel supported in a light brown to brown and tan silty sand and clayey sand matrix. Note that due to the drilling method, only gravel sized fragments were recovered, however, abundant cobble sized rock is anticipated. The conglomerate was dense to very dense, to (likely) locally cemented. The cobbles of the Stadium Conglomerate were also observed on the exposed slopes surrounding the borings. . We encountered difficult drilling in all the borings and had practical refusal on B-1 and B-4.

6.4. Groundwater

No groundwater or seepage was encountered in the borings at the time of field exploration. The depth of the regional groundwater table beneath the project site is unknown but may be assumed to be in excess of 100 feet bgs. However, localized shallow perched water conditions may occur, particularly during the wet (rainy) season. Perching would most likely be encountered in fill materials or alluvium above the contact with the relatively impermeable formational materials. Pipe leaks, overflows, and landscape irrigation could also potentially contribute to groundwater perching.

6.5. Geologic Hazards

Geologic hazards at the site are essentially related to those caused by earthquakes. The major cause of damage from earthquakes is fault rupture and strong shaking from seismic waves. Potential geologic hazards that could affect the project site are discussed below.

6.5.1. Faulting

The southern California region has long been recognized as being seismically active. Seismic activity results from a number of active faults that cross the region, all of which are related to the San Andreas transform system which covers a broad zone of right lateral faults that extend from Cape Mendocino to Baja California. Faults in Southern California are classified according to their activity as active, potentially active, and inactive faults. Active faults are those faults that have had surface displacement within Holocene time (approximately the last 11,700 years). Faults are considered potentially active if they show evidence of surface displacement since the beginning of Quaternary time (about 1.6 million years ago), but not since Holocene time.

The site is not within a currently established State of California Alquist-Priolo Earthquake Fault Zone for fault rupture hazard (formerly Special Studies Zones for fault rupture hazard). Based on a review of geologic literature, no active or potentially active faults are known to occur beneath the project site. Accordingly, it appears that there is little probability of surface rupture due to faulting beneath the site. There are, however, several faults located in sufficiently close proximity that movement associated with them could cause significant ground motion at the site as shown in Figure 4, Fault Location Map.

Regional active faults that occur near the College area include the Rose Canyon fault zone, the offshore Coronado Bank and San Diego Trough fault zones to the west, the Elsinore and San Jacinto fault zones to the east, and the San Miguel-Vallecitos and Agua Blanca fault zones to the south in Mexico. Locally, the Rose Canyon fault zone trends north-northwest through downtown San Diego and the San Diego Bay. The closest known active faults to the site are the Rose Canyon fault zone located approximately 5 miles to the west, the Coronado Bank fault zone located 18 miles to the west and the Newport-Inglewood fault zone located 9 miles northwest. Fault zones that are considered potentially active include the La Nacion fault zone which passes underneath the Collwood Villa apartment complex. A fault strand of the La Nacion fault is mapped just west of this project.

6.5.2. Earthquake Ground Motion

The project area may be subject to strong ground shaking in the event of an earthquake; however this hazard is common to Southern California and the effects on the proposed project

can be mitigated if the improvements are designed and constructed in accordance with current engineering practice and building codes.

6.5.3. Liquefaction

The potential for seismically induced liquefaction is greatest where shallow groundwater and poorly consolidated, well sorted, fine grained sands and silts are present. Liquefaction potential decreases with increasing density, grain size, and clay and gravel content, but increases as the ground acceleration and duration of seismic shaking increases.

Fill soils with about 2 to 6 feet in thickness cover the project site. These materials are composed of loose to medium dense, silty sand and clayey sand with some gravel and cobbles. Beneath the fill, alluvial soils range in depth from 5 to 13 feet bgs. Beneath the fill and alluvium, the formational materials consist of dense to very dense cobble conglomerate. Groundwater was not encountered within the depths drilled. Accordingly, the potential for liquefaction in the event of a strong to moderate earthquake on a nearby fault is considered low.

6.5.4. Seismic Settlement

Seismic settlement occurs when dry to saturated, loose to medium dense granular soils densify during ground shaking. Due to lithologic variations, such settlement can occur differentially across a site. Differential settlement may also be induced by ground failures, such as liquefaction, flow slides, and surface ruptures. The potential for seismic settlement in fill and alluvial materials is considered low to moderate. The potential for seismic settlement in formational materials is very low.

6.5.5. Landslides and Slope Stability

No evidence indicating the presence of deep seated landslides was observed on or in the immediate vicinity of the site. The sedimentary units exposed within the vicinity of the project area appeared to exhibit nearly horizontal bedding (Kennedy and Tan, 2008). The potential for deep seated slope stability problems at the site is considered low. There is, however, the potential for shallow sloughing and slumping of slope materials exposed in drainage channels if slope grading is altered extensively. In addition, the site is mapped in Landslide Susceptibility Area "2" – Marginally Susceptible (Tan, 1995).

6.5.6. Seismic Safety Study

The City of San Diego Seismic Safety Study designates the project area as "Zone 53: Level or sloping terrain, unfavorable geologic structure. Low to moderate risk." as shown in Figure 5, Seismic Safety Map.

6.6. Seismic Design Parameter

The project area is located at approximate coordinates: latitude N32.7659° to N32.7676° and longitude W117.0752° to W117.0816°. The materials beneath the site consist of loose to medium dense fill and loose to dense alluvium extending to approximate depths of 5 to 13 feet, underlain by dense to very dense formational materials.

Based on the results of our field investigation, the applicable Site Class is D, consisting of a stiff soil profile with average SPT N values between 15 and 50 blows per foot. Table 2 presents seismic

design parameters for the site in accordance with 2016 CBC and mapped spectral acceleration parameters (United States Geological Survey, 2016).

**Table 1
2013 California Building Code Design Parameters**

Design Parameter	Value
Site Class	D
Mapped Spectral Acceleration Parameter at Period of 0.2-Second, S_s	0.945g
Mapped Spectral Acceleration Parameter at Period 1-Second, S_1	0.361g
Site Coefficient, F_a	1.122
Site Coefficient, F_v	1.677
Adjusted MCE_R^1 Spectral Response Acceleration Parameter at Short Period, S_{MS}	1.060g
1-Second Period Adjusted MCE_R^1 Spectral Response Acceleration Parameter, S_{M1}	0.606g
Short Period Design Spectral Response Acceleration Parameter, S_{DS}	0.707g
1-Second Period Design Spectral Response Acceleration Parameter, S_{D1}	0.404g
Peak Ground Acceleration, PGA_M^2	0.426g
Seismic Design Category	D
Notes: ¹ Risk-Targeted Maximum Considered Earthquake ² Peak Ground Acceleration adjusted for site effects	

7. CONCLUSIONS

Based on the results of our subsurface evaluation, laboratory testing, and data analysis, construction of the proposed improvements is feasible from a geotechnical standpoint, provided the recommendations of this report are incorporated in the design and construction of the project. Geotechnical considerations include the following:

- The site is underlain by 2 to 6 feet of poorly consolidated fill soils overlying alluvial soils to depths of about 5 to 13 feet. Beneath the fill and alluvium, the site is underlain by gravel/cobble conglomerate. Refusal on cobbles was encountered in boring B-1 and B-4 at a depth of 10'9" and 10'6" bgs, respectively.
- The majority of the fill and alluvium is suitable for re-use as compacted fill, however, oversized materials will need to be screened out and clayey soils will need to be removed or mixed with granular soils.
- On-site materials are considered generally excavatable with conventional heavy-duty earth moving construction equipment. Difficult excavation is anticipated within strongly cemented formation materials and cobble zones. The cemented zones, although not encountered, are characteristics of the formation materials. The installation systems and drilling equipment used should be designed for the anticipated subsurface conditions.
- Implementation of appropriate method of trenchless system is vital as the subsurface condition is not suitable for all trenchless technology.
- Groundwater was not encountered within the boring locations. Transitory localized seepage may occur at the geologic contacts due to rainfall, irrigation practices, and other factors.

- Sieve analysis presented in this report is solely dependent on the material captured in the sampler but abundance of cobble up to 8" was visible all through the alignment. Considering the size of cobble and hardness of cobble, a larger fraction of coarse fragment during construction should be anticipated than that of testing results.
- Based on review of readily available geologic literature, active or potentially active faults do not cross the subject site. Accordingly, the possibility of surface rupture at the site due to faulting is considered low.
- The potential for seismically induced seismic settlement is moderate to low in the fill and alluvial soils and very low in formational materials.
- Based on Caltrans (2015) corrosion criteria, the project site would be classified as a non-corrosive site for concrete.

8. RECOMMENDATION

8.1. General

Based on the results of our field exploration, laboratory testing, and engineering analyses, it is our opinion that the proposed construction is feasible from a geotechnical standpoint, provided that the recommendations in this report are incorporated into the design plans and are implemented during construction. The following sections present our conclusions and recommendations pertaining to the geotechnical engineering design for this project.

8.2. Site Preparation

All exposed temporary excavation bottoms (for cut and cover, or pit excavation construction) should be observed and accepted by the geotechnical engineer or engineering geologist prior to construction of the sewer and water lines and prior to any fill placement. Unstable excavation bottoms may require additional removal to expose competent, non-yielding earth materials.

Vegetation, debris, organics and oversized materials greater than 6 inches in maximum dimension should be separated from on-site soil and legally disposed of off-site prior to placement of any compacted fill. Excavation bottoms should be observed and accepted by the geotechnical engineer or engineering geologist prior to installation of sewer and water lines and trench backfill placement for jacking pit and receiving pit. If imported fill materials are needed on the site, they should have a very low expansion potential (expansion index not greater than 20). Proposed import materials should be evaluated and approved by the geotechnical engineer prior to use at the site. Alternatively, gravel and geotextile fabrics may be used to stabilize the bottom of excavations when saturated or unstable materials are exposed within the excavation depth.

8.3. Excavation Characteristics

The results of our field exploration indicate that the project alignment is underlain by undocumented fill and alluvium, and gravel/cobble conglomerate with silt/clay sand matrix associated with the Mission Valley Formation and Stadium Conglomerate. Areas of difficult drilling and refusal was encountered at depths of 10'9" and 10'6" in borings B-1, and B-4, respectively.

Excavations in fill and weakly cemented formational materials should generally be feasible using heavy-duty earth moving equipment in good working condition. Construction debris, loose soils, caving and/or sloughing conditions may occur when excavating within undocumented fill and loose

portions of alluvium. Difficult excavation is anticipated within gravel and cobble conglomerate of the Mission Valley Formation and Stadium Conglomerate, when encountered. Excavations in these materials may entail the use of heavy ripping or rock breakers.

8.4. Temporary Excavations

The upper portion of on-site materials are loose to medium dense. Temporary un-surcharged excavation sides may be sloped back at an inclination of 1½:1 (horizontal to vertical). Personnel from Twining, Inc. should observe the excavations so that any necessary modifications based on the encountered soil conditions can be recommended.

Barricades should be placed around temporary excavations so that vehicles and storage loads do not encroach within 10 feet of the top of excavated slopes. A greater setback may be necessary when considering heavy vehicles, such as concrete trucks and cranes. Twining, Inc. should be advised of such heavy vehicle loadings so that specific setback requirements can be established. If temporary construction slopes are to be maintained during the rainy season, we recommend that berms be graded along the top of slopes in order to prevent runoff water from entering the excavation and eroding slope faces.

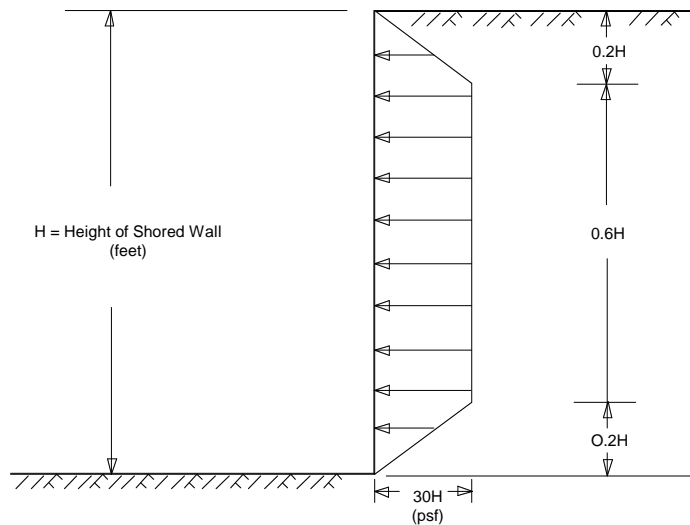
All excavations should be performed in accordance with CalOSHA requirements. Vertical excavations will require temporary shoring/shielding. Design recommendations for temporary shoring are presented in the following section.

8.5. Temporary Shoring

Temporary excavations to maximum depths of 22 feet are anticipated for jacking pit and shoring pit for Jack and Bore method. Shoring will be necessary for vertical excavations that are greater than 4 feet in depth, where there is the potential for caving soils or for support of adjacent buried utilities. Shoring should be maintained throughout the installation. When supporting adjacent improvements, sheeting and/or shoring should be installed to prevent loss of support and/or significant settlement.

For design of cantilevered shoring with heights of 15 feet or less a triangular distribution of lateral earth pressure may be used. If the soils behind the shoring are level and groundwater is below the bottom of the excavation, an equivalent fluid pressure of 44 pounds per cubic foot may be assumed for design. Where movement is not acceptable, we recommend that the shoring be designed for an "at rest" pressure of 66 pounds per cubic foot. Some surface settlement should be anticipated during shoring installation especially within the loose to medium dense fill soils.

For excavations greater than 15 feet, tied-back or braced shoring is recommended. Tied-back or braced shoring should be designed to resist a trapezoidal distribution of lateral earth pressure. The recommended pressure distribution, for the case where the grade is level behind the shoring and groundwater levels are below the bottom of the excavation, is illustrated in the following diagram with the maximum pressure equal to 30H pounds per square foot. H is the height of the shored wall in feet. The loads will need to be modified if adverse bedding is present.



Surcharge from live loads including traffic and dead loads including adjacent structures that are located within a 1:1 (horizontal to vertical) plane drawn upward from the base of the shored excavation should be added to the lateral earth pressures. The lateral contribution of uniform surcharge loads located immediately behind the temporary shoring may be calculated by multiplying the vertical surcharge pressure by 0.35. Lateral load contributions of surcharge loads behind the shored wall may be provided once the load configurations and layouts are known. As a minimum, 250 pounds per square foot vertical uniform surcharge is recommended to account for nominal construction and/or traffic loads.

8.6. Trenchless Installation

According to our construction plans provided by City, we understand that the existing 8-inch and 10-inch diameter VC sewer pipes will be replaced with 18-inch pipe using micro-tunneling or horizontal directional drilling trenchless methods. The selection of the installation method will depend on the length of the reach, the surface and subsurface conditions, and the alignment tolerances for the pipes to be installed. Our recommendations are based on our understanding of the proposed project, the results of the site reconnaissance, field explorations and laboratory testing completed for this investigation.

8.6.1. Microtunneling

This method uses a remote controlled microtunnel boring machine that provides continuous support to the tunnel face. Sections of pipe are jacked behind the tunneling machine which is used as casing during pipeline installation. Soil cuttings are removed through the casing pipe to the sending pit using augers or conveyors. While microtunneling provides control of alignment, large set-up areas are required. The greatest concern using microtunneling is the presence of obstructions such as cobbles and debris. Typically a 36-inch microtunnel boring machine is limited to a maximum material size of 9 to 12 inches, depending on the machine.

The weakly cemented and medium dense soils encountered at the site are anticipated to exhibit firm to moderately fast raveling behavior in accordance with the Tunnelman's Ground Classification. Firm to slow raveling is anticipated in the very dense formational cobble silt matrix. And very slow raveling is anticipated in the weathered rock layer. It is likely that oversized microtunneling machines on the order of 6 feet in diameter would be needed due to the power required to advance the machine in the harder formational layer. Bedrock and

conglomerate layers are associated with Mission Valley Formation and Stadium Conglomerate Formation. High blow counts and refusal were noted in exploratory borings. Due to the size of the sampling equipment and the drilling methods, it was not possible to determine the maximum size of the materials (gravel, cobbles or debris) encountered. Additional subsurface exploration may be performed at this location to characterize the materials maximum size within the pipeline alignment. Tunneling equipment should be designed for the anticipated site conditions.

8.6.2. Horizontal Directional Drilling

Horizontal directional drilling (HDD) methods involve steerable tunneling systems for installation of small- and large-diameter pipelines. In most cases, it is a two stage process. The first stage consists of drilling a small diameter pilot hole along the desired centerline of the proposed line. The second stage consists of enlarging the pilot hole to the desired diameter and pulling the utility line through the enlarged hole. This method allows to track the location of the drill bit and steer it during the drilling process. The result is greater degree of precision in placing utilities. Since HDD does not require shafts to advance the bore, it requires a long laydown area as the pipe to be pulled into the bore hole must be laid out its full length prior to installation. Since pressurized drilling fluids are present within the bore hole, care must be taken to avoid inadvertent fluid releases to the surface during drilling. The entry and exit angles for HDD bore should be between about 8 and 12 degrees from the horizontal. The minimum bending radius for the pipe (in feet) should be about 100 times the diameter of the pipe (in inches). Based on our subsurface exploration, the site is underlain by dense to very dense sandy gravel/cobble matrix with some clay, therefore HDD installation using HDPE pipe may be considered as an alternative to PVC pipe.

8.6.3. Jack and Bore or Auger Boring

The jack and bore (also known as auger boring) method uses a rotating cutting head to create a borehole from a drive shaft to a reception shaft. The most common type of jack and bore used for pipe installation is the track system. Spoils are transported back to the drive shaft by the auger rotating inside a casing that is being jacked in place during augering. Hydraulic jacks at the boring machine are used to advance the casing. A properly constructed drive shaft is important for the success of a track type auger boring project. The shaft requires a stable foundation and an adequate thrust block. The thrust block transmits the horizontal jacking forces from the tracks to the ground at the rear drive shaft. It must be designed to distribute the jacking force over sufficient area so that the allowable compressive strength of the soil is not exceeded. The typical pipe material is steel because the pipe must resist abrasion caused by the rotating augers, although concrete pipe may also be used designed for jack and bore method. Pipes with a diameter of 8 to 60 inch and drive lengths of 40 up to 500 feet can be used. This method is unguided and thus provides very limited tracking. This techniques has limited steering ability, which can affect the line and grade accuracy. Jack and bore should not be used below the groundwater table, in running sands, or in soils with large boulders. Another drawback associated with this method is surface subsidence and heaving during construction. Subsidence occurs when over-excavation is permitted, and heaving occurs when excessive force is applied to the excavation force. Considering all these disadvantages Twining does not recommend Jack and Bore as a method for trenchless installation.

8.6.4. Pipe Bursting

Pipe bursting is a trenchless replacement method in which an existing pipe is broken, either by brittle fracturing or by splitting, when applying a force with a bursting tool. Simultaneously during breaking of the existing pipe, the fractured pipe pieces are pushed aside and a new pipe of the same or larger diameter is pulled or jacked in, replacing the previous pipe. The most favorable soil conditions for pipe bursting are where the surrounding materials can be displaced by the bursting operation. Dense and/or rocky materials will increase the force required for the bursting operation as well as the stresses on the new pipe.

Pipe bursting will be used to install approximately 285 feet of sewer pipe to replace the existing 10-inch pipe with invert depths of about 7 to 22 feet below the existing grade. The International Pipe Bursting Association (IPBA) classifies pipe bursting installations based on the complexity involved according to the burst length, pipe depth, existing pipe diameter and the upsize (IPBA, 2012). The IPBA Pipe Bursting Classification is presented in Table 2.

Table 2
IPBA Pipe Bursting Classification

IPBA Classification	Degree of Difficulty	Pipe Depth (feet)	Existing Pipe ID (inches)	New Pipe Diameter Compared to Existing Pipe	Burst Length (feet)
A	Minimal	<12	2 – 12	Size on Size	0 – 350
B	Moderate	>12 to <18	12 – 18	Single Upsize	350 – 500
C	Comprehensive (Difficult to Extremely Difficult)	>18	20 – 36	Double/Triple Upsize	200 – 1,000

The proposed sewer line replacements (10- to 15-inch) is considered a double upsize. Accordingly, based on the expected depths, soil conditions and proposed size, the degree of difficulty during installation is classified as Moderate to Comprehensive for the depths less than 18 feet and triple upsize sections (B to C). Given the proposed upsizing and the length of the reaches, the use of pneumatic equipment and lubricants will likely be necessary during installation. Even with an experienced contractor, there is a risk of ground heave or refusal of the bursting tools.

Prior to the replacement procedures, the conditions of the existing pipe should be investigated. A video inspection of the existing pipe should be performed to identify the location of laterals and to quantify the presence of defects in the existing pipeline. In addition, the as-built drawings and maintenance records should be reviewed for details which would not be visible during the video inspection. The condition of the existing pipe trench backfill is unknown at this time. We recommend that documentation of the existing pipe installation be obtained.

Loading conditions during installation and service loads should be determined. The pipe thickness should be determined based on the most conservative loading condition. A minimum safety factor of 2 is recommended for installation loading conditions.

8.6.5. Trenchless Installation Recommendations

We recommend that trenchless pipe installation for this project be performed by contractors with experience in similar projects using installation methods and equipment compatible with local soil conditions. The risk of impacting adjacent structures, utilities, ground heave, vibrations, settlement and refusal of the excavation tools should be considered. Surface settlements are anticipated to be greater where pipe installations occur at shallower depths. Monitoring of surface settlement should be provided during installation. Even though significant settlement is not anticipated, mitigation measures may be required if surface settlement exceeds 1/2-inch. The estimated load on 18-inch pipelines installed at depths ranging from 7 to 26 feet is 170 pounds per linear feet based on Marston's formula. Loads for different pipe sizes and depths would need to be evaluated.

8.7. Open Cut Installation

Twining understands that the City wants to install the proposed pipelines by means of trenchless installation system. Due to subsurface conditions present on the site, Twining is also providing the open cut installation recommendation in case of deviation from the original proposal. Trenching and excavation should be performed in accordance with CalOSHA guidelines. Recommendations for temporary excavations were presented in sections 8.4 and 8.5 of this report.

8.7.1. Installation Recommendations

We recommend that pipe installation for this project be performed by contractors with experience in similar projects and local soil conditions. Due to existing improvements in the areas surrounding the proposed alignments and subsurface conditions, difficulties during installation may occur. The excavation and pipeline installation methods and equipment used should be compatible with the project requirements and anticipated subsurface conditions. The effects of excavation of formational materials on adjacent structures and utilities due to vibrations and settlement should be considered.

8.7.2. Difficult Rippability

Bedrock encountered along the pipeline alignment predominantly includes dense to very dense, to locally cemented gravel and cobble conglomerates, with a sandy matrix. The majority of bedrock (conglomerate) formations are anticipated to be rippable to marginally rippable but will likely contain isolated cemented zones that are very hard and difficult to excavate. Several cemented conglomerate zones were observed near the alignment.

8.7.3. Pipeline Loads

The loads imposed by backfill soils on the buried pipelines may be determined using the Marston-Spangler equation:

$$W_c = C_d w B_d$$

where, W_c = load, in pounds per foot
 C_d = Marston load coefficient, defined as:

$$C_d = \frac{1 - e^{-2K\mu' \frac{H}{B_d}}}{2K\mu'}$$

w = density of backfill materials, in pounds per cubic foot
 B_d = width of the trench at top of pipe, in feet

B_c = outside width of flexible pipe, in feet

The Martson-Spangler load factors recommended for this project are presented in Table 4. The resulting loads are applicable for project design provided that pipe installation, trench dimensions, placement and compaction of trench backfill materials are performed in accordance with City of San Diego standard plans and specifications and Section 306 of the Standard Specifications for Public Works Construction (SSPWC - Greenbook).

Table 3
Marston-Spangler Load Factors

Unit Weight of Backfill	Coefficient of Friction (μ')	Rankine's Ratio (K)	Maximum $K\mu'$
132 pcf	0.35	0.33	0.165

8.7.4. Monitoring

Buildings, structures, sidewalks, pavements and other improvements that are adjacent to the proposed sewer alignment should be surveyed and photographed prior to excavation. Pre- and post-construction video-documentation should be conducted in adjacent storm and sanitary sewer systems. The initial relative positions and elevations of adjacent improvements should be recorded.

An appropriate number of survey points should be provided by a licensed surveyor so that the Project Engineer may formulate a professional opinion regarding movement. Survey points should be monitored once each week until the installation and backfilling is completed. Additional surveying may be required by the Project Engineer. Visual observations of the excavation and adjacent areas should be made on a daily basis by Twining during installation of the pipeline.

8.7.5. Trench Bottoms

At locations where the trench bottom is yielding or otherwise unstable, pipe support may be improved by placing 12 inches of $\frac{3}{4}$ -inch crushed rock as defined in SSPWC Section 200-1.2. Remedial earthwork at the trench bottom should be performed where oversize materials (rocks or clods greater than 3 inches) are present. Removal of oversize materials to a depth of 6 inches below the bottom of the pipeline and replacement with fill compacted to at least 90% relative compaction is recommended. Alternatively, $\frac{3}{4}$ -inch crushed rock may be used.

8.7.6. Trench Backfill

Pipe trench backfill should conform to the recommendations presented in this report, City of San Diego standard plans and specifications, and SSPWC Section 306.

8.8. Lateral Pressures for Thrust Blocks

Thrust restraint for buried pipelines may be achieved by transferring the thrust force to the soil outside the pipe through a thrust block. Thrust blocks should be backfilled with granular backfill material, compacted as outlined in this report. Thrust blocks may be designed using lateral passive earth pressure according to the equation presented below:

$$P_p = 150 (D^2 - d^2) \text{ lb/ft}$$

where, P_p is the passive soil resistance per foot of width
 d is the depth to the top of the thrust block
 D is the depth to the bottom of the thrust block.

8.9. Retaining Wall Recommendations

It is our understanding that manhole vaults are proposed at certain locations. The retaining walls of the vaults can be designed using the following geotechnical parameters.

8.9.1. Static Lateral Earth Pressure

Cantilevered and restrained retaining walls should be designed to resist the lateral earth pressure distributions as shown below in Diagram 1.

The values presented below assume that the supported grade is level and that surcharge loads are not applied. Any surcharge (live, including traffic, or dead load) located within a 1:1 plane projected upward from the base of the wall, including adjacent structures, should be added to the lateral earth pressures.

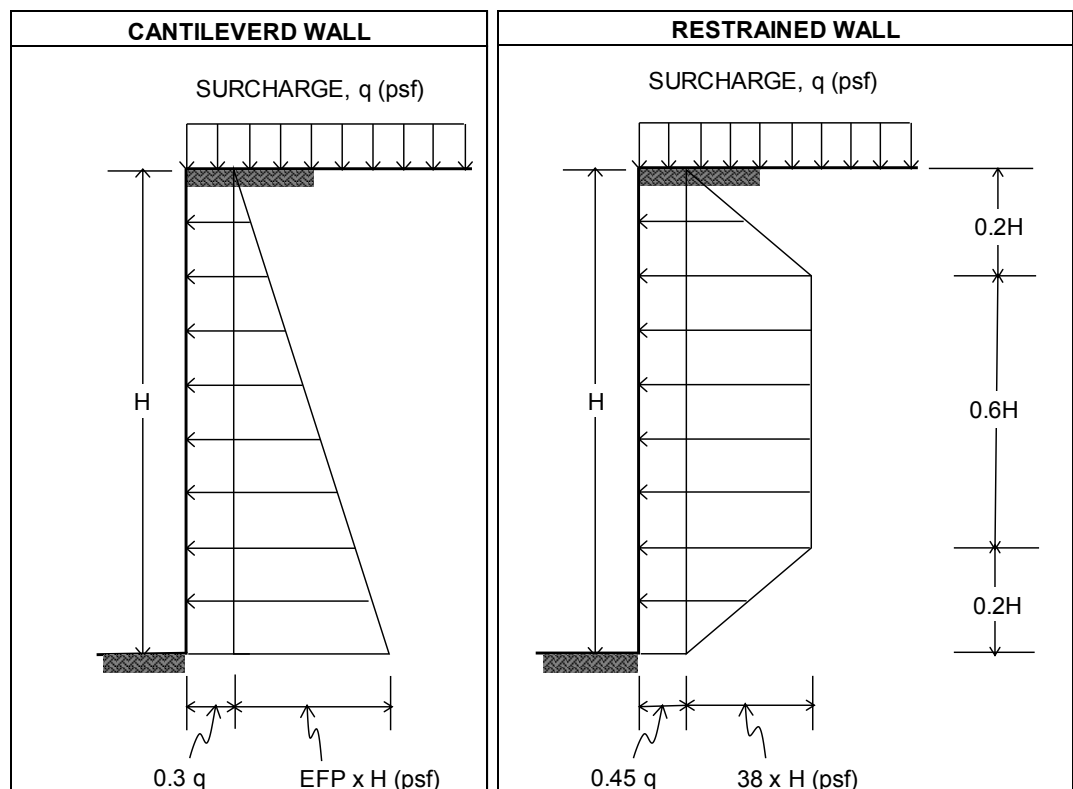


Diagram 1 – Static Earth Pressure Distribution for Retaining Walls

8.9.2. Seismic Lateral Earth Pressure

Retaining walls greater than 6 feet in height should be designed for seismic earth pressures. However, because the manhole walls are expected to be the same height, walls designed

with the static pressure (that is derived from at-rest pressure) recommended in this report is sufficient to resist the earthquake seismic pressure based on a technical paper entitled “Seismic Earth Pressures on Deep Building Basements” (Lew et. al., 2010).

8.10. Pavement Reconstruction

Trench excavations in existing streets or paved areas will involve replacement of pavement sections at the completion of work. In general, pavement repair should conform to the material thicknesses and compaction requirements of the adjacent pavement section. Subgrade and aggregate base materials should be compacted to 95 percent relative compaction as evaluated using ASTM D1557. Asphalt concrete (AC) should be compacted to 95 percent relative compaction as evaluated using ASTM D1561 (Hveem density). Pavement reconstruction should conform to City of San Diego requirements.

8.11. Corrosivity

Laboratory testing was performed on representative soils samples to evaluate soil pH, electrical resistivity, water-soluble chloride content, and water-soluble sulfate content. The pH values of the tested samples ranged from 6.9 to 7.0. Electrical resistivity values ranged from 890 to 1,020 ohm-centimeters. Chloride content ranged from 106 to 138 parts per million (ppm). Sulfate content ranged from 20 to 32 ppm. Additional details and laboratory test results are presented in Appendix B.

Based on Caltrans (2015) corrosion criteria, a site is considered corrosive if one or more of the following conditions exist at the site: chloride concentrations of 500 ppm or greater, sulfate concentration of 2,000 ppm or greater, or pH of 5.5 or less. Based on the laboratory test results and Caltrans Corrosion Guidelines, the site is considered non-corrosive. It is anticipated that the proposed pipes for the project will not be affected by corrosion. We recommend that a corrosion engineer be consulted for corrosion protection recommendations for the project.

8.12. Buried Metal

A factor for evaluating corrosivity to buried metal is electrical resistivity. The electrical resistivity of a soil is a measure of resistance to electrical current. Corrosion of buried metal is directly proportional to the flow of electrical current from the metal into the soil. As resistivity of the soil decreases, the corrosivity generally increases. The samples tested resulted in electrical resistivity values ranging from 890 to 1,020 ohm-centimeters.

Correlations between resistivity and corrosion potential (NACE, 1984) indicate that the soils have a moderate to corrosive potential to buried metals. As such, corrosion protection for metal in contact with site soils should be considered. Corrosion protection may include the use of epoxy or asphalt coatings.

8.13. Concrete Placement

Concrete in contact with soil or water that contains high concentrations of soluble sulfates can be subject to chemical deterioration. Laboratory testing indicated maximum sulfate content of 32 ppm in the samples tested. According to American Concrete Institute (ACI) 318, the potential for sulfate attack is negligible for water-soluble sulfate contents in soil less than 0.10 percent by weight (i.e., less than 150 ppm). Therefore, the site earth materials may be considered to have negligible potential for sulfate attack. Due to the potential for variability of soils, we recommend using Type II/V cement for concrete structures in contact with soil, and a water-cement ratio of no more than 0.45.

9. DESIGN REVIEW AND CONSTRUCTION MONITORING

Geotechnical review of plans and specifications is of paramount importance in engineering practice. The poor performance of many structures has been attributed to inadequate geotechnical review of construction documents. Additionally, observation and testing of the earthwork procedures will be important to the performance of the proposed development. The following sections present our recommendations relative to the review of construction documents and the monitoring of construction activities.

9.1. Plans and Specifications

Project plans and specifications should be reviewed by Twining, Inc. prior to bidding and construction, as the geotechnical recommendations may need to be reevaluated in the light of the actual design configuration and loads. This review is necessary to evaluate whether the recommendations contained in this report and future reports have been properly incorporated into the project plans and specifications. Based on the work already performed, this office is best qualified to provide such review.

9.2. Construction Monitoring

Site preparation, removal of unsuitable soils, assessment of imported fill materials, fill placement, and other site grading operations should be observed and tested, as appropriate. The substrata exposed during construction may differ from that encountered in the exploratory excavations. Continuous observation by a representative of Twining, Inc. during construction allows for evaluation of the soil conditions as they are encountered, and allows the opportunity to recommend appropriate revisions where necessary.

10. LIMITATIONS

The recommendations and opinions expressed in this report are based on Twining, Inc.'s review of readily available background documents, on information obtained from field explorations, and on laboratory testing. In the event that any of our recommendations conflict with recommendations provided by other design professionals, we should be contacted to aid in resolving the discrepancy.

Due to the limited nature of our field explorations, conditions not observed and described in this report may be present on the site. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation and laboratory testing can be performed upon request. It should be understood that conditions different from those anticipated in this report may be encountered during grading operations (for example, the extent of removal of unsuitable soil) and that additional effort may be required to mitigate them.

Site conditions, including but not limited to groundwater elevation, can change with time as a result of natural processes or the activities of man at the subject site or at nearby sites. Changes to the applicable laws, regulations, codes, and standards of practice may occur as a result of government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Twining, Inc. has no control.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Twining, Inc. should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

This report has been prepared for the exclusive use by the City of San Diego and its agents for specific application to the proposed project. Land use, site conditions, or other factors may change over time, and additional work may be required with the passage of time. Based on the intended use of this report and the nature of the project, Twining, Inc. may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Twining, Inc. from all liability resulting from the use of this report by any unauthorized party.

Twining, Inc. has endeavored to perform its evaluation using the degree of care and skill ordinarily exercised under similar circumstances by reputable geotechnical professionals with experience in this area under similar circumstances. No other warranty, either expressed or implied, is made as to the conclusions and recommendations contained in this report.

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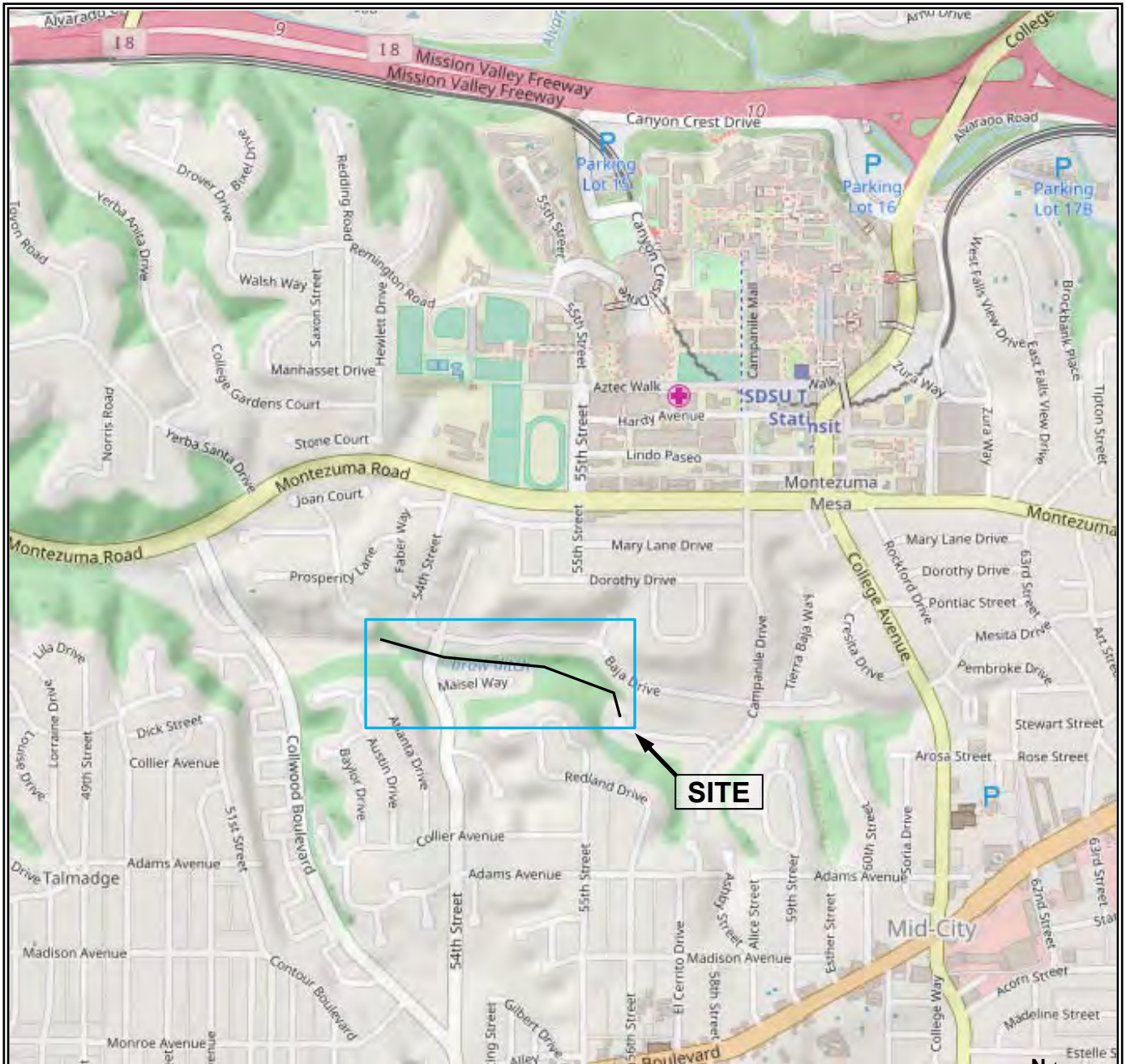
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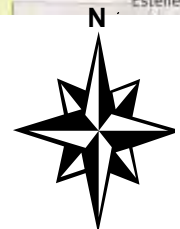
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FIGURES



LEGEND

— PIPE ALIGNMENT



SCALE 1" = 1200'

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

SOURCE: OPEN STREET MAP, 2016.



PROJECT LOCATION MAP

15GT14 - COLLEGE AREA SEWER & AC WATER MAIN
REPLACEMENT
54TH STREET AND CAMPANILE WAY,
SAN DIEGO, CALIFORNIA


REPORT DATE:
FEB 2018

PROJECT NO.:
180004.2

FIGURE 1



LEGEND

 **B-1** APPROXIMATE BORING LOCATION
 TD=5.5' TD= TERMINATION DEPTH IN FEET



SCALE 1" = 250'

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: GOOGLE MAPS (2017)



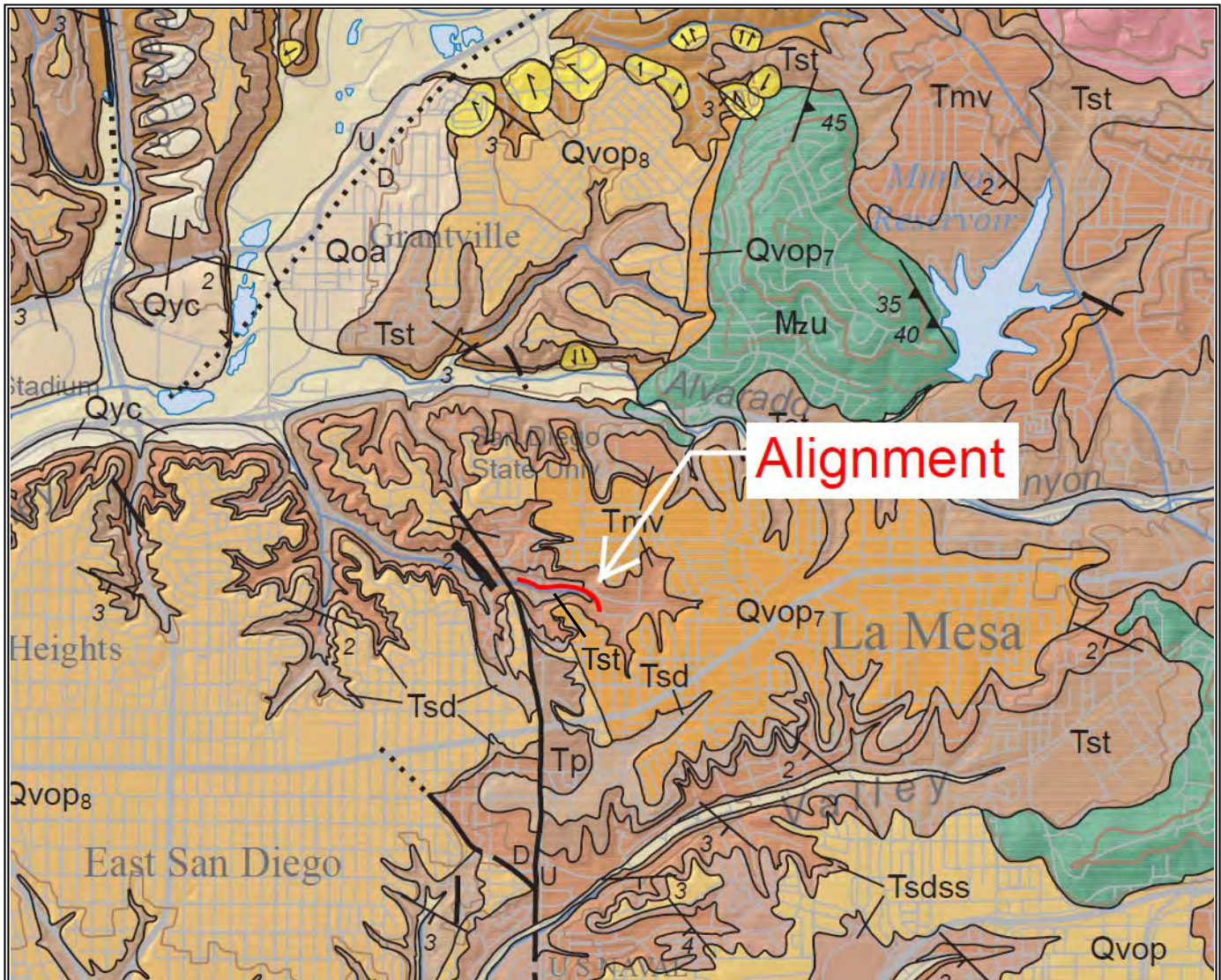
EXPLORATION LOCATION MAP

15GT14 - COLLEGE AREA SEWER & AC WATER MAIN
 REPLACEMENT
 54TH STREET AND CAMPANILE WAY,
 SAN DIEGO, CALIFORNIA

REPORT DATE:
 FEB 2018

PROJECT NO.:
 180004.2

FIGURE 2



Alignment

LEGEND

- Tsd SAN DIEGO FORMATION
- Qoa OLD ALLUVIAL FLOOD PLAIN DEPOSITS
- Qvop₈ VERY OLD PARALIC DEPOSITS (Unit 8)
- Qvop₇ VERY OLD PARALIC DEPOSITS (Unit 7)
- Tst STADIUM CONGLOMERATE
- Tmv MISSION VALLEY FORMATIONS



SCALE 1" = 1,500'

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

SOURCE: GEOLOGIC MAP OF EL CAJON, CALIFORNIA GEOLOGIC SURVEY, 2008.



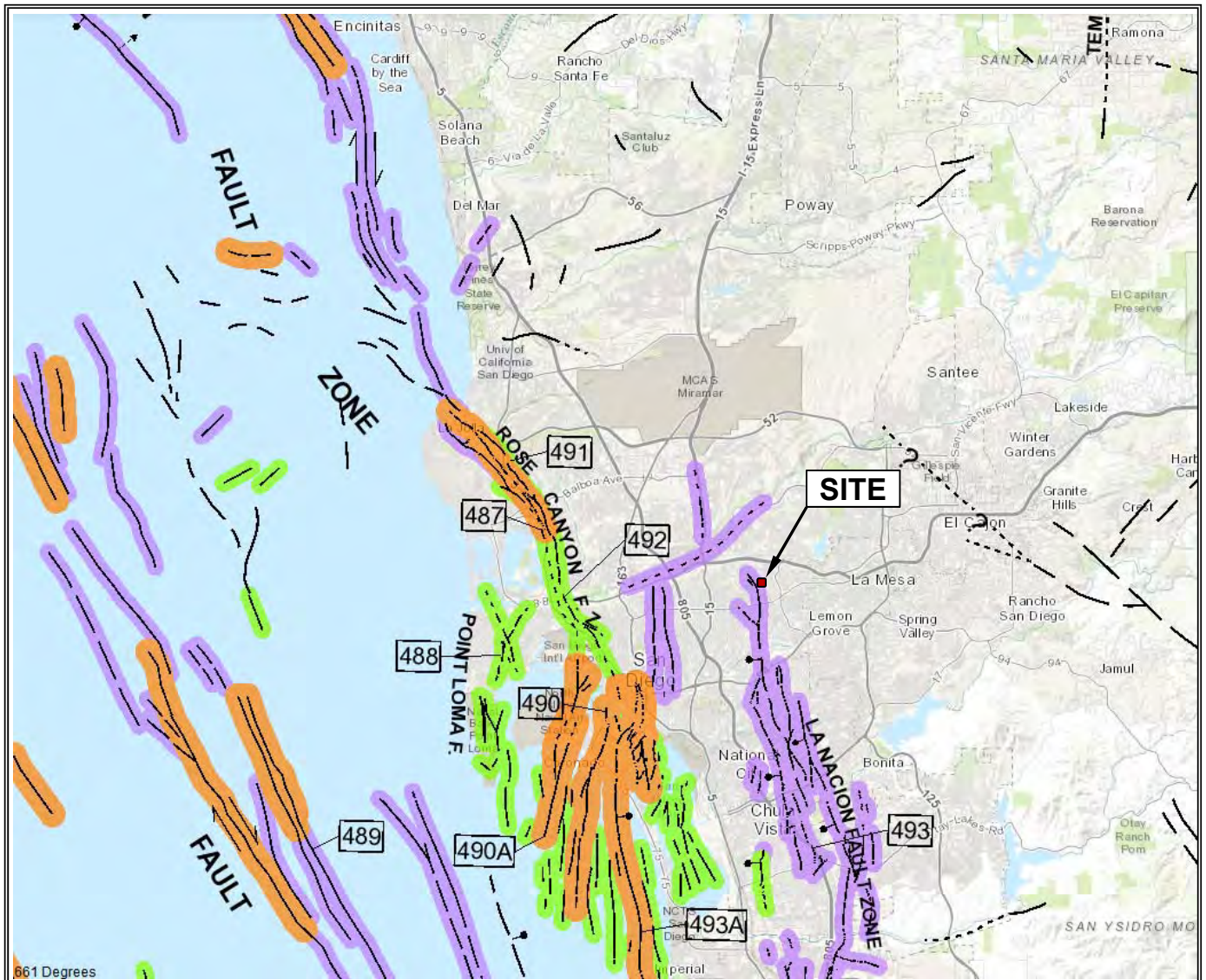
REGIONAL GEOLOGIC MAP

15GT14 - COLLEGE AREA SEWER & AC WATER MAIN REPLACEMENT
54TH STREET AND CAMPANILE WAY,
SAN DIEGO, CALIFORNIA





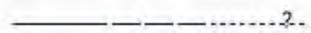
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FEB 2018

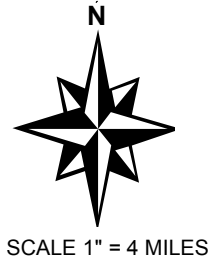
PROJECT NO.:
180004.2

FIGURE 3



LEGEND

-  FAULT ALONG WHICH HISTORIC DISPLACEMENT HAS OCCURRED
-  HOLOCENE FAULT DISPLACEMENT
-  LATE QUATERNARY FAULT DISPLACEMENT
-  QUATERNARY FAULT DISPLACEMENT
-  PRE-QUATERNARY FAULT DISPLACEMENT

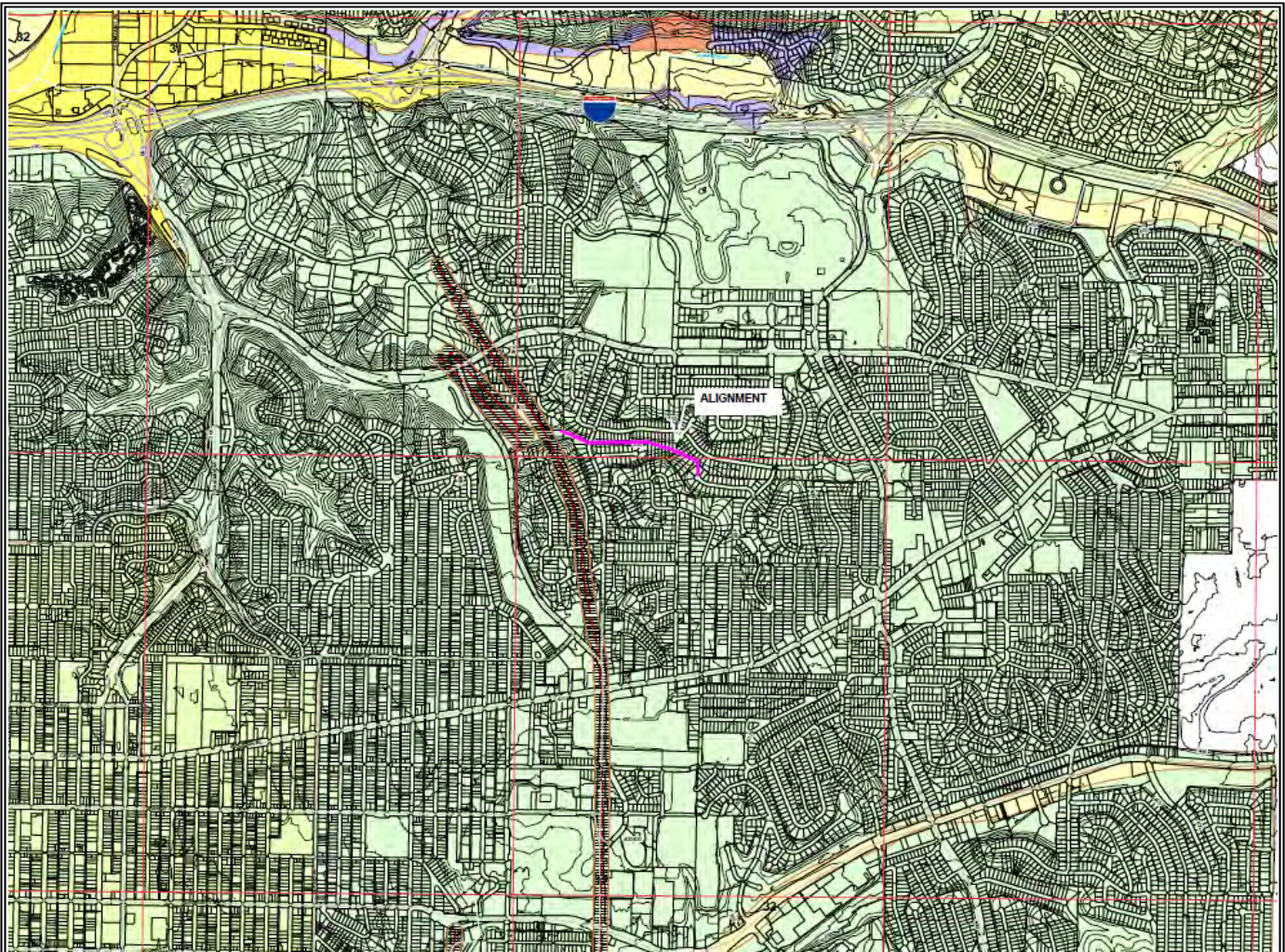


NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: CGS, 2010, FAULT ACTIVITY MAP OF CALIFORNIA (2010)

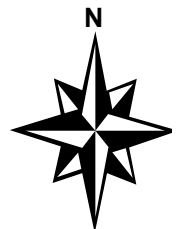


FAULT LOCATION MAP		
15GT14 - COLLEGE AREA SEWER & AC WATER MAIN REPLACEMENT 54 TH STREET AND CAMPANILE WAY, SAN DIEGO, CALIFORNIA		
REPORT DATE: FEB 2018	PROJECT NO.: 180004.2	FIGURE 4



LEGEND

- 51 Level mesas -- underlain by terrace deposits and bedrock nominal risk
- 52 Other level areas, gently sloping to steep terrain, favorable geologic structure, Low risk
- 53 Level or sloping terrain, unfavorable geologic structure, Low to moderate risk
- 54 Steeply sloping terrain, unfavorable or fault controlled geologic structure, Moderate risk
- 55 Modified terrain (graded sites) Nominal risk
- 31 High Potential -- shallow groundwater major drainages, hydraulic fills
- 32 Low Potential -- fluctuating groundwater minor drainages
- 11 Active, Alquist-Priolo Earthquake Fault Zone
- 12 Potentially Active, Inactive, Presumed Inactive, or Activity Unknown
- 13 Downtown special fault zone



SCALE 1" = 1,500'

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: CITY OF SAN DIEGO SEISMIC SAFETY STUDY MAP(2008)



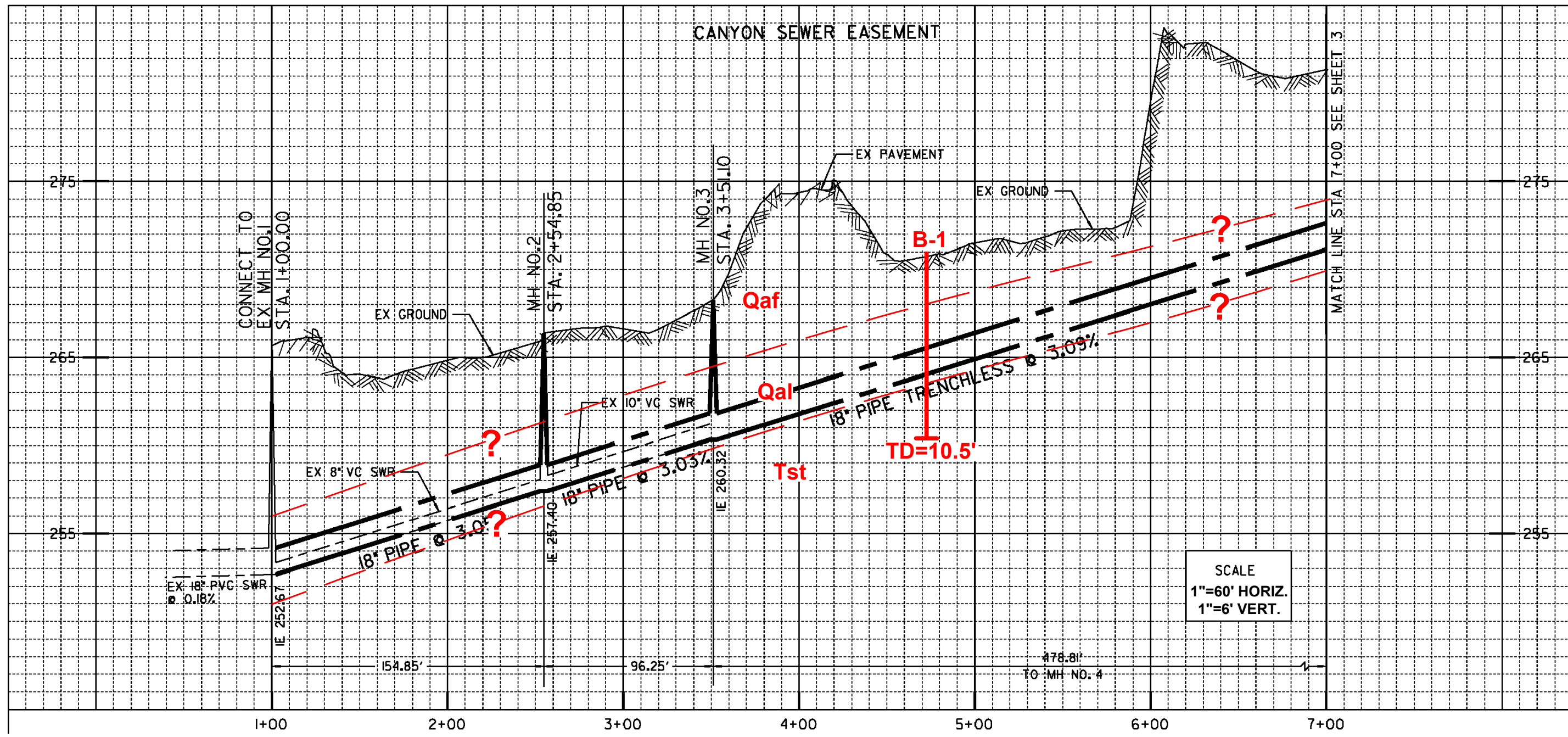
SEISMIC SAFETY MAP

15GT14 - COLLEGE AREA SEWER & AC WATER MAIN REPLACEMENT
54TH STREET AND CAMPANILE WAY,
SAN DIEGO, CALIFORNIA

REPORT DATE:
FEB 2018

PROJECT NO.:
180004.2

FIGURE 5



SCALE
 1"=60' HORIZ.
 1"=6' VERT.

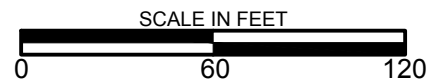
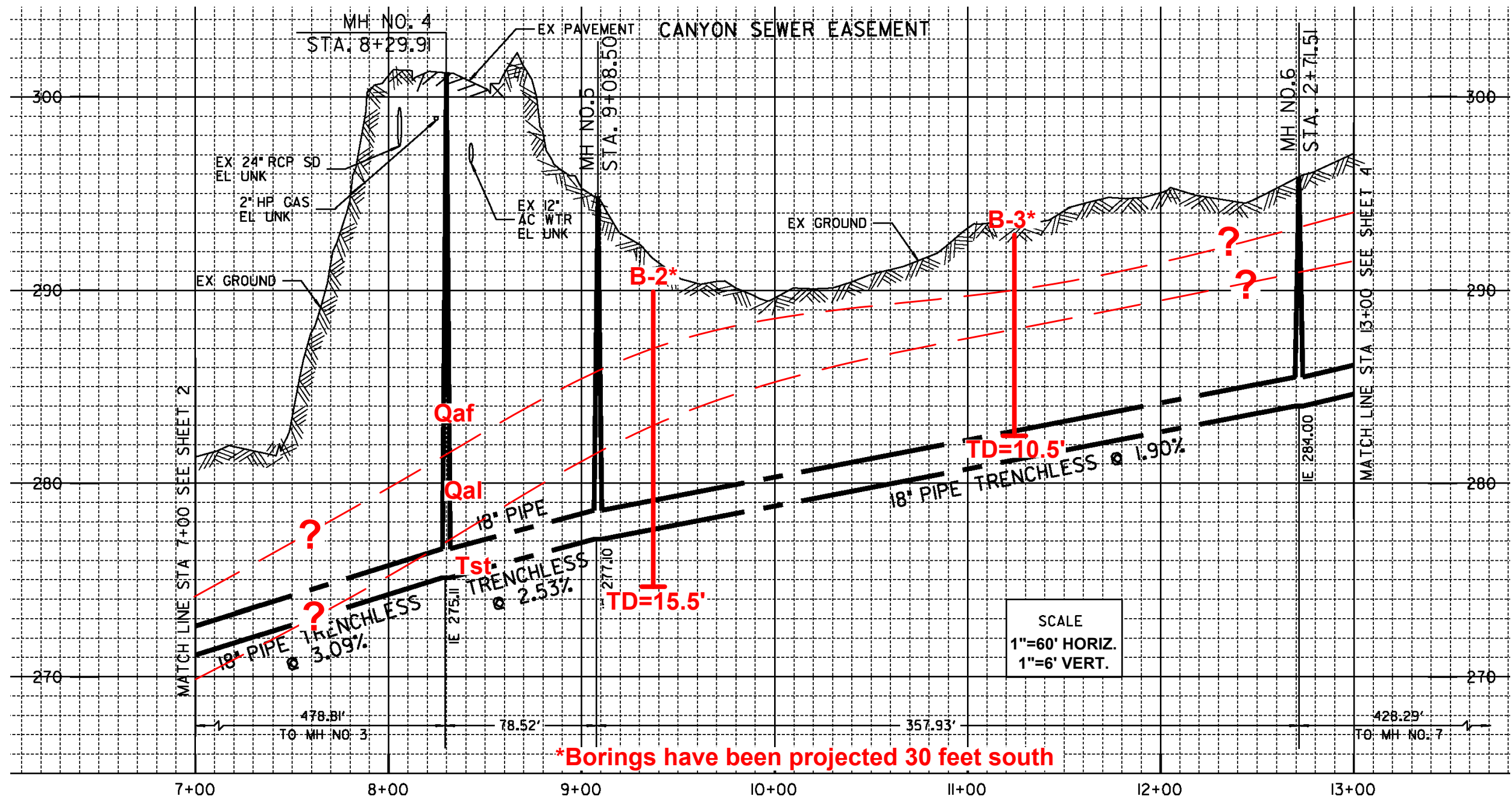


NOTE: All dimensions, locations, and directions are approximate.

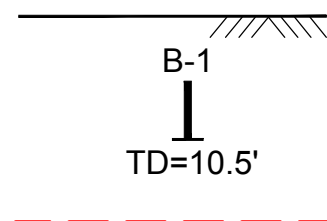


LEGEND	
	EXISTING GRADE
	APPROXIMATE LOCATION OF EXPLORATORY BORING TD = TERMINATION DEPTH IN FEET
	APPROXIMATE GEOLOGIC CONTACT LOCATION (QUERIED WHERE UNCERTAIN)
	ARTIFICIAL FILL
	ALLUVIUM
	STADIUM CONGOLOMERATE

GEOLOGIC CROSS SECTION		
15GT14 - College Area Sewer and Water Main Replacement 54th Street and Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE 6A



NOTE: All dimensions, locations, and directions are approximate.



EXISTING GRADE
 APPROXIMATE LOCATION OF EXPLORATORY BORING
 TD = TERMINATION DEPTH IN FEET
 APPROXIMATE GEOLOGIC CONTACT LOCATION (QUERIED WHERE UNCERTAIN)

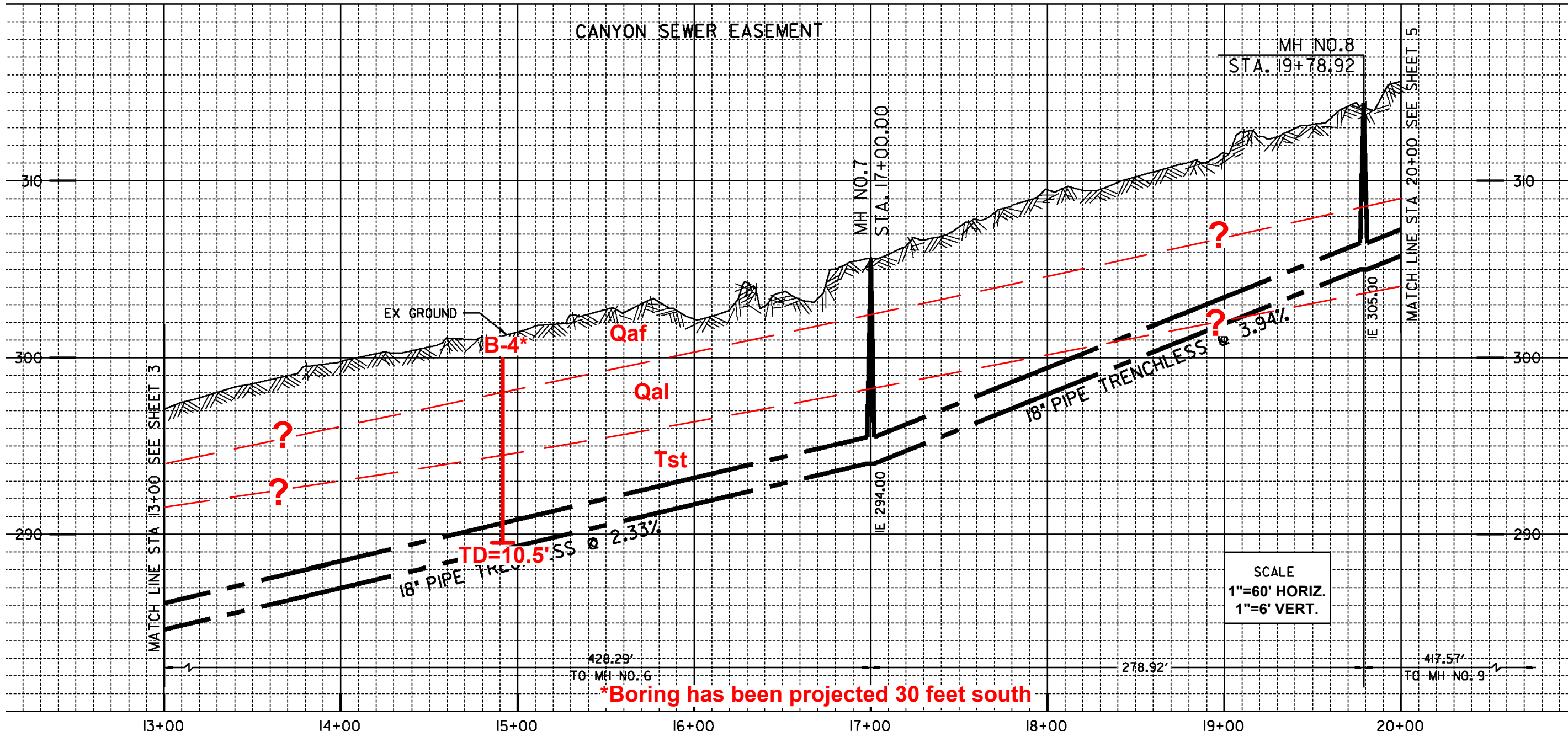
LEGEND

Qaf ARTIFICIAL FILL
 Qal ALLUVIUM
 Tst STADIUM CONGOLOMERATE

GEOLOGIC CROSS SECTION

15GT14 - College Area Sewer and Water Main Replacement
 54th Street and Campanile Way
 San Diego, California

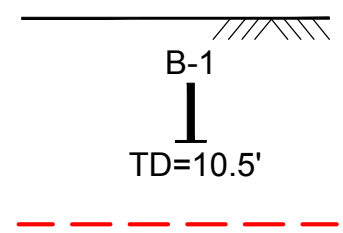
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE 6B
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SCALE
1"=60' HORIZ.
1"=6' VERT.



NOTE: All dimensions, locations, and directions are approximate.



LEGEND

EXISTING GRADE

APPROXIMATE LOCATION OF EXPLORATORY BORING
TD = TERMINATION DEPTH IN FEET

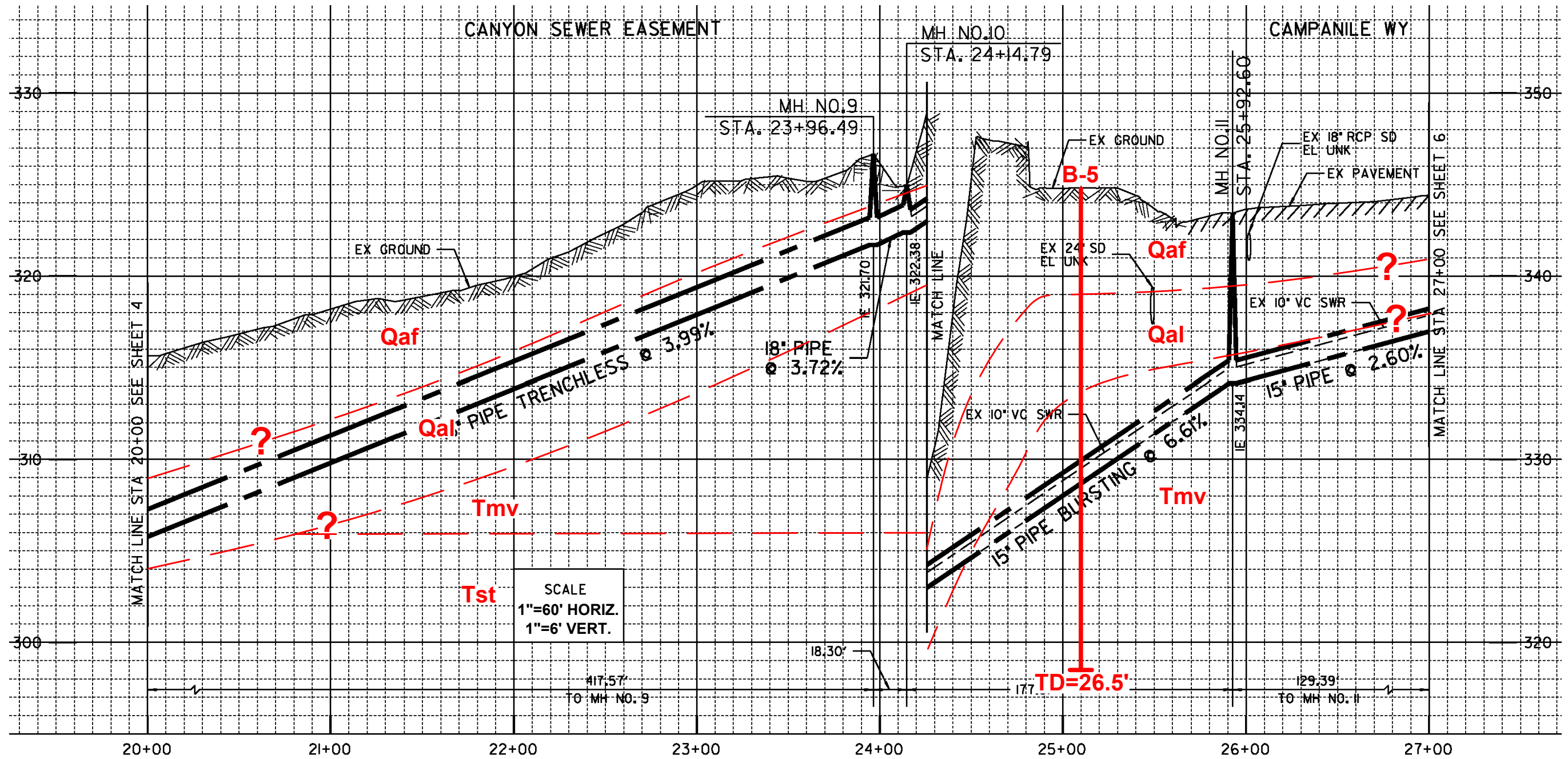
APPROXIMATE GEOLOGIC CONTACT LOCATION
(QUERIED WHERE UNCERTAIN)

Qaf ARTIFICIAL FILL

Qal ALLUVIUM

Tst STADIUM CONGOLOMERATE

GEOLOGIC CROSS SECTION		
15GT14 - College Area Sewer and Water Main Replacement 54th Street and Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE 6C



SCALE
1"=60' HORIZ.
1"=6' VERT.



NOTE: All dimensions, locations, and directions are approximate.



- EXISTING GRADE
 APPROXIMATE LOCATION OF EXPLORATORY BORING
 TD = TERMINATION DEPTH IN FEET
 APPROXIMATE GEOLOGIC CONTACT LOCATION (QUERIED WHERE UNCERTAIN)

LEGEND

- Qaf ARTIFICIAL FILL
- Qal ALLUVIUM
- Tmv MISSION VALLEY FORMATION
- Tst STADIUM CONGLOMERATE

GEOLOGIC CROSS SECTION		
15GT14 - College Area Sewer and Water Main Replacement 54th Street and Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE 6D

APPENDIX A FIELD EXPLORATION

Appendix A Field Exploration

General

The subsurface exploration program for the proposed project included drilling and logging five, 8-inch diameter borings. The borings were advanced using a Unimog truck-mounted hollow-stem-auger drill rig. The borings reached depths of approximately 10.5 feet to 26.5 feet below existing grades.

Drilling and Sampling





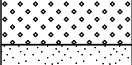




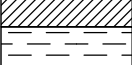



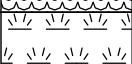

The Boring Logs are presented in Figures A-2 through A-6. An explanation of these logs is presented in Figure A-1. The Boring Logs describe the earth materials encountered, samples obtained, and show the field and laboratory tests performed. The log also shows the boring number, drilling date, and the name of the logger and drilling subcontractor. The borings were logged by a Twining, Inc. engineer using the Unified Soil Classification System. The boundaries between soil types shown on the logs are approximate and the transition between different soil layers may be gradual. Drive and bulk samples of representative earth materials were obtained from the borings.

A California modified sampler was used to obtain drive samples of the soils encountered. This sampler consists of a 3-inch outside diameter (O.D.), 2.4-inch inside diameter (I.D.) split barrel shaft that is driven into the soil a total of 18 inches using a 140-pound, automatic-drop hammer falling approximately 30 inches. The number of blows required to drive the sampler the final 12 inches is presented on the boring logs. The soil was retained in brass rings for laboratory testing. Additional soil from each drive remaining in the cutting shoe was usually discarded after visually classifying the soil.

Disturbed samples were obtained using a Standard Penetration Sampler (SPT). This sampler consists of a 2-inch O.D., 1.4-inch I.D. split barrel shaft that is driven into the soil a total of 18 inches using a 140-pound, automatic-drop hammer falling approximately 30 inches. The number of blows required to drive the sampler the final 12 inches is presented on the boring logs. Soil samples obtained by the SPT were retained in plastic bags.

Bulk samples of the soil cuttings were collected in plastic bags for testing in our laboratory.

UNIFIED SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS <small>MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE</small>	GRAVEL AND GRAVELLY SOILS <small>MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</small>	CLEAN GRAVELS <small>(LITTLE OR NO FINES)</small>		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS <small>MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</small>	CLEAN SANDS <small>(LITTLE OR NO FINES)</small>		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		CLEAN SANDS <small>(LITTLE OR NO FINES)</small>		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		SM	SILTY SANDS, SAND - SILT MIXTURES
		SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS <small>MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE</small>	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
			CH	INORGANIC CLAYS OF HIGH PLASTICITY	
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

COARSE-GRAINED SOILS





Relative Density	SPT (blows/ft)	Relative Density (%)	Consistency	SPT (blows/ft)
Very Loose	<4	0 - 15	Very Soft	<2
Loose	4 - 10	15 - 35	Soft	2 - 4
Medium Dense	10 - 30	35 - 65	Medium Stiff	4 - 8
Dense	30 - 50	65 - 85	Stiff	8 - 15
Very Dense	>50	85 - 100	Very Stiff	15 - 30
			Hard	>30

NOTE: SPT blow counts based on 140 lb. hammer falling 30 inches

FINE-GRAINED SOILS

LABORATORY TESTING ABBREVIATIONS

ATT	Atterberg Limits
C	Consolidation
CORR	Corrosivity Series
DS	Direct Shear
EI	Expansion Index
GS	Grain Size Distribution
K	Permeability
MAX	Moisture/Density (Modified Proctor)
O	Organic Content
RV	Resistance Value
SE	Sand Equivalent
SG	Specific Gravity
TX	Triaxial Compression
UC	Unconfined Compression

Sample Symbol	Sample Type	Description
	SPT	1.4 in. I.D., 2.0 in. O.D. driven sampler
	California Modified	2.4 in. I.D., 3.0 in. O.D. driven sampler
	Bulk	Retrieved from soil cuttings
	Thin-Walled Tube	Pitcher or Shelby Tube



TWINING

EXPLANATION FOR LOG OF BORINGS

15GT14-College Area Sewer and Water Main Replacement
54th Street & Campanile Way
San Diego, California

PROJECT NO.
180004.2

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FIGURE A-1

STANDARD LOG EXPLANATION - 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ - TWINING LABS.GDT - 2/14/18

DATE DRILLED 1/18/2018 LOGGED BY SM **BORING NO.** B-1
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 271 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES		BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
		Bulk	Driven						
								SC	ARTIFICIAL FILL: Clayey SAND, dark brown, wet, medium dense, chunk of clay, cobbles observed in the vicinity of the boring and the south side slope
266	5			50/6"				GP	ALLUVIUM: Sandy GRAVEL, light brown, damp, dense, coarse to medium
261	10			50/0.5"					STADIUM CONGLOMERATE: Sandy GRAVEL Conglomerate, brown, damp, dense, gravel up to 1.5 inch, difficulty in drilling - No recovery, Auger cutting: Sandy GRAVEL, brown, very dense, damp, with clayey sand matrix, Extreme difficulty in drilling, grinding with lose of auger bit, Practical refusal at 10'6" after three attempts. Total Depth = 10.5 feet Backfilled on 1/18/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.
256	15								
251	20								
246	25								
241	30								

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ, TWINING LABS.GDT, 2/23/18



LOG OF BORING

15GT14-College Area Sewer and Water Main Replacement
54th Street & Campanile Way
San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 2
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DATE DRILLED 1/18/2018 LOGGED BY SM **BORING NO.** B-2
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 290 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES		BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
		Bulk	Driven						
								SP	ARTIFICIAL FILL: Gravelly SAND, brown, damp, loose to dense, gravel upto 2", difficulty in drilling
				9				GP	ALLUVIUM: Sandy GRAVEL, light brown, damp, loose, gravel up to 1"
285	5								
280	10			50/6"	5.9	140.1			STADIUM CONGLOMERATE: Sandy GRAVEL Conglomerate, grayish brown, damp, dense, gravel up to 1.25" Sandy GRAVEL, grayish brown, damp, dense, gravel up to 2"
275	15			50/6"					- light brown, very dense, abundant gravel and cobble, weathered
									Total Depth = 15.5 feet Backfilled on 1/18/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.
270	20								
265	25								
260	30								

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/23/18



LOG OF BORING

15GT14-College Area Sewer and Water Main Replacement
 54th Street & Campanile Way
 San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 3
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DATE DRILLED 1/18/2018 LOGGED BY SM **BORING NO.** B-3
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 293 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES		BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
		Bulk	Driven						
								SM	<u>ARTIFICIAL FILL:</u> Clayey SAND, dark brown, moist, loose
								SC	<u>ALLUVIUM:</u> Clayey SAND, brown, moist, medium dense
288	5			50/1.5"				GM	<u>STADIUM CONGLOMERATE:</u> Silty GRAVEL Conglomerate, reddish brown, damp, very dense, extreme difficulty in drilling
283	10			50/6"				GP	Sandy GRAVEL, brown, damp, very dense, extreme difficulty in drilling Total Depth = 10.5 feet Backfilled on 1/18/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.
278	15								
273	20								
268	25								
263	30								

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ, TWINING LABS.GDT, 2/23/18





LOG OF BORING

15GT14-College Area Sewer and Water Main Replacement
 54th Street & Campanile Way
 San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 4
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DATE DRILLED 1/25/2018 LOGGED BY SM **BORING NO.** B-4
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 300 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES		BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
		Bulk	Driven						
								GW-GM	<u>ARTIFICIAL FILL:</u> Sandy GRAVEL, dark brown, moist, medium dense, cobble up to 4"
								SM	<u>ALLUVIUM:</u> Silty SAND, dark brown, moist, dense,
295	5			43					<u>STADIUM CONGLOMERATE:</u> Sandy GRAVEL Conglomerate, tan, moist, dense, gravel upto 1.75" , fractured face gravel indicating presence of large size cobble
290	10			50/5.5"					-- same, Practical refusal depth at 10.5' depth after 3 attempts of drilling Total Depth = 10.5 feet Backfilled on 1/25/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.
285	15								
280	20								
275	25								
270	30								

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/23/18



LOG OF BORING
 15GT14-College Area Sewer and Water Main Replacement
 54th Street & Campanile Way
 San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 5
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DATE DRILLED 1/25/2018 LOGGED BY SM **BORING NO.** B-5
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA/Air Rotary DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 345 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES		BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
		Bulk	Driven						
340	5			8				SM	<u>ASPHALT:</u> <u>ARTIFICIAL FILL:</u> Silty SAND, dark brown, damp, loose, with some clay chunk
335	10							SM GP	<u>ALLUVIUM:</u> Silty SAND, brown, damp, loose, Sandy GRAVEL, yellowish brown, damp, dense, difficult drilling on cobble at 7' and Air rotary drilling introduced, speed of advancement was 3-5 sec / ft at the 7' - 10' interval
330	15			73/7"				GP	- increasing size of gravel (possibly cobble), speed of advancement was 5 - 10 sec / ft at the 10' -15 interval.
325	20								<u>MISSION VALLEY FORMATION:</u> Sandy GRAVEL, tan, damp, very dense - No recovery (Mod Cal Sampler), same, increasing size of gravel (possibly cobble - fractured face gravel), speed of advancement was 8 - 11 sec / ft at the 15' - 20' interval. -speed of advancement was 10 - 13 sec / ft at the interval of 20' - 25'
320	25			21					-moist, sampler driven in cuttings at bottom
315	30								Total Depth = 26.5 feet Backfilled on 1/25/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/23/18



LOG OF BORING

15GT14-College Area Sewer and Water Main Replacement
 54th Street & Campanile Way
 San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 6
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APPENDIX B LABORATORY TESTING

Appendix B Laboratory Testing

Laboratory Moisture Content and Density Tests

The moisture content and dry density of selected driven samples obtained from the exploratory borings was evaluated in general accordance with the latest version of ASTM D2937. The test results are presented on the logs of the exploratory borings in Appendix A and also summarized in Table B-1.

**Table B-1
Laboratory Moisture Content and Dry Density**

Boring No.	Depth (feet)	Moisture Content (%)	Dry Unit Weight (pcf)
B-2	10	5.9	140.1

Atterberg Limits

Atterberg limits tests were performed on selected soil samples to evaluate plasticity characteristics and to aid in the classification of the soil. The tests were performed in general accordance with ASTM D4318. The results are presented in Figure B-1.

Maximum Dry Density and Optimum Moisture Content

A Standard Proctor test was performed on two samples of near-surface soils to determine the maximum dry density and optimum water content for compaction. The tests were performed in accordance with ASTM D 1557. The results have been presented in Figure B-11.

Sieve Analyses

The grain-size distribution of selected soil samples was evaluated in general accordance with ASTM C136/C117. Test results are presented on Figures B-2 through B-10.

Corrosivity

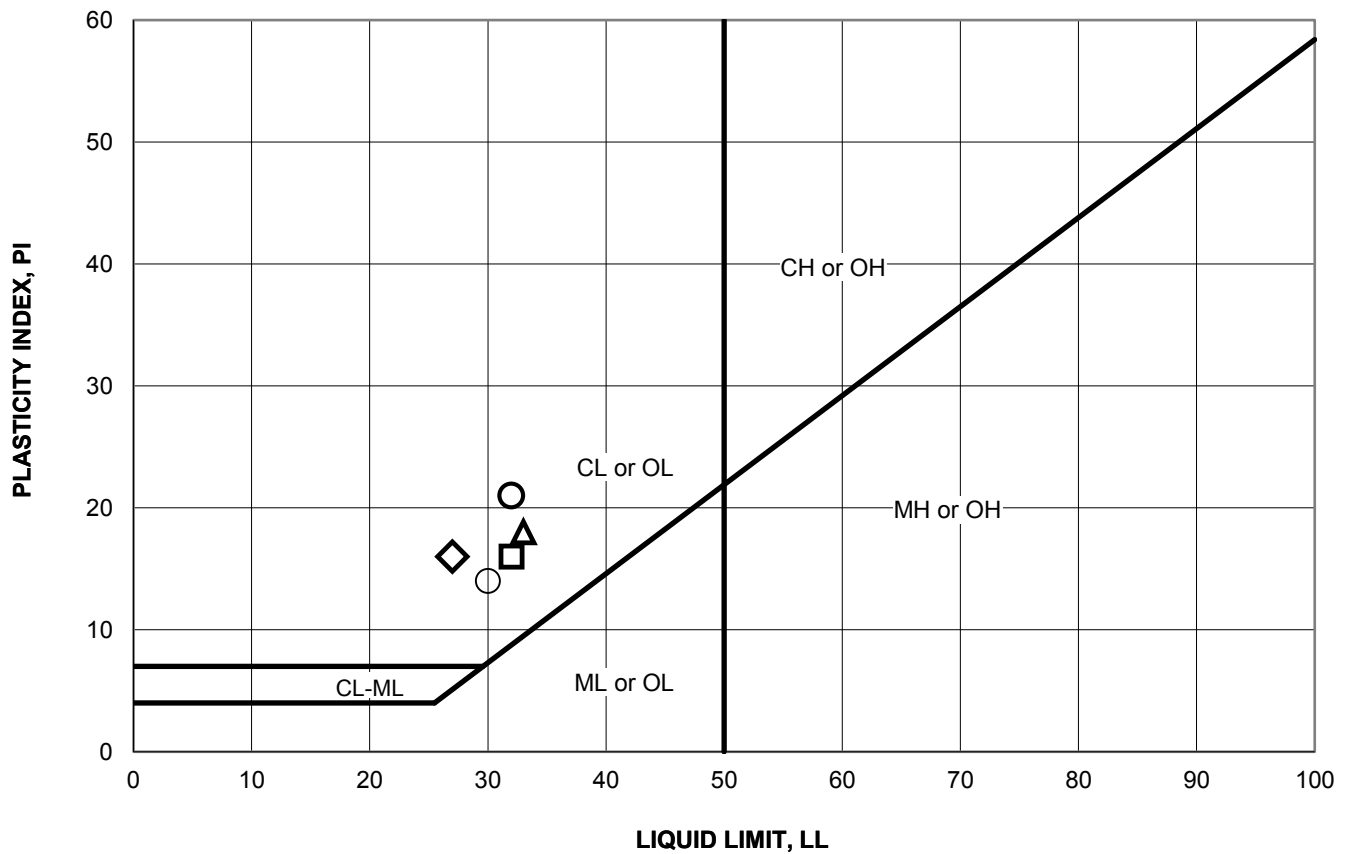
Soil pH and resistivity tests were performed on a representative soil samples in accordance with California Test Method 643. Chloride content of the selected samples was evaluated in accordance with California Test Method 422. Sulfate content of the selected samples was evaluated in accordance with California Test Method 417. The tests were performed by AP Engineering and Testing. Test results are presented on Table B-2.

**Table B-2
Corrosivity Test Results**

Boring No.	Depth (feet)	pH	Water Soluble Sulfate (ppm)	Water Soluble Chloride (ppm)	Minimum Resistivity (ohm-cm)
B-1	10.0'	6.9	20	106	890
B-2	10.0'	7.0	32	138	1,020

SYMBOL	SAMPLE LOCATION	SAMPLE DEPTH (FT)	LIQUID LIMIT, LL	PLASTIC LIMIT, PL	PLASTICITY INDEX, PI	USCS (% Finer than No. 40)	USCS (Entire Sample)
▲	B-1	0-5'	33	15	18	CL	SC
□	B-2	0-5'	32	16	16	CL	SG
○	B-3	0-5'	32	11	21	CL	SC
◇	B-3	5'	27	11	16	CL	GM
⬡	B-5	0-5'	30	16	14	CL	SC

NP - INDICATES NON-PLASTIC



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318



ATTERBERG LIMITS

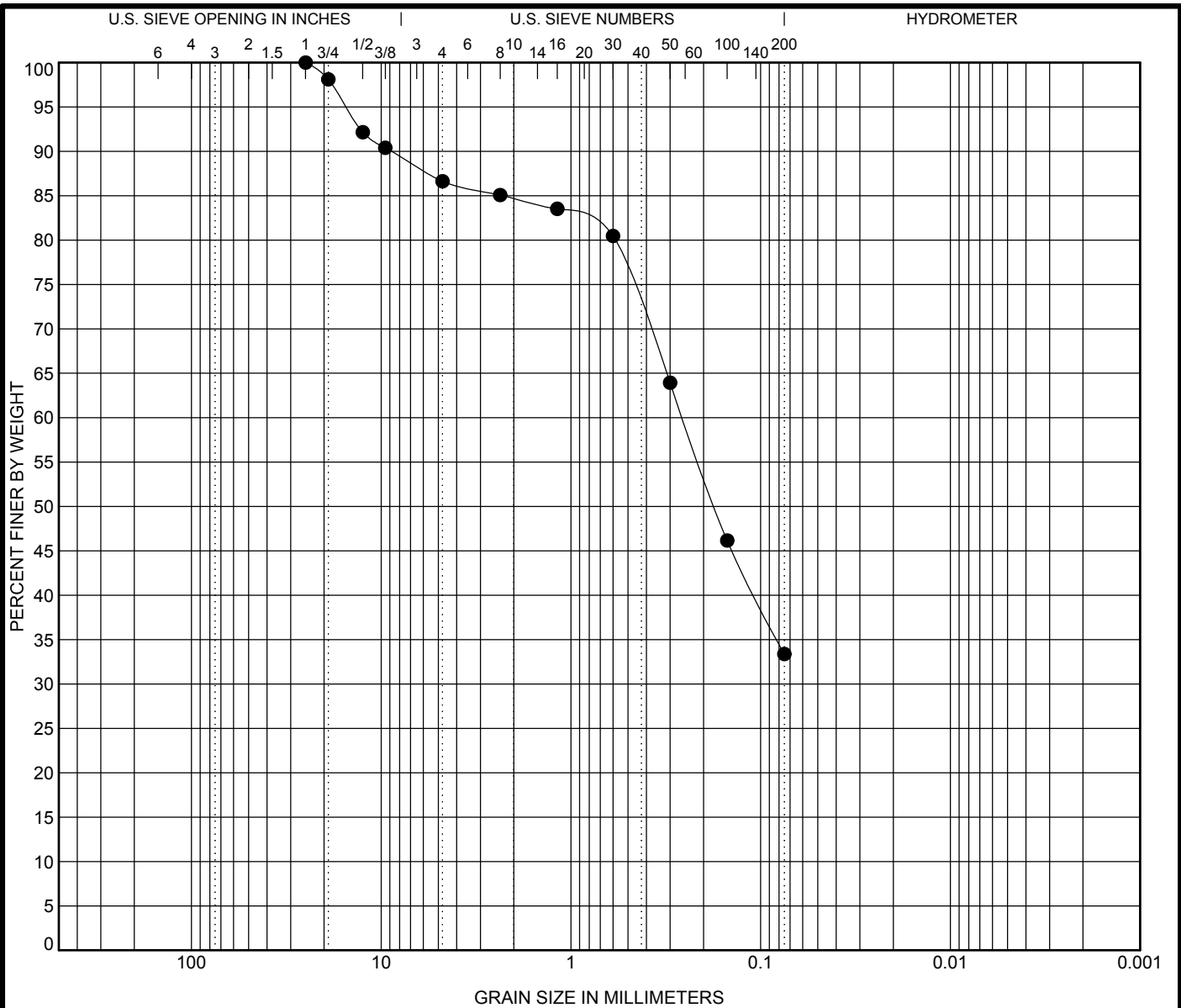
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February 2018

FIGURE B-1

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



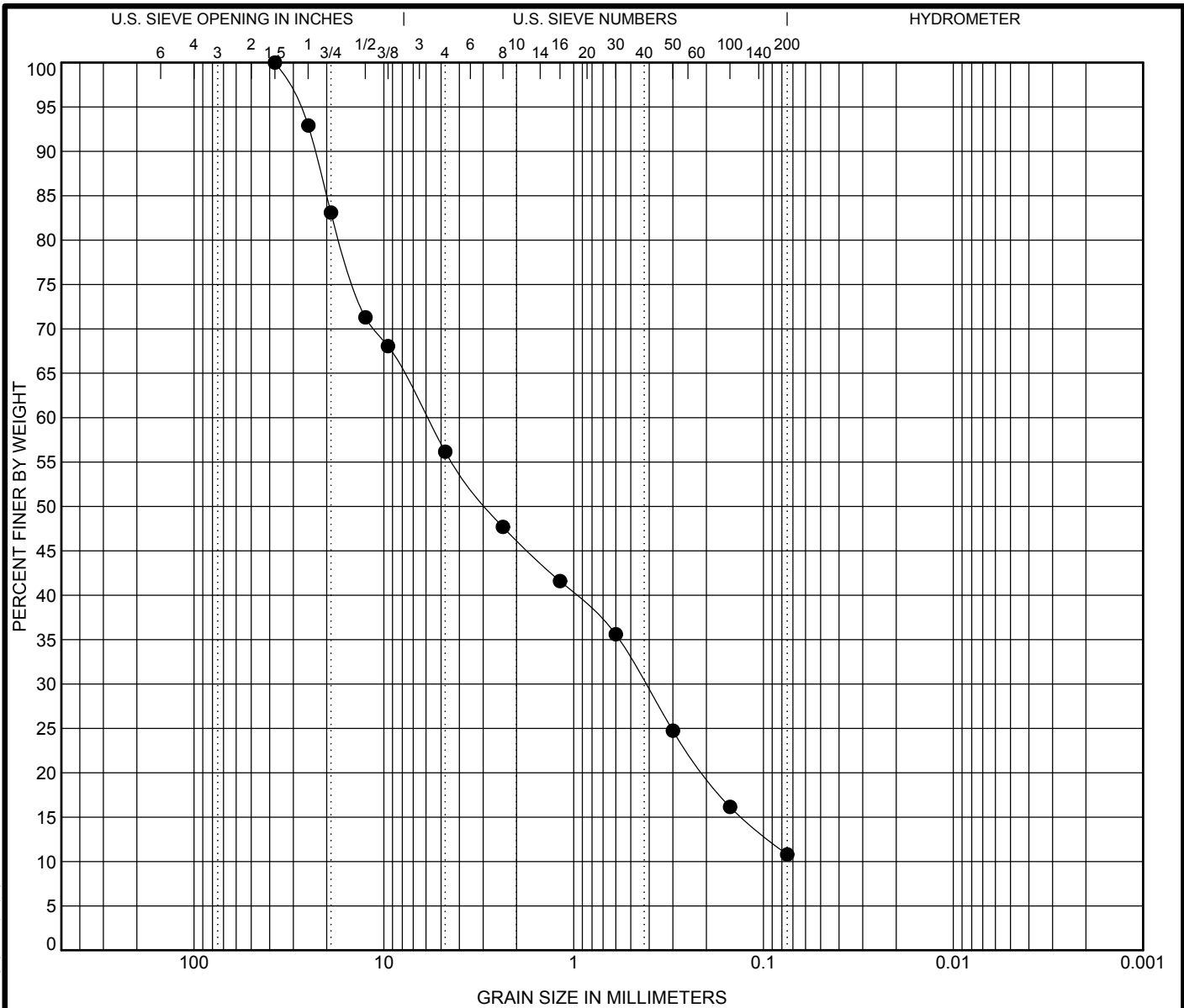
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	U.S.C.S. Classification						Cc	Cu
● B-1 at 0 - 5 ft	Clayey SAND							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
25	0.257	0.174			13.4	53.3	33.4	



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 2

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



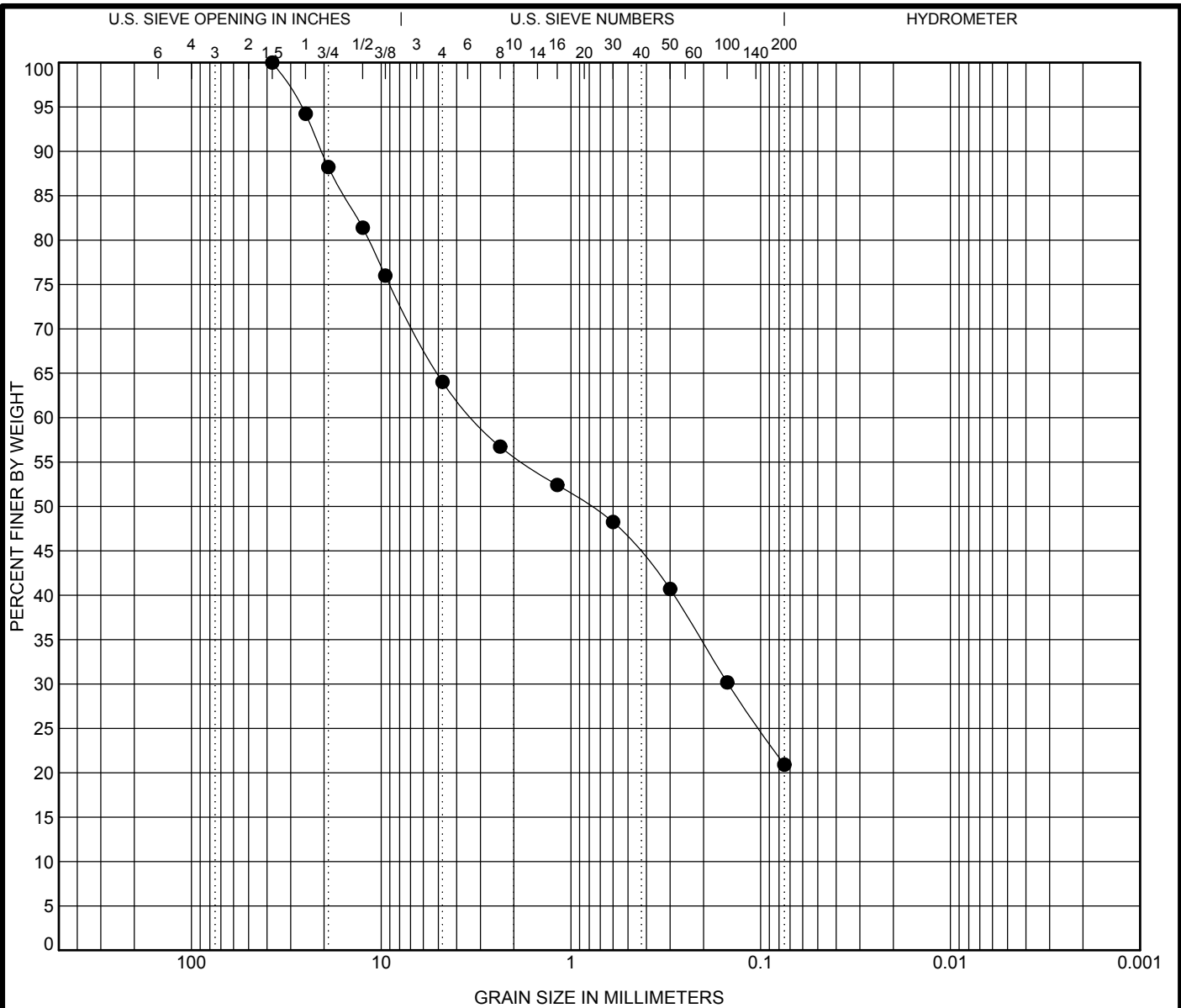
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		U.S.C.S. Classification					Cc	Cu
● B-1 at 5 ft		Sandy GRAVEL					0.44	87.75
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
37.5	5.939	2.854	0.42		43.8	45.4	10.8	



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 3

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



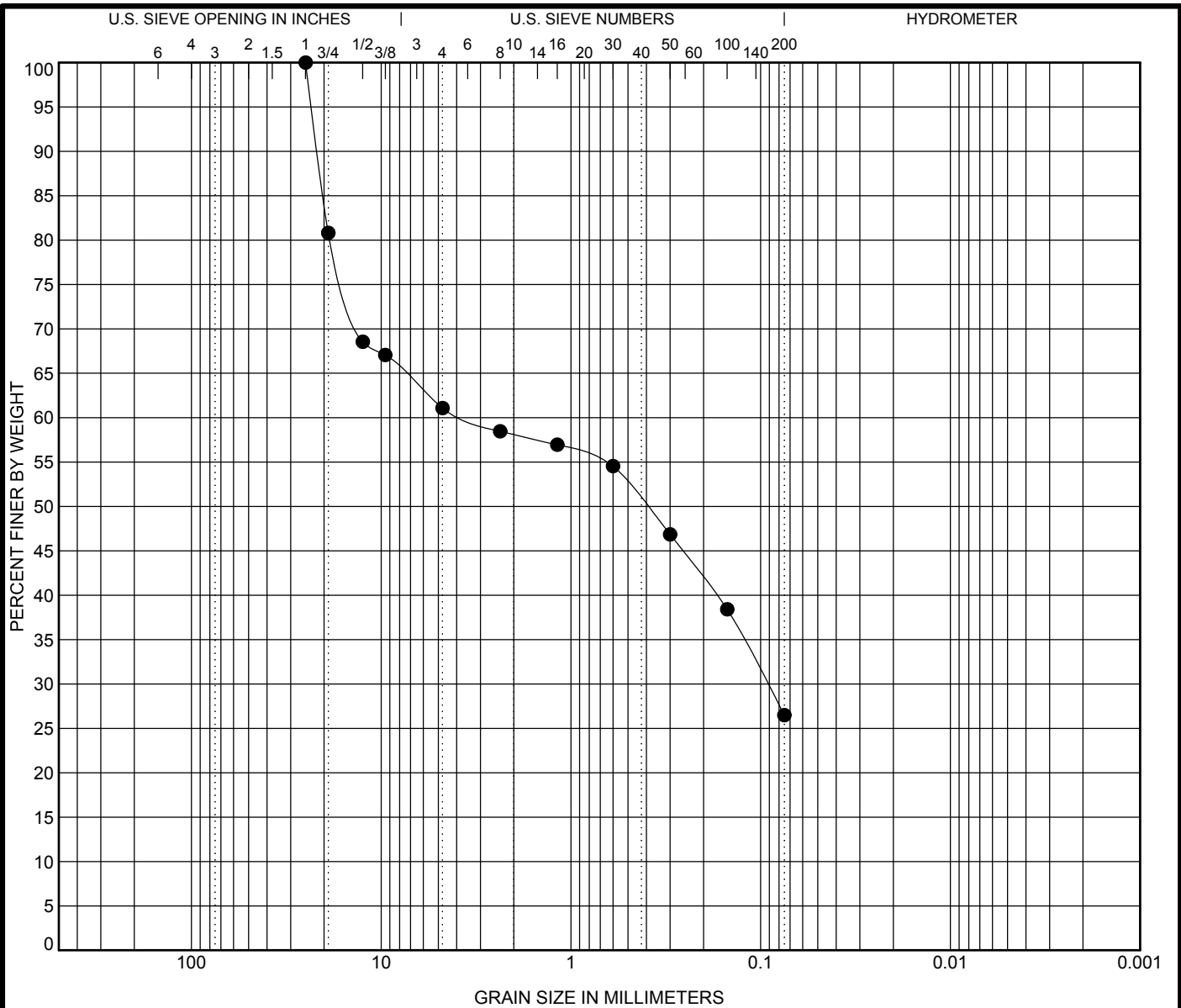
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	U.S.C.S. Classification						Cc	Cu
● B-2 at 0 - 5 ft	Gravelly SAND							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
37.5	3.226	0.797	0.148		36.0	43.1	20.9	



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 4

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



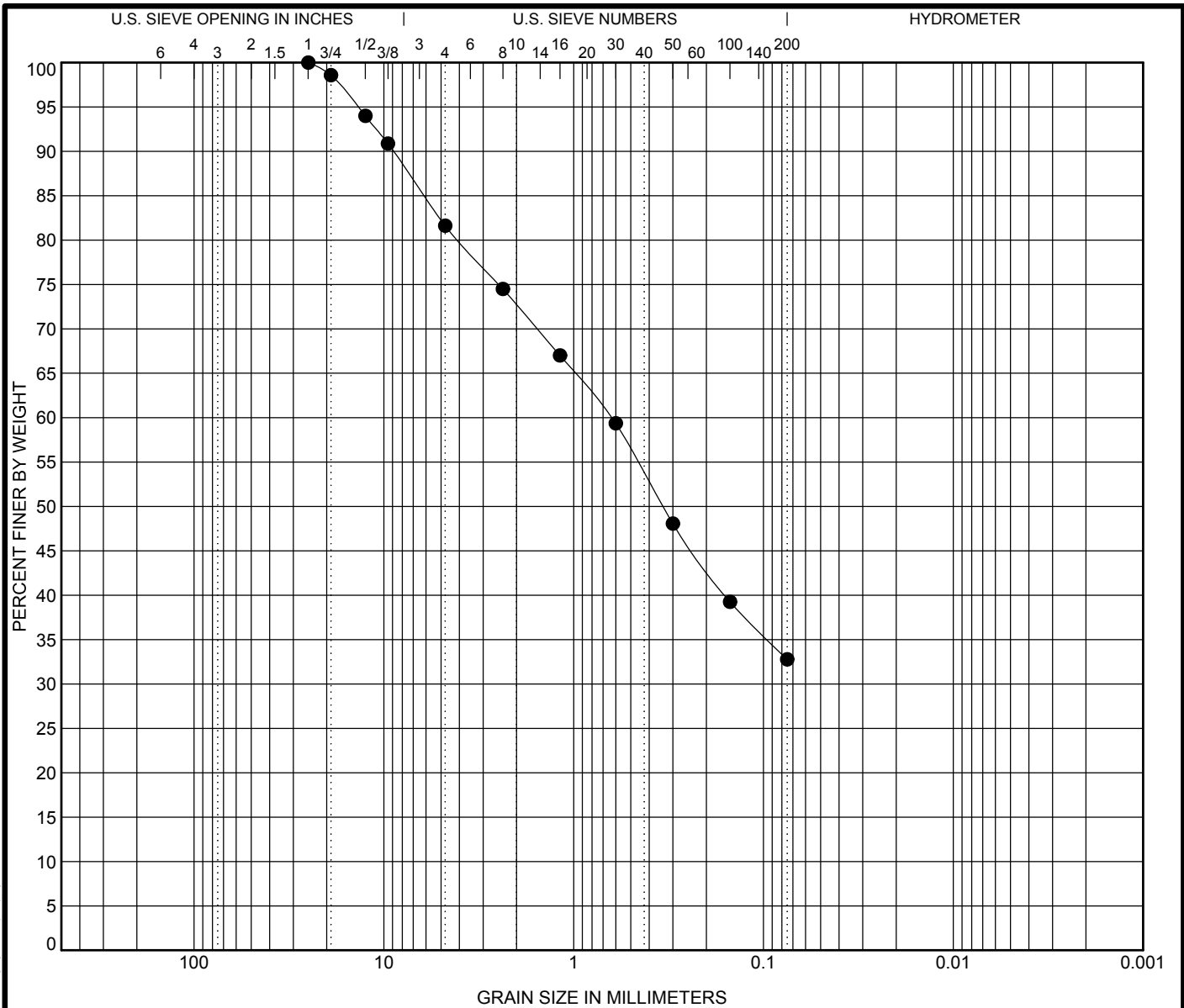
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	U.S.C.S. Classification						Cc	Cu
● B-2 at 5 ft	Sandy GRAVEL							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
25	3.556	0.398	0.092		38.9	34.6	26.5	




GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 5

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18

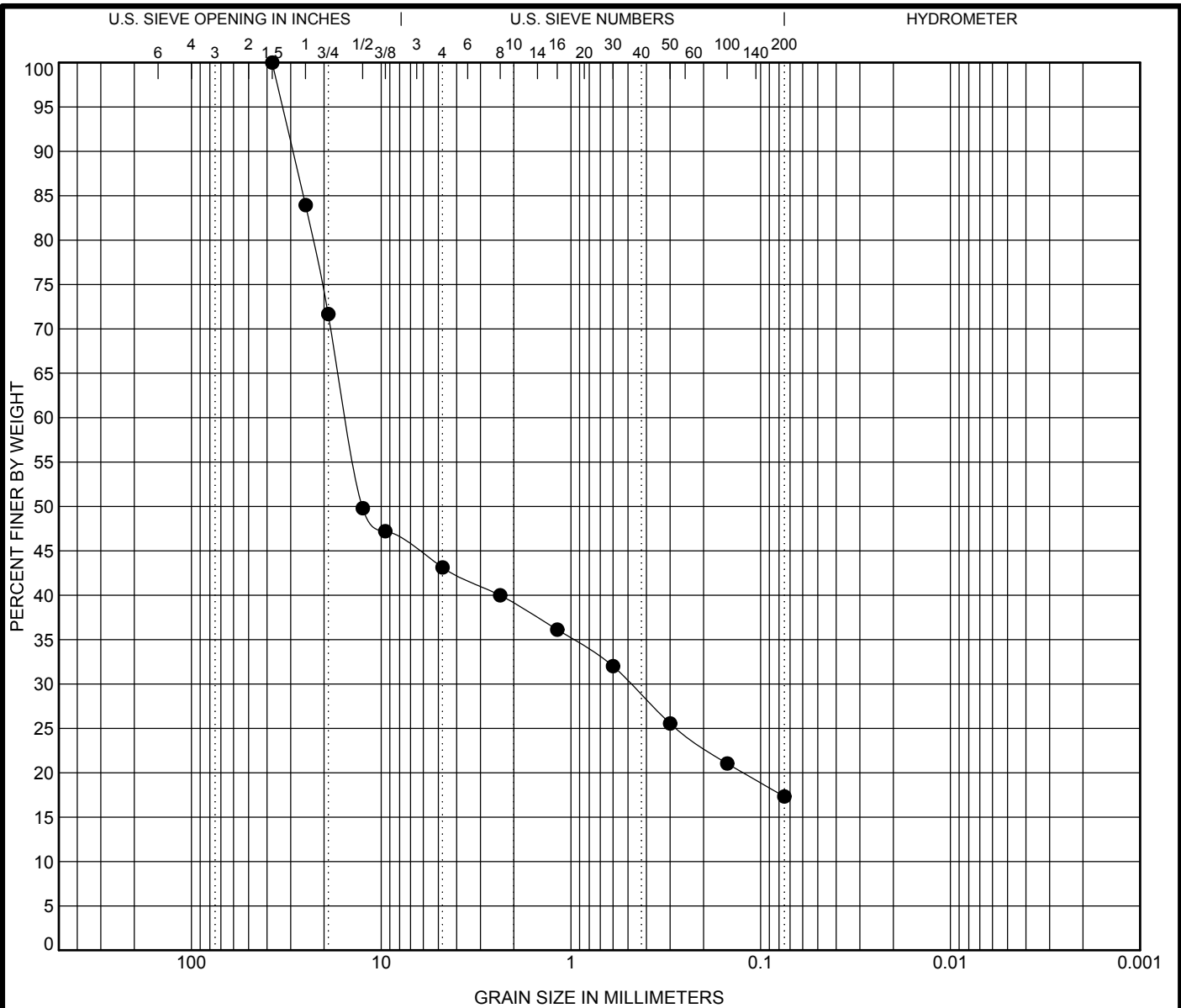


COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		U.S.C.S. Classification						Cc	Cu
● B-3 at 0 - 5 ft		Clayey SAND							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay	
25	0.634	0.338			18.4	48.8	32.8		

 TWINING	GRAIN SIZE DISTRIBUTION		
	15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
	PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 6

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



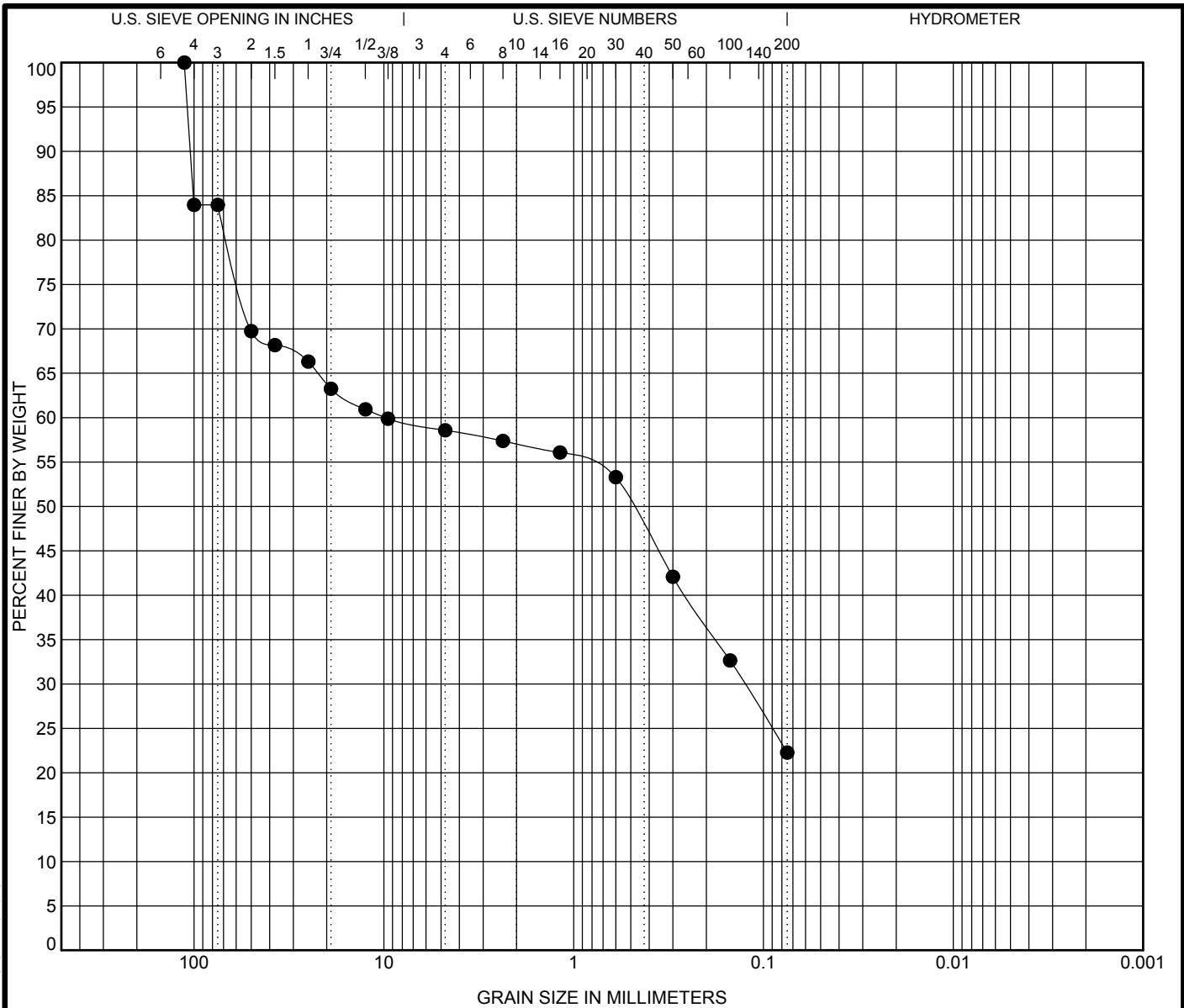
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	U.S.C.S. Classification						Cc	Cu
● B-3 at 10 ft	Sandy GRAVEL							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
37.5	15.195	12.547	0.483		56.9	25.8	17.3	



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 7

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



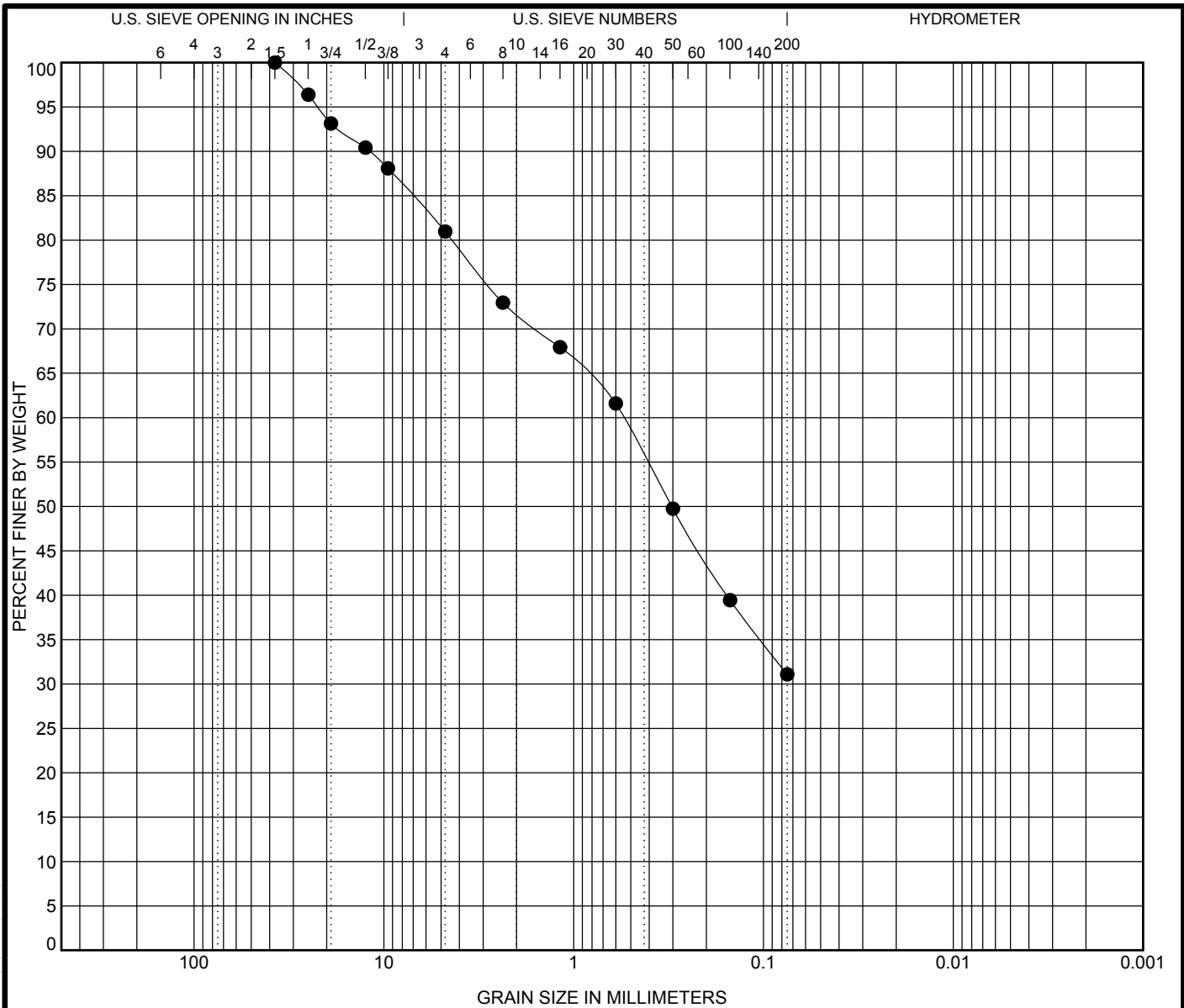
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		U.S.C.S. Classification						Cc	Cu
● B-4 at 0 - 5 ft		Sandy GRAVEL							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay	
112.5	9.79	0.49	0.126		25.4	36.3	22.3		



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 8

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



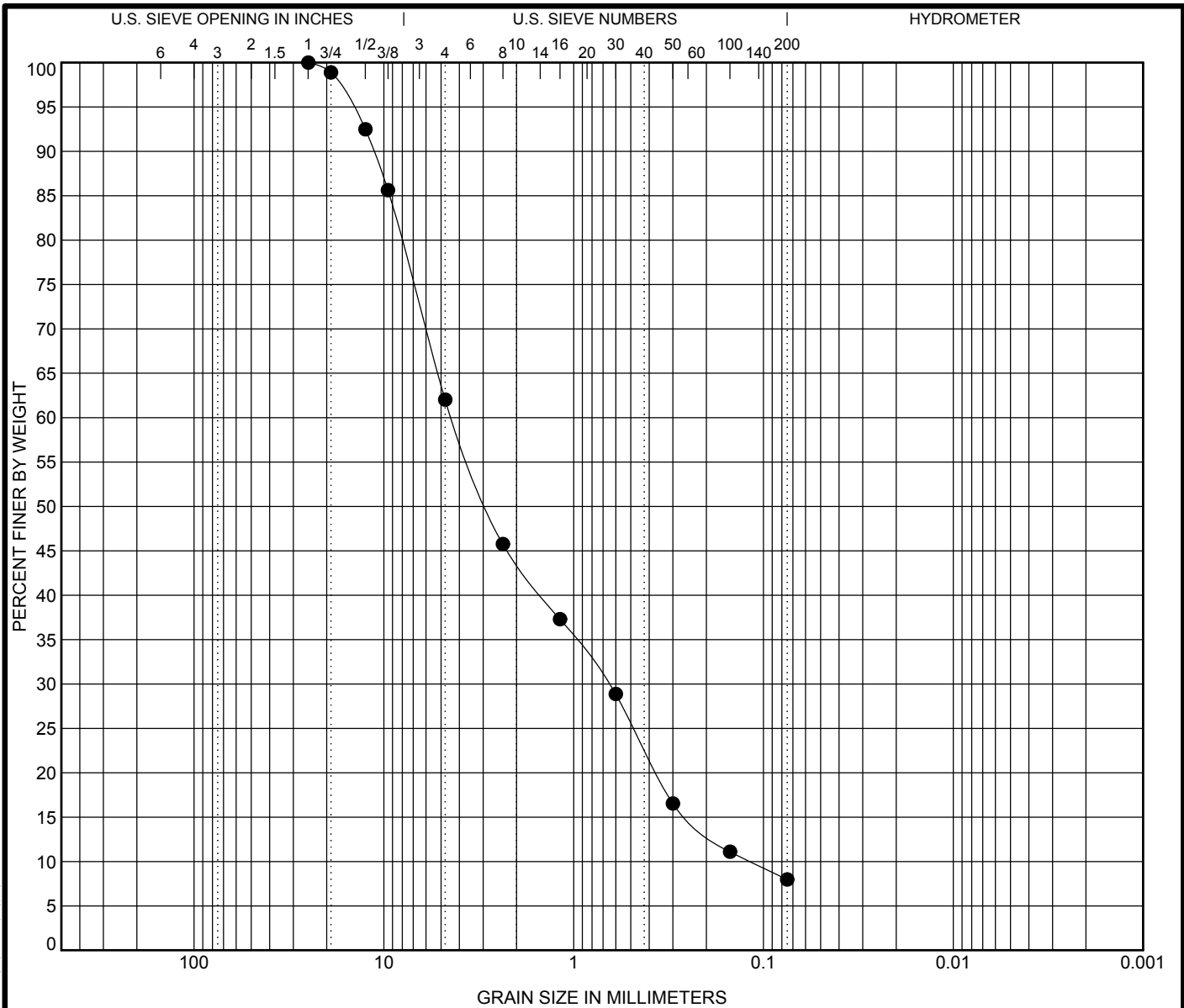
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	U.S.C.S. Classification						Cc	Cu
● B-5 at 0 - 5 ft	Clayey SAND							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
37.5	0.547	0.304			19.0	49.9	31.1	



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 9

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/16/18



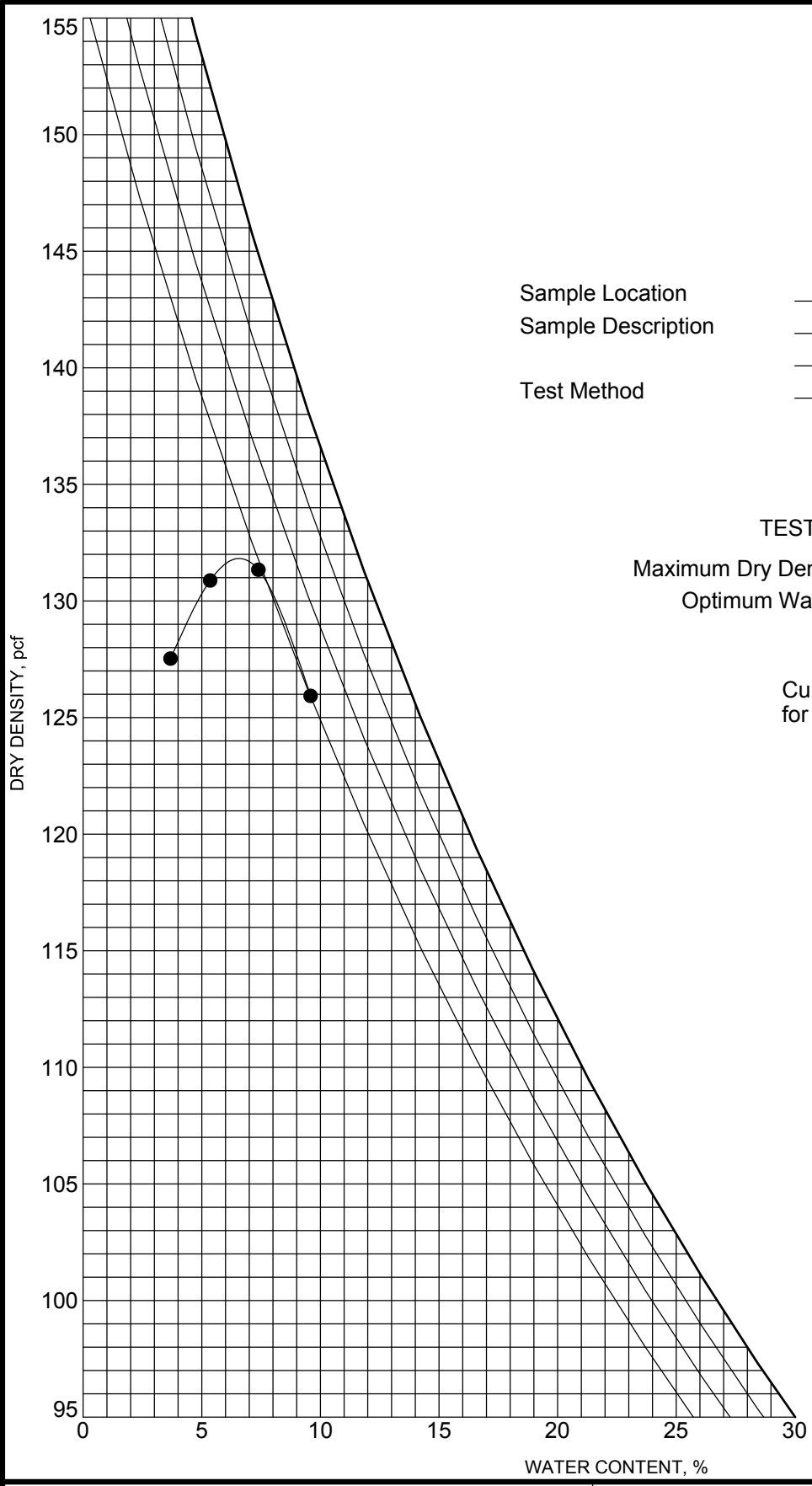
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		U.S.C.S. Classification						Cc	Cu
● B-5 at 15 - 20 ft		Gravelly SAND (Air Rotary Drilling - larger gravel fraction should be anticipated)						0.84	37.03
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay	
25	4.352	2.831	0.657	0.118	38.0	54.1	8.0		



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 10

COMPACTION 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/24/18



Sample Location B-5 at 15' - 20'
 Sample Description Tan Sandy Gravel
 Test Method ASTM D1557 Method C

TEST RESULTS

Maximum Dry Density 132.0 pcf
 Optimum Water Content 6.5 %

Curves of 100% Saturation
 for Specific Gravity Equal to:
 2.80
 2.70
 2.60
 2.50



MAXIMUM DENSITY & OPTIMUM MOISTURE		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B-11

APPENDIX M

TWINING GEOTECHNICAL – RESPONSE TO CITY OF SAN DIEGO LDR

September 16, 2020
Project No. 180004.2

Mr. Jericho Gallardo
Project Manager
City of San Diego – Public Works Department
525 B Street, Suite 750 (MS 908A)
San Diego, CA 92101

Subject: Response to City of San Diego LDR-Geology
Environmental Review
City Project No. 646068; Cycle 1

Project: City of San Diego Task 15GT14 – College Area Sewer (Master Contract # H156366)
San Diego, California

References: i) RECON Environmental, Inc., Biological Technical Report for the College Area Sewer and AC Water Project, 106 pages (Dated August 19, 2020).

ii) City of San Diego Plans for the Construction of College Area Sewer and AC Water Main Replacement, Drawing Number 39946, 33 Sheets (Unsigned dated June 8, 2020); College Area Sewer and AC Water Project Revegetation Plans B-16025, 3 Sheets (Dated August 9, 2020).

iii) Twining Cost Proposal to Provide a City of San Diego Response Letter to LDR-Geology, Cycle 1, review comments (Dated May 19, 2020).

iv) City of San Diego Letter requesting additional Geotechnical Services for the subject project (Dated March 30, 2020).

v) City of San Diego Cycle Issues, Environmental Review prepared by LDR-Geology, Cycle 1, Project No. 646068, City review dated September 25, 2019 (Print dated October 3, 2019), document received by Twining dated March 30, 2020.

vi) Twining Project No. 180004.2 Preliminary Geotechnical Investigation for City of San Diego Task 15GT14 – College Area Sewer and AC Water Main Replacement 54th Street (Dated April 10, 2018).

Dear Mr. Gallardo,

In accordance with your request and authorization, we are providing this letter to respond to the LDR-Geology Review Issues dated September 25, 2019 (Reference v), for the Task 15GT14 College Area Sewer and AC Water Replacement project for the City of San Diego Public Works Department. This response is based upon a review of the references above to resolve addressing the LDR-Geology Issues as part of the City Environmental Review process.

PROJECT UNDERSTANDING

Based on our review of the information provided by the City, it is our understanding that the City intends to replace and abandon sewer mains and water mains, and construct new mains via open trench and trenchless methods, including construction of nine launching/receiving pits, nine new manholes, and three new vault structures throughout the College Area as shown in the referenced project plans (Reference ii). Half of the planned construction would occur within developed right-of-ways, with the other half occurring within an undeveloped (modified) canyon. The scope of Twining's investigation area includes the work planned within the west to east canyon planned for construction of a new trenchless 15- to 18-inch sewer main adjacent to/or replacing the existing 8- to 10-inch sewer main. This section begins at the west end of the cul-de-sac at Campanile Way, proceeds westward and crosses under 54th Street (Station Nos. 1+00 to 27+00, Sheets 3 through 6). This alignment is within an existing canyon along an unnamed tributary to Alvarado Creek and terminates at the existing western sewer manhole #1. According to the design plans, the proposed sewer line will replace an existing vitrified clay pipeline; replacement will consist of a trenchless installation method through the canyon and under the road canyon fill for 54th Street between stations 3+51.10 through 25+92.6.

Twining previously performed a geotechnical investigation for the undeveloped canyon which included a project location map, geotechnical exploration map, geological maps, geological cross sections and geotechnical recommendations (Reference vi). Based upon the final City construction plans (Reference ii, Sheets 1 through 6), the eastern 15-inch sewer main section is now planned to be trenchless construction versus the previously planned 15-inch pipe bursting method (Station Nos. 24+14.79 to 25+92.60, Reference ii). Therefore, the majority of the sewer replacement section investigated by Twining will all be performed by pipe trenchless methods between Stations 3+51.10 through 25+92.6. From Station 1+00 to 3+51.10 and from Station 25+92.6 to 27+00, the plans indicate cut-and-cover construction.

The scope of Twining's work (Reference iii) was to review our previously prepared geotechnical report (Reference vi), the City LDR-Geology Cycle 1 Issues (Reference v), perform a geologic field reconnaissance and prepare this response letter. This work was performed without any additional geotechnical subsurface investigation as part of the City Environmental Review process. This work was necessary because Twining's geotechnical report was prepared two-and-one-half years ago and field conditions, and updated City design plans required additional review in order to provide the following responses. The intent for this response was for Twining to respond to the City LDR-Geology issues which asked whether or not the proposed construction as recommended will measurably destabilize neighboring properties or induce the settlement of adjacent structures, and indicate if unfavorable geologic structure exists at the site.

RESPONSES TO LDR-GEOLOGY

The following provides our responses to each of the City of San Diego LDR-Geology Issues (Reference v):

City Cycle 1; Issue No. 3: Submit an addendum geotechnical document that addresses the following.

Twining Response: *Twining is providing this updated letter response as part of the City environmental review process addressing the City LDR-Geology Issues below (Reference v).*

City Cycle 1; Issue No. 4: Construction Impacts: The geotechnical consultant must comment whether or not the proposed construction as recommended will measurably destabilize neighboring properties or induce the settlement of adjacent structures.

Twining Response: *Twining has reviewed our previous geotechnical report (Reference vi), the updated construction plans (Reference ii), and performed an additional site reconnaissance on September 4, 2020. No additional subsurface investigation was planned for this environmental review. The scope of this review includes the sewer construction planned within the west to east trending undeveloped canyon (Station Nos. 1+00 to 27+00, Sheets 3 through 6). The majority of this work is planned as trenchless to limit impacts in this undeveloped canyon for construction of a new 15- to 18-inch sewer main to replace an existing 8- to 10-inch sewer main between Stations 3+51.10 through 25+92.6. This canyon section of the sewer main will not be constructed by cut and cover methods; therefore, on this basis, it is our professional opinion that the proposed type of construction as recommended will not measurably destabilize neighboring properties or induce the settlement of adjacent structures. Note that from Stations 1+00 to 3+51.10 and 25+92.6 to 27+00, the plans indicate cut-and-cover construction mostly within existing street sections. From the western Station 1+00 eastward to Station 3+51.10, the sewer alignment is relatively level and begins within the subdivision paved road, then continues between the pavement and the existing concrete channel. From Station 25+92.6 eastward to Station 27+00, the sewer alignment is within the existing level pavement in the cul-de-sac of Campanile Way.*

Based on this additional site reconnaissance, Twining is providing the following site conditions that should be considered for the planned construction in the canyon that were not included in our original geotechnical report (Reference vi). This alignment is within an existing canyon along an unnamed tributary to Alvarado Creek. Although groundwater was not encountered in the borings at the time of the field exploration, groundwater should be anticipated during construction of the horizontal trenchless sewer pipes and the vertical structures (launching/receiving pits; manholes, vaults) in the canyon. This is because flowing and standing water were documented in the canyon during our site reconnaissance on September 4, 2020 which was performed during the drier time of the year. Damming and ponding of water was especially noted in the wider area of the canyon at Station 17+00, the location of a receiving pit and Manhole 7, and east to Station 19+78.92 (Manhole 8). Concrete culverts exist in most of the canyon bottom which appear to carry year-round surface water/seepage from adjacent residential properties. Localized groundwater should be anticipated at the other sections of pipe construction. All standard means and methods, including but not limited to reducing allowable overcut and grouting annular space needs to be implemented to avoid settlement during microtunneling nearby adjacent structures.

City Cycle 1; Issue No. 5: Indicate if unfavorable geologic structure exists at the site.

Twining Response: *Twining has reviewed our previous geotechnical report (Reference vi), the updated construction plans (Reference ii), and performed an updated site reconnaissance on September 4, 2020. The sewer alignment is within an existing canyon along an unnamed tributary to Alvarado Creek, which has the potential for erosion and shallow sloughing and slumping of slope materials. Our reconnaissance noted that access is difficult into the canyon due to overgrowth of vegetation and trash and debris that were encountered on slopes and in the drainage. The slope outside of the City easements which is located within private property, on the south side of the canyon, south of the area of Station 19+78.92 (Manhole 8), may have experienced some minor slumping of slope materials, though overgrowth and lack of access on private property limited geologic mapping. A review of aerial images notes some upper hillside scarp features south of the easement, though they are not conclusive due to the alteration of the topography for residential homes in the area. Alternatively, this feature could have been excavated as a borrow site exposing a backcut; Stadium Conglomerate is mapped as the geologic unit in this area (Reference vi). Twining's Figures 3 through 6D (Reference vi) presented the geology and geologic structure in the area. The project is underlain by artificial fill, Quaternary-aged alluvium, and gravel/cobble conglomerates associated with the Tertiary-aged Mission Valley Formation and Stadium*


Conglomerate. The trenchless construction method is planned for the canyon bottom adjacent to the private property with the questionable unstable geologic structure; therefore, it is our opinion that the potential for unfavorable geologic structure to impact the project and surrounding areas is low due to the trenchless method.

City Cycle 1; Issue No. 6: Submit original quality prints and digital copies (on CD/DVD/or USB data storage device) of the referenced geotechnical investigation report and the requested addendum geotechnical document for our review and for our records.

Twining Response: *A digital copy of the referenced geotechnical report (Reference vi), and this letter response are being provided.*

We appreciate the opportunity to be of service on this project. Should you have any questions regarding this letter report, or if we can be of further service, please do not hesitate to contact the undersigned.

Respectfully submitted,
TWINING, INC.


Paul Soltis, PE 56140 GE 2606
Vice President of Geotechnical Operation





Monte Murbach, CEG 1856
Certified Engineering Geologist

APPENDIX N

RECON – HISTORICAL RESOURCES SURVEY



**Historical Resources Survey for the
College Area Sewer and AC Water
Project
San Diego, California**

WBS #B-16025.02.02

Prepared for

City of San Diego
Public Works Department
525 B Street, Suite 750, MS 908A
San Diego, CA 92101
Contact: Mr. Jericho Gallardo

Prepared by

RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108
P 619.308.9333

RECON Number 9114

August 18, 2020

A handwritten signature in black ink that reads "Carmen Zepeda-Herman".

Carmen Zepeda-Herman, M.A., Principal Investigator

ARCHAEOLOGICAL RESOURCE REPORT FORM

I. PROJECT DESCRIPTION AND LOCATION

This report summarizes the background information, methods, and results of the historical resources survey of the approximate one-acre project area. The project is located within the city of San Diego, California (Figure 1). The project is within the Mission San Diego Land Grant of the U.S. Geological Survey (USGS) 7.5-minute topographic map, La Mesa quadrangle (Figure 2). The project occurs along an unnamed tributary to Alvarado Creek within the College community planning area, and is bounded by Collwood Boulevard, Montezuma Road, Adams Avenue, and College Avenue (Figure 3). Half of the project area is within the developed right-of-way in Campanile Way, Campanile Drive, Baja Drive, and 54th Street, while the other half of the project area runs west-east within an undeveloped canyon generally south of Baja Drive, west of the western terminus of Campanile Way, and east of Collwood Boulevard (Figures 4a and 4b).

The project involves replacement and abandonment of vitrified clay (VC) sewer mains and asbestos cement (AC) water mains and construction of new mains via open trench and trenchless methods, as well as construction of nine launching/receiving pits, nine new manholes, and three new vault structures (see Figures 4a and 4b). More specifically, the project proposes the following:

- Replace-in-place via open trench approximately 1,528 linear feet (0.29 mile) of existing 8-inch and 10-inch VC sewer mains with new 8-inch, 12-inch, 15-inch, and 18-inch sewer mains.
- Replace-in-place via trenchless methods approximately 178 linear feet (0.03 mile) of existing 10-inch sewer main with 15-inch sewer main.
- Construct via open trench 1,014 linear feet (0.19 mile) of new 18-inch, 15-inch, and 10-inch sewer main.
- Construct via trenchless methods 2,045 linear feet (0.39 mile) of new 18-inch sewer main.
- Abandon and slurry fill approximately 3,075 linear feet (0.58 mile) of existing 8- and 10-inch sewer main.
- Replace-in-place via open trench approximately 2,578 linear feet (0.49 mile) of the existing 4-, 6-, and 8-inch AC water mains with new 8-inch diameter water mains.
- Construct via open trench approximately 483 linear feet (0.09 mile) of new 8-inch PVC water main (dual main).
- Abandon and slurry fill approximately 118 linear feet (0.02 mile) of existing 6-inch water main.

Appurtenances and accessory structures associated with the project include nine proposed launching/receiving pits for seven trenchless construction pipeline segments. The launching pits will be approximately 20 feet by 10 feet and the receiving pits will be approximately 10 feet by 10 feet. "Temporary Construction Area(s)" of varying sizes will surround each launching/receiving pit as shown on Figures 4a and 4b. Nine new manholes will also be added and eight manholes will be abandoned. A vault structure with a depth of 26 feet will replace the existing deep manhole on 54th Street. A vault structure with a depth of 32 feet will be added on 54th Street. A vault structure with a depth of 26 feet will replace the existing deep manhole on Campanile Drive. New manhole footprint will be approximately 5 feet by 5 feet for each manhole.

Where the project occurs in the undeveloped canyon, a 10-foot-wide vehicle access path (see “Proposed Access Path” and “Existing Access Path” on Figures 4a and 4b) is proposed to be utilized by construction crews for access to launching/receiving pits. Access to the project site along 54th Street and Collwood Boulevard will be available through an existing unpaved 8-foot-wide City Public Utilities Department (PUD) maintenance access path (see “Existing Access Path” on Figures 4a and 4b). The access path east of 54th Street would follow this existing maintenance access path, which generally parallels a 12-foot-wide cement flood control channel. The “Existing Access Path” is proposed to be widened 2 feet south, which would be considered part of the “Proposed Access Path” (see Figure 4a). The “Existing Access Path” connects four of the six launching/receiving pits east of 54th Street within the canyon, while a proposed access path extension would be graded and maintained (i.e., considered a permanent impact) to connect the easternmost segment and access the remaining two receiving pits within the canyon. The access path west of 54th Street would be from a parking lot located at residential apartment complexes east of Collwood Boulevard. Vegetation trimming and grading would be required for vehicle use of the existing and proposed access paths. Equipment within vegetated areas may include excavator, loader/backhoe, drills, crane, dump trucks, utility trucks, generator, and shaker/screen. Additionally, steel plates would be used for vehicle access over the existing concrete channel. All vehicles and construction activities would remain within the limits of the access paths and temporary construction areas. The total impacts equal 0.75 acre.

II. SETTING

Natural Environment (Past and Present)

The project area is generally flat and gently slopes along the paved roads on top of the mesa and an undeveloped canyon in the west portion with a low channel down the middle. Elevations within the project area range from 454 feet above mean sea level (AMSL) in the southeast portion of the residential development, and the lowest elevation is approximately 260 feet AMSL within the western portion of the unnamed tributary. One soil series, Diablo, is mapped within the project area. The majority of the project area is covered with Diablo-Urban land complex, 5 to 15 percent slopes. These soils originally supported Diablo, but have been altered through cut-and-fill operations and leveling (U.S. Department of Agriculture (USDA; 1973).

Ethnography/History

The prehistoric cultural sequence in San Diego County is generally conceived as comprising three basic periods: the Paleoindian, dated between about 11,500 and 8,500 years ago and manifested by the artifacts of the San Dieguito Complex; the Archaic, lasting from about 8,500 to 1,500 years ago (A.D. 500) and manifested by the cobble and core technology of the La Jolla Complex; and the Late Prehistoric, lasting from about 1,500 years ago to historic contact (i.e., A.D. 500 to 1769) and represented by the Cuyamaca Complex. This latest complex is marked by the appearance of ceramics, small arrow points, and cremation burial practices.

The Paleoindian Period in San Diego County is most closely associated with the San Dieguito Complex, as identified by Rogers (1938, 1939, 1945). The San Dieguito assemblage consists of well-made scraper planes, choppers, scraping tools, crescentics, elongated bifacial knives, and leaf-shaped points. The San Dieguito Complex is thought to represent an early emphasis on hunting (Warren et al. 1993:III-33).

The Archaic Period in coastal San Diego County is represented by the La Jolla Complex, a local manifestation of the widespread Millingstone Horizon. This period brings an apparent shift toward a more generalized economy and an increased emphasis on seed resources, small game, and shellfish. The local cultural manifestations of the Archaic Period are called the La Jolla Complex along the

coast and the Pauma Complex inland. Pauma Complex sites lack the shell that dominates many La Jollan sites. Along with an economic focus on gathering plant resources, the settlement system appears to have been more sedentary. The La Jollan assemblage is dominated by rough, cobble-based choppers and scrapers, and slab and basin metates. Elko series projectile points appeared by about 3,500 years ago. Large deposits of marine shell at coastal sites argue for the importance of shellfish gathering to the coastal Archaic economy.

Near the coast and in the Peninsular Mountains beginning approximately 1,500 years ago, patterns began to emerge that suggest the ethnohistoric Kumeyaay. The Late Prehistoric Period is characterized by higher population densities and elaborations in social, political, and technological systems. Economic systems diversify and intensify during this period, with the continued elaboration of trade networks, the use of shell-bead currency, and the appearance of more labor-intensive but effective technological innovations. The late prehistoric archaeology of the San Diego coast and foothills is characterized by the Cuyamaca Complex. It is primarily known from the work of D. L. True at Cuyamaca Rancho State Park (True 1970). The Cuyamaca Complex is characterized by the presence of steatite arrowshaft straighteners, steatite pendants, steatite comales (heating stones), Tizon Brownware pottery, ceramic figurines reminiscent of Hohokam styles, ceramic "Yuman bow pipes," ceramic rattles, miniature pottery various cobble-based tools (e.g., scrapers, choppers, hammerstones), bone awls, manos and metates, mortars and pestles, and Desert Side-Notched (more common) and Cottonwood Series projectile points.

Ethnohistory

The Kumeyaay (also known as Kamia, Ipai, Tipai, and Diegueño) occupied the southern two-thirds of San Diego County. The Kumeyaay lived in semi-sedentary, politically autonomous villages or rancherias. Settlement system typically consisted of two or more seasonal villages with temporary camps radiating away from these central places (Cline 1984a and 1984b). Their economic system consisted of hunting and gathering, with a focus on small game, acorns, grass seeds, and other plant resources. The most basic social and economic unit was the patrilocal extended family. A wide range of tools was made of locally available and imported materials. A simple shoulder-height bow was utilized for hunting. Numerous other flaked stone tools were made including scrapers, choppers, flake-based cutting tools, and biface knives. Preferred stone types were locally available metavolcanics, cherts, and quartz. Obsidian was imported from the deserts to the north and east. Ground stone objects include mortars, manos, metates, and pestles typically made of locally available, fine-grained granite. Both portable and bedrock types are known. The Kumeyaay made fine baskets using either coiled or twined construction. The Kumeyaay also made pottery, utilizing the paddle-and-anvil technique. Most were a plain brown utility ware called Tizon Brownware, but some were decorated (Meighan 1954; May 1976, 1978).

Spanish/Mexican/American Periods

The Spanish Period (1769–1821) represents a time of European exploration and settlement. Military and naval forces along with a religious contingent founded the San Diego Presidio, the pueblo of San Diego, and the San Diego Mission in 1769 (Rolle 1998). The mission system used forced Native American labor and introduced horses, cattle, other agricultural goods, and implements. Native American culture in the coastal strip of California rapidly deteriorated despite repeated attempts to revolt against the Spanish invaders (Cook 1976). One of the hallmarks of the Spanish colonial scheme was the rancho system. In an attempt to encourage settlement and development of the colonies, large land grants were made to meritorious or well-connected individuals.

In 1821, Mexico declared its independence from Spain. During the Mexican Period (1822–1848), the mission system was secularized by the Mexican government and these lands allowed for the dramatic expansion of the rancho system. The southern California economy became increasingly based on cattle ranching.

The Mexican Period ended when Mexico signed the Treaty of Guadalupe Hidalgo on February 2, 1848, concluding the Mexican-American War (1846–1848; Rolle 1998). Just prior to the signing of the Treaty of Guadalupe Hidalgo, gold was discovered in the northern California Sierra-Nevada foothills, the news was published on March 15, 1848, and the California Gold Rush began. The great influx of Americans and Europeans eliminated many remaining vestiges of Native American culture. California became a state in 1850.

The American homestead system encouraged settlement beyond the coastal plain into areas where Indians had retreated to avoid the worst of Spanish and Mexican influences (Carrico 1987; Cook 1976). A rural community cultural pattern existed in San Diego County from approximately 1870 to 1930. These communities were composed of an aggregate of people who lived on scattered farmsteads tied together through a common school district, church, post office, and country store (Hector and Van Wormer 1986; Pourade 1963).

Between 1880 and 1910 San Diego's population tripled in size. The arrival of the Atchison, Topeka, and Santa Fe line from National City to Los Angeles via Oceanside and Fallbrook helped in the 1880s boom and connected San Diego to a transcontinental railroad in San Bernardino. Growth to outlying suburban areas was limited by the challenge of providing quick and inexpensive transportation to and from the suburban areas to downtown San Diego. Established in 1892, the San Diego Electric Railway Company ran cable-powered street cars and provided a solution to the mass transit problem. The expansion of the street car lines resulted in the development of suburban communities, including Mission Valley, Pacific Beach, and the City of East San Diego (now City Heights). Commercial developments were built along trolley track routes, while homes were built usually within walking distance of the trolley tracks (Historic Resources Group 2010). The railway system allowed people to move to suburban communities and still get to and from work in downtown San Diego; thus, making the railway system key to the expansion and development of San Diego (San Diego History Center 2012).

Normal School (present-day San Diego State University) was founded in 1897 as a training facility for teachers. By 1921 it became the San Diego State Teachers College that granted certificates and undergraduate degrees. In 1935 the degree programs were expanded beyond teacher education and it became San Diego State College, which became part of the California State College system in 1960. The community began to develop in the early 1930s with the first subdivision maps along El Cajon Boulevard, Adams Avenue at 55th Street, at 63rd and Stewart Streets, and along Cresita Drive, Lindo Paseo, and Hardy Avenue. Postwar in the 1950s the housing boom into suburban areas and completion of Interstate 8 contributed to the growth of the area (College Area Community Plan; City of San Diego 1989).

III. AREA OF POTENTIAL EFFECT (APE)

The APE comprises the 0.75-acre project site.

IV. STUDY METHODS

The cultural resources survey included both an archival search and an on-site foot survey of the project area. A records search with a one-mile radius buffer was requested from the South Coastal Information Center at San Diego State University in order to determine if previously recorded prehistoric or historic cultural resources occur on the project area. Historic aerial photographs were reviewed to determine changes in the survey area over time.

A letter was sent on July 10, 2020, to the Native American Heritage Commission (NAHC) requesting them to search their Sacred Lands File (SLF) to identify spiritually significant and/or sacred sites or traditional use areas in the project vicinity. The NAHC was also asked to provide a list of local

Native American tribes, bands, or individuals who may have concerns or interests in the cultural resources of the project.

The field survey was conducted on July 9, 2020, by RECON archaeologist Carmen Zepeda-Herman accompanied by Corel Taylor and Gretchen White, Native American representatives from Red Tail Environmental. The spacing between the field personnel was two meters. The survey area was inspected for evidence of archaeological materials such as flaked and ground stone tools, ceramics, milling features, and historic features. Photographs were taken to document the environmental setting and general conditions.

V. RESULTS OF STUDY

The records search indicated that there have been three cultural resource investigations that have included the project area. Fifty-nine cultural resources occur within a one-mile radius of the project; nine prehistoric resources (three of which are isolated artifacts) and fifty historic-era resources (one of which is an isolated artifact) (Table 1). The prehistoric resources consist of a lithic scatter, a shell scatter, and bedrock milling features. The historic resources consist of commercial buildings, single- and multi-family properties, and San Diego State University buildings. No previously recorded cultural resources occur on the project property.

A response letter from the NAHC was received on July 21, 2020, indicating the results of the records search of the Sacred Lands File for the project area were negative (see attached correspondence).

The survey resulted in finding no cultural material. The survey took place under clear skies and warm temperatures. The project areas within Baja Drive, Campanile Drive, and Campanile Way were not surveyed because asphalt provides zero ground visibility. The abandoned water line extending from the east end of Baja Drive south to the north end of 60th Street was also not surveyed since the impacted areas remain within the asphalted roadways. Overall ground visibility along the canyon access road was less than 5 percent due to dense vegetation consisting of non-native riparian vegetation, ornamental plants, and some small areas of Diegan coastal sage scrub and disturbed Diegan coastal sage scrub (RECON 2020; Photographs 1 and 2). Slopes have been manufactured during the residential development surrounding the canyon (Photograph 3).

Historic aerial photographs indicate that the project area has been disturbed to some extent since 1953. In the 1953 aerial photograph, a dirt road ran east-west in the general area of the present-day concrete canal. By 1964 the canyon and area surrounding the canyon were graded for the housing development north and south of the canyon, with the exception of the southeastern end where no grading was noted. This photograph supports that slopes were manufactured on either side of the project area. The 1960 topographic map does not show 54th Street; however, the street does appear on the 1969 topographic map (Nationwide Environmental Title Research NETR 2020).

VI. RECOMMENDATIONS

The cultural resource investigations summarized herein satisfy the study and documentation requirements identified by City of San Diego Development Services Department staff and are consistent with the goals and policies of the City of San Diego as published in the Land Development Manual. As such, the efforts to identify and document historical resources in the APE for the project determined that the project would have no impact on previously recorded cultural resources.

The possibility of significant historical resources being present within the proposed project is considered low. The majority of the area has been impacted in the past during the housing development for the presence of potentially significant cultural resources. RECON recommends no further cultural resources work; construction monitoring is not recommended.

VII. SOURCES CONSULTED**DATE**

National Register of Historic Places <input checked="" type="checkbox"/>	Month and Year: July 2020
California Register of Historical Resources <input checked="" type="checkbox"/>	Month and Year: July 2020
City of San Diego Historical Resources Register <input checked="" type="checkbox"/>	Month and Year: July 2020
Archaeological/Historical Site Records: South Coastal Information Center <input checked="" type="checkbox"/>	Month and Year: July 2020
Other Sources Consulted:	

VIII. CERTIFICATION

Preparer: Carmen Zepeda-Herman, M.A.	Title: Principal Investigator
Signature:	Date: August 18, 2020

**Table 1
Cultural Resources within One-Mile of the Project Area**

Primary No.	Trinomial	Resource Type	Age	Recording Events
P-37-008667	CA-SDI-008667	Lithic scatter	Prehistoric	1981 (Goldberg)
P-37-009899	CA-SDI-009899	Isolate: metate	Prehistoric	1984 (Kidder & Miller)
P-37-013708	CA-SDI-013717	Stadium: Aztec Bowl	Historic	1994 (San Diego State University)
P-37-015591		Isolate: core	Prehistoric	1996 (Gallegos & Associates)
P-37-015654		Isolate: flaked tool	Prehistoric	1996 (Gallegos)
P-37-017028	CA-SDI-015067	Historic trash scatter	Historic	1999 (Mooney & Associates)
P-37-017254		Single-family house	Historic	1999 (Scott Moomjian)
P-37-018911	CA-SDI-015750	Historic trash scatter	Historic	2000 (Terra Environmental)
P-37-018964	CA-SDI-015789	Shell scatter	Prehistoric	2000 (Tierra Environmental)
P-37-019016	CA-SDI-013708	Lithic, ground stone, cobble feature	Prehistoric	1994 (Gallegos & Associates)
P-37-020926		School building	Historic	2002 (Facilities Planning. SDSU)
P-37-020927		School building	Historic	2002 (Facilities Planning. SDSU)
P-37-020928		School building	Historic	2002 (Facilities Planning. SDSU)
P-37-020929		School building	Historic	2002 (Facilities Planning. SDSU)
P-37-020930		School building	Historic	2002 (Facilities Planning. SDSU)
P-37-020931		School building	Historic	2002 (Facilities Planning. SDSU)
P-37-020932		School building	Historic	2002 (Facilities Planning. SDSU)
P-37-020933		School building	Historic	2002 (Facilities Planning. SDSU)
P-37-022042		Bungalow court units	Historic	2002 (Caltrans)
P-37-022045		Apartment building	Historic	2002 (Caltrans)
P-37-022046		Single-family house	Historic	2002 (Caltrans)
P-37-022049		Single-family house	Historic	2002 (Caltrans)
P-37-022052		Single-family house	Historic	2002 (Caltrans)
P-37-024341		Talmadge gates	Historic	2001 (Charles Kaminski, Fred J. Lindahl)
P-37-025491		Apartment building	Historic	2004 (Brian F. Smith & Associates)
P-37-025492		Single-family house	Historic	2004 (Brian F. Smith & Associates)
P-37-025751		Single-family house	Historic	2004 (Brian F. Smith & Associates); 2009 (Steve Van Wormer, ASM Affiliates)
P-37-025752		Single-family house	Historic	2004 (Brian F. Smith & Associates); 2009 (Steve Van Wormer, ASM Affiliates)
P-37-027607		Motel	Historic	2006 (Marie Burke Lia)
P-37-027710		Motel and apartments	Historic	2006 (Marie Burke Lia)
P-37-027844	CA-SDI-018104	Historic trash scatter	Historic	2006 (Brian F. Smith & Associates)
P-37-028223	CA-SDI-018326	Bedrock milling feature	Prehistoric	2007 (Brian F. Smith & Associates)
P-37-028224	CA-SDI-018327	Bedrock milling feature	Prehistoric	2007 (Brian F. Smith & Associates)

**Table 1
Cultural Resources within One-Mile of the Project Area**

Primary No.	Trinomial	Resource Type	Age	Recording Events
P-37-028330	CA-SDI-018347	Privy	Historic	2007 (Jones & Stokes)
P-37-029023	CA-SDI-018589	Historic trash scatter	Historic	2008 (Laguna Mountain Environmental, Inc.)
P-37-030636		Isolate: bottle	Historic	2009 (Brian F. Smith & Associates)
P-37-032674	CA-SDI-020702	Historic trash scatter	Historic	2012 (Laguna Mountain)
P-37-033557		Highway 395	Historic	2013 (Larry Tift, ASM Affiliates, Inc.); 2015 (Kent Manchen, Matt DeCarlo, ASM Affiliates, Inc.); 2017 (Haley Chateene, PanGIS); 2017 (A. Foglia, K. Keckeisen, PanGIS, Inc.); 2018 (Sarah Stringer-Bowsher, ASM Affiliates, Inc.)
P-37-034948		Commercial building	Historic	2009 (ASM Affiliates)
P-37-034949		1- to 3-story Commercial Building	Historic	2009 (ASM Affiliates)
P-37-034950		1- to 3-story Commercial Building	Historic	2009 (ASM Affiliates)
P-37-034951		1- to 3-story Commercial Building	Historic	2009 (ASM Affiliates)
P-37-034952		1- to 3-story Commercial Building	Historic	2009 (ASM Affiliates)
P-37-034953		1- to 3-story Commercial Building	Historic	2009 (ASM Affiliates)
P-37-034954		1- to 3-story Commercial Building	Historic	2009 (ASM Affiliates)
P-37-034955		Multi-family property	Historic	2009 (ASM Affiliates)
P-37-035268		Multi-family property; Religious building	Historic	2012 (Ace Environmental)
P-37-035429		Multi-family property	Historic	2013 (S. Moomjian)
P-37-035445		Educational building	Historic	2013 (Crawford Historic Services)
P-37-035449		Educational building	Historic	2013 (Crawford Historic Services)
P-37-035560		1- to 3-story Commercial Building	Historic	2013 (Crawford Historic Services)
P-37-035594		Single-family property	Historic	2014 (A. Hazard)
P-37-035655		Single-family property	Historic	2015 (A. Hazard)
P-37-036982		Building	Historic	2015 (Ronald V. May, Kiley Wallace, Legacy 106, Inc.)
P-37-037123		Building	Historic	2016 (Rebecca McManus, IS Architecture)
P-37-037200		Building	Historic	2017 (Wendy L. Tinsley Becker, Urbana Preservation & Planning LLC)
P-37-037560		Building	Historic	2017 (Timothy Yates, ICF)
P-37-037795	CA-SDI-022509	Bedrock milling feature	Prehistoric	2019 (Helix Environmental Planning)
P-37-038270		Isolate - Medicine bottle	Historic	2017 (Dudek)

IX. ATTACHMENTS

Bibliography
Attached

National Archaeological Data Base Information
Attached

Maps (include all of the following maps.)
Figure 1. Project Location
Figure 2. USGS Quadrangle
Figure 3. City of San Diego 800' scale
Figure 4. Aerial Photograph of Project Location

Photographs
Photograph 1. Proposed Access Path East of 54th Street, Looking West
Photograph 2. Example of Dense Vegetation Surrounding Access Path, Looking East
Photograph 3. Slope West of 54th Street, Looking West

Native American Heritage Commission Correspondence

Personnel Qualifications (Include resumes if not already on file with the City.)
Resumes are already on file with the City.

X. CONFIDENTIAL APPENDICES (bound separately)

Record search results
Maps from record search results from South Coastal Information Center
(Under separate cover).

New or updated historical resource records
None

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NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

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Consulting Firm: RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108-5726

Report Date: August 18, 2020

Report Title: Historical Resources Survey for the College Area Sewer and AC Water Project, San Diego, California

Prepared for: Jericho Gallardo
City of San Diego
Public Utilities Department
525 B Street, Suite 750, MS 908A
San Diego, CA 92101

Contract Number: 9114

USGS Quadrangle Map: La Mesa Quadrangle

Keywords: Negative survey, College Area

ABSTRACT

A cultural resources survey was conducted for the College Area Sewer and AC Water Project located within the College community planning area of the city of San Diego. The survey included a records search at the South Coastal Information Center and a search of the Sacred Lands Files by the Native American Heritage Commission (NAHC). The records search indicated that there have been three cultural resource investigations that have included the project area and 59 cultural resources that occur within a one-mile radius of the project. None of the resources occur within the project area. A response letter from the NAHC was received on July 21, 2020, indicating the results of the records search of the Sacred Lands File for the project area were negative.

A RECON archaeologist along with Native American monitors from Red Tail Environmental completed the field survey on July 10, 2020. The survey resulted in finding no cultural material. Ground visibility was low; however, the survey noted evidence of past disturbance including the concrete channel and manufactured slopes. The possibility of significant historical resources being present within the proposed project is considered low. RECON recommends no further cultural resources work; construction monitoring is not recommended.




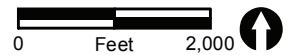
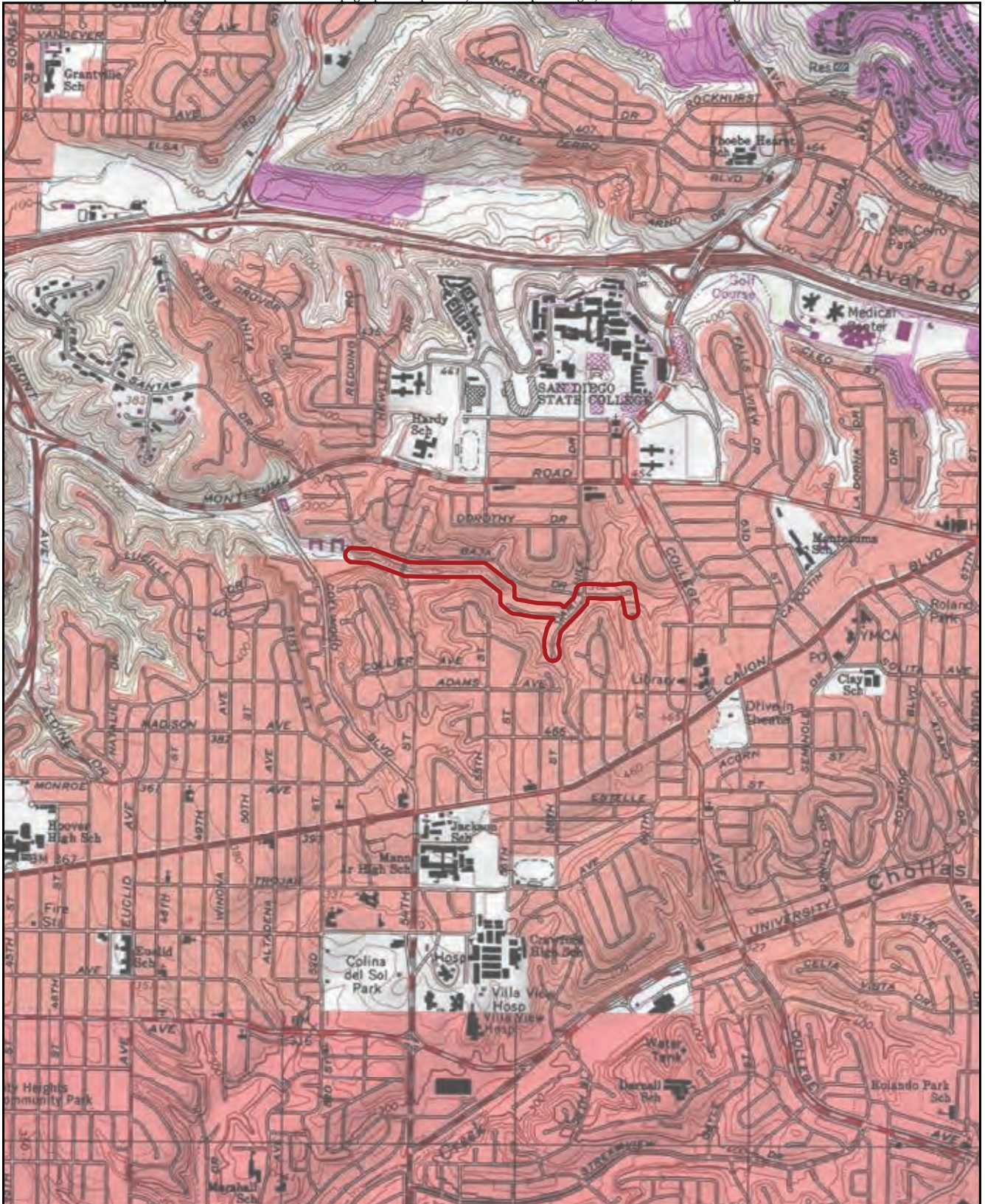
 Project Location

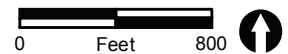
FIGURE 1
Regional Location



 Project Area

FIGURE 2

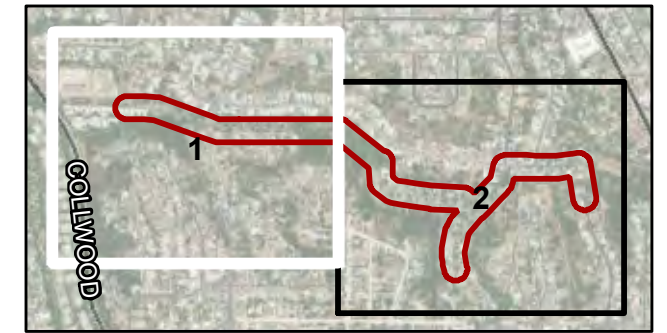
Project Location on USGS Map



 Project Area

FIGURE 3

Project Location on City 800' Map



- Project Area
- Project Features**
- Proposed Sewer Main Replacement
- Proposed Sewer Main Replacement - Trenchless
- Existing Manhole
- ⊗ Existing Manhole to be Abandoned
- Existing Access Path (8' wide)
- Permanent Impacts**
- Proposed Manhole (5'x5')
- ▲ Proposed Vault (13'x11'8")
- Proposed Access Path
- Temporary Impacts**
- Launching Pit (10'x20')
- Receiving Pit (10'x10')
- Temporary Construction Area

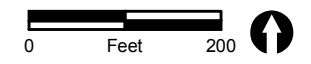
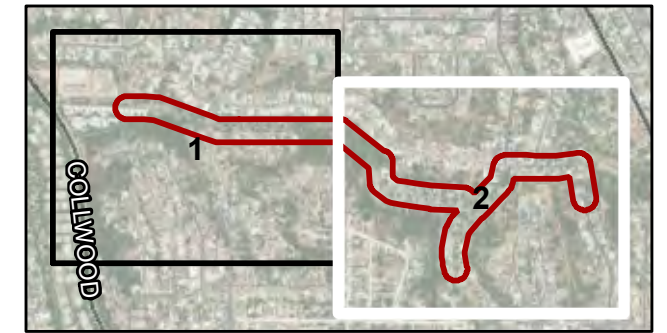


FIGURE 4a
Project Location on Aerial Photograph



- Project Area
- Project Features**
- Proposed Dual 8" Water Main
- Proposed 8" Water Main Replacement
- Water Main to be Abandoned
- Proposed Sewer Main Replacement
- Proposed Sewer Main Replacement - Trenchless
- X Existing Manhole to be Abandoned
- Existing Access Path (8' wide)
- Permanent Impacts**
- o Proposed Manhole (5'x5')
- ▲ Proposed Vault (13'x11'8")
- Proposed Access Path
- Temporary Impacts**
- Launching Pit (10'x20')
- Receiving Pit (10'x10')
- Temporary Construction Area

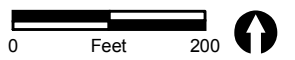


FIGURE 4b
Project Location on Aerial Photograph



PHOTOGRAPH 1
Proposed Access Path East of 54th Street, Looking West



PHOTOGRAPH 2
Example of Dense Vegetation Surrounding Access Path, Looking East



PHOTOGRAPH 3
Slope West of 54th Street, Looking West



July 21, 2020

Carmen Zepeda-Herman
RECON Environmental

Via Email to: czepeda@reconenvironmental.com

Re: College Area Sewer and AC Water Project, San Diego County

CHAIRPERSON
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Luiseño

VICE CHAIRPERSON
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SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
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COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
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COMMISSIONER
[Vacant]

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NAHC.ca.gov

Dear Ms. Zepeda-Herman:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn
Cultural Resources Analyst

Attachment

**Native American Heritage Commission
Native American Contact List
San Diego County
7/21/2020**

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This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed College Area Sewer and AC Water Project, San Diego County.

**Native American Heritage Commission
Native American Contact List
San Diego County
7/21/2020**

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This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed College Area Sewer and AC Water Project, San Diego County.

CONFIDENTIAL ATTACHMENTS

Are not for public review

APPENDIX O

RECON – BIOLOGICAL TECHNICAL REPORT



**Biological Technical Report for the
College Area Sewer and AC Water
Project
San Diego, California
WBS #B-16025.02.02**

Prepared for
City of San Diego
Public Works Department
525 B Street, Suite 750, MS 908A
San Diego, CA 92101
Contact: Mr. Jericho Gallardo

Prepared by
RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
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P 619.308.9333

RECON Number 9114
August 19, 2020

A handwritten signature in black ink that reads "Kayo Valenti". The signature is written in a cursive, flowing style.

Kayo Valenti, Biologist

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Acronyms and Abbreviations

AC	asbestos cement
ADD	Administrator Deputy Director
AMSL	above mean sea level
BCME	Biological Construction Monitoring Exhibit
BMP	best management practice
CDFW	California Department of Fish and Wildlife
CFGC	California Fish and Game Code
City	City of San Diego
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
ESL	Environmentally Sensitive Lands
GPS	global positioning system
MHPA	Multi-Habitat Planning Area
MMC	Mitigation Monitoring Coordination
MSCP	Multiple Species Conservation Program
OHWM	Ordinary High Water Mark
project	College Area Sewer and AC Water Project
PUD	Public Utilities Department
RECON	RECON Environmental, Inc.
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SDNHM	San Diego Natural History Museum
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VC	vitriified clay

Management Summary

The City of San Diego (City) Public Works Department is proposing the College Area Sewer and AC Water Project (project), which comprises replacement and abandonment of sewer mains and water mains and construction of new mains via open trench and trenchless methods, as well as construction of nine launching/receiving pits, nine new manholes, and three new vault structures. The project is located along an unnamed tributary to Alvarado Creek, bounded by Collwood Boulevard, Montezuma Road, Adams Avenue, and College Avenue in the city of San Diego, California. Half of the project occurs within developed areas, with the other half occurs within an undeveloped canyon.

The following nine vegetation communities or land cover types were mapped in the 25.061-acre vegetation survey area (i.e., project area and surrounding 100-foot radius): non-native riparian, disturbed wetland (including unvegetated channel, vegetated channel, and artificial hydrology), maritime succulent scrub, Diegan coastal sage scrub, disturbed coastal sage scrub, eucalyptus woodland, disturbed land (i.e., disturbed habitat), ornamental plantings, and urban/developed land. According to design plans provided by the City of San Diego on February 1, 2019, the project would result in a total of 0.253 acre of impacts to sensitive vegetation communities. The project would cause permanent impacts to 0.006 acre of sensitive wetland communities and 0.108 acre of Tier I and II sensitive vegetation communities, as well as temporary impacts to 0.102 acre of sensitive wetland communities and 0.037 acre of Tier I and II sensitive vegetation communities. Mitigation for direct impacts (temporary and permanent) to sensitive vegetation communities is proposed through 0.361 acre of preservation at an existing Public Utilities Department (PUD) mitigation site. In addition to off-site mitigation, on-site revegetation would occur for temporarily impacted areas.

Impacts due to construction of an existing access path have been previously impacted and mitigated for, as documented in the biological resources report from Dudek & Associates, Inc. (Dudek; 2002), and are not included in this report.

Three sensitive plant species—Nuttall’s scrub oak (*Quercus dumosa*), California adolphia (*Adolphia californica*), and San Diego viguiera (*Bahiopsis [=Viguiera] laciniata*)—were observed within the survey area. The project would result in direct impacts to 10 individual Nuttall’s scrub oak, 10 individual California adolphia, and 3 individual San Diego viguiera. However, these impacts are not expected to threaten the local or regional long-term survival of these species. Therefore, the proposed impacts would be considered less than significant and require no mitigation. However, it is recommended that Nuttall’s scrub oak be included within the revegetation plant palette for the temporary impact area.

No sensitive wildlife species were observed within the wildlife survey area (i.e., project area and surrounding 300-foot radius) during the biological survey. However, two sensitive wildlife species—Belding’s orange-throated whiptail (*Aspidoscelis hyperythra beldingi*) and Cooper’s hawk (*Accipiter cooperii*)—have a moderate to high potential to occur. Additionally, nesting avian species protected by California Fish and Game Code

Section 3503 have high potential to nest in the survey area. Direct and/or indirect impacts to Cooper's hawk and direct impacts to other nesting avian species could occur as a result of project activities within the undeveloped canyon if work is conducted during the combined breeding season for raptors and upland bird species (February 1 to September 15). Pre-construction nest surveys are recommended to avoid and/or minimize direct and/or indirect impacts to Cooper's hawk and other nesting avian species. Potential impacts to Belding's orange-throated whiptail would be considered less than significant and require no mitigation. Suitable habitat within the impact area comprises a small fraction of the available habitat for any local whiptail populations, and potential impacts are not expected to reduce the population of this species to below a self-sustaining level.

The project is located outside of the City's Multi-Habitat Planning Area (MHPA), although the western project impact area lies approximately 125 feet north and downslope from the edge of the MHPA. No direct or indirect impacts within the MHPA are anticipated. However, adherence to general measures (i.e., best management practices and a revegetation plan) is anticipated to avoid and/or minimize potential indirect impacts from project activities to habitat within the MHPA.

The habitat within the project area and surrounding canyons does not function as a wildlife movement corridor. Therefore, the project would not hinder wildlife movement through the area.

An unnamed tributary to Alvarado Creek and associated wetland habitat occur within the project impact area. The tributary and associated wetland habitat are likely under the jurisdiction of the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB). The wetland habitat is likely considered City wetland. USACE/RWQCB/CDFW non-wetland waters and streambed entirely overlap. RWQCB/CDFW wetland waters entirely overlap. USACE wetland waters fall within RWQCB/CDFW wetland waters. City wetlands entirely overlap with RWQCB/CDFW wetland waters and include the vegetated portions of USACE/RWQCB/CDFW non-wetland waters. There is a patch of disturbed wetland north of Maisel Way and east of Chaparral Way that is supported by runoff released from a private property via a plastic pipe. This feature would likely not be considered jurisdictional because it has artificial hydrology.

Portions of USACE/RWQCB/CDFW non-wetland waters that occur within an unvegetated concrete-lined channel will not be impacted as steel plates will be used for vehicle access over the top of the channel. Project impacts to jurisdictional wetlands and waters are as follows:

- 0.007 acre (130 linear feet) of temporary impacts to non-wetland waters of the U.S., 0.004 acre of permanent impacts to wetland waters of the U.S., and 0.094 acre of temporary impacts to wetland waters of the U.S.
- 0.007 acre (130 linear feet) of temporary impacts to non-wetland waters of the state, 0.006 acre of permanent impacts to wetland waters of the state, and 0.095 acre of temporary impacts to wetland waters of the state.
- 0.006 acre of permanent impacts and 0.102 acre of temporary impacts to City wetlands.

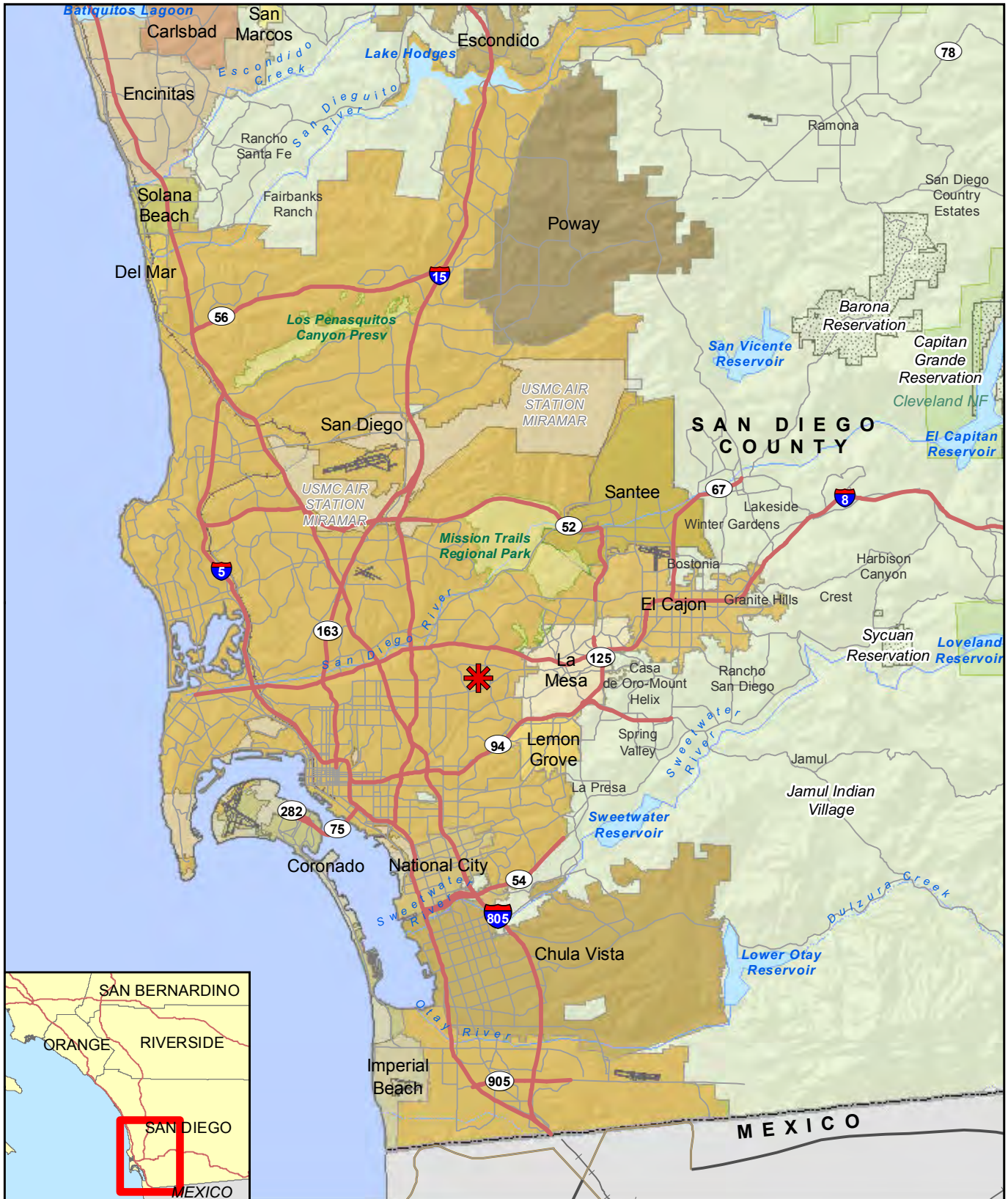
Any impacts to USACE, CDFW, or RWQCB waters would require a Section 404 permit authorization from USACE, a 1600 Streambed Alteration Agreement from CDFW, and a 401 State Water Quality Certification from RWQCB. Impacts to City wetlands would require and qualify for a deviation from the Environmentally Sensitive Lands (ESL) regulations (City of San Diego 2012), and appropriate mitigation would be applied. Mitigation for temporary and permanent impacts will occur at an appropriate PUD mitigation site for project impacts to non-wetland waters/streambed and wetland waters. The proposed mitigation would reduce impacts to jurisdictional waters to a level of less than significant. As direct impacts would occur to jurisdictional waters, indirect impacts to adjacent jurisdictional waters may occur. Implementation of best management practices is anticipated to minimize indirect impacts to jurisdictional waters. In addition to off-site mitigation, on-site revegetation will occur for temporarily impacted areas.

1.0 Introduction

The purpose of this biological resources report is to (1) document the existing biological conditions within the project survey area; (2) evaluate the survey area and the vicinity for the potential to support sensitive biological resources, including Environmentally Sensitive Lands (ESL); (3) provide an impact analysis based on the potential impacts associated with the proposed project; and (4) provide a discussion of avoidance, minimization, and mitigation measures that may be required to reduce those impacts to below a level of significance.

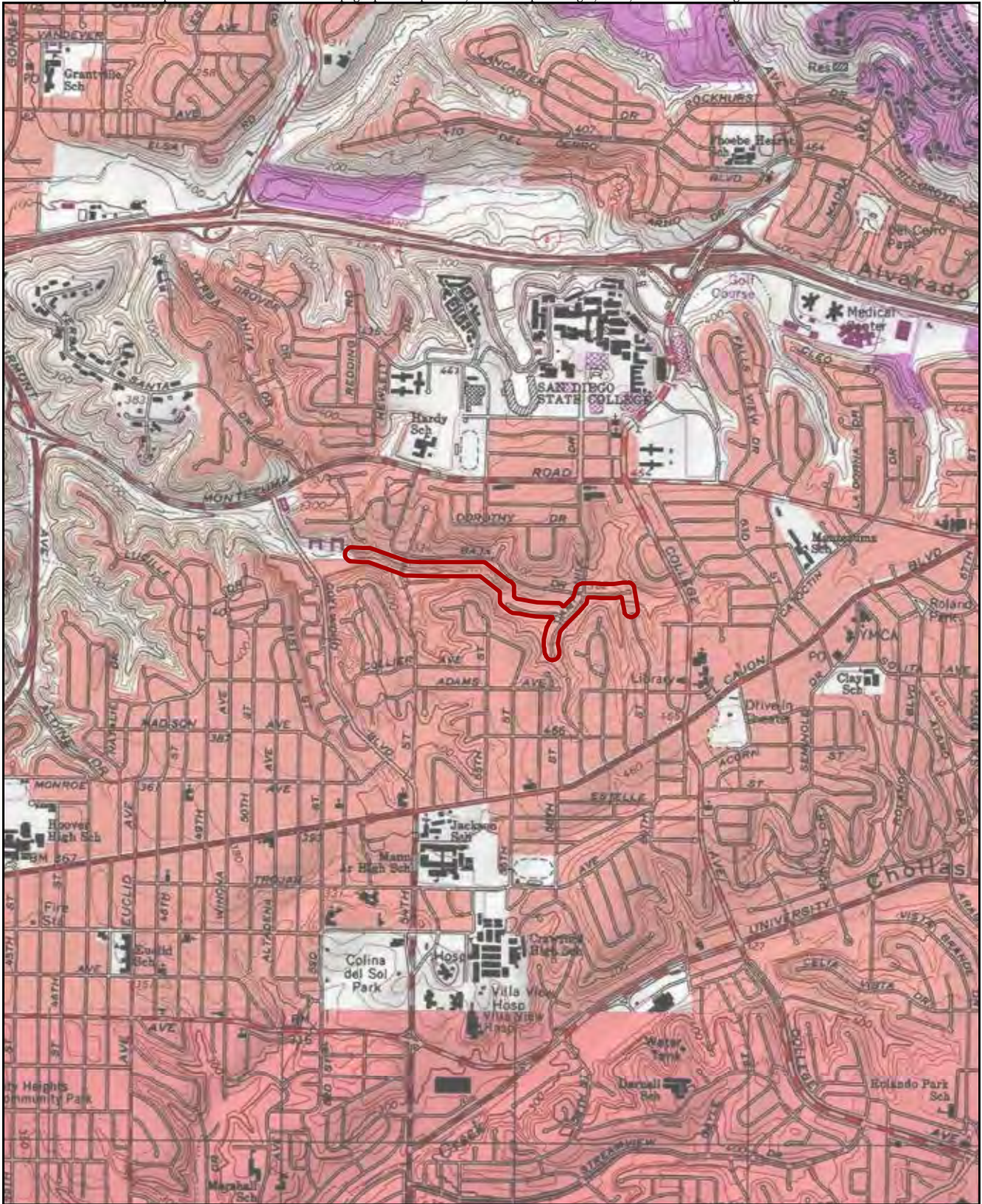
1.1 Project Location

The City of San Diego (City) Public Works Department's College Area Sewer and AC Water Project (project) is located within the city of San Diego, California (Figure 1). The project is within the Mission San Diego Land Grant of the U.S. Geological Survey (USGS) 7.5-minute topographic map, La Mesa quadrangle (Figure 2; USGS 1994). The project is situated along an unnamed tributary to Alvarado Creek within the College community planning area within Council District 9, and is bounded by Collwood Boulevard, Montezuma Road, Adams Avenue, and College Avenue (Figure 3). A portion of the project area is within the developed right-of-way in Campanile Way, Campanile Drive, Baja Drive, and 54th Street, while the other portion of the project area runs west-east within an undeveloped canyon generally south of Baja Drive, west of the western terminus of Campanile Way, and east of Collwood Boulevard (Figures 4a and 4b).



 Project Location

FIGURE 1
Regional Location




 Vegetation Survey Area

FIGURE 2

Project Location on USGS Map




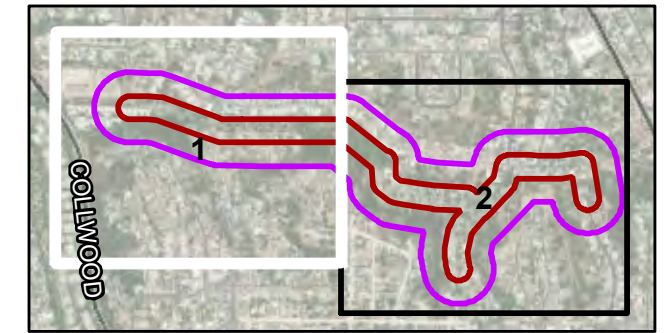
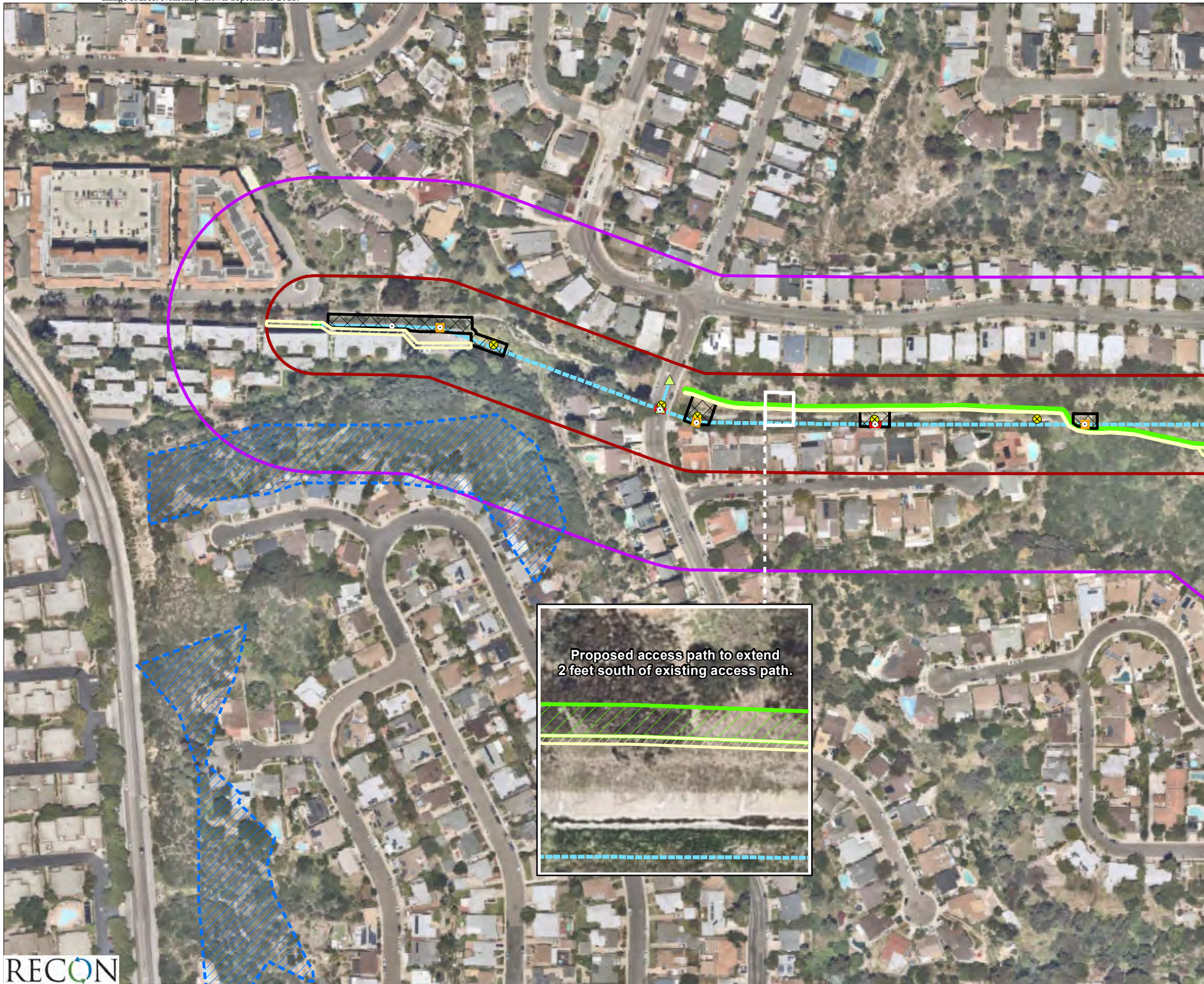
 Vegetation Survey Area

FIGURE 3

Project Location on City 800' Map



- Vegetation Survey Area
 - Wildlife Survey Area
 - City of San Diego MHPA
- Project Features**
- Proposed Sewer Main Replacement
 - Proposed Sewer Main Replacement - Trenchless
 - Existing Manhole
 - ⊗ Existing Manhole to be Abandoned
 - Existing Access Path (8' wide)
- Permanent Impacts**
- ⊙ Proposed Manhole (5'x5')
 - ▲ Proposed Vault (13'x11'8")
 - Proposed Access Path
- Temporary Impacts**
- Launching Pit (10'x20')
 - Receiving Pit (10'x10')
 - Temporary Construction Area

Proposed access path to extend
2 feet south of existing access path.

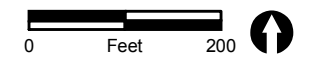
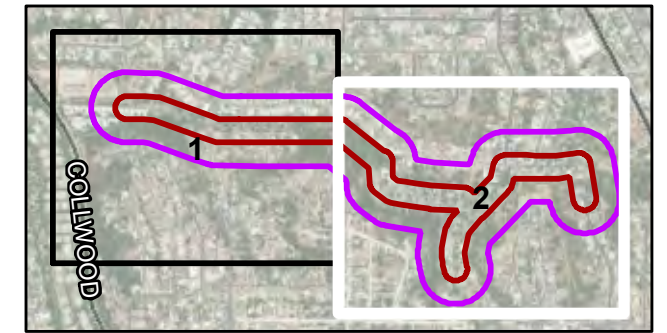
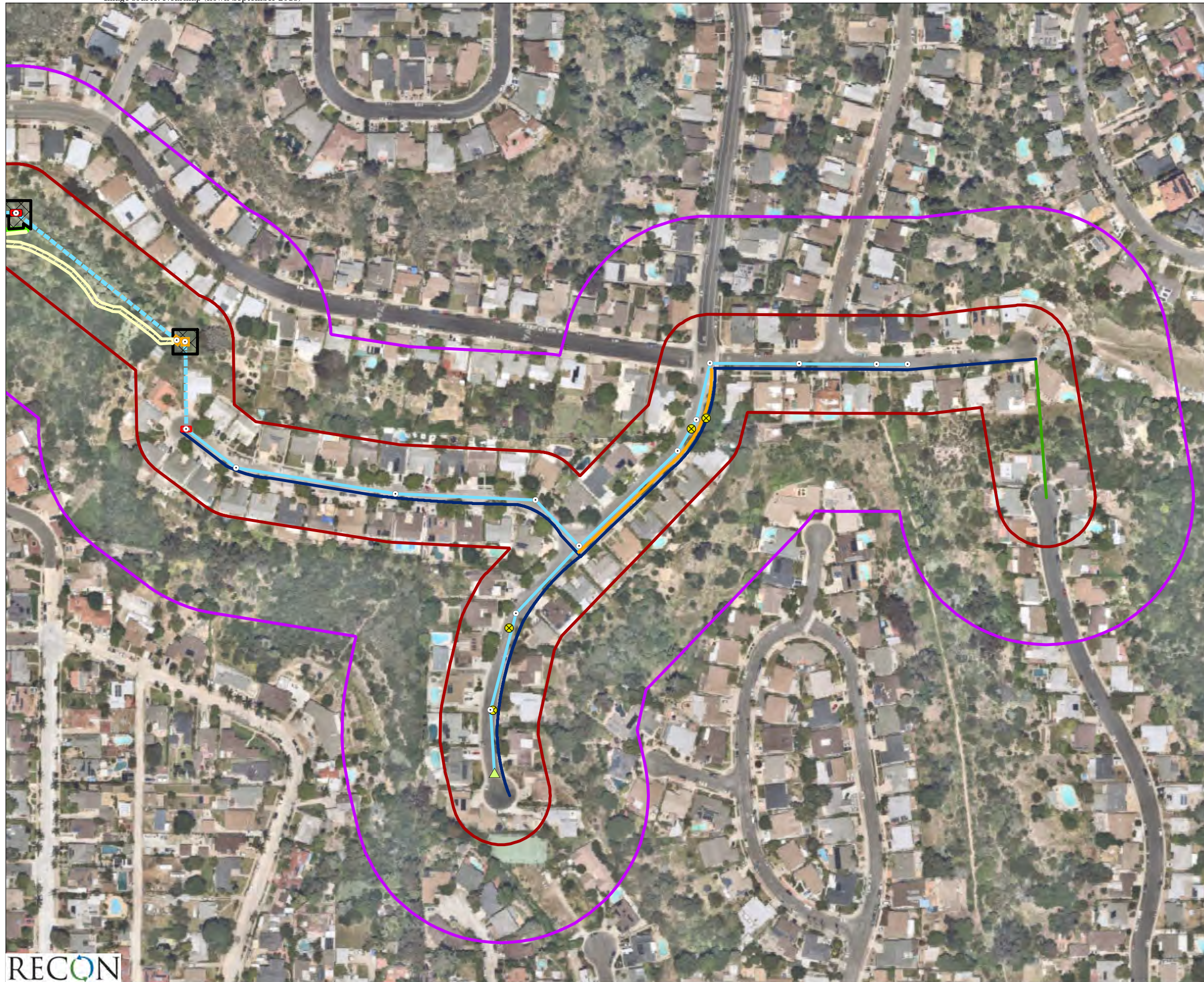


FIGURE 4a
Project Location on Aerial Photograph



- Vegetation Survey Area
- Wildlife Survey Area
- Project Features**
- Proposed Dual 8" Water Main
- Proposed 8" Water Main Replacement
- Water Main to be Abandoned
- Proposed Sewer Main Replacement
- Proposed Sewer Main Replacement - Trenchless
- ⊗ Existing Manhole to be Abandoned
- Existing Access Path (8' wide)
- Permanent Impacts**
- ⊙ Proposed Manhole (5'x5')
- ▲ Proposed Vault (13'x11'8")
- Proposed Access Path
- Temporary Impacts**
- Launching Pit (10'x20')
- Receiving Pit (10'x10')
- Temporary Construction Area

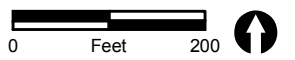


FIGURE 4b
Project Location on Aerial Photograph

1.2 Project Description

The project involves replacement and abandonment of vitrified clay (VC) sewer mains and asbestos cement (AC) water mains and construction of new mains via open trench and trenchless methods, as well as construction of ten launching/receiving pits, nine new manholes, and three new vault structure (see Figures 4a and 4b). More specifically, the project proposes the following:

- Replace-in-place via open trench approximately 1,528 linear feet (0.29 mile) of existing 8-inch and 10-inch VC sewer mains with new 8-inch, 12-inch, 15-inch, and 18-inch sewer mains.
- Replace-in-place via trenchless methods approximately 178 linear feet (0.03 mile) of existing 10-inch sewer main with 15-inch sewer main.
- Construct via open trench 1,014 linear feet (0.19 mile) of new 18-inch, 15-inch, and 10-inch sewer main.
- Construct via trenchless methods 2,045 linear feet (0.39 mile) of new 18-inch sewer main.
- Abandon and slurry fill approximately 3,075 linear feet (0.58 mile) of existing 8- and 10-inch sewer main.
- Replace-in-place via open trench approximately 2,578 linear feet (0.49 mile) of the existing 4-, 6-, and 8-inch AC water mains with new 8-inch diameter water mains.
- Construct via open trench approximately 483 linear feet (0.09 mile) of new 8-inch PVC water main (dual main).
- Abandon and slurry fill approximately 118 linear feet (0.02 mile) of existing 6-inch water main.

Appurtenances and accessory structures associated with the project include nine proposed launching/receiving pits for seven trenchless construction pipeline segments. The launching pits will be approximately 20 feet by 10 feet and the receiving pits will be approximately 10 feet by 10 feet. “Temporary Construction Area(s)” of varying sizes will surround each launching/receiving pit as shown on Figures 4a and 4b. Nine new manholes will also be added and eight manholes will be abandoned. A vault structure with a depth of 26 feet will replace the existing deep manhole on 54th Street. A vault structure with a depth of 32 feet will be added on 54th Street. A vault structure with a depth of 26 feet will replace the existing deep manhole on Campanile Drive. New manhole footprint will be approximately 5 feet by 5 feet for each manhole.

Where the project occurs in the undeveloped canyon, a 10-foot-wide vehicle access path (see “Proposed Access Path” and “Existing Access Path” on Figures 4a and 4b) is proposed to be utilized by construction crews for access to launching/receiving pits. Access to the project site along 54th Street and Collwood Boulevard will be available through an existing unpaved, 8-foot-wide City Public Utilities Department (PUD) maintenance access path (see “Existing Access Path” on Figures 4a and 4b). The access path east of 54th Street would

follow this existing maintenance access path, which generally parallels a 12-foot-wide cement flood control channel. The “Existing Access Path” is proposed to be widened 2 feet south, which would be considered part of the “Proposed Access Path” (see Figure 4a). The “Existing Access Path” connects four of the six launching/receiving pits east of 54th Street within the canyon, while a proposed access path extension would be graded and maintained (i.e., considered a permanent impact) to connect the easternmost segment and access the remaining two receiving pits within the canyon. The access path west of 54th Street would be from a parking lot located at residential apartment complexes east of Collwood Boulevard. Vegetation trimming and grading would be required for vehicle use of the existing and proposed access paths. Equipment within vegetated areas may include excavator, loader/backhoe, drills, crane, dump trucks, utility trucks, generator, and shaker/screen. Additionally, steel plates would be used for vehicle access over the existing concrete channel. All vehicles and construction activities would remain within the limits of the access paths and temporary construction areas.

2.0 Methods and Survey Limitations

Biological resource data for the project was obtained from a combination of literature review, general biological survey, and jurisdictional waters/wetland delineation. The literature review and survey methods are discussed further below.

2.1 Literature Review

RECON Environmental, Inc. (RECON) conducted an analysis of existing sensitive species occurrence records within two miles of the project area. This analysis included searches of the U.S. Fish and Wildlife (USFWS) all-species occurrence database (USFWS 2018a) and critical habitat portal (USFWS 2018b), the SanBIOS database (County of San Diego 2018), the California Natural Diversity Database (CNDDDB; California Department of Fish and Wildlife [CDFW] 2018a), and Amphibian and Reptile Atlas of Peninsular California (San Diego Natural History Museum [SDNHM] 2018); as well as reviews of the San Diego County Bird Atlas and Mammal Atlas (Unitt 2004; Tremor et al. 2017). Background research to assess the existing biological conditions also included a review of online aerial satellite imagery (Google 2018), USGS topographic map (USGS 1994), and U.S. Department of Agriculture (USDA) soil survey maps (USDA 1973).

2.2 Biological Survey

RECON biologists JR Sundberg and Kayo Valenti conducted a field survey on October 16, 2018, between 8:30 a.m. and 3:30 p.m. to assess the existing conditions of the biological resources. See Attachment 1 for the biologists’ qualifications. Weather conditions during the survey consisted of a clear sky, winds of 0 to 1 mile per hour, and air temperature of 65 to 79 degrees Fahrenheit. The survey area consisted of the entire project area based on the project features provided by the City in September 2018 and the surrounding 100-foot radius for vegetation and surrounding 300-foot radius for wildlife. Final access path locations in the canyon were provided by the City on February 1, 2019, based on

information gathered from the biologists during the field survey. The biologists conducted the survey on foot by meandering throughout the survey area where slope and vegetation density allowed access. Areas that were too steep or densely vegetated were viewed from the closest accessible areas. Private property was avoided, but the biologists covered the streets within the project area in order to search for additional pockets of vegetation or assess ornamental plantings for suitable wildlife habitat. Digital photographs of representative areas were taken during the survey. Fieldwork focused on three primary objectives: (1) vegetation mapping, (2) plant and wildlife species inventory and assessment of the potential occurrence for sensitive species, and (3) delineating jurisdictional waters and wetlands.

2.2.1 Vegetation Mapping

Vegetation communities and land cover types were mapped on a 1-inch-equals-100-foot scale aerial photograph (flown June 2018) of the vegetation survey area (herein referred to as survey area). A sub-meter-accurate global positioning system (GPS) unit was used to record sensitive vegetation communities. Dominant plant species were noted for each vegetation community. Vegetation community classifications follow Holland (1986) as modified by Oberbauer et al. (2008), with minor adjustments for consistency with the City of San Diego's Biology Guidelines (City of San Diego 2012).

2.2.2 Species Inventory and Assessment

Plant species observed within the survey area were noted; however, a complete inventory of non-native ornamental species within developed and landscaped areas was not recorded. The survey also included a directed search for sensitive plants that would have been apparent at the time of the survey. Limitations to the compilation of a comprehensive floral checklist were imposed by seasonal factors, as the survey was conducted in fall so spring annuals may not have been detected. Floral nomenclature follows the Jepson Manual (Baldwin et al. 2012) as updated by the Jepson Flora Project (University of California 2018). In instances where common names were not provided in these resources, common names were obtained from Rebman and Simpson (2014), the USDA maintained database (USDA 2013), or the Sunset Western Garden Book (Brenzel 2001).

All animal species observed directly or detected from calls, tracks, or other sign were recorded. The wildlife survey was limited by seasonal and temporal factors. Nocturnal animals could only be detected by sign, as the survey was performed during the day. In addition, as the survey was conducted in fall, spring or summer migrants would likely not have been detected. Zoological nomenclature follows the American Ornithological Society's Checklist (2018) and Unitt (2004) for birds; Baker et al. (2003) for mammals; Crother et al. (2008) for amphibians and reptiles; and SDNHM (2002) and Evans (2007) for invertebrates.

Determination of the potential occurrence for listed, sensitive, or noteworthy species is based upon the literature review, habitat conditions, and known ranges and habitat preferences for the species (Jennings and Hayes 1994; Unitt 2004; CDFW 2018b–e; California Native Plant Society [CNPS] 2018; Reiser 2001).

2.2.3 Jurisdictional Waters/Wetland Delineation

RECON biologist JR Sundberg conducted a routine jurisdictional waters/wetland delineation in the survey area during the October 16, 2018 field survey, following the guidelines set forth by the U.S. Army Corps of Engineers (USACE; 1987, 2008a, 2008b) to determine the presence and extent of wetlands and/or waters under the jurisdiction of USACE, CDFW, Regional Water Quality Control Board (RWQCB), and/or the City. Wetlands were delineated using the following three parameters: hydrophytic vegetation, wetland hydrology such as the presence of seasonal flows and an ordinary high watermark, and hydric soils. According to the USACE, indicators for all three parameters must be present to qualify an area as a wetland. RWQCB waters of the state include all areas that meet one of three criteria (hydrology, hydric soils, or wetland vegetation) and generally include, but are not limited to, all waters under the jurisdiction of the USACE. The CDFW has jurisdiction over streambed and wetland habitats associated with watercourses, delineated by the outer edge of wetland vegetation or at the top of the bank of streams or lakes, whichever is wider. City wetlands include wetland waters of the state within the city of San Diego.

To determine presence of hydrophytic vegetation, a direct search was conducted for wetland vegetation or areas dominant by wetland plant species, as defined by the National Wetland Plant List (Lichvar 2016). To determine the presence of wetland hydrology, hydrologic information for the site was obtained by reviewing USGS topographic maps and by directly observing hydrology indicators in the field. To determine the presence of hydric soils, sample points were selected within potential wetland areas and near the apparent boundary between wetland and upland. This boundary was inferred based on topography and changes in the composition of the vegetation. A complete list of hydric soil indicators is provided in the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008b). Information on the soil types sampled in the survey area is summarized from the Soil Survey for San Diego County (USDA 1973), the San Diego Association of Governments (SANDAG) 1995 geographic information system data (SANDAG 1995), and the USDA Hydric Soils of California list (hydric soil list; USDA 2015).

Wetland Determination Data Forms (USACE 2008b) were completed at three sample points. Non-wetland waters were delineated based on A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008a). Updated OHWM datasheets (USACE 2010) were completed at two locations within the project survey area. Refer to the Jurisdictional Waters/Wetland Delineation Report for a more detailed description of methods (RECON 2019).

3.0 Existing Conditions and Survey Results

This section describes the existing physical and biological conditions of the project survey area. This includes a summary of land use, topographical features, and soils observed during the biological survey conducted on October 16, 2018.

3.1 Physical Characteristics

3.1.1 Existing Land Use

Half of the survey area occurs within residential development and the other half within an undeveloped canyon that falls within the residential development. The undeveloped canyon occurs within the southeastern portion of a larger mosaic of urban canyons around Interstate 8 and Fairmount Avenue. The portion that falls within the survey area contains an unnamed tributary to Alvarado Creek.

3.1.2 Topography and Soils

The survey area generally consists of developed land on the top of a mesa, surrounding narrow finger canyons. The undeveloped canyon of the survey area contains a low channel in the middle that generally runs east-west with north- and south-facing slopes on either side. In the eastern portion of the survey area within the canyon, the channel curves southeast with the aspect of the slopes changing accordingly.

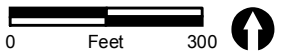
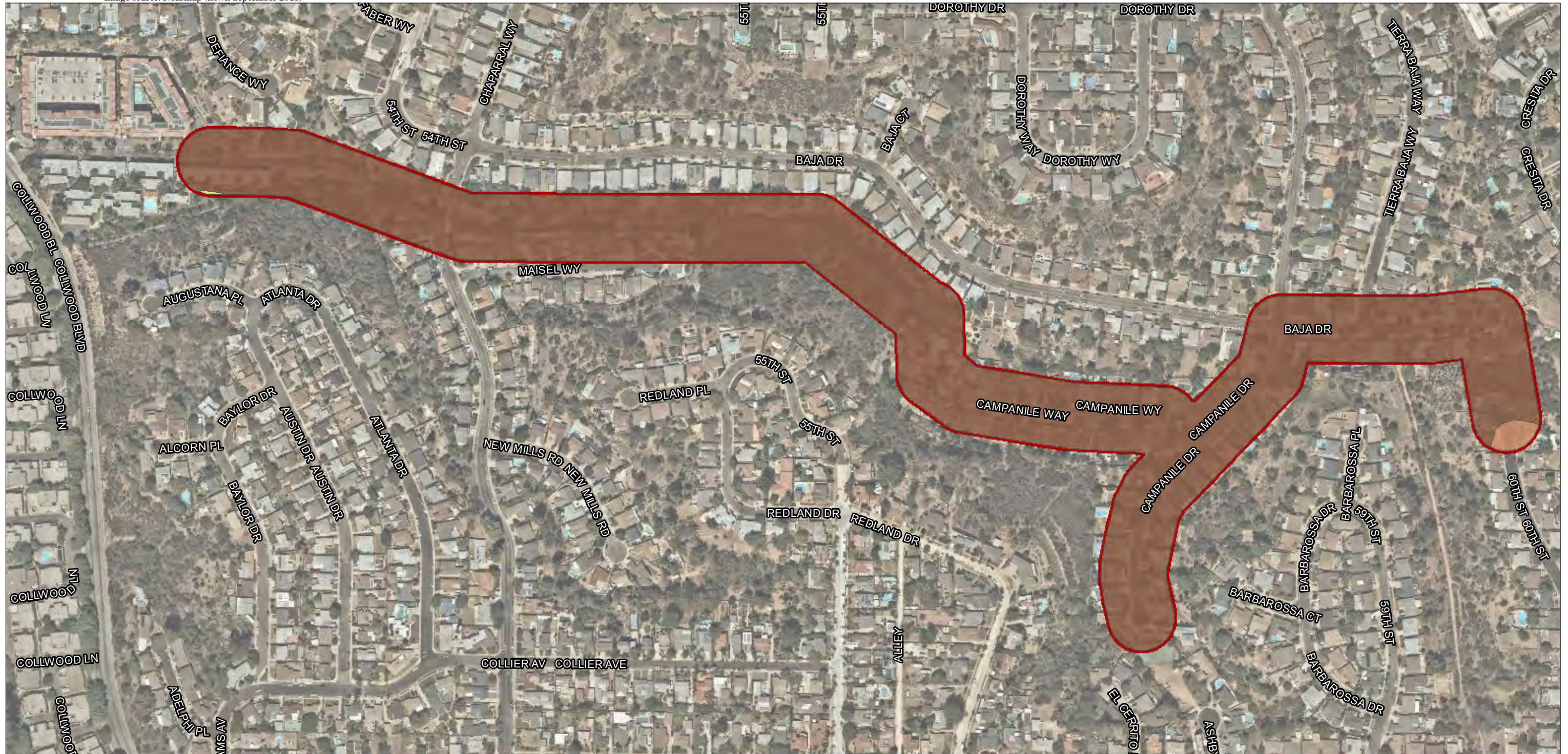
The highest elevation within the survey area is approximately 454 feet above mean sea level (AMSL) within the southeastern portion of the residential development, and the lowest elevation is approximately 260 feet AMSL within the western portion of the unnamed tributary (USGS 1994).

Three soil series, Diablo, Redding, and Olivenhain, are mapped within the survey area (Figure 5; USDA 1973). Characteristics of these soils are summarized below from the Soil Survey of San Diego Area, California (USDA 1973).

Diablo-Urban land complex, 5 to 15 percent slopes, indicates areas that originally supported Diablo, but have been altered through cut-and-fill operations and leveling. This occurs within almost the entire survey area.

Redding-Urban land complex, 2 to 9 percent slopes, indicates areas that originally supported Redding, but have been altered through cut-and-fill operations and leveling. Redding cobbly loam is on the hydric soil list and can be hydric in depressions (USDA 2015). This occurs within the majority of the eastern tip of the survey area.

Olivenhain-Urban land complex, 2 to 9 percent slopes, indicates areas that originally supported Olivenhain, but have been altered through cut-and-fill operations and leveling. Olivenhain cobbly loam is on the hydric soil list and can be hydric in depressions (USDA 2015). This occurs as a small sliver at the western tip of the survey area.



- Vegetation Survey Area
- Soil Type**
- Diablo-Urban Land Complex, 5 to 15 Percent Slopes
- Olivenhain-Urban Land Complex, 2 to 9 Percent Slopes
- Redding-Urban Land Complex, 2 to 9 Percent Slopes

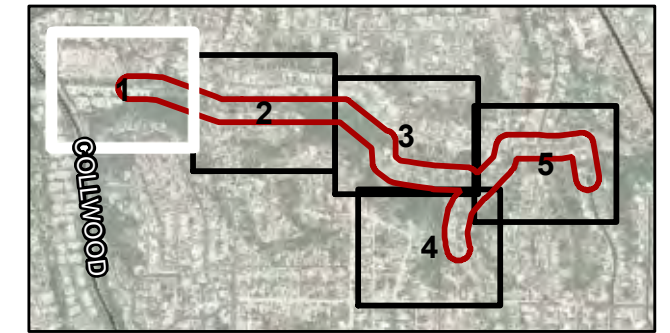
FIGURE 5
Soils within the Project Survey Area

3.2 Biological Resources

3.2.1 Botanical Resources

The following nine vegetation communities and land cover types were identified in the 25.061-acre survey area: non-native riparian, disturbed wetland (including vegetated channel, artificial hydrology, and unvegetated channel), maritime succulent scrub, Diegan coastal sage scrub, disturbed coastal sage scrub, eucalyptus woodland, disturbed land, ornamental plantings, and urban/developed land. Table 1 lists the acreage of each vegetation community and land cover type, and Figures 6a through 6e illustrate the location of each within the survey area. Photographs 1 through 9, taken from Photo Points A through I on Figures 6a through 6c, provide views of the vegetation communities. A total of 106 plant species were identified within the survey area (Attachment 2). Of this total, 43 (41 percent) are species native to southern California and 63 (59 percent) are introduced species. Sensitive species observed or with high to moderate potential to occur within the survey area are discussed below in the Sensitive Biological Resources section (Section 3.3).

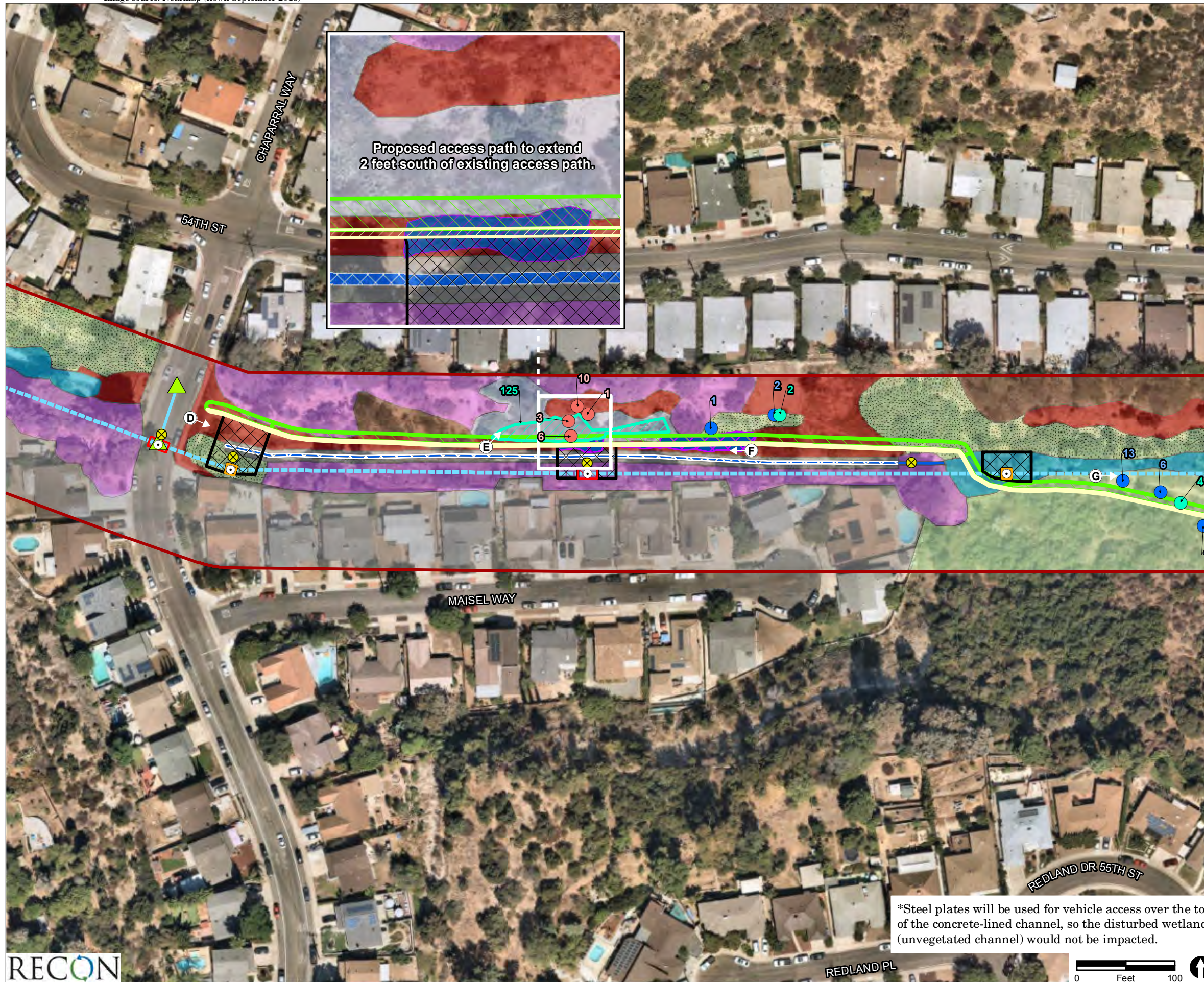
Community or Type (Holland Code as modified by Oberbauer)	City of San Diego Tier	Acres
Non-native riparian (65000)	-- ^a	0.784
Disturbed wetland (vegetated channel) (11200)	-- ^a	0.016
Disturbed wetland (artificial hydrology) (11200)	-- ^a	0.048
Disturbed wetland (unvegetated channel) (11200)	-- ^a	0.068
Maritime succulent scrub (32400)	I	0.173
Diegan coastal sage scrub (32500)	II	2.326
Disturbed coastal sage scrub (32500)	II	1.608
Eucalyptus woodland (79100)	IV	0.285
Disturbed land (11300)	IV	1.132
Ornamental plantings (11000)	IV	2.297
Urban/developed land (12000)	-- ^b	16.324
TOTAL		25.061
^a Wetlands do not have City of San Diego-assigned tiers.		
^b No City of San Diego-assigned tier.		



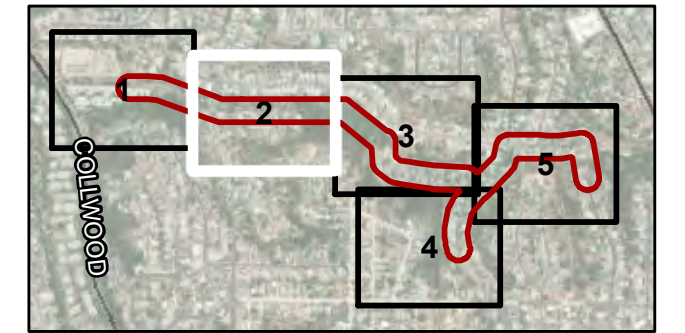
- Vegetation Survey Area
- City of San Diego MHPA
- Photo Point
- Vegetation Communities**
- Diegan Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Disturbed Land
- Disturbed Wetland (Vegetated Channel)
- Disturbed Wetland (Unvegetated Channel)
- Non-Native Riparian
- Ornamental Plantings
- Urban/Developed
- Sensitive Plant Species**
- Nuttall's Scrub Oak
- Project Features**
- Proposed Sewer Main Replacement
- Proposed Sewer Main Replacement - Trenchless
- Existing Manhole
- Existing Manhole to be Abandoned
- Permanent Impacts**
- Proposed Manhole (5'x5')
- Proposed Access Path
- Temporary Impacts**
- Receiving Pit (10'x10')
- Temporary Construction Area*

*Steel plates will be used for vehicle access over the top of the concrete-lined channel, so the disturbed wetland (unvegetated channel) would not be impacted.

FIGURE 6a
Existing Biological Resources and Impacts

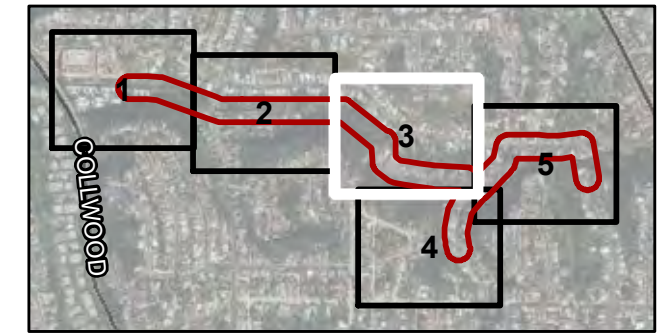


*Steel plates will be used for vehicle access over the top of the concrete-lined channel, so the disturbed wetland (unvegetated channel) would not be impacted.



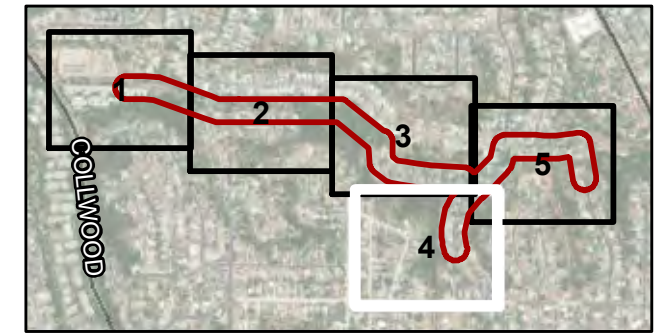
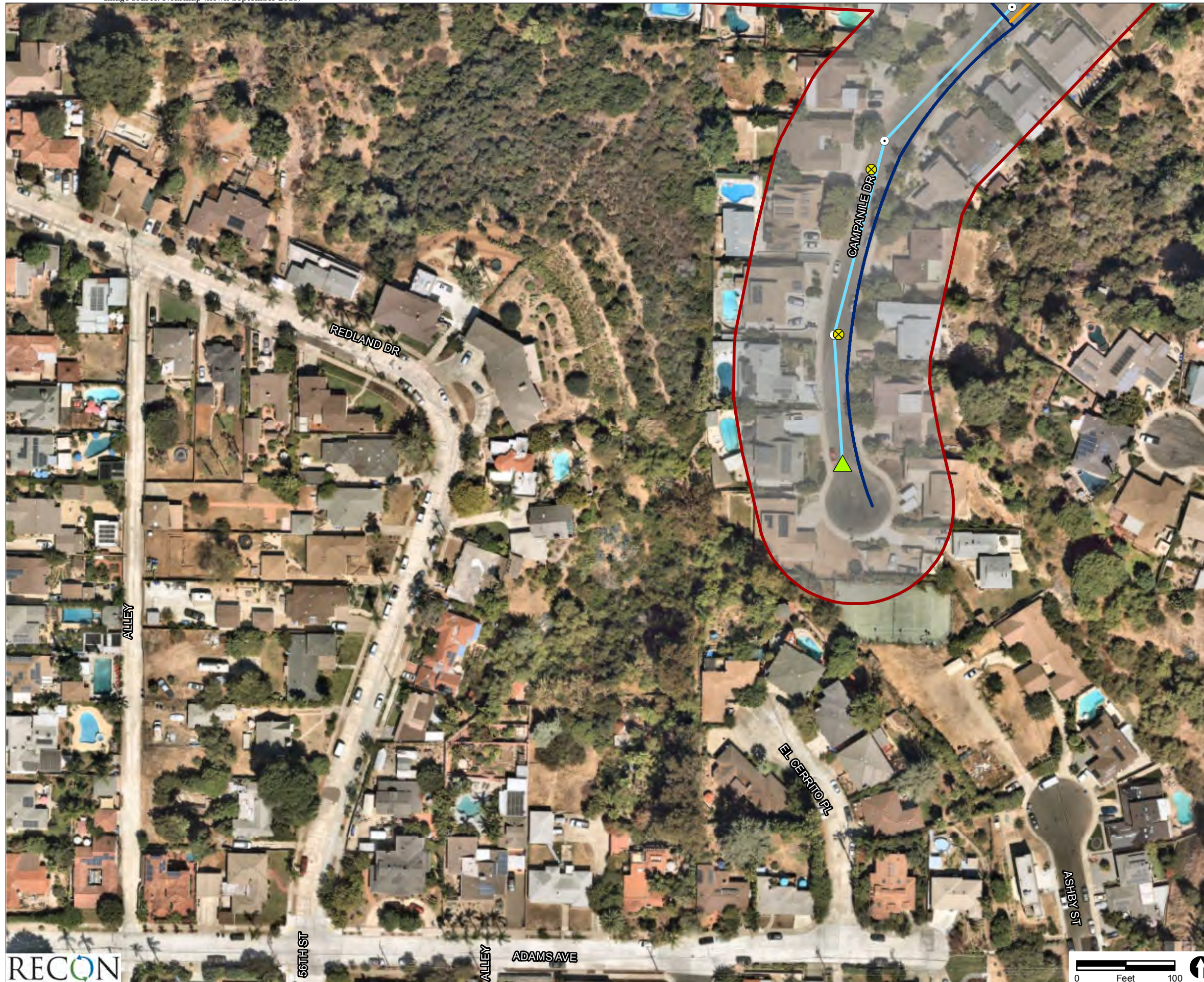
- Vegetation Survey Area
- Photo Point
- Vegetation Communities**
 - Diegan Coastal Sage Scrub
 - Disturbed Coastal Sage Scrub
 - Disturbed Land
 - Disturbed Wetland (Vegetated Channel)
 - Disturbed Wetland (Artificial Hydrology)
 - Disturbed Wetland (Unvegetated Channel)
 - Eucalyptus Woodland
 - Maritime Succulent Scrub
 - Non-Native Riparian
 - Ornamental Plantings
 - Urban/Developed
- Sensitive Plant Species**
 - California Adolphia
 - Nuttall's Scrub Oak
 - San Diego County Viguiera
- Project Features**
 - Proposed Sewer Main Replacement
 - Proposed Sewer Main Replacement - Trenchless
 - Existing Access Path (8' wide)
 - ⊗ Existing Manhole to be Abandoned
- Permanent Impacts**
 - ⊙ Proposed Manhole (5'x5')
 - ▲ Proposed Vault (13'x11'8")
 - Proposed Access Path
- Temporary Impacts**
 - Launching Pit (10'x20')
 - Receiving Pit (10'x10')
 - Temporary Construction Area*

FIGURE 6b
Existing Biological Resources and Impacts



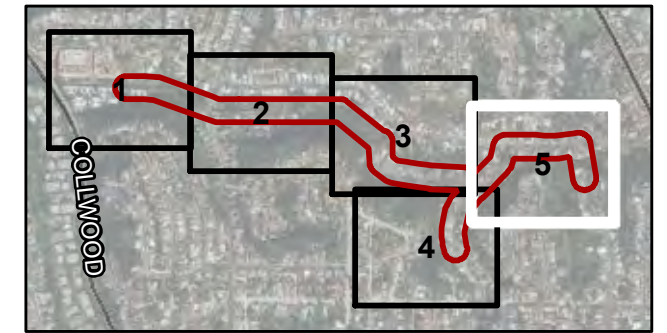
- Vegetation Survey Area
- Photo Point
- Vegetation Communities**
- Diegan Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Disturbed Land
- Disturbed Wetland (Vegetated Channel)
- Eucalyptus Woodland
- Non-Native Riparian
- Ornamental Plantings
- Urban/Developed
- Sensitive Plant Species**
- Nuttall's Scrub Oak
- Project Features**
- Proposed Dual 8" Water Main
- Proposed 8" Water Main Replacement
- Proposed Sewer Main Replacement
- Proposed Sewer Main Replacement - Trenchless
- Existing Access Path (8' wide)
- Permanent Impacts**
- ⊙ Proposed Manhole (5'x5')
- Proposed Access Path
- Temporary Impacts**
- Launching Pit (10'x20')
- Receiving Pit (10'x10')
- Temporary Construction Area

FIGURE 6c
Existing Biological
Resources and Impacts



- Vegetation Survey Area
- Vegetation Communities**
- Urban/Developed
- Project Features**
- Proposed Dual 8" Water Main
- Proposed 8" Water Main Replacement
- Proposed Sewer Main Replacement
- ⊗ Existing Manhole to be Abandoned
- Permanent Impacts**
- ⊙ Proposed Manhole (5'x5')
- ▲ Proposed Vault (13'x11'8")

FIGURE 6d
Existing Biological
Resources and Impacts



- Vegetation Survey Area
- Vegetation Communities**
- Diegan Coastal Sage Scrub
- Urban/Developed
- Project Features**
- Proposed Dual 8" Water Main
- Proposed 8" Water Main Replacement
- Water Main to be Abandoned
- Proposed Sewer Main Replacement
- X Existing Manhole to be Abandoned
- o Proposed Manhole (5'x5')
- Permanent Impacts**
- o Proposed Manhole (5'x5')

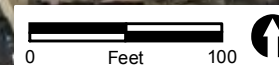


FIGURE 6e
Existing Biological Resources and Impacts



PHOTOGRAPH 1

Photo Point A of Disturbed Coastal Sage Scrub on the Left, Disturbed Wetland (Unvegetated Channel) along the Bottom of the Channel, and Ornamental Plantings Right of the Channel, Facing Southeast, Taken on October 16, 2018



PHOTOGRAPH 2

Photo Point B of Non-native Riparian and Disturbed Coastal Sage Scrub on the Right, Facing West, Taken on October 16, 2018





PHOTOGRAPH 3
Photo Point C of Disturbed Land and Diegan Coastal Sage Scrub,
Facing South, Taken on October 16, 2018



PHOTOGRAPH 4
Photo Point D of Disturbed Land, Eucalyptus Woodland, and
Ornamental Plantings, Facing East, Taken on October 16, 2018



PHOTOGRAPH 5
Photo Point E of Maritime Succulent Scrub, Facing Northeast,
Taken on October 16, 2018



PHOTOGRAPH 6
Photo Point F of Disturbed Wetland (Unvegetated Channel) Shown at
the Bottom of the Channel and Disturbed Wetland (Artificial
Hydrology) with Cattails on the Right, Facing West,
Taken on October 16, 2018





PHOTOGRAPH 7

Photo Point G of Nuttall's Scrub Oak within the Access Route,
Facing East, Taken on October 16, 2018



PHOTOGRAPH 8

Photo Point H of Non-native Riparian and Diegan Coastal Sage Scrub,
Facing Northeast, Taken on October 16, 2018





PHOTOGRAPH 9
Photo Point I of Disturbed Wetland (Vegetated Channel) and
Non-native Riparian, Facing Northwest, Taken on October 16, 2018

3.2.1.1 Non-Native Riparian

Non-native riparian is a densely vegetated riparian thicket dominated by non-native, invasive species (Oberbauer et al. 2008). It occurs along the unnamed tributary within the western and eastern portions of the survey area (see Figures 6a through 6c). It is dominated by Mexican fan palm (*Washingtonia robusta*), contains scattered ornamental trees, such as Brazilian pepper tree (*Schinus terebinthifolius*) and shamel ash (*Fraxinus uhdei*), and contains a few native arroyo and Goodding's black willow trees (*Salix lasiolepis* and *Salix gooddingii*) (see Photographs 2, 8, and 9). While the non-native riparian is dominated by non-native trees, it is considered moderate-quality habitat for wildlife due to the dominance of mature trees that can provide habitat to a variety of wildlife species, and occurrence adjacent to other mature coastal sage scrub. Non-native riparian is considered a wetland vegetation community under the City of San Diego's Biology Guidelines (2012) and is considered sensitive by the State of California resource agencies.

3.2.1.2 Disturbed Wetland

Disturbed wetlands are areas that are permanently or periodically inundated and have been significantly modified by human activity. They include portions of wetlands with obvious artificial structures such as concrete lining, barricades, riprap, piers, or gates. These areas are often unvegetated, but may contain scattered native or non-native vegetation. Disturbed wetland examples may include lined channels, Arizona crossings, detention basins, culverts, and ditches (Oberbauer et al. 2008). Disturbed wetland is considered a wetland vegetation community under the City of San Diego's Biology Guidelines (2012) and is considered sensitive by the State of California resource agencies.

Disturbed wetland occurs in three locations within the survey area (see Figures 6a through 6c):

- Unvegetated Channel – This category of disturbed wetland occurs along the bottom of a 3-foot-wide section of the 12-foot-wide cement flood control channel (Photographs 1 and 6). This area was unvegetated, but contained standing water at the time of the survey. It is considered low-quality habitat for wildlife due to the lack of vegetation.
- Vegetated Channel - This category of disturbed wetland occurs in portions of the concrete channel that are covered in sediment and/or ponded water and surrounded by mature trees (Photograph 9). These areas transition to non-native riparian in portions of the channel that are dominated by trees, with the exception of the ornamental plantings in the eastern portion of the canyon. This area of disturbed wetland is considered moderate-quality habitat for wildlife as it occurs adjacent to vegetation that contains mature shrubs and trees that likely provide habitat to a variety of wildlife species but is ultimately bound by residential development.
- Artificial Hydrology – This category of disturbed wetland occurs as two patches within the canyon upslope of the cement channel east of 54th Street and appear to be

supported by runoff discharging from a private property via a three-inch corrugated plastic pipe. These patches of disturbed wetlands are dominated by broad-leaved cattail (*Typha latifolia*) and freeway iceplant (*Carpobrotus edulis*) (see Photograph 6). These areas are considered low-quality habitat for wildlife due to the prevalence of a non-native ruderal species and as they are ultimately bound by residential development.

3.2.1.3 Maritime Succulent Scrub

Maritime succulent scrub is a low, open vegetation community dominated by drought deciduous, subligneous (somewhat woody), malacophyllous (soft-leaved) shrubs with a rich mixture of cacti and stem and leaf succulents. The proportion of cacti is typically highest in inland areas. Ground cover is more or less devoid of vegetation between shrubs. Growth and flowering are concentrated in the spring. Maritime succulent scrub occurs on thin rocky or sandy soils, often on steep slopes of coastal headlands and bluffs, and often intergrades with southern coastal bluff scrub on more exposed areas, and with coastal sage scrub on better developed, moister soils away from the immediate coast (Holland 1986).

Maritime succulent scrub occurs as a small patch within the central portion of the canyon in the survey area, east of 54th Street (see Figure 6b). This vegetation community is dominated by a mix of coast prickly-pear (*Opuntia littoralis*), coast cholla (*Cylindropuntia prolifera*), and California adolphia (*Adolphia californica*) (see Photograph 5). The maritime succulent scrub is considered moderate-quality habitat for wildlife as it occurs within a vegetated canyon among mature shrubs and trees that likely provide habitat to a variety of wildlife species, but is ultimately bound by residential development. Maritime succulent scrub is considered sensitive by state resource agencies, and a Tier I (rare uplands) community under the City's Biology Guidelines (2012).

3.2.1.4 Diegan Coastal Sage Scrub

Diegan coastal sage scrub is a plant community consisting of low-growing, aromatic, drought-deciduous soft-woody shrubs that have an average height of approximately 3 to 4 feet. It is typically dominated by facultative drought deciduous species such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), and white sage (*Salvia apiana*). The community typically is found on low moisture-availability sites with steep, xeric slopes or clay rich soils that are slow to release stored water. These sites often include drier south- and west-facing slopes and occasionally north-facing slopes, where the community can act as a successional phase of chaparral development. Diegan coastal sage scrub intergrades at higher elevations with several types of chaparrals, or in northern inland areas with Riversidean sage scrub. Diegan coastal sage scrub is found in coastal areas from Los Angeles County south into Baja California (Holland 1986).

Diegan coastal sage scrub occurs along the southern portion of the survey area, generally on north-facing slopes (see Figures 6a through 6e), and extends south of the survey area within the canyon. It has a thick shrub cover (approximately 80 percent) and is dominated

by lemonade berry (*Rhus integrifolia*) and contains other scattered species such as laurel sumac, toyon (*Heteromeles arbutifolia*), California buckwheat, and Nuttall's scrub oak (*Quercus dumosa*) (see Photographs 3, 7, and 8). In the Vegetation Classification Manual for Western San Diego County (Sproul et al. 2011) under Appendix C Classification Crosswalks for Vegetation Alliances and Associations of San Diego County the *Rhus integrifolia* Alliance crosswalks to Diegan coastal sage scrub in Vegetation Communities of San Diego County (Oberbauer et al. 2008). The Diegan coastal sage scrub is considered moderate-quality habitat for wildlife as it occurs within a vegetated canyon with mature shrubs and trees that likely provide habitat to a variety of wildlife species, but is ultimately bound by residential development. Diegan coastal sage scrub is considered sensitive by federal and state resource agencies, and is a Tier II (uncommon uplands) community under the City's Biology Guidelines (2012).

3.2.1.5 Disturbed Coastal Sage Scrub

Disturbed coastal sage scrub occurs within the northern portion of the survey area, generally on steep, south-facing slopes with a shrub cover of approximately 40 percent (see Figures 6a through 6c). This vegetation community occurs adjacent to residences and associated ornamental vegetation. It is dominated by lemonade berry and contained non-native grasses (*Bromus* spp.) in the understory (see Photographs 1 and 2). The disturbed coastal sage scrub is considered moderate-quality habitat for wildlife as it occurs within a vegetated canyon with mature shrubs and trees that likely provide habitat to a variety of wildlife species, but is ultimately bound by residential development. Diegan coastal sage scrub is considered sensitive by federal and state resource agencies, and is a Tier II (uncommon uplands) community under the City's Biology Guidelines (2012).

3.2.1.6 Eucalyptus Woodland

Eucalyptus woodland occurs as two patches in the north-central portion of the canyon within the survey area (see Figure 6b). Sugar gum (*Eucalyptus cladocalyx*) and silver dollar gum (*Eucalyptus polyanthemus*) were observed as the dominant eucalyptus trees in this vegetation community (see Photograph 4). As the eucalyptus woodland is dominated by mature trees adjacent to other mature shrubs and trees within the canyon that is ultimately bound by development, it is considered moderate-quality nesting habitat for raptors, tree-cavity nesters, and ground-dwelling species such as reptiles and mammals. Eucalyptus woodland is considered a Tier IV (other uplands) vegetation community under the City's Biology Guidelines (2012).

3.2.1.7 Disturbed Land

Disturbed land is composed of areas that have been previously disturbed and no longer function as a native or naturalized vegetation community. Vegetation, if present, is dominated by opportunistic non-native species. Disturbed land can also include previously graded lands such as fire breaks, off-road-vehicle trails, and construction staging sites (Oberbauer et al. 2008).

Disturbed land occurs as several patches throughout the vegetated canyon of the survey area (see Figures 6a through 6c). It is dominated by non-native ruderal species such as Russian thistle (*Salsola tragus*), Australian saltbush (*Atriplex semibaccata*), ripgut grass (*Bromus diandrus*), and freeway iceplant (see Photograph 3 and 4). The disturbed land provides low-quality habitat due to the prevalence of non-native ruderal species and general absence of shrubs. Disturbed land is considered a Tier IV (other uplands) vegetation community under the City's Biology Guidelines (2012).

3.2.1.8 Ornamental Plantings

Ornamental plantings were dominated by non-native trees associated with the residential development along the canyon within the survey area (see Figures 6a through 6c). It contained species such as Peruvian pepper tree (*Schinus molle*), carob tree (*Ceratonia siliqua*), rusty fig (*Ficus rubiginosa*), golden rain tree (*Koelreuteria paniculata*), Chinese elm (*Ulmus parvifolia*), and understory species such as freeway iceplant and English ivy (*Hedera helix*) (see Photograph 1 and 4). The ornamental plantings is considered low-quality habitat due to the dominance of trees and occurrence within an undeveloped canyon that is ultimately bound by development. Ornamental plantings are considered a Tier IV (other uplands) vegetation community under the City's Biology Guidelines (2012).

3.2.1.9 Urban/Developed

Urban/developed land is the dominant land cover type within the survey area and includes all paved streets (including vegetation that has been planted along the streets) and private residences (including most maintained vegetation occurring on their property) (see Figures 6a through 6e). Urban/developed land is not a sensitive vegetation community and is not assigned a tier under the City's Biology Guidelines (2012).

3.2.2 Zoological Resources

A total of 30 animal species was detected within the wildlife survey area, including 11 invertebrates, 2 reptiles, 15 birds, and 2 mammals (Attachment 3). Overall, the survey area provides moderate- to low-quality habitat within the canyon and low value habitat for wildlife species where the survey area is developed. A complete list of the wildlife species detected within the survey area is provided in Attachment 3.

Wildlife species observed within the wildlife survey area consist largely of species characteristic of scrub communities, as well as those commonly observed within the urban-wildland interface. These species include cabbage white (*Pieris rapae*), gulf fritillary (*Agraulis vanillae incarnata*), common buckeye (*Junonia coenia grisea*), common side-blotched lizard (*Uta stansburiana*), California scrub-jay (*Aphelocoma californica*), spotted towhee (*Pipilo maculatus*), lesser goldfinch (*Spinus psaltria hesperophilus*), northern mockingbird (*Mimus polyglottos polyglottos*), and northern raccoon (*Procyon lotor*).

3.3 Sensitive Biological Resources

Sensitive biological resources include sensitive vegetation communities and Multi-Habitat Planning Area (MHPA) per ESL Regulations; sensitive plant and wildlife species; wildlife movement corridors and nursery sites; and jurisdictional wetlands and waters. Biological resource sensitivity determinations follow the City's Significance Determination Thresholds (City of San Diego 2011).

Sensitive vegetation communities are those that have cumulative losses throughout the region, have relatively limited distribution, support or potentially support sensitive species, have particular value to other wildlife, or have a combination of these characteristics. For purposes of this report, sensitive vegetation communities include all wetland communities and upland communities identified as Tier I, II, IIIA, or IIIB by the City of San Diego (2012).

For purposes of this report and in accordance with the City Guidelines for Conducting Biology Surveys (City of San Diego 2012), plant and wildlife species will be considered sensitive if they are: (1) listed by state or federal agencies as threatened or endangered or are proposed for listing; (2) designated by the City as a narrow endemic species (City of San Diego 1997, 2012); (3) covered species under the Multiple Species Conservation Program (MSCP) or Vernal Pool Habitat Conservation Plan; (4) given a California Rare Plant Rank (CRPR) 1B (considered endangered throughout its range), 2 (considered endangered in California but more common elsewhere), 3 (more information about the plant's distribution and rarity needed), or 4 (plants of limited distribution) in the CNPS Inventory of Rare and Endangered Plants of California (2018); (5) considered rare, endangered, or threatened by CDFW (2018b–e); or (6) identified by another recognized conservation or scientific group as being depleted, potentially depleted, declining, rare, critical, endemic, endangered, or threatened.

Active bird nests are covered by the California Fish and Game Code (CFGC) 3503, which states that it is “unlawful to take, possess, or needlessly destroy the nest or eggs of any bird” unless authorized (State of California 1991). Raptors (birds of prey) and active raptor nests are protected by the CFGC 3503.5, which states that it is “unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird” unless authorized (State of California 1991).

In accordance with the ESL Regulations, lands within the MHPA and habitat for sensitive species will also be considered sensitive biological resources. The ESL Regulations, as defined in the City Biology Guidelines, apply to lands within the MHPA; wetlands occurring within or outside the MHPA; vegetation communities classified as Tier I, II, IIIA, or IIIB; habitat for sensitive species; coastal beaches; coastal bluffs; and/or Special Flood Hazard Areas.

3.3.1 Sensitive Vegetation Communities

Pursuant to the City’s Biology Guidelines, five sensitive vegetation communities occur within the project survey area: non-native riparian, disturbed wetland (vegetated channel), maritime succulent scrub, Diegan coastal sage scrub, and disturbed coastal sage scrub. The locations of these vegetation communities are shown on Figures 6a through 6e. Disturbed wetland (unvegetated channel) and disturbed wetland (artificial hydrology) are not considered sensitive vegetation communities for purposes of this report. The concrete-lined channel will not be impacted as steel plates will be used for vehicle access. The concrete channel will remain the same as pre-impact conditions following construction. The City does not recognize artificial wetlands as a wetland habitat.

3.3.2 Sensitive Plant Species

Three sensitive plant species—Nuttall’s scrub oak, California adolphia, and San Diego viguiera (*Bahiopsis* [= *Viguiera*] *laciniata*)—were observed within the survey area during the biological survey. Figures 6a through 6c show the observed locations and number of individuals. Attachment 4 summarizes these species and other potentially occurring sensitive plant species.

3.3.2.1 Nuttall’s Scrub Oak (*Quercus dumosa*)

Nuttall’s scrub oak is a CRPR 1B.1 species (CNPS 2018). This species is found near the coast in Santa Barbara, Orange, and San Diego counties and in Baja California, Mexico. It grows at elevations below 1,300 feet in chaparral, coastal scrub, and closed-cone coniferous forest habitats (CNPS 2018), and is particularly common in flat, open-canopy coastal chaparral, but can grow in dense stands on north-facing slopes (Reiser 2001). In San Diego County, it is known to grow as far inland as Camp Elliott and Otay Mesa (Reiser 2001), being replaced by the similar scrub oak (*Q. berberidifolia*) in higher, drier locations (Hickman 1993).

Thirty-four Nuttall’s scrub oak individuals were observed within Diegan coastal sage scrub, disturbed coastal sage scrub, non-native riparian, and ornamental plantings of the survey area. Six individuals occur within the temporary construction area, three individuals occur within the existing access path, and one individual occurs within the proposed access path (see Figures 6a through 6c).

3.3.2.2 California Adolphia (*Adolphia californica*)

California adolphia is a CRPR 2B.1 species (CNPS 2018). This species generally occurs at elevations below 1000 feet in Diegan coastal sage scrub, near the edge of chaparral, particularly in dry canyons or washes. Its range is limited to San Diego County and northern Baja California, Mexico. In San Diego County, it is found from the Carlsbad area south into the Proctor Valley and the Otay area (Beauchamp 1986).

Approximately 130 California adolphia individuals occur within the maritime succulent scrub and Diegan coastal sage scrub of the survey area. Ten individuals occur within the existing access path (see Figure 6b).

3.3.2.3 San Diego County Viguiera (*Bahiopsis laciniata*)

San Diego County viguiera is a CRPR 4.3 species (CNPS 2018). Its range extends from Sonora and Baja California, Mexico northward into San Diego and Orange County (CNPS 2018), although the population in Orange County may not be native (Reiser 2001). In San Diego County it is rare north of Highway 78, becoming increasingly common to the south, until it is the dominant shrub in coastal sage scrub in non-coastal southern San Diego County (Reiser 2001). San Diego County viguiera occurs on dry, shrubby slopes in Diegan coastal sage scrub and chaparral habitats between 200 and 2,500 feet elevation. Overall, this species is in decline due to development. However, there are many areas containing substantial populations (Reiser 2001).

Twenty San Diego County viguiera individuals were observed within the maritime succulent scrub and disturbed land of the survey area. Three individuals occur within the existing access path (see Figure 6b).

3.3.3 Sensitive Wildlife Species

No sensitive wildlife species were detected within the wildlife survey area. However, Attachment 5 assesses the potential for other sensitive wildlife species to occur. Based on those assessments, two sensitive wildlife species—Belding’s orange-throated whiptail (*Aspidoscelis hyperythra beldingi*) and Cooper’s hawk (*Accipiter cooperii*)—have a moderate to high potential to occur within the project survey area. Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) is not expected to occur, as there are no suitable cactus thickets required by this species for nesting. Coastal California gnatcatcher (*Polioptila californica californica*) has a low potential to forage or nest within the project survey area because the coastal sage scrub lacks the low-growing habitat required by this species; it is dominated by lemonade berry, a tall shrub, with only a low number of scattered California sagebrush and California buckwheat shrubs.

3.3.3.1 Belding’s Orange-throated Whiptail (*Aspidoscelis hyperythra beldingi*)

Belding’s orange-throated whiptail is a CDFW watch list species (CDFW 2018b) and an MSCP covered species (City of San Diego 1997). This species ranges from the coast to the Peninsular mountain ranges from Orange and southwestern San Bernardino counties to the tip of Baja California, Mexico (Stebbins 2003). It occurs in a variety of habitats and is most common in sandy areas of low, open sage scrub or chaparral, particularly where there is California buckwheat, sage (*Salvia* spp.), or chamise (*Adenostoma fasciculatum*; Lemm 2006). This species feeds primarily on the western subterranean termite (*Reticulitermes hesperus*; Bostic 1966). It is active during spring and summer but largely dormant during the fall and winter when temperatures drop (Jennings and Hayes 1994). Breeding occurs

from May through July. The decline of this species is attributed to habitat loss and fragmentation (McGurty 1980).

Although this species was not observed during the survey, it has been recorded within two miles of the survey area (CDFW 2018a; County of San Diego 2018). The survey area contains potentially suitable open habitat that occurs within a small, somewhat isolated canyon constrained by development. As this species has a low sensitivity to human disturbances, there is moderate potential for this species to occur within the Diegan coastal sage scrub, disturbed coastal sage scrub, maritime succulent scrub, and disturbed land of the survey area.

3.3.3.2 Cooper's Hawk (*Accipiter cooperii*)

Cooper's hawk is a CDFW watch list species (nesting) and an MSCP covered species (CDFW 2018b; City of San Diego 1997). The Cooper's hawk's year-round range extends throughout most of the United States. Its wintering range extends south to Central America, and its breeding range extends north to southern Canada (Curtis et al. 2006). Breeding birds are widespread over San Diego County's coastal slope and most abundant in lowland and foothill canyons and in urban areas. It is a common breeder in both oak and willow riparian woodlands and urban environments, with eucalyptus trees used nearly as often as oaks (Unitt 2004). Additionally, this species has been known to nest within planted trees, including pine (Unitt 2004). Breeding occurs from February to August, and nests are typically located high in the tree but under the canopy. This hawk forages primarily on medium-sized birds but is also known to eat small mammals such as chipmunks and other rodents (Curtis et al. 2006). Although urbanization and loss of habitat have contributed to the decline of this species, the Cooper's hawk acclimation to city living over the last few decades has generously increased their numbers (Unitt 2004).

Although this species was not observed during the survey, it has been recorded within two miles of the survey area (County of San Diego 2018). This species has a high potential to forage within the survey area due to presence of tall trees for perching and vegetation that would contain prey species. Additionally, this species has a high tolerance to human disturbance and reported occurrences within residential areas. It has moderate potential to nest within the survey areas, as the narrow strips of ornamental plantings and eucalyptus woodland contain taller trees preferred by the species.

3.3.4 Multi-Habitat Planning Area

As shown on Figures 6a-e, the project area does not occur within the MHPA. However, the MHPA occurs within 300 feet of the southwest portion of the survey area (see Figure 6a).

3.3.5 Wildlife Movement Corridor

Although the survey area contains a canyon with a drainage and riparian vegetation, it is heavily constrained by residential development and neighborhood streets on all sides. As a result, it would not be considered a wildlife movement corridor. The presence of native

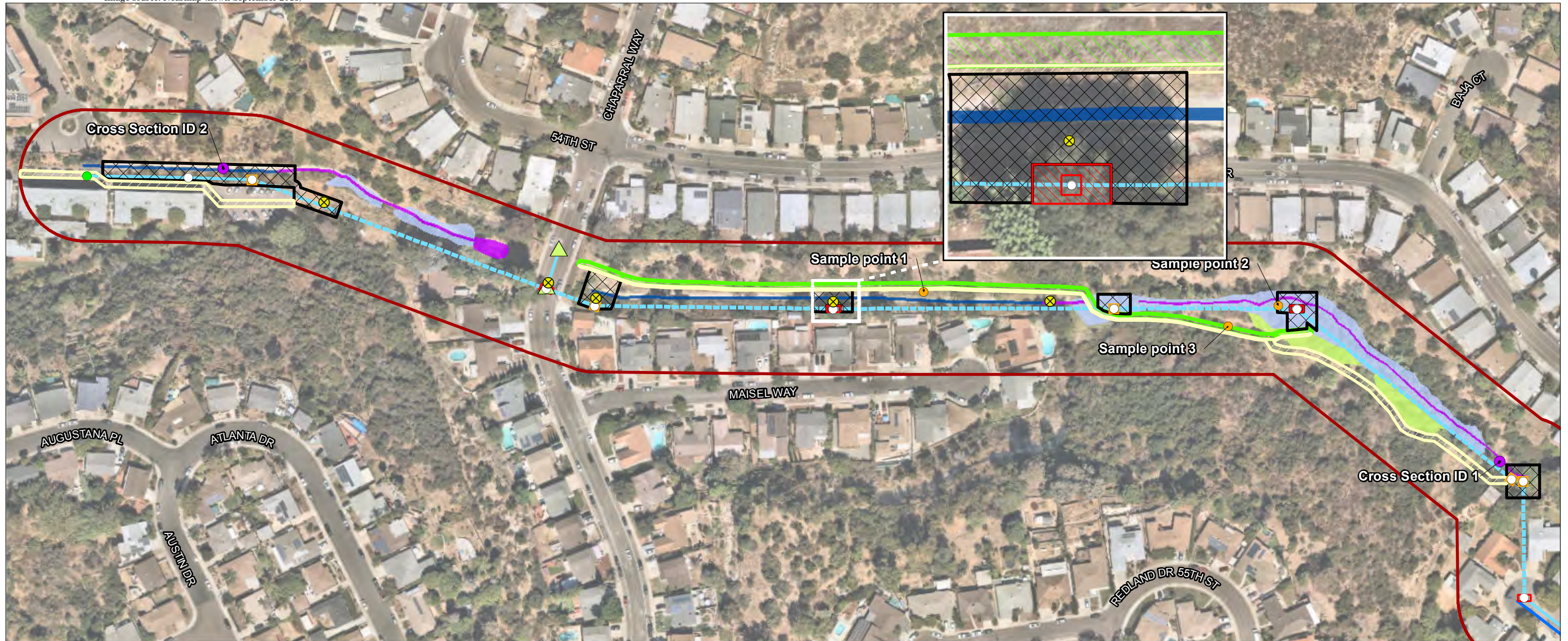
vegetation cover in combination with the patchwork of surrounding urban canyons, likely serves as a wildlife corridor for urban-acclimated species and as “stepping stones” for avian species’ travel. Connection to San Diego River corridor to the northwest or Chollas Creek to the south is impeded by busy streets, Collwood Boulevard, Montezuma Road, College Avenue, and El Cajon Boulevard. Therefore, the adjoining canyons would not facilitate the movement of large terrestrial wildlife and, therefore, do not serve as a wildlife movement corridor.

3.4 Jurisdictional Waters/Wetlands

Jurisdictional wetlands and waters are regulated by the USACE, CDFW, RWQCB and/or City. USACE regulates the discharge of dredged or fill material into waters of the U.S. (wetland and non-wetland jurisdictional waters) according to Section 404 of the Clean Water Act. CDFW regulates all changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. With several exceptions, CDFW jurisdictional areas overlap USACE jurisdictional areas on a given site. However, riparian habitat, regardless of USACE jurisdiction, is regulated by CDFW. RWQCB is the regional agency responsible for protecting water quality in California. City wetlands include waters with hydrophytic vegetation, state jurisdictional wetlands, and USACE wetlands as per the City’s Biology Guidelines (City of San Diego 2012). This section provides a general overview of the potential jurisdictional waters and wetlands within the survey area. A more detailed description, wetland determination datasheets, and OHWM datasheets are provided in the Jurisdictional Waters/Wetland Delineation Report (RECON 2019).

3.4.1 Locations of Jurisdictional Waters/Wetlands

The results from the Jurisdictional Waters/Wetland Delineation Report for the College Area Sewer and AC Water project (RECON 2019) are summarized in Table 2 and discussed in this section. Figure 7 shows the locations of sample points, cross sections, and the jurisdictional waters and wetlands identified in the survey area for each agency jurisdiction.



Project Survey Area

Sample Point

OHWM Sample Locations

Jurisdictional Waters

CDFW and RWQCB Wetland Waters of the State, City Wetland

USACE Non-wetland Waters, CDFW Streambed, RWQCB Non-wetland Waters of the State

USACE Non-wetland Waters, CDFW Streambed, RWQCB Non-wetland Waters of the State, City Wetland

USACE Wetland Waters, CDFW and RWQCB Wetland Waters of the State, City Wetland

Project Features

Proposed 8" Water Main Replacement

Proposed Sewer Main Replacement

Proposed Sewer Main Replacement - Trenchless

Existing Manhole

Existing Manhole to be Abandoned

Existing Access Path (8' wide)

Permanent Impacts

Proposed Manhole (5'x5')

Proposed Vault (13'x11'8")

Proposed Access Path

Temporary Impacts

Launching Pit (10'x20')

Receiving Pit (10'x10')

Temporary Construction Area*

* USACE/RWQCB/CDFW non-wetland waters that occur within an unvegetated concrete-lined channel will not be impacted as steel plates will be used for vehicle access over the top of the channel.

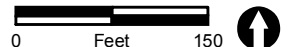


Table 2		
Existing Jurisdictional Areas within the Survey Area		
Jurisdictional Areas	Acreage	Linear feet
USACE Jurisdictional Areas (404)		
Non-wetland Waters of the U.S. ^a	0.151	2,066
Wetland Waters of the U.S. ^b	0.570	n/a
Total USACE Jurisdiction	0.721	2,066
RWQCB Jurisdictional Areas (401)		
Non-wetland Waters of the state ^a	0.151	2,066
Wetland Waters of the state ^b	0.717	n/a
Total RWQCB Jurisdiction	0.868	2,066
CDFW Jurisdictional Areas (1602)		
Streambed ^a	0.151	2,066
Wetland Waters of the state ^b	0.717	n/a
Total CDFW Jurisdiction	0.868	2,066
City of San Diego Jurisdiction Wetland		
Wetland ^{ab}	0.801	n/a
Total City of San Diego Jurisdiction	0.801	n/a
^a USACE/RWQCB/CDFW non-wetland waters and streambed entirely overlap. City wetlands fall within USACE/RWQCB/CDFW non-wetland waters. ^b RWQCB/CDFW/City wetland waters entirely overlap. USACE wetland waters fall within RWQCB/CDFW wetland waters. n/a = Not applicable		

3.4.1.1 USACE Jurisdictional Areas

USACE jurisdictional areas in the survey area consist of non-wetland waters and wetland waters of the U.S. in the form of a seasonal stream channel and associated wetlands. A total of 0.151 acre of non-wetland waters of the U.S. likely considered under the jurisdiction of USACE was delineated within the survey area (see Figure 7). The non-wetland waters are considered ephemeral riverine, covering a length of 2,066 linear feet and an average width of 3 feet. These non-wetland waters lack hydrophytic vegetation, either due to surface water or concrete liner. The jurisdictional status of this stream channel was determined based on the presence of an OHWM and a connection to Alvarado Creek, which is a tributary to the San Diego River, which drains into the Pacific Ocean (a traditional navigable water) approximately nine miles to the west. The lateral extent of the non-wetland waters was determined by the observable OHWM, and the upstream extent was determined by the culvert head wall. The stream channel was hydrologically connected but broken by culverted sections.

A total of 0.570 acre of wetland waters of the U.S. likely considered under the jurisdiction of USACE were delineated within the survey area (see Figure 7). The vegetation associated with much of the floodplain of the channel satisfies the three-parameter criteria for USACE wetlands.

A disturbed wetland area (0.048 acre) due to artificial hydrology is located just upslope of the concrete-lined channel in a small topographic depression shown on Figure 6 as disturbed wetland (artificial hydrology). While this area satisfies the three wetland

parameters: hydrophytic vegetation, hydric soils, and wetland hydrology (dry-season surface water, saturation, and hydrogen sulfide odor), it appears to be supported by runoff discharging from a private property via a three-inch corrugated plastic pipe (Photographs 10 and 11). A portion of the area is within an access road and is bounded by a steep slope and the concrete liner of the flood control channel. Based on the presence of the pipe, water source is not expected to be a natural source such as rainwater, seep, or spring. As it can take many years to develop strong hydrology indicators in this area, the pipe must be providing a consistent source of water. Additionally, the concrete channel liner acts as a dam to hold the water on the access road, preventing it from infiltrating or draining, and maintains saturated conditions in this area. If the artificial water source was interrupted it is expected that this wetland would cease to exist. Therefore, this area would not likely be considered under the jurisdiction of the USACE.

3.4.1.2 CDFW Jurisdictional Area

Waters of the state likely under the jurisdiction of the CDFW (under CFGC 1600-1607) include both streambed and wetland areas (see Figure 7). CDFW streambed was delineated within the stream channel and totals 0.151 acre. CDFW wetland habitat totals 0.717 acre on-site and includes the non-native riparian habitat and disturbed wetlands associated with the stream channel. This includes a 0.570-acre area considered USACE wetlands, as well as areas of hydrophytic vegetation that do not meet all three wetland parameters. An additional wetland area (0.048 acre) with artificial hydrology would not likely be considered waters of the state.

3.4.1.3 RWQCB Jurisdictional Areas

RWQCB likely jurisdictional areas (under Clean Water Act Section 401) include the 0.151 acre of streambed, 0.570 acre of USACE wetlands, and an additional 0.147 acre of wetlands of the state which only meet the hydrophytic vegetation parameter but not the soil or hydrology parameters. An additional wetland area (0.048 acre) with artificial hydrology would not likely be considered waters of the state. These wetlands overlap with the CDFW jurisdictional wetlands.

3.4.1.4 City Wetland Jurisdictional Areas

City wetland likely jurisdictional areas total 0.801 acre and include all CDFW and RWQCB wetland waters plus vegetated non-wetland waters (i.e., vegetated portions of the channel and non-wetland waters that overlap as non-native riparian).



PHOTOGRAPH 10
Water Source of Wetland Near Sample Point 1 Coming from Residences, Taken North of End of Maisel Way, Facing Northwest



PHOTOGRAPH 11
End of Corrugated Pipe Near Sample Point 1, Taken North of End of Maisel Way, Facing West

4.0 Project Impact Analysis

Project impacts were analyzed according to the City's Biology Guidelines (City of San Diego 2012) and Significance Determination Thresholds (City of San Diego 2011).

According to the Significance Determination Thresholds (City of San Diego 2011), total upland impacts (Tiers I- IIIB) of less than 0.1 acre are not considered significant and do not require mitigation. Total wetland impacts of less than 0.01 acre are not considered significant and do not require mitigation. However, any impacts to vernal pools or wetlands within the Coastal Zone require mitigation.

Direct, indirect, and cumulative impacts may result from a project. Impacts are considered direct when they result in a physical change (e.g., vegetation removal, grubbing, grading, excavation) of the environment. Indirect impacts are secondary changes in the environment that are caused by a project but occur later in time or at a different place. For example, generation of dust, noise, lighting, and erosion could result in indirect impacts to plants, wildlife, and/or waterways. The MSCP was designed to address cumulative impacts and compensate for the regional loss of biological resources throughout the region.

Project implementation would result in both permanent and temporary direct impacts as shown on Figures 6a through 6e. City requires mitigation for all impacts, whether they are temporary or permanent.

Impacts that are considered temporary are the areas where the ground would be regraded to pre-existing conditions and revegetated following construction and include:

- Temporary construction areas,
- Launching pits, and
- Receiving pits.

Permanent impacts would result from the following features that will remain after project activities:

- The proposed access path,
- Proposed manholes, and
- The proposed vaults.

Impacts associated with the existing 8-foot-wide access path east of 54th Street were incurred and mitigated for by the 54th Street Emergency Sewer Repair project (Dudek 2002). Therefore, impacts associated with the existing access path are not discussed further. This existing 8-foot-wide access path east of 54th Street would be widened to 10 feet and extended as a 10-foot-wide access path extending east until it connects with the final construction area approximately 150 feet north of the western terminus of Campanile Way. The widened and extended portions of the access path are considered permanent impacts associated with the proposed access path.

The potential direct (temporary and permanent), indirect, and cumulative impacts to sensitive biological resources that may result from the proposed project are discussed below.

4.1 Impacts to Sensitive Vegetation Communities

Project implementation would result in both permanent and temporary impacts to sensitive vegetation communities. The temporary construction area and launching/receiving pits would cause temporary impacts to sensitive vegetation communities. The proposed access path and manholes would require permanent impacts to sensitive vegetation. The proposed access path east of Collwood Boulevard occurs within a paved road to an apartment complex and would not result in impacts to vegetation. Steel plates would be used for vehicle access over the top of the concrete-lined channel, so the disturbed wetland (unvegetated channel) would not be impacted.

In total, the proposed project would cause direct impacts to 0.749 acre, including 0.273 acre of permanent impacts and 0.476 acre of temporary impacts. This includes permanent impacts to 0.006 acre of sensitive wetland communities and 0.108 acre of Tier I and II sensitive vegetation communities, and temporary impacts to 0.102 acre of sensitive wetland communities and 0.037 acre of Tier I and II sensitive vegetation communities. Impacts to sensitive vegetation communities would be considered significant and would require mitigation. Impacts to other vegetation communities/land cover types including 0.008 acre of permanent and 0.005 acre of temporary impacts to non-sensitive wetland communities and 0.152 acre of permanent and 0.331 acre of temporary impacts to Tier IV communities and developed land would not be significant and would not require mitigation (Table 3; see Figures 6a through 6e).

The project is not expected to result in indirect impacts to sensitive vegetation communities due to erosion, as the project would include implementation of best management practices (BMPs) and revegetation of temporary impact areas following construction. Indirect impacts to adjacent sensitive vegetation communities may occur as a result of project-related dust (i.e., interfere with photosynthetic processes). However, implementation of BMPs to reduce dust would be required and would minimize potential indirect impacts.

The project would conform to the MSCP. Therefore, with implementation of habitat-based mitigation required by the City Biology Guidelines (2012), no cumulative impacts to sensitive vegetation communities are anticipated to occur.

Table 3 Project Impacts to Vegetation Communities/Land Cover Types				
Vegetation Community	Survey Area Total	Permanent Impacts	Temporary Impacts	Total Direct Impacts
Wetland Communities				
Non-native riparian	0.784	0.006	0.098	0.104
Disturbed wetland (vegetated channel)	0.016	—	0.004	0.004
Wetland Subtotal	0.800	0.006	0.102	0.108
Non-sensitive Wetland Communities				
Disturbed wetland (unvegetated channel)	0.068	—	—*	—
Disturbed wetland (artificial hydrology)	0.048	0.008	0.005	0.013
Non-sensitive Wetland Subtotal	0.116	0.008	0.005	0.013
Tier I and II Communities				
Maritime succulent scrub	0.173	—	—	—
Diegan coastal sage scrub	2.326	0.104	0.008	0.112
Disturbed coastal sage scrub	1.608	0.004	0.029	0.033
Tier I and II Subtotal	4.107	0.108	0.037	0.145
Tier IV Communities or Developed Land				
Eucalyptus woodland	0.285	0.002	—	0.002
Disturbed land	1.132	0.032	0.063	0.095
Ornamental plantings	2.297	0.004	0.177	0.181
Urban/developed land	16.324	0.114	0.091	0.205
Tier IV Subtotal	20.038	0.152	0.331	0.483
TOTAL	25.061	0.273	0.476	0.749
NOTE: All areas are presented in acres rounded to the nearest 0.001.				
*Steel plates would be installed over the concrete channel mapped as disturbed wetland (unvegetated channel) so impacts to this area would be avoided.				

4.2 Impacts to Sensitive Plants

The project would directly impact three sensitive plant species, Nuttall’s scrub oak (CNPS CRPR 1B.1 species), California adolphia (CNPS CRPR 2B.1 species), and San Diego viguiera (CNPS CRPR 4.3 species).

4.2.1 Nuttall’s Scrub Oak

Of the 34 Nuttall’s scrub oak within the survey area, 10 would be impacted: six within the temporary construction area, three within the existing access path, and one within the proposed access path. Impacts to approximately 30 percent (10 of 34) of the population observed within the survey area are not expected to threaten the local and regional long-term survival of this species. Multiple presumed extant Nuttall’s scrub oak populations have been reported to CNDDDB within coastal San Diego County (CDFW 2018a). As impacts to six individuals fall within the temporary impact footprint, it is recommended that this species be included in the revegetation plant palette. Therefore, the proposed impacts would be considered less than significant and require no mitigation.

Indirect impacts to Nuttall's scrub oak occurring adjacent to the proposed project impact area may occur as a result of project-related dust (i.e., interfere with photosynthetic processes). However, implementation of BMPs to reduce dust would be required and would minimize potential indirect impacts. Additionally, the remaining mapped individuals within the survey area occur either upslope of an existing access path or scattered among other mature shrubs within Diegan coastal sage scrub. Therefore, potential indirect impacts to this species by project-related dust are anticipated to be minimal and require no mitigation.

As Nuttall's scrub oak would be included within the revegetation plant palette, and due to the type and small scale of the project, no cumulative impacts to this species are anticipated.

4.2.2 California Adolphia

The proposed project would impact 10 of the 130 California adolphia individuals within the survey area. Impacts to approximately 8 percent (10 of 130) of the population observed within the survey area are not expected to threaten the local and regional long-term survival of this species. Therefore, the proposed impacts would be considered less than significant and require no mitigation.

Indirect impacts to California adolphia occurring adjacent to the proposed project impact area may occur as a result of project-related dust. However, implementation of BMPs to reduce dust would be required and would minimize potential indirect impacts. Additionally, the remaining mapped individuals within the survey area occur upslope of an existing access path that would not require substantial grading. Therefore, potential indirect impacts to this species by project-related dust are anticipated to be minimal and require no mitigation.

Although impacts to 8 percent of the observed on-site population of California adolphia would occur, the majority of the population would remain intact. Additionally, due to the type and small scale of the project, no cumulative impacts to this species are anticipated.

4.2.3 San Diego Viguiera

Three of the 20 San Diego viguiera individuals recorded within the survey area would be impacted by grading activities within the existing access path. Impacts to approximately 15 percent (3 of 20) of the population observed within the survey area are not expected to threaten the local and regional long-term survival of this species. Therefore, the proposed impacts would be considered less than significant and require no mitigation.

Indirect impacts to San Diego viguiera occurring adjacent to the proposed project impact area may occur as a result of project-related dust. However, implementation of BMPs to reduce dust would be required and would minimize potential indirect impacts. Additionally, the remaining mapped individuals within the survey area occur upslope of an existing access path that would not require substantial grading. Therefore, potential indirect

impacts to this species by project-related dust are anticipated to be minimal and require no mitigation.

Although impacts to 15 percent of the observed on-site population of San Diego viguiera would occur, the majority of the population would remain intact. Additionally, due to the type and small scale of the project, no cumulative impacts to this species are anticipated.

4.3 Impacts to Sensitive Wildlife

The project may result in direct impacts to sensitive bird species, including Cooper's hawk and avian species covered by the CFGC 3503 and 3503.5. In addition, the proposed project may result in direct impacts to one sensitive reptile species, Belding's orange-throated whiptail, that has a moderate potential to occur within the survey area.

4.3.1 Cooper's Hawk

Cooper's hawk (a CDFW watch list species [nesting] and an MSCP covered species) has a high potential to forage within survey area and a moderate potential to nest within the survey area. Direct impacts to Cooper's hawk are not expected as impacts to eucalyptus woodland would consist of trimming of a narrow section within the existing access path. The remaining vegetation proposed to be removed during project activities do not contain suitable tall trees preferred by nesting Copper's hawk. Indirect noise impacts could occur as a result of project activities if work is conducted during the species' nesting season, which typically occurs between February 1 and August 31. Any direct or indirect impacts that adversely affect nesting success would be considered significant. Avoidance and minimization measures would be required to reduce potential direct and indirect impacts to Cooper's hawk to a level of less than significant.

The project's conformance with the MSCP, and its species-specific conditions for coverage, is expected to prevent any cumulative impacts to MSCP-covered wildlife species, including Cooper's hawk. Additionally, no substantial cumulative impacts are anticipated to occur due to the small scale of the proposed project.

4.3.2 Nesting Avian Species

Nesting birds and raptors covered by CFGC 3503 and 3503.5 have potential to be directly impacted if removal of vegetation occurs during the nesting season of February 1 to September 15. Direct impacts to nesting birds would be considered significant and require avoidance measures.

Although general avian species are not covered by the MSCP, no substantial cumulative impacts are anticipated to occur due to the small scale of the proposed project and the project's conformance with CFGC 3503 and 3503.5.

4.3.3 Belding's Orange-throated Whiptail

Project activities could result in direct impacts to Belding's orange-throated whiptail (CDFW watch list and MSCP covered species) through direct mortality during construction activities and loss of habitat. Temporary and permanent loss of habitat for this species are expected to be minor. Suitable habitat within the impact area comprises a small fraction of the available habitat for any local populations, and potential impacts are not expected to reduce the population of this species to below a self-sustaining level. Therefore, species-specific avoidance, minimization, and mitigation measures would not be required for impacts to Belding's orange-throated whiptail.

The project's conformance with the MSCP, and its species-specific conditions for coverage, is expected to prevent any cumulative impacts to MSCP-covered wildlife species, including Belding's orange-throated whiptail. Additionally, no substantial cumulative impacts are anticipated to occur due to the small scale of the proposed project.

4.4 Impacts to Multi-Habitat Planning Area

As shown on Figures 6a through 6e, the western proposed impact area occurs approximately 125 feet north and downslope from the edge of the MHPA. Therefore, no direct impacts within the MHPA are anticipated. However, given this close proximity to the MHPA, indirect impacts could occur. Section 1.4.3 of the City's MSCP Subarea Plan presents Land Use Adjacency Guidelines that largely address indirect impacts within the MHPA (City of San Diego 1997). These Land Use Adjacency Guidelines address drainage, toxics, lighting, noise, barriers, invasive, brush management, and grading/land development. Each guideline is summarized below, along with a discussion of the project's avoidance or conformance with each guideline.

4.4.1 Drainage

All new and proposed parking lots and developed areas in and adjacent to the preserve must not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA.

The proposed project would not cause drainage into the MHPA, as the impact area lies downslope of and a minimum of 125 feet away from the MHPA. Additionally, BMPs are anticipated to be implemented during construction to prevent off-site runoff or sedimentation.

4.4.2 Toxics

Land uses, such as recreation, urban landscaping, and agriculture, that use chemicals or generate by-products, such as manure, that are potentially toxic or impactive to wildlife,

sensitive species, habitat, or water quality need to incorporate measures to reduce impacts caused by application or drainage of such materials into the MHPA.

The proposed project is not expected to cause release of toxics into the MHPA, as the project site lies downslope of and a minimum of 125 feet away from the MHPA. Additionally, the project is anticipated to implement BMPs (such as use of drip pans and refueling vehicles away from drainages) during construction to prevent construction-related toxins from leaving the immediate project impact area.

4.4.3 Lighting

Lighting of all developed areas within and adjacent to the MHPA should be directed away from the MHPA. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the MHPA and sensitive species from night lighting.

All project activities will occur during the day and will require no nighttime lighting.

4.4.4 Noise

Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas, recreational areas, and other uses that may introduce noises that could impact or interfere with wildlife utilization of the MHPA. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise reduction measures and be curtailed during the breeding season of sensitive species. Adequate noise reduction measures should also be incorporated for the remainder of the year.

The proposed project is not expected to cause noise impacts within the MHPA. The project impact area is located a minimum of 125 feet from the edge of the MHPA, and the stand of dense, 15-foot-tall lemonade berry shrubs would dissipate construction noise between the construction area and the MHPA. Additionally, this section of canyon is surrounded by residential development and paved roads that would be subjected to increased noise on a regular basis. Coastal California gnatcatcher is not anticipated to occur within the MHPA adjacent to the project due to the lack of suitable nesting habitat.

4.4.5 Barriers

New development within or adjacent to the MHPA may be required to provide barriers (e.g., non-invasive vegetation, rocks/boulders, fences, walls, and/or signage) along the MHPA boundaries to direct public access to appropriate locations and reduce domestic animal predation. Access to the MHPA, if any, should be directed to minimize impacts and reduce impacts associated with domestic pet predation.

No new development is proposed as part of the project. No access currently exists between the MHPA and the project impact area.

4.4.6 Invasive Plants

No invasive plant species shall be introduced into areas adjacent to the MHPA.

The project is not anticipated to introduce invasive plant species. As portions of the temporary impact area occur within vegetation communities mapped as ornamental vegetation, disturbed habitat, and non-native riparian, invasive plants already exist within the project impact area. Following project construction, revegetation is anticipated to include a native seed mix and/or plant palette and a monitoring program.

4.4.7 Brush Management

New development located adjacent to the MHPA must be set back to incorporate Zone 1 brush management areas on the development pad and outside of the MHPA. Zone 2 may be located in the MHPA except where narrow wildlife corridors require it to be located outside the MHPA. Vegetation clearing shall be done consistent with City standards and shall avoid/minimize impacts to covered species to the maximum extent possible.

No new development is proposed as part of this project.

4.4.8 Grading/Land Development

Manufactured slopes associated with site development shall be included within the development footprint for projects within or adjacent to the MHPA.

No new developed or paved areas are proposed as part of the project.

4.5 Impacts to Wildlife Movement Corridors

The site does not function as a wildlife movement corridor. Therefore, the project would not hinder wildlife movement through the area.

4.6 Impacts to Federal and State Jurisdictional Waters and Wetlands

As sewer main replacement within the canyon occurs along jurisdictional waters, impacts could not be avoided. However, project design would minimize impacts to wetland waters by including steel plates over concrete-lined portions of the drainage, trenchless design methods, and siting the proposed access path outside of wetland waters where practical due to surrounding slopes.

Impacts to jurisdictional waters are shown on Figure 7 and presented in Table 4. The project would result in permanent impacts to wetland waters of the U.S. and state. The project would also result in temporary impacts to non-wetland waters and wetland waters of the U.S. and state. USACE/RWQCB/CDFW non-wetland waters and streambed entirely

overlap. RWQCB/CDFW wetland waters entirely overlap. USACE wetland waters fall within RWQCB/CDFW wetland waters. Permanent impacts would occur as a result of grading and widening the access path. However, improvements are minimal; where the access path crosses the jurisdictional waters the crossing would still convey flows following project activities. Therefore, the impact would not result in the loss of aquatic resources to the area. Temporary impacts to jurisdictional waters include temporary construction areas that may be graded. Temporary jurisdictional water impact locations are anticipated to return to pre-existing contours following project activities. Impacts to jurisdictional waters would be considered significant and would require mitigation. The unvegetated channel (i.e., the concrete-lined channel) would not be impacted as steel plates would be utilized to prevent damage to or alteration of the channel.

Table 4			
Impacts to Jurisdictional Waters			
Jurisdictional Areas	Permanent Impact	Temporary Impact [linear feet]	Total Direct Impacts [linear feet]
USACE Jurisdictional Areas (404)			
Non-wetland Waters of the U.S. ^a	—	0.007 [130 lf]	0.007 [130 lf]
Wetland Waters of the U.S. ^b	0.004	0.094	0.098
Total USACE Jurisdiction	0.004	0.101 [130 lf]	0.105 [130 lf]
RWQCB Jurisdictional Areas (401)			
Non-wetland Waters of the state ^a	—	0.007 [130 lf]	0.007 [130 lf]
Wetland Waters of the state ^b	0.006	0.095	0.101
Total RWQCB Jurisdiction	0.006	0.102 [130 lf]	0.108 [130 lf]
CDFW Jurisdictional Areas (1602)			
Streambed ^a	—	0.007 [130 lf]	0.007 [130 lf]
Wetland Waters of the state ^b	0.006	0.095	0.101
Total CDFW Jurisdiction	0.006	0.102 [130 lf]	0.108 [130 lf]
NOTE: All areas are presented in acres rounded to the nearest 0.001; where relevant, linear feet [lf] are presented in brackets.			
^a USACE/RWQCB/CDFW non-wetland waters and streambed entirely overlap.			
^b RWQCB/CDFW wetland waters entirely overlap. USACE wetland waters fall within RWQCB/CDFW wetland waters.			

As direct impacts would occur to jurisdictional waters, indirect impacts to adjacent jurisdictional waters may occur during construction as a result of altered hydrology, fugitive dust, and chemical and particulate pollution. However, implementation of BMPs would be required and would minimize potential indirect impacts to a level of less than significant.

4.7 Impacts to City Jurisdictional Wetlands

The project would result in permanent impacts of 0.006 acre and temporary impacts of 0.102 acre to City wetlands (see Figure 7). City wetlands entirely overlap with RWQCB and CDFW wetland waters and include USACE/RWQCB/CDFW vegetated non-wetland waters (i.e., vegetated portions of the channel and non-wetland waters that overlap as non-native riparian). Wetlands with artificially induced hydrology are not recognized by the City.

Impacts to wetlands within the City of San Diego would require a deviation from the ESL wetland regulations (City of San Diego 2012).

Per Section 126.0505 and 143.0510(d) of the San Diego Municipal Code a deviation to the ESL wetland regulations may be granted provided the project (A) can demonstrate that no feasible alternative exists that would avoid impacts to wetlands, and (B) meets the definition of an Essential Public Projects. The project's compliance with these requirements is discussed below:

(A) The project was designed to avoid and minimize impacts to wetlands to the extent feasible. It comprises maintenance of existing sewer and water pipelines that run down the bottom of a canyon, complete avoidance is impossible and redirection of the pipelines out of the canyon (and out of wetlands) is not feasible. However, the wetlands that would be impacted by the project are disturbed wetlands and non-native riparian, both of which are dominated by exotic species.

(B) As the project proposes maintenance of an existing linear infrastructure, namely water and sewer pipelines, it meets criterion (ii) for Essential Public Projects.

5.0 Mitigation and Monitoring Measures

The proposed project has the potential to result in significant direct and indirect impacts to sensitive biological resources. Avoidance, minimization, and mitigation measures shall be implemented to maintain potential impacts to a level of less than significant.

5.1 Mitigation for Sensitive Vegetation Communities

The project would result in 0.108 acre of permanent and temporary impacts to sensitive wetland communities and 0.145 acre of permanent and temporary impacts to Tier I and II sensitive vegetation communities. Permanent and temporary impacts would be mitigated with preservation at existing PUD mitigation sites inside the MHPA.

Impacts to wetland vegetation communities would be mitigated at a total 2:1 ratio with a combination of wetland creation and wetland enhancement credits, each at a 1:1 ratio. Wetland creation credits would be acquired at the PUD-owned San Diego River Wetland Creation site in the City's Mission Valley community. This mitigation site supports 3.43 acres of created high-quality riparian forest, of which 1.22 acres is available to be used. Wetland enhancement credits would be acquired at the Rancho Mission Canyon Wetland Enhancement site in the City's Allied Gardens community. This enhancement site contains 8.74 acres of southern willow scrub enhancement credits, of which 6.61 acres are remaining. These creation and enhancement sites support higher quality wetland communities than those that would be impacted.

Impacts to Tier I and II upland vegetation communities would be mitigated with credits at the Otay Mesa Mitigation Bank. This mitigation site is located in the Goat Mesa area of Otay Mesa and is surrounded by other City Park and Recreation Open Space lands and federal lands. It supports 45.43 acres of maritime succulent scrub, of which 11.51 acres is available to be used as mitigation. Maritime succulent scrub is a Tier I community that would be an up-tier from the Diegan coastal sage scrub and disturbed coastal sage scrub that would be impacted.

The mitigation ratios shown in Table 5 assume the mitigation site would occur within the MHPA. In addition, temporarily impacted areas would be revegetated on-site. The proposed mitigation would reduce impacts to sensitive habitat to a level of less than significant.

Table 5					
Vegetation Communities/Land Cover Types, Impacts, and Mitigation within the Project					
Vegetation Community	Impact		Total Direct Impacts	Mitigation Ratio ^a	Required Mitigation
	Permanent	Temporary			
Wetland Communities					
Non-native riparian	0.006	0.098	0.104	2:1	0.208
Disturbed wetland (vegetated channel)	—	0.004	0.004	2:1	0.008
Wetland Subtotal	0.006	0.102	0.108	2:1	0.216
Non-sensitive Wetland Communities					
Disturbed wetland (unvegetated channel)	—	—	—	N/A	—
Disturbed wetland (artificial hydrology)	0.008	0.005	0.013	N/A	—
Non-sensitive Wetland Subtotal	0.008	0.005	0.013	N/A	—
Tier I and II Communities					
Maritime succulent scrub	—	—	—	1:1	—
Diegan coastal sage scrub	0.104	0.008	0.112	1:1	0.112
Disturbed coastal sage scrub	0.004	0.029	0.033	1:1	0.033
Tier I and II Subtotal	0.108	0.037	0.145	1:1	0.145
Tier IV Communities or Developed Land					
Eucalyptus woodland	0.002	—	0.002	N/A	—
Disturbed land	0.032	0.063	0.095	N/A	—
Ornamental plantings	0.004	0.177	0.181	N/A	—
Urban/developed land	0.114	0.091	0.205	N/A	—
Tier IV Subtotal	0.152	0.331	0.483	N/A	—
TOTAL	0.273	0.476	0.749	N/A	0.361
^a Ratio assumes location of existing PUD mitigation site occurs within the MHPA.					
NOTE: All areas are presented in acres rounded to the nearest 0.001.					

5.2 Mitigation for Sensitive Species

As detailed in Section 4.0, the project would not cause significant impacts to sensitive plant species or Belding's orange-throated whiptail; potential impacts to sensitive wildlife species, including Cooper's hawk and nesting avian species, would be mitigated through application

of City standard mitigation measures of I. A through G, II. A B, and III. A and B in Section 5.7 below. Application of these mitigation measures would reduce potential impacts to sensitive species to a level of less than significant.

5.3 Mitigation for Multi-Habitat Planning Area

No indirect impacts to MHPA are anticipated as a result of the project. However, adherence to Measure III.B stated below in Section 5.7 is anticipated to prevent potential indirect impacts to sensitive habitat within the MHPA. No additional mitigation is required.

5.4 Mitigation for Wildlife Movement Corridor

The proposed project is not anticipated to cause impacts to wildlife movement corridors, so no mitigation would be required.

5.5 Mitigation for Federal and State Jurisdictional Waters and Wetlands

Impacts to jurisdictional waters would require permit authorizations from the USACE through the Section 404 Permit Program, from the CDFW through a 1602 Streambed Alteration Agreement, and from the RWQCB through a 401 State Water Quality Certification. Most utility projects are permitted through a USACE Nationwide Permit track. The state agencies also have a specialized permit track for utility projects. Compensatory mitigation for impacts to jurisdictional waters would be addressed in a mitigation plan to be submitted for approval with the permit application packages.

Authorized impacts to jurisdictional waters would require in-kind mitigation through habitat creation, enhancement, or preservation to achieve a no-net-loss of jurisdictional waters. Mitigation for temporary and permanent impacts to non-wetland waters/streambed and wetland waters will occur at an appropriate PUD mitigation site. Anticipated mitigation is presented below in Table 6. The mitigation ratios applied for permanent and temporary impacts assume the mitigation site would occur within the Alvarado Creek/San Diego River watershed (see Table 6). If the mitigation site occurs in an adjacent watershed, a greater mitigation ratio may be required. Wetlands with artificially induced hydrology are anticipated to cease to exist if the artificial water source is interrupted; therefore, this feature is not considered jurisdictional and will not receive mitigation. Indirect impacts to jurisdictional waters from altered hydrology, fugitive dust, and chemical and particulate pollution would be minimized through anticipated implementation of BMPs (e.g., sediment basin, silt fence, fiber rolls, drip pans beneath staged equipment).

Table 6					
Jurisdictional Waters, Impacts, and Anticipated Mitigation					
Jurisdictional Areas	Impact		Total Direct Impacts [linear feet]	Mitigation Ratio ^{ab}	Mitigation [linear feet]
	Permanent	Temporary [linear feet]			
USACE Jurisdictional Areas (404)					
Non-wetland Waters of the U.S. ^c	—	0.007 [130 lf]	0.007 [130 lf]	2:1	0.014 [260 lf]
Wetland Waters of the U.S. ^d	0.004	0.094	0.098	2:1	0.196
Total USACE Jurisdiction	0.004	0.101 [130 lf]	0.105 [130 lf]	2:1	0.210 [260 lf]
RWQCB Jurisdictional Areas (401)					
Non-wetland Waters of the state ^c	—	0.007 [130 lf]	0.007 [130 lf]	2:1	0.014 [260 lf]
Wetland Waters of the state ^d	0.006	0.095	0.101	2:1	0.202
Total RWQCB Jurisdiction	0.006	0.102 [130 lf]	0.108 [130 lf]	2:1	0.216 [260 lf]
CDFW Jurisdictional Areas (1602)					
Streambed ^c	—	0.007 [130 lf]	0.007 [130 lf]	2:1	0.014 [260 lf]
Wetland Waters of the state ^d	0.006	0.095	0.101	2:1	0.202
Total CDFW Jurisdiction	0.006	0.102 [130 lf]	0.108 [130 lf]	2:1	0.216 [260 lf]
City of San Diego Wetlands					
Wetlands ^{cd}	0.006	0.102	0.108	2:1	0.216
Total City of San Diego Jurisdiction	0.006	0.102	0.108	2:1	0.216
<p>NOTE: All areas are presented in acres rounded to the nearest 0.001; where relevant, linear feet [lf] are presented in brackets.</p> <p>^aFinal mitigation ratios may be greater and will be determined by USACE, RWQCB, and CDFW. In-kind mitigation is required.</p> <p>^bRatio for impacts is based on the location of mitigation site. The proposed ratio assumes the mitigation site occurs within the same watershed. If the mitigation site occurs in an adjacent watershed, a greater mitigation ratio may be required.</p> <p>^cUSACE/RWQCB/CDFW non-wetland waters and streambed entirely overlap. City wetlands fall within USACE/RWQCB/CDFW non-wetland waters.</p> <p>^dRWQCB/CDFW/City wetland waters entirely overlap. USACE wetland waters fall within RWQCB/CDFW wetland waters.</p>					

5.6 Mitigation for City Jurisdictional Wetlands

The project would result in permanent impacts of 0.006 acre and temporary impacts of 0.102 acre to City wetlands (see Figure 7). City wetlands entirely overlap with RWQCB and CDFW wetland waters and include USACE/RWQCB/CDFW vegetated non-wetland waters. Wetlands with artificially induced hydrology are not recognized by the City.

Impacts to City wetlands would require a deviation from the ESL wetland regulations. The project would qualify for a wetland deviation under the Essential Public Projects Option, and appropriate mitigation would be applied. Anticipated mitigation at a ratio of 2:1 would bring the total mitigation for impacts to City wetlands to 0.216 acre. Mitigation for temporary and permanent impacts to wetland waters will occur at an appropriate PUD mitigation site.

5.7 City Standard Mitigation Measures

The following City standard mitigation for biological resource protection during construction shall be incorporated:

I. Prior to Construction

- A. **Biologist Verification** – The owner/permittee shall provide a letter to the City's Mitigation Monitoring Coordination (MMC) section stating that a Project Biologist (Qualified Biologist) as defined in the City's Biological Guidelines (2012), has been retained to implement the proposed project's biological monitoring program. The letter shall include the names and contact information of all persons involved in the biological monitoring of the proposed project.
- B. **Preconstruction Meeting** – The Qualified Biologist shall attend the preconstruction meeting, discuss the project's biological monitoring program, and arrange to perform any follow up mitigation measures and reporting including site-specific monitoring, restoration or revegetation, and additional fauna/flora surveys/salvage.
- C. **Biological Documents** – The Qualified Biologist shall submit all required documentation to MMC verifying that any special mitigation reports including but not limited to, maps, plans, surveys, survey timelines, or buffers are completed or scheduled per City Biology Guidelines, MSCP, ESL Ordinance, project permit conditions, California Environmental Quality Act (CEQA; City of San Diego 2011), endangered species acts (ESAs), and/or other local, state or federal requirements.
- D. **Biological Construction Monitoring Exhibit** – The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit (BCME) which includes the biological documents in C above. In addition, the BCME shall include the following: restoration/revegetation plans, plant salvage/relocation requirements (e.g., coastal cactus wren plant salvage, burrowing owl exclusions, etc.), avian or

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other wildlife surveys/survey schedules (including general avian nesting and USFWS protocol), timing of surveys, wetland buffers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City Administrator Deputy Director (ADD)/MMC. The BCME shall include a site plan, written and graphic depiction of the project's biological mitigation/monitoring program, and a schedule. The BCME shall be approved by MMC and referenced in the construction documents.

- E. Avian Protection Requirements** –To avoid any direct impacts to any species identified as a listed, candidate, sensitive, or special status species in the MSCP, removal of habitat that supports active nests in the proposed area of disturbance should occur outside the breeding season for these species (February 1 to September 15). If removal of habitat in the proposed area of disturbance must occur during the breeding season, the Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The applicant shall submit the results of the pre-construction survey to the City for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines (i.e. appropriate follow up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's MMC Section and Biologist shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.
- F. Resource Delineation** – Prior to construction activities, the Qualified Biologist shall supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological habitats and verify compliance with any other project conditions as shown on the BCME. This phase shall include flagging plant specimens and delimiting buffers to protect sensitive biological resources (e.g., habitats/flora and fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.
- G. Education** – Prior to commencement of construction activities, the Qualified Biologist shall meet with the owner/permittee or designee and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside the approved construction area and to protect sensitive flora and fauna (e.g., explain the avian and wetland buffers, flag system for removal of invasive species or retention of sensitive plants, and clarify acceptable access routes/methods and staging areas, etc.).

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II. During Construction

- A. **Monitoring** – All construction (including access/staging areas) shall be restricted to areas previously identified, proposed for development/staging, or previously disturbed as shown on the BCME. The Qualified Biologist shall monitor construction activities as needed to ensure that construction activities do not encroach into biologically sensitive areas, or cause other similar damage, and that the work plan has been amended to accommodate any sensitive species located during the pre-construction surveys. In addition, the Qualified Biologist shall document field activity via the Consultant Site Visit Record (CSVR). The CSVR shall be e-mailed to MMC on the first day of monitoring, the first week of each month, the last day of monitoring, and immediately in the case of any undocumented condition or discovery.
- B. **Subsequent Resource Identification** – The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna on-site (e.g., flag plant specimens for avoidance during access, etc.). If active nests or other previously unknown sensitive resources are detected, all project activities that directly impact the resource shall be delayed until species specific local, state, or federal regulations have been determined and applied by the Qualified Biologist.

III. Post-construction

- A. In the event that impacts exceed previously allowed amounts, additional impacts shall be mitigated in accordance with City Biology Guidelines, ESL and MSCP, State CEQA, and other applicable local, state and federal law. The Qualified Biologist shall submit a final BCME/report to the satisfaction of the City ADD/MMC within 30 days of construction completion.

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ATTACHMENTS

ATTACHMENT 1
Biologists' Qualifications

Jason (JR) Sundberg

Biologist/Botanist



Experience Highlights

- ✓ Conducts botanical and wildlife surveys
- ✓ Extensive rare plant survey experience
- ✓ Plant identification using taxonomic keys and field characters
- ✓ Wetland delineation and permitting

Experience

10 years

Education/Registrations

B.S. Botany, Northern Michigan University

Certifications/Permits

International Society of Arboriculture-Certified Arborist

CDFW Scientific Collecting Permit for amphibians, birds, invertebrates (California vernal pool branchiopods [fairy shrimp] and terrestrial invertebrates), small mammals, and reptiles

CDFW California Endangered Species Act Plant Voucher Collecting Permit

Mr. Sundberg is responsible for rare plant identification and surveys; habitat assessments for coastal California gnatcatcher and coastal cactus wren; vegetation mapping; environmental compliance monitoring; and focused surveys for endangered, threatened, and sensitive species throughout southern California. He prepares biological technical reports to document findings and uses GPS to map vegetation and sensitive species habitats.

Mr. Sundberg also has completed wetland delineations, and assessments, within riverine, lacustrine, and estuarine wetland systems. His experience includes wetland delineations within difficult and atypical wetlands including vernal pool complexes and urbanized streams as well as montane meadows, perennial and intermittent river systems, and ephemeral drainages.

Lakeside Fire Station No. 1 Wetland Permitting, San Diego County, CA

Mr. Sundberg prepared the permit applications (1602, 401, 404) and jurisdictional waters/wetland delineation report for the Lakeside Fire Station No. 1 project.

Beyer Park Development Project, San Diego, CA

Mr. Sundberg conducted constraints level biological assessment within maritime succulent scrub and coastal sage scrub vegetation. He also assessed potential jurisdictional waters on-site.

El Cajon Mountain Preserve, San Diego County, CA

Mr. Sundberg conducted rare plant, weed, and Quino checkerspot butterfly habitat surveys within preserved land on El Cajon Mountain. Difficult access issues were overcome.

TL 6914 Wetland Assessment and Monitoring, Lakeside, CA

Mr. Sundberg assessed potential jurisdictional waters along a multi-mile utility corridor from Lakeside to Dehesa, including urban, rural, and open space areas. He assisted in the preparation of wetland assessment technical report and the associated figures. Additional responsibilities included attending construction meetings, monitoring work near sensitive aquatic resources, and communicating the requirements of the related permits.

CDFW Flat-Tailed Horned Lizard Training and Certification

OSHA 10-Hour Training Course in Construction Safety and Health

USFWS Permit TE-797665 for vernal pool and upland plants; to conduct surveys for the Quino checkerspot butterfly

Training

Wetland Delineation Training, Wetland Training Institute

California Rapid Assessment Method Certified

CNPS Rapid Assessment Training

SDNHM Native Plant Identification Workshop

Jepson Herbarium Workshops

Affiliations

California Native Plant Society

Southern California Botanists

TL6939 Wetland Assessment and Rare Plant Survey, San Diego, CA

Mr. Sundberg assessed potential jurisdictional waters and surveyed for rare plants and their habitat along a multi-mile utility corridor through the Camino del Sur and 4S Ranch area of San Diego. He assisted in the preparation of wetland assessment technical report, rare plant survey report, and the associated figures.

TL 637 Wetland Assessment and Monitoring, Ramona, CA

Mr. Sundberg assessed potential jurisdictional waters along a multi-mile utility corridor spanning from Ramona to Santa Ysabel through primarily rural ranch lands. He assisted in the preparation of wetland assessment technical report and the associated figures. His responsibilities extended into managing a water resource monitoring staff to provide on-site guidance to construction crews.

Coast Highway (Hill Street) Bridge Replacement Project, Oceanside, CA

Mr. Sundberg conducted a wetland delineation for bridge improvements in tidally influenced riverine wetland.

Wetland Impacts of Emergency Repair, Borrego Springs, CA

Mr. Sundberg assessed impacts to jurisdictional waters along a utility corridor after an emergency repair. He prepared a letter report and associated figures detailing the impacts to jurisdictional waters for submittal to the regulatory agencies.

SDG&E Wetlands Delineation, Carlsbad, CA

Mr. Sundberg conducted a wetland delineation and prepared a wetland delineation report in support of the design phase of a new transmission structure.

TL 649 Wetland Assessment, Chula Vista, CA

Mr. Sundberg assessed potential jurisdictional waters along a multi-mile utility corridor in and near the City of Chula Vista. The survey area included ephemeral streams and a vernal pool complex. He assisted the preparation of wetland assessment technical report and the associated figures.

SDG&E Wetlands Delineation, Carlsbad, CA

Mr. Sundberg conducted a jurisdictional delineation for several transmission structures and access roads in Carlsbad. He prepared a jurisdictional delineation technical report and the associated figures in support of the design phase of flood hardening of the transmission structures.

Kayo Valenti

Biologist



Experience Highlights

- ✓ Environmental compliance project management
- ✓ General biological surveys and vegetation mapping
- ✓ Threatened and endangered species surveys and monitoring
- ✓ Habitat restoration

Experience

13 years

Education/Registrations

B.S. Biology, Emphasis Ecology, San Diego State University

Certifications/Permits

CDFW Scientific Collecting Permit for Invertebrates, Rodents/Small Mammals, and Reptiles/Amphibians

CDFW California Endangered Species Act Plant Voucher Collecting Permit

CDFW Flat-Tailed Horned Lizard Training and Certification

OSHA 10-Hour Training Course in Construction Safety and Health

Ms. Valenti has extensive experience conducting sensitive and non-native floral species surveys, vegetation mapping, focused surveys for vernal pool branchiopods, general biological assessments, and environmental compliance monitoring, utilizing GPS technology for accurate data collection, and assisting with focused surveys for endangered, threatened, and sensitive fauna species in a variety of habitats in southern California. Ms. Valenti manages native habitat restoration/mitigation implementation and environmental compliance monitoring projects, including reporting. She has experience in the preparation of biological reports to document findings and evaluate project impacts on sensitive biological resources in accordance with local and regional conservation plans.

Cañon Street Pocket Park Project, San Diego, CA

Ms. Valenti conducted the biological resources survey and prepared the letter report to document biological resources and assess project impacts for this City of San Diego proposed pocket park.

Sewer and AC Water Group 697A Project, San Diego, CA

Ms. Valenti conducted the biological resources survey and prepared the biological letter report to document biological resources, assess project impacts, and recommend avoidance and mitigation measures for this City of San Diego sewer and water line replacement project.

City of San Diego Vernal Pool Habitat Conservation Plan Plant Monitoring, San Diego, CA

Ms. Valenti conducted vernal pool plant surveys in support of the vernal pool habitat conservation plan and prepared a report that includes methods, results, and recommendations for associated management activities in accordance with the Vernal Pool Management and Monitoring Plan.

El Camino Real/SR-56 Bike Path Connector, Biological Monitoring, San Diego, CA

Ms. Valenti managed biological mitigation monitoring and reporting for this City of San Diego mitigation project. She managed construction biological monitoring and reporting, mapped and assisted with sensitive plant species Del Mar mesa sand aster translocation during and after construction

USFWS Permit TE-797665
for Vernal Pool
Branchiopods

Training

Introduction to Surveying,
Monitoring, and Handling
Techniques Workshop,
Desert Tortoise Council

Identification and Ecology
of the Fairy Shrimp and
Tadpole Shrimp of
California and Oregon
Course

San Diego Audubon
Society Introductory
Birding Course

Affiliations

California Native Plant
Society

San Diego Audubon
Society

Sierra Club

activities, and managed revegetation biological monitoring and reporting.

Camino Del Rey Drainage and Road Improvements Project, Bonsall, County of San Diego, CA

Ms. Valenti conducted the biological resources survey and is preparing the biological letter report to document survey results, including sensitive riparian habitat and several sensitive avian species. Project impacts and mitigation recommendations will be included in the report for this project adjacent to Moosa Creek, in the community of Bonsall.

Beyer Park Development Project, San Diego, CA

Ms. Valenti managed vernal pool branchiopod surveys and reporting requirements, and assisted with coastal California gnatcatcher and burrowing owl surveys for this City of San Diego proposed park development project.

Manning Canyon Sewer and Water Replacement Project, San Diego, CA

Ms. Valenti conducted biological monitoring of pipe removal that occurred within a portion of Tecolote Canyon Natural Park, which supports coastal sage scrub habitat, provides nesting habitat for multiple sensitive avian species, and contains jurisdictional drainages. Following construction activities, she continues to monitor revegetation activities, which includes report submittals, for this City of San Diego sewer and water replacement project.

Dehesa Road and Harbison Canyon Road Intersection Improvement Project, Dehesa, CA

Ms. Valenti conducted a biological survey and prepared the biological resources letter report for the Dehesa Road and Harbison Canyon Road Intersection Improvements project. The impact analysis and recommended mitigation measures were based on the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements.

Casita Way Emergency Storm Drain Replacement Project, San Diego, CA

Ms. Valenti manages, monitors, and schedules maintenance activities for this revegetation project that occurs on a steep slope behind two private properties in the City of San Diego.

ATTACHMENT 2

Plant Species Observed within the College Area Sewer and AC Water Project Survey Area

**Attachment 2
Plant Species Observed**

Scientific Name	Common Name	Habitat	Origin
FERNS			
PTERIDACEAE	BRAKE FAMILY		
<i>Pentagramma triangularis</i> (Kaulf.) Yatsk. Windham & E. Wollenw.	goldback fern	CSS	N
GYMNOSPERMS			
CUPRESSACEAE	CYPRESS FAMILY		
<i>Italian cypress</i>	Italian cypress	ORN	I
<i>Juniperus chinensis</i> L.	Hollywood juniper	ORN	I
PINACEAE	PINE FAMILY		
<i>Pinus halepensis</i> Mill.	Aleppo pine	ORN	I
PODOCARPACEAE	FERN PINE FAMILY		
<i>Afrocarpus falcatus</i> (Thunb.) C.N.Page	common yellow wood, yew pine	NNR	I
ANGIOSPERMS: MAGNOLIIDS-PIPERALES			
SAURURACEAE	LIZARD'S TAIL FAMILY		
<i>Anemopsis californica</i> (Nutt.) Hook. & Arn.	yerba mansa	DW	N
ANGIOSPERMS: MONOCOTS			
AGAVACEAE	AGAVE FAMILY		
<i>Agave americana</i> L.	American century plant	ORN	I
<i>Agave attenuata</i> Salm.	lion's tail, foxtail, swan's neck	ORN	I
<i>Yucca guatemalensis</i> Baker	bluestem yucca	ORN, U/D	I
ARECACEAE	PALM FAMILY		
<i>Phoenix canariensis</i> Chabaud	Canary Island palm	NNR	I
<i>Washingtonia robusta</i> H. Wendl.	Mexican fan palm	NNR, ORN, U/D	I
ASPARAGACEAE	ASPARAGUS FAMILY		
<i>Asparagus asparagoides</i> (L.) Druce	florist's-smilax	NNR	I
<i>Asparagus setaceus</i> (Kunth) Jessop	asparagus-fern	NNR	I
CYPERACEAE	SEDGE FAMILY		
<i>Bolboschoenus maritimus</i> (L.) Palla ssp. <i>paludosus</i> (A. Nelson) T. Koyama [= <i>Scirpus maritimus</i>]	saltmarsh bulrush, alkali bulrush	DW	N
<i>Cyperus eragrostis</i> Lam.	tall flatsedge	NNR	N
<i>Cyperus involucratus</i> [= <i>Cyperus alternifolius</i>] Rottb.	African umbrella plant	NNR	I

**Attachment 2
Plant Species Observed**

Scientific Name	Common Name	Habitat	Origin
<i>Schoenoplectus</i> [=Scirpus] <i>californicus</i> (C.A. Mey.) Soják	southern bulrush	DW	N
IRIDACEAE	IRIS FAMILY		
<i>Dietes grandiflora</i> N.E.Br	fortnight lily	ORN	I
POACEAE (GRAMINEAE)	GRASS FAMILY		
<i>Arundo donax</i> L.	giant reed	NNR	I
<i>Avena barbata</i> Pott ex Link	slender wild oat	DL, DCSS	I
<i>Brachypodium distachyon</i> (L.) P. Beauv.	purple falsebrome	CSS, DCSS	I
<i>Bromus diandrus</i> Roth	ripgut grass	DL, DCSS, CSS	I
<i>Bromus madritensis</i> L. ssp. <i>rubens</i> (L.) Husn.	red brome	DL, DCSS, CSS, MSS	I
<i>Cortaderia selloana</i> (Schult. & Schult. f.) Asch. & Graebn.	pampas grass	NNR	I
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	NNR, DL, DW	I
<i>Paspalum dilatatum</i> Poir.	dallis grass	NNR	I
<i>Pennisetum setaceum</i> (Forssk.) Chiov.	crimson fountain grass	DCSS, ORN	I
<i>Stipa</i> [=Nassella] <i>lepida</i> Hitchc.	foothill needle grass	CSS	N
<i>Stipa miliacea</i> (L.) Hoover var. <i>miliacea</i> [=Piptatherum <i>miliaceum</i> ssp. <i>miliaceum</i> and <i>Oryzopsis miliacea</i>]	smilo grass	NNR	I
THEMIDACEAE	BRODIAEA FAMILY		
<i>Bloomeria crocea</i> (Torr.) Coville	common goldenstar	CSS	N
TYPHACEAE	CATTAIL FAMILY		
<i>Typha latifolia</i> L.	broad-leaved cattail	DW, NNR	N
ANGIOSPERMS: DICOTS			
AIZOACEAE	FIG-MARIGOLD FAMILY		
<i>Carpobrotus edulis</i> (L.) N.E. Br.	freeway iceplant	DW, DL, DCSS, ORN	I
ANACARDIACEAE	SUMAC OR CASHEW FAMILY		
<i>Malosma laurina</i> Nutt. ex Abrams	laurel sumac	CSS	N
<i>Rhus integrifolia</i> (Nutt.) Benth. & Hook. f. ex Rothr.	lemonade berry	CSS, DCSS	N
<i>Schinus molle</i> L.	Peruvian pepper tree	NNR, ORN	I
<i>Schinus terebinthifolius</i> Raddi	Brazilian pepper tree	NNR	I
<i>Toxicodendron diversilobum</i> (Torr. & A. Gray) Greene	western poison oak	CSS	N

**Attachment 2
Plant Species Observed**

Scientific Name	Common Name	Habitat	Origin
APIACEAE (UMBELLIFERAE)	CARROT FAMILY		
<i>Apium graveolens</i> L.	celery	NNR, DW	I
<i>Foeniculum vulgare</i> Mill.	fennel	DL	I
ARALIACEAE	GINSENG FAMILY		
<i>Hedera helix</i> L.	English ivy	ORN	I
ASTERACEAE	SUNFLOWER FAMILY		
<i>Ambrosia psilostachya</i> DC.	western ragweed	NNR, DW, DCSS	N
<i>Artemisia californica</i> Less.	California sagebrush	CSS, DCSS, MSS	N
<i>Baccharis salicifolia</i> (Ruiz & Pav.) Pers. ssp. <i>salicifolia</i>	mule fat, seep-willow	NNR	N
<i>Baccharis sarothroides</i> A. Gray	broom baccharis	DCSS, CSS	N
<i>Bahiopsis</i> [= <i>Viguiera</i>] <i>laciniata</i> (A. Gray) E.E. Schilling & Panero	San Diego viguiera, San Diego County viguiera	MSS	N
<i>Carduus pycnocephalus</i> L.	Italian thistle	NNR	I
<i>Centaurea melitensis</i> L.	totalote, Maltese star-thistle	DL, DCSS	I
<i>Glebionis coronaria</i> (L.) Spach [= <i>Chrysanthemum coronarium</i>]	garland, crown daisy	DL	I
<i>Lactuca serriola</i> L.	prickly lettuce	DL, DCSS	I
<i>Pseudognaphalium</i> [= <i>Gnaphalium</i>] <i>californicum</i> (DC.) Anderb.	California everlasting, green everlasting	DCSS, CSS	N
<i>Senecio linearifolius</i> A. Rich.	linear-leaved Australian fireweed	DW	N
<i>Sonchus oleraceus</i> L.	common sow thistle	DL	I
<i>Xanthium strumarium</i> L.	cocklebur	DW, NNR	N
BIGNONIACEAE	BIGNONIA FAMILY		
<i>Jacaranda mimosifolia</i> D. Don	blue jacaranda	ORN, U/D	I
BORAGINACEAE	BORAGE FAMILY		
<i>Echium candicans</i> L. f.	pride of Madeira	DL, NNR	I
<i>Heliotropium curassavicum</i> L. var. <i>oculatum</i> (A. Heller) I. M. Johnst. ex Tidestr.	seaside heliotrope, alkali heliotrope	DW, CSS	N
CACTACEAE	CACTUS FAMILY		
<i>Cereus peruvianus</i> (L.) Mill.	Peruvian apple cactus	ORN	I
<i>Cylindropuntia</i> [= <i>Opuntia</i>] <i>prolifera</i> (Engelm.) F.M. Knuth	coast cholla	MSS	N
<i>Opuntia ficus-indica</i> (L.) Mill.	mission prickly-pear, Indian fig	DCSS	I
<i>Opuntia littoralis</i> (Engelm.) Cockerell.	coast prickly-pear, shore cactus	MSS	N

**Attachment 2
Plant Species Observed**

Scientific Name	Common Name	Habitat	Origin
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY		
<i>Lonicera subspicata</i> Hook. & Arn.	southern honeysuckle	CSS	N
CHENOPODIACEAE	GOOSEFOOT FAMILY		
<i>Atriplex semibaccata</i> R. Br.	Australian saltbush	DL	I
<i>Bassia hyssopifolia</i> (Pall.) Kuntze	five-hook bassia	DW, DL	I
<i>Salsola tragus</i> L.	Russian thistle, tumbleweed	DL, MSS	I
CONVOLVULACEAE	MORNING-GLORY FAMILY		
<i>Ipomoea indica</i> (Burm.) Merr.	Indian morning-glory	NNR	I
CRASSULACEAE	STONECROP FAMILY		
<i>Crassula ovata</i> (Mill.) Druce	jade plant	ORN, DL	I
<i>Dudleya lanceolata</i> (Nutt.) Britton & Rose	lance-leaved dudleya, lanceleaf liveforever	CSS	N
CUCURBITACEAE	GOURD FAMILY		
<i>Marah macrocarpa</i> (Greene) Greene	wild cucumber	CSS	N
DIDIEREACEAE	FAMILY DIDIEREACEAE		
<i>Portulacaria afra</i> Jacq.	dwarf jade plant	ORN	N
EUPHORBIACEAE	SPURGE FAMILY		
<i>Euphorbia peplus</i> L.	petty spurge	DL	I
<i>Ricinus communis</i> L.	castor bean	NNR	I
FABACEAE (LEGUMINOSAE)	LEGUME FAMILY		
<i>Acacia cyclops</i> A. Cunn. ex G. Don	western coastal wattle	NNR	I
<i>Acacia redolens</i> Maslin	vanilla-scented wattle	ORN	I
<i>Acmispon glaber</i> (Vogel) Brouillet [= <i>Lotus scoparius</i>]	deerweed, California broom	CSS, DCSS	N
<i>Astragalus trichopodus</i> (Nutt.) A. Gray var. <i>lonchus</i> (M.E. Jones) Barneby	ocean locoweed	CSS	N
<i>Ceratonia siliqua</i> L.	carob tree	ORN	I
<i>Melilotus</i> sp.	sweetclover	DL, DCSS	I
<i>Senna didymobotrya</i> (Fresen.) H.S. Irwin & Barneby	African senna	DL	I
FAGACEAE	OAK FAMILY		
<i>Quercus dumosa</i> Nutt.	Nuttall's scrub oak	DCSS, CSS, NNR, ORN	N

**Attachment 2
Plant Species Observed**

Scientific Name	Common Name	Habitat	Origin
LAMIACEAE	MINT FAMILY		
<i>Marrubium vulgare</i> L.	horehound	DL	I
<i>Salvia mellifera</i> Greene	black sage	CSS, DCSS	N
MALVACEAE	MALLOW FAMILY		
<i>Malacothamnus fasciculatus</i> (Nutt. ex Torr. & A. Gray) Greene	chaparral mallow	CSS, DCSS	N
<i>Malva parviflora</i> L.	cheeseweed, little mallow	DL, DCSS	I
MORACEAE	MULBERRY FAMILY		
<i>Ficus rubiginosa</i> Desf. ex Vent.	rusty fig	ORN	I
MYRTACEAE	MYRTLE FAMILY		
<i>Eucalyptus cladocalyx</i> F. Muell.	sugar gum	EW	I
<i>Eucalyptus polyanthemus</i> Schauer	silver dollar gum, red box	EW	I
NYCTAGINACEAE	FOUR O'CLOCK FAMILY		
<i>Bougainvillea</i> sp. Comm. ex Juss.	bougainvillea	U/D, ORN	I
OLEACEAE	OLIVE FAMILY		
<i>Fraxinus uhdei</i> (Wenz.) Lingelsh.	shamel ash	NNR, U/D	I
<i>Olea europaea</i> L.	olive	ORN	I
ONAGRACEAE	EVENING-PRIMROSE FAMILY		
<i>Epilobium canum</i> (Greene) P.H. Raven ssp. <i>canum</i>	California fuchsia, zauschneria	CSS	N
<i>Oenothera elata</i> Kunth ssp. <i>hirsutissima</i> (S. Watson) W. Dietr.	great marsh evening-primrose	DW, NNR	N
PHRYMACEAE [=SCROPHULARIACEAE]	HOPSEED FAMILY		
<i>Diplacus</i> [= <i>Mimulus</i>] <i>aurantiacus</i> (Curt.) Jeps.	bush monkey-flower	CSS	N
PITTOSPORACEAE	PITTOSPORUM FAMILY		
<i>Pittosporum tobira</i> (Thunb.) W.T.Aiton	Japanese pittosporum, mock orange	NNR, U/D	I
PLANTAGINACEAE	PLANTAIN FAMILY		
<i>Plantago major</i> L.	common plantain	DL	I
PLUMBAGINACEAE	LEADWORT FAMILY		
<i>Plumbago auriculata</i> Lam.	Cape leadwort	DL, ORN	I
POLYGONACEAE	BUCKWHEAT FAMILY		
<i>Eriogonum fasciculatum</i> Benth. var. <i>fasciculatum</i>	coast California buckwheat	DCSS, CSS, MSS	N
<i>Rumex crispus</i> L.	curly dock	NNR	I

**Attachment 2
Plant Species Observed**

Scientific Name	Common Name	Habitat	Origin
PROTEACEAE	PROTEA FAMILY		
<i>Grevillea robusta</i> A.Cunn. ex R.Br.	silk oak	ORN	N
RHAMNACEAE	BUCKTHORN FAMILY		
<i>Adolphia californica</i> S. Watson	California adolphia, spineshrub	MSS, CSS, DCSS	N
ROSACEAE	ROSE FAMILY		
<i>Heteromeles arbutifolia</i> (Lindl.) M. Roem.	toyon, Christmas berry	CSS	N
RUBIACEAE	MADDER FAMILY		
<i>Galium angustifolium</i> Nutt. ex A. Gray ssp. <i>angustifolium</i>	narrow-leaf bedstraw	CSS	N
SALICACEAE	WILLOW FAMILY		
<i>Salix gooddingii</i> C.R. Ball.	Goodding's black willow	NNR	N
<i>Salix lasiolepis</i> Benth.	arroyo willow	NNR	N
SAPINDACEAE	SOAPBERRY FAMILY		
<i>Koelreuteria paniculata</i> Laxm.	golden rain tree	ORN, NNR	N
SOLANACEAE	NIGHTSHADE FAMILY		
<i>Datura wrightii</i> Regel	western Jimson weed	DL	N
ULMACEAE	ELM FAMILY		
<i>Ulmus parvifolia</i> Jacq.	Chinese elm, lacebark elm	ORN	I

HABITATS

CSS = Diegan Coastal Sage Scrub
DCSS= Disturbed Coastal Sage Scrub
DL = Disturbed Land
DW = Disturbed Wetland
EW = Eucalyptus Woodland
MSS = Maritime Succulent Scrub
NNR = Non-Native Riparian
ORN = Ornamental Plantings
U/D = Urban/Developed

ORIGIN

N = Native to locality
I = Introduced species from outside locality
(I) = Introduced species to the ecoregion in which the survey occurred; however, native to other ecoregions within San Diego County.

ATTACHMENT 3

Wildlife Species Observed within the College Area Sewer and AC Water Project Survey Area

**Attachment 3
Wildlife Species Observed**

Scientific Name	Common Name	Occupied Habitat	On-Site Abundance/ Seasonality (Birds Only)	Evidence of Occurrence
INVERTEBRATES (Nomenclature for spiders and insects from Evans 2008; for butterflies from San Diego Natural History Museum 2002)				
APIDAE	HONEY BEES			
<i>Apis mellifera</i>	honey bee (I)	CSS		O
CULICIDAE	MOSQUITOS			
Not identified to species	Mosquito larvae	DW		O
FORMICIDAE	ANTS			
<i>Linepithema humile</i>	Argentine ant (I)	NNR		O
PAPILIONIDAE	PARNASSIANS & SWALLOWTAILS			
<i>Papilio zelicaon</i>	anise swallowtail	CSS		O
PIERIDAE	WHITES & SULPHURS			
<i>Colias</i> sp.	sulphur	CSS		O
<i>Pieris rapae</i>	cabbage white (I)	DL, CSS		O
LYCAENIDAE	BLUES, COPPERS, & HAIRSTREAKS			
<i>Brephidium exile</i>	western pygmy-blue	DL		O
<i>Leptotes marina</i>	marine blue	CSS, DCSS		O
NYMPHALIDAE	BRUSH-FOOTED BUTTERFLIES			
<i>Agraulis vanillae incarnata</i>	gulf fritillary	MSS		O
<i>Junonia coenia grisea</i>	common buckeye	DCSS		O
<i>Nymphalis antiopa</i>	mourning cloak	CSS, DL		O
REPTILES (Nomenclature from Crother 2008)				
PHRYNOSOMATIDAE	SPINY LIZARDS			
<i>Sceloporus occidentalis</i>	western fence lizard	DL		O
<i>Uta stansburiana</i>	common side-blotched lizard	DL		O
BIRDS (Nomenclature from Chesser et al. 2018 and Unitt 2004)				
ACCIPITRIDAE	HAWKS, KITES, & EAGLES			
<i>Buteo jamaicensis</i>	red-tailed hawk	F	F / Y	O

**Attachment 3
Wildlife Species Observed**

Scientific Name	Common Name	Occupied Habitat	On-Site Abundance/ Seasonality (Birds Only)	Evidence of Occurrence
TROCHILIDAE	HUMMINGBIRDS			
<i>Calypte anna</i>	Anna's hummingbird	ORN, U/D, CSS, NNR	C / Y	O
TYRANNIDAE	TYRANT FLYCATCHERS			
<i>Empidonax difficilis</i>	Pacific-slope flycatcher	NNR	F / S	O
<i>Sayornis nigricans semiatra</i>	black phoebe	CSS, ORN	F / Y	O
<i>Tyrannus vociferans vociferans</i>	Cassin's kingbird	ORN, EW	F / Y	O
CORVIDAE	CROWS, JAYS, & MAGPIES			
<i>Aphelocoma californica</i>	California [=western] scrub-jay	ORN, CSS, DCSS	F / Y	O
<i>Corvus brachyrhynchos hesperis</i>	American crow	ORN, U/D	F / Y	O
TROGLODYTIDAE	WRENS			
<i>Troglodytes aedon parkmanii</i>	house wren	DL, ORN	F / Y	O
MIMIDAE	MOCKINGBIRDS & THRASHERS			
<i>Mimus polyglottos polyglottos</i>	northern mockingbird	ORN, U/D, CSS, NNR	F / Y	O
PARULIDAE	WOOD WARBLERS			
<i>Setophaga [=Dendroica] coronata</i>	yellow-rumped warbler	NNR	F / W	O
EMBERIZIDAE	EMBERIZIDS			
<i>Melospiza [=Pipilo] crissalis</i>	California towhee	DL, CSS, ORN	C / Y	O
<i>Pipilo maculatus</i>	spotted towhee	CSS	F / Y	V
FRINGILLIDAE	FINCHES			
<i>Spinus [=Carduelis] psaltria hesperophilus</i>	lesser goldfinch	NNR	F / Y	V
<i>Haemorhous [=Carpodacus] mexicanus frontalis</i>	house finch	U/D, ORN	C / Y	O
ESTRILDIDAE	WEAVER-FINCHES			
<i>Lonchura punctulata</i>	scaly-breasted munia [=nutmeg manikin] (I)	CSS, NNR, ORN	F / Y	O

**Attachment 3
Wildlife Species Observed**

Scientific Name	Common Name	Occupied Habitat	On-Site Abundance/ Seasonality (Birds Only)	Evidence of Occurrence
MAMMALS (Nomenclature from Baker et al. 2003)				
SCIURIDAE	SQUIRRELS & CHIPMUNKS			
<i>Spermophilus beecheyi</i>	California ground squirrel	CSS		B
PROCYONIDAE	PROCYONIDS			
<i>Procyon lotor</i>	northern raccoon	NNR, DCSS		T, S
<p>(I) = Introduced species</p> <p>HABITATS</p> <p>CSS = Diegan Coastal Sage Scrub DCSS = Disturbed Coastal Sage Scrub DL = Disturbed Land DW = Disturbed Wetland EW = Eucalyptus Woodland F = Flying overhead MSS = Maritime Succulent Scrub NNR = Non-Native Riparian ORN = Ornamental Plantings U/D = Urban/Developed</p> <p>EVIDENCE OF OCCURRENCE</p> <p>B = Burrow O = Observed S = Scat T = Track V = Vocalization</p> <p>ABUNDANCE (birds only; based on Garrett and Dunn 1981)</p> <p>C = Common to abundant; almost always encountered in proper habitat, usually in moderate to large numbers F = Fairly common; usually encountered in proper habitat, generally not in large numbers</p> <p>SEASONALITY (birds only)</p> <p>S = Spring/summer resident; probable breeder on-site or in vicinity W = Winter visitor; does not breed locally Y = Year-round resident; probable breeder on-site or in vicinity</p>				

ATTACHMENT 4

**Sensitive Plant Species Observed
or with the Potential to Occur within the
College Area Sewer and AC Water Project Survey Area**

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Diego	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
ANGIOSPERMS: DICOTS						
CHENOPODIACEAE GOOSEFOOT FAMILY						
<i>Aphanisma blitoides</i> aphanisma	--	1B.2	NE, MSCP	Annual herb; coastal bluff scrub, beach dunes; sandy soils; blooms March–June; elevation less than 1,000 feet.	No	This species is known from one 1884 record within two miles of the project area, but is labeled “needs fieldwork” to confirm (CDFW 2018a). This species is not expected to occur within the project area due to lack of appropriate coastal bluff or dune habitat.
APIACEAE CARROT FAMILY						
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button-celery	CE/FE	1B.1	NE, MSCP	Biennial/perennial herb; vernal pools, mesic areas of coastal sage scrub and grasslands, blooms April–June; elevation less than 2,000 feet. Known from San Diego and Riverside counties. Additional populations occur in Baja California, Mexico.	No	This species has been known to occur within two miles of the project area (CDFW 2018a); However, this species is not expected to occur due to lack of vernal pool habitat.
ASTERACEAE SUNFLOWER FAMILY						
<i>Ambrosia monogyra</i> [= <i>Hymenoclea monogyra</i>] singlewhorl burrobrush	--	2B.2	–	Perennial shrub; sandy, chaparral, Sonoran desert scrub; blooms August–November; elevation 30–1,650 feet.	No	Although this species has been reported within two miles of the project area (CDFW 2018a), it is not expected to occur due to lack of sandy soils. Additionally, this conspicuous perennial shrub would have likely been apparent if present.

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Diego	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
<i>Ambrosia pumila</i> San Diego ambrosia	-/FE	1B.1	NE, MSCP	Perennial herb (rhizomatous); chaparral; coastal sage scrub; valley and foothill grasslands; creek beds with open, sandy areas; vernal pools; often in disturbed areas; blooms May–September; elevation less than 1,400 feet. Many occurrences extirpated in San Diego County.	No	This species has been reported within two miles of the project area; however, the locale is now thought to be extirpated (CDFW 2018a). This species is not expected to occur within the project area due to lack of open, sandy areas generally preferred by the species.
<i>Bahiopsis</i> [= <i>Viguiera</i>] <i>laciniata</i> San Diego viguiera [=San Diego County viguiera]	-/-	4.3	-	Perennial shrub; chaparral, coastal sage scrub; blooms February–June; elevation less than 2,500 feet.	Yes	Twenty San Diego County viguiera individuals were observed within maritime succulent scrub and disturbed land within the survey area, including three individuals within the project impact area.
<i>Ericameria palmeri</i> var. <i>palmeri</i> [= <i>E. palmeri</i> ssp. <i>palmeri</i>] Palmer's goldenbush [=Palmer's ericameria]	-/-	1B.1	MSCP	Perennial evergreen shrub; chaparral, coastal sage scrub, typically in mesic areas; blooms July–November; elevation less than 2,000 feet. Known in California from sixteen occurrences all of which are in San Diego County. Additional populations in Baja California, Mexico.	No	Although this species was reported to the CNDDB in 1935 and 1965 within two miles of the project area, the 1965 reported population is possibly extirpated according to a review of the records in 2015 and the 1935 record is labeled “needs fieldwork” to confirm (CDFW 2018a). None of the 16 currently known occurrences in San Diego County lie within the project area. This conspicuous perennial evergreen shrub is not expected to occur, and would have likely been apparent if present.

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Diego	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
<i>Stylocline citroleum</i> oil nest-straw	--	1B.1	-	Annual herb; chenopod scrub; potentially coastal sage scrub, valley and foothill grasslands in the vicinity of oil fields; clay soils; blooms March–April; elevation less than 1,300 feet. California endemic. Known from San Diego (questionable record) and Kern counties.	No	This species is known from one 1883 observation reported to the CNDDDB within two miles of the project area (CDFW 2018a); however, this record is questionable in identification (Reiser 2001). This species is not expected to occur, as it is likely extirpated from San Diego County (Reiser 2001; Rebman and Simpson 2014).
BRASSICACEAE MUSTARD FAMILY						
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's peppergrass	--	4.3	-	Annual herb; dry exposed locales within open coastal sage scrub and chaparral; blooms January–July; elevation less than 2,900 feet.	No	This species was reported to the CNDDDB in 1935 and 2005 within two miles of the project area (CDFW 2018a). The 1935 record is labeled “needs fieldwork” to confirm and the 2005 record occurs adjacent to Lake Murray (CDFW 2018a). The species has a low potential to occur as the south-facing slopes containing dry exposed locales within disturbed coastal sage scrub occurs downslope of previous cut and fill for the residential development. Additionally, while the survey was conducted after the blooming period for the species, desiccated individuals would likely have been observed if present.

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Diego	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
CACTACEAE CACTUS FAMILY						
<i>Ferocactus viridescens</i> San Diego barrel cactus	--	2B.1	MSCP	Perennial stem succulent; chaparral, coastal sage scrub, valley and foothill grasslands, vernal pools; blooms May–June; elevation less than 1,500 feet.	No	This species has been reported to the CNDDDB within two miles of the project area (CDFW 2018a). This species is not expected to occur within the project area due to lack of dry exposed cobbly locales within open coastal sage scrub. Additionally, as this is a conspicuous perennial succulent, this species would likely have been observed, if present.
CRASSULACEAE STONECROP FAMILY						
<i>Dudleya variegata</i> variegated dudleya	--	1B.2	NE, MSCP	Perennial herb; openings in chaparral, coastal sage scrub, grasslands, vernal pools, isolated rocky substrates; blooms May–June; elevation less than 1,900 feet.	No	This species was reported to the CNDDDB in 1936 and 2001 within two miles of the project area (CDFW 2018a). The 1936 record is possibly extirpated and the 2001 record occurs adjacent to Lake Murray (CDFW 2018a). This species is not expected to occur within the project area due to lack of suitable isolated rocky substrates within the open, disturbed coastal sage scrub.

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Diego	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
ERICACEAE HEATH FAMILY						
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> summer holly	-/-	1B.2	-	Perennial evergreen shrub; chaparral; blooms April–June; elevation 100–2,600 feet.	No	This species has been reported to the CNDDDB within two miles of the project area (CDFW 2018a). This conspicuous perennial evergreen shrub is not expected to occur, as it would have likely been apparent if present.
FAGACEAE OAK FAMILY						
<i>Quercus dumosa</i> Nuttall's scrub oak	-/-	1B.1	-	Perennial evergreen shrub; closed-cone coniferous forest, coastal chaparral, coastal sage scrub; sandy and clay loam soils; blooms February–March; elevation less than 1,300 feet.	Yes	Thirty-four individuals were observed within Diegan coastal sage scrub, disturbed coastal sage scrub, non-native riparian, and ornamental plantings of the survey area. Ten individuals occur within the project impact area. This species has been reported to the CNDDDB within two miles of the project area (CDFW 2018a).
LAMIACEAE MINT FAMILY						
<i>Acanthomintha ilicifolia</i> San Diego thornmint	CE/FT	1B.1	NE, MSCP	Annual herb; chaparral, coastal sage scrub, and grasslands; friable or broken clay soils; blooms April–June; elevation less than 3,200 feet.	No	Although this species has been reported within two miles of the project area, the records are from 1949 and earlier, and the reported populations are identified as “possibly extirpated” according to a review of the records (CDFW 2018a). This species is not expected to occur within the project area due to lack of friable or broken clay soils.

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Diego	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
<i>Pogogyne abramsii</i> San Diego mesa mint	CE/FE	1B.1	NE, MSCP	Annual herb; vernal pools; blooms April–July; elevation 300–700 feet. San Diego County endemic.	No	This species was reported in 1941 and 1952 within two miles of the project area; however, both are thought to be extirpated due to development (CDFW 2018a). This species is not expected to occur within the project area due to lack of vernal pool habitat.
<i>Pogogyne nudiuscula</i> Otay mesa mint	CE/FE	1B.1	NE, MSCP	Annual herb; vernal pools; blooms May–July; elevation 300–820 feet. In California, known from approximately 10 occurrences in Otay Mesa in San Diego County. Additional populations occur in Baja California, Mexico.	No	This species was reported in 1930 within two miles of the project area; however, this recorded population is considered extirpated due to development (CDFW 2018a). This species is not expected to occur within the project area due to lack of vernal pool habitat.
PLANTAGINACEAE PLANTAIN FAMILY						
<i>Stemodia durantifolia</i> purple stemodia	--	2B.1	–	Perennial herb; Sonoran desert scrub, mesic; sandy soils; blooms January–December; elevation 600–1,000 feet.	No	This species was reported in 1935 and 1940 within two miles of the project area, but both records are labeled “needs fieldwork” to confirm (CDFW 2018a). This species is not expected to occur within the project area due to lack of sandy soils.

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Diego	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
RHAMNACEAE BUCKTHORN FAMILY						
<i>Adolphia californica</i> California adolphia	--	2B.1	-	Perennial deciduous shrub; Diegan coastal sage scrub and chaparral; blooms December– May; elevation 100–2,500 feet.	Yes	Approximately 130 individuals occur within the maritime succulent scrub and Diegan coastal sage scrub of the survey area. Ten individuals occur within the project impact area. This species has been reported to the CNDDDB within two miles of the project area (CDFW 2018a).
<i>Ceanothus verrucosus</i> wart-stemmed ceanothus	--	2B.2	MSCP	Perennial evergreen shrub; chaparral; blooms December– April; elevation less than 1,300 feet.	No	This species has been reported to the CNDDDB within two miles of the project area (CDFW 2018a). This conspicuous perennial evergreen shrub is not expected to occur, as it would have likely been apparent if present.

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Diego	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
ANGIOSPERMS: MONOCOTS						
THEMIDACEAE		BRODIAEA FAMILY				
<i>Bloomeria</i> [=Muilla] <i>clevelandii</i> San Diego goldenstar	--	1B.1	MSCP	Perennial herb (bulbiferous); somewhat open locales; does not typically grow in the shade of woody perennials; preferred habitats are valley and foothill grassland and near vernal pools; open, low-growing coastal sage scrub; clay soils; blooms May; elevation 170–1,500 feet.	No	The CNDDDB has three records of this species within two miles of the project area (CDFW 2018a). Two records are from 1950 and earlier, and are identified as “possibly extirpated” according to a review of the records. The third record is from 2001 and occurs at Chollas Heights Naval Radio Station within non-native grassland and low growing coastal sage scrub. This species is not expected to occur within the project area due to lack of suitable open, low growing coastal sage scrub, as the open, disturbed coastal sage scrub of the survey area is dominated by a tall woody perennial and occurs downslope of previous cut and fill for residential development.

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

Species' <i>Scientific Name</i> Common Name	State/Federal Status	CNPS Rank	City of San Diego	Habitat/ Preference/Requirements/ Blooming Period	Observed?	Basis for Determination of Occurrence Potential
<i>Brodiaea orcuttii</i> Orcutt's brodiaea	--	1B.1	MSCP	Perennial herb (bulbiferous); preferred habitats are vernal moist grasslands and near vernal pools; mesic, clay and gravelly loam soil; blooms May-July; elevation less than 5,600 feet.	No	This species has been reported to the CNDDDB within two miles of the project area (CDFW 2018a). Both records are from 1949 and earlier, and are identified as "possibly extirpated" according to a review of the records. This species is not expected to occur within the project area due to lack of preferred mesic grassland and vernal pool habitat.

Attachment 4
Sensitive Plant Species
Observed or with the Potential for Occurrence

FEDERAL CANDIDATES AND LISTED PLANTS

FE = Federally listed endangered
FT = Federally listed threatened

STATE LISTED PLANTS

CE = State listed endangered

CALIFORNIA NATIVE PLANT SOCIETY (CNPS): CALIFORNIA RARE PLANT RANKS (CRPR)

1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
2B = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.
4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.
.1 = Species seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat).
.2 = Species fairly threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat).
.3 = Species not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known).

CITY OF SAN DIEGO

NE = Narrow endemic
MSCP = Multiple Species Conservation Program covered species

ATTACHMENT 5

Sensitive Wildlife Species Occurring or with the Potential to Occur within the College Area Sewer and AC Water Project Survey Area

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
INVERTEBRATES (Nomenclature from Eriksen and Belk 1999; San Diego Natural History Museum 2002)					
BRANCHINECTIDAE FAIRY SHRIMP					
San Diego fairy shrimp <i>Branchinecta sandiegonensis</i>	FE, MSCP, *	Vernal pools.	No	Not expected	Although this species has been recorded within two miles of the project area (CDFW 2018a; USFWS 2018a), it is not expected to occur due to a lack of vernal pools within the project area.
NYPHALIDAE BRUSH-FOOTED BUTTERFLIES					
Quino checkerspot <i>Euphydryas editha quino</i>	FE	Open, dry areas in foothills, mesas, lake margins. Larval host plant dot seed plantain (<i>Plantago erecta</i>). Adult emergence mid-January through April.	No	Not expected	Although this species has been reported within two miles of the project area (County of San Diego 2018; USFWS 2018a), records are from 1953 and earlier. The project area occurs within the bottom of a canyon, downslope of previous cut and fill operations for residential development and lacks suitable open, dry scrub habitats. The project occurs outside the recommended Quino checkerspot survey area.

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
AMPHIBIANS (Nomenclature from Crother et al. 2008)					
PELOBATIDAE SPADEFOOT TOADS					
Western spadefoot <i>Spea hammondi</i>	SSC	Vernal pools, floodplains, and alkali flats within areas of open vegetation.	No	Not expected	This species has been reported at Lake Murray, two miles northeast of the project area (County of San Diego 2018). The survey area lacks vernal pools and alkali flats and areas of open vegetation next to the flood control channel within the project site.

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
REPTILES (Nomenclature from Crother et al. 2008)					
IGUANIDAE		IGUANID LIZARDS			
Coast horned lizard <i>Phrynosoma blainvillii</i> [= <i>P. coronatum</i> coastal population]	SSC, MSCP, *	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants (<i>Pogonomyrmex</i> sp.) for forage.	No	Not expected	Four records for this species exist within two miles of the survey area (CDFW 2018a; County of San Diego 2018). Both records in the CNDDDB are from 1967 and earlier and are identified as “possibly extirpated” according to a review of the records (CDFW 2018a). Both records in SANBIOS are from 1950 and earlier and located near San Diego State University (County of San Diego 2018). In addition, the presence of Argentine ants (<i>Linepithema humile</i>) and substantial development in the survey area likely precludes the occurrence of harvester ants, on which coast horned lizard relies as a main part of its diet (Zeiner et al. 1990; Zee and Holway 2005).

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
SCINCIDAE SKINKS					
Coronado skink <i>Eumeces skiltonianus</i> <i>interparietalis</i>	SSC	Grasslands, open woodlands and forest, broken chaparral. Rocky habitats near streams.	No	Low	Several records for this species exist within two miles of the survey area, with the earliest record from 1951 (County of San Diego 2018). The dense coastal sage scrub adjacent to standing water in the flood control channel provides marginally suitable habitat. However, this species has low potential to occur, as the project area occurs within a small, somewhat isolated canyon with no suitable woodlands, forest, or chaparral habitat.
TEIIDAE WHIPTAIL LIZARDS					
Belding's orange-throated whiptail <i>Aspidoscelis hyperythra beldingi</i>	SSC, MSCP	Chaparral, coastal sage scrub with coarse sandy soils and scattered brush.	No	Moderate	Several records for this species exist within two miles of the survey area, with only one presumed extant at Chollas Heights (CDFW 2018a; County of San Diego 2018). Potentially suitable open, disturbed coastal sage scrub habitat occurs within the survey area. Potential occurrence is reduced somewhat, as the project area occurs within a small, somewhat isolated canyon.

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
San Diego ring-necked snake <i>Diadophis punctatus similis</i>	*	Rocky areas in wet locales, such as swamps, damp forests, or riparian woodlands.	No	Not expected	Although this species has been reported within two miles of the project area, the records are from 1948 and earlier (County of San Diego 2018). The project area does not support rocky areas with swamps, damp forests, or riparian woodlands. Although standing water within non-native riparian occurs within the project area, this habitat occurs as a narrow strip and is dominated by Mexican fan palm (<i>Washingtonia robusta</i>). This area would not be considered suitable woodland or forest habitat for the species.
Two-striped gartersnake <i>Thamnophis hammondi</i>	SSC, *	Permanent freshwater streams with rocky bottoms. Mesic areas.	No	Not expected	This species has been recorded within two miles of the project area, with the most recent record from 1957 (County of San Diego 2018). While the flood control channel provides standing water, this species is not likely to occur due to urbanization and habitat fragmentation within the surrounding areas.

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
CROTALIDAE RATTLESNAKES					
Red diamond rattlesnake <i>Crotalus ruber</i>	SSC	Desert scrub and riparian, coastal sage scrub, open chaparral, grassland, and agricultural fields.	No	Not expected	This species has been recorded within two miles of the project area, with the most recent record from 1950 (County of San Diego 2018). The species is not expected to occur due to the fragmented nature of the habitat in and around the survey area and high level of human disturbance.
BIRDS (Nomenclature from Chesser et al. 2018 and Unitt 2004)					
ARDEIDAE HERONS & BITTERNS					
Great blue heron (rookery site) <i>Ardea herodias</i>	*	Bays, lagoons, ponds, lakes. Non-breeding year-round visitor, some localized breeding.	No	Not expected	Although this species has been observed within two miles of the survey area (County of San Diego 2018), it is not expected to occur due to lack of bays, lagoons, ponds, or lakes.
Western least bittern <i>Ixobrychus exilis hesperis</i>	SSC	Brackish and freshwater marshes in the coastal lowland. Rare summer resident, rare in winter.	No	Not expected	Although this species has been observed within two miles of the survey area (County of San Diego 2018), it is not expected to occur due to a lack of brackish and freshwater marshes.

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
ACCIPITRIDAE HAWKS, KITES, & EAGLES					
Cooper's hawk (nesting) <i>Accipiter cooperii</i>	WL, MSCP	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas.	No	High (foraging) Moderate (nesting)	This species has been observed within two miles of the survey area (County of San Diego 2018). This species has a high potential to forage within the survey area due to presence of tall trees for perching and vegetation that would contain prey species. Additionally, this species has a high tolerance to human disturbance and reported occurrences within residential areas. It has moderate potential to nest within the survey areas, as the narrow strips of ornamental plantings and eucalyptus woodland contain taller trees preferred by the species.
FALCONIDAE FALCONS & CARACARAS					
Prairie falcon (nesting) <i>Falco mexicanus</i>	WL	Uses grassland, agricultural fields, and desert scrub for foraging. Cliff-nester. Uncommon winter resident. Rare breeding resident.	No	Not expected	A record for this species exists within two miles of the project area (CDFW 2018a). However, it is not expected to forage or nest within the project area due to lack of suitable cliffs or bluffs required by this species (Steenhof 2013).

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
RALLIDAE RAILS, GALLINULES, & COOTS					
California black rail <i>Laterallus jamaicensis</i>	CT, CFP	Tidal marshes, grassy marshes. Resident populations extirpated.	No	Not expected	Although this species has been observed within two miles of the project area (CDFW 2018a), this species is not expected to occur within the project area due to lack of suitable tidal or grassy marsh habitat.
VIREONIDAE VIREOS					
Least Bell's vireo (nesting) <i>Vireo bellii pusillus</i>	FE, CE, MSCP	Willow riparian woodlands. Summer resident.	No	Not expected	This species has been observed within two miles of the project area (CDFW 2018a; USFWS 2018a). Although the project area contains a few scattered willows within the non-native riparian, no willow riparian woodland habitat occurs.
TROGLODYTIDAE WRENS					
Coastal cactus wren <i>Campylorhynchus brunneicapillus sandiegensis</i>	SSC, MSCP, *	Maritime succulent scrub, coastal sage scrub with prickly pear and/or cholla thickets. Rare localized resident.	No	Not expected	This species has been observed within two miles of the project area (County of San Diego 2018). Although the project area contains a small, isolated patch of coast prickly pear and coast cholla; it does not provide suitable cactus thickets preferred by the species.

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
SYLVIIDAE GNATCATCHERS					
Coastal California gnatcatcher <i>Polioptila californica californica</i>	FT, SSC, MSCP	Coastal sage scrub, maritime succulent scrub. Nesting vegetation generally comprises low (less than 3 feet) shrub and sub-shrub species. Ideal host shrub is California sagebrush (<i>Artemisia californica</i>), but it is also found nesting in coast California buckwheat (<i>Eriogonum fasciculatum</i>), common encelia (<i>Encelia californica</i>), and broom baccharis (<i>Baccharis sarothroides</i>) (Unitt 2004). Resident.	No	Low (foraging and nesting)	This species has been observed within two miles of the project area (CDFW 2018a; USFWS 2018a; County of San Diego 2018). Although coastal sage scrub habitat occurs within the survey area, it does not occur as a low-growing habitat as it is dominated by a tall shrub, lemonade berry (<i>Rhus integrifolia</i>). While California sagebrush and California buckwheat shrubs were observed within the survey area, these plant species were observed scattered in low numbers. This species has low potential to forage or nest within the largely unsuitable coastal sage scrub of the survey area.

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
MAMMALS (Nomenclature from Baker et al. 2003)					
PHYLLOSTOMIDAE NEW WORLD LEAF- NOSED BATS					
Mexican long-tongued bat <i>Choeronycteris mexicana</i>	SSC	Arid habitats including thorn scrub, palo verde-saguaro desert, semi-desert grassland, oak woodland, tropical deciduous forest, and Ponderosa pine forest from sea level to 7,800 feet. In San Diego County, all known records are from urban or suburban areas, utilizing ornamental plants for food sources. Roosts in caves, crevices, mines, buildings, and exposed roots of trees. Migratory.	No	Moderate (foraging) Not expected to roost	No record of this species exists within two miles of the project area; however, the ornamental yucca and agave species within the survey area may provide nectaring opportunities. This species is not expected to roost within the nearby buildings, as they are inhabited.
VESPERTILIONIDAE VESPER BATS					
Western yellow bat <i>Lasiurus xanthinus</i>	SSC	Strongly associated with California fan palm groves in the desert, also occurs in coastal and desert riparian, rural, suburban, and urban settings. Primarily roosts in the "skirts" of dead fronds of native and non-native fan palms; occasionally roosts in cottonwood trees and yuccas.	No	Low (foraging and roosting)	No record of this species exists within two miles of the project area; however, the fan palms of the non-native riparian may provide marginally suitable roost sites. However, this species is considered uncommon in San Diego county. It is historically a desert species. While it is increasingly found west of the mountains due to use of fan palms in landscaping, most observations are from the foothills, with very few in the urban areas.

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
MOLOSSIDAE FREE-TAILED BATS					
Western mastiff bat <i>Eumops perotis californicus</i>	SSC	Desert scrub, chaparral, oak woodland, ponderosa pine and mixed conifer forests, meadows. Strongly tied to areas with cliffs and other significant rock features for roosting. Audible echolocation signal.	No	Not expected to roost	This species has been observed within two miles of the project area (CDFW 2018a; County of San Diego 2018). This species is not expected to roost within the project area due to lack of cliffs or significant rock features for roosting.
LEPORIDAE RABBITS & HARES					
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	SSC	Open areas of scrub, grasslands, and agricultural fields.	No	Not expected	This species has been reported in 1928 to occur within two miles of the project area (County of San Diego 2018). Although the project area provides coastal sage scrub, this species is likely now extirpated from urbanized areas due to habitat fragmentation (Tremor et al. 2017).
MURIDAE OLD WORLD MICE & RATS					
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	SSC	Coastal sage scrub, chaparral, pinyon-juniper woodland, and desert scrub. Prefers rocky habitat with succulent vegetation.	No	Low	This species has been reported within two miles of the project area (County of San Diego 2018). Although this species persists in some larger habitat fragments and canyons within urbanized areas, the project area lacks rocky habitat. In addition, no woodrat middens were observed during the survey. The project area provides marginally suitable coastal sage scrub habitat.

Attachment 5
Sensitive Wildlife Species Occurring or with the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected On-Site?	Potential to Occur On-Site?	Basis for Determination of Occurrence Potential
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STATUS CODES

Listed/Proposed

- FE = Listed as endangered by the federal government
- FT = Listed as threatened by the federal government
- CE = Listed as endangered by the state of California
- CT = Listed as threatened by the state of California

Other

- CFP = California fully protected species
- SSC = California Department of Fish and Wildlife species of special concern
- WL = California Department of Fish and Wildlife watch list species
- MSCP = City of San Diego Multiple Species Conservation Program covered species
- * = Taxa listed with an asterisk fall into one or more of the following categories:
 - Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
 - Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
 - Population(s) in California that may be peripheral to the major portion of a taxon's range but which are threatened with extirpation within California
 - Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

APPENDIX P

RECON – JURISDICTIONAL WATERS/WETLAND DELINEATION REPORT



**Jurisdictional Waters/
Wetland Delineation Report
for the College Area AC
Water and Sewer Project,
San Diego, California**

Prepared for
City of San Diego
Public Works Department
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Prepared by
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RECON Number 9114
February 11, 2019~~December 13, 2018~~

A handwritten signature in black ink, appearing to read "JR Sundberg".

JR Sundberg, Biologist

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1:	Wetland Determination Data Forms
2:	<u>Ordinary High Water Mark Datasheets</u>

Abbreviations and Acronyms

AC	asbestos cement
Arid Supplement	USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
OHWM	Ordinary High Water Mark
project	College Area AC Water and Sewer
RECON	RECON Environmental, Inc.
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

1.0 Summary of Findings

RECON Environmental, Inc. (RECON) conducted a routine jurisdictional waters/wetland delineation in the City of San Diego Public Works Department's College Area Sewer and AC Water Project (project) area on October 16, 2018. Methods for delineating wetlands followed guidelines set forth by the U.S. Army Corps of Engineers (USACE), including the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987), A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008a), and the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Arid Supplement; USACE 2008b).

A total of 0.15 acre of non-wetland waters and 0.62 acre of wetland waters of the U.S. likely under the jurisdiction of USACE were delineated on-site. These likely jurisdictional areas were delineated by an observable OHWM and presence of three wetland parameters. Impacts to jurisdictional waters or wetlands on-site would require a 404 Permit from the USACE.

The California Department of Fish and Wildlife (CDFW) likely jurisdictional area consists of a total of 0.89 acre of streambed (0.15 acre) and wetland (riparian; 0.73 acre) habitat that likely qualify as waters of the State. Impacts to waters of the state would require a 1602 Streambed Alteration Agreement from the CDFW.

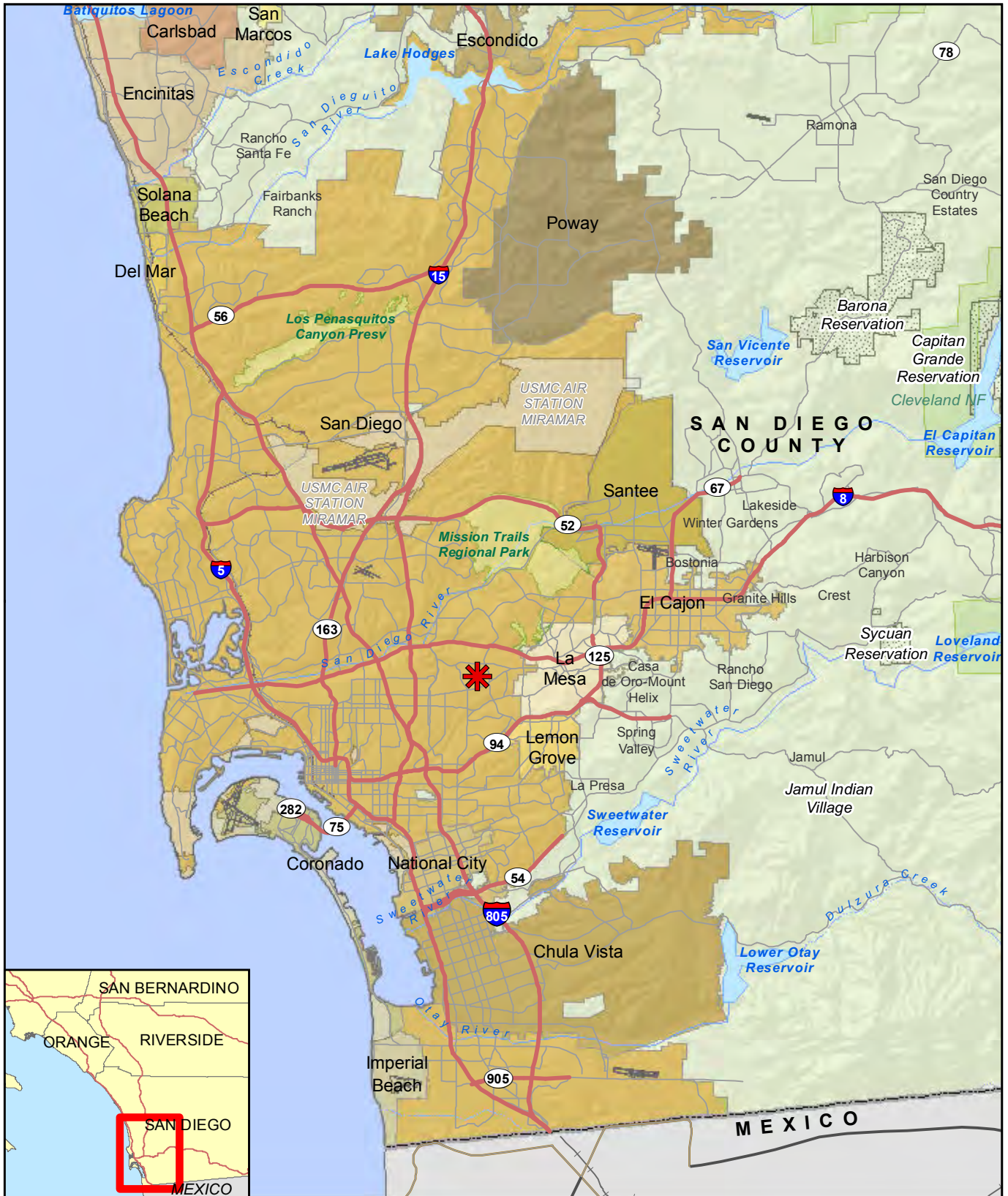
Regional Water Quality Control Board (RWQCB) likely jurisdiction totals 0.89 acre of wetlands (0.73 acre) and non-wetland (0.15 acre) waters of the state. Waters under jurisdiction of the RWQCB include all USACE jurisdictional waters and areas which meet only the hydrophytic vegetation parameter are considered wetland waters of the state. Impacts to the waters of the state would require a 401 State Water Quality Certification from the RWQCB.

2.0 Introduction

This report describes the methods and results of a jurisdictional waters/wetland delineation conducted on October 16, 2018 for the project. The project applicant is the City of San Diego Department of Public Works with Mr. Jericho Gallardo as the primary contact regarding this project.

2.1 Project Location and Description

The project is located in the College Area neighborhood, within the city of San Diego, California (Figure 1). The project is within the Mission San Diego Land Grant of the U.S. Geological Survey (USGS) 7.5-minute topographic map, La Mesa quadrangle (Figure 2; USGS 1994). The project occurs along an unnamed tributary to Alvarado Creek within the College Community Planning Area, and is bounded by Collwood Boulevard, Montezuma Road, Adams Avenue, and College Avenue (Figure 3). Half of the project area is within the following streets (developed right-of-way): Campanile Way, Campanile Drive, and Baja Drive. While the other half of the project area runs west-east within an undeveloped canyon that generally occurs south of Baja Drive, west of the western terminus of Campanile Way and east of Collwood Boulevard.




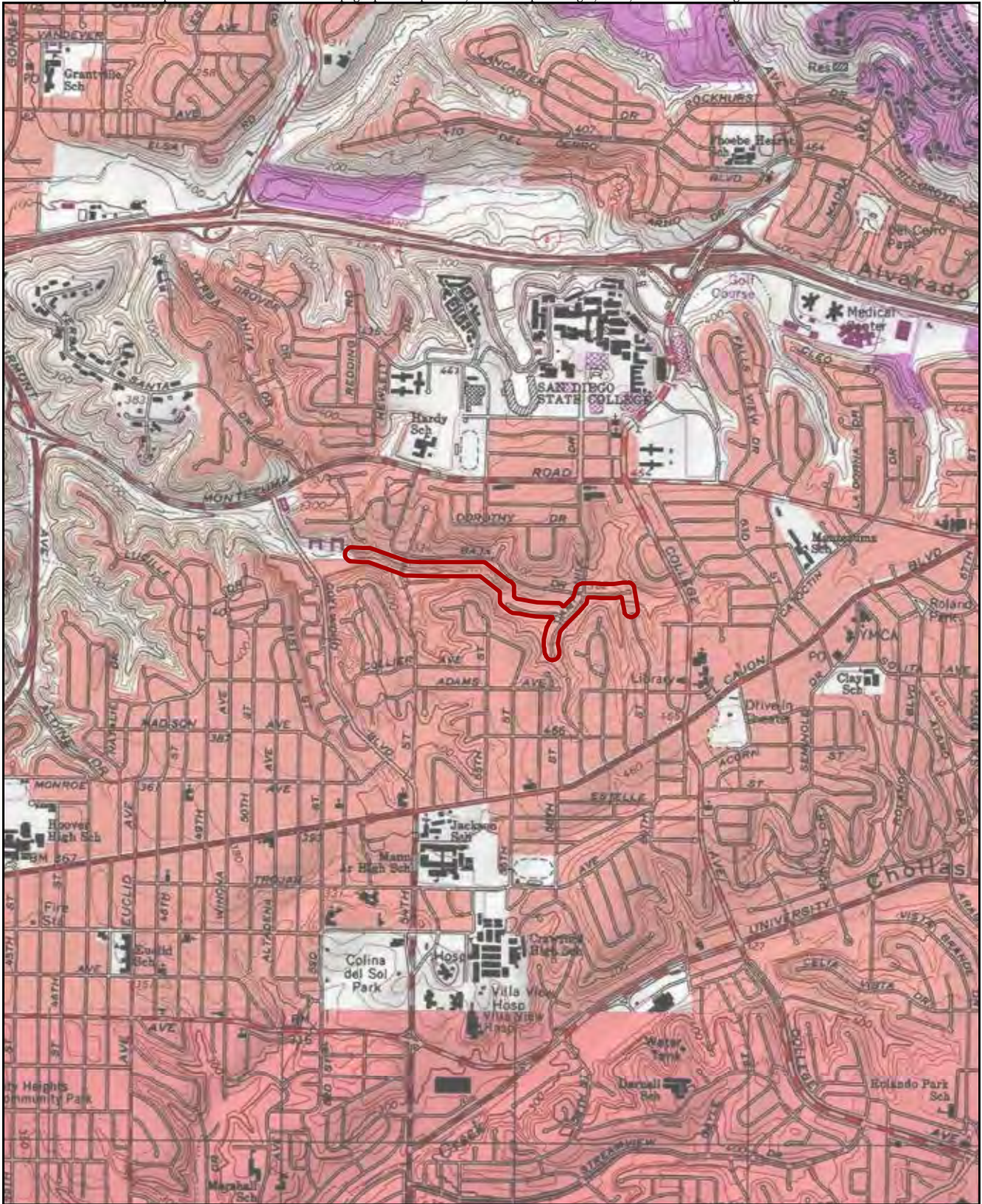
 Project Location

FIGURE 1
Regional Location




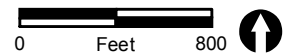
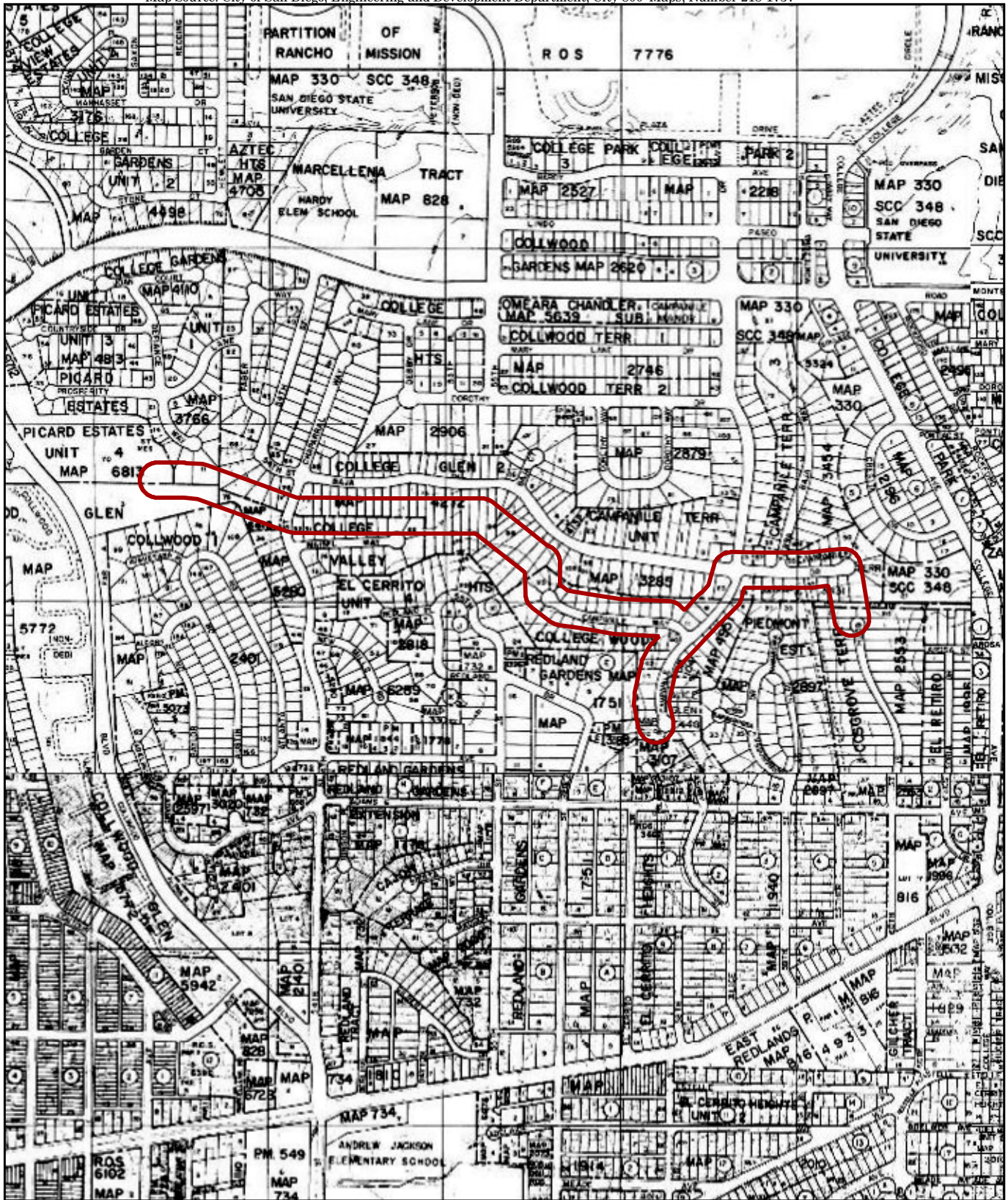
 Survey Area

FIGURE 2

Project Location on USGS Map



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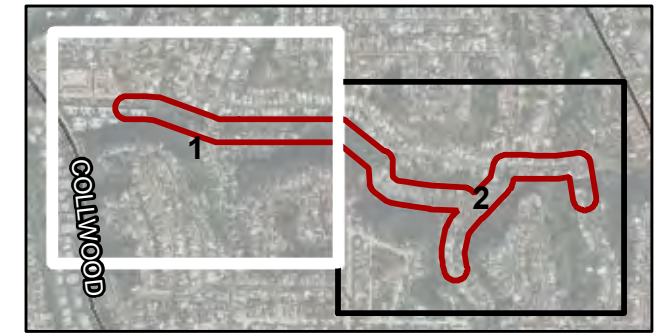
 Survey Area

FIGURE 3

Project Location on City 800' Map



- Survey Area
- Project Features**
- Proposed Sewer Main Replacement
- Proposed Sewer Main Replacement - Trenchless
- Launching Pit
- Receiving Pit
- Proposed Manhole
- Existing Manhole
- ⊗ Existing Manhole to be Abandoned

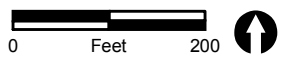
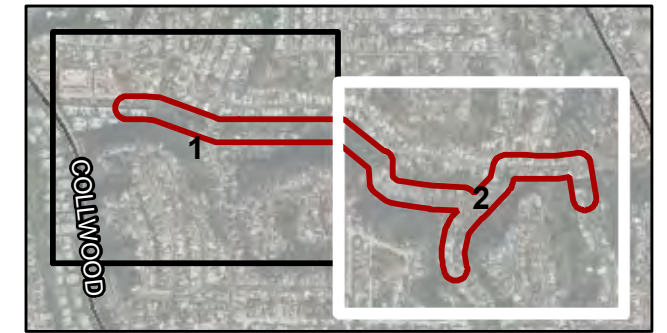
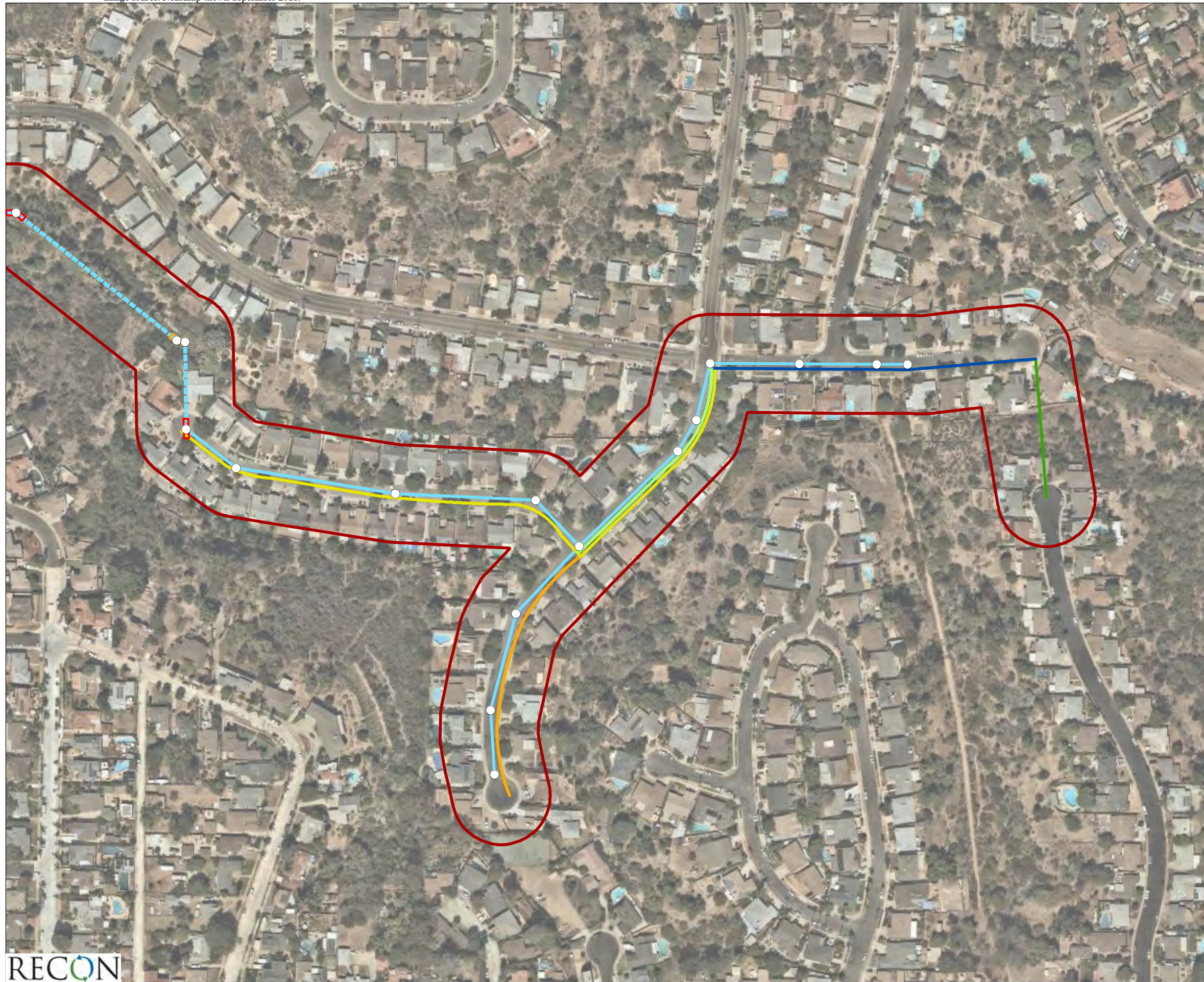


FIGURE 4a
Project Location on Aerial Photograph



- Survey Area
- Project Features**
- Proposed Dual 8" Water Main - Phase 1
- Proposed 8" Water Main Replacement - Phase 2
- Proposed 8" Water Main Replacement - Phase 3
- Proposed 8" Water Main Replacement - Phase 4
- Water Main to be Abandoned
- Proposed Sewer Main Replacement
- Proposed Sewer Main Replacement - Trenchless
- Launching Pit
- Receiving Pit
- Proposed Manhole

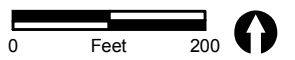


FIGURE 4b
Project Location on Aerial Photograph

The project involves replacement and abandonment of vitrified clay sewer mains and asbestos cement (AC) water mains and construction of new mains via open trench and trenchless methods, as well as construction of nine launching/receiving pits, ten new manholes, and one new vault structure (Figure 4). Approximate linear footage for the project include: replacement of 1,706 feet of vitrified clay sewer mains, construction of 3,121 feet of new sewer mains, and the abandonment of 3,075 feet of sewer mains. In addition, approximately 2,578 feet of water mains would be replaced, 483 feet of new water main would be constructed, and 118 feet of AC water main would be abandoned. Nine manholes will be abandoned and 10 new manholes will be constructed. Some of the work will require vehicles and equipment to utilize existing and new access routes in the undeveloped canyons. Work activities in undeveloped areas will be limited to approved access route and work spaces. The proposed access route within the canyon was not finalized at the time of this report. Vegetation trimming and grading would be required for vehicle use of the proposed access route. Equipment within vegetated areas may include excavator, loader/backhoe, drills, crane, dump trucks, utility trucks, generator, and shaker/screen.

3.0 Methods and Jurisdictions

A routine jurisdictional waters/wetland delineation, following the guidelines set forth by the USACE (1987, 2008a, 2008b), was performed to gather field data at potential jurisdictional resources within a 100-foot buffer of the entire project area based on the project features provided by the City in September 2018, shown on Figure 4 and referred to hereafter as “survey area.” RECON biologist JR Sundberg conducted the routine delineation fieldwork on October 16, 2018. Prior to conducting the delineation, aerial photographs and USGS topographic maps of the site were examined. Once on-site, the potential federal and state jurisdictional areas were examined to determine the presence and extent of any jurisdictional waters/wetlands. The data form completed for the survey was the “Wetland Determination Data Form” from the Arid Supplement (USACE 2008b). Jurisdictional resource boundaries were recorded using a Trimble R1 Series (Model Number 99133) with sub-meter accuracy paired with an iPad.

Seasonal precipitation was reviewed to assess deviation from normal. The San Diego International Airport (Lindbergh Field) climate station was chosen for reference, as it is the closest station with a complete 30-year record for comparison. As shown in Table 1, rainfall received at the San Diego International Airport station during the 2017-2018 wet season was 38 percent of average (National Weather Service 2018).

Table 1 Precipitation in Inches at San Diego Climate Station 30-year Average Compared to Current Year		
Month	Average Precipitation in Inches	2017–2018 Total in Inches
October	0.67	T
November	0.81	0.02
December	1.82	0.07
January	1.40	1.78
February	1.97	0.36
March	0.84	0.95
April	0.53	0.02
May	0.32	0.12
June	0.01	T
July	0.10	T
August	0.01	0.02
September	0.12	T
Annual	8.70	3.34
Note: Any discrepancies in totals are due to rounding. Source: NOWData Climate Table from San Diego International Airport, the closest station with a complete 30-year record for comparison. T = Trace, a quantity less than 0.01 inch but greater than zero.		

3.1 USACE Methods and Jurisdictions

As stated in the federal regulations for the Clean Water Act, wetlands are defined as:

. . . those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Protection Agency, 40 Code of Federal Regulations [CFR] 230.3 and, 33 CFR 328.3).

Wetlands are delineated using the following three parameters: hydrophytic vegetation, wetland hydrology, and hydric soils. According to the USACE, indicators for all three parameters must be present to qualify an area as a wetland.

3.1.1 Regulatory Definition

In accordance with Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged or fill material into waters of the U.S. The term “waters of the United States” is defined as:

- All waters currently used, or used in the past, or which may be susceptible to be used in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;

- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; the use, degradation, or destruction of which could affect foreign commerce including any such waters:
 - (1) which could be used by interstate or foreign travelers for recreational or other purposes; or
 - (2) from which fish or shellfish are, or could be, taken and sold in interstate or foreign commerce; or
 - (3) which are used or could be used for industries in interstate commerce;
- All other impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified above;
- The territorial seas; and
- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified above [33 CFR Part 328.3(a)].

3.1.2 Wetland Parameters

3.1.2.1 Hydrophytic Vegetation

Hydrophytic vegetation is defined as “the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content” (USACE 1987). The entire survey area was covered on foot to locate and record areas exhibiting characteristics of jurisdictional waters or wetlands. Vegetation units with the potential to be wetlands were examined, and data for each vegetation stratum (i.e., tree, shrub, herb, and vine) were recorded on the datasheet provided in the 2008 Arid Supplement (USACE 2008b). The percent absolute cover of each plant species present was visually estimated and recorded.

The wetland indicator status of each plant species recorded was determined by using the National Wetland Plant List (Lichvar 2016). Plant species nomenclature follows that provided in the Jepson Manual (Baldwin et al. 2012). Dominant species with an indicator status of NI or not listed in the USACE National List of Vascular Plant Species that Occur in Wetlands (Lichvar 2016) were evaluated as either wetland or upland indicator species based on local professional knowledge of where the species are most often observed in habitats that are characteristic in southern California.

3.1.2.2 Hydric Soils

A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (USACE 1987). Hydric soil indicators are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds (USACE 2008b).

The hydric soil criterion is considered fulfilled at a location if soils in the area show evidence of a high groundwater table, prolonged soil saturation, or any indicators suggesting a long-term reducing environment in the upper 18 inches of the soil profile.

Sample points were selected within a potential wetland area and where the apparent boundary between wetland and upland was inferred based on changes in the composition of the vegetation and topography. The soil pit was dug to a depth of at least 18 inches or to a depth necessary to determine soil color, evidence of soil saturation, depth to groundwater, and indicators of a reducing soil environment (i.e., mottling, gleying, and sulfidic odor).

3.1.2.3 Wetland Hydrology

The presence of wetland hydrology indicators confirms that inundation or saturation has occurred on a site but may not provide information about the timing, duration, or frequency of the event. Hydrology features are generally the most ephemeral of the three wetland parameters (USACE 2008b).

Hydrologic information for the site was obtained by reviewing USGS topographic maps and by directly observing hydrology indicators in the field. The wetland hydrology criterion was considered fulfilled at a location if, based upon the conclusions inferred from the field observations, an area had a high probability of being periodically inundated or had soils saturated to the surface at some time during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE 1987). If at least one primary indicator or at least two secondary indicators were found at a sample point, the wetland hydrology criterion was considered fulfilled.

3.1.3 Non-wetland Jurisdictional Waters

The USACE also requires the delineation of non-wetland jurisdictional waters. These waters must have strong hydrology indicators such as the presence of seasonal flows and an OHWM. An OHWM is defined as:

. . . that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR Part 328.3).

Areas delineated as non-wetland jurisdictional waters may lack wetland vegetation or hydric soil characteristics. Hydric soil indicators may be missing, because topographic position precludes ponding and subsequent development of hydric soils. Absence of wetland vegetation can result from frequent scouring due to rapid water flow. These types of jurisdictional waters are delineated by the lateral and upstream/downstream extent of the OHWM of the particular drainage.

3.2 CDFW Methods and Jurisdictions

Under Sections 1600–1607 of the Fish and Game Code, the CDFW regulates activities that would divert or obstruct the natural flow or would substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. The CDFW has jurisdiction over riparian habitats associated with watercourses. Jurisdictional areas are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. Vegetation was determined to be CDFW jurisdictional if it was dominated by native wetland indicator species in any stratum and was closely associated with the stream channel.

3.3 RWQCB Methods and Jurisdictions

The RWQCB is the regional agency responsible for protecting water quality in California. The jurisdiction of this agency includes hydrophytic vegetation and all waters of the United States within California as mandated by Section 401 in the Clean Water Act and the California Porter-Cologne Water Quality Control Act. RWQCB waters of the state would be all waters that meet one of three criteria (hydrology, hydric soils, or wetland vegetation) and generally include, but are not limited to, all waters under the jurisdiction of the USACE.

4.0 Results of Field Data

Descriptions of the hydrophytic vegetation units, soil types, and hydrology observed in the survey area are presented below. Copies of the field data forms summarizing information collected in the field on vegetation, soils, and hydrology observed at the sample points are provided in Attachment 1. Ordinary High Water Mark datasheets are provided as Attachment 2.

4.1 Vegetation

The vegetation within the survey area consists of a mix of native-dominated and non-native-dominated patches, surrounded by residential development. Vegetation and land cover types observed include Diegan coastal sage scrub (undisturbed and disturbed), eucalyptus woodland, non-native riparian, disturbed wetland, disturbed land, maritime succulent scrub, ornamental plantings, and urban/developed (Photographs 1 through 4).

4.1.1 Areas with Hydrophytic Vegetation

Hydrophytic vegetation within the survey area consists of disturbed wetlands and non-native riparian habitat.

Disturbed wetlands are permanently or periodically inundated by water and have been significantly modified by human activity (Oberbauer et al. 2008). Disturbed wetland occurs along the bottom of the cement flood control channel, and within areas where the cement liner has been completely buried. Disturbed wetlands also occur upslope of the cement channel, within the central portion of the survey area in the canyon, east of 54th Street (see Photograph 1).



PHOTOGRAPH 1
Disturbed Wetlands Upslope (right) of Concrete-lined Channel (left),
within Canyon, Taken East of 54th Street, Facing West



PHOTOGRAPH 2
Partially Buried Concrete-lined Channel with Non-native Riparian
Vegetation, Taken West of Terminus of Campanile Way,
Facing Northwest





PHOTOGRAPH 3
Non-native Riparian Vegetation Closely Following Stream Channel
with Upland Vegetation on Canyon Slopes, Taken North of
Terminus of 55th Street, Facing Northwest



PHOTOGRAPH 4
Typical Section of Concrete-lined Channel Surrounded by Disturbed
Land and Urban Development, Taken South of
Terminus of Defiance Way, Facing West



These disturbed wetlands are dominated by broad-leaved cattail (*Typha latifolia*), alkali bulrush (*Bolboschoenus maritimus*), and freeway iceplant (*Carpobrotus edulis*).

Non-native riparian habitat consists of dense stands of non-native woody species associated with stream channels (Oberbauer et al. 2008). Non-native riparian habitat occurs along the stream channel within the western and eastern portions of the survey area in the canyon (see Photograph 2). It is dominated by Mexican fan palm (*Washingtonia robusta*), contains scattered ornamental trees, such as Brazilian pepper tree (*Schinus terebinthifolius*) and shamel ash (*Fraxinus uhdei*), and contains a few native willow trees (*Salix lasiolepis* and *Salix gooddingii*).

4.1.2 Areas Lacking Hydrophytic Vegetation

Vegetation communities or land cover types present on-site that lack hydrophytic vegetation include Diegan coastal sage scrub, disturbed land, eucalyptus woodland, maritime succulent scrub, ornamental plantings, and urban/developed.

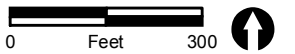
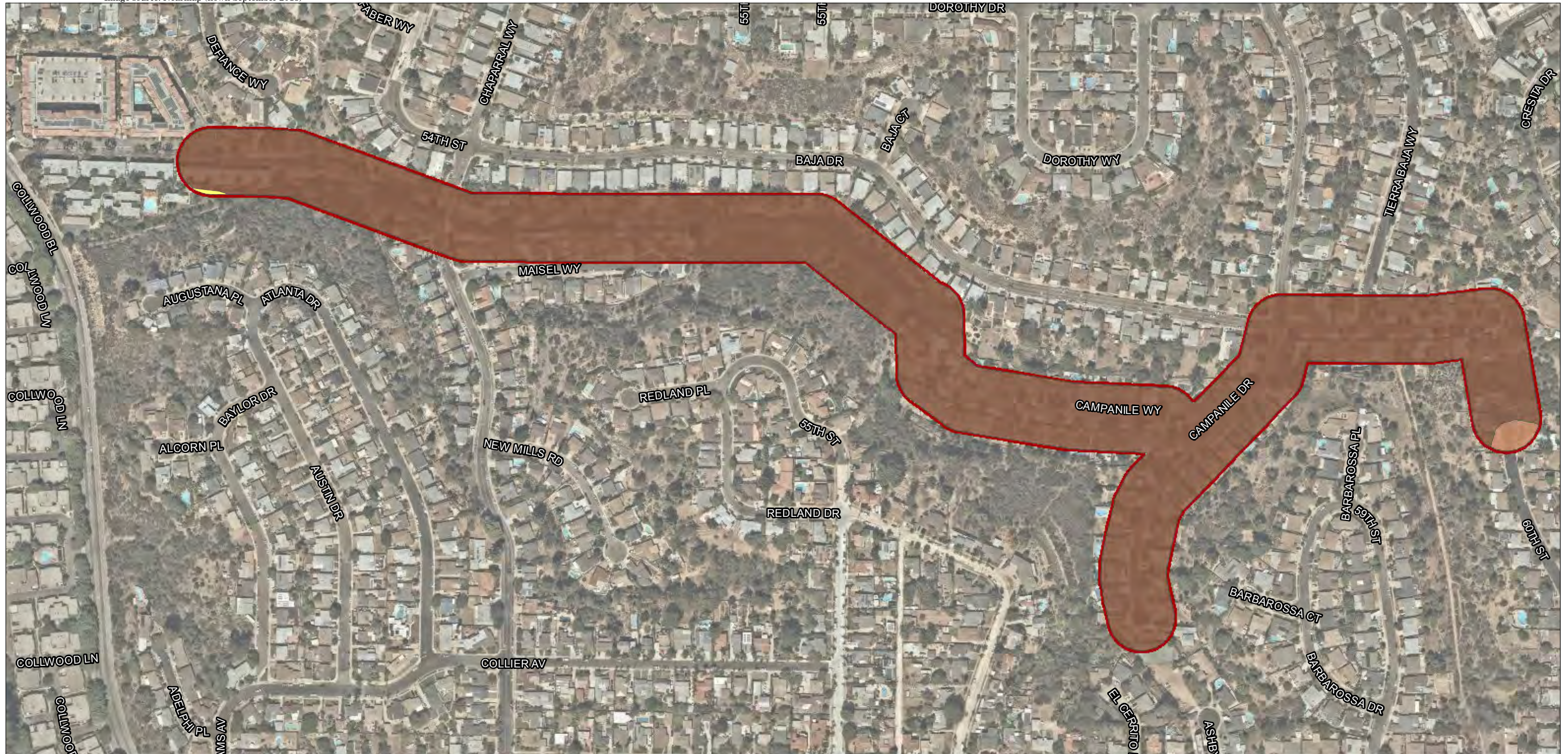
These vegetation communities are dominated by upland plant species. Urban land consists of developed areas such as streets, buildings, and associated ornamental or ruderal vegetation. Diegan coastal sage scrub, ornamental plantings, and disturbed land occur within the channel floodplain. Maritime succulent scrub, Diegan coastal sage scrub, eucalyptus woodland, disturbed land, and ornamental plantings occur on the slopes above the floodplain (see Photograph 3). Urban/developed occupies the less sloped areas on the mesa tops.

4.2 Soils

Information on the soil types sampled in the survey area is summarized from the Soil Survey for San Diego County (U.S. Department of Agriculture 1973), and the Hydric Soils of California list obtained from the Natural Resource Conservation Service (2015). Three soil types are mapped within the project area: Diablo-Urban Land Complex, 5 to 15 Percent Slopes, Olivenhain-Urban Land Complex, 2 to 9 Percent Slopes, and Redding-Urban Land Complex, 2 to 9 Percent Slopes (Figure 5). Diablo-Urban Land Complex comprises the majority of the survey area.

Olivenhain cobbly loam, 2 to 9 percent slopes, and Redding cobbly loam, 2 to 9 percent slopes, are on the hydric soil list, and can be hydric in depressions (Natural Resource Conservation Service 2015).

Hydric soil indicators were observed at sample points one and two. These include depleted below dark surface and loamy gleyed matrix.



- Project Survey Area
- Soil Type**
- Diablo-Urban Land Complex, 5 to 15 Percent Slopes
- Olivenhain-Urban Land Complex, 2 to 9 Percent Slopes
- Redding-Urban Land Complex, 2 to 9 Percent Slopes

FIGURE 5
Soils within the Project Survey Area

4.3 Hydrology

The stream channel in the project area is an unnamed tributary of Alvarado Creek. Water must flow approximately one and a half miles northwest from the project area before reaching Alvarado Creek. Alvarado Creek flows an additional quarter mile westward before emptying into the San Diego River which flows into the Pacific Ocean, a Traditional Navigable Waterway, approximately nine miles to the west. Within the floodplain of the stream channel there are several areas where water can reside long enough to develop hydric soils and primary hydrologic indicators. Water was observed flowing through the stream channel during a dry part of the year, possibly due to runoff in the highly urbanized watershed. An OHWM where soil or drift was present was observed along the stream channels.

This was characterized by a change in slope, change in sediment size, and change in vegetation cover. Most of the length of the channel is a bare concrete-lined flood control channel (see Photograph 4). The upstream extent of the stream channel was the headwall of the storm drain culverts. The stream channel was a small headwater stream, ranged in width from one to six feet, and was no more than two feet deep. The stream channel passed through culverts at street crossings but are hydrologically connected.

An additional area exhibiting hydrologic indicators is located upslope of the cement channel, within the central portion of the survey area in the canyon, east of 54th Street. This area appears to retain water on a perennial basis as evidenced by primary hydrology indicators such as dry-season surface water, saturation, and hydrogen sulfide odor. The area is within an access road and is bounded by a steep slope and the concrete liner of the flood control channel. The water source is runoff discharging from a black corrugated three-inch pipe coming from a private property (Photographs 5 and 6). Although the source of this water is unclear, it is not expected to be a natural source such as rainwater, seep, or spring (Figure 6). This must be a consistent source of water as it can take many years to develop strong hydrology indicators in this area. The other important factor about this area is the concrete liner of the channel, which is acting as a dam to hold the water on the access road. The concrete prevents the water from infiltrating deeper into the soil or draining into the channel and helps maintain a saturated condition in this area. If the artificial water source was interrupted it is expected that this wetland would cease to exist.

5.0 Location of Jurisdictional Waters

Jurisdictional waters were delineated on-site according to USACE, CDFW, and RWQCB regulations. Acreages of likely jurisdictional waters for each of the different jurisdictions are provided in Table 2. Figure 6 shows the locations of the likely jurisdictional waters identified on-site for each agency's jurisdiction.



PHOTOGRAPH 5
Water Source of Wetland Near Sample Point 1 Coming from Residences, Taken North of End of Maisel Way, Facing Northwest



PHOTOGRAPH 6
End of Corrugated Pipe Near Sample Point 1, Taken North of End of Maisel Way, Facing West





Project Survey Area

● Sample Point

OHWM Sample Locations

Jurisdictional Resources

CDFW and RWQCB Wetland Waters of the State

USACE Non-wetland Waters, CDFW Streambed, RWQCB Non-wetland Waters of the State

USACE Wetland Waters, CDFW and RWQCB Wetland Waters of the State

Wetlands with Potentially Artificially Induced Hydrology



FIGURE 6
Existing Jurisdictional Resources

Table 2 Existing Jurisdictional Areas within the Survey Area ¹		
Jurisdictional Areas	Total in Acres	Linear feet
USACE Jurisdictional Areas		
Non-wetland Waters of the U.S. ²	0.15	<u>2,066</u>
Wetland Waters of the U.S.	0.57	<u>n/a</u>
<u>Wetlands with Potentially Artificially Induced Hydrology</u>	<u>0.05</u>	<u>n/a</u>
USACE Total Jurisdiction (404)	0.77	2,066
CDFW Jurisdictional Areas		
Streambed ²	0.15	<u>2,066</u>
Wetland (Riparian Habitat) ³	0.68	<u>n/a</u>
<u>Wetlands with Potentially Artificially Induced Hydrology</u>	<u>0.05</u>	<u>n/a</u>
CDFW Total Jurisdictional Areas (1602)	0.89	2,066
RWQCB Jurisdictional Areas		
Streambed ²	0.15	<u>2,066</u>
Wetland Waters ³	0.68	<u>n/a</u>
<u>Wetlands with Potentially Artificially Induced Hydrology</u>	<u>0.05</u>	<u>n/a</u>
RWQCB Total Jurisdictional Areas	0.89	2,066
¹ Any discrepancies in totals are due to rounding.		
² Streambed and non-wetland waters area not included in the wetland habitat, so that no area is counted twice for the same jurisdiction.		
³ An additional 0.11 acres of riparian meets only the hydrophytic vegetation parameter and does not overlap with the Wetland Waters of the U.S.		

5.1 Waters of the U.S.–USACE Jurisdictional Areas

USACE jurisdictional areas in the survey area consist of non-wetland waters and wetland waters of the U.S. in the form of a seasonal stream channel and associated wetlands. These waters of the U.S. are discussed below.

A total of 0.15 acre of non-wetland waters of the U.S. likely considered under the jurisdiction of USACE was delineated within the survey area (see Figure 6). The non-wetland waters are considered a Cowardin class of ephemeral riverine, covering a length of ~~2,200~~066 linear feet and an average width of three feet. These non-wetland waters lack hydrophytic vegetation, either due to surface water or concrete liner. The presence of an OHWM and a connection to Alvarado Creek, which empties into the San Diego River which drains into the Pacific Ocean (a traditional navigable water) approximately nine miles west, were used to determine the jurisdictional status of the stream channel. The lateral extent of the non-wetland waters was determined by the observable OHWM, and the upstream extent was determined by the culvert head wall. The stream channel was hydrologically connected but broken by culverted sections.

A total of ~~0.62~~57 acre of wetland waters of the U.S. likely considered under the jurisdiction of USACE were delineated within the survey area (see Figure 6). The vegetation associated with much of the floodplain of the channel satisfies the three-parameter criteria for USACE wetlands (see Attachment 1 for wetland determination data sheets). An additional wetland area (0.05 acre) is located just above the concrete-lined channel in a small topographic

depression shown on Figure 6 as wetlands with potentially artificially induced hydrology. This area also satisfies the three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology.

5.2 Waters of the State

5.2.1 CDFW Jurisdictional Areas

Waters of the State likely under the jurisdiction of the CDFW (under Fish and Game Code 1600-1607) that occur in the survey area include both streambed and wetland areas (see Figure 6). CDFW streambed delineated on-site includes the stream channel and totals 0.15 acre. CDFW wetland habitat totals ~~0.73~~68 acre on-site and includes the non-native riparian habitat and disturbed wetlands associated with the stream channel. This includes a ~~0.62~~57-acre area considered USACE wetlands and areas which do not meet all three wetland parameters but form a continuous vegetation within the riparian corridor and have at least some native hydrophytic species such as willows. An additional wetland area (0.05 acre) with potentially artificial hydrology discussed in section 5.1 may be considered Waters of the State at the discretion of the CDFW.

5.2.2 RWQCB Jurisdictional Areas

RWQCB likely jurisdictional areas (under Clean Water Act Section 401) include the 0.15 acre of streambed, ~~0.62~~57 acre of USACE wetlands, and an additional 0.11 acre of wetlands of the state which only meet the hydrophytic vegetation parameter but not the soil or hydrology parameters. These wetlands overlap with the CDFW jurisdictional wetlands. An additional wetland area (0.05 acre) with potentially artificial hydrology discussed in section 5.1 may be considered Waters of the State at the discretion of the RWQCB.

6.0 Regulatory Issues

Due to a no-net-loss policy implemented by the resource agencies, the first consideration in project planning should be avoidance of jurisdictional waters. USACE, CDFW, and RWQCB jurisdictional waters are regulated by the federal, state, and local governments. All impacts are considered significant and need to be avoided to the greatest extent possible. Unavoidable impacts to jurisdictional waters may be authorized through permit authorizations from the USACE through the Section 404 Permit Program, from the CDFW through a 1602 Streambed Alteration Agreement, and from the RWQCB through a 401 State Water Quality Certification. Approved impacts to USACE, CDFW, and RWQCB jurisdictional waters require mitigation through habitat creation, enhancement, and/or credits in a mitigation bank to achieve a no net loss of jurisdictional waters, as determined by a qualified restoration specialist in consultation with the regulatory agencies.

7.0 References Cited

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1994 La Mesa Quadrangle 7.5-Minute Topographic Map.

ATTACHMENT 1
Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: College Area City/County: San Diego, San Diego County Sampling Date: Oct. 16, 2018
 Applicant/Owner: City of San Diego State: CA Sampling Point: 1
 Investigator(s): J. R. Sundberg Section, Township, Range: Unsectioned, Township 16S, Range 02W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): Mediterranean California (LRR C) Lat: 32.767224 Long: -117.078122 Datum: WGS 1984
 Soil Map Unit Name: Diablo-Urban Land Complex, 5 to 15 Percent Slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Sample point is within a wetland. The area is an old road cut which is retaining water from a drain. The water source is unknown but it appear to be perennial and occurring for many years.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>NA</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>NA</u>				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>10 x 40 ft.</u>)				
1. <u>Typha domingensis</u>	<u>50</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Bolboschoenus maritimus</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Carpobrotus edulis</u>	<u>25</u>	<u>Yes</u>	<u>NI</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. <u>NA</u>				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>		
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: The sample point has strongly hydrophytic vegetation. The *Carpobrotus edulis* within the plot is primarily rooted outside of the wetland but due to its creeping habit is still a significant amount of vegetation cover within the plot. All other dominant plant species are OBL. Remaining cover in the herb stratum is litter.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10 YR 2/1	100					loam	
10-18	10 YR 3/1	99	7.5 YR 4/2	1	C	M	sandy loam	Few redox concentrations.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5) (LRR C)</p> <p><input type="checkbox"/> 1 cm Muck (A9) (LRR D)</p> <p><input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 1 cm Muck (A9) (LRR C)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR B)</p> <p><input type="checkbox"/> Reduced Vertic (F18)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>
<p>Restrictive Layer (if present):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

Remarks: Hydric soil present. Meets criteria for depleted below dark surface (A11).

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input checked="" type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1) (Nonriverine)</p> <p><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)</p> <p><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)</p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p> <p><input type="checkbox"/> Salt Crust (B11)</p> <p><input type="checkbox"/> Biotic Crust (B12)</p> <p><input type="checkbox"/> Aquatic Invertebrates (B13)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p>Secondary Indicators (2 or more required)</p> <p><input checked="" type="checkbox"/> Water Marks (B1) (Riverine)</p> <p><input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)</p> <p><input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Shallow Aquitard (D3)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>
---	---

<p>Field Observations:</p> <p>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>11</u></p>	<p>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/></p>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sample point located near stream channel with surface water. This area likely floods during moderate rain events and is supported by a water table within 18 inches of the surface. The urbanization of the stream's watershed makes the stream both more flashy and maintains a perennial flow due to urban runoff.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: College Area City/County: San Diego, San Diego County Sampling Date: Oct. 16, 2018
 Applicant/Owner: City of San Diego State: CA Sampling Point: 3
 Investigator(s): J. R. Sundberg Section, Township, Range: Unsectioned, Township 16S, Range 02W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): Mediterranean California (LRR C) Lat: 32.767032 Long: -117.076590 Datum: WGS 1984
 Soil Map Unit Name: Diablo-Urban Land Complex, 5 to 15 Percent Slopes NWI classification: Riverine
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample point not a wetland, area was dominated by upland plant species.	

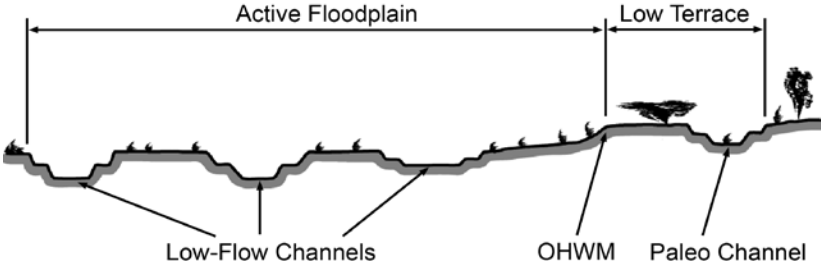
VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: 20 x 40 ft. _____)				
1. <i>Eriogonum fasciculatum</i>	15	Yes	UPL	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>63</u> x 1 = <u>63</u> FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>63</u> (A) <u>63</u> (B) Prevalence Index = B/A = <u>1.0</u>
2. <i>Heteromeles arbutifolia</i>	10	Yes	UPL	
3. <i>Rhus integrifolia</i>	8	Yes	UPL	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: 10 x 10 ft. _____)				
1. <i>Bromus diandrus</i>	10	Yes	UPL	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Bromus madritensis</i>	10	Yes	UPL	
3. <i>Brachypodium distachyon</i>	10	Yes	UPL	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>40</u> % Cover of Biotic Crust <u>0</u>				

Remarks: The sample point is within an upland vegetation community. Herb stratum has 30% litter.

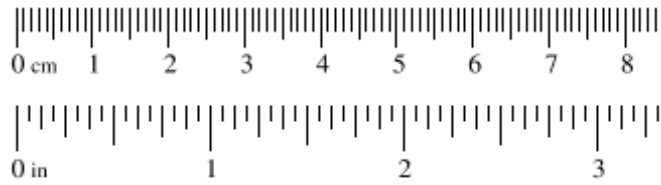
ATTACHMENT 2
Ordinary High Water Mark Datasheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

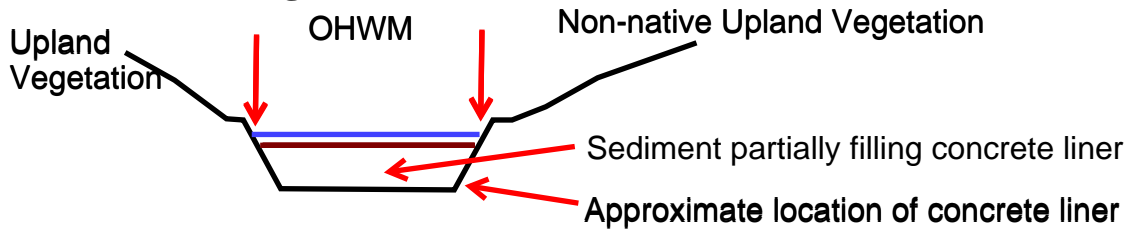
Project: College Area A/C Sewer Project Number: 9114 Stream: Unnamed tributary of Alvarado Creek Investigator(s): J. R. Sundberg	Date: 2018 Oct 16 Town: San Diego Photo begin file#: See Photograph 2	Time: 10:15 State: CA Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: In urban canyon south of the end of Defiance Way, San Diego, CA Projection: Mercator Datum: WGS1984 Coordinates: 32.766516, -117.075320					
Potential anthropogenic influences on the channel system: Watershed is highly urbanized with primarily paved and developed areas surrounding. The channel has a concrete liner which has become buried in this section. There is some anthropogenic debris such as concrete, plastic rubbish, tires, and other refuse.						
Brief site description: Urban canyon with concrete liner becoming buried in sediment. Water source is the outlet of a storm drain.						
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>			<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event					
Hydrogeomorphic Floodplain Units 						
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHWM and record the indicators. Record the OHWM position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 			<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class
10.08	256	Boulder
2.56	64	Cobble
0.157	4	Pebble
0.079	2.00	Granule
0.039	1.00	Very coarse sand
0.020	0.50	Coarse sand
1/2 0.0098	0.25	Medium sand
1/4 0.005	0.125	Fine sand
1/8 0.0025	0.0625	Very fine sand
1/16 0.0012	0.031	Coarse silt
1/32 0.00061	0.0156	Medium silt
1/64 0.00031	0.0078	Fine silt
1/128 0.00015	0.0039	Very fine silt
		Clay



Cross section drawing: Facing west.



OHWM

GPS point: 32.766516, -117.075320

Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Change in average sediment texture | <input checked="" type="checkbox"/> Break in bank slope |
| <input checked="" type="checkbox"/> Change in vegetation species | <input checked="" type="checkbox"/> Other: <u>Presence of surface water</u> |
| <input checked="" type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

OHWM is defined by the typical height of the surface water within the concrete lined channel.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: 32.766516, -117.075320

Characteristics of the floodplain unit:

Average sediment texture: Silt

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- | | |
|---|--|
| <input checked="" type="checkbox"/> NA | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input checked="" type="checkbox"/> Ripples | <input type="checkbox"/> Surface relief |
| <input type="checkbox"/> Drift and/or debris | <input type="checkbox"/> Other: _____ |
| <input checked="" type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Within the concrete line, the channel is constrained and functions as the low flow channel, active floodplain, and low terraces. If the discharge rises above the concrete liner the flow would be restrained by the steep slopes on both sides.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: NA

Characteristics of the floodplain unit:
 Average sediment texture: _____
 Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%
 Community successional stage:
 NA Mid (herbaceous, shrubs, saplings)
 Early (herbaceous & seedlings) Late (herbaceous, shrubs, mature trees)

Indicators:

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

Comments:

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: NA

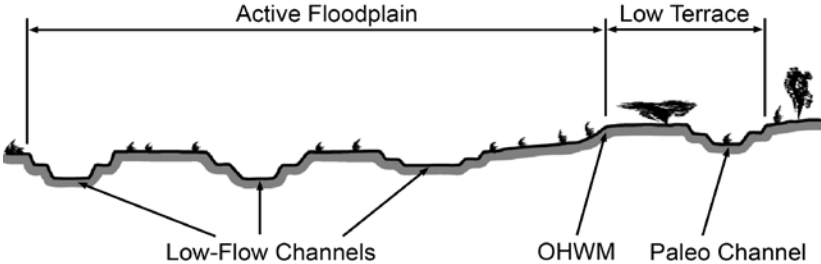
Characteristics of the floodplain unit:
 Average sediment texture: _____
 Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%
 Community successional stage:
 NA Mid (herbaceous, shrubs, saplings)
 Early (herbaceous & seedlings) Late (herbaceous, shrubs, mature trees)

Indicators:

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

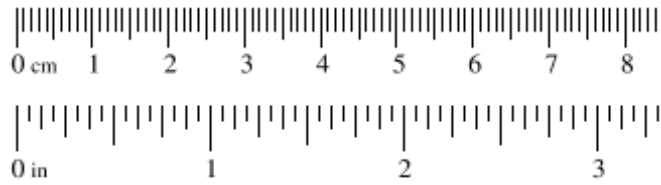
Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

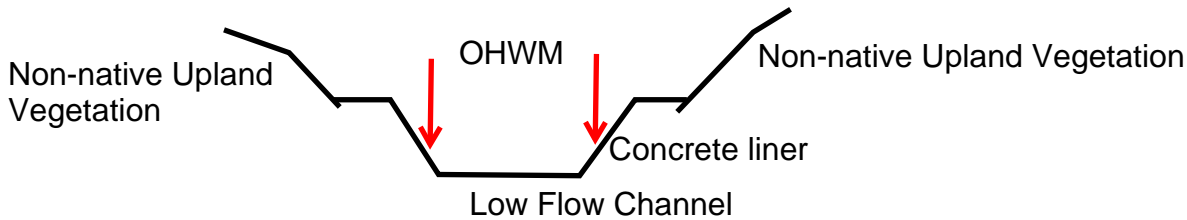
Project: College Area A/C Sewer Project Number: 9114 Stream: Unnamed tributary of Alvarado Creek Investigator(s): J. R. Sundberg	Date: 2018 Oct 16 Town: San Diego Photo begin file#: See Photograph 4	Time: 12:30 State: CA Photo end file#:				
Y <input checked="" type="checkbox"/> / N <input type="checkbox"/> Do normal circumstances exist on the site? Y <input type="checkbox"/> / N <input checked="" type="checkbox"/> Is the site significantly disturbed?	Location Details: In urban canyon south of the end of Defiance Way, San Diego, CA Projection: Mercator Datum: WGS1984 Coordinates: 32.767696, -117.081664					
Potential anthropogenic influences on the channel system: Watershed is highly urbanized with primarily paved and developed areas surrounding. The channel has an exposed concrete liner. There is little debris or sediment in this area.						
Brief site description: Urban canyon with concrete liner. Water source is the outlet of a storm drain.						
Checklist of resources (if available): <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event </td> </tr> </table>			<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event		
<input checked="" type="checkbox"/> Aerial photography Dates: <input checked="" type="checkbox"/> Topographic maps <input type="checkbox"/> Geologic maps <input type="checkbox"/> Vegetation maps <input checked="" type="checkbox"/> Soils maps <input type="checkbox"/> Rainfall/precipitation maps <input type="checkbox"/> Existing delineation(s) for site <input checked="" type="checkbox"/> Global positioning system (GPS) <input type="checkbox"/> Other studies	<input type="checkbox"/> Stream gage data Gage number: Period of record: <input type="checkbox"/> History of recent effective discharges <input type="checkbox"/> Results of flood frequency analysis <input type="checkbox"/> Most recent shift-adjusted rating <input type="checkbox"/> Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event					
Hydrogeomorphic Floodplain Units 						
Procedure for identifying and characterizing the floodplain units to assist in identifying the OHW: <ol style="list-style-type: none"> 1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site. 2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units. 3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units. <ol style="list-style-type: none"> a) Record the floodplain unit and GPS position. b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit. c) Identify any indicators present at the location. 4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section. 5. Identify the OHW and record the indicators. Record the OHW position via: <table style="width: 100%; border: none; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Mapping on aerial photograph</td> <td style="width: 50%;"><input checked="" type="checkbox"/> GPS</td> </tr> <tr> <td><input checked="" type="checkbox"/> Digitized on computer</td> <td><input type="checkbox"/> Other:</td> </tr> </table> 			<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS	<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Mapping on aerial photograph	<input checked="" type="checkbox"/> GPS					
<input checked="" type="checkbox"/> Digitized on computer	<input type="checkbox"/> Other:					

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class
10.08	256	Boulder
2.56	64	Cobble
0.157	4	Pebble
0.079	2.00	Granule
0.039	1.00	Very coarse sand
0.020	0.50	Coarse sand
1/2 0.0098	0.25	Medium sand
1/4 0.005	0.125	Fine sand
1/8 0.0025	0.0625	Very fine sand
1/16 0.0012	0.031	Coarse silt
1/32 0.00061	0.0156	Medium silt
1/64 0.00031	0.0078	Fine silt
1/128 0.00015	0.0039	Very fine silt
		Clay



Cross section drawing:



OHWM

GPS point: 32.767696, -117.081664

Indicators:

- | | |
|---|---|
| <input type="checkbox"/> Change in average sediment texture | <input type="checkbox"/> Break in bank slope |
| <input type="checkbox"/> Change in vegetation species | <input checked="" type="checkbox"/> Other: <u>Water marks on concrete</u> |
| <input type="checkbox"/> Change in vegetation cover | <input type="checkbox"/> Other: _____ |

Comments:

OHWM is within a concrete lined channel. A water mark line is noticeable.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: 32.767696, -117.081664

Characteristics of the floodplain unit:

Average sediment texture: Concrete

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- | | |
|---|--|
| <input checked="" type="checkbox"/> NA | <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) |
| <input type="checkbox"/> Early (herbaceous & seedlings) | <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) |

Indicators:

- | | |
|---|---|
| <input type="checkbox"/> Mudcracks | <input type="checkbox"/> Soil development |
| <input checked="" type="checkbox"/> Ripples | <input type="checkbox"/> Surface relief |
| <input checked="" type="checkbox"/> Drift and/or debris | <input checked="" type="checkbox"/> Other: <u>Light sediment deposits</u> |
| <input type="checkbox"/> Presence of bed and bank | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Benches | <input type="checkbox"/> Other: _____ |

Comments:

Within the concrete line, the channel is constrained and functions as the low flow channel, active floodplain, and low terraces. If the discharge rises above the concrete liner the flow would be restrained by the steep slopes on both sides.

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: NA

Characteristics of the floodplain unit:
 Average sediment texture: _____
 Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%
 Community successional stage:
 NA Mid (herbaceous, shrubs, saplings)
 Early (herbaceous & seedlings) Late (herbaceous, shrubs, mature trees)

Indicators:

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

Comments:

Floodplain unit: Low-Flow Channel Active Floodplain Low Terrace

GPS point: NA

Characteristics of the floodplain unit:
 Average sediment texture: _____
 Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%
 Community successional stage:
 NA Mid (herbaceous, shrubs, saplings)
 Early (herbaceous & seedlings) Late (herbaceous, shrubs, mature trees)

Indicators:

<input type="checkbox"/> Mudcracks	<input type="checkbox"/> Soil development
<input type="checkbox"/> Ripples	<input type="checkbox"/> Surface relief
<input type="checkbox"/> Drift and/or debris	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Presence of bed and bank	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Benches	<input type="checkbox"/> Other: _____

Comments:

APPENDIX Q

PSOMAS – DESIGN TECHNICAL MEMORANDUM

DESIGN TECHNICAL MEMORANDUM

To: Jericho Gallardo

From: Maira Salcedo, PE
Andrew Balane, EIT

Date: August 19, 2021

Subject: City of San Diego – Engineering & Capital Projects Department – Transportation and Utility Engineering Division
College Area Sewer and AC Water Replacement Project

BACKGROUND

The City of San Diego selected Psomas to provide design services to complete a portion of the College Area Sewer and AC Water Main Project. The existing 10-inch sewer will be replaced with 178 lineal feet of 15-inch and 2,064 lineal feet of 18-inch sewer by trenchless methods. The existing 10-inch sewer and manholes will be abandoned in place and interfering portions removed. The City has prepared a Mitigated Negative Declaration and Revegetation Plan.

The project is located in Council District 9 within the College area Community of San Diego. The trenchless portion is located between Sta. 3+50.10 near the Parking lot of the Collwood Villas south of Prosperity Lane and Sta. 25+92.60 in a manhole in Campanile Way. The existing and proposed sewer will be located primarily within 20-foot and 25-foot sewer easements and will cross 54th Street, as shown in Figure 1 – Pipe Alignment. The project is generally located within heavy vegetation, private property, steep slopes, and between two houses near Campanile Way.



Figure 1: Pipeline Alignment

The City provided topographic files and 60% design CADD files for Psomas' use. The CADD files include utility base files generated from record data from the City, various utility agencies within the area, and design base files previously prepared by the City. Psomas will integrate information provided by the Geotechnical engineer to determine an appropriate trenchless method of installation and finalize the design and construction documents.

DESIGN CONSIDERATIONS

Geotechnical Recommendations

It is our understanding the soil strata within the project limits is comprised of a top layer of fill, middle layer of alluvium and a bottom layer of stadium conglomerate. A layer of Mission Valley Formation is mapped as overlaying the Stadium Conglomerate (beneath alluvium) starting at approximately Station 21+00. The pipe will primarily be installed within the alluvium and Stadium Conglomerate, with approximately 200-feet within the Mission Valley Formation. The Stadium Conglomerate is typically comprised gravel and cobbles in a sandy matrix and can pose challenges during trenchless pipe installation due to clast size and strength.

The Supplemental Geotechnical Recommendations (Draft) dated August 16, 2021 prepared by ENGE0 identified five geotechnical alignment constraints, listed below, in selecting a trenchless technology. Refer to Appendix B for the complete report.

1. Tunneling under relatively shallow (at time less than 5 feet) non-cohesive overburden soils;
2. Tunneling beneath, and in close proximity, to the toe of very steep slopes;
3. Tunneling adjacent, and in close proximity, to residential properties/structures;
4. Tunneling through scattered high-strength cobbles present in sandy/gravelly alluvial deposits; and
5. Tunneling through concentrated gravel/cobble conglomerate (with possible scattered boulders) containing very strong to extremely strong clasts (over 30,000 psi).

Trenchless installation methods considered for the project included:

- **Microtunneling** is an unmanned excavation method using a remotely operated microtunnel boring machine (MTBM) to install pipes underground with minimal surface disruption. The method continuously installs a string of pipe behind a remotely controlled, steerable, laser-guided, full-face controlled, articulated MTBM. The installed pipe is connected to and follows the MTBM into the excavation tunnel. Microtunneling is acceptable for drives of up to 350 feet.
- **Horizontal Directional Drilling (HDD)** is a method used to install underground utilities in a relatively shallow arc or radius along a prescribed underground path using a drilling rig at the ground surface. A smaller diameter pilot hole along the utility path is drilled and enlarged to facilitate the installation of the desired pipeline.
- **Horizontal Auger Boring (Traditional Boring and Jacking)** is the traditional method used in pipeline construction. A jacking pit and receiving pit are constructed and appropriately shored, with the jacking pit large enough to fit a full pipe segment horizontally. The jacking machine is lowered into the jacking pit and uses a rotating helical auger to drill through the soil along the desired alignment. As the machine drills the hole, it also functions like a jackhammer to push the casing pipe into place. The drill hole is continuously supported by the casing as the auger advances. Suitable pipe materials for jacking include reinforced concrete pipe, steel casing and

corrugated steel pipe, with steel casing being the material of choice for water and sewer applications.

As the jacking operation progresses, soil cuttings within the jacking pipe are continually moved by the auger from the face of the excavation to the jacking pit. Once jacking is completed and a casing pipe installed, a second carrier pipe is installed, using spacers to support the carrier pipe within the casing. The annular space between the casing and carrier pipes is backfilled with sand or grout. Auger boring (traditional Boring and Jacking) is acceptable for drives (distance between jacking pit and receiving pit) of up to 800-feet but up to 400-feet within the Stadium Conglomerate soil type.

Given the geotechnical constraints of the proposed sewer replacement alignment and available trenchless methods, ENGeo considers the horizontal auger jack-and-bore to be the preferred trenchless installation method.

Environmental Factors

The project limits, with exception of public right-of-way crossing, will be located within environmentally sensitive areas with vegetated ground cover. The City of San Diego has prepared environmental documents including a Mitigated Negative Declaration and Revegetation Plan limiting the construction work areas in order to protect the natural environment and restore surface conditions. It is Psomas’ understanding the pit location and sizes as shown in the City’s 60% design plans have already been pre-approved as part of the environmental document preparation and permitting, which include four 10’x20’ jacking pits and five 10’x10’ receiving pits.

Alignment Location

The project is located within 25-foot and 20-foot easements, as shown in Figure 1 – Pipe Alignment and Appendix A. It parallels an existing City of San Diego storm drain channel starting near the parking lot of the Collwood Villas at Station 3+51, bearing southeast through private property while traversing 54th Street south of Baja Drive up to Station 8+09. The alignment changes to an easterly direction through private property up to Station 19+79; changing direction southeast up to Station 23+97; then east up to Station 24+15; and finally south within a 10-foot easement to Station 25+93 within Campanile Way. Private properties within the project limits are listed in Table 1 – Private Property within Project Limits.

Table 1 – Private Property within Project Limits

Assessor Parcel Number (APN)	Address	Land Use
466-260-18-01	4819-4899 Collwood Blvd. (Collwood Villas)	Residential – Condominium
466-890-2400	4896 54 th St.	Residential – SFR
466-890-08-00	5404 Maisel Wy.	Residential – SFR
466-890-07-00	5412 Maisel Wy.	Residential – SFR
466-900-17-00	5420 Maisel Wy.	Residential – SFR
466-900-16-00	5428 Maisel Wy.	Residential – SFR
466-900-15-00	5436 Maisel Wy.	Residential – SFR
466-900-14-00	5444 Maisel Wy.	Residential – SFR
466-900-13-00	5452 Maisel Wy.	Residential – SFR
466-900-12-00	5460 Maisel Wy.	Residential – SFR
466-900-11-00	5468 Maisel Wy.	Residential – SFR

Assessor Parcel Number (APN)	Address	Land Use
466-900-10-00	5476 Maisel Wy.	Residential – SFR
466-900-09-00	5484 Maisel Wy.	Residential – SFR
466-782-10-00	5485 Baja Wy.	Residential – SFR
466-782-11-00	5491 Baja Wy.	Residential – SFR
466-782-12-00	5497 Baja Wy.	Residential – SFR
466-782-13-00	5501 Baja Wy.	Residential – SFR
466-782-14-00	5507 Baja Wy.	Residential – SFR
466-800-01-00	5513 Baja Wy.	Residential – SFR
466-800-02-00	5519 Baja Wy.	Residential – SFR
466-800-03-00	5525 Baja Wy.	Residential – SFR
466-800-07-00	5553 Baja Wy.	Residential – SFR
466-800-08-00	5561 Baja Wy.	Residential – SFR
466-800-15-00	5567 Baja Wy.	Residential – SFR
466-800-16-00	5573 Baja Wy.	Residential – SFR
466-800-17-00	5579 Baja Wy.	Residential – SFR
466-800-18-00	5585 Baja Wy.	Residential – SFR
466-870-10-00	5604 Campanile Wy.	Residential – SFR
466-870-09-00	5616 Campanile Wy.	Residential – SFR

The alignment has an average 7-foot cover with some exceptions including the crossing beneath the northeast corner of the Collwood Villas parking lot (11-foot cover), 54th Street (23-cover) and as the alignment traverses between two residential home structures (5616 and 5604 Campanile Way) with a 9.57% slope (22-cover).

Traffic Control

54th Street is a 2-lane street with parking lanes in both the north and south bound traffic. The manhole is anticipated to be constructed in the center of the roadway. Campanile Way is a residential cul-de-sac with six homes potentially being affected with construction activities.

RECOMMENDED DESIGN CRITERIA

Jack and Bore Pit Size and Location

The selected recommended trenchless method is horizontal auger boring with careful consideration placed on the jack and bore pit locations. Although the pit location and dimensions as shown in the City’s 60% design plans have already been pre-approved as part of the environmental document preparation and permitting, upon consideration of the soil strata, discussions with experienced contractors, and location the recommended pit areas are being increased to a 12’x35’ jacking pit and 12’x12’ receiving pit, in some locations. Three 12’x35’ jacking pits, one irregular shaped jacking pit, two 12’x12’ receiving pits, and two 10’x10’ receiving pits are being proposed. Refer to Appendix A for the recommended jacking and boring pit locations overlaid with anticipated soil strata. To provide a productive working space around the equipment the pit widths are being increased from 10-feet to 12-feet, in most cases. During our information gathering phase it was discovered the welding a large diameter casing could take up to four hours to six hours depending on diameter and thickness. Therefore, to maintain a timely construction schedule, a 35-foot jacking pit is being recommend for consideration to allow two field welds per set up.

For shorter segments, less than 100-feet, in construction restrictive areas, or environmentally sensitive locations a 20-foot long jacking pit may be used.

Collwood Villas Parking Lot

As shown on the exhibits in Appendix A, the construction of the 12'x35' jacking pit at proposed Manhole #3 will be partially encroaching into the parking lot behind the Collwood Villas Condominium complex to avoid impacting the existing storm drain channel. Due to the higher elevation of the parking lot in relation to the channel, this pit will likely require additional shoring where the pit edge is adjacent to the parking lot. Additionally, portions of the parking lot will require restoration after sewer construction is complete. The extent of the restoration will depend on how much of the lot is required to be removed during pit construction.

While shifting the pit towards the parking lot will prevent the pit from damaging the existing storm drain channel, the construction excavation for Manhole #3 will come extremely close to the channel limits. The contractor will need to use extreme caution to protect the concrete channel structure. To combat this issue, the manhole may be constructed offset in order to protect the channel during construction. In this case the manhole channel may be slightly off center, but may protect the concrete storm drain channel.

Steel Pipe Casing

In consideration of ENGEO's analysis and recommendations a 36-inch steel casing is being proposed within the alluvium layer to allow the removal and transport of cobble clasts through the auger back to the jacking pit. A 48-inch casing within the Stadium Conglomerate is being proposed to allow the removal and transport of cobbles through the auger back to the jacking pit and allow man-entry and access to the tunnel face, if necessary, to manually break down and remove obstructions such as boulder-sized clasts and/or highly cemented conglomerate matrix zones. Per the City's requirement, the carrier pipe will be centered in the casing by use of casing spacers. Refer to Appendix A for the recommended pipe casing diameters and approximate depth. The vertical alignment downstream of Station 3+51 will need to be lowered to match the lowered casing and carrier pipe between Manhole #3 and Manhole #4.

The pipe casing between Station 4+50 and 5+90 is anticipated to have less than a 5-foot cover. Due to the shallow cover in this area and to mitigate possible settlement of the soil after construction, the gap between the native soil and casing will be filled with grout. The grout will be pumped from the pits through grouting ports drilled into the casing prior to jacking, allowing for precise grouting in only the area with shallow cover.

54th Street and Campanile Way

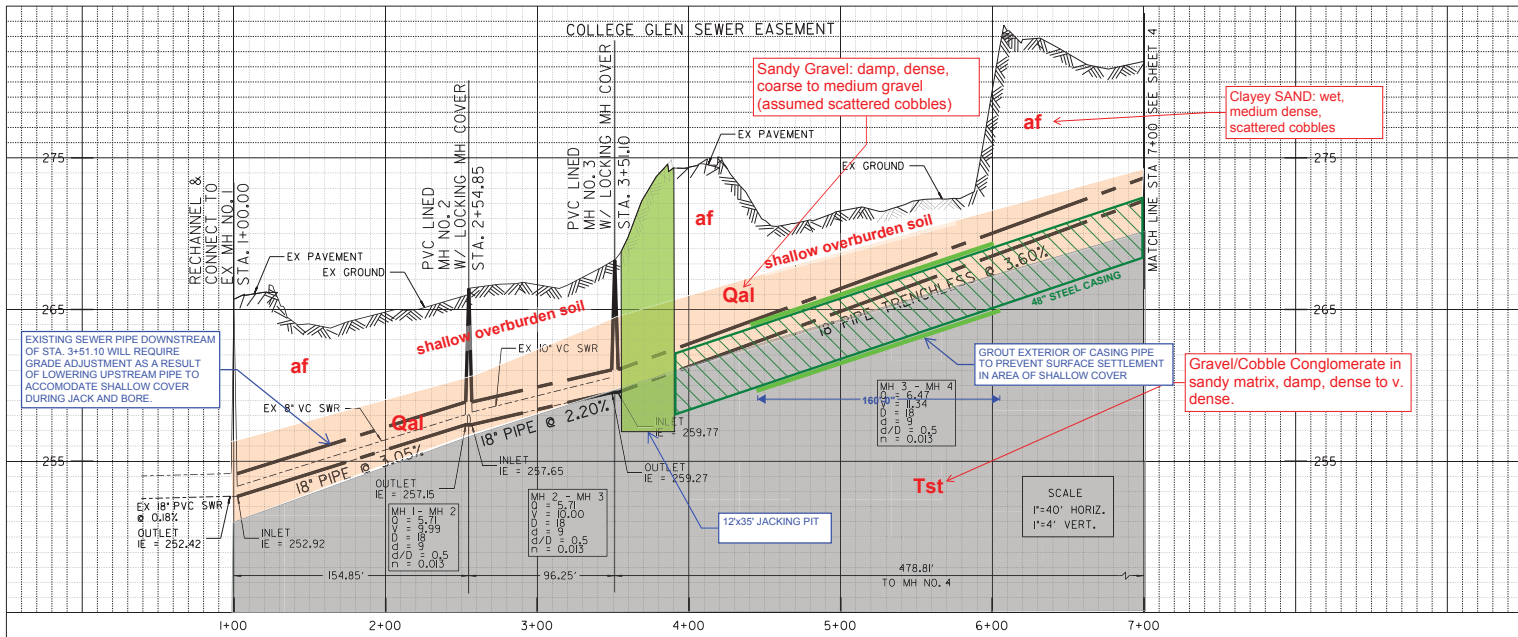
It is being proposed for the City's consideration to remove the jacking pit in 54th Street. The pipe casing will be jacked from Station 3+51 upstream to Station 9+09 (southeast of 54th Street). The 29-foot deep manhole constructed in 54th Street (Station 8+30) will connect to the existing 8-inch PVC lined sewer within 54th Street. Portions of the steel casing will need to be cut and removed to allow the construction of the manhole and reconnection to existing sewers. The manhole will need to be cast-in-place concrete designed by a structural engineer. The elimination of the jacking pit in 54th Street will also facilitate the protection of the existing 2-inch gas line and 12-inch AC water main during construction of the manhole. Engineered traffic control plans are also anticipated to be required for 54th Street due to a potential blind turning radius within the manholes' advanced construction warning limits. Psomas' scope does not include engineered traffic control plans. Therefore, the contractor will be required to provide engineered

traffic control plans, if required by the City. After reviewing the proposed recommendation, the City has approved the removal of the jacking pit in 54th Street and construction of the manhole following jacking operations, cut and removal of interfering casing for the manhole construction and reconnection to existing 8-inch sewer. The proposed soffit of the 8-inch sewer between MH #24 and MH #4 will be adjusted to match the soffit of the proposed 18-inch sewer.

The jacking pit in Campanile Way will need to be constructed carefully to allow the protection of the existing utilities including a 1.5-inch gas line, 4-inch AC water main, water services, and 18" RCP storm drain. The proposed alignment between Station 24+14 and Station 25+93 passes between two homes (5604 and 5616 Campanile Way). The estimated cover to the top of the jacked steel casing for this pipe segment is approximately 15-feet, which provides negligible impact to the structures and foundations. It is anticipated the City will allow the MUTCD Work Area Traffic Control Handbook (WATCH) manual to be used for traffic control. The area will require ongoing coordination with the residents of the Campanile Way cul-de-sac.

APPENDIX A

Conceptual Design Exhibits



ESTIMATED ARCHAEOLOGICAL MONITORING LIMITS (INCLUDES MAIN, LATERALS, AND OTHER TRENCHING ACTIVITIES)

BEGINNING STATION	ENDING STATION	APPROXIMATE LF
STA 2+54.85	STA 3+56.10	101.25

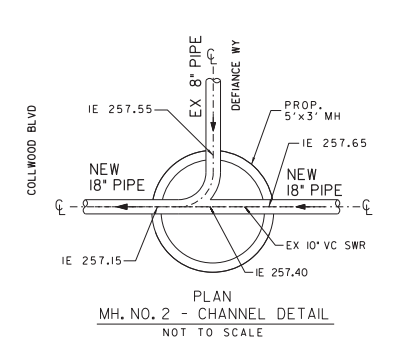
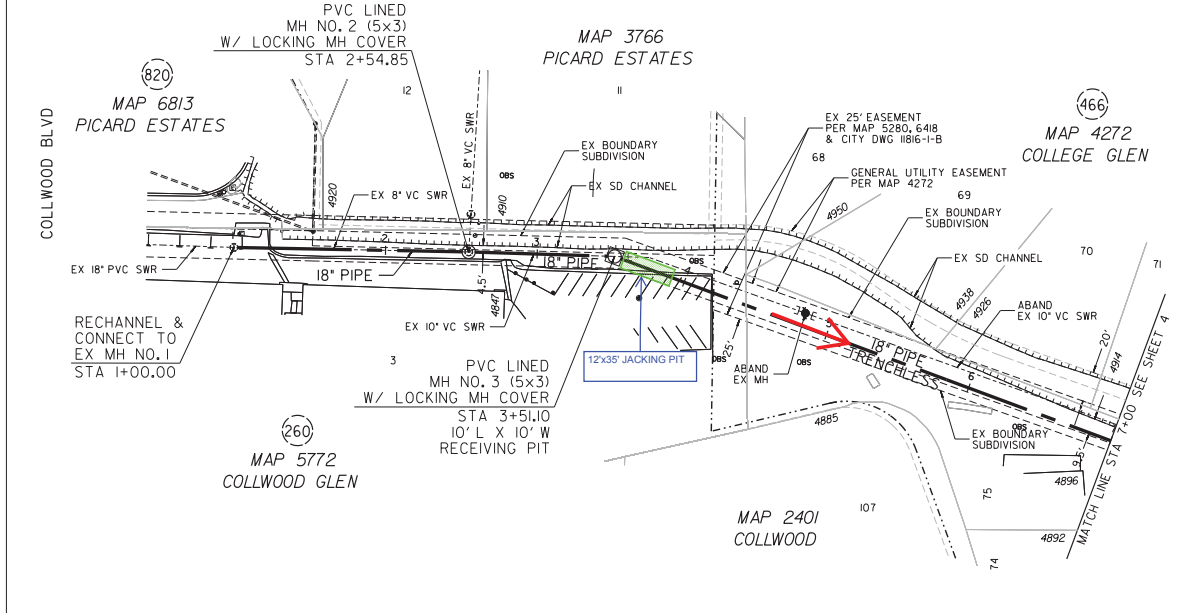
ACTUAL LIMITS SHALL BE DETERMINED BY THE PI/MONITORIS) PRIOR TO CONSTRUCTION AND SHALL BE CONSISTENT WITH THE PROJECT'S MITIGATION AND MONITORING PROGRAM (MMRP)

ESTIMATED PALEONTOLOGICAL MONITORING LIMITS (INCLUDES MAIN, LATERALS, AND OTHER TRENCHING ACTIVITIES)

BEGINNING STATION	ENDING STATION	APPROXIMATE LF
STA. 1+00.00	STA. 2+54.85	154.85

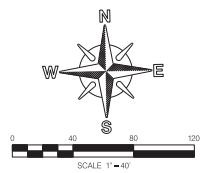
ACTUAL LIMITS SHALL BE DETERMINED BY THE PI/MONITORIS) PRIOR TO CONSTRUCTION AND SHALL BE CONSISTENT WITH THE PROJECT'S MITIGATION AND MONITORING PROGRAM (MMRP)

Soil/rock stratigraphy shown is based on interpolation between widely-spaced borings and should be considered very approximate.



REFERENCE:
 WATER: NONE
 SEWER: 35531-13-D, 13393-0-L, 05440-0-L, 05439-0-L
 STORM DRAIN: 13391-L, 10567-5-D
 GAS: NONE
 ELECTRIC: NONE
 CABLE TV: NONE
 TELEPHONE: NONE
 IMPROVEMENTS: 35531-13-D
 100' SCALE/FIELD BOOK #175
 THOMAS BROS.: 1270A2
 HGL: NONE

RETIREMENTS:
 8" - VC - 154.85' - N/A
 10" - VC - 447.91' - N/A
 MH - 4x3 - 2 - N/A



PTS * 646068

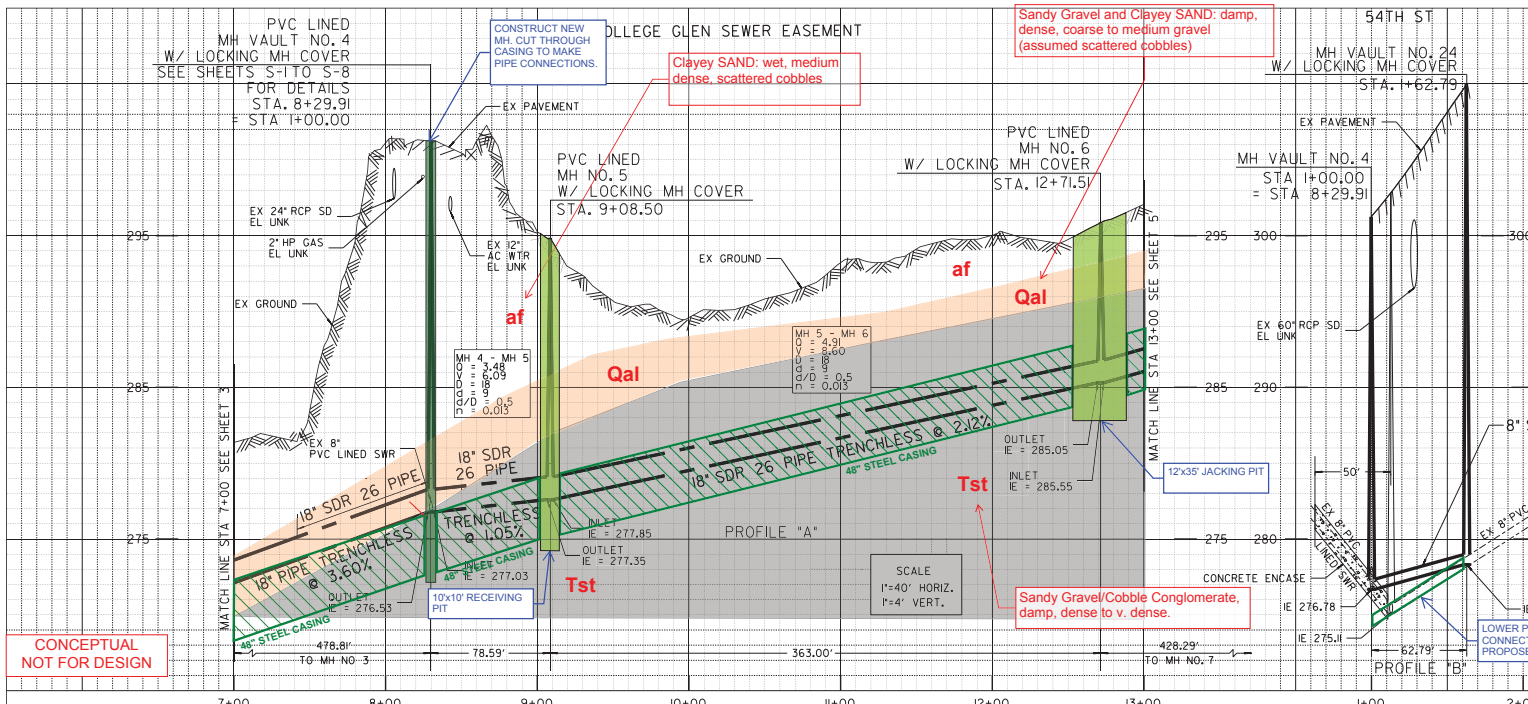
CITY OF SAN DIEGO, CALIFORNIA
 ENGINEERING & CAPITAL PROJECTS DEPARTMENT
 SHEET 3 OF 33 SHEETS

WATER SEWER B-16022
 WATER SEWER B-16025

PROJECT ENGINEER: SHEILA BOSE
 PROJECT ENGINEER: JAMES PIEL
 PROJECT NUMBER: 218-1743
 CREDIT COORDINATE: 1858-6303
 CREDIT COORDINATE: 39946-03-D

DATE STARTED: _____ DATE COMPLETED: _____

COLLEGE GLEN SEWER EASEMENT



ESTIMATED ARCHAEOLOGICAL MONITORING LIMITS
(INCLUDES MAIN, LATERALS, AND OTHER TRENCHING ACTIVITIES)

BEGINNING STATION	ENDING STATION	APPROXIMATE LF
STA. 8+19.91	STA. 8+39.91	20
STA. 9+03.50	STA. 9+13.50	10
STA. 12+61.51	STA. 12+81.51	20

ACTUAL LIMITS SHALL BE DETERMINED BY THE PI/MONITORIS) PRIOR TO CONSTRUCTION AND SHALL BE CONSISTENT WITH THE PROJECT'S MITIGATION AND MONITORING PROGRAM (MMRP)

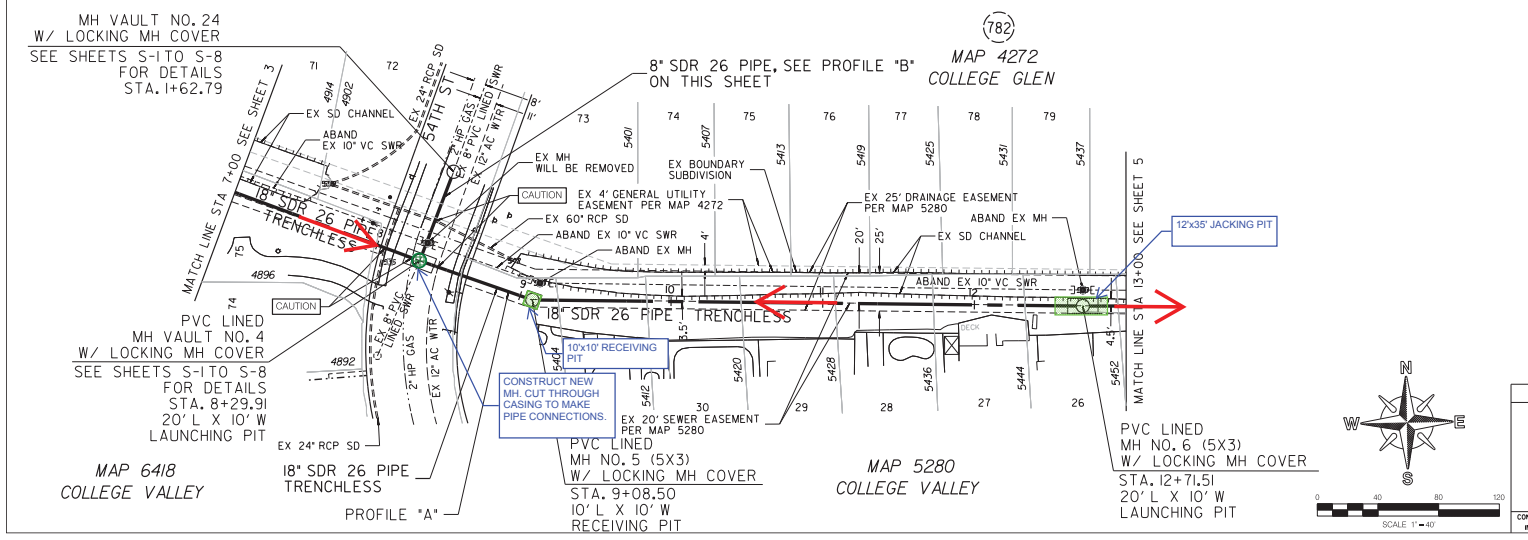
ESTIMATED PALEONTOLOGICAL MONITORING LIMITS
(INCLUDES MAIN, LATERALS, AND OTHER TRENCHING ACTIVITIES)

BEGINNING STATION	ENDING STATION	APPROXIMATE LF
STA. 8+19.91	STA. 8+39.91	20
STA. 9+03.50	STA. 9+13.50	10
STA. 12+61.51	STA. 12+81.51	20

ACTUAL LIMITS SHALL BE DETERMINED BY THE PI/MONITORIS) PRIOR TO CONSTRUCTION AND SHALL BE CONSISTENT WITH THE PROJECT'S MITIGATION AND MONITORING PROGRAM (MMRP)

Soil/rock stratigraphy shown is based on interpolation between widely-spaced borings and should be considered very approximate.

CONCEPTUAL NOT FOR DESIGN



REFERENCE:
 WATER: I0657-5-D
 SEWER: I0657-5-D, 5440-0-L, 05439-0-L
 STORM DRAIN: I0657-5-D, 7199-D
 GAS: I0655-108945
 ELECTRIC: NONE
 CABLE: TV: NONE
 TELEPHONE: NONE
 IMPROVEMENTS: NONE
 100' SCALE/FIELD BOOK: KITS
 THOMAS BROS.: 127082
 HGL: NONE

RETIREMENTS:
 10" - VC - 600' - N/A
 MH - 4X3 - 3 - N/A

C-2

COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT
 COLLEGE GLEN SEWER EASEMENT
 WO 54TH ST TO STA 13+00
 MH 4 TO MH 24

CITY OF SAN DIEGO, CALIFORNIA
 ENGINEERING & CAPITAL PROJECTS DEPARTMENT
 SHEET 4 OF 33 SHEETS

PTS * 646068

DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE

CONTRACTOR INSPECTOR

DATE STARTED

DATE COMPLETED

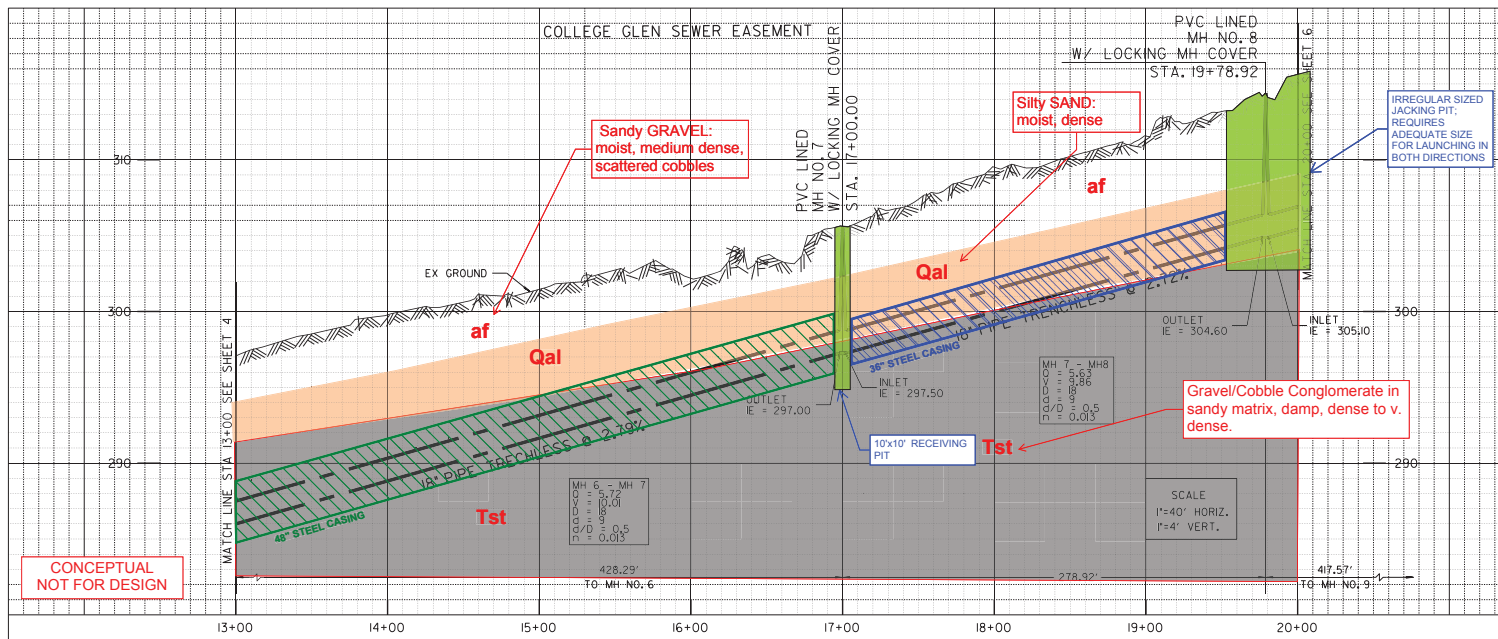
WATER SEWER BWS B-16022
 B-16025

JERICO GALLARDO
 PROJECT MANAGER

JAMES PIEL
 PROJECT ENGINEER

218-1743
 1858-6303

39946-04-D



ESTIMATED ARCHAEOLOGICAL MONITORING LIMITS (INCLUDES MAIN, LATERALS, AND OTHER TRENCHING ACTIVITIES)

BEGINNING STATION	ENDING STATION	APPROXIMATE LF
STA. 16+95.00	STA. 17+05.00	10
STA. 19+68.92	STA. 19+88.92	20

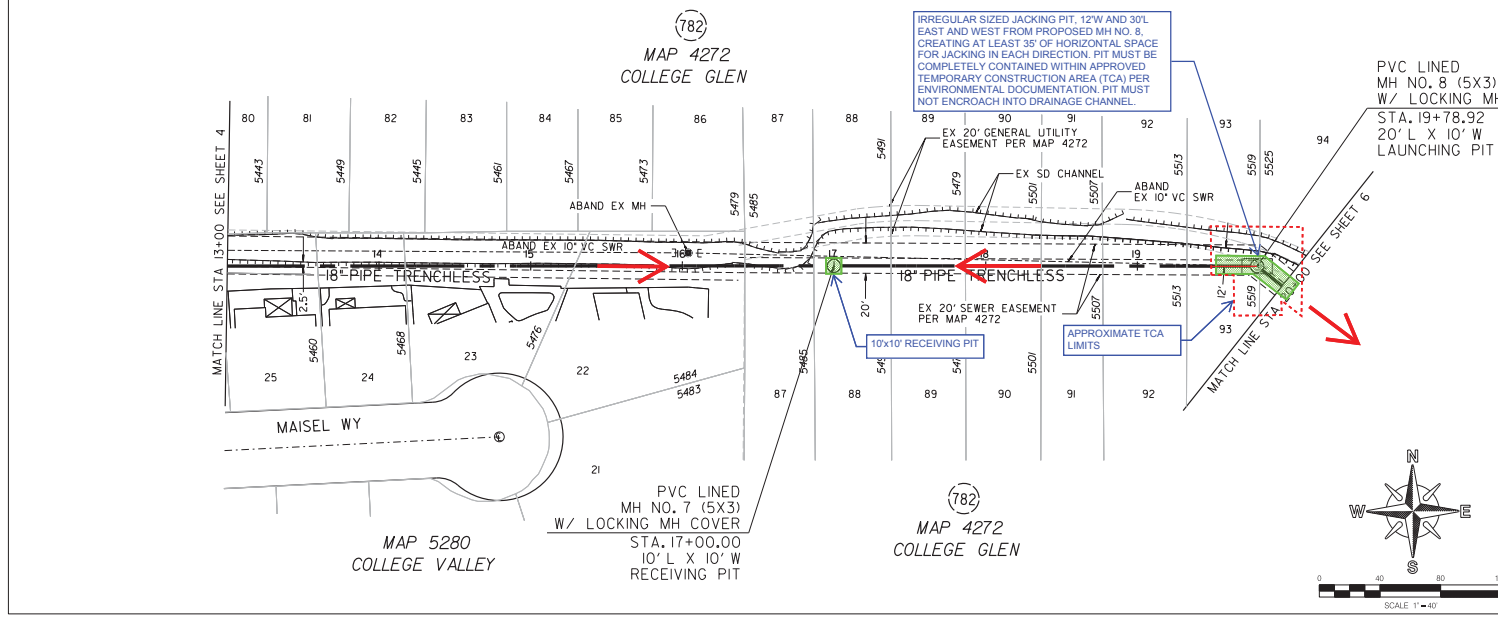
ACTUAL LIMITS SHALL BE DETERMINED BY THE PI/MONITOR(S) PRIOR TO CONSTRUCTION AND SHALL BE CONSISTENT WITH THE PROJECT'S MITIGATION AND MONITORING PROGRAM (MMRP)

ESTIMATED PALEONTOLOGICAL MONITORING LIMITS (INCLUDES MAIN, LATERALS, AND OTHER TRENCHING ACTIVITIES)

BEGINNING STATION	ENDING STATION	APPROXIMATE LF
STA. 16+95.00	STA. 17+05.00	10
STA. 19+68.92	STA. 19+88.92	20

ACTUAL LIMITS SHALL BE DETERMINED BY THE PI/MONITOR(S) PRIOR TO CONSTRUCTION AND SHALL BE CONSISTENT WITH THE PROJECT'S MITIGATION AND MONITORING PROGRAM (MMRP)

Soil/rock stratigraphy shown is based on interpolation between widely-spaced borings and should be considered very approximate.



REFERENCE:
 WATER: NONE
 SEWER: 5440-0-L, 05439-0-L
 STORM DRAIN: 7199-D
 GAS: NONE
 ELECTRIC: NONE
 CABLE TV: NONE
 TELEPHONE: NONE
 IMPROVEMENTS: NONE
 100' SCALE/FIELD BOOK: KIT'S
 THOMAS BROS.: 1270B2
 HGL: NONE

RETIREMENTS:
 10' - VC - 700' - 1957
 MH - 4X3 - 2 - 1957

C-3

COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT
 COLLEGE GLEN SEWER EASEMENT
 STA 13+00 TO STA 20+00

CITY OF SAN DIEGO, CALIFORNIA
 ENGINEERING & CAPITAL PROJECTS DEPARTMENT
 SHEET 5 OF 33 SHEETS

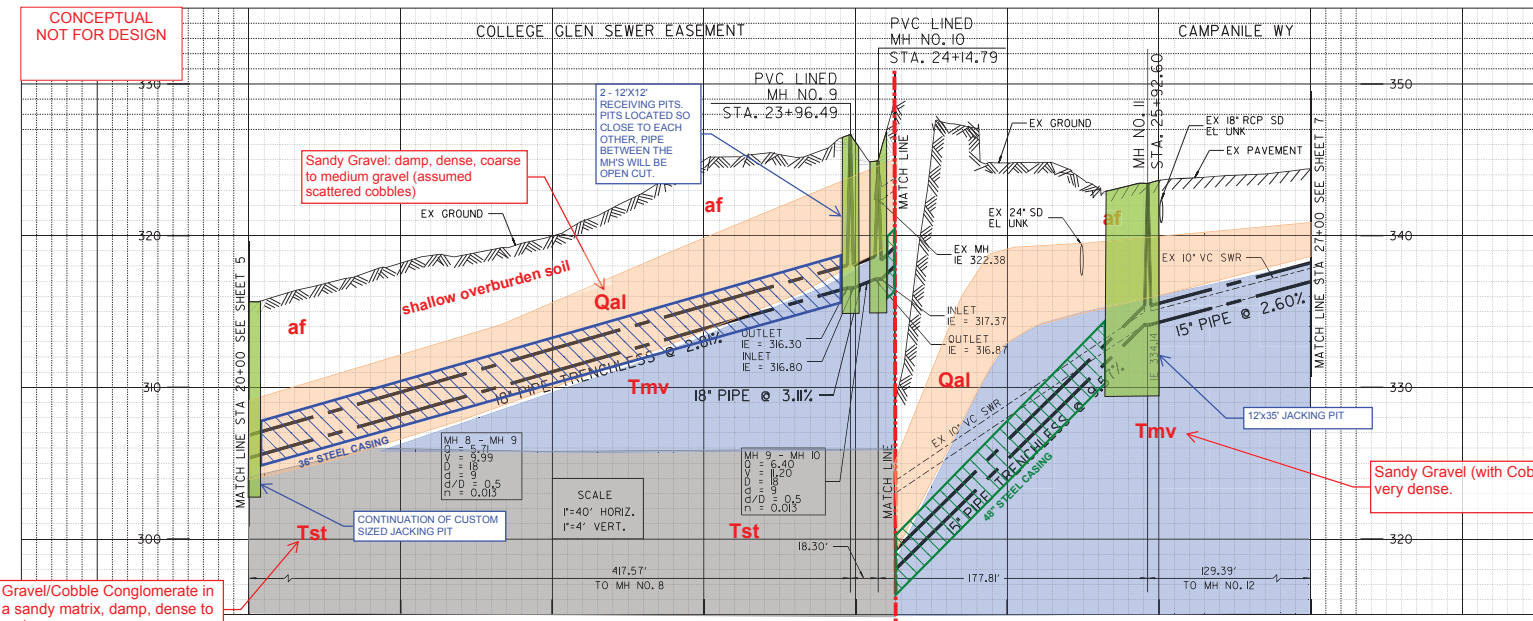
PTS * 646068

FOR CITY ENGINEER: SHEILA BOSE
 PROJECT ENGINEER: JERICO GALLARDO
 PROJECT NUMBER: 218-1743
 PROJECT NUMBER: 1858-6303

DATE STARTED: _____ DATE COMPLETED: _____

COLLEGE GLEN SEWER EASEMENT

CONCEPTUAL
NOT FOR DESIGN



ESTIMATED ARCHAEOLOGICAL MONITORING LIMITS (INCLUDES MAIN, LATERALS, AND OTHER TRENCHING ACTIVITIES)

BEGINNING STATION	ENDING STATION	APPROXIMATE LF
STA. 23+91.49	STA. 24+01.49	10
STA. 24+09.79	STA. 24+19.79	10

ACTUAL LIMITS SHALL BE DETERMINED BY THE PI/MONITOR(S) PRIOR TO CONSTRUCTION AND SHALL BE CONSISTENT WITH THE PROJECT'S MITIGATION AND MONITORING PROGRAM (MMRP)

ESTIMATED PALEONTOLOGICAL MONITORING LIMITS (INCLUDES MAIN, LATERALS, AND OTHER TRENCHING ACTIVITIES)

BEGINNING STATION	ENDING STATION	APPROXIMATE LF
STA. 25+82.60	STA. 26+02.60	20

ACTUAL LIMITS SHALL BE DETERMINED BY THE PI/MONITOR(S) PRIOR TO CONSTRUCTION AND SHALL BE CONSISTENT WITH THE PROJECT'S MITIGATION AND MONITORING PROGRAM (MMRP)

Soil/rock stratigraphy shown is based on interpolation between widely-spaced borings and should be considered very approximate.

Gravel/Cobble Conglomerate in a sandy matrix, damp, dense to v. dense.

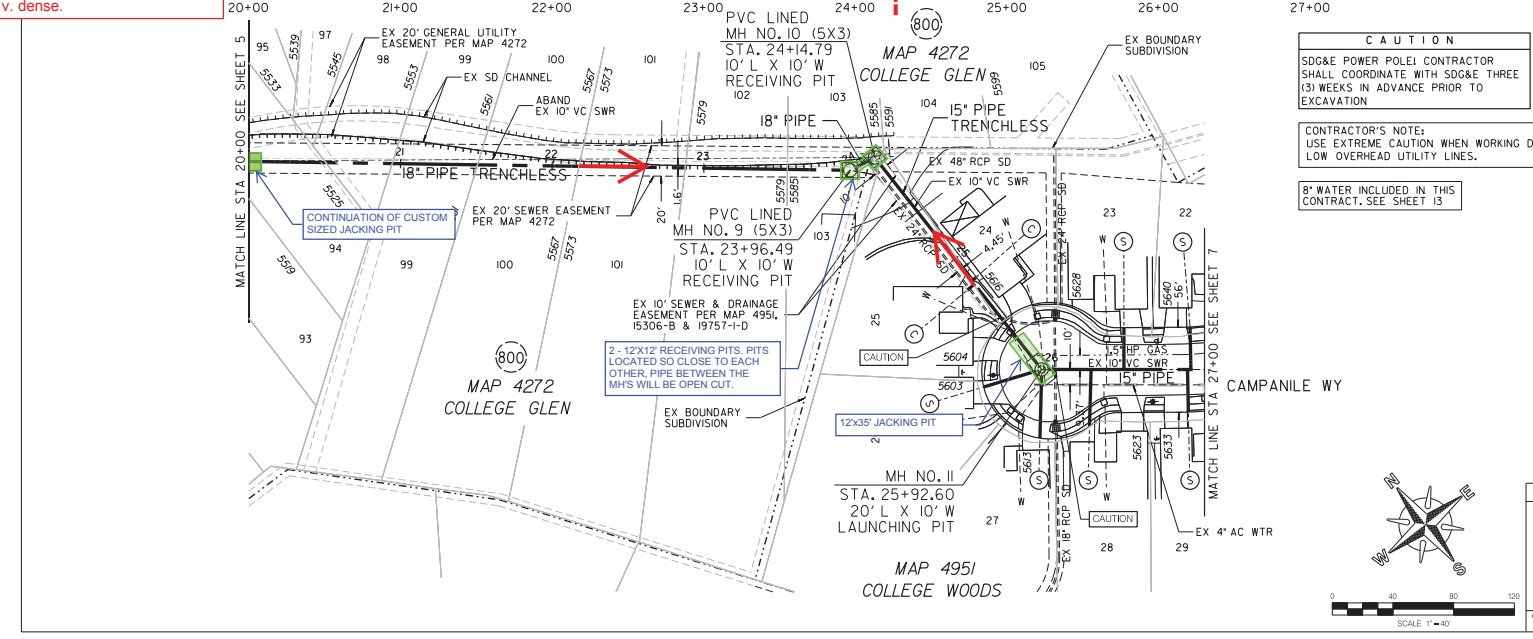
Sandy Gravel (with Cobbles), damp, very dense.

Sandy Gravel: damp, dense, coarse to medium gravel (assumed scattered cobbles)

shallow overburden soil

CONTINUATION OF CUSTOM SIZED JACKING PIT

SCALE
1"=40' HORIZ.
1"=4' VERT.



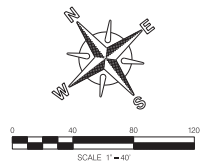
CAUTION
SD&E POWER POLE CONTRACTOR SHALL COORDINATE WITH SD&E THREE (3) WEEKS IN ADVANCE PRIOR TO EXCAVATION

CONTRACTOR'S NOTE:
USE EXTREME CAUTION WHEN WORKING DUE TO LOW OVERHEAD UTILITY LINES.

8" WATER INCLUDED IN THIS CONTRACT. SEE SHEET 7

REFERENCE:
WATER: I0491-3-D
SEWER: I0491-3-D
STORM DRAIN: I0491-3-D, 19757-1-D
GAS: I6170-18340
ELECTRIC: NONE
CABLE TV: NONE
TELEPHONE: NONE
IMPROVEMENTS: NONE
100' SCALE FIELD BOOK: K175
THOMAS BROS.: I270B3
HGL: NONE

RETIREMENTS:
10" - VC - 700' - 1962
MH - 4X3 - 2 - 1957 & 1962
4" LATERAL - 8 - UNK - UNK



C-4

COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT
COLLEGE GLEN SEWER EASEMENT TO CAMPANILE WY
STA 20+00 TO CAMPANILE WY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING & CAPITAL PROJECTS DEPARTMENT
SHEET 6 OF 33 SHEETS

PTS * 646068

DESIGNER SHEILA BOSE	DATE	PROJECT MANAGER JERICO GALLARDO
DESCRIPTION ORIGINAL	BY tuc	PROJECT NUMBER 218-1743
APPROVED	DATE	DATE STARTED
FILED		DATE COMPLETED
		CONTRACTOR
		INSPECTOR

WATER SWS B-16022
SEWER SWS B-16025

1858-6303
39946-06-D

APPENDIX B
SUPPLEMENTAL GEOTECHNICAL
RECOMMENDATIONS
PREPARED BY ENGEO

August 16, 2021

Project No.
18842.000.001

Mr. Marc Weinberger, PE
Psomas Inc.
401 B Street, Suite 1600
San Diego, CA 92101

Subject: City of San Diego - College Area Sewer Replacement
San Diego, California

SUPPLEMENTAL GEOTECHNICAL RECOMMENDATIONS

Dear Mr. Weinberger:

We are pleased to provide our supplemental geotechnical recommendations in support of the design and construction of the City of San Diego's College Area Sewer and Water Replacement Project in San Diego, California. Our scope of services carried out for preparation of this letter report is in accordance with our Subconsultant Agreement dated May 28, 2021. The purpose of our work scope is to provide additional geotechnical recommendations for the trenchless installation segment of the sewer replacement project that supplements the previous geotechnical exploration completed for the City of San Diego in 2018 by Twining Geotechnical ("Twining").

The alignment segment addressed in this letter report traverses between Stations 3+51 and 25+93 as identified on the current City of San Diego Engineering & Capital Improvements Department construction plans (undated, PTS# 646068, Sewer WBS B-16025). Based on our meetings and written communications, our supplemental geotechnical recommendations provided herein focus on the following primary geotechnical issues.

- Further assessment and characterization of surface and subsurface conditions to aid in the selection of a preferred trenchless sewer installation method.
- Potential trenchless construction impact to adjacent steep hillside slopes (and hence neighboring properties and structures).
- Support and shoring of excavations for launching/receiving pits adjacent to sloping ground.

Our geotechnical recommendations rely on data and information from the subsurface exploration performed during the 2018 investigation by Twining as well as other available geotechnical data and information from relevant projects in the region.

This letter report has been prepared for the exclusive use of Psomas, and City of San Diego and their consultants for design of this project. In the event that any changes are made to the character, design, or to the layout of the sewer and associated appurtenances, we should be contacted to review the conclusions and recommendations contained in this letter report to evaluate whether modifications may be necessary.

1.0 ALIGNMENT DESCRIPTION

The project alignment is located in the College West neighborhood of San Diego, California, as shown on Figure 1 – Site Vicinity Map. The alignment follows a topographic drainage depression

generally traversing in a west-to-east direction starting near the east end of the Collwood Villa condominium complex; crossing 54th Street; traversing eastward between Baja Drive (north) and Maisel Way (south); then making a southeast bend and traversing upslope to an existing manhole at the end of the Campanile Way cul-de-sac.

The trenchless installation segment addressed in this letter report is approximately 2,140 feet long, extending between alignment Stations 3+51 and 25+92.6 as indicated on the project plans. Ground surface elevations range from approximately 268 feet at Station 3+51 to about 325 feet at the eastern end of the drainage channel (Station 24+15), then traversing upslope to an elevation of about 343 feet at the existing manhole on Campanile Way. All elevations referenced in this report are with respect to NGVD29 datum.

From Station 3+51 to 24+15, the project will replace the existing sewer with a new 18-inch sewer line with invert elevations ranging from 259.8 feet (at Station 3+51) to 317.4 feet (at Station 24+15), and invert gradients ranging from 1.05 to 3.60 percent. The upslope segment between Stations 24+15 and 25+93 will replace the existing 15-inch sewer with a new 15-inch line with invert elevations ranging from 317.4 feet to 334.1 feet at an invert gradient of 9.6 percent.

2.0 SOURCES OF INFORMATION

Our supplemental geotechnical recommendations for the trenchless installation segment of the project relies on the subsurface data from the previous geotechnical investigation for the City of San Diego, which was provided to us for our review. The report is titled “Preliminary Geotechnical Investigation, College Area Sewer and AC Water Main Replacement – Task 15GT14, 54th Street, San Diego, California” is dated April 10, 2018, and was prepared by Twining Geotechnical. The relevant geotechnical subsurface data and information in this report provide the basis for our interpretation of the geologic conditions along the project alignment. The report includes logs of five exploratory borings and geotechnical laboratory test results. A copy of the 2018 report is provided in Attachment B. A summary of the borings from the 2018 investigation is shown in the following Table 2.0-1.

TABLE 2.0-1: Summary of 2018 Twining Field Exploration Borings

BORING ID	EXPLORATION METHOD	STATION ¹	APPROX. GROUND ELEVATION (feet, NGVD29)	BORING DEPTH (feet, bgs)	DEPTH TO GW ² (feet, bgs)	DEPTH TO STADIUM CONGLOMERATE (feet, bgs)	DEPTH TO MISSION VALLEY FORMATION (feet, bgs)
B-1	Hollow-stem Auger	4+72	271	10½	NE	7½	NE
B-2	Hollow-stem Auger	9+37	290	15½	NE	7	NE
B-3	Hollow-stem Auger	11+24	293	10½	NE	5	NE
B-4	Hollow-stem Auger	14+90	300	10½	NE	5½	NE
B-5	Hollow-stem Auger/Air Rotary	25+10	345	26½	NE	NE	13

^{1.} Boring stationing based on Twining’s boring projections onto the sewer alignment as presented in their 2018 geotechnical report.

^{2.} GW = groundwater; bgs = “below ground surface,” NE = not encountered

Other reports retrieved during our literature search that contained information and data relevant to the geotechnical/geological conditions of the project alignment include:

- Geotechnical Data Report, Mission Valley East LRT – SDSU Tunnel, San Diego, California, prepared by Golder Associates Inc., August 2000.
- Geotechnical Data Report, Volume 1, San Vicente to Second Aqueduct Sewer and Surge Control Facility Project, prepared by Jacobs Associates (in association with GeoPentech, Golder Associates, and Southland Geotechnical) for the San Diego County Water Authority, December 2004.

These two reports provided additional relevant information and laboratory data regarding the physical makeup and strength characteristics of the Stadium Conglomerate and Mission Valley Formation, which also underlie the College Area sewer alignment, and were used to supplement the boring observations and data from the 2018 Twining investigation. Other sources of information include published geologic maps and technical papers, which are referenced throughout this letter and listed under “Select References.”

3.0 SITE RECONNAISSANCE

On June 17, 2021, two geologists from ENGEO performed a field reconnaissance of the existing conditions along accessible portions of the sewer alignment. The purpose of the reconnaissance was to observe ground conditions and identify surface features such as geologic exposures, presence of cobbles and boulders, and evidence of seeps, landslides, or slope instability that may affect the sewer replacement installation.

We note that the current condition of the sewer alignment site imposed a number of access constraints including heavy vegetation, fenced off private property, steep slopes, and areas of wet soft ground. Therefore, our observations are limited to portions of the alignment that we could readily access and observe. The key observations from our site reconnaissance for this project are:

1. Except as stated in Note 2 below, the steep slopes north of the alignment are primarily underlain by Stadium Conglomerate and/or Mission Valley Formation. A veneer of slope wash mantles the slope faces and masks the underlying formational soils. Based on our review of the previous consultant’s report (Twining 2018), along most of the alignment Mission Valley Formation overlies the Stadium Conglomerate above an elevation of approximately 305 feet. The geologic contact is generally horizontal. Faulting displaces the contact down in elevation near the western terminus of the project alignment.
2. Based on our field observations and our comparison of 1961 and 1979 topographic maps, the following slopes are comprised of fill soils: Station 0+00 to 5+50 (slope along and south of the alignment), Station 7+50 to 9+00 (roadway fill for 54th Street), Station 8+75 to 16+50 (fill slope along south side of alignment), approximate Station 14+50 to 16+50 (filled side canyon on north side of alignment), approximate Station 20+00 to 22+00 (filled side canyon on north side of alignment).
3. Occasional exposures of cobbles were observed along the north side of the access path from 54th Street east to approximate Station 12+00 during our site reconnaissance. No boulders were observed.

4. No evidence of deep-seated landslides/slope failure was observed. Occasional areas of minor downslope creep of surficial soils were observed.
5. Water was observed in the concrete drainage swale that exists along the north side of the alignment. Standing water and/or wet ground were observed along the toe of the slope on the access road from Station 12+00 to 17+00 and in the vegetated area south of Station 17+00 (outside of the concrete drainage swale).

Additional field notes, map, and photographs from our site reconnaissance are provided under Attachment A.

4.0 ALIGNMENT GEOLOGY

Our review of the geologic maps included the California Division of Mines and Geology Bulletin 200 map shown in Figure 2, and the California Geological Survey's (CGS) Regional Geologic Map No. 3 shown in Figure 3. These maps indicate that the sewer alignment is underlain by the Eocene-aged Stadium Conglomerate and the overlying Mission Valley Formation. These formations are exposed in limited areas of the slopes adjacent to the sewer alignment. These formations generally consist of well-consolidated conglomerate, sandstone, siltstone, and claystone. Strands of the La Nacion fault are also shown on the Figure 2 and Figure 3 maps crossing the existing sewer alignment near the west end (Station 3+51) of the sewer replacement alignment.

Based on our field reconnaissance, review of geologic maps, and review of subsurface information from the 2018 Twining Geotechnical report, the sewer alignment is underlain by the Stadium Conglomerate and Mission Valley Formation formational units, and surficial deposits consisting of alluvium, slope wash and fill soils. The formational units are generally flat-lying to slightly westerly dipping, but they may exhibit localized variability due to scouring, lensing, and cross-stratification. Adverse out-of-slope bedding conditions were not observed during our site visit and are not anticipated at the site. Brief descriptions of these units follow.

Stadium Conglomerate - The Eocene-aged Stadium Conglomerate is one of the formational units that underlies the sewer alignment. This unit is also exposed locally in slopes in the general site vicinity. The Stadium Conglomerate consists primarily of a gravel/cobble conglomerate with a slightly silty fine- to medium-grained sand matrix. Sandstone intervals also occur within the Stadium Conglomerate.

The clasts in the Stadium Conglomerate are hard, well rounded and are composed primarily of slightly metamorphosed rhyolite, dacite, and quartzite. The clasts generally range in size from gravel to cobble size, though larger boulder clasts can also occur. The clasts are very strong to extremely strong. The matrix for this unit exhibits varying degrees of cementation and can be described as ranging from weakly cemented to strongly cemented. The cemented concretionary horizons can be very strong to extremely strong. Cemented concretionary horizons are not predictable, and can be laterally and vertically extensive within the unit.

Mission Valley Formation - The Eocene-aged Mission Valley Formation is mapped as overlying the Stadium Conglomerate, and also appears partially interbedded (“interfingered”) with the Stadium Conglomerate. Surficial exposures of this unit were observed in the general site vicinity. The unit is exposed in the steep slope behind the homes on the south side of Maisel Way. The Mission Valley Formation is generally described as a light olive gray, silty fine- to medium-grained sandstone. A tongue of conglomerate in the Mission Valley Formation was encountered in the Twining Boring B-5. The Mission Valley Formation may also contain strongly cemented concretionary horizons.

Alluvium - Alluvium exists in the bottom of the canyon along the sewer alignment. Alluvium is generally described as sediment deposited by the action of streams, and in the project area, appears to be derived from the formational units exposed in the area (Stadium Conglomerate and Mission Valley Formation). The alluvium is described in the previous geotechnical report (Twining 2018) as generally consisting of loose to dense, silty sand to sandy gravel with cobbles up to 8 inches in diameter. The alluvium was reported to be encountered to depths of 5 to 13 feet below the ground surface at the locations of the previous geotechnical borings.

Slope Wash - Slope wash is generally described as a surficial veneer of soils on the faces of slopes. Slope wash also accumulates at the toes of slopes by the downward action of gravity and surface water flow on slopes. Slope wash is locally derived from the geologic units underlying the slopes. Slope wash soils are generally loose and subject to downslope migration. Surface water, groundwater, gravity and other factors erode soils and deposit the soils downslope resulting, with time, in a slope face with a gentler gradient. This slope flattening is a natural process and can be accelerated, or retarded, by various factors.

Fill - The existing sewer in the easement was constructed primarily by cut-and-cover trenching methods. Therefore, the surficial soils along the majority of the easement consist of fill soils. These fill soils were locally derived from the trench excavation and placed as backfill in the pipe trench. Fill soils also exist in the project area as a result of earthwork activities associated with the adjacent residential developments and improvements. The 54th Street roadway crossing of the canyon was created by the placement of fill soils. Fill soils are associated with the improvements constructed as part of the multi-family residential developments near the west end of the alignment.

5.0 TRENCHLESS INSTALLATION GEOTECHNICAL CONDITIONS

Based on the proposed sewer alignment and invert grades shown on the current design plans, we anticipate that the excavation face of trenchless installations between Stations 3+51 and 24+15 will encounter primarily (1) sandy and gravelly alluvial deposits, and (2) Stadium Conglomerate gravels and cobbles in a sandy matrix. These tunnel face materials are typically overlain by sandy to gravelly artificial fill ranging from about five to 15 feet thick (and over 20 feet thick beneath 54th Street) that are in some areas saturated near the ground surface due to ponded surface water within the drainage course.

Between Stations 24+15 and 25+93 the trenchless installation will encounter very dense sandy gravels and cobbles of the Mission Valley Formation. These materials are overlain by loose to dense silty sand artificial fill and sandy gravel alluvium ranging from about five to 15 feet thick.

Our segment-by-segment characterization of anticipated tunneling face conditions for the trenchless installation is discussed in further detail below.

Station 3+51 to 8+00

The trenchless sewer installation along this initial segment will encounter primarily alluvial deposits consisting of loose to dense sandy gravel. The geotechnical conditions for tunneling in this segment are as follows:

General Consistency: Sandy gravel alluvium that is loose to dense, and damp to moist. Scattered cobbles derived from Stadium Conglomerate also anticipated.

Clast size:	Typically less than one inch, but includes scattered coarse gravel (up to 3 inches) and scattered cobbles from 3 to 12 inches.
Cobble Clast Strength:	Scattered cobbles (derived from Stadium Conglomerate) typically between 20,000 and 50,000 psi (correlated from point load tests in Jacobs, 2004).
Tunnelman's Classification (Heuer, 1974):	Slow to Fast Raveling.
Groundwater:	No phreatic groundwater, however some perched water in overburden soils near the ground surface resulting from ponded surface runoff/drainage should be anticipated.
Overburden Conditions:	Sandy and gravelly alluvium and fill ranging from a few feet up to 15 feet thick; loose to dense; damp to wet; typically non-cohesive. A segment between about Station 6+00 and 8+00 will also traverse beneath the toe of a steep fill slope along the southerly alignment margin, and the toe of the fill slope for the crossing of 54th Street.

Station 8+00 To 17+00

The trenchless installation along this segment will encounter primarily Stadium Conglomerate consisting of a dense to very dense gravel/cobble conglomerate within a silty to clayey sand matrix. The geotechnical conditions for tunneling in this segment are as follows:

General Consistency: Concentrated gravel/cobble conglomerate (anticipated average clast size in the cobble range) in a weakly cemented silty- to clayey-sand matrix; may also include dispersed lenses of cemented sandstone within the matrix. The clasts are predominantly semi-spherical, well rounded, slightly metamorphized rhyolite, but also can include other rock types such as quartzite, dacite, and granite.

Clast size:	Typically 3 to 8 inches; includes gravel size clasts (<3 inches), scattered large cobbles up to 12 inches, and occasional boulders that are commonly (about 75 percent) in the 12 to 16 inch range (Boone, et al., 2001); larger boulders are also possible but are much less frequent.
Clast Strength:	Cobbles and boulders in the Stadium Conglomerate are typically between 20,000 and 50,000 psi (correlated from point load tests in Jacobs, 2004).
Tunnelman's Classification (Heuer, 1974):	Firm to Slow Raveling.
Groundwater:	No phreatic groundwater, possible perched water in overburden soils near the ground surface resulting from ponded surface runoff/drainage.
Overburden Conditions:	Sandy and gravelly alluvium and fill typically ranging from about 5 to 10 feet thick, but up to about 25 feet thick beneath 54 th Street; overburden materials are typically non-cohesive and range from loose to dense; typically damp but can

be wet near the ground surface where ponded surface water is present in the drainage channel. Alignment also traverses beneath the toe of the southerly fill slope within the existing canyon.

Station 17+00 To 24+15

The trenchless sewer installation along this segment will encounter primarily alluvial deposits consisting of dense silty sand to sandy gravel. The geotechnical conditions for tunneling in this segment are as follows:

General Consistency: Silty sand to sandy gravel that is typically dense (with loose to medium dense pockets) and damp to moist. Scattered cobbles derived from Stadium Conglomerate also anticipated.

Clast size: Typically less than 1 inch, but includes coarse gravel (up to 3 inches) and scattered cobbles from 3 to 12 inches.

Cobble Clast Strength: Not Applicable
Scattered cobbles (derived from Stadium Conglomerate) typically between 20,000 and 50,000 psi (correlated from point load tests in Jacobs, 2004).

Tunnelman's Classification (Heuer, 1974): Slow to Fast Raveling.

Groundwater: No phreatic groundwater, however some perched water in overburden soils near the ground surface resulting from ponded surface runoff/drainage should be anticipated.

Overburden Conditions: Sandy and gravelly alluvium and fill ranging from about 5 to 10 feet thick; typically ranging from loose to dense, damp to wet, and non-cohesive. After about station 21+50, the alignment traverses beneath the narrowing existing swale beneath the toe of adjacent steep northerly and southerly slopes.

Station 24+15 to 25+93 (end of trenchless installation)

The trenchless sewer installation along this segment will encounter dense sandy to gravelly alluvium initially, then transitioning to very dense sandy gravel with cobbles associated with the Mission Valley Formation. The geotechnical conditions for tunneling in this segment are described as follows:

General Consistency: Sandy gravel that is typically dense and damp. Cobbles also anticipated within Mission Valley Formation.

Clast size: Typically about 1 to 3 inches, with cobbles from 3 to 12 inches.

Cobble Clast Strength: Very strong cobbles anticipated.

Tunnelman's
Classification
(Heuer, 1974): Firm to Slow Raveling.

Groundwater: No phreatic groundwater. Perched water not anticipated.

Overburden
Conditions: Loose silty sand fill underlain by dense sandy to gravelly alluvium; typically damp and non-cohesive; total thickness ranging from about five to 20 feet. Alignment traverses a narrow easement between two residential homes.

6.0 GROUNDWATER CONDITIONS

As stated in the previous geotechnical report, the static, regional groundwater table may be in excess of 100 feet below the existing ground surface. No groundwater was observed in the five exploratory borings drilled during the 2018 subsurface investigation.

Surface water was observed in portions of the concrete drainage channel adjacent to the sewer alignment, both to the east and west of 54th Street. Surface water was also observed outside the concrete channel in the canyon near the east end of Maisel Way. Indications of surface water (and possibly perched groundwater) included visible ponding, wet soils and dense vegetative growth.

7.0 TRENCHLESS INSTALLATION METHODS

Trenchless technologies are available for pipeline installation including, but not limited to, microtunneling, auger jack-and-bore, and horizontal directional drilling (HDD). The trenchless technology selected for the sewer installation should maintain line and grade for the sewer to within desired tolerances and should avoid impacts to overlying ground surfaces. From a geotechnical standpoint, the key alignment constraints that should be considered in the selection of an appropriate trenchless installation method include:

- Tunneling under relatively shallow (at times less than 5 feet) non-cohesive overburden soil.
- Tunneling beneath, and in close proximity, to the toe of very steep slopes.
- Tunneling adjacent, and in close proximity, to residential properties/structures.
- Tunneling through scattered high-strength cobbles present in sandy/gravelly alluvial deposits.
- Tunneling through concentrated gravel/cobble conglomerate (with possible scattered boulders) containing very strong to extremely strong clasts (over 30,000 psi) and potentially extremely strong cemented matrix and concretionary layers.

An overview of the trenchless installation methods under consideration for the project are as follows.

Microtunneling – is a trenchless technique used to construct small diameter non-man-entry tunnels utilizing a microtunnel boring machine (MTBM) that is operated remotely. Microtunnel boring machines are very similar to normal tunnel boring machines (TBMs), but on a smaller scale, typically ranging from 2 to 5 feet in diameter and are not manned at the tunnel face. Usually, the operator controls the machine remotely from the ground surface and receives continuous feedback about the machine's location, orientation and hydraulic devices. Pipes/casings are typically pushed by means of pipe jacking from the launching pit behind the MTBM as it advances.

MTBMs utilize pressurized slurry to support the tunnel face and to circulate/remove the tunnel spoils back to the launch pit. MTBM's crushing chamber is typically capable of ingesting and crushing cobble and boulder size material with unconfined compressive strengths of up to 30,000 psi, provided they are between 25 and 30 percent of the MTBM face diameter (Mathy et al., 2003). Cobbles and boulders larger than about 25 to 30 percent of the face diameter of the MTBM can stop the MTBM and could require excavation of a shaft down to the MTBM for removal of the "oversize" material, or removal of the MTBM if damaged. Concentrations of high strength cobbles can also cause significant wear on the MTBM.

Horizontal Directional Drilling (HDD) - is a trenchless method of installing underground utilities lines in a relatively shallow arc or radius along a prescribed underground path using a drilling rig at the ground surface. HDD is generally accomplished by (1) drilling a small diameter pilot hole along the utility path from one surface point to another, (2) subsequently enlarging the diameter to facilitate the installation of the desired pipeline, and (3) pulling the pipeline through the enlarged hole. HDD is suitable for a variety of soil conditions including clay, silt, sand, and rock. Problematic soil conditions include coarse gravels, cobbles, and boulders, all which can obstruct the boring and/or significantly impact the control of line and grade. Cobbles and boulders can deflect the pilot bore from being installed on proper line and grade and can also obstruct the reaming of the pilot bore. Gravelly materials are also prone to collapse within an open HDD borehole.

Horizontal Auger Jack-and-Bore - is a method of trenchless excavation that uses a rotating helical auger shaft to extract soil while advancing a cutter head along a more or less level line. The drill hole is continuously supported by a casing that is pipe-jacked in sections as the auger advances. The spiral auger removes the spoils through the casing and back to the jacking pit as the drilling operation progresses. Once the boring reaches the receiving pit, the auger is removed, leaving only the casing.

Auger boring methods allow flexibility of a wide variety of tooling as the augers and cutting head can be retracted during boring for repairs or replacement with alternative tools. Casing the auger bore, coupled with limiting the advancement of the cutter head beyond the casing, provides effective mechanical stabilization against collapse or loss of material at the tunnel face. Similar to microtunneling, the bore diameter should be at least three times the anticipated maximum clast size to facilitate ingesting and removal of the material through the auger. Horizontal auger bores can also be sized to facilitate manual access to the tunnel face to clear obstructions or manually breakdown over-sized clasts or cemented zones.

8.0 PREFERRED TRENCHLESS METHOD

Given the geotechnical constraints of the proposed sewer replacement alignment listed in Section 7.0, we consider horizontal auger jack-and-bore to be the preferred trenchless installation method for the proposed College Area sewer replacement. The preference, in our opinion, of the auger jack-and-bore relative to each of the geotechnical constraints identified above is further elaborated below.

- 1. Shallow non-cohesive overburden soils.** Extensive portions of the sewer replacement will be installed at relatively shallow depths with very shallow overburden soil cover of 5 feet or less. These overburden soils are typically granular and cohesionless in nature, and in some locations, may be further loosened/softened by ponded drainage channel water at the ground surface. Methods such as microtunneling or HDD, which both utilized pressurized slurry in the drilling/tunneling process, can hydro-fracture the ground causing significant ground disturbance

(i.e. heaving and/or settlement) and slurry to flow out and onto the ground surface. Such hydro-fracturing can also weaken the near-surface soils and destabilize adjacent slopes and foundations of surrounding residential buildings and structures (e.g. homes, retaining walls, etc.). Auger jack-and-bore method does not rely on pressurized slurry to stabilize the tunnel face or to remove tunnel spoils and does not impose a risk of hydro-fracturing. The auger jack-and-bore is continuously cased to provide mechanical stabilization of the bore as it advances. Furthermore, provisions can be made to limit the advancement of the cutting head beyond the casing so that fast raveling overburden soils (or unforeseen flowing soils) do not flow into the casing.

- 2. Tunneling beneath, and in close proximity to, the toe of very steep slopes.** In addition to the shallow overburden conditions noted above, extensive portions of the sewer replacement alignment will traverse beneath, or in close proximity to, the toe of steep native hillside slopes, cut slopes, and fill slopes that bound the northern and southern edges of the existing canyon. As noted above, auger jack-and-bore installation methods can provide effective mechanical stabilization of the tunnel bore by means of continuous casing to preclude destabilization of adjacent ground slopes. Microtunneling and HDD methods impose a risk of destabilizing the overlying toe of slopes if hydro-fracturing or hole collapse occurs.
- 3. Tunneling adjacent, and in close proximity to, residential properties.** Extensive portions of the sewer replacement alignment will traverse adjacent to residential properties. As noted above, auger jack-and-bore installation methods can provide effective mechanical stabilization of the tunnel bore by means of continuous casing to preclude undermining and/or settlement of residential foundations, retaining walls footings, etc. Provisions can be made to limit the advancement of the cutting head beyond the casing to further minimize the risk of tunnel face instability, or even maintain the cutting head behind the lead edge of the casing to form a continuous soil plug.
- 4. Tunneling through scattered high-strength cobbles in sandy/gravelly alluvial deposits.** Auger jack-and-bore can excavate and remove scattered cobbles exposed in the tunnel face provided that the bore diameter is adequately sized such that it is at least about 3times the diameter of the largest anticipated cobble clast (which allows their removal and transport through the auger back to the jacking pit). MTBMs can also typically ingest and crush cobbles up to one-third of the bore diameter and no more than about 30,000 psi in strength. However, since cobbles associated with Stadium Conglomerate typically have strengths in excess of 30,000 psi, MTBMs may be obstructed by these clasts or be subjected to excessive wear and/or damage. Gravelly soils with cobbles can impose significant difficulties for the HDD method by obstructing the drilling path of the pilot hole and causing hole instability.
- 5. Tunneling through concentrated gravel/cobble conglomerate (with possible scattered boulders) containing very strong to extremely strong clasts (over 30,000 psi).** Perhaps the most challenging segment of the sewer replacement will involve tunneling through very dense conglomerate with concentrated coarse gravels and cobbles that are very to extremely strong (approximately 20,000 to 50,000 psi compressive strength). The conglomerate may also contain scattered boulder size clasts (typically between 12 and 16 inches). These conglomerates are anticipated within Stadium Conglomerate between approximate stations 8+00 and 17+00, and within Mission Valley Formation between approximate stations 24+15 and 25+93.

HDD trenchless methods are generally considered impractical in cobble-rich ground conditions, as highly concentrated cobbles can obstruct or deflect the pilot hole boring path and significantly impact the control of line and grade.

As previously discussed, MTBMs have some capability to break down and ingest cobble-sized clasts, but the strength of the cobble clasts in the Stadium Conglomerate and Mission Valley Formation exceed the upper limit of what an MTBM can routinely handle, thereby increasing the risk of obstruction or excessive mechanical wear or breakdown. Furthermore, if the MTBM becomes obstructed, stuck, or mechanically breaks down, it can only be removed by excavating a “rescue pit” from the ground surface.

Auger jack-and-bore, if properly sized (i.e. at least 3times the diameter of the largest anticipated clasts), can facilitate the removal of cobbles from the tunnel face and transport them through the augers back to the jacking pit for disposal. This method also offers a distinct advantage of being sized (typically 48-inch diameter minimum) to allow man-entry and access to the tunnel face, if necessary, to manually break down and remove obstructions such as boulder-sized clasts and/or highly cemented conglomerate matrix zones.

The main limitations of the auger jack-and-bore method for the proposed sewer replacement are related to available torque and steering capabilities of the auger bore and available jacking forces to advance the casing. An auger boring machine uses a large motor located in the jacking pit to turn the continuous flight augers that remove spoil through the casing, and also rotate the cutting head. As the bore is advanced additional auger sections are added inside the casing, increasing the required torque to continue rotating the entire system. Additionally, auger jack-and-bore has very limited steering capability and relies mainly on the setup and positioning of the boring and jacking apparatus within the jacking pit to establish the line and grade of the bore. These limitations could necessitate limiting/shortening the length of each drive run (i.e. distance between jacking pits) to maintain adequate torque and jacking forces, and keep line and grade of the bore within desired tolerances. Auger bore runs (i.e. distance between jacking and receiving pits) of about 300 feet maximum are typical to facilitate drilling, jacking of casing, maintenance of line and grade, and accommodation of manual entry and access to the tunneling face.

9.0 SLOPE/GROUND STABILITY CONSIDERATIONS

The trenchless segment of the College Area sewer replacement traverses from west to east within a natural topographic canyon drainage that is bound by relatively steep up-sloping ground extending to the north and to the south of the alignment. The slopes comprise (1) native hillsides (which may include some historical cutback grading) and (2) fill slopes historically constructed to fill in side-canyons and level out lots during grading for the College Glen residential development. These slopes vary in height and grade as well as their offset of the toe from the sewer alignment. In most cases the crest of the slopes are occupied by residential buildings and/or structures (e.g. homes, retaining walls, decks, swimming pools, etc.), and thus the maintenance of slope stability during the trenchless installation is critical. A general summary breakdown of the slope conditions adjacent to relevant trenchless sewer alignment segments is shown in the following Table 9.0-1.

TABLE 9.0-1: Summary of Surface Slopes Adjacent to Proposed Replacement Sewer Alignment ¹

ALIGNMENT STATION SEGMENT	UPSLOPE DIRECTION RELATIVE TO ALIGNMENT	APPROX. GROUND SLOPE ² (HOR:VERT)	APPROX. SLOPE HEIGHT ² (FEET)	APPROX. TOE SETBACK ^{2, 3} (FEET)	SLOPE TYPE	SLOPE MATERIAL ^{4, 5, 6}
1+00 to 3+51	Northerly	1½ : 1	50	15	Native Hillside	Tmv over Tst
	Southerly	1 : 1	5	5	Fill Slope	Fill
4+25 to 5+80	Northerly	2 : 1	50	50	Native Hillside	Tmv over Tst
	Southerly	2½ : 1	>100	35	Native Hillside	Tst
5+80 to 7+50	Northerly	1½ : 1	50	30	Native Hillside	Tst
	Southerly	1 : 1	25	(-8)	Fill Slope	Fill
9+10 to 14+00	Northerly	2 : 1	40	30	Native Hillside	Tst
	Southerly	2 : 1	10 to 15	(-10)	Fill Slope	Fill
14+00 to 16+50	Northerly	5 : 1	15	5	Fill Slope	Fill
	Southerly	2 : 1	10	(-5)	Fill Slope	Fill
16+50 to 19+80	Northerly	2 : 1	35	30 to 45	Native Hillside	Tst
	Southerly	2 : 1	>100	35	Native Hillside	Tmv over Tst
19+80 to 22+40	Northerly	1½ to 2 : 1	30	20 to 40	Fill Slope	Fill
	Southerly	2 : 1	>100	5 to 10	Native Hillside	Tmv over Tst
22+40 to 24+15	Northerly	2 : 1	30	15	Native Hillside	Tmv over Tst
	Southerly	3 : 1	>100	0 to 10	Native Hillside	Tmv over Tst

1. Slope characteristics summarized are general in nature and based on site reconnaissance observations and review of recent and historical topographic maps and geologic maps.
2. Slope inclinations, slope heights, and toe setbacks are approximate and scaled from recent and historical topographic maps.
3. (-) negative number indicates that replacement sewer alignment traverses inward beneath the toe of slope.
4. Tmv = Mission Valley Formation; Tst = Stadium Conglomerate.
5. Slopes comprising Tmv and Tst typically are overlain at the surface by a veneer of slope wash soil that thickens near the toe of slope.
6. Consistency of fill soil not investigated, but assumed to be derived locally from cuts within Tmv and Tst.

Based on our review of the slope conditions outlined in Table 9-1 relative to the trenchless installation line and grade and anticipated tunnel face geotechnical conditions, we provide the following assessment regarding the trenchless installation impact on the stability of adjacent slopes:

1. Tunneling through Alluvium (Stations 3+51-to-8+00 and Stations 17+00-to-24+15). As described in Section 6.0, the initial trenchless sewer replacement segment (Station 3+51–to-8+00) and a later trenchless segment (Station 17+00-to-24+15) will tunnel through alluvial deposits confined within the bottom of the existing canyon drainage swale. Overburden soil cover along these segments range from just a few feet up to about fifteen feet thick (where undercrossing a fill slopes). Where the trenchless installation tunnels through alluvium within the existing drainage swale, we anticipate that any ground instability caused by tunnel borehole collapse or loss of material through the tunnel face will be confined to within the local overburden soils. We do not anticipate that ground failures within the alluvium will extend up, or cause instability to, the native hillside slopes identified in Table 9-1. However, where the alignment

traverses near (less than 10 feet) or beneath fill slopes identified in Table 9-1, ground failure propagation due to an unstable tunnel could undermine or weaken the toe of the fill slope causing slope instability. As discussed in Section 8.1, implementing an auger jack-and-bore trenchless installation method in these areas can effectively mitigate tunnel bore and face instability by mechanical support and sealing of the bore provided by the casing and auger/cutter head facing. Provisions can also be made to limit, or prohibit, extending the boring cutter head ahead of the casing to further seal the tunneling system and reduce the risk of ground failure.

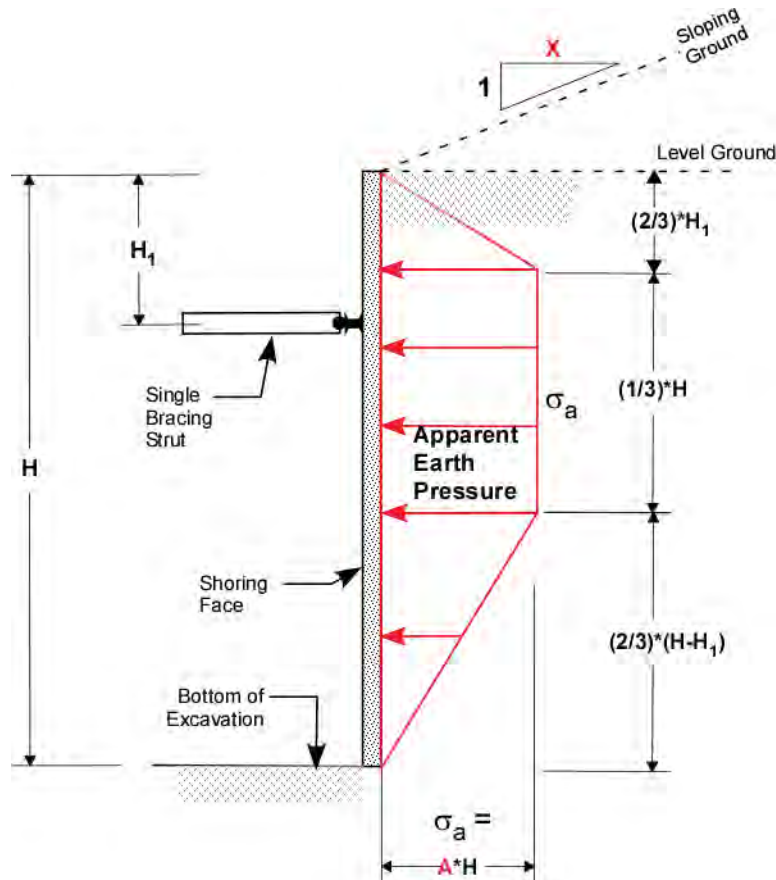
2. **Tunneling through Stadium Conglomerate (Station 8+00 to 17+00).** As described in Section 6.0, the trenchless segment of the sewer replacement approximately between Stations 8+00 and 17+00 will tunnel through very dense Stadium Conglomerate typically consisting of concentrated high-strength gravel and cobbles in a weakly cemented silty- to clayey-sand matrix. Overburden soil cover along this segment ranges from just a few feet up to about fifteen feet thick (where undercrossing a raised parking lot and a fill slope). We classify the tunnel conditions as “firm to slow raveling” based on the Tunnelman’s Classification system (Heuer, 1974) and expect tunneling in this segment to be relatively stable, particularly when tunneled with the preferred auger jack-and-bore method. Any raveling of conglomerate at the tunneling face should remain localized; we do not consider the Stadium Conglomerate to be prone to propagation of far-reaching shear planes that could cause deep-seated failures of the surrounding native slopes. However, where the alignment traverses near (less than 10 feet) or beneath fill slopes identified in Table 9-1, even minor raveling of the Stadium Conglomerate at the tunnel face could potentially weaken the toe of the fill slope. As discussed above, implementing an auger jack-and-bore trenchless installation method in these areas can effectively mitigate tunnel instability by mechanical support and sealing of the bore provided by the casing and auger/cutter head facing. Provisions can also be made to limit, or prohibit, extending the boring cutter head ahead of the casing to further seal the tunneling system and reduce the risk of ground failure.
3. **Tunneling through Mission Valley Formation (Station 24+15 to 25+93).** The final trenchless segment of the sewer replacement approximately between Station 8+00 and 17+00 will tunnel through very dense gravel/cobble conglomerate associated with the Mission Valley Formation. The orientation of the tunneling in this segment is perpendicular to the toe-of-slope line, making it less susceptible to undermining the toe (i.e. destabilizing the passive wedge of the slope). We classify the tunnel conditions in Mission Valley Formation as “firm to slow raveling” based on the Tunnelman’s Classification system (Heuer, 1974) and expect tunneling in this segment to be relatively stable, particularly when tunneled with the preferred auger jack-and-bore method. Any raveling of Mission Valley Formation conglomerate at the tunneling face should remain localized, although the proposed invert gradient of nearly 10% in this segment may slightly increase the rate of raveling. We do not consider the Mission Valley Formation to be prone to propagation of far-reaching shear planes that could cause deep-seated failures of the surrounding native slopes.

10.0 EXCAVATION AND SHORING CONSIDERATIONS

The trenchless installation of the sewer replacement will include shored excavations spaced along the alignment for the construction of launching/jacking pits. Many of these shored excavations will be immediately adjacent to steeply sloping ground. We expect that shoring for jacking and receiving pits will require internal bracing to restrain the shoring walls; tiebacks are likely impractical or unfeasible given the site constraints. To supplement the shoring recommendations in the previous geotechnical report, we provide our recommended design earth pressures for jacking/receiving pit excavations considering single-braced and multiple-braced restrained shoring adjacent to sloping

ground. For a single-braced shoring, the recommended earth pressure distribution is shown in the following Exhibit 10.0-1.

EXHIBIT 10.0-1: Lateral Earth Pressure Diagram for Single-Braced Shoring Wall



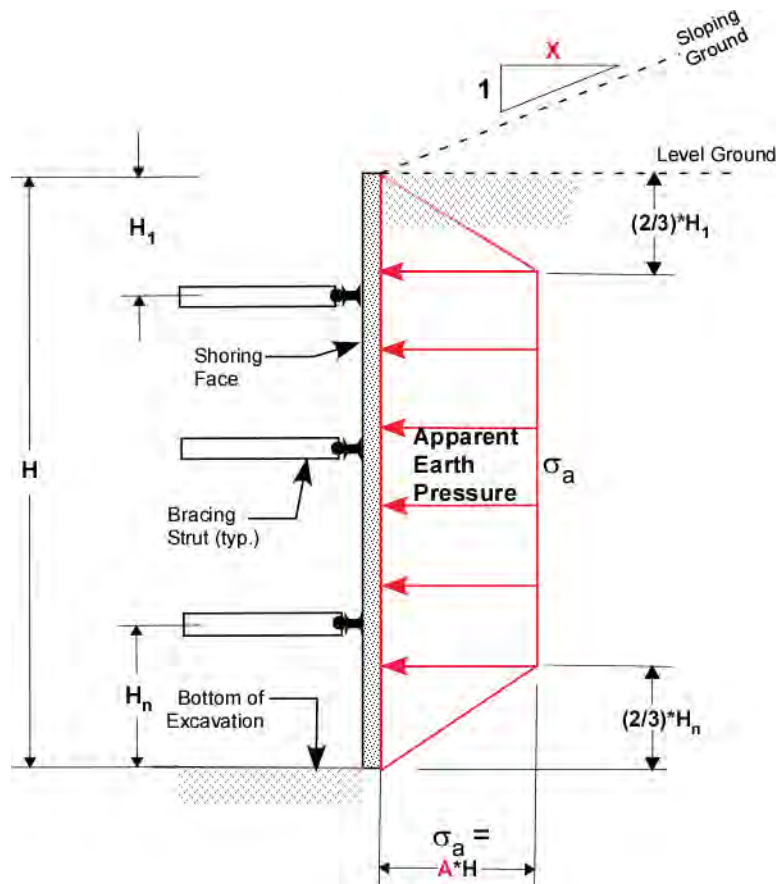
The magnitude of “A*H” for the determination of the maximum wall pressure is a function of the ground slope “X horizontal:1 vertical”, where the relationship between “X” and “A” are provided in the following Table 10.0-1.

TABLE 10.0-1: Maximum Lateral Earth Pressure vs Ground Slope for Single-Braced Shoring

GROUND SLOPE X:1	“A” FACTOR (where $\sigma_a = A * H$)
4:1 (or flatter)	39
3:1	43
2:1	49
1½:1	64

For a multi-braced shoring, the recommended earth pressure distribution is shown in the following Exhibit 10.0-2.

EXHIBIT 10.0-2: Lateral Earth Pressure Diagram for Multi-Braced Shoring Wall



The relationship between “X” and “A” for a multi-braced shoring are provided in the following Table 10.0-2.

TABLE 10.0-2: Maximum Lateral Earth Pressure vs Ground Slope for Multi-Braced Shoring

GROUND SLOPE X:1	“A” FACTOR (where $\sigma_a = A*H$)
4:1 (or flatter)	30
3:1	35
2:1	40
1½:1	50

11.0 CLOSURE AND LIMITATIONS


This letter report is prepared for use by the Psomas design team and presents a broad characterization of sewer alignment subsurface conditions based on observations and data from widely spaced exploratory borings (by Twining) and other relevant geotechnical explorations in the region. It is not a construction document and should not be construed as such, and is not intended

for establishing geotechnical baselines for the sewer replacement trenchless construction. This letter report should only be provided to a construction contractor as a reference document.

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Sincerely,

ENGEO Incorporated


Joseph N. Seibold, GE
jns/st/jt/jg/ar




Susan E. Tanges, CEG



Attachments: Selected References
Figures
Attachment A – Site Reconnaissance Notes, Map, and Photos
Attachment B – 2018 Twining Geotechnical Report

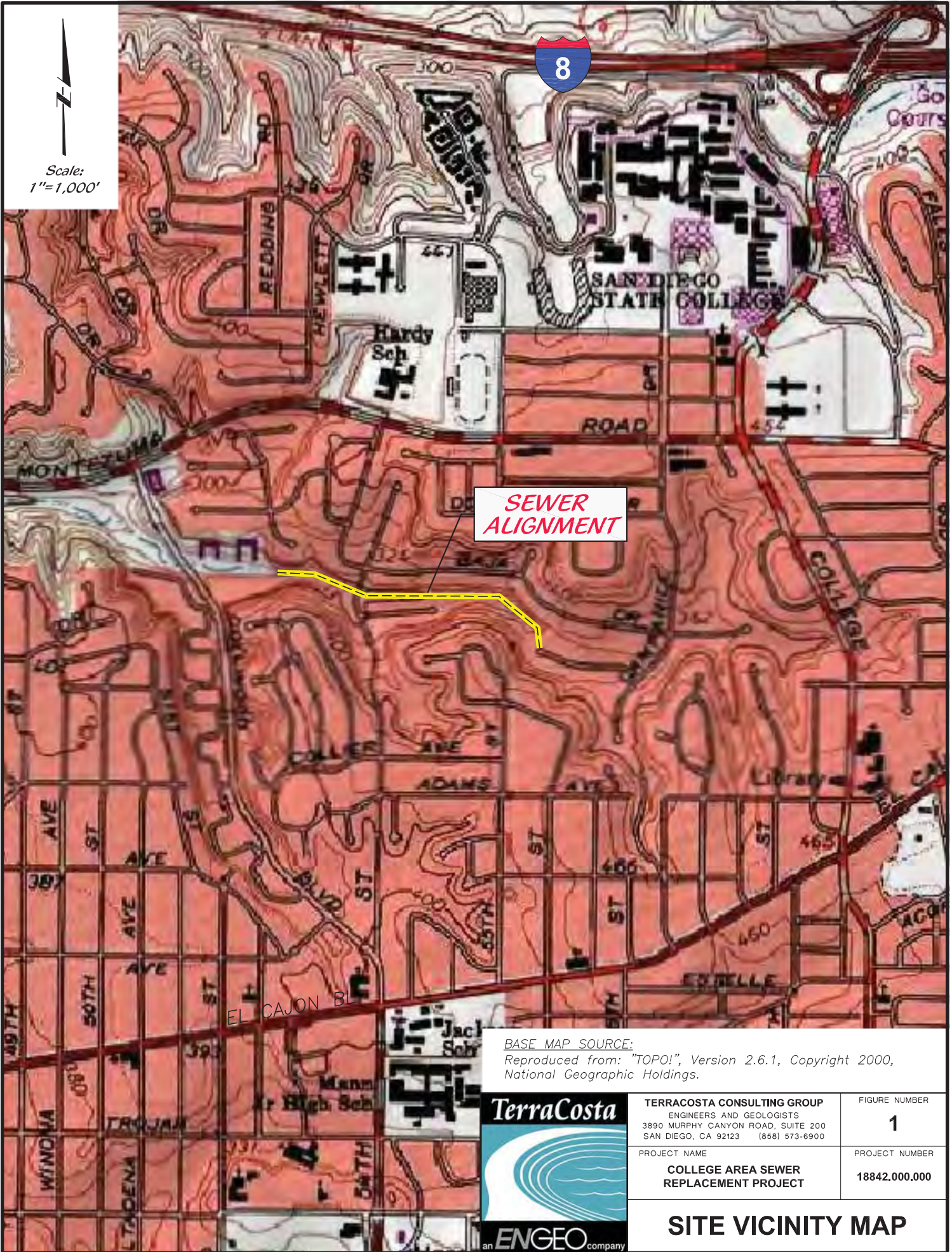
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August 16, 2021

FIGURES

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August 16, 2021



SEWER ALIGNMENT

BASE MAP SOURCE:
 Reproduced from: "TOPO!", Version 2.6.1, Copyright 2000,
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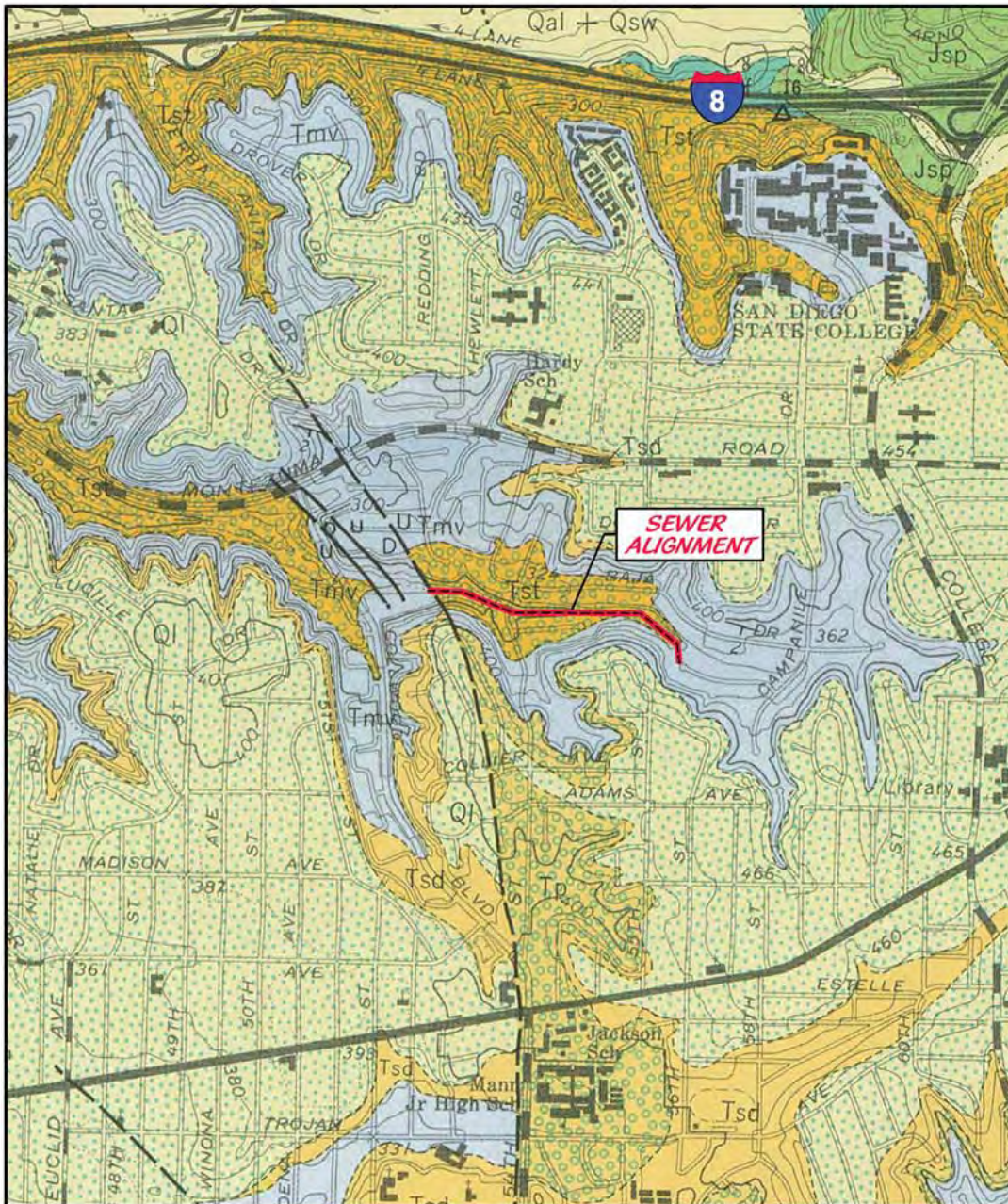
TERRACOSTA CONSULTING GROUP
 ENGINEERS AND GEOLOGISTS
 3890 MURPHY CANYON ROAD, SUITE 200
 SAN DIEGO, CA 92123 (858) 573-6900

PROJECT NAME
COLLEGE AREA SEWER REPLACEMENT PROJECT

FIGURE NUMBER
1

PROJECT NUMBER
18842.000.000

SITE VICINITY MAP



EXPLANATION

QUATERNARY	Holocene		Alluvium and Slopewash <i>Qal, Slopewash; Qal & Qsw, Alluvium and Slopewash undifferentiated.</i>
			Landslide deposits
QUATERNARY	Pleistocene		Stream-terrace deposits
			Lindavista Formation
TERTIARY	Pliocene		San Diego Formation
			Poway Group <i>Tp, Pomerado Conglomerate; Tms, Mission Valley Formation; Tst, Stadium Conglomerate. Conglomerate marked by circle pattern.</i>
TERTIARY	Eocene		
		JURASSIC CRETACEOUS	
	Santiago Peak Volcanics		

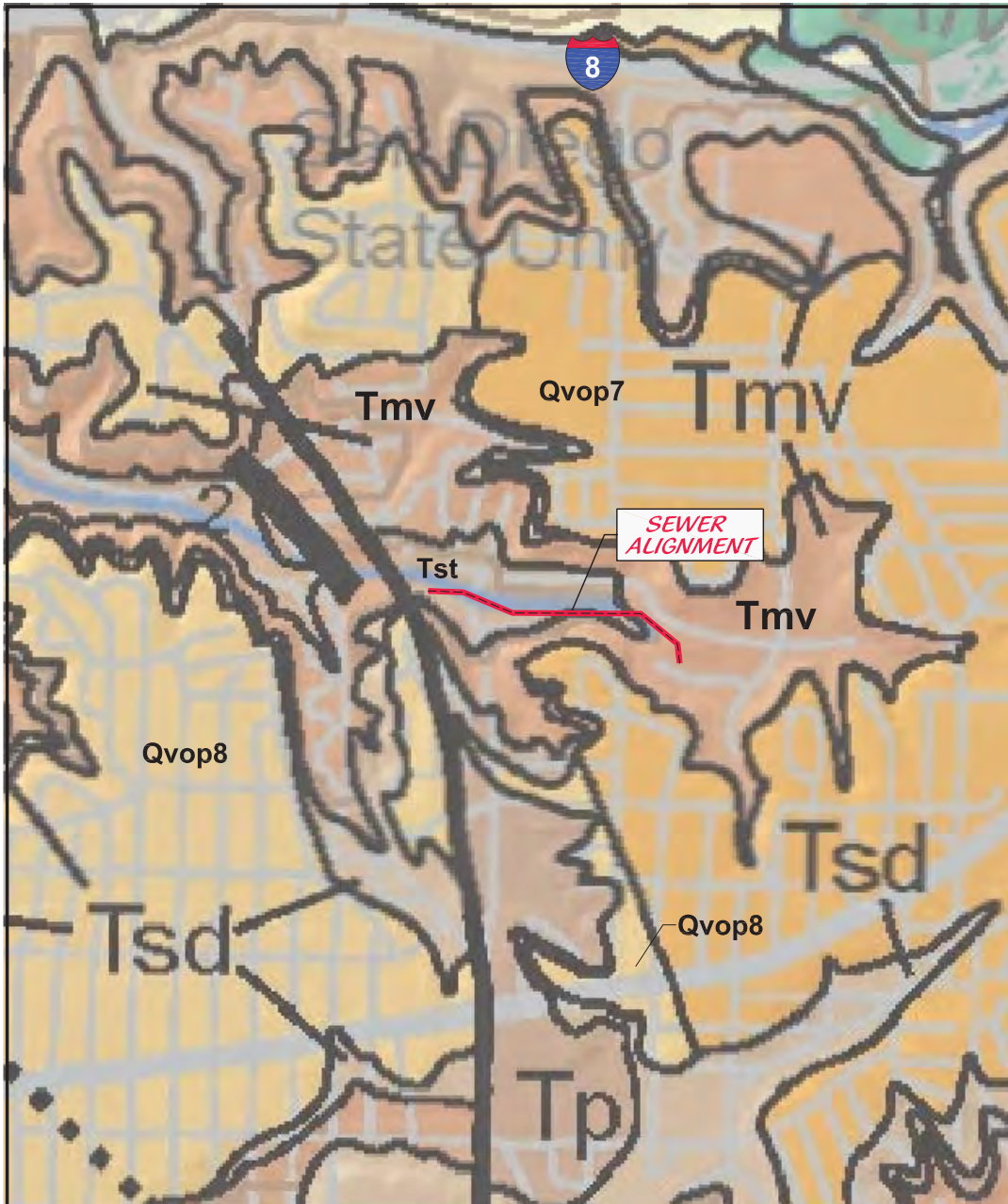
SYMBOLS

- Contact
(dashed where approximately located; dotted where concealed)
- Fault, showing dip
(dashed where approximately located; dotted where concealed; U, upthrown side; D, downthrown side).
- Strike and dip of bedding in sedimentary rocks.
- Strike and dip of bedding in metasedimentary rocks.
- Landslide with direction of movement indicated by arrows.

Scale:
1"=1,000'

BASE MAP SOURCE:
Adapted from a portion of "Geology of the San Diego Metropolitan Area, California (Bulletin 200), La Mesa Quadrangle," by Michael P. Kennedy, 1975.

	TERRACOSTA CONSULTING GROUP ENGINEERS AND GEOLOGISTS 3890 MURPHY CANYON ROAD, SUITE 200 SAN DIEGO, CA 92123 (858) 513-6900	FIGURE NUMBER 2
	PROJECT NAME COLLEGE AREA SEWER REPLACEMENT PROJECT	PROJECT NUMBER 18842.000.000
GEOLOGIC MAP (BULLETIN 200) & LEGEND		

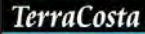



GEOLOGIC UNITS

- Qya Young alluvial flood-plain deposits (Holocene and late Pleistocene) - Poorly consolidated, poorly sorted, permeable flood-plain deposits of sandy, silty or clay-bearing alluvium.
- Qvop8 Very old paralic deposits, Unit 8 (middle to early Pleistocene) - Poorly sorted, moderately permeable, reddish-brown, interfingering strandline, beach, estuarine and colluvial deposits composed of siltstone, sandstone and conglomerate. These deposits rest on the 123-125 m Tierra Santa terrace.
- Qvop7 Very old paralic deposits, Unit 7 (middle to early Pleistocene) - Poorly sorted, moderately permeable, reddish-brown, interfingering strandline, beach, estuarine and colluvial deposits composed of siltstone, sandstone and conglomerate. These deposits rest on the 129-131 m Mira Mesa terrace.
- Tsd San Diego Formation (early Pleistocene and late Pliocene) -
- Tsdss Predominantly yellowish-brown and gray, fine- to medium-grained,
- Tsdcg poorly indurated fossiliferous marine sandstone (Tsdss) and reddish-brown, transitional marine and nonmarine pebble and cobble conglomerate (Tsdcg). In part of the area the sandstone and conglomerate are undivided (Tsd). The San Diego Formation consists of approximately 75 m of marine and 9 m of nonmarine sedimentary rocks (Demere, 1983). These rocks and their associated marine fossils were first described by Dall (1898) and given the name "San Diego Beds." The name San Diego Formation was given to these rocks in an extensive biostratigraphic study by Arnold (1903). Several comprehensive studies of the marine invertebrate fossil faunas of the San Diego Formation have been published subsequently by Grant and Gale (1931) and Hertlein and Grant (1944, 1960, 1972). Most recently Demere (1982, 1983) presents a concise discussion on the history of work, geologic setting, biostratigraphy and age of the San Diego Formation
- Tmv Mission Valley Formation (middle Eocene) - Hard, relatively horizontally stratified light-olive-gray, fine- to medium-grained marine and non-marine sandy to clayey siltstones.
- Tst Stadium Conglomerate (middle Eocene) - Very dense, partially cemented conglomeratic sandstone to cobble conglomerate with a dark-yellowish coarse-grained sand matrix.

SOURCE:
 "Geologic Map of the San Diego 30'x60' Quadrangle, California,"
 compiled by Michael P. Kennedy and Siang S. Tan, 2008.
 California Geological Survey, Regional Geologic Map No. 3 (online).

Scale:
 1"=1,000'

 	TERRACOSTA CONSULTING GROUP ENGINEERS AND GEOLOGISTS 3890 MURPHY CANYON ROAD, SUITE 200 SAN DIEGO, CA 92123 (858) 573-6900	FIGURE NUMBER 3
	PROJECT NAME COLLEGE AREA SEWER REPLACEMENT PROJECT	PROJECT NUMBER 18842.000.000
REGIONAL GEOLOGIC MAP & LEGEND		

ATTACHMENT A

**Site Reconnaissance Field Notes
Figure 1 – Field Observations and Photo Location Map
Site Reconnaissance Photos**

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SITE RECONNAISSANCE FIELD NOTES

On June 17, 2021, two geologists from ENGEO performed a field reconnaissance of the existing conditions along accessible portions of the pipeline alignment. Brief field comments and associated locations of the attached field photos are shown on the attached Figure A-1. Following is a summary of our field observations:

From Collwood Boulevard to approx. Station 1+00 (approximately 630 feet east of Collwood Boulevard):

The pipeline in this stretch is not planned for replacement per the project plans. The pipeline alignment extends roughly east-west between two multi-family residential developments. There is a Keystone-like block retaining wall along the north side of the alignment (see photo 1). Information regarding the construction of this wall and the depth of its footing was not provided for our review. An asphaltic concrete (AC) driveway exists at the top of the south-facing wall. A crack in the AC parallel to the top of the wall was observed (see photo 2). An AC driveway near the bottom of the retaining wall for the southern multi-family residential property is located to the south, adjacent to the pipeline alignment.

Station 1+00 to Station 4+20:

The pipeline alignment is along the south side of an existing concrete drainage channel. The concrete channel is located at the toe of a slope that descends from a parking lot for the southern multi-family residential development. This slope is likely comprised of locally derived fill soils placed during grading of this development. The south-facing slope descending from the north to the concrete channel in the canyon bottom appears to be underlain primarily by Mission Valley Formation (see photo 3). The La Nacion fault is mapped as crossing the alignment in the approximate area of Station 4+00, but the fault was not observed in the field.

Station 4+20 to Station 5+50:

The pipeline alignment extends southerly of the concrete drainage channel through a vegetated area east of the locked gate at the east end of the parking lot. This area was not accessed by our geologists. The vegetation masks the soils but this area is likely underlain by fill soils associated with previous grading for the residential development (see Photo 5). The previous consultant drilled an exploratory boring in this area (B-1).

Station 5+50 to Station 7+50:

The concrete drainage channel in this area is fairly wide. Surface water was observed in the channel. The adjacent slopes are heavily vegetated and were not accessed by our geologists. The vegetation masks the soils but it appears that the slopes may be underlain by Stadium Conglomerate.

Station 7+50 to Station 9+00:

The surficial soil exposed in this section of the pipeline alignment are fill soils placed for the 54th Street roadway (see Photos 7 and 8). The roadway embankments descend from the east and west sides of 54th Street to the canyon bottom.

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Station 9+00 to Station 17+00:

The pipeline alignment is located along the toe of a slope on the south side of the concrete drainage channel that exists in the canyon bottom. Our geologists accessed the canyon area along the existing utility easement on the north side of the concrete drainage channel. The slope on the south side of the channel descends from the rear yards of residential properties along Maisel Way and has a maximum height of approximately 10 feet. This slope is mostly vegetated but appears to be comprised primarily of locally derived fill soils placed during grading for the Maisel Way residences (see Photo 11). There are various improvements along the slope associated with the residences. There are also some improvements on the slope including wood stairs and two stacks of CMU blocks near Station 12+00 (see Photo 12).

The south-facing slope on the north side of the canyon is approximately 40 to 50 feet high and descends from the row of residences along the south side of Baja Drive. This slope appears to be a predominantly natural slope underlain by Stadium Conglomerate with a veneer of slope wash consisting of loose soils, some vegetative cover and debris. Relatively minor retaining structures exist locally on the slope. The slope area near approximate Station 15+00 to Station 16+50 is likely a fill slope that resulted from infilling of a side canyon to the north during grading for the residential building pads along Baja Drive (based on comparison of 1961 and 1979 topographic maps).

Our geologists noted that the utility access path on the north side of the concrete channel was underlain by wet soils easterly from approximate Station 13+00. The soils also appeared to be derived from the Mission Valley Formation. The soils were light gray to brown silty fine sand to sandy silt. The wet soil and associated dense vegetation extended easterly to Station 17+00. The area east of Station 17+00 was not accessible due to very dense vegetation, ponded water and the presence of poison oak.

Station 17+00 to Campanile Way:

The eastern portion of the alignment was not accessed by our geologists from the west. An alternate access route from the east was not observed off of Campanile Way. The canyon bottom in this area is heavily vegetated (as seen on Figure A-1 and Photos 17 and 18).

GENERAL COMMENT:

Indications of deep-seated slope instability were not noted during our field reconnaissance. Localized areas of surficial sloughing of the veneer of loose soils on the slope faces were observed.

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August 16, 2021



COLLWOOD BLVD

BAJA DR

54TH ST

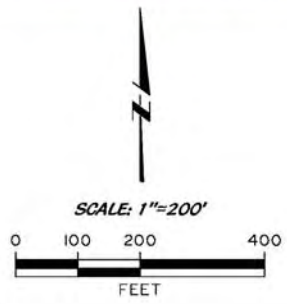
CAMPANILE WAY

NOTE:
Fill and Alluvium were observed
in the field but not mapped.

LEGEND

- 18 APPROXIMATE LOCATION AND NUMBER OF PHOTO
- APPROXIMATE PROPOSED SEWER ALIGNMENT
- ?- - - APPROXIMATE LOCATION OF GEOLOGIC CONTACT
(Queried where uncertain)
- Fill AREAS OF FILL SOILS
- Tmv MISSION VALLEY FORMATION (Below surficial soils)
- Tst STADIUM CONGLOMERATE (Below surficial soils)

BASE PHOTO SOURCE:
GOOGLE INC., July 2021, Imagery Date: 11/17/2018
GOOGLE EARTH [SOFTWARE].



 	TERRACOSTA CONSULTING GROUP ENGINEERS AND GEOLOGISTS 3890 MURPHY CANYON ROAD, SUITE 200 SAN DIEGO, CA 92123 (858) 873-6900	FIGURE NUMBER A-1
	PROJECT NAME COLLEGE AREA SEWER REPLACEMENT PROJECT	PROJECT NUMBER 18842.000.000
FIELD OBSERVATIONS AND PHOTO LOCATION MAP		

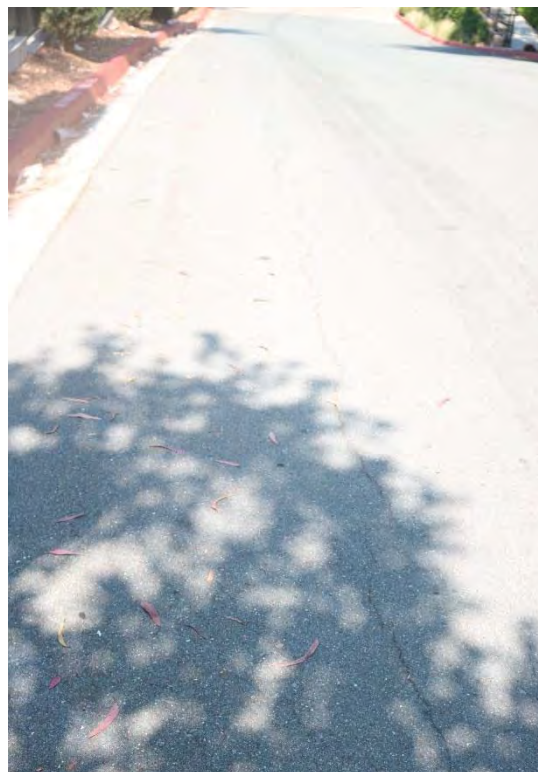
SITE RECONNAISSANCE PHOTOS

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PHOTO 1: Keystone-style retaining wall, west of west project terminus (4754.17Jun2021)



PHOTO 2: Crack in pavement at top of retaining wall (4749.17Jun2021)



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PHOTO 3: View N of slope underlain by Tmv; note drain pipe and irrigation lines (4759.17Jun2021)



PHOTO 4: View NE of upper portion of slope which is underlain by Tmv (4763.17Jun2021)



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PHOTO 5: View E to 54th Street, along alignment (4768.17Jun2021)



PHOTO 6: View N along timbers at top of fill slope on W side of 54th Street (4748.17Jun2021)



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**PHOTO 7: View W down fill slope on W side of 54th Street to concrete drainage ditch
(4744.17Jun2021)**



**PHOTO 8: View E from E side of 54th Street, Tst in lower portion of slope on left
(4698.17Jun2021)**



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PHOTO 9: View W towards 54th Street; note concrete drainage ditch (4701.17Jun2021)



PHOTO 10: View N up slope on N side of easement; slope underlain by Tst (4705.17Jun2021)



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PHOTO 11: View SE of fill slope on S side of concrete drainage ditch (4711.17Jun2021)



PHOTO 12: View N up slope on N side of easement, underlain by Tmv (4714.17Jun2021)



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PHOTO 13: View SE of fill slope on S side of ditch; note stacked CMU blocks (4719.17Jun2021)



PHOTO 14: View N up slope on N side of easement, underlain by Tmv; note drain pipe (4728.17Jun2021)



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PHOTO 15: View N of toe area of slope on N side of easement (4731.17Jun2021)



PHOTO 16: View NE of slope; note stairway of tires on slope and heavy vegetation (4735.17Jun2021)



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PHOTO 17: E of E end of Maisel Way, view of surface water in canyon (4738.17Jun2021)



PHOTO 18: E of E end of Maisel Way, view S of dense vegetation (poison oak) (4739.17Jun2021)



18842.000.001
August 16, 2021

ATTACHMENT B
2018 TWINING GEOTECHNICAL REPORT

18842.000.001
August 16, 2021



Preliminary Geotechnical Investigation

City of San Diego Task 15GT14 - College Area Sewer
and AC Water Main Replacement
54th Street & Campanile Way
San Diego, California

Prepared for:

City of San Diego
525 B Street, Suite 750 (MS 908A)
San Diego, CA 92101

April 10, 2018

Project No.: 180004.2

April 10, 2018
Project No. 180004.2

Tamina Igartua
Project Engineer
City of San Diego
525 B Street, Suite 750 (MS 908A)
San Diego, CA 92101

Subject: Preliminary Geotechnical Investigation
College Area Sewer and AC Water main replacement - Task 15GT14
54th Street
San Diego, California

Dear Ms. Igartua,

In accordance with your request and authorization, we are presenting the results of our geotechnical engineering evaluation for the above-referenced project in the College Area neighborhood of the City of San Diego, California. The purpose of this investigation was to evaluate the subsurface conditions at the proposed sewer pipeline locations and to provide geotechnical engineering recommendations for the College Area Sewer and AC water main replacement project.

Please note that the recommendations presented within the report are based on assumptions stated herein. Should conditions encountered during installation and construction differs from those assumed in our analyses, or should the proposed project change, our recommendations may need to be modified accordingly.

We appreciate the opportunity to be of service on this project. Should you have any questions regarding this report, or if we can be of further service, please do not hesitate to contact the undersigned.

Respectfully submitted,
TWINING, INC.



Sean Lin, PhD, PE 67109, GE 2921
Senior Geotechnical Engineer



Monte Murbach, PG, CEG
Consulting Engineering Geologist



Sharif Mohiuddin, EIT
Senior Staff Engineer

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Appendices

- Appendix A – Field Exploration
- Appendix B – Laboratory Testing

1. INTRODUCTION

This report presents the results of our preliminary geotechnical investigation performed for the College Area Sewer and Water Main Replacement project within the College Area neighborhood of the City of San Diego, California. The approximate locations of the proposed sewer pipelines are shown in Figure 1, Project Location Map. The purpose of this study was to evaluate the subsurface conditions at the project site and provide geotechnical engineering recommendations for the design and construction of the proposed sewer and water mains.

2. PROJECT DESCRIPTION

According to the information presented in the construction plans prepared by the City of San Diego *Plans for the Construction of College Area Sewer and AC Water Group, 60% Design*, undated, (Sheets 39946-01-D to 05-D) that the sewer portion of the project (this project) consists of installation of a new pipeline between the existing 10-inch sewer lateral at the west end of cul-de-sac of Campanile Way west toward 54th Street, and continuing west along the existing canyon and concrete lined channel to the vicinity of Collwood Villas apartment complex where the existing sewer manhole #1 is located. Sewer manhole #1 is the western termination of this project. According to the design plans, the proposed sewer line will replace an existing vitrified clay pipeline using the trenchless installation method. The trenchless method is proposed for an 18 inch diameter pipe between Station 1+00 and 24+14.79. Pipe bursting will be used for a 15 inch diameter pipe in the Campanile Way cul-de-sac area between Station 24.+14.79 and 27+00. Depth of the proposed sewer installation along the alignment ranges from 7 feet to 26 feet. The objective of the geotechnical investigation is to obtain information regarding the existing subsurface condition and the feasibility of trenchless installation as well as recommendations for various methods (i.e. jack & bore, micro-tunneling, etc.).

3. SITE DESCRIPTION

College Area Sewer and Water Main Replacement project is located within the College West neighborhood in the Mid-City area of City of San Diego. The area is characterized by considerable undulating topography and the slope ranges from 1:30 (vertical: horizontal) to 1:1.5 (H:V). In general, the project vicinity corresponds to a residential area with single- family homes and multi-family dwellings and paved streets and sidewalks. Most of the proposed alignment lies on the existing Storm Drain easement which is densely vegetated. The alignment has elevation ranges from 273 feet to 345 feet above from mean sea level (MSL). Review of historical aerial photographs indicates that the majority of the pipe alignment is within a previously existing canyon drainage that was subsequently surrounded by development. Latitudes for the site coordinates ranges from 32.7659 to 32.7676 and Longitude ranges from -117.0816 to -117.0752.

4. SCOPE OF SERVICES

Our scope of services for this project consisted of the following:

- Review of readily available background data, including project plans provided by the City of San Diego, in-house geotechnical data, geotechnical literature, and, geologic and topographic maps relevant to the project.
- Discussion with City of San Diego representatives and selection of five boring locations for the subsurface investigation.



- Obtaining boring permits from the San Diego County Department of Environmental Health (DEH).
- Performance of a site reconnaissance to observe the general surface conditions at the project site and mark out the boring locations.
- Notification of Underground Service Alert (USA) a minimum of 72 hours prior to excavation.
- Performance of a subsurface evaluation consisting of drilling and sampling five exploratory borings.
- Laboratory testing on selected bulk and relatively undisturbed samples to evaluate the geotechnical engineering properties of the on-site soils.
- Review and analysis of data collected from our site reconnaissance, subsurface explorations, and laboratory testing. Specifically, our analyses included the following:
 - Evaluation of general subsurface conditions and description of types, distribution, and engineering characteristics of subsurface materials;
 - Evaluation of current and historical groundwater conditions at the site and potential impact on design and construction;
 - Evaluation of project feasibility and suitability of on-site soils for fill materials;
 - Development of general recommendations for earthwork, including requirements for placement of compacted fill; and,
 - Recommendations for temporary excavations, shoring design and trenchless installation.

Preparation of this report summarizing the results of our findings and presenting our conclusions and geotechnical recommendations for the design and construction of the proposed improvements.

5. FIELD EXPLORATION AND LABORATORY TESTING

5.1. Field Exploration

Field explorations were performed on January 17th and January 25th, 2018. The subsurface conditions were evaluated by drilling five borings to approximate depths ranging from 10.5 feet to 26.5 feet below existing ground surface (bgs). The borings were drilled using a UNIMOG truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers. Twining also used track mounted drill rig (FRASTE) in two locations (B-4 and B-5) due to limited accessibility. The approximate locations of the exploratory borings are shown on Figure 2, Boring Location Map. The logs of borings are presented in Appendix A, Field Exploration. Cross sections of the anticipated geologic conditions are presented on Figures 6A through 6D. Note that due to terrain and property access issues, Borings B-2 through B-4 were drilled north of the proposed sewer alignment; anticipated geologic contacts were projected to the cross sections. Geologic contacts noted on the cross sections are considered approximate.

Relatively undisturbed samples were obtained using a modified California split spoon sampler. Standard Penetration Tests (SPTs) were performed to obtain disturbed soil samples using a split barrel sampler. The samplers were driven using a 140-pound, automatic-drop hammer falling approximately 30 inches. The blow counts were recorded and the materials encountered in the borings were logged by our field personnel. The number of blows required to drive the sampler 12 inches was recorded and are presented on the boring logs in Appendix A. After completion, the

borings were backfilled in accordance with San Diego County Department of Environmental Health (SDCDEH) requirements and the street borings were capped with rapid-set concrete with black dye.

5.2. Laboratory Testing

Laboratory tests were performed on selected samples obtained from the borings in order to aid in the soil classification and to evaluate the engineering properties of the soils. The laboratory tests included: in-situ moisture and dry density, maximum density, Atterberg limits, sieve analyses, direct shear and corrosivity evaluation. In-situ moisture content and density data are presented on the boring logs in Appendix A. A description of the laboratory tests performed as well as the test results are shown in Appendix B.

6. GEOLOGY AND SUBSURFACE CONDITIONS

6.1. Regional Geologic Setting

The site is located in the Peninsular Ranges Geomorphic Province (PRGP) of California. The Peninsular Range Province is characterized by northwest trending mountain ranges separated by a series of sub-parallel fault zones associated with the San Andreas Fault System. Within the PRGP, the mountain ranges generally consist of Cretaceous igneous rocks of the Peninsular Ranges Batholith and Jurassic metasediments and metavolcanics, and the topographically lower areas in the coastal region typically consist of marine and terrestrial sedimentary rocks (Kennedy and Peterson, 1975). In the coastal region of San Diego County, Quaternary and late Tertiary age folding and tilting has occurred in areas adjacent to the active Rose Canyon fault zone and a few randomly oriented and scattered small scale faults exist throughout the region (Kennedy and Peterson, 1975; Treiman, 1993; Tan and Kennedy, 2008). The site is located within the PRGP coastal region.

6.2. Tectonic Setting

The tectonic setting of the San Diego is influenced by plate boundary interaction between the Pacific and North American lithospheric plates. This crustal interaction occurs along a broad zone of northwest-striking, predominantly right-slip faults that span the width of the Peninsular Ranges and extend offshore into the California Continental Borderland Province. At the latitude of San Diego (project site), this extends from the San Clemente fault zone, located approximately 54 miles southwest offshore of the San Diego coastline, to the San Andreas fault, located about 85 miles northeast of San Diego (California Geological Society, 2010).

Geologic, geodetic, and seismic data indicate that the faults along the eastern margin of the plate boundary, including the San Andreas, San Jacinto, and Imperial faults, are currently the most active. These active faults are located in the Imperial Valley and are the dominant structures in accommodating the majority of motion between the two adjacent plates. A smaller portion of the relative plate motion is being accommodated by northwest-striking active faults to the west, including the Elsinore, Newport-Inglewood-Rose Canyon, and offshore faults. The offshore faults include the Coronado Bank, San Diego Trough, and San Clemente faults zones.

6.3. Site Geology and Subsurface Conditions

The project site is underlain by artificial fill, Quaternary-aged alluvium, and gravel/cobble conglomerates associated with the Tertiary-aged Mission Valley Formation and Stadium Conglomerate. These materials have been mapped by Kennedy (1975) and Kennedy and Tan



(2008). At the exploratory locations, the alluvial and formational materials are mantled by artificial fill soils likely associated with residential streets and utility construction. The regional geology is presented in Figure 3. The geologic units observed are described below from youngest to oldest.



6.3.1. Artificial Fill (Unmapped)

Artificial fill was encountered in the upper portions of the borings. At the boring locations the fill soils were generally composed of brown to dark brown, silty to clayey sand, with gravel and cobbles. The fill encountered was generally damp to moist, to locally wet, loose to medium dense. The thickness of fill encountered is approximately 2 to 6 feet. Abundant cobbles were observed on the surface around the boring locations of B-1 through B-4. Some cobbles were noted up to 8 inches in diameter. A portion of the fill is considered suitable for reuse as backfill for the jacking and receiving pits, and trench cut and cover methods, if opted, provided the fill is screened of over-sized cobbles.

6.3.2. Alluvium (Unmapped)

Alluvial soils were encountered at borings extending to depths ranging from 5 feet to 13 feet bgs. The alluvium generally consisted of dark brown to reddish brown, damp, silty sand to sandy gravel. The alluvium is generally loose to dense, with few to abundant cobbles. The alluvium is underlain by formational sedimentary units (Mission Valley Formation or Stadium Conglomerate), as noted below. Also, note that cobbles in the area of the borings were up to 8 inches in diameter.

6.3.3. Mission Valley Formation (Tmv)

The Mission Valley Formation encountered at the eastern portion of the site, as mapped and described by Kennedy (1975) and Kennedy and Tan (2008) as predominantly a marine sandstone unit, resting conformable upon the Stadium Conglomerate. A tongue of cobble conglomerate within the sandstone that is similar to the Stadium Conglomerate was encountered in boring B-5 at a depth of 13 feet. At the boring location, the formational materials consisted of tan, damp, sandy gravel conglomerate. Due to the drilling method, only gravel fragments were recovered. Based on observations, cobble sized rock is also present.

6.3.4. Stadium Conglomerate (Tst)

The Stadium Conglomerate encountered at the western $\frac{3}{4}$'s of the site is described by Kennedy (1975) and Kennedy and Tan (2008) as the one of the three partly intertonguing and partly time equivalent formations of the Poway Group. These rocks, which are mainly nonmarine in their easternmost exposures and nearshore marine and lagoonal in their westernmost exposures, crop out in the westernmost part of the El Cajon quadrangle. The formation, per Kennedy, consists of massive cobble conglomerate with a dark yellowish brown, coarse grained sandstone matrix. Conglomerate is moderately well sorted with an average clast size in the cobble size range.

At the boring locations (B-1 through B-4), this sedimentary unit was composed of cobbles and gravel supported in a light brown to brown and tan silty sand and clayey sand matrix. Note that due to the drilling method, only gravel sized fragments were recovered, however, abundant cobble sized rock is anticipated. The conglomerate was dense to very dense, to (likely) locally cemented. The cobbles of the Stadium Conglomerate were also observed on the exposed slopes surrounding the borings. . We encountered difficult drilling in all the borings and had practical refusal on B-1 and B-4.



6.4. Groundwater

No groundwater or seepage was encountered in the borings at the time of field exploration. The depth of the regional groundwater table beneath the project site is unknown but may be assumed to be in excess of 100 feet bgs. However, localized shallow perched water conditions may occur, particularly during the wet (rainy) season. Perching would most likely be encountered in fill materials or alluvium above the contact with the relatively impermeable formational materials. Pipe leaks, overflows, and landscape irrigation could also potentially contribute to groundwater perching.

6.5. Geologic Hazards

Geologic hazards at the site are essentially related to those caused by earthquakes. The major cause of damage from earthquakes is fault rupture and strong shaking from seismic waves. Potential geologic hazards that could affect the project site are discussed below.

6.5.1. Faulting

The southern California region has long been recognized as being seismically active. Seismic activity results from a number of active faults that cross the region, all of which are related to the San Andreas transform system which covers a broad zone of right lateral faults that extend from Cape Mendocino to Baja California. Faults in Southern California are classified according to their activity as active, potentially active, and inactive faults. Active faults are those faults that have had surface displacement within Holocene time (approximately the last 11,700 years). Faults are considered potentially active if they show evidence of surface displacement since the beginning of Quaternary time (about 1.6 million years ago), but not since Holocene time.

The site is not within a currently established State of California Alquist-Priolo Earthquake Fault Zone for fault rupture hazard (formerly Special Studies Zones for fault rupture hazard). Based on a review of geologic literature, no active or potentially active faults are known to occur beneath the project site. Accordingly, it appears that there is little probability of surface rupture due to faulting beneath the site. There are, however, several faults located in sufficiently close proximity that movement associated with them could cause significant ground motion at the site as shown in Figure 4, Fault Location Map.

Regional active faults that occur near the College area include the Rose Canyon fault zone, the offshore Coronado Bank and San Diego Trough fault zones to the west, the Elsinore and San Jacinto fault zones to the east, and the San Miguel-Vallecitos and Agua Blanca fault zones to the south in Mexico. Locally, the Rose Canyon fault zone trends north-northwest through downtown San Diego and the San Diego Bay. The closest known active faults to the site are the Rose Canyon fault zone located approximately 5 miles to the west, the Coronado Bank fault zone located 18 miles to the west and the Newport-Inglewood fault zone located 9 miles northwest. Fault zones that are considered potentially active include the La Nacion fault zone which passes underneath the Collwood Villa apartment complex. A fault strand of the La Nacion fault is mapped just west of this project.

6.5.2. Earthquake Ground Motion

The project area may be subject to strong ground shaking in the event of an earthquake; however this hazard is common to Southern California and the effects on the proposed project

can be mitigated if the improvements are designed and constructed in accordance with current engineering practice and building codes.

6.5.3. Liquefaction

The potential for seismically induced liquefaction is greatest where shallow groundwater and poorly consolidated, well sorted, fine grained sands and silts are present. Liquefaction potential decreases with increasing density, grain size, and clay and gravel content, but increases as the ground acceleration and duration of seismic shaking increases.

Fill soils with about 2 to 6 feet in thickness cover the project site. These materials are composed of loose to medium dense, silty sand and clayey sand with some gravel and cobbles. Beneath the fill, alluvial soils range in depth from 5 to 13 feet bgs. Beneath the fill and alluvium, the formational materials consist of dense to very dense cobble conglomerate. Groundwater was not encountered within the depths drilled. Accordingly, the potential for liquefaction in the event of a strong to moderate earthquake on a nearby fault is considered low.

6.5.4. Seismic Settlement

Seismic settlement occurs when dry to saturated, loose to medium dense granular soils densify during ground shaking. Due to lithologic variations, such settlement can occur differentially across a site. Differential settlement may also be induced by ground failures, such as liquefaction, flow slides, and surface ruptures. The potential for seismic settlement in fill and alluvial materials is considered low to moderate. The potential for seismic settlement in formational materials is very low.

6.5.5. Landslides and Slope Stability

No evidence indicating the presence of deep seated landslides was observed on or in the immediate vicinity of the site. The sedimentary units exposed within the vicinity of the project area appeared to exhibit nearly horizontal bedding (Kennedy and Tan, 2008). The potential for deep seated slope stability problems at the site is considered low. There is, however, the potential for shallow sloughing and slumping of slope materials exposed in drainage channels if slope grading is altered extensively. In addition, the site is mapped in Landslide Susceptibility Area "2" – Marginally Susceptible (Tan, 1995).

6.5.6. Seismic Safety Study

The City of San Diego Seismic Safety Study designates the project area as "Zone 53: Level or sloping terrain, unfavorable geologic structure. Low to moderate risk." as shown in Figure 5, Seismic Safety Map.

6.6. Seismic Design Parameter

The project area is located at approximate coordinates: latitude N32.7659° to N32.7676° and longitude W117.0752° to W117.0816°. The materials beneath the site consist of loose to medium dense fill and loose to dense alluvium extending to approximate depths of 5 to 13 feet, underlain by dense to very dense formational materials.

Based on the results of our field investigation, the applicable Site Class is D, consisting of a stiff soil profile with average SPT N values between 15 and 50 blows per foot. Table 2 presents seismic



design parameters for the site in accordance with 2016 CBC and mapped spectral acceleration parameters (United States Geological Survey, 2016).

**Table 1
2013 California Building Code Design Parameters**

Design Parameter	Value
Site Class	D
Mapped Spectral Acceleration Parameter at Period of 0.2-Second, S_s	0.945g
Mapped Spectral Acceleration Parameter at Period 1-Second, S_1	0.361g
Site Coefficient, F_a	1.122
Site Coefficient, F_v	1.677
Adjusted MCE_R^1 Spectral Response Acceleration Parameter at Short Period, S_{MS}	1.060g
1-Second Period Adjusted MCE_R^1 Spectral Response Acceleration Parameter, S_{M1}	0.606g
Short Period Design Spectral Response Acceleration Parameter, S_{DS}	0.707g
1-Second Period Design Spectral Response Acceleration Parameter, S_{D1}	0.404g
Peak Ground Acceleration, PGA_M^2	0.426g
Seismic Design Category	D
Notes: ¹ Risk-Targeted Maximum Considered Earthquake ² Peak Ground Acceleration adjusted for site effects	

7. CONCLUSIONS

Based on the results of our subsurface evaluation, laboratory testing, and data analysis, construction of the proposed improvements is feasible from a geotechnical standpoint, provided the recommendations of this report are incorporated in the design and construction of the project. Geotechnical considerations include the following:

- The site is underlain by 2 to 6 feet of poorly consolidated fill soils overlying alluvial soils to depths of about 5 to 13 feet. Beneath the fill and alluvium, the site is underlain by gravel/cobble conglomerate. Refusal on cobbles was encountered in boring B-1 and B-4 at a depth of 10'9" and 10'6" bgs, respectively.
- The majority of the fill and alluvium is suitable for re-use as compacted fill, however, oversized materials will need to be screened out and clayey soils will need to be removed or mixed with granular soils.
- On-site materials are considered generally excavatable with conventional heavy-duty earth moving construction equipment. Difficult excavation is anticipated within strongly cemented formation materials and cobble zones. The cemented zones, although not encountered, are characteristics of the formation materials. The installation systems and drilling equipment used should be designed for the anticipated subsurface conditions.
- Implementation of appropriate method of trenchless system is vital as the subsurface condition is not suitable for all trenchless technology.
- Groundwater was not encountered within the boring locations. Transitory localized seepage may occur at the geologic contacts due to rainfall, irrigation practices, and other factors.





- Sieve analysis presented in this report is solely dependent on the material captured in the sampler but abundance of cobble up to 8" was visible all through the alignment. Considering the size of cobble and hardness of cobble, a larger fraction of coarse fragment during construction should be anticipated than that of testing results.
- Based on review of readily available geologic literature, active or potentially active faults do not cross the subject site. Accordingly, the possibility of surface rupture at the site due to faulting is considered low.
- The potential for seismically induced seismic settlement is moderate to low in the fill and alluvial soils and very low in formational materials.
- Based on Caltrans (2015) corrosion criteria, the project site would be classified as a non-corrosive site for concrete.

8. RECOMMENDATION

8.1. General

Based on the results of our field exploration, laboratory testing, and engineering analyses, it is our opinion that the proposed construction is feasible from a geotechnical standpoint, provided that the recommendations in this report are incorporated into the design plans and are implemented during construction. The following sections present our conclusions and recommendations pertaining to the geotechnical engineering design for this project.

8.2. Site Preparation

All exposed temporary excavation bottoms (for cut and cover, or pit excavation construction) should be observed and accepted by the geotechnical engineer or engineering geologist prior to construction of the sewer and water lines and prior to any fill placement. Unstable excavation bottoms may require additional removal to expose competent, non-yielding earth materials.

Vegetation, debris, organics and oversized materials greater than 6 inches in maximum dimension should be separated from on-site soil and legally disposed of off-site prior to placement of any compacted fill. Excavation bottoms should be observed and accepted by the geotechnical engineer or engineering geologist prior to installation of sewer and water lines and trench backfill placement for jacking pit and receiving pit. If imported fill materials are needed on the site, they should have a very low expansion potential (expansion index not greater than 20). Proposed import materials should be evaluated and approved by the geotechnical engineer prior to use at the site. Alternatively, gravel and geotextile fabrics may be used to stabilize the bottom of excavations when saturated or unstable materials are exposed within the excavation depth.

8.3. Excavation Characteristics

The results of our field exploration indicate that the project alignment is underlain by undocumented fill and alluvium, and gravel/cobble conglomerate with silt/clay sand matrix associated with the Mission Valley Formation and Stadium Conglomerate. Areas of difficult drilling and refusal was encountered at depths of 10'9" and 10'6" in borings B-1, and B-4, respectively.

Excavations in fill and weakly cemented formational materials should generally be feasible using heavy-duty earth moving equipment in good working condition. Construction debris, loose soils, caving and/or sloughing conditions may occur when excavating within undocumented fill and loose



portions of alluvium. Difficult excavation is anticipated within gravel and cobble conglomerate of the Mission Valley Formation and Stadium Conglomerate, when encountered. Excavations in these materials may entail the use of heavy ripping or rock breakers.

8.4. Temporary Excavations

The upper portion of on-site materials are loose to medium dense. Temporary un-surcharged excavation sides may be sloped back at an inclination of 1½:1 (horizontal to vertical). Personnel from Twining, Inc. should observe the excavations so that any necessary modifications based on the encountered soil conditions can be recommended.

Barricades should be placed around temporary excavations so that vehicles and storage loads do not encroach within 10 feet of the top of excavated slopes. A greater setback may be necessary when considering heavy vehicles, such as concrete trucks and cranes. Twining, Inc. should be advised of such heavy vehicle loadings so that specific setback requirements can be established. If temporary construction slopes are to be maintained during the rainy season, we recommend that berms be graded along the top of slopes in order to prevent runoff water from entering the excavation and eroding slope faces.

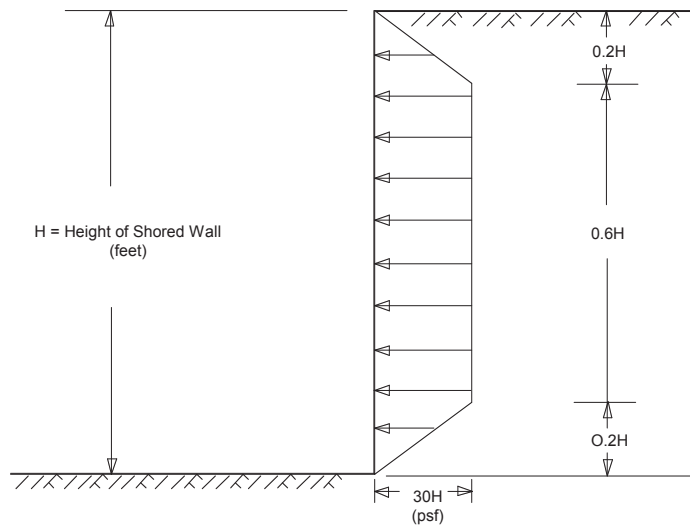
All excavations should be performed in accordance with CalOSHA requirements. Vertical excavations will require temporary shoring/shielding. Design recommendations for temporary shoring are presented in the following section.

8.5. Temporary Shoring

Temporary excavations to maximum depths of 22 feet are anticipated for jacking pit and shoring pit for Jack and Bore method. Shoring will be necessary for vertical excavations that are greater than 4 feet in depth, where there is the potential for caving soils or for support of adjacent buried utilities. Shoring should be maintained throughout the installation. When supporting adjacent improvements, sheeting and/or shoring should be installed to prevent loss of support and/or significant settlement.

For design of cantilevered shoring with heights of 15 feet or less a triangular distribution of lateral earth pressure may be used. If the soils behind the shoring are level and groundwater is below the bottom of the excavation, an equivalent fluid pressure of 44 pounds per cubic foot may be assumed for design. Where movement is not acceptable, we recommend that the shoring be designed for an "at rest" pressure of 66 pounds per cubic foot. Some surface settlement should be anticipated during shoring installation especially within the loose to medium dense fill soils.

For excavations greater than 15 feet, tied-back or braced shoring is recommended. Tied-back or braced shoring should be designed to resist a trapezoidal distribution of lateral earth pressure. The recommended pressure distribution, for the case where the grade is level behind the shoring and groundwater levels are below the bottom of the excavation, is illustrated in the following diagram with the maximum pressure equal to 30H pounds per square foot. H is the height of the shored wall in feet. The loads will need to be modified if adverse bedding is present.



Surcharge from live loads including traffic and dead loads including adjacent structures that are located within a 1:1 (horizontal to vertical) plane drawn upward from the base of the shored excavation should be added to the lateral earth pressures. The lateral contribution of uniform surcharge loads located immediately behind the temporary shoring may be calculated by multiplying the vertical surcharge pressure by 0.35. Lateral load contributions of surcharge loads behind the shored wall may be provided once the load configurations and layouts are known. As a minimum, 250 pounds per square foot vertical uniform surcharge is recommended to account for nominal construction and/or traffic loads.

8.6. Trenchless Installation

According to our construction plans provided by City, we understand that the existing 8-inch and 10-inch diameter VC sewer pipes will be replaced with 18-inch pipe using micro-tunneling or horizontal directional drilling trenchless methods. The selection of the installation method will depend on the length of the reach, the surface and subsurface conditions, and the alignment tolerances for the pipes to be installed. Our recommendations are based on our understanding of the proposed project, the results of the site reconnaissance, field explorations and laboratory testing completed for this investigation.

8.6.1. Microtunneling

This method uses a remote controlled microtunnel boring machine that provides continuous support to the tunnel face. Sections of pipe are jacked behind the tunneling machine which is used as casing during pipeline installation. Soil cuttings are removed through the casing pipe to the sending pit using augers or conveyors. While microtunneling provides control of alignment, large set-up areas are required. The greatest concern using microtunneling is the presence of obstructions such as cobbles and debris. Typically a 36-inch microtunnel boring machine is limited to a maximum material size of 9 to 12 inches, depending on the machine.

The weakly cemented and medium dense soils encountered at the site are anticipated to exhibit firm to moderately fast raveling behavior in accordance with the Tunnelman's Ground Classification. Firm to slow raveling is anticipated in the very dense formational cobble silt matrix. And very slow raveling is anticipated in the weathered rock layer. It is likely that over-sized microtunneling machines on the order of 6 feet in diameter would be needed due to the power required to advance the machine in the harder formational layer. Bedrock and



conglomerate layers are associated with Mission Valley Formation and Stadium Conglomerate Formation. High blow counts and refusal were noted in exploratory borings. Due to the size of the sampling equipment and the drilling methods, it was not possible to determine the maximum size of the materials (gravel, cobbles or debris) encountered. Additional subsurface exploration may be performed at this location to characterize the materials maximum size within the pipeline alignment. Tunneling equipment should be designed for the anticipated site conditions.

8.6.2. Horizontal Directional Drilling

Horizontal directional drilling (HDD) methods involve steerable tunneling systems for installation of small- and large-diameter pipelines. In most cases, it is a two stage process. The first stage consists of drilling a small diameter pilot hole along the desired centerline of the proposed line. The second stage consists of enlarging the pilot hole to the desired diameter and pulling the utility line through the enlarged hole. This method allows to track the location of the drill bit and steer it during the drilling process. The result is greater degree of precision in placing utilities. Since HDD does not require shafts to advance the bore, it requires a long laydown area as the pipe to be pulled into the bore hole must be laid out its full length prior to installation. Since pressurized drilling fluids are present within the bore hole, care must be taken to avoid inadvertent fluid releases to the surface during drilling. The entry and exit angles for HDD bore should be between about 8 and 12 degrees from the horizontal. The minimum bending radius for the pipe (in feet) should be about 100 times the diameter of the pipe (in inches). Based on our subsurface exploration, the site is underlain by dense to very dense sandy gravel/cobble matrix with some clay, therefore HDD installation using HDPE pipe may be considered as an alternative to PVC pipe.

8.6.3. Jack and Bore or Auger Boring

The jack and bore (also known as auger boring) method uses a rotating cutting head to create a borehole from a drive shaft to a reception shaft. The most common type of jack and bore used for pipe installation is the track system. Spoils are transported back to the drive shaft by the auger rotating inside a casing that is being jacked in place during augering. Hydraulic jacks at the boring machine are used to advance the casing. A properly constructed drive shaft is important for the success of a track type auger boring project. The shaft requires a stable foundation and an adequate thrust block. The thrust block transmits the horizontal jacking forces from the tracks to the ground at the rear drive shaft. It must be designed to distribute the jacking force over sufficient area so that the allowable compressive strength of the soil is not exceeded. The typical pipe material is steel because the pipe must resist abrasion caused by the rotating augers, although concrete pipe may also be used designed for jack and bore method. Pipes with a diameter of 8 to 60 inch and drive lengths of 40 up to 500 feet can be used. This method is unguided and thus provides very limited tracking. This techniques has limited steering ability, which can affect the line and grade accuracy. Jack and bore should not be used below the groundwater table, in running sands, or in soils with large boulders. Another drawback associated with this method is surface subsidence and heaving during construction. Subsidence occurs when over-excavation is permitted, and heaving occurs when excessive force is applied to the excavation force. Considering all these disadvantages Twining does not recommend Jack and Bore as a method for trenchless installation.



8.6.4. Pipe Bursting

Pipe bursting is a trenchless replacement method in which an existing pipe is broken, either by brittle fracturing or by splitting, when applying a force with a bursting tool. Simultaneously during breaking of the existing pipe, the fractured pipe pieces are pushed aside and a new pipe of the same or larger diameter is pulled or jacked in, replacing the previous pipe. The most favorable soil conditions for pipe bursting are where the surrounding materials can be displaced by the bursting operation. Dense and/or rocky materials will increase the force required for the bursting operation as well as the stresses on the new pipe.

Pipe bursting will be used to install approximately 285 feet of sewer pipe to replace the existing 10-inch pipe with invert depths of about 7 to 22 feet below the existing grade. The International Pipe Bursting Association (IPBA) classifies pipe bursting installations based on the complexity involved according to the burst length, pipe depth, existing pipe diameter and the upsize (IPBA, 2012). The IPBA Pipe Bursting Classification is presented in Table 2.

**Table 2
IPBA Pipe Bursting Classification**

IPBA Classification	Degree of Difficulty	Pipe Depth (feet)	Existing Pipe ID (inches)	New Pipe Diameter Compared to Existing Pipe	Burst Length (feet)
A	Minimal	<12	2 – 12	Size on Size	0 – 350
B	Moderate	>12 to <18	12 – 18	Single Upsize	350 – 500
C	Comprehensive (Difficult to Extremely Difficult)	>18	20 – 36	Double/Triple Upsize	200 – 1,000

The proposed sewer line replacements (10- to 15-inch) is considered a double upsize. Accordingly, based on the expected depths, soil conditions and proposed size, the degree of difficulty during installation is classified as Moderate to Comprehensive for the depths less than 18 feet and triple upsize sections (B to C). Given the proposed upsizing and the length of the reaches, the use of pneumatic equipment and lubricants will likely be necessary during installation. Even with an experienced contractor, there is a risk of ground heave or refusal of the bursting tools.

Prior to the replacement procedures, the conditions of the existing pipe should be investigated. A video inspection of the existing pipe should be performed to identify the location of laterals and to quantify the presence of defects in the existing pipeline. In addition, the as-built drawings and maintenance records should be reviewed for details which would not be visible during the video inspection. The condition of the existing pipe trench backfill is unknown at this time. We recommend that documentation of the existing pipe installation be obtained.

Loading conditions during installation and service loads should be determined. The pipe thickness should be determined based on the most conservative loading condition. A minimum safety factor of 2 is recommended for installation loading conditions.



8.6.5. Trenchless Installation Recommendations

We recommend that trenchless pipe installation for this project be performed by contractors with experience in similar projects using installation methods and equipment compatible with local soil conditions. The risk of impacting adjacent structures, utilities, ground heave, vibrations, settlement and refusal of the excavation tools should be considered. Surface settlements are anticipated to be greater where pipe installations occur at shallower depths. Monitoring of surface settlement should be provided during installation. Even though significant settlement is not anticipated, mitigation measures may be required if surface settlement exceeds 1/2-inch. The estimated load on 18-inch pipelines installed at depths ranging from 7 to 26 feet is 170 pounds per linear feet based on Marston's formula. Loads for different pipe sizes and depths would need to be evaluated.

8.7. Open Cut Installation

Twining understands that the City wants to install the proposed pipelines by means of trenchless installation system. Due to subsurface conditions present on the site, Twining is also providing the open cut installation recommendation in case of deviation from the original proposal. Trenching and excavation should be performed in accordance with CalOSHA guidelines. Recommendations for temporary excavations were presented in sections 8.4 and 8.5 of this report.

8.7.1. Installation Recommendations

We recommend that pipe installation for this project be performed by contractors with experience in similar projects and local soil conditions. Due to existing improvements in the areas surrounding the proposed alignments and subsurface conditions, difficulties during installation may occur. The excavation and pipeline installation methods and equipment used should be compatible with the project requirements and anticipated subsurface conditions. The effects of excavation of formational materials on adjacent structures and utilities due to vibrations and settlement should be considered.

8.7.2. Difficult Rippability

Bedrock encountered along the pipeline alignment predominantly includes dense to very dense, to locally cemented gravel and cobble conglomerates, with a sandy matrix. The majority of bedrock (conglomerate) formations are anticipated to be rippable to marginally rippable but will likely contain isolated cemented zones that are very hard and difficult to excavate. Several cemented conglomerate zones were observed near the alignment.

8.7.3. Pipeline Loads

The loads imposed by backfill soils on the buried pipelines may be determined using the Marston-Spangler equation:

$$W_c = C_d w B_c B_d$$

where, W_c = load, in pounds per foot
 C_d = Marston load coefficient, defined as:

$$C_d = \frac{1 - e^{-2K\mu' \frac{H}{B_d}}}{2K\mu'}$$

w = density of backfill materials, in pounds per cubic foot
 B_d = width of the trench at top of pipe, in feet



B_c = outside width of flexible pipe, in feet

The Martson-Spangler load factors recommended for this project are presented in Table 4. The resulting loads are applicable for project design provided that pipe installation, trench dimensions, placement and compaction of trench backfill materials are performed in accordance with City of San Diego standard plans and specifications and Section 306 of the Standard Specifications for Public Works Construction (SSPWC - Greenbook).

**Table 3
Marston-Spangler Load Factors**

Unit Weight of Backfill	Coefficient of Friction (μ')	Rankine's Ratio (K)	Maximum $K\mu'$
132 pcf	0.35	0.33	0.165

8.7.4. Monitoring

Buildings, structures, sidewalks, pavements and other improvements that are adjacent to the proposed sewer alignment should be surveyed and photographed prior to excavation. Pre- and post-construction video-documentation should be conducted in adjacent storm and sanitary sewer systems. The initial relative positions and elevations of adjacent improvements should be recorded.

An appropriate number of survey points should be provided by a licensed surveyor so that the Project Engineer may formulate a professional opinion regarding movement. Survey points should be monitored once each week until the installation and backfilling is completed. Additional surveying may be required by the Project Engineer. Visual observations of the excavation and adjacent areas should be made on a daily basis by Twining during installation of the pipeline.

8.7.5. Trench Bottoms

At locations where the trench bottom is yielding or otherwise unstable, pipe support may be improved by placing 12 inches of ¾-inch crushed rock as defined in SSPWC Section 200-1.2. Remedial earthwork at the trench bottom should be performed where oversize materials (rocks or clods greater than 3 inches) are present. Removal of oversize materials to a depth of 6 inches below the bottom of the pipeline and replacement with fill compacted to at least 90% relative compaction is recommended. Alternatively, ¾-inch crushed rock may be used.

8.7.6. Trench Backfill

Pipe trench backfill should conform to the recommendations presented in this report, City of San Diego standard plans and specifications, and SSPWC Section 306.

8.8. Lateral Pressures for Thrust Blocks

Thrust restraint for buried pipelines may be achieved by transferring the thrust force to the soil outside the pipe through a thrust block. Thrust blocks should be backfilled with granular backfill material, compacted as outlined in this report. Thrust blocks may be designed using lateral passive earth pressure according to the equation presented below:



$$P_p = 150 (D^2 - d^2) \text{ lb/ft}$$

where, P_p is the passive soil resistance per foot of width
 d is the depth to the top of the thrust block
 D is the depth to the bottom of the thrust block.

8.9. Retaining Wall Recommendations

It is our understanding that manhole vaults are proposed at certain locations. The retaining walls of the vaults can be designed using the following geotechnical parameters.

8.9.1. Static Lateral Earth Pressure

Cantilevered and restrained retaining walls should be designed to resist the lateral earth pressure distributions as shown below in Diagram 1.

The values presented below assume that the supported grade is level and that surcharge loads are not applied. Any surcharge (live, including traffic, or dead load) located within a 1:1 plane projected upward from the base of the wall, including adjacent structures, should be added to the lateral earth pressures.

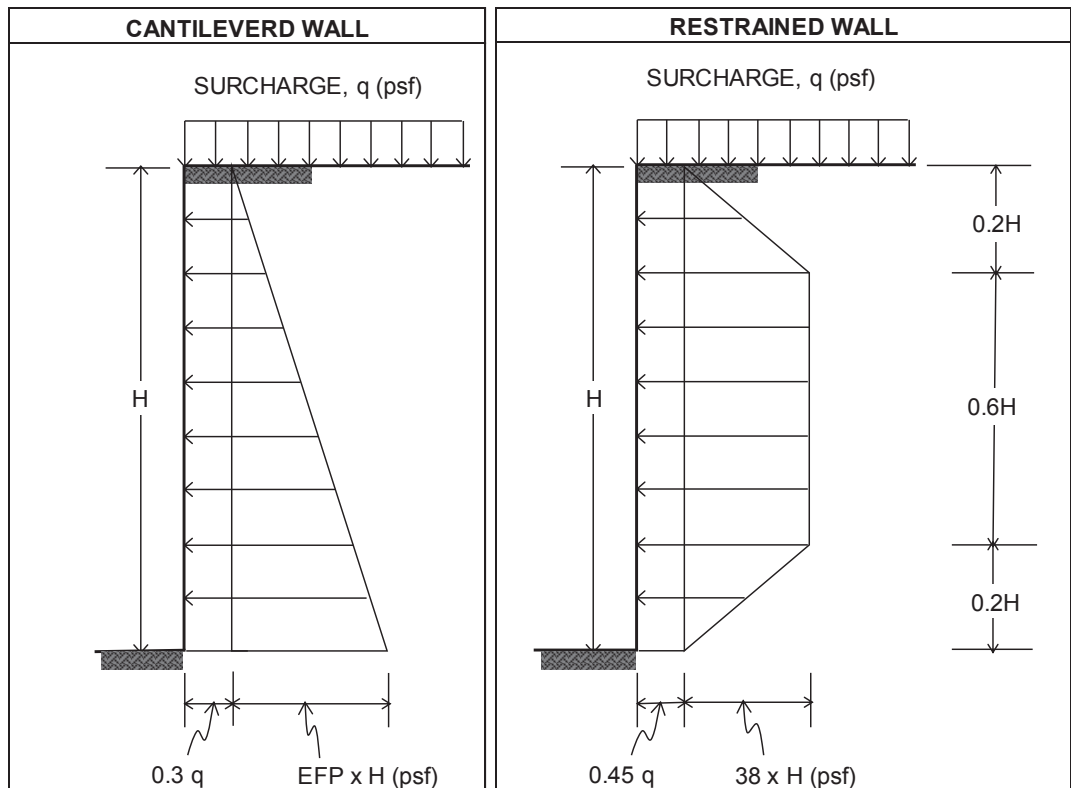


Diagram 1 – Static Earth Pressure Distribution for Retaining Walls

8.9.2. Seismic Lateral Earth Pressure

Retaining walls greater than 6 feet in height should be designed for seismic earth pressures. However, because the manhole walls are expected to be the same height, walls designed



with the static pressure (that is derived from at-rest pressure) recommended in this report is sufficient to resist the earthquake seismic pressure based on a technical paper entitled "Seismic Earth Pressures on Deep Building Basements" (Lew et. al., 2010).

8.10. Pavement Reconstruction

Trench excavations in existing streets or paved areas will involve replacement of pavement sections at the completion of work. In general, pavement repair should conform to the material thicknesses and compaction requirements of the adjacent pavement section. Subgrade and aggregate base materials should be compacted to 95 percent relative compaction as evaluated using ASTM D1557. Asphalt concrete (AC) should be compacted to 95 percent relative compaction as evaluated using ASTM D1561 (Hveem density). Pavement reconstruction should conform to City of San Diego requirements.

8.11. Corrosivity

Laboratory testing was performed on representative soils samples to evaluate soil pH, electrical resistivity, water-soluble chloride content, and water-soluble sulfate content. The pH values of the tested samples ranged from 6.9 to 7.0. Electrical resistivity values ranged from 890 to 1,020 ohm-centimeters. Chloride content ranged from 106 to 138 parts per million (ppm). Sulfate content ranged from 20 to 32 ppm. Additional details and laboratory test results are presented in Appendix B.

Based on Caltrans (2015) corrosion criteria, a site is considered corrosive if one or more of the following conditions exist at the site: chloride concentrations of 500 ppm or greater, sulfate concentration of 2,000 ppm or greater, or pH of 5.5 or less. Based on the laboratory test results and Caltrans Corrosion Guidelines, the site is considered non-corrosive. It is anticipated that the proposed pipes for the project will not be affected by corrosion. We recommend that a corrosion engineer be consulted for corrosion protection recommendations for the project.

8.12. Buried Metal

A factor for evaluating corrosivity to buried metal is electrical resistivity. The electrical resistivity of a soil is a measure of resistance to electrical current. Corrosion of buried metal is directly proportional to the flow of electrical current from the metal into the soil. As resistivity of the soil decreases, the corrosivity generally increases. The samples tested resulted in electrical resistivity values ranging from 890 to 1,020 ohm-centimeters.

Correlations between resistivity and corrosion potential (NACE, 1984) indicate that the soils have a moderate to corrosive potential to buried metals. As such, corrosion protection for metal in contact with site soils should be considered. Corrosion protection may include the use of epoxy or asphalt coatings.

8.13. Concrete Placement

Concrete in contact with soil or water that contains high concentrations of soluble sulfates can be subject to chemical deterioration. Laboratory testing indicated maximum sulfate content of 32 ppm in the samples tested. According to American Concrete Institute (ACI) 318, the potential for sulfate attack is negligible for water-soluble sulfate contents in soil less than 0.10 percent by weight (i.e., less than 150 ppm). Therefore, the site earth materials may be considered to have negligible potential for sulfate attack. Due to the potential for variability of soils, we recommend using Type II/V cement for concrete structures in contact with soil, and a water-cement ratio of no more than 0.45.

9. DESIGN REVIEW AND CONSTRUCTION MONITORING

Geotechnical review of plans and specifications is of paramount importance in engineering practice. The poor performance of many structures has been attributed to inadequate geotechnical review of construction documents. Additionally, observation and testing of the earthwork procedures will be important to the performance of the proposed development. The following sections present our recommendations relative to the review of construction documents and the monitoring of construction activities.



9.1. Plans and Specifications

Project plans and specifications should be reviewed by Twining, Inc. prior to bidding and construction, as the geotechnical recommendations may need to be reevaluated in the light of the actual design configuration and loads. This review is necessary to evaluate whether the recommendations contained in this report and future reports have been properly incorporated into the project plans and specifications. Based on the work already performed, this office is best qualified to provide such review.

9.2. Construction Monitoring

Site preparation, removal of unsuitable soils, assessment of imported fill materials, fill placement, and other site grading operations should be observed and tested, as appropriate. The substrata exposed during construction may differ from that encountered in the exploratory excavations. Continuous observation by a representative of Twining, Inc. during construction allows for evaluation of the soil conditions as they are encountered, and allows the opportunity to recommend appropriate revisions where necessary.

10. LIMITATIONS

The recommendations and opinions expressed in this report are based on Twining, Inc.'s review of readily available background documents, on information obtained from field explorations, and on laboratory testing. In the event that any of our recommendations conflict with recommendations provided by other design professionals, we should be contacted to aid in resolving the discrepancy.

Due to the limited nature of our field explorations, conditions not observed and described in this report may be present on the site. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation and laboratory testing can be performed upon request. It should be understood that conditions different from those anticipated in this report may be encountered during grading operations (for example, the extent of removal of unsuitable soil) and that additional effort may be required to mitigate them.

Site conditions, including but not limited to groundwater elevation, can change with time as a result of natural processes or the activities of man at the subject site or at nearby sites. Changes to the applicable laws, regulations, codes, and standards of practice may occur as a result of government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Twining, Inc. has no control.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Twining, Inc. should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

This report has been prepared for the exclusive use by the City of San Diego and its agents for specific application to the proposed project. Land use, site conditions, or other factors may change over time, and additional work may be required with the passage of time. Based on the intended use of this report and the nature of the project, Twining, Inc. may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Twining, Inc. from all liability resulting from the use of this report by any unauthorized party.



Twining, Inc. has endeavored to perform its evaluation using the degree of care and skill ordinarily exercised under similar circumstances by reputable geotechnical professionals with experience in this area under similar circumstances. No other warranty, either expressed or implied, is made as to the conclusions and recommendations contained in this report.



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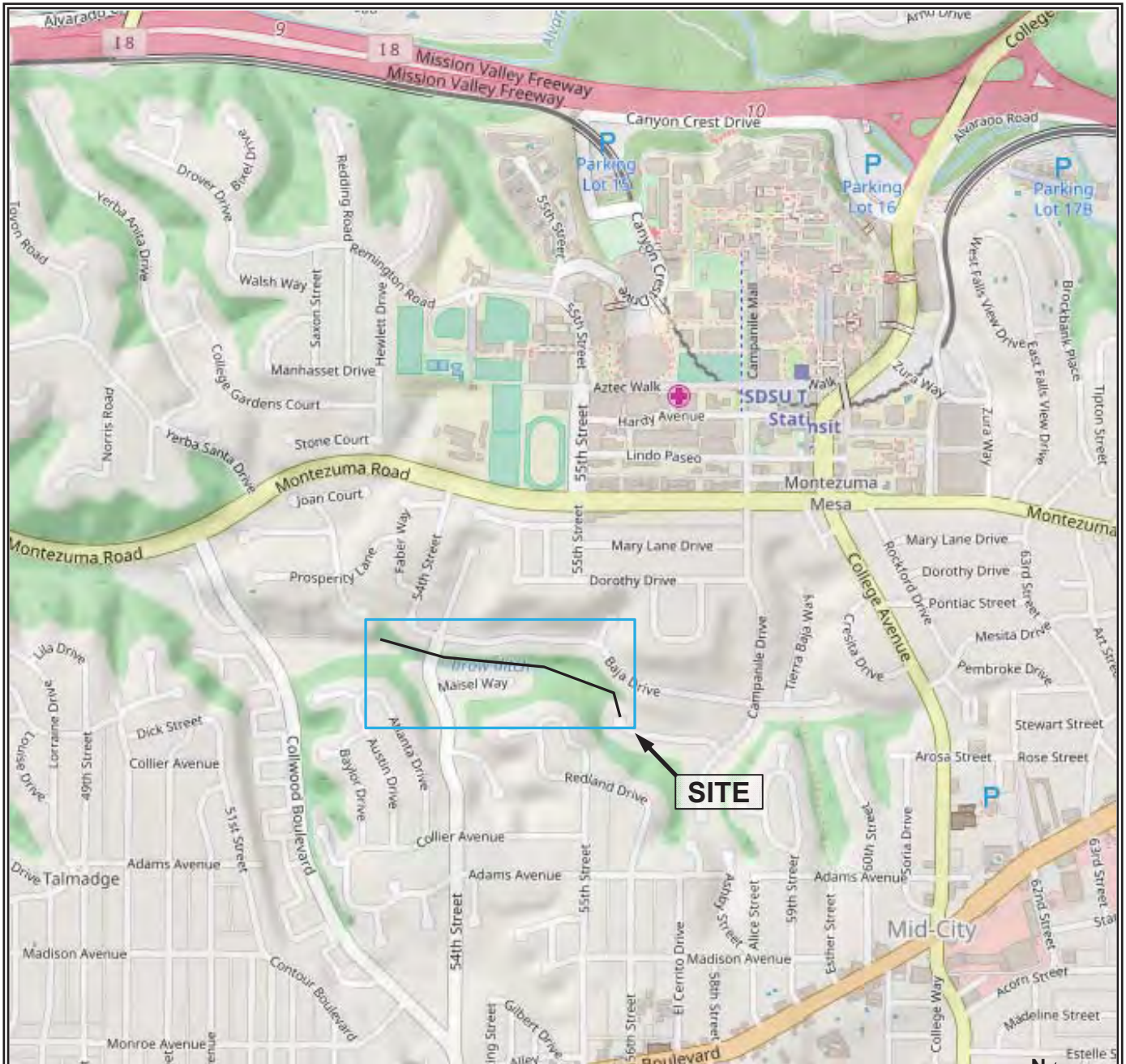
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FIGURES



LEGEND

— PIPE ALIGNMENT



SCALE 1" = 1200'

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

SOURCE: OPEN STREET MAP, 2016.



PROJECT LOCATION MAP

15GT14 - COLLEGE AREA SEWER & AC WATER MAIN REPLACEMENT
54TH STREET AND CAMPANILE WAY,
SAN DIEGO, CALIFORNIA


REPORT DATE:
FEB 2018

PROJECT NO.:
180004.2

FIGURE 1



LEGEND


B-1 APPROXIMATE BORING LOCATION
 TD=5.5' TD= TERMINATION DEPTH IN FEET



SCALE 1" = 250'

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: GOOGLE MAPS (2017)



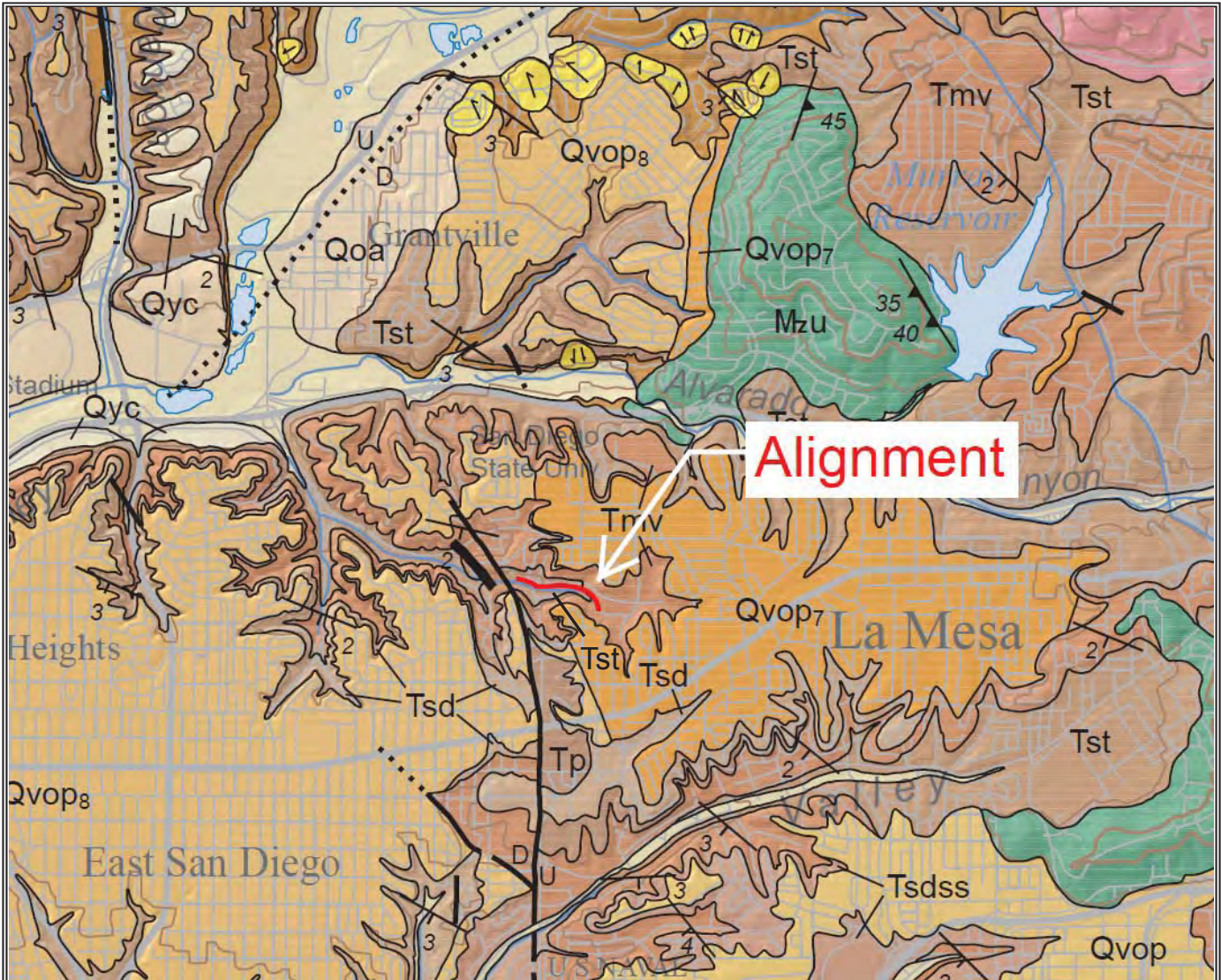
EXPLORATION LOCATION MAP

15GT14 - COLLEGE AREA SEWER & AC WATER MAIN
 REPLACEMENT
 54TH STREET AND CAMPANILE WAY,
 SAN DIEGO, CALIFORNIA

REPORT DATE:
 FEB 2018

PROJECT NO.:
 180004.2

FIGURE 2



LEGEND

- Tsd SAN DIEGO FORMATION
- Qoa OLD ALLUVIAL FLOOD PLAIN DEPOSITS
- Qvop₈ VERY OLD PARALIC DEPOSITS (Unit 8)
- Qvop₇ VERY OLD PARALIC DEPOSITS (Unit 7)
- Tst STADIUM CONGLOMERATE
- Tmv MISSION VALLEY FORMATIONS



SCALE 1" = 1,500'

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

SOURCE: GEOLOGIC MAP OF EL CAJON, CALIFORNIA GEOLOGIC SURVEY, 2008.



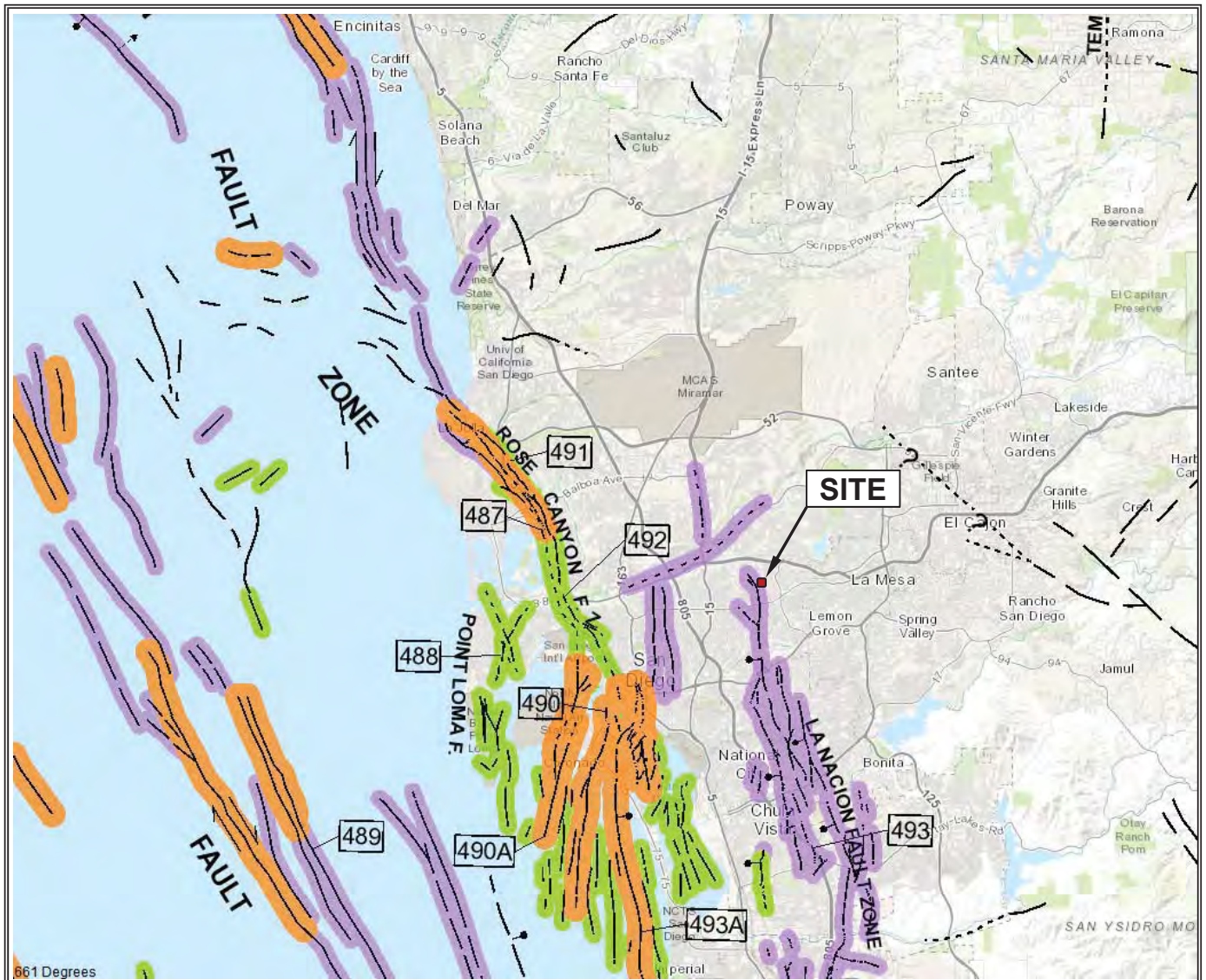
REGIONAL GEOLOGIC MAP

15GT14 - COLLEGE AREA SEWER & AC WATER MAIN REPLACEMENT
 54TH STREET AND CAMPANILE WAY,
 SAN DIEGO, CALIFORNIA






REPORT DATE:
FEB 2018

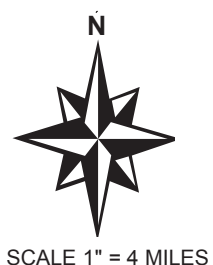
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FIGURE 3



LEGEND

-  FAULT ALONG WHICH HISTORIC DISPLACEMENT HAS OCCURRED
-  HOLOCENE FAULT DISPLACEMENT
-  LATE QUATERNARY FAULT DISPLACEMENT
-  QUATERNARY FAULT DISPLACEMENT
-  PRE-QUATERNARY FAULT DISPLACEMENT

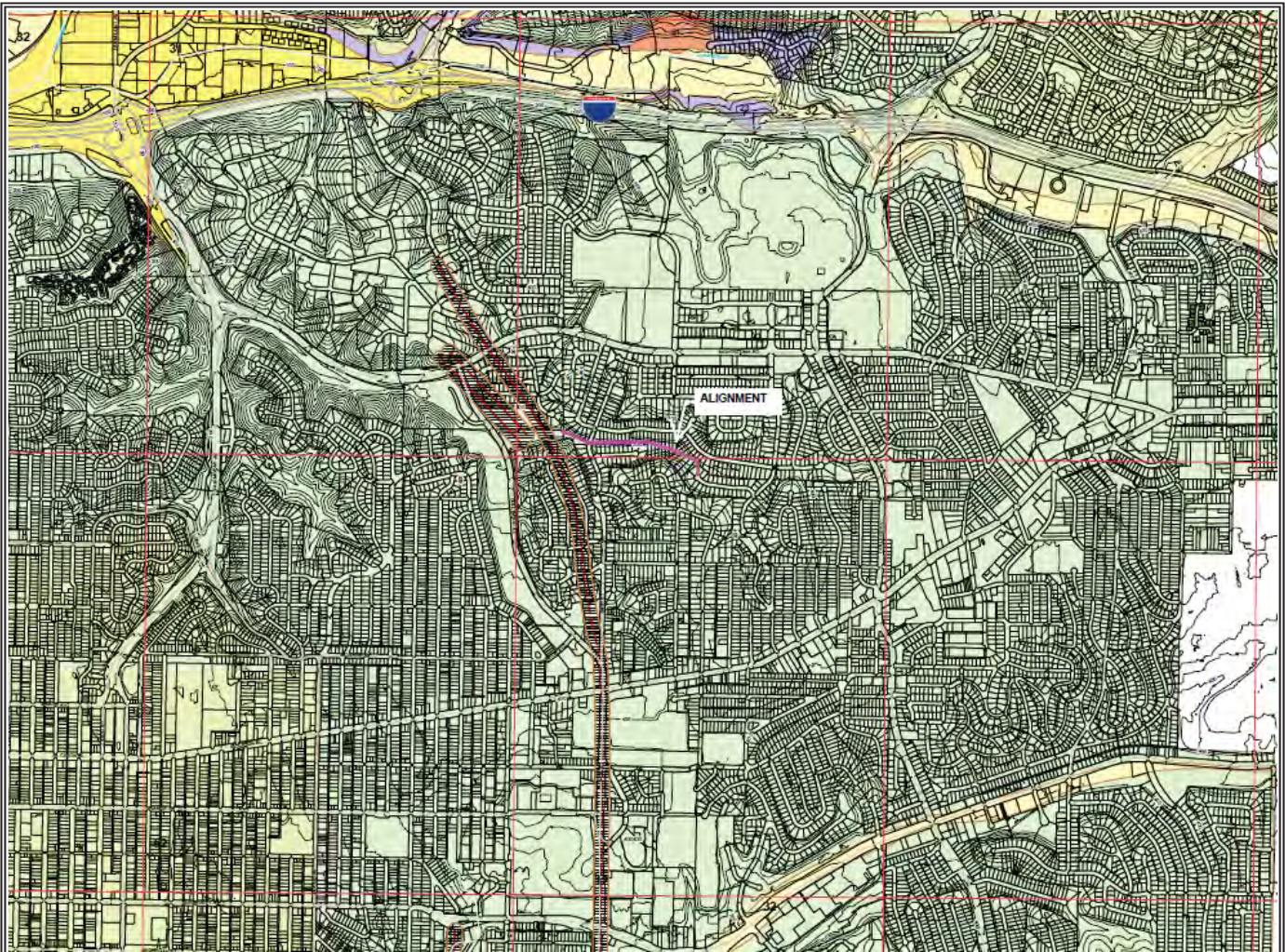


NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: CGS, 2010, FAULT ACTIVITY MAP OF CALIFORNIA (2010)



FAULT LOCATION MAP		
15GT14 - COLLEGE AREA SEWER & AC WATER MAIN REPLACEMENT 54 TH STREET AND CAMPANILE WAY, SAN DIEGO, CALIFORNIA		
REPORT DATE: FEB 2018	PROJECT NO.: 180004.2	FIGURE 4



LEGEND

- 51 Level mesas -- underlain by terrace deposits and bedrock nominal risk
- 52 Other level areas, gently sloping to steep terrain, favorable geologic structure, Low risk
- 53 Level or sloping terrain, unfavorable geologic structure, Low to moderate risk
- 54 Steeply sloping terrain, unfavorable or fault controlled geologic structure, Moderate risk
- 55 Modified terrain (graded sites) Nominal risk
- 31 High Potential -- shallow groundwater major drainages, hydraulic fills
- 32 Low Potential -- fluctuating groundwater minor drainages
- 11 Active, Alquist-Priolo Earthquake Fault Zone
- 12 Potentially Active, Inactive, Presumed Inactive, or Activity Unknown
- 13 Downtown special fault zone



SCALE 1" = 1,500'

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: CITY OF SAN DIEGO SEISMIC SAFETY STUDY MAP(2008)



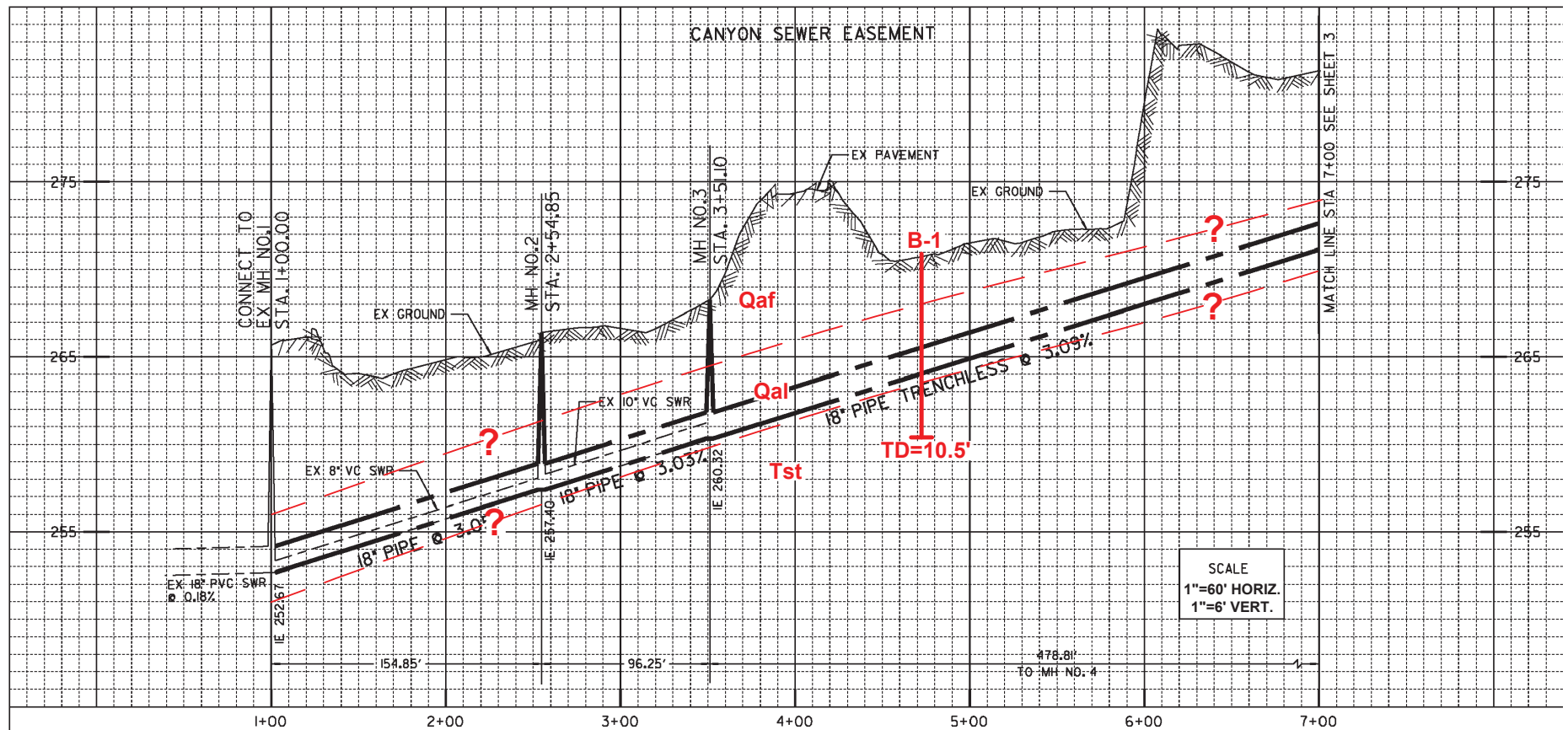
SEISMIC SAFETY MAP

15GT14 - COLLEGE AREA SEWER & AC WATER MAIN REPLACEMENT
 54TH STREET AND CAMPANILE WAY,
 SAN DIEGO, CALIFORNIA

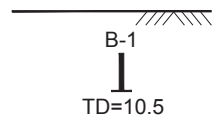
REPORT DATE:
FEB 2018

PROJECT NO.:
180004.2

FIGURE 5



NOTE: All dimensions, locations, and directions are approximate.



TD=10.5

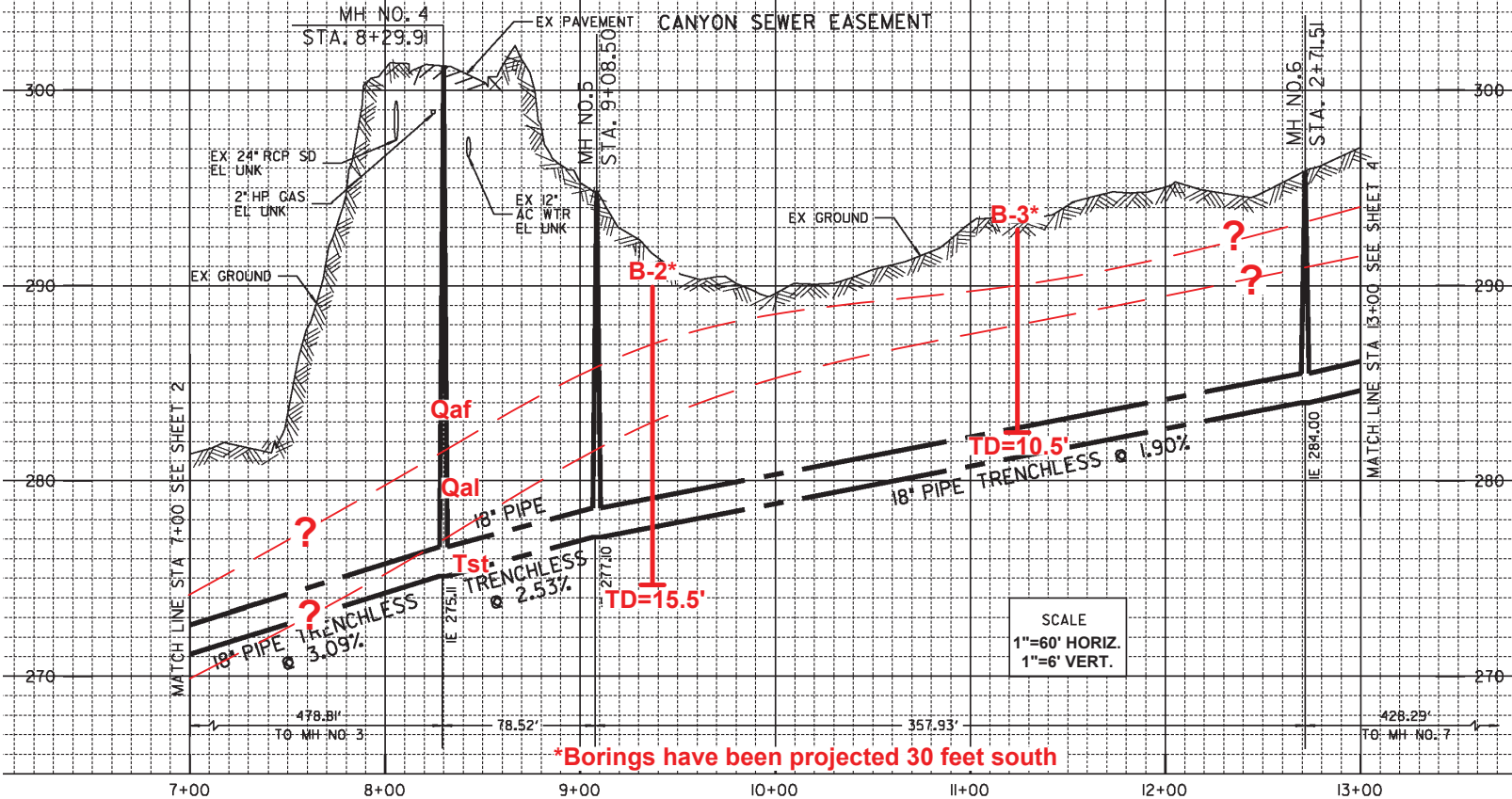
LEGEND

- EXISTING GRADE
- APPROXIMATE GEOLOGIC CONTACT LOCATION (QUERIED WHERE UNCERTAIN)
- ARTIFICIAL FILL
- ALLUVIUM
- STADIUM CONGLOMERATE

GEOLOGIC CROSS SECTION

15GT14 - College Area Sewer and Water Main Replacement
54th Street and Campanile Way
San Diego, California

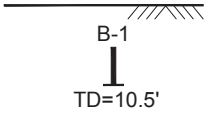
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE 6A
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*Borings have been projected 30 feet south



NOTE: All dimensions, locations, and directions are approximate.

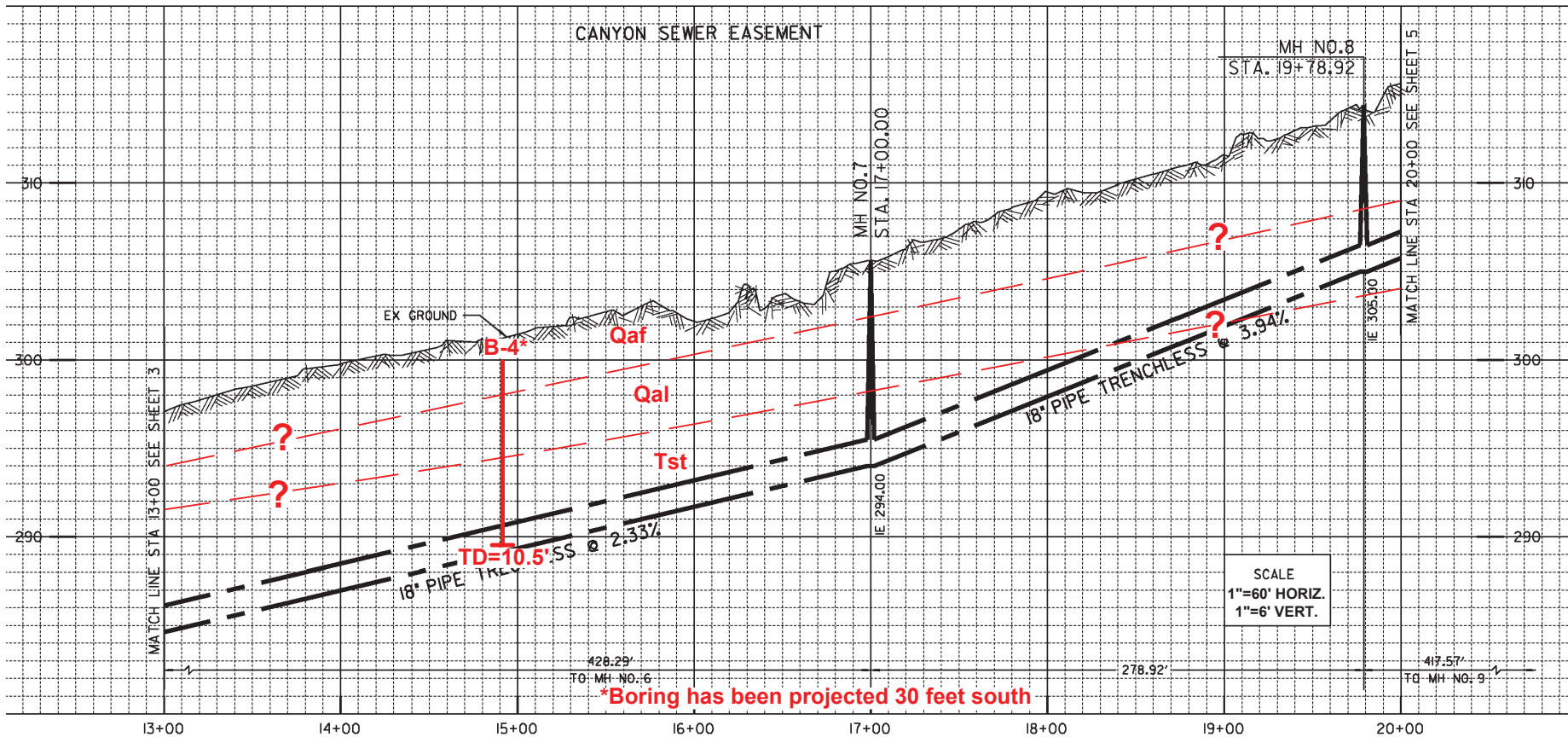


EXISTING GRADE
 APPROXIMATE LOCATION OF EXPLORATORY BORING
 TD = TERMINATION DEPTH IN FEET
 APPROXIMATE GEOLOGIC CONTACT LOCATION (QUERIED WHERE UNCERTAIN)

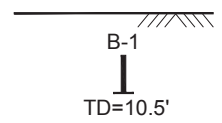
LEGEND

- Qaf ARTIFICIAL FILL
- Qal ALLUVIUM
- Tst STADIUM CONGOLOMERATE

GEOLOGIC CROSS SECTION		
15GT14 - College Area Sewer and Water Main Replacement 54th Street and Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE 6B



NOTE: All dimensions, locations, and directions are approximate.

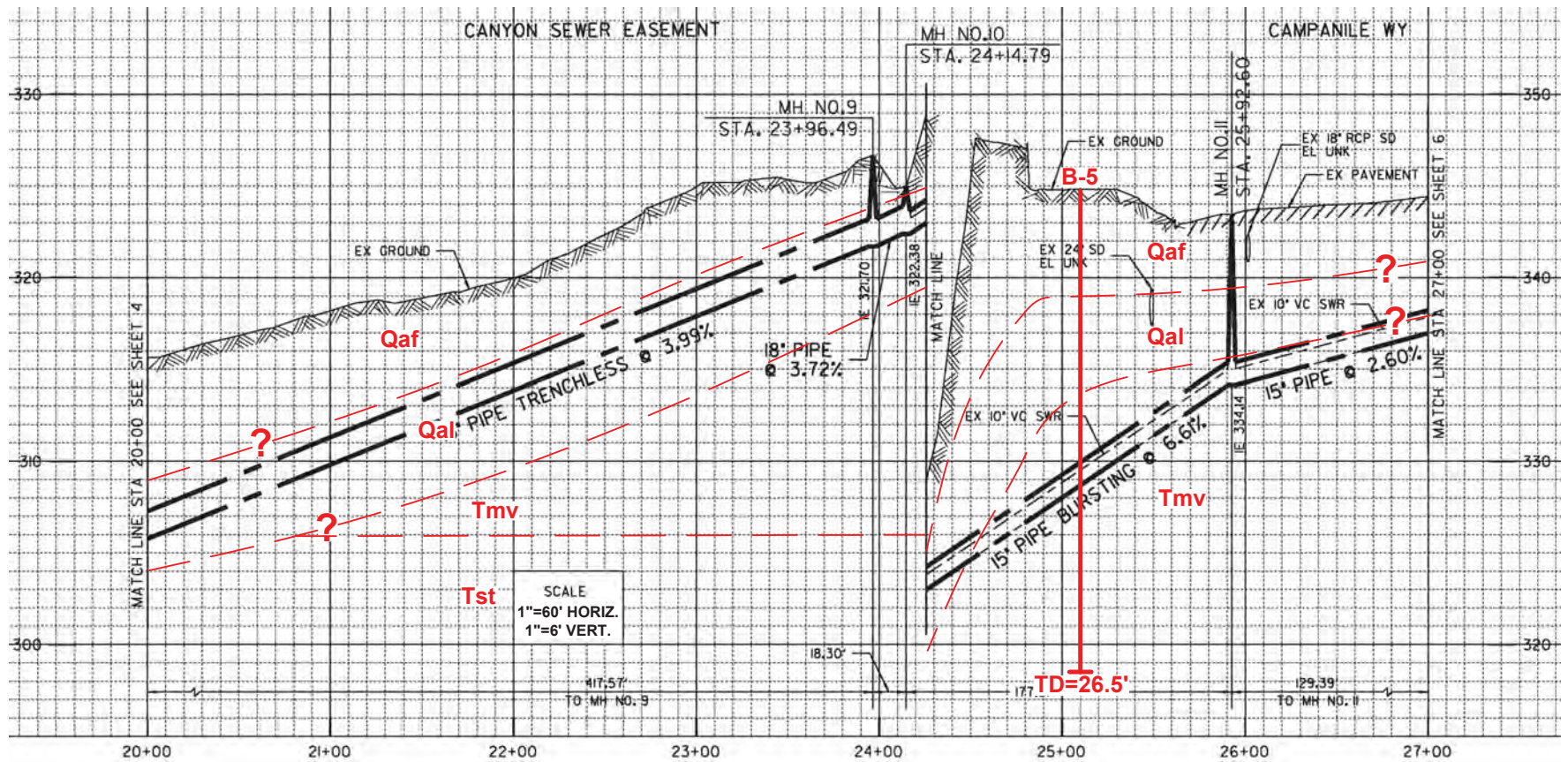


LEGEND

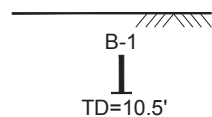
- EXISTING GRADE
- APPROXIMATE LOCATION OF EXPLORATORY BORING
TD = TERMINATION DEPTH IN FEET
- APPROXIMATE GEOLOGIC CONTACT LOCATION (QUERIED WHERE UNCERTAIN)

- ARTIFICIAL FILL
- ALLUVIUM
- STADIUM CONGLOMERATE

GEOLOGIC CROSS SECTION		
15GT14 - College Area Sewer and Water Main Replacement 54th Street and Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE 6C



NOTE: All dimensions, locations, and directions are approximate.



EXISTING GRADE

APPROXIMATE LOCATION OF EXPLORATORY BORING

TD = TERMINATION DEPTH IN FEET

APPROXIMATE GEOLOGIC CONTACT LOCATION (QUERIED WHERE UNCERTAIN)

LEGEND

- Qaf ARTIFICIAL FILL
- Qal ALLUVIUM
- Tmv MISSION VALLEY FORMATION
- Tst STADIUM CONGLOMERATE

GEOLOGIC CROSS SECTION

15GT14 - College Area Sewer and Water Main Replacement
54th Street and Campanile Way
San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE 6D
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APPENDIX A FIELD EXPLORATION

Appendix A Field Exploration

General

The subsurface exploration program for the proposed project included drilling and logging five, 8-inch diameter borings. The borings were advanced using a Unimog truck-mounted hollow-stem-auger drill rig. The borings reached depths of approximately 10.5 feet to 26.5 feet below existing grades.

Drilling and Sampling

The Boring Logs are presented in Figures A-2 through A-6. An explanation of these logs is presented in Figure A-1. The Boring Logs describe the earth materials encountered, samples obtained, and show the field and laboratory tests performed. The log also shows the boring number, drilling date, and the name of the logger and drilling subcontractor. The borings were logged by a Twining, Inc. engineer using the Unified Soil Classification System. The boundaries between soil types shown on the logs are approximate and the transition between different soil layers may be gradual. Drive and bulk samples of representative earth materials were obtained from the borings.

A California modified sampler was used to obtain drive samples of the soils encountered. This sampler consists of a 3-inch outside diameter (O.D.), 2.4-inch inside diameter (I.D.) split barrel shaft that is driven into the soil a total of 18 inches using a 140-pound, automatic-drop hammer falling approximately 30 inches. The number of blows required to drive the sampler the final 12 inches is presented on the boring logs. The soil was retained in brass rings for laboratory testing. Additional soil from each drive remaining in the cutting shoe was usually discarded after visually classifying the soil.

Disturbed samples were obtained using a Standard Penetration Sampler (SPT). This sampler consists of a 2-inch O.D., 1.4-inch I.D. split barrel shaft that is driven into the soil a total of 18 inches using a 140-pound, automatic-drop hammer falling approximately 30 inches. The number of blows required to drive the sampler the final 12 inches is presented on the boring logs. Soil samples obtained by the SPT were retained in plastic bags.

Bulk samples of the soil cuttings were collected in plastic bags for testing in our laboratory.



UNIFIED SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS <small>MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE</small>	GRAVEL AND GRAVELLY SOILS <small>MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</small>	CLEAN GRAVELS <small>(LITTLE OR NO FINES)</small>		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS <small>MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</small>	CLEAN SANDS <small>(LITTLE OR NO FINES)</small>		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		CLEAN SANDS <small>(LITTLE OR NO FINES)</small>		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		SM	SILTY SANDS, SAND - SILT MIXTURES
		SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS <small>MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE</small>	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
			CH	INORGANIC CLAYS OF HIGH PLASTICITY	
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

COARSE-GRAINED SOILS

Relative Density	SPT (blows/ft)	Relative Density (%)	Consistency	SPT (blows/ft)
Very Loose	<4	0 - 15	Very Soft	<2
Loose	4 - 10	15 - 35	Soft	2 - 4
Medium Dense	10 - 30	35 - 65	Medium Stiff	4 - 8
Dense	30 - 50	65 - 85	Stiff	8 - 15
Very Dense	>50	85 - 100	Very Stiff	15 - 30
			Hard	>30

NOTE: SPT blow counts based on 140 lb. hammer falling 30 inches

FINE-GRAINED SOILS

LABORATORY TESTING ABBREVIATIONS

ATT	Atterberg Limits
C	Consolidation
CORR	Corrosivity Series
DS	Direct Shear
EI	Expansion Index
GS	Grain Size Distribution
K	Permeability
MAX	Moisture/Density (Modified Proctor)
O	Organic Content
RV	Resistance Value
SE	Sand Equivalent
SG	Specific Gravity
TX	Triaxial Compression
UC	Unconfined Compression

Sample Symbol	Sample Type	Description
	SPT	1.4 in I.D., 2.0 in. O.D. driven sampler
	California Modified	2.4 in. I.D., 3.0 in. O.D. driven sampler
	Bulk	Retrieved from soil cuttings
	Thin-Walled Tube	Pitcher or Shelby Tube



TWINING

EXPLANATION FOR LOG OF BORINGS

15GT14-College Area Sewer and Water Main Replacement
54th Street & Campanile Way
San Diego, California

PROJECT NO.
180004.2

REPORT DATE
February 2018

FIGURE A-1

STANDARD LOG EXPLANATION - 15GT14-COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ - TWINING LABS.GDT - 2/14/18

DATE DRILLED 1/18/2018 LOGGED BY SM **BORING NO.** B-1
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 271 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES		BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
		Bulk	Driven						
								SC	ARTIFICIAL FILL: Clayey SAND, dark brown, wet, medium dense, chunk of clay, cobbles observed in the vicinity of the boring and the south side slope
266	5			50/6"				GP	ALLUVIUM: Sandy GRAVEL, light brown, damp, dense, coarse to medium
261	10			50/0.5"					STADIUM CONGLOMERATE: Sandy GRAVEL Conglomerate, brown, damp, dense, gravel up to 1.5 inch, difficulty in drilling - No recovery, Auger cutting: Sandy GRAVEL, brown, very dense, damp, with clayey sand matrix, Extreme difficulty in drilling, grinding with lose of auger bit, Practical refusal at 10'6" after three attempts. Total Depth = 10.5 feet Backfilled on 1/18/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.
256	15								
251	20								
246	25								
241	30								

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/23/18



LOG OF BORING

15GT14-College Area Sewer and Water Main Replacement
 54th Street & Campanile Way
 San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 2
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DATE DRILLED 1/18/2018 LOGGED BY SM **BORING NO.** B-2
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 290 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES		BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
		Bulk	Driven						
								SP	<u>ARTIFICIAL FILL:</u> Gravelly SAND, brown, damp, loose to dense, gravel upto 2", difficulty in drilling
285	5			9				GP	<u>ALLUVIUM:</u> Sandy GRAVEL, light brown, damp, loose, gravel up to 1"
280	10			50/6"	5.9	140.1			<u>STADIUM CONGLOMERATE:</u> Sandy GRAVEL Conglomerate, grayish brown, damp, dense, gravel up to 1.25" Sandy GRAVEL, grayish brown, damp, dense, gravel up to 2"
275	15			50/6"					- light brown, very dense, abundant gravel and cobble, weathered Total Depth = 15.5 feet Backfilled on 1/18/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.
270	20								
265	25								
260	30								

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT. 2/23/18



LOG OF BORING

15GT14-College Area Sewer and Water Main Replacement
 54th Street & Campanile Way
 San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 3
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DATE DRILLED 1/18/2018 LOGGED BY SM **BORING NO.** B-3
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 293 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES		BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
		Bulk	Driven						
								SM	<u>ARTIFICIAL FILL:</u> Clayey SAND, dark brown, moist, loose
								SC	<u>ALLUVIUM:</u> Clayey SAND, brown, moist, medium dense
288	5			50/1.5"				GM	<u>STADIUM CONGLOMERATE:</u> Silty GRAVEL Conglomerate, reddish brown, damp, very dense, extreme difficulty in drilling
283	10			50/6"				GP	Sandy GRAVEL, brown, damp, very dense, extreme difficulty in drilling Total Depth = 10.5 feet Backfilled on 1/18/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.
278	15								
273	20								
268	25								
263	30								

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/23/18



LOG OF BORING

15GT14-College Area Sewer and Water Main Replacement
 54th Street & Campanile Way
 San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 4
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DATE DRILLED 1/25/2018 LOGGED BY SM **BORING NO.** B-4
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 300 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES		BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
		Bulk	Driven						
								GW-GM	<u>ARTIFICIAL FILL:</u> Sandy GRAVEL, dark brown, moist, medium dense, cobble up to 4"
								SM	<u>ALLUVIUM:</u> Silty SAND, dark brown, moist, dense,
295	5			43					<u>STADIUM CONGLOMERATE:</u> Sandy GRAVEL Conglomerate, tan, moist, dense, gravel upto 1.75" , fractured face gravel indicating presence of large size cobble
290	10			50/5.5"					-- same, Practical refusal depth at 10.5' depth after 3 attempts of drilling Total Depth = 10.5 feet Backfilled on 1/25/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.
285	15								
280	20								
275	25								
270	30								

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/23/18



LOG OF BORING

15GT14-College Area Sewer and Water Main Replacement
 54th Street & Campanile Way
 San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 5
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DATE DRILLED 1/25/2018 LOGGED BY SM **BORING NO.** B-5
 DRIVE WEIGHT 140 lbs. DROP 30 inches DEPTH TO GROUNDWATER (ft.) NE
 DRILLING METHOD 8" HSA/Air Rotary DRILLER Pacific Drilling SURFACE ELEVATION (ft.) 345 ±(MSL)

ELEVATION (feet)	DEPTH (feet)	SAMPLES Bulk Driven	BLOWS / FOOT	MOISTURE (%)	DRY DENSITY (pcf)	GRAPHIC LOG	U.S.C.S. CLASSIFICATION	DESCRIPTION
340	5		8				SM	<u>ASPHALT:</u> <u>ARTIFICIAL FILL:</u> Silty SAND, dark brown, damp, loose, with some clay chunk
335	10						SM GP	<u>ALLUVIUM:</u> Silty SAND, brown, damp, loose, Sandy GRAVEL, yellowish brown, damp, dense, difficult drilling on cobble at 7' and Air rotary drilling introduced, speed of advancement was 3-5 sec / ft at the 7' - 10' interval
330	15		73/7"				GP	- increasing size of gravel (possibly cobble), speed of advancement was 5 - 10 sec / ft at the 10' -15 interval.
325	20							<u>MISSION VALLEY FORMATION:</u> Sandy GRAVEL, tan, damp, very dense - No recovery (Mod Cal Sampler), same, increasing size of gravel (possibly cobble - fractured face gravel), speed of advancement was 8 - 11 sec / ft at the 15' - 20' interval. -speed of advancement was 10 - 13 sec / ft at the interval of 20' - 25'
320	25		21					-moist, sampler driven in cuttings at bottom
315	30							Total Depth = 26.5 feet Backfilled on 1/25/2018 Groundwater not observed at completion of drilling. Borehole backfilled in accordance with SDCDEH requirements.

BORING LOG 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/23/18



LOG OF BORING

15GT14-College Area Sewer and Water Main Replacement
 54th Street & Campanile Way
 San Diego, California

PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE A - 6
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APPENDIX B

LABORATORY TESTING



Appendix B Laboratory Testing

Laboratory Moisture Content and Density Tests

The moisture content and dry density of selected driven samples obtained from the exploratory borings was evaluated in general accordance with the latest version of ASTM D2937. The test results are presented on the logs of the exploratory borings in Appendix A and also summarized in Table B-1.

**Table B-1
Laboratory Moisture Content and Dry Density**

Boring No.	Depth (feet)	Moisture Content (%)	Dry Unit Weight (pcf)
B-2	10	5.9	140.1

Atterberg Limits

Atterberg limits tests were performed on selected soil samples to evaluate plasticity characteristics and to aid in the classification of the soil. The tests were performed in general accordance with ASTM D4318. The results are presented in Figure B-1.

Maximum Dry Density and Optimum Moisture Content

A Standard Proctor test was performed on two samples of near-surface soils to determine the maximum dry density and optimum water content for compaction. The tests were performed in accordance with ASTM D 1557. The results have been presented in Figure B-11.

Sieve Analyses

The grain-size distribution of selected soil samples was evaluated in general accordance with ASTM C136/C117. Test results are presented on Figures B-2 through B-10.

Corrosivity

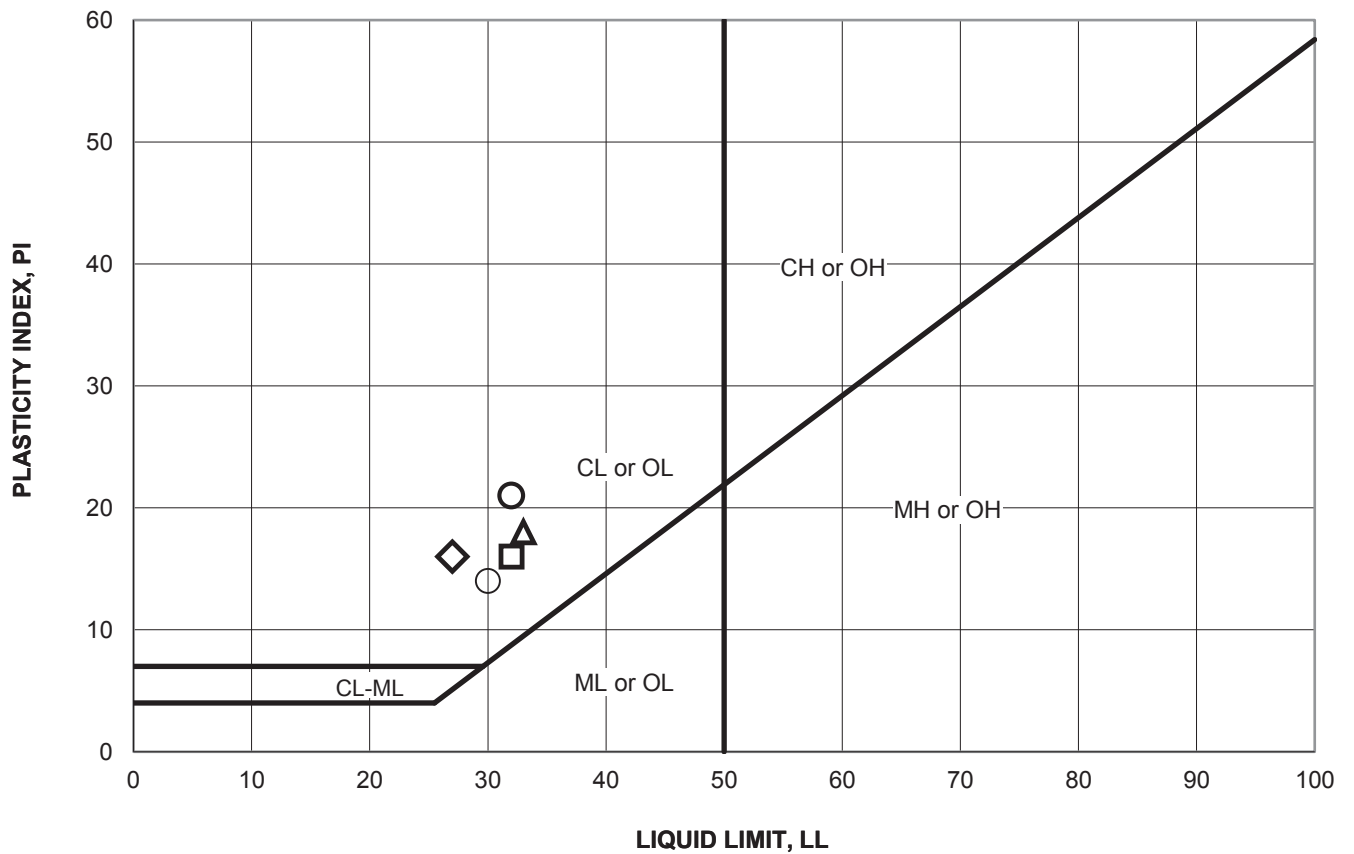
Soil pH and resistivity tests were performed on a representative soil samples in accordance with California Test Method 643. Chloride content of the selected samples was evaluated in accordance with California Test Method 422. Sulfate content of the selected samples was evaluated in accordance with California Test Method 417. The tests were performed by AP Engineering and Testing. Test results are presented on Table B-2.

**Table B-2
Corrosivity Test Results**

Boring No.	Depth (feet)	pH	Water Soluble Sulfate (ppm)	Water Soluble Chloride (ppm)	Minimum Resistivity (ohm-cm)
B-1	10.0'	6.9	20	106	890
B-2	10.0'	7.0	32	138	1,020

SYMBOL	SAMPLE LOCATION	SAMPLE DEPTH (FT)	LIQUID LIMIT, LL	PLASTIC LIMIT, PL	PLASTICITY INDEX, PI	USCS (% Finer than No. 40)	USCS (Entire Sample)
▲	B-1	0-5'	33	15	18	CL	SC
□	B-2	0-5'	32	16	16	CL	SG
○	B-3	0-5'	32	11	21	CL	SC
◇	B-3	5'	27	11	16	CL	GM
⬡	B-5	0-5'	30	16	14	CL	SC

NP - INDICATES NON-PLASTIC



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318



ATTERBERG LIMITS

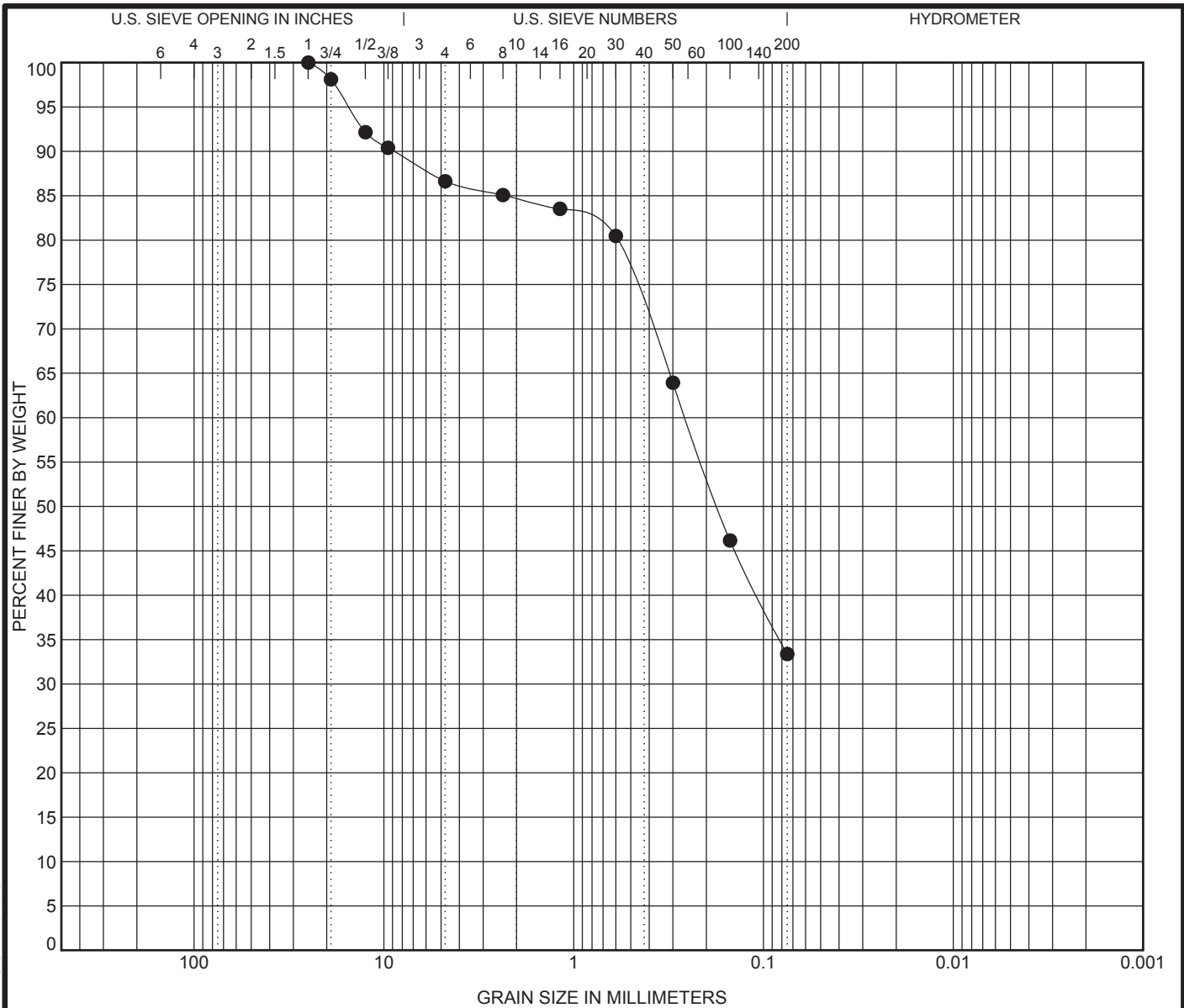
15GT14 - College Area Sewer & Water Main Replacement
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San Diego, California

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180004.2

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February 2018


FIGURE B-1

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18

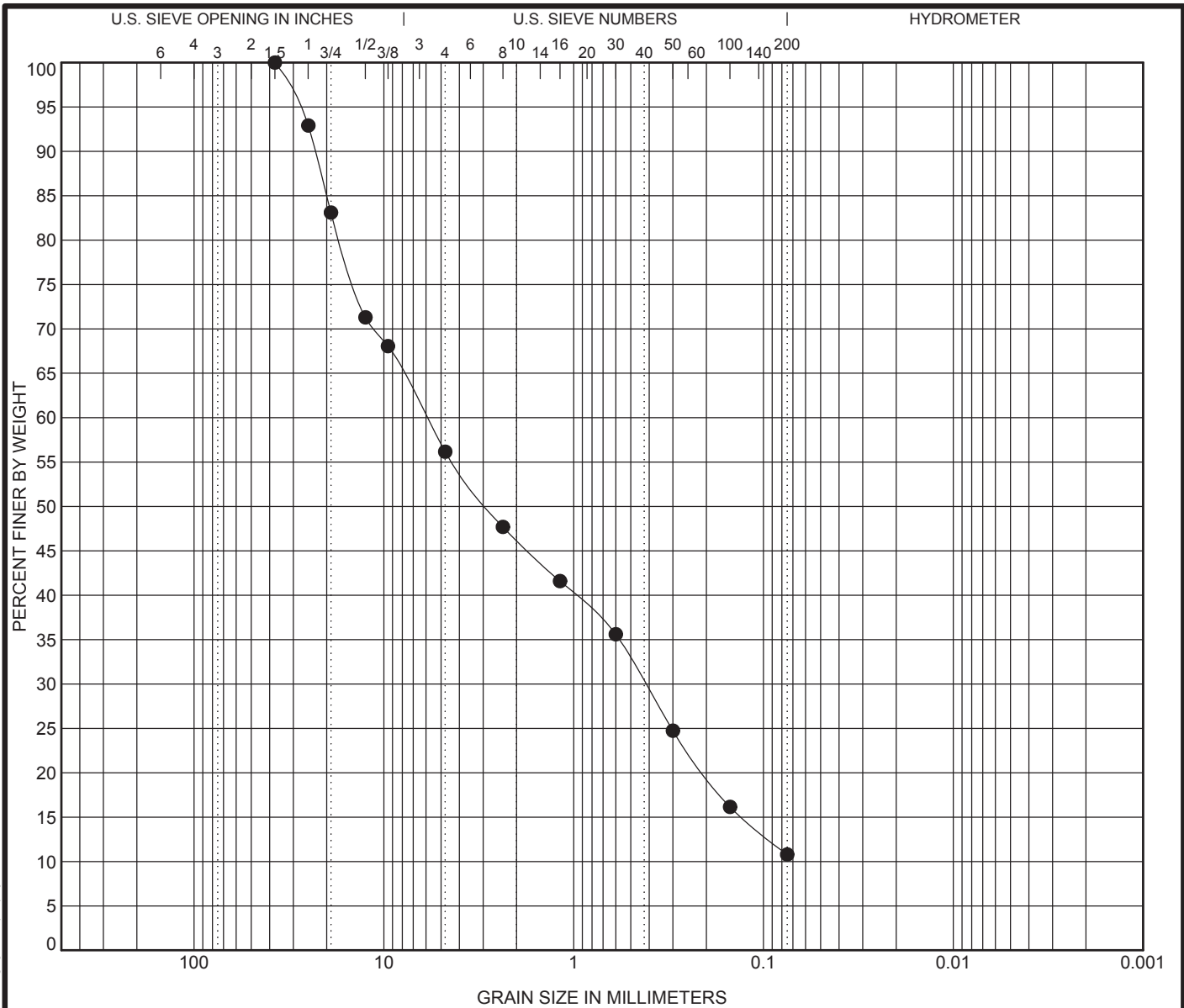


COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		U.S.C.S. Classification						Cc	Cu
● B-1 at 0 - 5 ft		Clayey SAND							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay	
25	0.257	0.174			13.4	53.3	33.4		

 <h1>TWINING</h1>	GRAIN SIZE DISTRIBUTION		
	15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
	PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 2

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



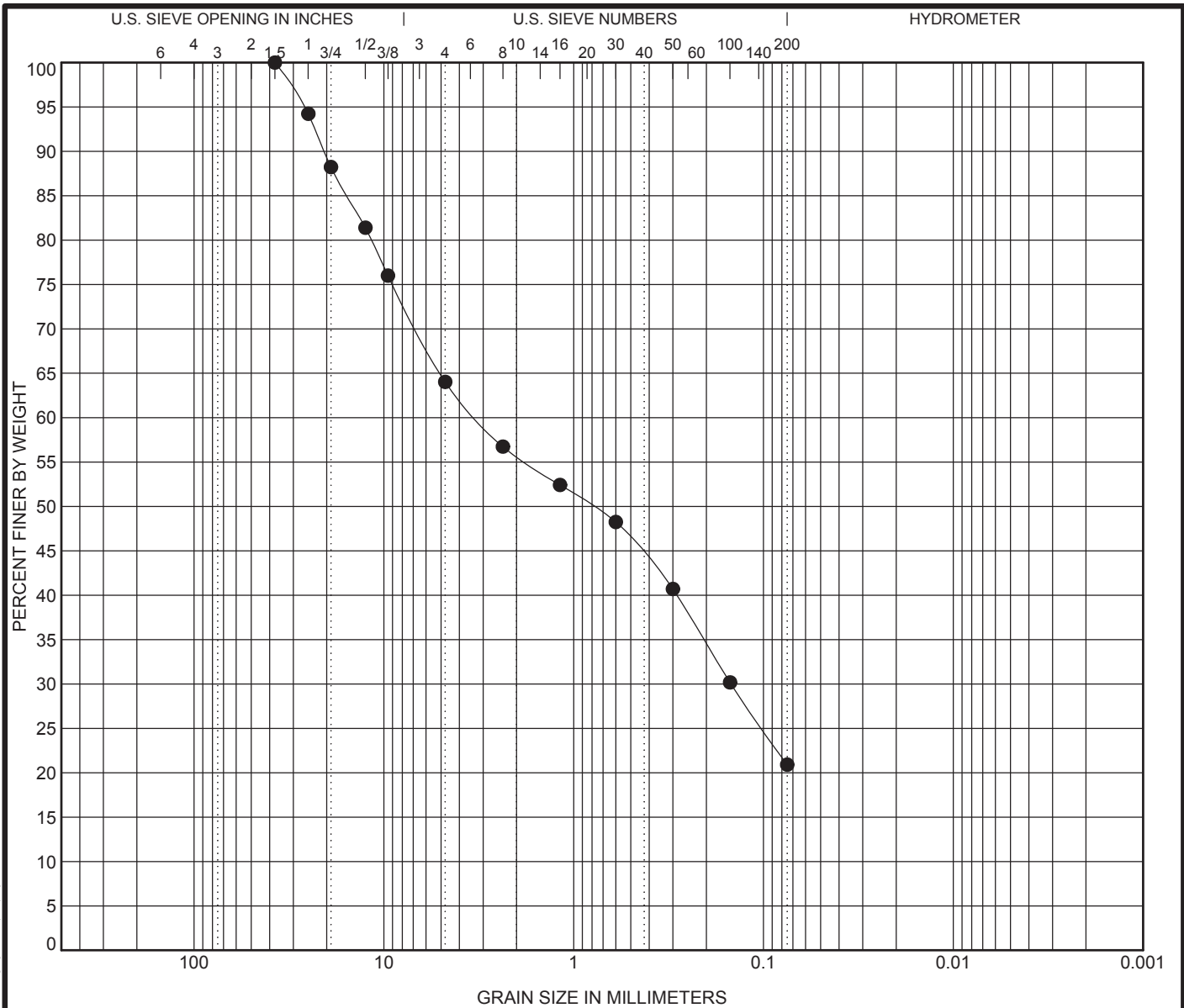
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		U.S.C.S. Classification					Cc	Cu
● B-1 at 5 ft		Sandy GRAVEL					0.44	87.75
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
37.5	5.939	2.854	0.42		43.8	45.4	10.8	



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 3

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



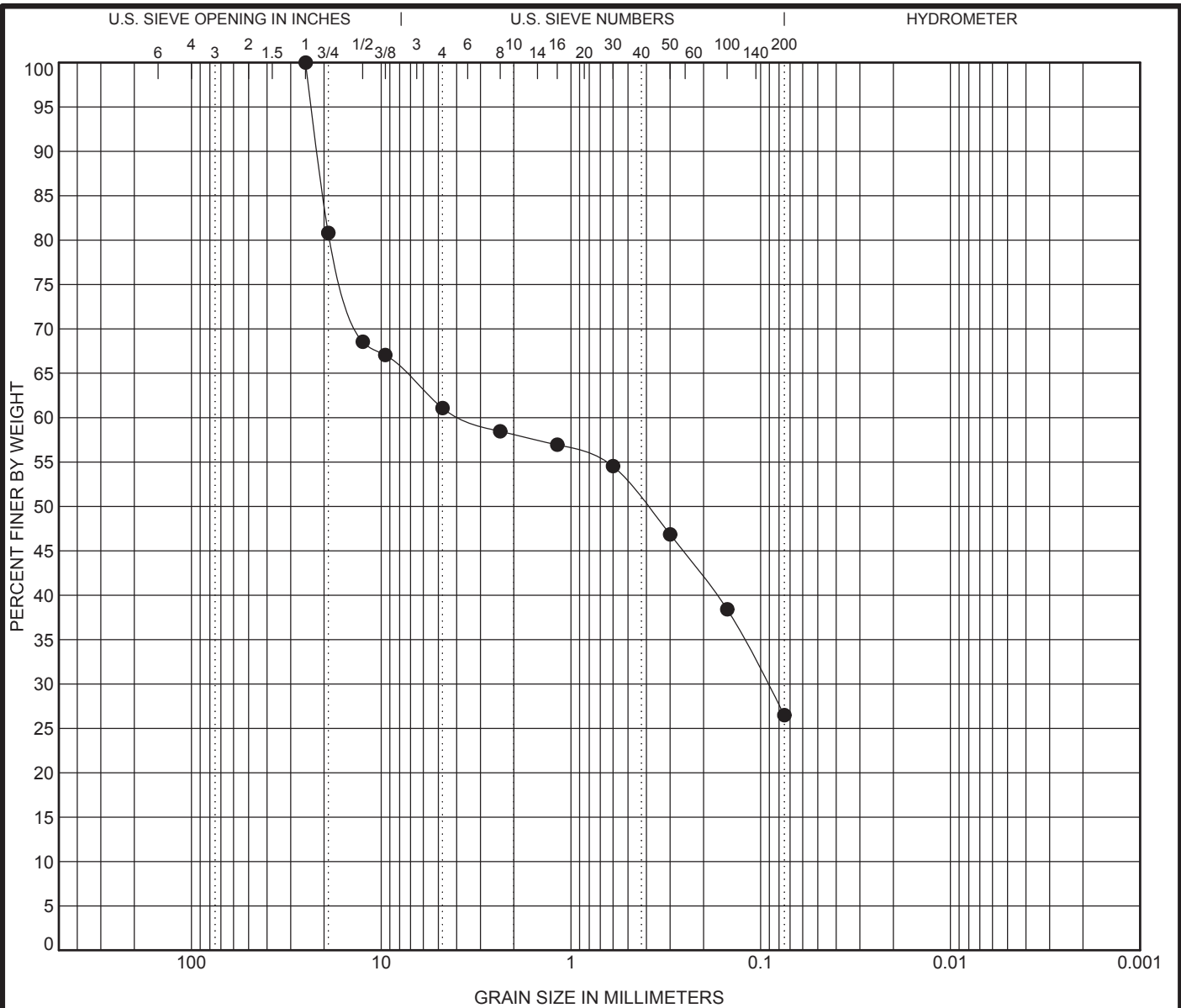
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		U.S.C.S. Classification						Cc	Cu
● B-2 at 0 - 5 ft		Gravelly SAND							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay	
37.5	3.226	0.797	0.148		36.0	43.1	20.9		



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 4

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



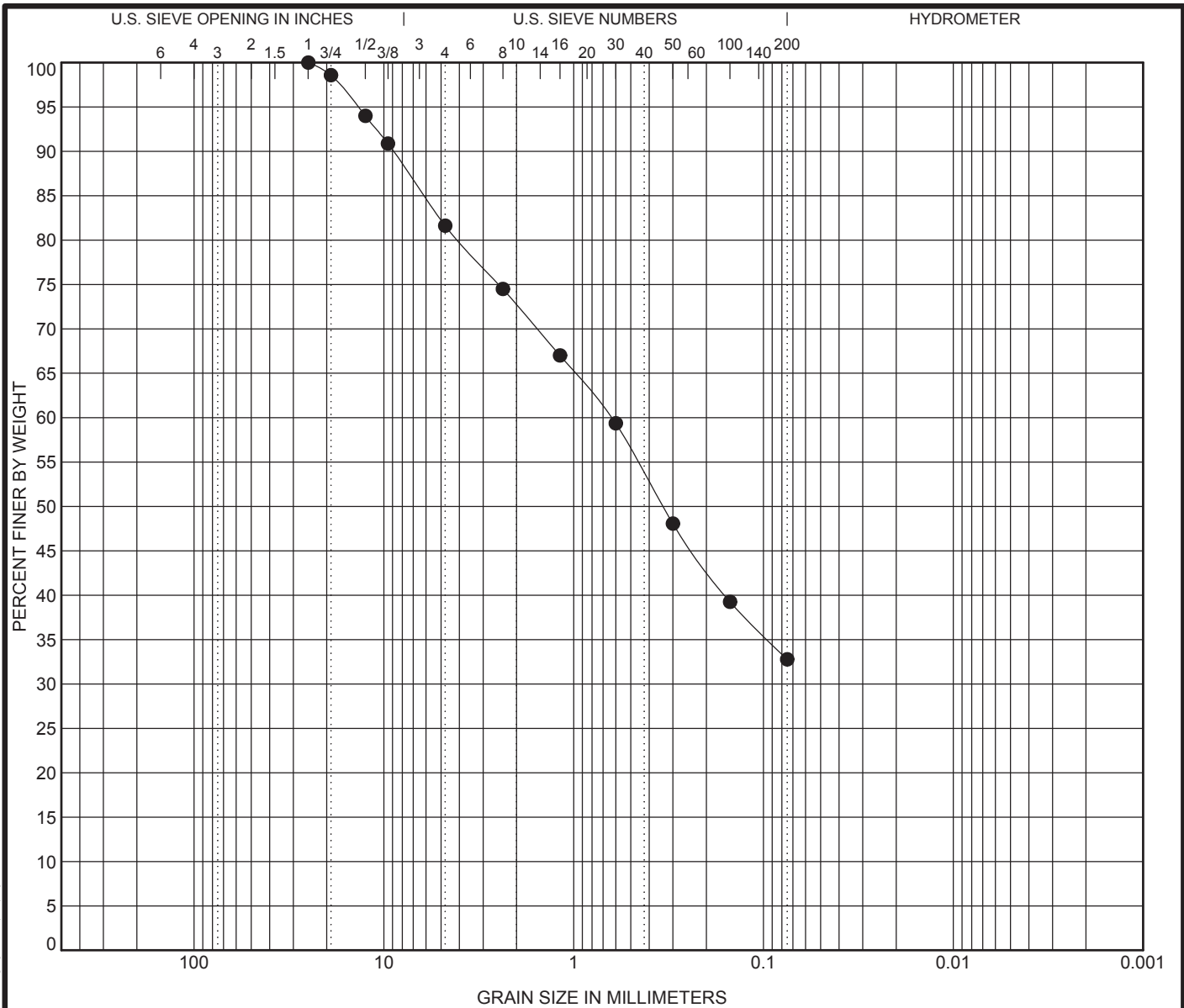
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	U.S.C.S. Classification						Cc	Cu
● B-2 at 5 ft	Sandy GRAVEL							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
25	3.556	0.398	0.092		38.9	34.6	26.5	




GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 5

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18

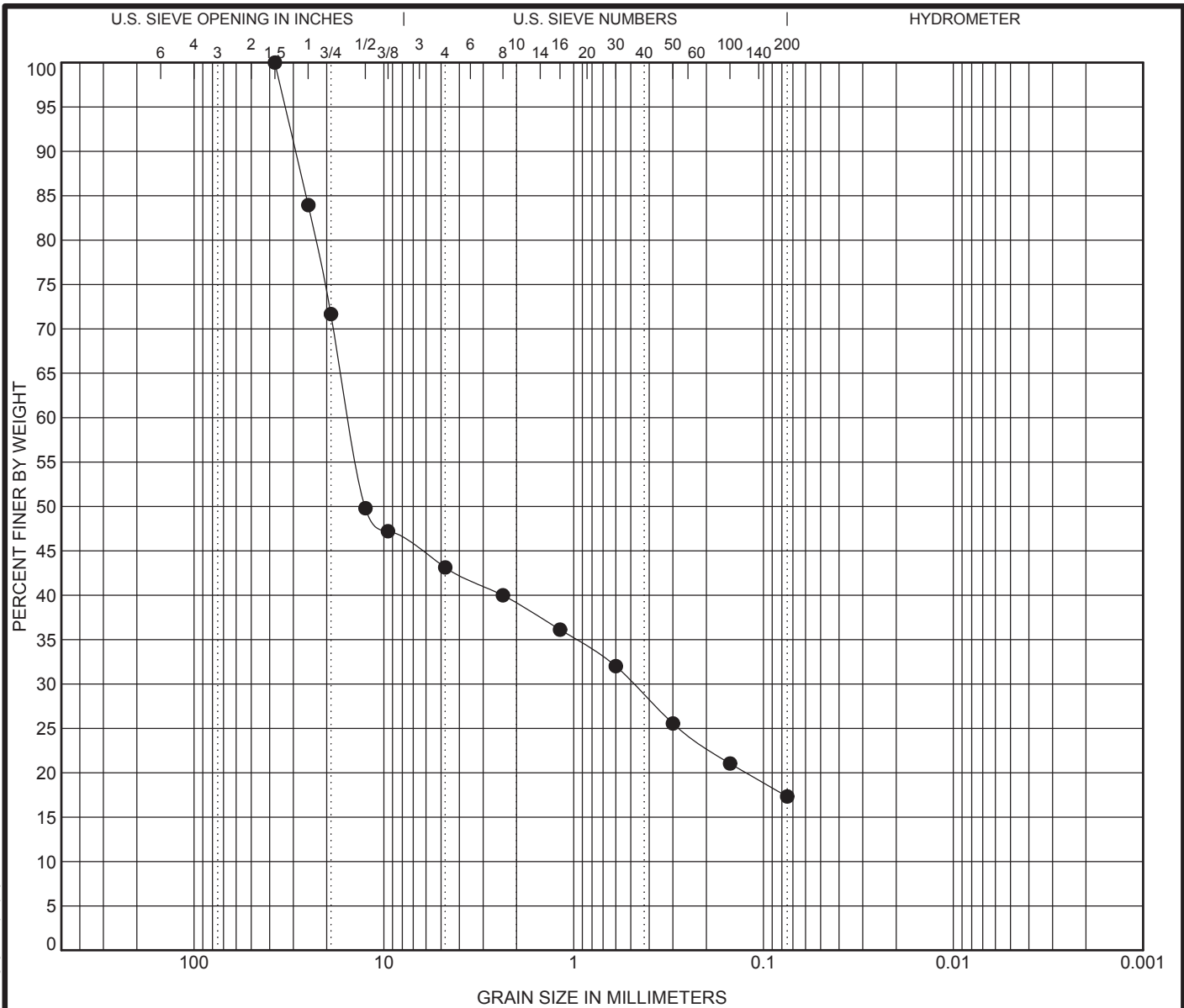


COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		U.S.C.S. Classification						Cc	Cu
● B-3 at 0 - 5 ft		Clayey SAND							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay	
25	0.634	0.338			18.4	48.8	32.8		

 <h1>TWINING</h1>	GRAIN SIZE DISTRIBUTION		
	15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
	PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 6

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



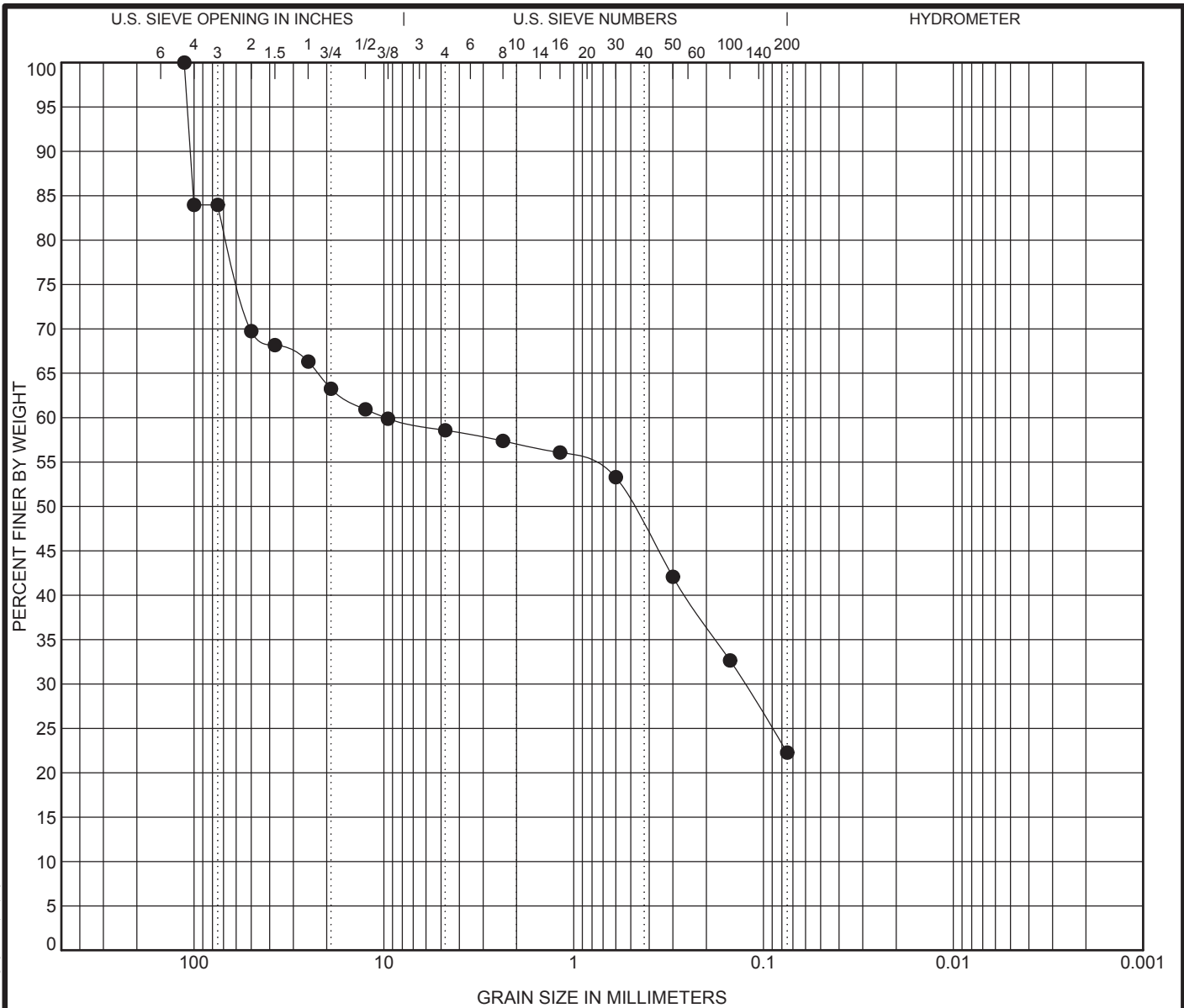
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	U.S.C.S. Classification						Cc	Cu
● B-3 at 10 ft	Sandy GRAVEL							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
37.5	15.195	12.547	0.483		56.9	25.8	17.3	




GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 7

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18

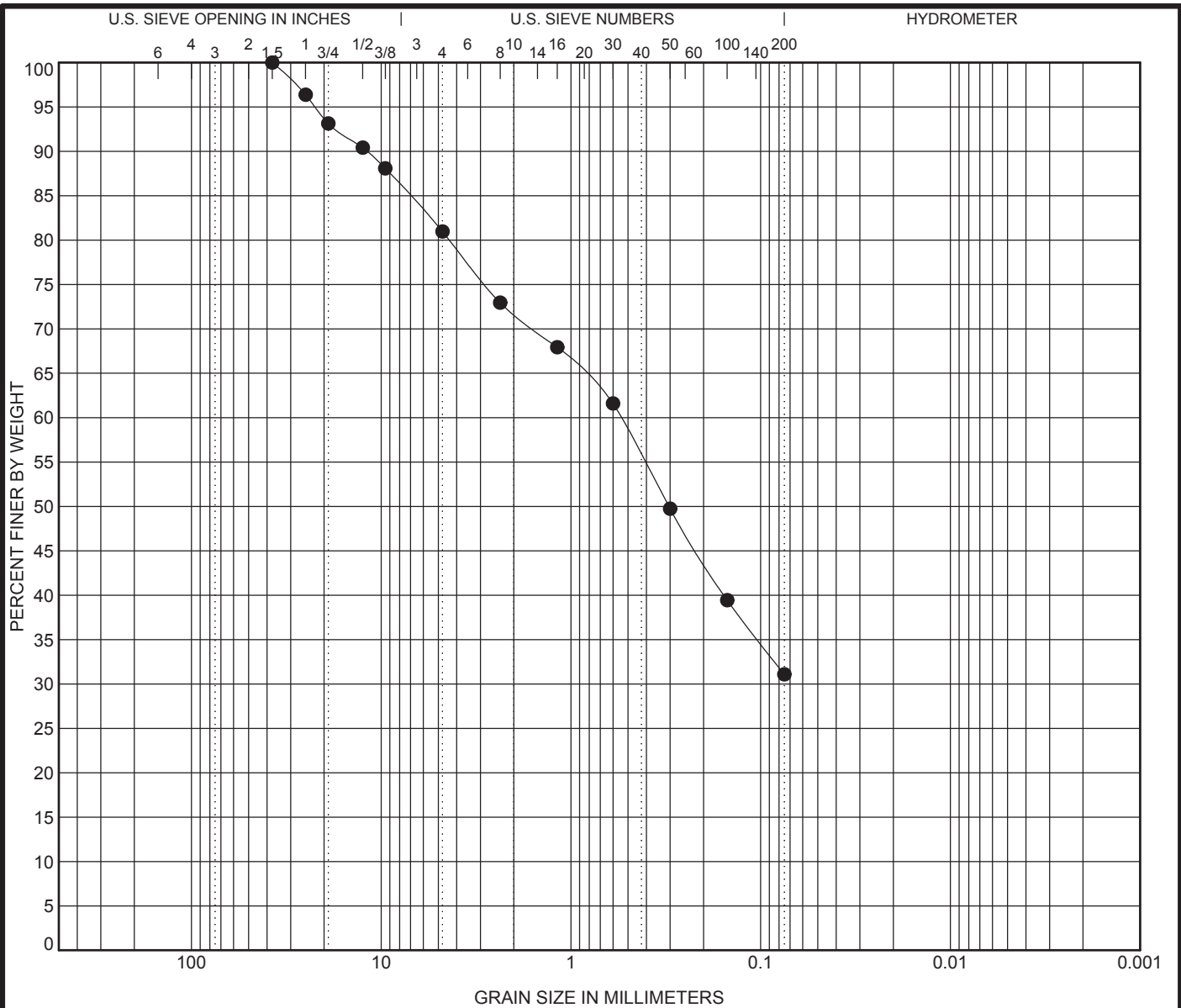


COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	U.S.C.S. Classification						Cc	Cu
● B-4 at 0 - 5 ft	Sandy GRAVEL							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
112.5	9.79	0.49	0.126		25.4	36.3	22.3	

 TWINING	GRAIN SIZE DISTRIBUTION		
	15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
	PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 8

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/14/18



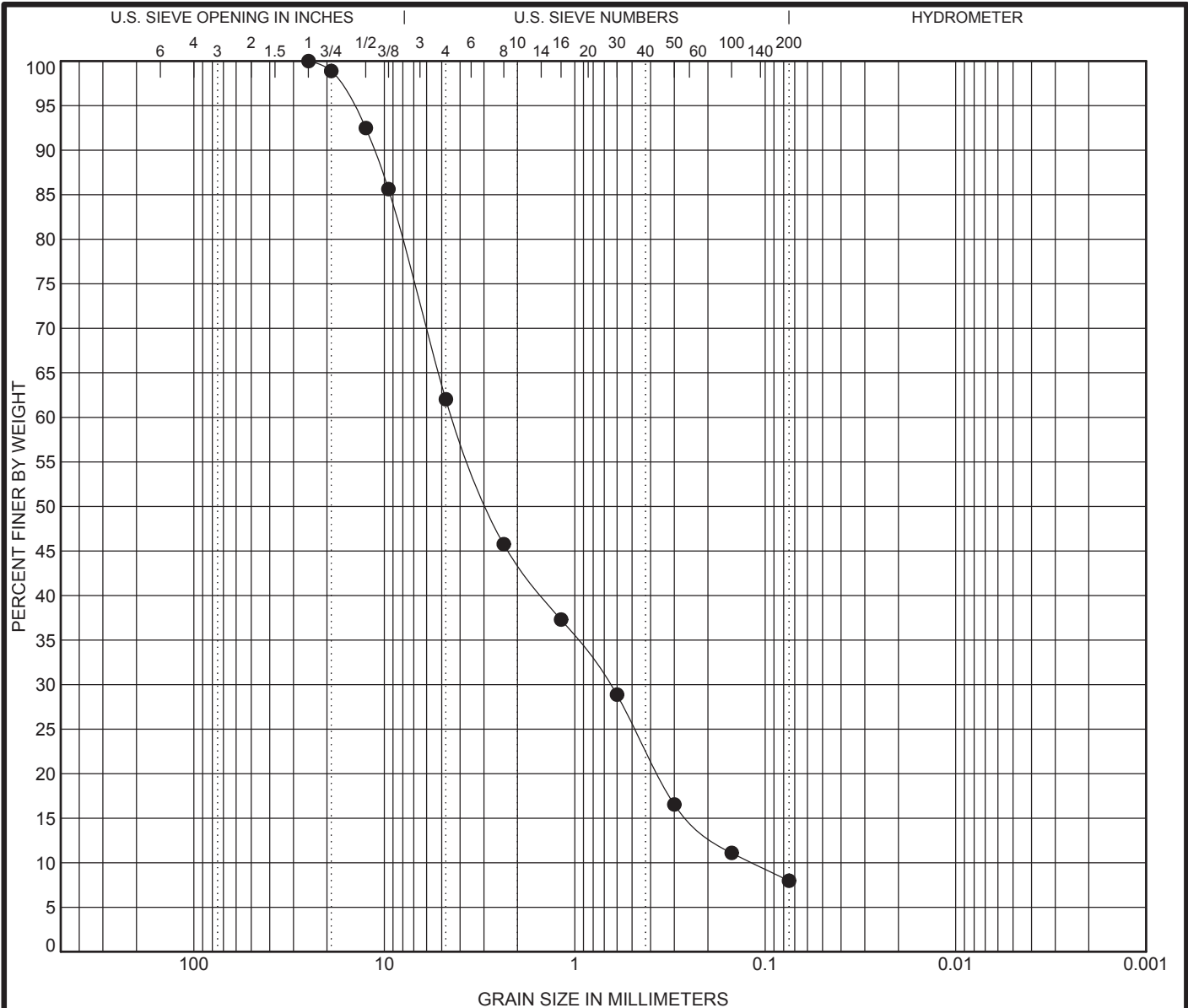
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	U.S.C.S. Classification						Cc	Cu
● B-5 at 0 - 5 ft	Clayey SAND							
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay
37.5	0.547	0.304			19.0	49.9	31.1	



GRAIN SIZE DISTRIBUTION		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B- 9

GRAIN SIZE 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/16/18



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		U.S.C.S. Classification						Cc	Cu
● B-5 at 15 - 20 ft		Gravelly SAND (Air Rotary Drilling - larger gravel fraction should be anticipated)						0.84	37.03
D ₁₀₀	D ₆₀	D ₅₀	D ₃₀	D ₁₀	%Gravel	%Sand	%Silt	%Clay	
25	4.352	2.831	0.657	0.118	38.0	54.1	8.0		



GRAIN SIZE DISTRIBUTION

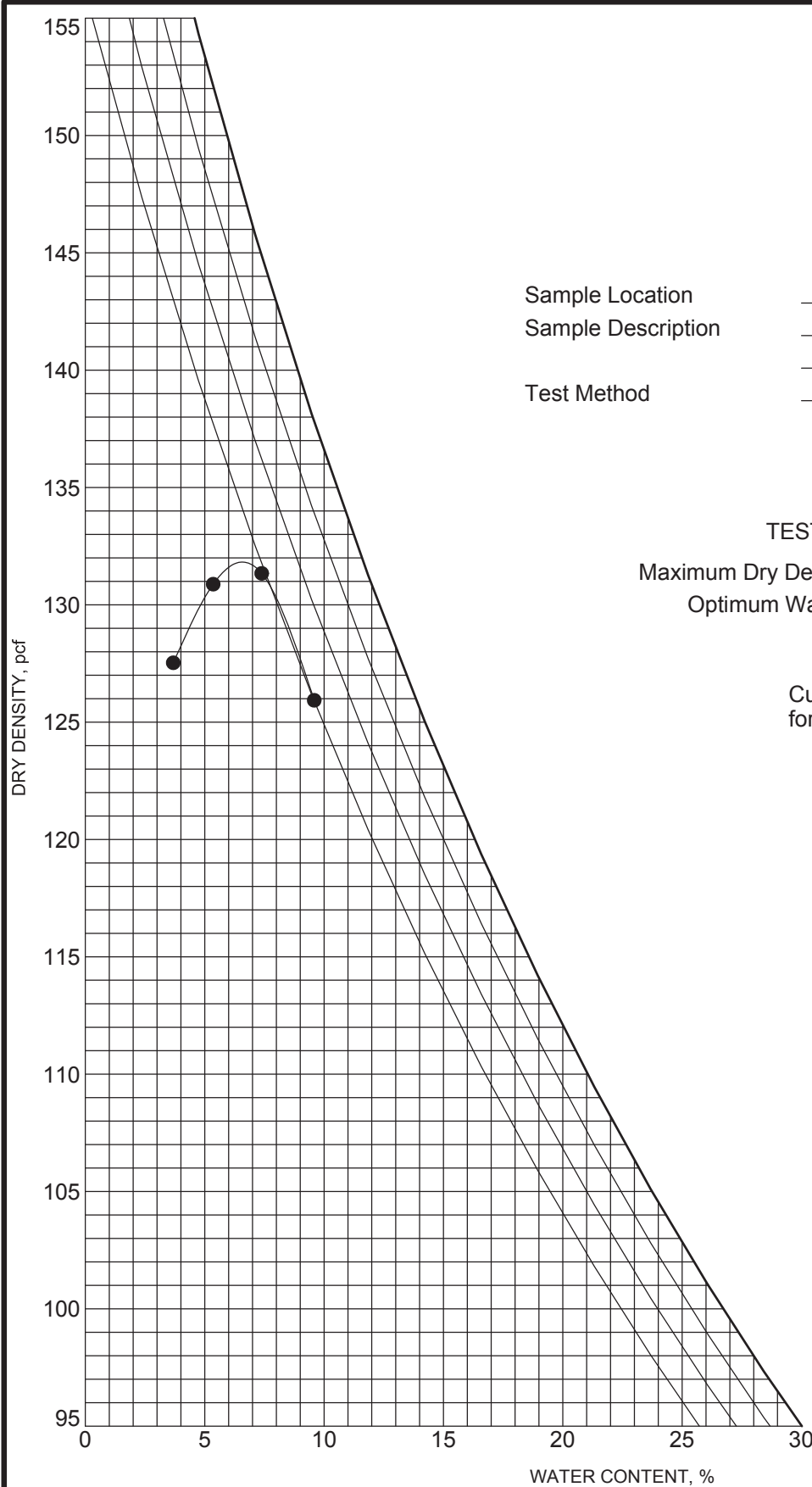
15GT14-College Area Sewer and Water Main Replacement
54th Street & Campanile Way
San Diego, California

PROJECT NO.
180004.2

REPORT DATE
February 2018

FIGURE B- 10

COMPACTION 15GT14 COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT.GPJ TWINING LABS.GDT 2/24/18



Sample Location B-5 at 15' - 20'
 Sample Description Tan Sandy Gravel
 Test Method ASTM D1557 Method C

TEST RESULTS

Maximum Dry Density 132.0 pcf
 Optimum Water Content 6.5 %

Curves of 100% Saturation
 for Specific Gravity Equal to:
 2.80
 2.70
 2.60
 2.50



MAXIMUM DENSITY & OPTIMUM MOISTURE		
15GT14-College Area Sewer and Water Main Replacement 54th Street & Campanile Way San Diego, California		
PROJECT NO. 180004.2	REPORT DATE February 2018	FIGURE B-11

APPENDIX R
TUNNEL CLASSIFICATION



State of California
Department of Industrial Relations
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Van Nuys Office R5D2

Underground Classification

C021-073-22T

College Area Sewer and AC Water Main Replacement
City of San Diego - Public Utilities Department

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

of _____
525 B Street, Suite 750
San Diego, CA 92101

(MAILING ADDRESS)

at _____
54th Street between Baja Drive and Maisel Way
San Diego, CA

(LOCATION)

has been classified as _____
POTENTIALLY GASSY

(CLASSIFICATION)


as required by the California Labor Code Section 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

A 48-inch diameter steel casing, approximately 557 feet in length, to be installed under/across 54th Street, between Manhole #3 at the east end of 4819 Collwood Boulevard and Manhole #5 behind the property at 5404 Maisel Way, in the City of San Diego, California.

December 2, 2021

Date



Matt Switzer,
Acting District Manager



State of California
Department of Industrial Relations
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Van Nuys Office R5D2

Underground Classification

C022-073-22T

College Area Sewer and AC Water Main Replacement
City of San Diego - Public Utilities Department

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

of _____
525 B Street, Suite 750
San Diego, CA 92101

(MAILING ADDRESS)

at _____
East of 54th Street between Baja Drive and Maisel Way
San Diego, CA

(LOCATION)

has been classified as _____
POTENTIALLY GASSY

(CLASSIFICATION)


as required by the California Labor Code Section 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

A 48-inch diameter steel casing, approximately 363 feet in length, to be installed approximately 120 feet north of and parallel to Maisel Way, between Manhole #5 behind the property at 5404 Maisel Way and Manhole #6 behind the property at 5452 Maisel Way, in the City of San Diego, California.

December 2, 2021

Date



Matt Switzer,
Acting District Manager



State of California
Department of Industrial Relations
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Van Nuys Office R5D2

Underground Classification

C023-073-22T

College Area Sewer and AC Water Main Replacement
City of San Diego - Public Utilities Department

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

of _____
525 B Street, Suite 750
San Diego, CA 92101

(MAILING ADDRESS)

at _____
East of 54th Street between Baja Drive and Maisel Way
San Diego, CA

(LOCATION)

has been classified as _____
POTENTIALLY GASSY

(CLASSIFICATION)


as required by the California Labor Code Section 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

A 48-inch diameter steel casing, approximately 428 feet in length, to be installed approximately 120 feet north of and parallel to Maisel Way, between Manhole #6 behind the property at 5452 Maisel Way and Manhole #7 behind the property at 5491 Baja Drive, in the City of San Diego, California.

December 2, 2021

Date



Matt Switzer,
Acting District Manager



State of California
Department of Industrial Relations
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Van Nuys Office R5D2

Underground Classification

C024-073-22T

College Area Sewer and AC Water Main Replacement
City of San Diego - Public Utilities Department

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

of _____
525 B Street, Suite 750
San Diego, CA 92101

(MAILING ADDRESS)

at _____
South of Baja Drive and east of 54th Street
San Diego, CA

(LOCATION)

has been classified as _____
POTENTIALLY GASSY

(CLASSIFICATION)


as required by the California Labor Code Section 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

A 36-inch diameter steel casing, approximately 278 feet in length, to be installed approximately 180 feet south of and parallel to Baja Drive, between Manhole #7 behind the property at 5491 Baja Drive and Manhole #8 behind the property at 5519 Baja Drive, in the City of San Diego, California.

December 2, 2021

Date



Matt Switzer,
Acting District Manager



State of California
Department of Industrial Relations
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Van Nuys Office R5D2

Underground Classification

C025-073-22T

College Area Sewer and AC Water Main Replacement
City of San Diego - Public Utilities Department

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

of _____
525 B Street, Suite 750
San Diego, CA 92101

(MAILING ADDRESS)

at _____
Southwest of Baja Drive and northeast of 55th Street
San Diego, CA

(LOCATION)

has been classified as _____
POTENTIALLY GASSY

(CLASSIFICATION)

as required by the California Labor Code Section 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

A 36-inch diameter steel casing, approximately 417 feet in length, to be installed approximately 200 feet southwest of Baja Drive, between Manhole #8 behind the property at 5519 Baja Drive and Manhole #9 behind the property at 5585 Baja Drive, in the City of San Diego, California.

December 2, 2021

Date

Matt Switzer,
Acting District Manager



State of California
Department of Industrial Relations
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Van Nuys Office R5D2

Underground Classification

C026-073-22T

College Area Sewer and AC Water Main Replacement
City of San Diego - Public Utilities Department

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

of _____
525 B Street, Suite 750
San Diego, CA 92101

(MAILING ADDRESS)

at _____
Campanile Way cul-de-sac
San Diego, CA

(LOCATION)

has been classified as _____
POTENTIALLY GASSY

(CLASSIFICATION)


as required by the California Labor Code Section 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

A 48-inch diameter steel casing, approximately 177 feet in length, to be installed between Manhole #10 behind the property at 5585 Baja Drive and Manhole #11 in the center of the cul-de-sac of Campanile Way, in the City of San Diego, California.

December 2, 2021

Date



Matt Switzer,
Acting District Manager

ATTACHMENT F
RESERVED

ATTACHMENT G
CONTRACT AGREEMENT

CONTRACT AGREEMENT

CONSTRUCTION CONTRACT

This Phase-Funded contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and **S.C. Valley Engineering, Inc.**, herein called "Contractor" for construction of **College Areas Swr & AC Wtr Main Repl**; Bid No. **K-22-2059-DBB-3**; in the total amount which is **Ten Million Three Hundred Three Thousand Two Hundred Seventy Four Dollars and Ten Cents (\$10,303,274.10)** comprised of the Base Bid consisting of an amount not to exceed **\$7,200,000.00** for **Phase 1** and **\$3,103,274.10** for **Phase 2**.

IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

1. The following are incorporated into this contract as though fully set forth herein:
 - (a) The attached Faithful Performance and Payment Bonds.
 - (b) The attached Proposal included in the Bid documents by the Contractor.
 - (c) Reference Standards listed in the Instruction to Bidders and the Supplementary Special Provisions (SSP).
 - (d) Phased Funding Schedule Agreement, Long-Term Maintenance and Monitoring Agreement.
 - (e) That certain documents entitled **College Areas Swr & AC Wtr Main Repl**, on file in the office of the City Clerk as Document No. **B-16022, B-16025**, as well as all matters referenced therein.
2. The City wishes to construct this Project on a Phase-Funded basis. In accordance with Whitebook section 7-3.10, the City is only obligated to pay for Phase I; Contractor cannot begin, nor is the City financially liable for any additional Phases, unless and until Contractor is issued a Notice to Proceed for each additional Phase by the City.
3. The Contractor shall perform and be bound by all the terms and conditions of this contract and in strict conformity therewith shall perform and complete in a good and workmanlike manner **College Areas Swr & AC Wtr Main Repl**, Bid No. **K-22-2059-DBB-3**, San Diego, California.
4. For such performances, the City shall pay to Contractor the amounts set forth at the times and in the manner and with such additions or deductions as are provided for in this contract, and the Contractor shall accept such payment in full satisfaction of all claims incident to such performances. (See WHITEBOOK, Section 7-3.10, Phased Funding Compensation).

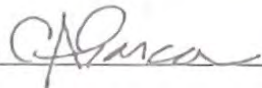
CONTRACT AGREEMENT (continued)

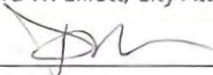
- 5. No claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.
- 6. This contract is effective as of the date that the Mayor or designee signs the agreement and is approved by the City Attorney in accordance with San Diego Charter Section 40.

IN WITNESS WHEREOF, this Agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code 522.3102 authorizing such execution.

THE CITY OF SAN DIEGO

APPROVED AS TO FORM

By 

Mara W. Elliott, City Attorney
By 

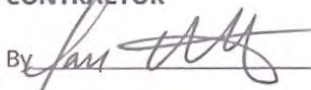
Print Name: Claudia C. Abarca
Director
Purchasing & Contracting Department

Print Name: Bonny Hsu
Deputy City Attorney

Date: September 14, 2022

Date: September 15, 22

CONTRACTOR

By 

Print Name: Sam Watnen

Title: President

Date: 7/5/2022

City of San Diego License No.: B2001005583

State Contractor's License No.: 624559-A

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER: 1000020727

CERTIFICATIONS AND FORMS

The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certifications, forms and affidavits submitted as part of this bid are true and correct.

BIDDER'S GENERAL INFORMATION

To the City of San Diego:

Pursuant to "Notice Inviting Bids", specifications, and requirements on file with the City Clerk, and subject to all provisions of the Charter and Ordinances of the City of San Diego and applicable laws and regulations of the United States and the State of California, the undersigned hereby proposes to furnish to the City of San Diego, complete at the prices stated herein, the items or services hereinafter mentioned. The undersigned further warrants that this bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

The undersigned bidder(s) further warrants that bidder(s) has thoroughly examined and understands the entire Contract Documents (plans and specifications) and the Bidding Documents therefore, and that by submitting said Bidding Documents as its bid proposal, bidder(s) acknowledges and is bound by the entire Contract Documents, including any addenda issued thereto, as such Contract Documents incorporated by reference in the Bidding Documents.

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER 23
UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106**

State of California

County of San Diego

The bidder, being first duly sworn, deposes and says that he or she is authorized by the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

CONTRACTOR CERTIFICATION

COVID-19 VACCINATION ORDINANCE

CERTIFICATION OF COMPLIANCE

I hereby certify that I am familiar with the requirements of San Diego Ordinance No. O-21398 implementing the City's Mandatory COVID-19 Vaccination Policy.

TERMS OF COMPLIANCE

The City's Mandatory COVID-19 Vaccination Policy, outlined in San Diego Ordinance O-21398 (Nov. 29, 2021), requires ALL City contractors, who interact in close contact with City employees while providing contracted services indoors in City facilities or while performing bargaining unit work while indoors, to be fully vaccinated against COVID-19, effective January 3, 2022, as a condition for provision or continued provision of contracted services.

1. "City contractor" means a person who has contracted with the City of San Diego to provide public works, goods, services, franchise, or consultant services for or on behalf of the City, and includes a subcontractor, vendor, franchisee, consultant, or any of their respective officers, directors, shareholders, partners, managers, employees, or other individuals associated with the contractor, subcontractor, consultant, or vendor. "Person" means any natural person, firm, joint venture, joint stock company, partnership, association, club, company, corporation business trust or organization.
2. "Fully vaccinated" means a person has received, at least 14 days prior, either the second dose in a two-dose COVID-19 vaccine series or a single-dose COVID-19 vaccine, or otherwise meets the criteria for full vaccination against COVID-19 as stated in applicable public health guidance, orders, or law. Acceptable COVID-19 vaccines must be approved by the U.S. Food and Drug Administration (FDA) or authorized for emergency use by the FDA or the World Health Organization.
3. "Close contact" means a City contractor is **within 6 feet** of a City employee for a **cumulative total of 15 minutes or more over a 24-hour period** (for example, three individual 5-minute exposures for a total of 15 minutes).
4. City contractors who interact in close contact with City employees must fully comply with the City's Mandatory COVID-19 Vaccination Policy, which may include a reporting program that tracks employee vaccination status.
5. City contractors with employees or subcontractors who interact in close contact with City employees must certify that those members of their workforce, and subcontractors regardless of tier, who work indoors at a City facility, are fully vaccinated and that the City contractor has a program to track employee compliance.
6. City contractors that have an Occupational Safety and Health Administration compliant testing program for members of their workforce, as a reasonable accommodation, may be considered for compliance.

Non-compliance with the City's Mandatory COVID-19 Vaccination Policy may result in termination of a contract for cause, pursuant to the City's General Terms and Provisions, Reference Standards, and the San Diego Municipal Code.

CONTRACTOR CERTIFICATION

DRUG-FREE WORKPLACE

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in the WHITEBOOK, Section 5-1.3, "Drug-Free Workplace", of the project specifications, and that;

This company has in place a drug-free workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of subdivisions a) through c) of the policy as outlined.

CONTRACTOR CERTIFICATION

AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the Americans With Disabilities Act (ADA) outlined in the WHITEBOOK, Section 5-1.2, "California Building Code, California Code of Regulations Title 24 and Americans with Disabilities Act". Americans with Disabilities Act", of the project specifications, and that:

This company has in place workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

CONTRACTOR CERTIFICATION

CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

I declare under penalty of perjury that I am authorized to make this certification on behalf of the company submitting this bid/proposal, that as Contractor, I am familiar with the requirements of City of San Diego Municipal Code § 22.3004 regarding Contractor Standards as outlined in the WHITEBOOK, Section 5-1.4, ("Contractor Standards and Pledge of Compliance Contractor Standards"), of the project specifications, and that Contractor has complied with those requirements.

I further certify that each of the Contractor's subcontractors has completed a Pledge of Compliance attesting under penalty of perjury of having complied with City of San Diego Municipal Code § 22.3004.

CONTRACTOR CERTIFICATION

EQUAL BENEFITS ORDINANCE CERTIFICATION

I declare under penalty of perjury that I am familiar with the requirements of and in compliance with the City of San Diego Municipal Code § 22.4300 regarding Equal Benefits Ordinance.

CONTRACTOR CERTIFICATION

EQUAL PAY ORDINANCE CERTIFICATION

Contractor shall comply with the Equal Pay Ordinance (EPO) codified in the San Diego Municipal Code (SDMC) at section 22.4801 through 22.4809, unless compliance is not required based on an exception listed in SDMC section 22.4804.

Contractor shall require all of its subcontractors to certify compliance with the EPO in their written subcontracts.

Contractor must post a notice informing its employees of their rights under the EPO in the workplace or job site.

By signing this Contract with the City of San Diego, Contractor acknowledges the EPO requirements and pledges ongoing compliance with the requirements of SDMC Division 48, section 22.4801 et seq., throughout the duration of this Contract.

CONTRACTOR CERTIFICATION

PRODUCT ENDORSEMENT

I declare under penalty of perjury that I acknowledge and agree to comply with the provisions of City of San Diego Administrative Regulation 95.65, concerning product endorsement. Any advertisement identifying or referring to the City as the user of a product or service requires the prior written approval of the City.

AFFIDAVIT OF DISPOSAL

(To be submitted upon completion of Construction pursuant to the contracts Certificate of Completion)

WHEREAS, on the _____ DAY OF _____, 2____ the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

College Areas Swr & AC Wtr Main Repl

Project Title

as particularly described in said contract and identified as Bid No. **K-22-2059-DBB-3**; SAP No. (WBS) **B-16022 / B-16025**; and **WHEREAS**, the specification of said contract requires the Contractor to affirm that "all brush, trash, debris, and surplus materials resulting from this project have been disposed of in a legal manner"; and **WHEREAS**, said contract has been completed and all surplus materials disposed of:

NOW, THEREFORE, in consideration of the final payment by the City of San Diego to said Contractor under the terms of said contract, the undersigned Contractor, does hereby affirm that all surplus materials as described in said contract have been disposed of at the following location(s)

and that they have been disposed of according to all applicable laws and regulations.

Dated this _____ DAY OF _____, _____.

By: _____
Contractor

ATTEST:

State of _____ County of _____

On this _____ DAY OF _____, 2____, before the undersigned, a Notary Public in and for said County and State, duly commissioned and sworn, personally appeared _____ known to me to be the _____ Contractor named in the foregoing Release, and whose name is subscribed thereto, and acknowledged to me that said Contractor executed the said Release.

Notary Public in and for said County and State

LIST OF SUBCONTRACTORS

***** PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY *** TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY*** SEE INSTRUCTIONS TO BIDDERS, FOR FURTHER INFORMATION**

In accordance with the requirements of the "Subletting and Subcontracting Fair Practices Act", Section 4100, of the California Public Contract Code (PCC), the Bidder is to list below the name, address and license number of each Subcontractor who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement, in an amount of or in excess of 0.5% of the Contractor's total Bid. Failure to comply with this requirement may result in the Bid being rejected as non-responsive. The Contractor is to list only one Subcontractor for each portion of the Work. The Bidder's attention is directed to the Special Provisions – General; Paragraph 2-3 Subcontracts, which stipulates the percentage of the Work to be performed with the Bidder's own forces. The Bidder is to also list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which the Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB®	WHERE CERTIFIED®	CHECK IF JOINT VENTURE PARTNERSHIP
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____							
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____							

- ① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ② As appropriate, Bidder shall indicate if Subcontractor is certified by:
- | | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | | |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

NAMED EQUIPMENT/MATERIAL SUPPLIER LIST

***** PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY *** TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY *** SEE INSTRUCTIONS TO BIDDERS FOR FURTHER INFORMATION**

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIAL OR SUPPLIES	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB ^①	WHERE CERTIFIED ^②
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						

- ① As appropriate, Bidder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ② As appropriate, Bidder shall indicate if Vendor/Supplier is certified by:
- | | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | | |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

ELECTRONICALLY SUBMITTED FORMS

FAILURE TO FULLY COMPLETE AND SUBMIT ANY OF THE FOLLOWING FORMS WILL DEEM YOUR BID NON-RESPONSIVE.

PLANETBIDS WILL NOT ALLOW FOR BID SUBMISSIONS WITHOUT THE ATTACHMENT OF THESE FORMS

The following forms are to be completed by the bidder and submitted (uploaded) electronically with the bid in PlanetBids.

- A. BID BOND – See Instructions to Bidders, Bidders Guarantee of Good Faith (Bid Security) for further instructions**
- B. CONTRACTOR’S CERTIFICATION OF PENDING ACTIONS**
- C. MANDATORY DISCLOSURE OF BUSINESS INTERESTS FORM**
- D. DEBARMENT AND SUSPENSION CERTIFICATION FOR PRIME CONTRACTOR**
- E. DEBARMENT AND SUSPENSION CERTIFICATION FOR SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS**
- F. SUBCONTRACTOR LISTING FOR ALTERNATE ITEMS**

BID BOND

**See Instructions to Bidders, Bidder Guarantee of Good Faith
(Bid Security)**

KNOW ALL MEN BY THESE PRESENTS,

That S.C. Valley Engineering, Inc. as Principal,
and Western Surety Company as Surety, are held
and firmly bound unto The City of San Diego hereinafter called "OWNER," in the sum
of **10% OF THE TOTAL BID AMOUNT** for the payment of which sum, well and truly to be made, we
bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally,
firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under
the bidding schedule(s) of the OWNER's Contract Documents entitled

College Areas Sewer & AC Water Main Replacement / K-22-2059-DBB-3

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in
the manner required in the "Notice Inviting Bids" enters into a written Agreement on the form of
agreement bound with said Contract Documents, furnishes the required certificates of insurance, and
furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and
void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by
said OWNER and OWNER prevails, said Surety shall pay all costs incurred by said OWNER in such suit,
including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this 22 day of April, 2022

S.C. Valley Engineering, Inc. (SEAL)
(Principal)

Western Surety Company (SEAL)
(Surety)

By: [Signature]
(Signature)

By: [Signature]
(Signature)
Robert P. Dole, Attorney-in-Fact

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

County of San Diego }

On April 22, 2022 before me, Patti Ewert, Notary Public,
Date Insert Name of Notary exactly as it appears on the official seal

personally appeared Robert P. Dole
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature Patti Ewert
Signature of Notary Public, Patti Ewert



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Robert P. Dole

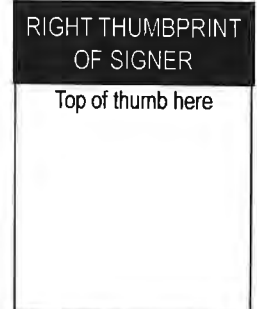
- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer is Representing:
Western Surety Company

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer is Representing:

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Daniel P Dole, John T Dole, Robert P Dole, Michael Dole, Adam Dole, Patti Ewert, Individually

of Bonita, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 22nd day of June, 2021.



WESTERN SURETY COMPANY

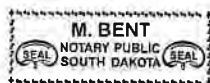
Paul T. Bruflat
Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } SS

On this 22nd day of June, 2021, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires

March 2, 2026



M. Bent
M. Bent, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 22 day of April, 2022.



WESTERN SURETY COMPANY

L. Nelson
L. Nelson, Assistant Secretary

CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

- The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.

- The undersigned certifies that within the past 10 years the Bidder has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION/REMEDIAL ACTION TAKEN

Contractor Name: S.C. Valley Engineering, Inc.

Certified By Samuel H. Wathen Title President

Name

 Signature

Date 05/20/2022

USE ADDITIONAL FORMS AS NECESSARY

Mandatory Disclosure of Business Interests Form

BIDDER/PROPOSER INFORMATION

Legal Name		DBA	
S.C. Valley Engineering, Inc.			
Street Address	City	State	Zip
656 Front Street	El Cajon	CA	92020
Contact Person, Title		Phone	Fax
Samuel H. Wathen-President		619-444-2366	619-444-2333

Provide the name, identity, and precise nature of the interest* of all persons who are directly or indirectly involved** in this proposed transaction (SDMC § 21.0103).

* The precise nature of the interest includes:

- the percentage ownership interest in a party to the transaction,
- the percentage ownership interest in any firm, corporation, or partnership that will receive funds from the transaction, the value of any financial interest in the transaction,
- any contingent interest in the transaction and the value of such interest should the contingency be satisfied, and any philanthropic, scientific, artistic, or property interest in the transaction.

** Directly or indirectly involved means pursuing the transaction by:

- communicating or negotiating with City officers or employees,
- submitting or preparing applications, bids, proposals or other documents for purposes of contracting with the City,
- or directing or supervising the actions of persons engaged in the above activity.

Name	Title/Position
Samuel H. Wathen	President
City and State of Residence	Employer (if different than Bidder/Proposer)
El Cajon, CA	
Interest in the transaction	
51% Ownership of SC Valley	

Name	Title/Position
Colleen Wathen	CFO
City and State of Residence	Employer (if different than Bidder/Proposer)
El Cajon, CA	
Interest in the transaction	
49% Ownership of SC Valley	

* Use Additional Pages if Necessary *

Under penalty of perjury under the laws of the State of California, I certify that I am responsible for the completeness and accuracy of the responses contained herein, and that all information provided is true, full and complete to the best of my knowledge and belief. I agree to provide written notice to the Mayor or Designee within five (5) business days if, at any time, I learn that any portion of this Mandatory Disclosure of Business Interests Form requires an updated response. Failure to timely provide the Mayor or Designee with written notice is grounds for Contract termination.

Samuel H. Wathen-President

05/20/2022

Print Name, Title

Signature

Date

Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed Mandatory Disclosure of Business Interests Form is submitted.

**DEBARMENT AND SUSPENSION CERTIFICATION
PRIME CONTRACTOR
FAILURE TO COMPLETE AND SUBMIT AT TIME OF BID SHALL RENDER BID NON-RESPONSIVE**

EFFECT OF DEBARMENT OR SUSPENSION

To promote integrity in the City's contracting processes and to protect the public interest, the City shall only enter into contracts with responsible- bidders and contractors. In accordance with San Diego Municipal Code §22.0814 (a): *Bidders and contractors* who have been *debarred* or *suspended* are excluded from submitting bids, submitting responses to requests for proposal or qualifications, receiving *contract awards*, executing *contracts*, participating as a *subcontractor*, employee, agent or representative of another *person* contracting with the City.

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of Names of the Principal Individual owner(s).

The names of all persons interested in the foregoing proposal as Principals are as follows:

NAME	TITLE
Samuel H. Wathen	President
Colleen Wathen	CFO

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Bidder or other interested person is an individual, state first and last names in full.

The Bidder, under penalty of perjury, certifies that, except as noted below, he/she or any person associated therewith in the capacity of owner, partner, director, officer, manager:

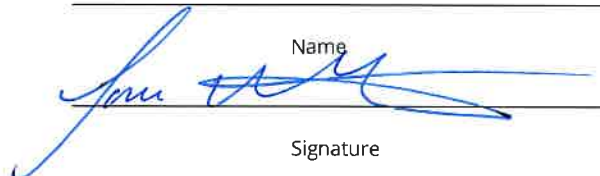
- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal, State or local agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal, State or local agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Contractor Name: S.C. Valley Engineering, Inc.

Certified By Samuel H. Wathen Title President


 Name _____
 Signature _____

Date 05/20/2022

NOTE: Providing false information may result in criminal prosecution or administrative sanctions.

**DEBARMENT AND SUSPENSION CERTIFICATION
 SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS
 TO BE COMPLETED BY BIDDER
 FAILURE TO COMPLETE AND SUBMIT AT TIME OF BID SHALL RENDER BID NON-RESPONSIVE**

Names of the Principal individual owner(s)

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of Names of the Principal Individual owner(s) for their subcontractor/supplier/manufacturers.

Please indicate if principal owner is serving in the capacity of **subcontractor, supplier, and/or manufacturer:**

SUBCONTRACTOR SUPPLIER MANUFACTURER

NAME	TITLE
Pipe Jacking Trenchless, Inc.- Steve Balkom	President
Pipe Jacking Trenchless, Inc.- Scott Summers	Vice President
Frank Vasquez-SealRight	President

SUBCONTRACTOR SUPPLIER MANUFACTURER

NAME	TITLE
Pavement Coatings Co.- Doug Ford	President
Pavement Coatings Co. - Nathan Beyler	CFO
Kelly Santar-R&C Structures	President
Pete Santar-R&C Structures	Vice President

SUBCONTRACTOR SUPPLIER MANUFACTURER


NAME	TITLE
Greg Vasilieff- Western Gardens	President
Robert Vasilieff- Western Gardens	VP
Marie Vasilieff- Western Gardens	CFO

SUBCONTRACTOR SUPPLIER MANUFACTURER

NAME	TITLE

Contractor Name: S.C. Valley Engineering, Inc.

Certified By Samuel H. Wathen Title President

Name

 Signature

Date 05/20/2022

USE ADDITIONAL FORMS AS NECESSARY*

SUBCONTRACTORS ADDITIVE/DEDUCTIVE ALTERNATE
***** FOR USE WHEN LISTING SUBCONTRACTORS ON ALTERNATES *****
(Use Additional Sheets As Needed)

ADDITIVE/DEDUCTIVE ALTERNATE	SUBCONTRACTOR NAME, LOCATION, PHONE & EMAIL	CONSTRUCTOR OR DESIGNER	DIR REGISTRATION NUMBER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB ^①	WHERE CERTIFIED	CHECK IF JOINT VENTURE PARTNERSHIP
Additive Alternate D	Name: <u>Sealright Paving, Inc.</u> Address: <u>9053 Olive Dr.</u> City: <u>Spring Valley</u> State: <u>CA</u> Zip: <u>91977</u> Phone: <u>619-465-7411</u> Email: <u>estimating@sealrightpaving.com</u>	Constructor	1000039542	364113 C12	Paving Work	\$244,575.66	DBE	Caltrans	
Deductive E	Name: <u>Pavement Coatings Co.</u> Address: <u>10240 San Sevaine Way</u> City: <u>Jurupa Valley</u> State: <u>CA</u> Zip: <u>91752</u> Phone: <u>714-826-3011</u> Email: <u>mailshie@pavementrecycling.com</u>	Constructor	1000003382	303609A	Slurry Seal	-\$25,882.46	NA	NA	
	Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____								

- ① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ② As appropriate, Bidder shall indicate if Subcontractor is certified by:
- | | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | | |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

City of San Diego

CITY CONTACT: Rosa I. Riego, Senior Contract Specialist, Email: RRiego@sandiego.gov
Phone No. (619) 533-3426

ADDENDUM A



FOR

COLLEGE AREAS SWR & AC WTR MAIN REPL

BID NO.: K-22-2059-DBB-3
SAP NO. (WBS/IO/CC): B-16022, B-16025
CLIENT DEPARTMENT: 2000
COUNCIL DISTRICT: 9
PROJECT TYPE: JA, KB

BID DUE DATE:

2:00 PM
MAY 3, 2022

CITY OF SAN DIEGO'S ELECTRONIC BIDDING SITE, PLANETBIDS

<http://www.sandiego.gov/cip/bidopps/index.shtml>

ENGINEER OF WORK

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineer:

M. Salcedo
1) Registered Engineer

4/21/22
Date

Seal:



Sheila Bose
2) For City Engineer

4/21/22
Date

Seal:



A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN **EXTENDED AS STATED ON THE COVER PAGE.**

B. ADDITIONAL CHANGES

- The following are additional changes to the Line Items in the PlanetBids Tab: For clarity where applicable, **ADDITIONS**, if any, have been **Underlined** and **DELETIONS**, if any, have been **~~Stricken out.~~**

Section	Item Code	Description	UoM	Quantity	Payment Reference
Main Bid	237110	Sewer Lateral and Cleanout (4 Inch, Street)	EA	54 <u>52</u>	306-17.2
Main Bid	237110	Sewer Main by Jacking Operation with Steel Casing (15 Inch, 36 Inch Casing) <u>Sewer Main by Jacking Operation with Steel Casing (15 Inch, 48 Inch Casing)</u>	LF	180	307-1.7
<u>Main Bid</u>	<u>237110</u>	<u>Sewer Lateral Connection</u>	<u>EA</u>	<u>2</u>	<u>306-17.2</u>

C. PLANS

- To Drawing Numbers **39946-01-D** and **39946-06-D**, **DELETE** in their entirety and **REPLACE** with pages 4 through 5 of this Addendum.

Rania Amen, Director
Engineering & Capital Projects Department

Dated: *April 22, 2022*
San Diego, California

RA/DH/ks

COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT

CONTRACTOR'S RESPONSIBILITIES

- PURSUANT TO SECTION 4216 OF THE GOVERNMENT CODE, AT LEAST 2 WORKING DAYS PRIOR TO EXCAVATION, YOU MUST CONTACT THE REGIONAL NOTIFICATION CENTER (E.G. UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA) AND OBTAIN AN INQUIRY IDENTIFICATION NUMBER.
- NOTIFY SDG&E AT LEAST 10 WORKING DAYS PRIOR TO EXCAVATING WITHIN 10' OF SDG&E UNDERGROUND HIGH VOLTAGE TRANSMISSION POWER LINES, (I.E., 69 KV & HIGHER)
- LOCATE AND RECONNECT ALL SEWER LATERALS. LOCATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE ONLY. LATERAL RECORDS ARE AVAILABLE TO THE CONTRACTOR AT THE WATER DEPARTMENT, 2797 CAMINITO CHOLLAS. LOCATE THE IMPROVEMENTS THAT WILL BE AFFECTED BY LATERAL REPLACEMENTS.
- EXCAVATE AROUND WATER METER BOX (CITY PROPERTY SIDE) TO DETERMINE IN ADVANCE, THE SIZE OF EACH SERVICE BEFORE TAPPING MAIN.
- CITY FORCES, WHEN SPECIFIED OR SHOWN ON THE PLANS, WILL MAKE PERMANENT CUTS & PLUGS AND CONNECTIONS.
- KEEP EXISTING MAINS IN SERVICE IN LIEU OF HIGH-LINING, UNLESS OTHERWISE SPECIFIED SHOWN ON PLANS.
- THE LOCATIONS OF EXISTING BUILDINGS AS SHOWN ON THE PLAN ARE APPROXIMATE.
- STORM DRAIN INLETS SHALL REMAIN FUNCTIONAL AT ALL TIMES DURING CONSTRUCTION.
- UNLESS OTHERWISE NOTED AS PREVIOUSLY POTHOLED (PH), ELEVATIONS SHOWN ON THE PROFILE FOR EXISTING UTILITIES ARE BASED ON A SEARCH OF THE AVAILABLE RECORD INFORMATION ONLY AND ARE SOLELY FOR THE CONTRACTOR'S CONVENIENCE. THE CITY DOES NOT GUARANTEE THAT IT HAS REVIEWED ALL AVAILABLE DATA. THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES EITHER SHOWN ON THE PLANS OR MARKED IN THE FIELD IN ACCORDANCE WITH THE SPECIFICATIONS SECTION 402-UTILITIES.
- EXISTING UTILITY CROSSING AS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT REPRESENTATIVE OF ACTUAL LENGTH AND LOCATION OF CONFLICT AREAS. SEE PLAN VIEW.
- ALL ADVANCE METERING INFRASTRUCTURE (AMI) DEVICES ATTACHED TO THE WATER METER OR LOCATED IN OR NEAR WATER METER BOXES, COFFINS, OR VAULTS SHALL BE PROTECTED AT ALL TIMES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- ALL BURIED DUCTILE IRON PIPE AND FITTINGS SHALL BE COATED AND HOLIDAY FREE AS SPECIFIED IN THE WHITEBOOK. IF USING WAX TAPE, OVERLAP EXISTING METALLIC PIPING BY 12 INCHES ON EACH SIDE. IF ANY BURIED PIPE MATERIALS ARE TO BE CHANGED FROM NONMETALLIC TO METALLIC DURING THE CONSTRUCTION PHASE, THIS CHANGE MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY'S CORROSION ENGINEER.
- FOR COORDINATION OF THE SHUTDOWN OF MAINS, PLEASE CONTACT THE FOLLOWING: TRANSMISSION MAINS (16 INCHES AND LARGER) - JESUS RAMOS (619-527-7438) DISTRIBUTION MAINS (LESS THAN 16 INCHES) - FREDDY PORTER (619-527-7539) WATER FACILITIES - TATYANA FIKHMAN (619-527-7465) AND JESUS RAMOS (619-527-7438)
- PRIOR TO THE ISSUANCE OF ANY CONSTRUCTION PERMIT, THE OWNER/PERMITEE SHALL SUBMIT A WATER POLLUTION CONTROL PLAN (WPCP). THE WPCP SHALL BE PREPARED IN ACCORDANCE WITH THE GUIDELINES IN PART 2 CONSTRUCTION BMP STANDARDS CHAPTER 4 OF THE CITY'S STORM WATER STANDARDS.
- PRIOR TO THE ISSUANCE OF ANY CONSTRUCTION PERMIT, THE OWNER/PERMITEE SHALL INCORPORATE ANY CONSTRUCTION BEST MANAGEMENT PRACTICES NECESSARY TO COMPLY WITH CHAPTER 14, ARTICLE 2, DIVISION 1 (GRADING REGULATIONS) OF THE SAN DIEGO MUNICIPAL CODE.
- CONNECTION JOINTS SHALL NOT BE INSTALLED ON THE PROPOSED WATER MAIN ABOVE, BELOW AND WITHIN 10' ON BOTH SIDES OF SEWER OR STORM DRAIN CROSSING.

CONSTRUCTION STORM WATER PROTECTION NOTES

- TOTAL SITE DISTURBANCE AREA (ACRES) 0.44
HYDROLOGIC UNIT & WATERSHED SAN DIEGO HU / SAN DIEGO RIVER WATERSHED
HYDROLOGIC SUBAREA NAME & NO. MISSION SAN DIEGO / 907.II
- THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE
 MINOR WPCP
 THE PROJECT IS SUBJECT TO MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT NO. R9-2013-0001 AS AMENDED BY R9-2015-0001 AND R9-2015-0100
 WPCP
 THE PROJECT IS SUBJECT TO MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT NO. R9-2013-0001 AS AMENDED BY R9-2015-0001 AND R9-2015-0100
 SWPPP
 THE PROJECT IS SUBJECT TO MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT NO. R9-2013-0001 AS AMENDED BY R9-2015-0001 AND R9-2015-0100 AND CONSTRUCTION GENERAL PERMIT (CGP) ORDER 2009-0009-DWO AS AMENDED BY ORDER 2010-0014-DWO AND 2012-0006-DWO
 TRADITIONAL RISK LEVEL 2 3
 LUP: RISK TYPE 2 3
- CONSTRUCTION SITE PRIORITY
 ASBS HIGH MEDIUM LOW

PERMANENT STORM WATER BMP CATEGORY:

- PRIORITY DEVELOPMENT PROJECT
- STANDARD DEVELOPMENT PROJECT
- PDP EXEMPT
- NOT SUBJECT TO PERMANENT STORM WATER REQUIREMENTS

SHEET INDEX

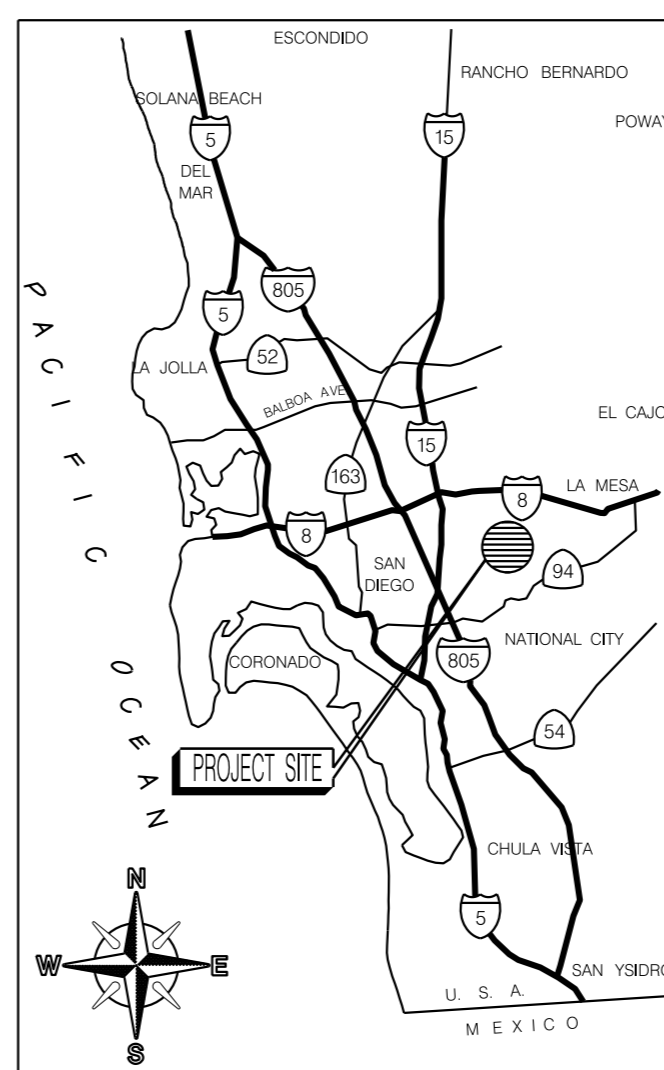
SHEET NO.	DISCIPLINE CODE	TITLE	LIMITS	PIPE		LENGTH (FT)
				SIZE (IN)	MATERIAL	
1	G-1	COVER SHEET				
2	G-2	KEY MAP				
3	C-1	COLLEGE GLEN SEWER EASEMENT	S/O DEFIANCE WY TO W/O 54TH ST	18	-	600.00
4	C-2	COLLEGE GLEN SEWER EASEMENT	W/O 54TH ST TO STA I3+00 MH 4 TO MH 24	18	-	600.00
5	C-3	COLLEGE GLEN SEWER EASEMENT	STA I3+00 TO STA 20+00	8	-	62.79
6	C-4	COLLEGE GLEN SEWER EASEMENT TO CAMPANILE WY	STA 20+00 TO CAMPANILE WY	18	-	700.00
7	C-5	CAMPANILE WY	CAMPANILE WY TO W/O CAMPANILE DR	15	-	285.21
8	C-6	CAMPANILE DR	CAMPANILE WY TO BAJA DR	15	-	700.00
9	C-7	BAJA DR	E/O CAMPANILE DR TO E/O TIERRA BAJA WY	15	-	600.00
10	C-8	CAMPANILE DR	CAMPANILE DR TO CAMPANILE WY	12	-	161.57
11				10	-	518.03
11	C-9	CAMPANILE DR	CAMPANILE WY TO BAJA DR	8	-	482.72
12	C-10	CAMPANILE DR	CAMPANILE DR TO CAMPANILE WY	8	-	544.93
13	C-11	CAMPANILE WY	CAMPANILE WY TO W/O CAMPANILE DR	8	-	400.00
14	C-12	CAMPANILE WY	CAMPANILE WY TO CAMPANILE DR	8	-	488.49
15	C-13	CAMPANILE DR	CAMPANILE WY TO BAJA DR	8	-	486.77
16	C-14	BAJA DR	CAMPANILE DR TO E/O TIERRA BAJA WY	8	-	655.19
17	C-15	STREET RESURFACING		TOTAL SEWER		4,760.98
18	C-16	CURB RAMP LOCATION		TOTAL WATER		3,058.10
19	C-17	CHLORINATION DISCHARGE LOCATION				
20	C-18	WORK BY CITY FORCES				
21	C-19	MONUMENT PERPETUATION				
22	C-20	HORIZONTAL ALIGNMENT REPORT				
23	C-21	ACCESS PATH				
24	C-22	ACCESS PATH				
25	C-23	ACCESS PATH				
26	C-24	CIVIL DETAILS				
27	S-1	GENERAL STRUCTURAL NOTES AND ABBREVIATIONS				
28	S-2	SPECIAL INSPECTION AND TESTING				
29	S-3	TYPICAL STRUCTURAL DETAILS 1				
30	S-4	TYPICAL STRUCTURAL DETAILS 2				
31	S-5	MANHOLE NO. 4 STRUCTURAL PLANS				
32	S-6	MANHOLE NO. 21 STRUCTURAL PLANS				
33	S-7	MANHOLE NO. 24 STRUCTURAL PLANS				
34	S-8	STRUCTURAL SECTIONS				

DISCIPLINE CODE

G GENERAL
 C CIVIL
 S STRUCTURAL

WORK TO BE DONE

CONSTRUCTION OF THE COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT PROJECT CONSISTS OF THE REPLACEMENT OF 1,706.99 LINEAL FEET (FT) OF EXISTING SEWER MAINS AND THE CONSTRUCTION OF 303,399 LINEAL FEET OF NEW SEWER MAINS; THE REPLACEMENT OF 2,575.38 LINEAL FEET (FT) OF EXISTING WATER MAINS AND THE CONSTRUCTION OF 482.72 LINEAL FEET OF NEW WATER MAIN; CURB RAMPS, RESURFACING AND ALL OTHER WORK AND APPURTENANCES IN ACCORDANCE WITH THESE SPECIFICATIONS AND THESE DRAWINGS NUMBERED 39946-01-D THROUGH 39946-34-D.



VICINITY MAP
 NOT TO SCALE

LEGEND

IMPROVEMENTS	REFERENCE	SYMBOL
TRENCH RESURFACING	SDG-I07, SDG-I08	[Symbol: Dashed line with parallel lines]
SEWER MAIN	SDS-I01, SDS-I10 (TYPE C)	[Symbol: Dashed line with solid line]
SEWER MANHOLE/PVC LINED	SDS-I06, SDS-I07, SDS-I08, SDM-I13, SDS-I20, M-03A, SM-07	[Symbol: Circle with crosshair]
4" SEWER LATERAL WITH C.O. UNLESS OTHERWISE SPECIFIED	SDS-I02, SDS-I03, SDS-I04, SDS-I05, SDS-I10 (TYPE C), SDS-I18	[Symbol: Dashed line with circle]
SEWER LATERAL CONNECTION	SEE PLANS & SPECS	[Symbol: T-junction with circle]
ABANDON EX MANHOLE	SM-08	[Symbol: Circle with dot]
SLURRY FILL ABANDONED SEWER MAIN	SEE PLANS & SPECS	[Symbol: Dashed line with cross-hatch]
CUTTING AND PLUGGING ABANDONED WATER MAIN	WP-03	[Symbol: Dashed line with cross-hatch]
SURVEY MONUMENT	M-I0A, M-I0B, M-I0C	[Symbol: Triangle]
WATER MAIN & APPURTENANCES	SDM-I05, SDW-I10, SDW-I51, SDW-I61	[Symbol: Solid line with cross-hatch]
VALVES WITH CAPS AND WELLS	SDW-I09, SDW-I52, SDW-I53, WV-05	[Symbol: Circle with crosshair]
6" FIRE HYDRANT ASSEMBLY & MARKER 2-PORT UNLESS SPECIFIED AS 3-PORT	SDM-I05, SDW-I04, SDW-I09, SDW-I52, SDW-I53	[Symbol: Square with crosshair]
1" WATER SERVICE UNLESS OTHERWISE SPECIFIED	SDM-I05, SDW-I07, SDW-I34, SDW-I35, SDW-I36, SDW-I37, SDW-I38, SDW-I49, SDW-I50, WS-03	[Symbol: Circle with crosshair]
BLOW-OFF ASSEMBLY	SDM-I05, SDW-I06, SDW-I43, SDW-I44, SDW-I45, SDW-I46, WB-05	[Symbol: Square with crosshair]
AIR & VACUUM VALVE	SDM-I05, SDW-I17, SDW-I58, SDW-I59, SDW-I60	[Symbol: Square with crosshair]
HIGHLINING BY CONTRACTOR	SDW-I70, SDW-I71, SDW-I72, SDW-I73, SDW-I74 IF APPLICABLE	[Symbol: Dashed line with cross-hatch]

EXISTING STRUCTURES

EX WATER MAIN & VALVES	[Symbol: Dashed line with cross-hatch]	EX GROUND LINE (PROFILE)	[Symbol: Solid line with cross-hatch]
EX WATER METER	[Symbol: Square with crosshair]	EX TRAFFIC SIGNAL	[Symbol: Circle with crosshair]
EX FIRE HYDRANT	[Symbol: Circle with crosshair]	EX STREET LIGHT	[Symbol: Square with crosshair]
EX SEWER MAIN & MANHOLES	[Symbol: Dashed line with cross-hatch]	GAS MAIN	[Symbol: Dashed line with cross-hatch]
EX DRAINS	[Symbol: Dashed line with cross-hatch]	ELEC. COND., TEL. COND., CATV	[Symbol: Dashed line with cross-hatch]
EX AC PAVEMENT (PROFILE)	[Symbol: Solid line with cross-hatch]	RAILROAD, TROLLEY TRACKS	[Symbol: Dashed line with cross-hatch]
EX CONCRETE PAVEMENT (PROFILE)	[Symbol: Solid line with cross-hatch]		

FIELD DATA

TOPOGRAPHY SOURCE: BASED ON FIELD SURVEY PERFORMED BY CITY OF SAN DIEGO SURVEYING DIVISION ON AUGUST 10, 2016, WORK ORDER NO. B-16025/B-16022
 BENCHMARK: SWBP MARY LANE/CAMPANILE (PT* 52) ELEVATION 456.017 MSL, BASED ON NGVD 29 FEET AS SHOWN IN THE CITY OF SAN DIEGO BENCH BOOK.
 FIELD NOTES: CHIEF: DAVIS
 INSTRUMENT: MINERO
 DATE: 8/10/2016
 DATUM: MEAN SEA LEVEL
 BASIS OF BEARING / COORDINATES: THE BASIS OF BEARINGS FOR THIS PROJECT WAS DERIVED FROM A PREVIOUS STATIC GPS SURVEY USING R.OF S.14492 NAD 83 FEET, ZONE 6 (EPOCH 1991.35), UTILIZING RTK/GPS FIELD PROCEDURES WITH A CALVRS BASE STATION BROADCAST OF 2015 AND CONTRAINING TO GPS I7 (PT* 20017) AND CHECKING GPS I09B (PT* I09B), I.E. N 52° 53' 37" W.
 STREETS REQUIRING 12' TRENCH CAP: NONE

CONSTRUCTION CHANGE / ADDENDUM				WARNING
CHANGE	DATE	AFFECTED OR ADDED SHEET NUMBERS	APPROVAL NO.	[Symbol: Bar with I]
▲	4/21/22	SHEETS 1, 6	N/A	

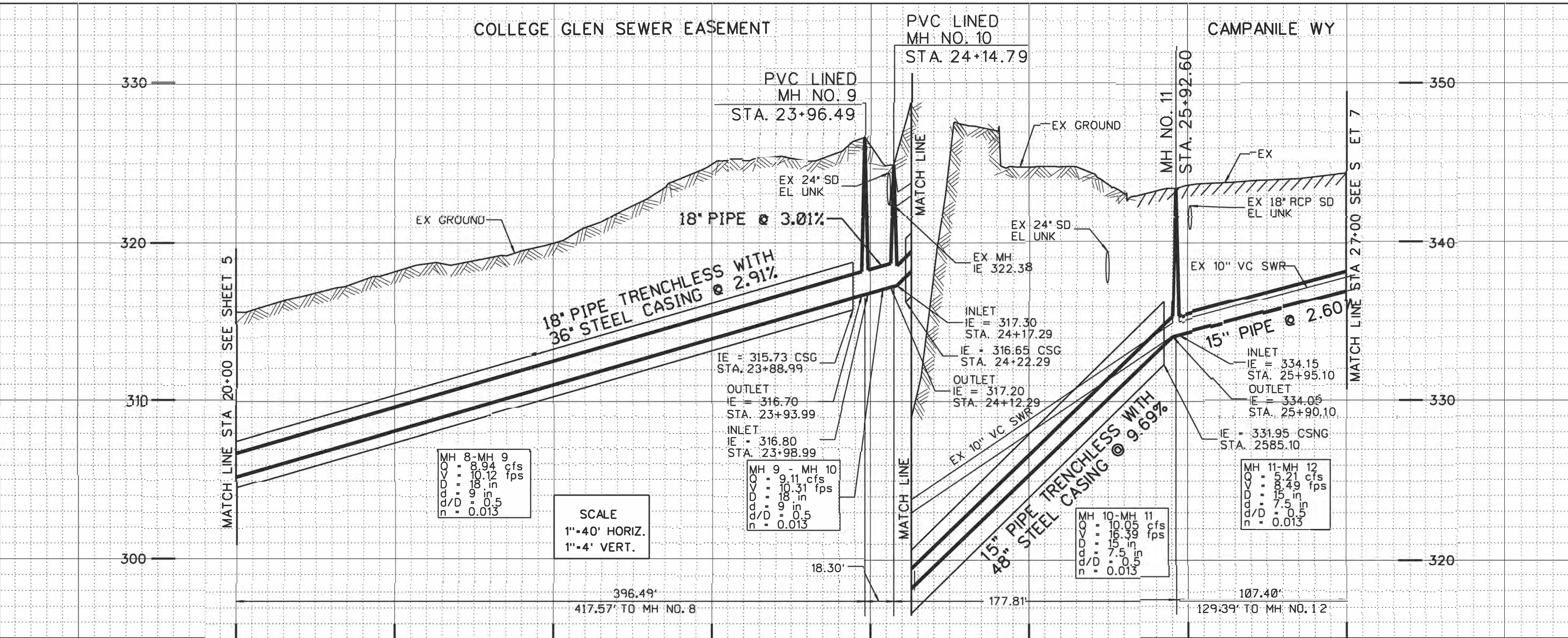
The City of **SAN DIEGO**

AS-BUILT INFORMATION		CONSULTANT	
MATERIALS	MANUFACTURER	COMPANY NAME	
PIPE CL 235 (WATER)	-	COMPANY ADDRESS	
PIPE SDR 35 (SEWER)	-	COMPANY PHONE NUMBER	
GATE VALVES	-	COMPANY EMAIL	
FIRE HYDRANTS	-	DATE OF SIGNING	
SEWER MANHOLES	-		
REHABILITATE SEWER MANHOLES	-		
REHABILITATE SEWER MAIN	-		

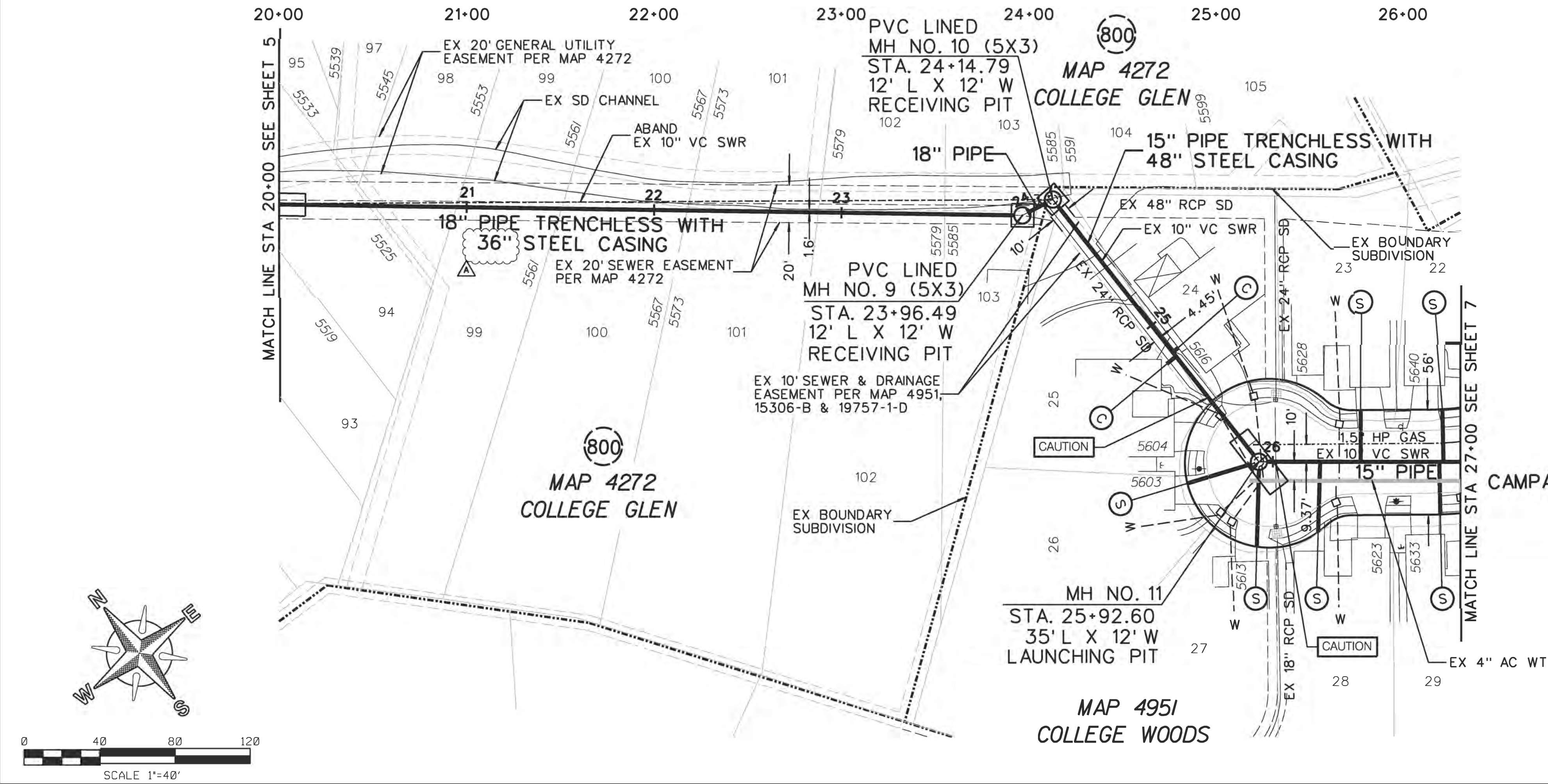
SPEC. NO. 2059	CITY OF SAN DIEGO, CALIFORNIA ENGINEERING & CAPITAL PROJECTS DEPARTMENT SHEET 1 OF 34 SHEETS	WATER WBS B-16022 SEWER WBS B-16025
APPROVED: [Signature] SHEILA BOSE	DATE 12/06/2021 DATE 12/06/21 RICE# C59403	DESIGNED BY: JERICHO GALLARDO PROJECT MANAGER CHECKED BY: JAMES PIEL PROJECT ENGINEER
DESCRIPTION: ORIGINAL	BY: JP	APPROVED: [Signature]
DATE: 04/21/22	FILED: [Signature]	DATE: 12/06/21
SEE EACH SHEET CCS27 COORDINATE		SEE EACH SHEET CCS83 COORDINATE
CONTRACTOR: NTP DATE		39946-01-D
INSPECTOR: NOC DATE		

ADDENDUM A

COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT



ESTIMATED PALEONTOLOGICAL MONITORING LIMITS (INCLUDES MAIN, LATERALS, AND OTHER TRENCHING ACTIVITIES)		
BEGINNING STATION	ENDING STATION	APPROXIMATE LF
STA. 25+75.10	STA. 26+10.10	35
ACTUAL LIMITS SHALL BE DETERMINED BY THE PI/MONITOR(S) PRIOR TO CONSTRUCTION AND SHALL BE CONSISTENT WITH THE PROJECT'S MITIGATION AND MONITORING PROGRAM (MMRP)		



CAUTION
SDG&E POWER POLE! CONTRACTOR SHALL COORDINATE WITH SDG&E THREE (3) WEEKS IN ADVANCE PRIOR TO EXCAVATION

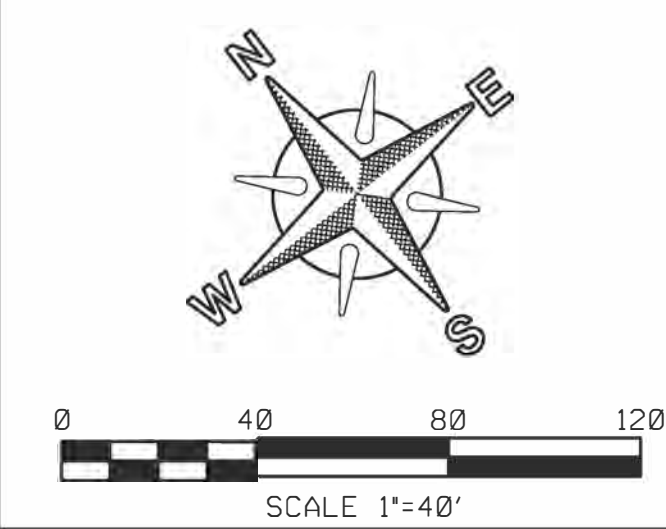
CONTRACTOR'S NOTE:
USE EXTREME CAUTION WHEN WORKING DUE TO LOW OVERHEAD UTILITY LINES.

8" WATER INCLUDED IN THIS CONTRACT. SEE SHEET 13

CONSTRUCTION NOTES:
1. THE LAUNCHING AND RECEIVING PITS FOR TUNNELING ARE APPROXIMATE AREAS. FOR ADDITIONAL CONSTRUCTION LAYDOWN AND ACCESS AREA, REFER TO CONSTRUCTION LIMITS OF WORK, SHEET C-21 THROUGH C-23.
2. INSTALL STEEL CASING PER DETAIL ON SHEET C-24.

REFERENCE:
WATER: 10491-3-D
SEWER: 10491-3-D
STORM DRAIN: 10491-3-D, 19757-1-D
GAS: 16170-118940
ELECTRIC: NONE
CABLE TV: NONE
TELEPHONE: NONE
IMPROVEMENTS: NONE
100' SCALE/FIELD BOOK: K17S
THOMAS BROS.: 1270B3
HGL: NONE

RETIREMENTS:
10" - VC - 700' - 1962
MH - 4X3 - 2 - 1957 & 1962
4" LATERAL - 8 - UNK - UNK

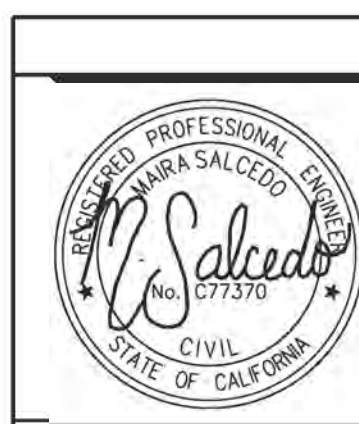


C-4

COLLEGE AREA SEWER AND AC WATER MAIN REPLACEMENT
COLLEGE GLEN SEWER EASEMENT TO CAMPANILE WY
STA 20+00 TO CAMPANILE WY

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING & CAPITAL PROJECTS DEPARTMENT
SHEET 6 OF 34 SHEETS

APPROVED FOR CITY ENGINEER <i>Sheila Bose</i> SHEILA BOSE PRINT DCE NAME	DATE 12/06/2021 DATE C59403 RCE#	WATER WBS -B-16022 SEWER WBS -B-16025
SUBMITTED BY JERICHO GALLARDO PROJECT MANAGER		
CHECKED BY JAMES PIEL PROJECT ENGINEER		
DESCRIPTION	BY	APPROVED
ORIGINAL	TI/CC	<i>Sheila Bose</i>
ADDENDUM A	JP	<i>Sheila Bose</i>
DATE	DATE	DATE
12/08/21	04/21/22	
218-1743	1858-6303	39946-06-D
CCS27 COORDINATE	CCS83 COORDINATE	



PSOMAS
401 B Street, Suite 1600
San Diego, CA 92101
(619) 961-2800 (619) 961-2392 fax
www.psomas.com

CONTRACTOR INSPECTOR _____ NTP DATE _____ NOC DATE _____

City of San Diego

CITY CONTACT: Rosa I. Riego, Senior Contract Specialist, Email: RRiego@sandiego.gov
Phone No. (619) 533-3426

ADDENDUM B



FOR

COLLEGE AREAS SWR & AC WTR MAIN REPL

BID NO.: K-22-2059-DBB-3
SAP NO. (WBS/IO/CC): B-16022, B-16025
CLIENT DEPARTMENT: 2000
COUNCIL DISTRICT: 9
PROJECT TYPE: JA, KB

BID DUE DATE:

2:00 PM
MAY 20, 2022

CITY OF SAN DIEGO'S ELECTRONIC BIDDING SITE, PLANETBIDS

<http://www.sandiego.gov/cip/bidopps/index.shtml>

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN **EXTENDED AS STATED ON THE COVER PAGE.**

B. CLARIFICATIONS

1. Bidders shall utilize the SLBE/ELBE certified list dated May 2, 2022 for purposes of conducting outreach efforts.

Rania Amen, Director
Engineering & Capital Projects Department

Dated: *May 2, 2022*
San Diego, California

RA/DH/ks

Bid Results

Bidder Details

Vendor Name S.C. Valley Engineering, Inc.
Address 656 Front St.
El Cajon, California 92020
United States
Respondee Julio Cabrera
Respondee Title Estimator
Phone 619-444-2366
Email julio@scvalleyinc.com
Vendor Type MBE, CADIR
License # 624559
CADIR 1000020727

Bid Detail

Bid Format Electronic
Submitted 05/20/2022 1:51 PM (PDT)
Delivery Method
Bid Responsive
Bid Status Submitted
Confirmation # 292551

Respondee Comment

Buyer Comment

Attachments

File Title	File Name	File Type
Pending Actions.pdf	Pending Actions.pdf	Contractor's Certification of Pending Actions
Disclosure of Business interest .pdf	Disclosure of Business interest .pdf	Mandatory Disclosure of Business Interests Form
Debarment Prime.pdf	Debarment Prime.pdf	Prime - Debarment and Suspension Certification
Debarment Subs1.pdf	Debarment Subs1.pdf	Subcontractor - Debarment and Suspension Certification
Additive-Deductive1.pdf	Additive-Deductive1.pdf	Subcontractors Additive/Deductive Alternate
Bid Bond Signed.pdf	Bid Bond Signed.pdf	Bid Bond

Subcontractors

Showing 5 Subcontractors

Name & Address	Desc	License Num	CADIR	Amount	Type
Pavement Coatings 10240 San Sevaine Way Jurupa Valley, California 91752	Slurry Seal- Constructor	303609	1000003382	\$97,305.55	PQUAL, CADIR
Pipe Jacking Trenchless, Inc. 26000 Commercentre Drive Lake Forest, California 92630	Jack & Bore- Constructor	1018405	1000042926	\$4,285,000.00	
R&C Structures, Inc. 1615 La Mirada Drive San Marcos, California 92078	Manholes- Constructor	425215	1000004446	\$804,930.00	WBE, WOSB, FEM, CAU, Local
SealRight Paving, Inc. 9053 Olive Dr. Spring Valley, California 91977	Paving Work- Constructor- Alternate D	364113	1000039542	\$244,575.66	DBE, MBE, CADIR, MALE, LAT, Local
Western Gardens Landscaping, Inc. 4616 Pannonia Rd. Carlsbad, California 92008	Landscaping- Constructor-SLBE	662550	1000004289	\$392,569.01	SLBE, CADIR, Local

Line Items

Discount Terms No Discount

Item #	Item Code	Type	Item Description	UOM	QTY	Unit Price	Line Total	Response	Comment
Main Bid							\$10,303,274.10		
1	524126		Bonds (Payment and Performance)	LS	1	\$75,000.00	\$75,000.00	Yes	
2	334290		Remote Control Camera Inspection (EOC Type II)	AL	1	\$20,000.00	\$20,000.00	Yes	
3	237110		Sewage Bypass and Pumping Plan (Diversion Plan) for Right-of-Way (Sheets C-5 through C-8)	LS	1	\$5,000.00	\$5,000.00	Yes	
4	237110		Sewage Bypass and Pumping Plan (Diversion Plan) for Canyon (Sheets C-1 through C-4)	LS	1	\$175,000.00	\$175,000.00	Yes	
5	237110		Drinking Water Discharge Monitoring by QSP	LS	1	\$1,541.00	\$1,541.00	Yes	
6	237110		Dewatering Permit and Discharge Fees (EOC Type I)	AL	1	\$5,000.00	\$5,000.00	Yes	
7	541330		Specialty Inspection Paid For By the Contractor (EOC Type I) - Welding Inspector	AL	1	\$20,000.00	\$20,000.00	Yes	
8	238910		Preparation of Waste Management Form	LS	1	\$5,350.00	\$5,350.00	Yes	
9	238910		Site Storage and Handling of Construction and Demolition Waste	TON	2000	\$10.00	\$20,000.00	Yes	
10	238910		Disposal of Construction and Demolition Waste	TON	2000	\$40.00	\$80,000.00	Yes	
11	541690		Paleontological Monitoring Program	LF	1118	\$9.00	\$10,062.00	Yes	
12	541690		Suspension of Work - Resources	DAY	5	\$5.00	\$25.00	Yes	
13	541690		Paleontological Mitigation and Excavation	CY	19289	\$0.30	\$5,786.70	Yes	
14	237110		Mobilization	LS	1	\$250,000.00	\$250,000.00	Yes	
15			Field Orders (EOC Type II)	AL	1	\$150,000.00	\$150,000.00	Yes	
16	238910		Clearing and Grubbing	LS	1	\$45,000.00	\$45,000.00	Yes	
17	237310		Asphalt Pavement Repair	TON	16	\$504.00	\$8,064.00	Yes	
18	237310		Subgrade Imported Backfill	TON	1	\$25.00	\$25.00	Yes	
19	237310		Class 2 Aggregate Base	TON	1	\$35.00	\$35.00	Yes	
20	237310		Rubber Polymer Modified Slurry (RPMS) Type I	SF	92383	\$0.60	\$55,429.80	Yes	
21	237310		Rubber Polymer Modified Slurry (RPMS) Type II	SF	69008	\$0.80	\$55,206.40	Yes	
22	237310		Pavement Restoration Adjacent to Trench	SF	5330	\$15.00	\$79,950.00	Yes	
23	237310		Crack Seal	LB	133	\$54.00	\$7,182.00	Yes	
24	237310		Historical and Contractor Date Stamps and Impressions	EA	2	\$161.00	\$322.00	Yes	
25	237310		Additional Curb and Gutter Removal and Replacement	LF	20	\$56.00	\$1,120.00	Yes	
26	237310		Additional Sidewalk Removal and Replacement	SF	100	\$11.00	\$1,100.00	Yes	
27	237310		Cross Gutter	SF	800	\$22.00	\$17,600.00	Yes	
28	237310		Curb Ramp (Type D) without Detectable Warning Tiles	EA	2	\$3,210.00	\$6,420.00	Yes	
29	237310		Curb Ramp (Type A) with Stainless Steel Detectable Warning Tiles	EA	2	\$4,922.00	\$9,844.00	Yes	
30	237310		Curb Ramp (Type B) with Stainless Steel Detectable Warning Tiles	EA	2	\$4,815.00	\$9,630.00	Yes	
31	237110		Removal or Abandonment of Existing Water Facilities	LF	118	\$32.00	\$3,776.00	Yes	
32	237110		Abandon and Fill Existing Sewer Main (10 Inch) Outside of the Trench Limit	LF	2390	\$10.00	\$23,900.00	Yes	
33	237110		Abandon and Fill Existing Sewer Main (8 Inch) Outside of the Trench Limit	LF	685	\$10.00	\$6,850.00	Yes	
34	237110		Abandon Existing Manhole Outside of the Trench Limit	EA	8	\$1,282.00	\$10,256.00	Yes	
35	237110		Handling and Disposal of Non-friable Asbestos Material	LF	2575	\$13.00	\$33,475.00	Yes	
36	237110		Additional Bedding	CY	148	\$29.00	\$4,292.00	Yes	
37	237110		Water Main (8 Inch, Class 305)	LF	3058	\$134.00	\$409,772.00	Yes	
38	237110		Sewer Main (10 Inch)	LF	384	\$217.00	\$83,328.00	Yes	
39	237110		Sewer Main (12 Inch)	LF	158	\$208.00	\$32,864.00	Yes	
40	237110		Sewer Main (15 Inch)	LF	1494	\$214.00	\$319,716.00	Yes	
41	237110		Sewer Main (18 Inch)	LF	255	\$323.00	\$82,365.00	Yes	
42	237110		Sewer Main (8 Inch, SDR-26)	LF	53	\$542.00	\$28,726.00	Yes	
43	237110		Sewer Main (10 Inch, SDR-26)	LF	124	\$385.00	\$47,740.00	Yes	
44	237110		Engineered Trench Shoring	LS	1	\$225,750.00	\$225,750.00	Yes	
45	237110		Gate Valve (8 Inch)	EA	12	\$3,182.00	\$38,184.00	Yes	
46	237110		Fire Hydrant Assembly and Marker (6 Inch)	EA	7	\$11,951.00	\$83,657.00	Yes	
47	237110		Water Service (1 Inch)	EA	73	\$3,534.00	\$257,982.00	Yes	
48	237110		Blow-Off Valve Assembly (2 Inch)	EA	1	\$10,637.00	\$10,637.00	Yes	
49	237110		Air and Vacuum (Air Release) Valve Assembly (1 Inch, Class 305)	EA	2	\$7,806.00	\$15,612.00	Yes	

Item #	Item Code	Type	Item Description	UOM	QTY	Unit Price	Line Total	Response	Comment
50	237310		Temporary Resurfacing	TON	282	\$125.00	\$35,250.00	Yes	
51	237110		Manhole No. 4, No. 21 & No. 24 Vault Installation	EA	3	\$240,305.00	\$720,915.00	Yes	
52	237110		Manhole (4 ft x 3 ft)	EA	12	\$10,025.00	\$120,300.00	Yes	
53	237110		Manhole (PVC Lined, 5 ft x 3 ft)	EA	8	\$21,140.00	\$169,120.00	Yes	
54	237110		Connection to Existing Manhole and Rechanneling	EA	1	\$1,906.00	\$1,906.00	Yes	
55	237110		Sewer Lateral and Cleanout (4 Inch, Street)	EA	52	\$3,771.00	\$196,092.00	Yes	
56	237110		Sewer Lateral and Cleanout (4 Inch, Special Strength SDR 26, Street)	EA	3	\$5,225.00	\$15,675.00	Yes	
57	237110		Video Inspection of Pipelines and Culverts for Acceptance	LF	4766	\$1.40	\$6,672.40	Yes	
58	237110		Sewer Main by Jacking Operation with Steel Casing (18 Inch, 36 Inch Casing)	LF	700	\$2,398.00	\$1,678,600.00	Yes	
59	237110		Sewer Main by Jacking Operation with Steel Casing (18 Inch, 48 Inch Casing)	LF	1370	\$2,399.00	\$3,286,630.00	Yes	
60	237110		Sewer Main by Jacking Operation with Steel Casing (15 Inch, 48 Inch Casing)	LF	180	\$2,384.00	\$429,120.00	Yes	
61	237110		Jack and Bore Launching Pit at MH No. 3 (Sheet C-1)	LS	1	\$13,648.00	\$13,648.00	Yes	
62	237110		Jack and Bore Receiving Pit at MH No. 5 (Sheet C-2)	LS	1	\$8,444.00	\$8,444.00	Yes	
63	237110		Jack and Bore Launching Pit at MH No. 6 (Sheet C-2)	LS	1	\$9,704.00	\$9,704.00	Yes	
64	237110		Jack and Bore Launching Pit at MH No 7 (Sheet C-3)	LS	1	\$7,814.00	\$7,814.00	Yes	
65	237110		Jack and Bore Launching Pit at MH No. 8 (Sheet C-3)	LS	1	\$11,174.00	\$11,174.00	Yes	
66	237110		Jack and Bore Pit Receiving Pit at MH No. 9 (Sheet C-4)	LS	1	\$8,234.00	\$8,234.00	Yes	
67	237110		Jack and Bore Pit Receiving Pit at MH No. 10 (Sheet C-4)	LS	1	\$8,024.00	\$8,024.00	Yes	
68	237110		Jack and Bore Pit Launching Pit at MH No. 11 (Sheet C-4)	LS	1	\$9,914.00	\$9,914.00	Yes	
69	237310		Removal and Replacement of Existing Thermoplastic Striping and Markings	LS	1	\$4,280.00	\$4,280.00	Yes	
70	238990		Video Recording of Existing Conditions	LS	1	\$3,745.00	\$3,745.00	Yes	
71	237310		Adjust Existing Manhole Frame and Cover to Grade	EA	19	\$522.00	\$9,918.00	Yes	
72	237310		Adjust Existing Gate Valve Frame and Cover to Grade	EA	17	\$337.00	\$5,729.00	Yes	
73	237310		Adjust Existing Survey Monument to Grade	EA	3	\$1,500.00	\$4,500.00	Yes	
74	541330		Traffic Control and Working Drawings	LS	1	\$15,000.00	\$15,000.00	Yes	
75	561730		Hydro Seed	SF	15246	\$11.80	\$179,902.80	Yes	
76	561730		Shrub (1 Gallon)	EA	420	\$65.00	\$27,300.00	Yes	
77	237310		Construction Fencing and Access Route	LS	1	\$128,400.00	\$128,400.00	Yes	
78	541330		25-Month Revegetation Maintenance and Monitoring Program	LS	1	\$93,625.00	\$93,625.00	Yes	
79	237110		Contractor Furnished Materials for the City Forces High-line Work	LF	6130	\$2.00	\$12,260.00	Yes	
80	237110		Pavement Restoration for Final Connection	SF	500	\$18.00	\$9,000.00	Yes	
81	541330		WPCP Development	LS	1	\$803.00	\$803.00	Yes	
82	237310		WPCP Implementation	LS	1	\$175,000.00	\$175,000.00	Yes	
83	541820		Exclusive Community Liaison Services	LS	1	\$53,000.00	\$53,000.00	Yes	
84	237110		Sewer Lateral Connection	EA	2	\$2,500.00	\$5,000.00	Yes	
Additive Alternate A							\$55,180.00		
85	237110		Furnished Materials for Contractor High-line Work	LF	1	\$10.00	\$10.00	Yes	
86	237110		High-lining Installation by the Contractor	LF	6130	\$6.00	\$36,780.00	Yes	
87	237110		High-lining Removed by the Contractor	LF	6130	\$3.00	\$18,390.00	Yes	
Deductive Alternate B							(\$42,910.00)		
88	237110		Contractor Furnished Materials for the City Forces High-line Work [(Deductive) Enter Unit Price as Negative (-)]	LF	-6130	\$7.00	(\$42,910.00)	Yes	
Additive Alternate C							\$53,675.00		
89	237110		Connections to The Existing System by Contractor (8 Inch through 12 Inch)	EA	3	\$4,127.00	\$12,381.00	Yes	
90	237110		Cut-in Tee by Contractor (8 Inch through 12 Inch)	EA	3	\$8,831.00	\$26,493.00	Yes	
91	237110		Cut-in Cross by Contractor (8 Inch through 12 Inch)	EA	1	\$11,945.00	\$11,945.00	Yes	9
92	237110		Cut and Plug by Contractor	EA	2	\$1,428.00	\$2,856.00	Yes	
Additive Alternate D							\$279,184.40		
93	237310		Cold Mill AC Pavement (> 1½ Inch - 3 Inch)	SF	67258	\$1.00	\$67,258.00	Yes	
94	237310		Asphalt Concrete Overlay	TON	1180	\$134.00	\$158,120.00	Yes	
95	237310		Cold Milling Full Width	SF	67258	\$0.80	\$53,806.40	Yes	

Item #	Item Code	Type	Item Description	UOM	QTY	Unit Price	Line Total	Response	Comment
Deductive Alternate E							(\$40,183.00)		
96	237310		Crack Seal [(Deductive) Enter Unit Price as Negative (-)]	LB	-100	\$43.00	(\$4,300.00)	Yes	
97	237310		Rubber Polymer Modified Slurry (RPMS) Type I [(Deductive) Enter Unit Price as Negative (-)]	SF	-67258	\$0.20	(\$13,451.60)	Yes	
98	237310		Rubber Polymer Modified Slurry (RPMS) Type II [(Deductive) Enter Unit Price as Negative (-)]	SF	-67258	\$0.30	(\$20,177.40)	Yes	
99	237310		Asphalt Pavement Repair [(Deductive) Enter Unit Price as Negative (-)]	TON	-14	\$161.00	(\$2,254.00)	Yes	

Line Item Subtotals

Section Title	Line Total
Main Bid	\$10,303,274.10
Additive Alternate A	\$55,180.00
Deductive Alternate B	(\$42,910.00)
Additive Alternate C	\$53,675.00
Additive Alternate D	\$279,184.40
Deductive Alternate E	(\$40,183.00)
Grand Total	\$10,608,220.50

Line Totals (Unit Price * Quantity)								
Item Num	Section	Item Code	Description	Reference	Unit of Measure	Quantity	S.C. Valley Engineering, Inc. - Unit Price	S.C. Valley Engineering, Inc. - Line Total
1	Main Bid	524126	Bonds (Payment and Performance)	1-7.2.1	LS	1	\$75,000.00	\$75,000.00
2	Main Bid	334290	Remote Control Camera Inspection (EOC Type II)	3-5.1.6	AL	1	\$20,000.00	\$20,000.00
3	Main Bid	237110	Sewage Bypass and Pumping Plan (Diversion Plan) for Right-of-Way (Sheets C-5 through C-8)	3-12.5.4	LS	1	\$5,000.00	\$5,000.00
4	Main Bid	237110	Sewage Bypass and Pumping Plan (Diversion Plan) for Canyon (Sheets C-1 through C-4)	3-12.5.4	LS	1	\$175,000.00	\$175,000.00
5	Main Bid	237110	Drinking Water Discharge Monitoring by QSP	3-12.7.3	LS	1	\$1,541.00	\$1,541.00
6	Main Bid	237110	Dewatering Permit and Discharge Fees (EOC Type I)	3-12.8.8	AL	1	\$5,000.00	\$5,000.00
7	Main Bid	541330	Specialty Inspection Paid For By the Contractor (EOC Type I) - Welding Inspector	4-3.4.1	AL	1	\$20,000.00	\$20,000.00
8	Main Bid	238910	Preparation of Waste Management Form	5-14.9	LS	1	\$5,350.00	\$5,350.00
9	Main Bid	238910	Site Storage and Handling of Construction and Demolition Waste	5-14.9	TON	2000	\$10.00	\$20,000.00
10	Main Bid	238910	Disposal of Construction and Demolition Waste	5-14.9	TON	2000	\$40.00	\$80,000.00
11	Main Bid	541690	Paleontological Monitoring Program	6-6.2.2.1	LF	1118	\$9.00	\$10,062.00

12	Main Bid	541690	Suspension of Work - Resources	6-6.2.1.1 OR 6-6.2.2.1	DAY	5	\$5.00	\$25.00
13	Main Bid	541690	Paleontological Mitigation and Excavation	6-6.2.4.1	CY	19289	\$0.30	\$5,786.70
14	Main Bid	237110	Mobilization	7-3.4.1	LS	1	\$250,000.00	\$250,000.00
15	Main Bid		Field Orders (EOC Type II)	7-3.9	AL	1	\$150,000.00	\$150,000.00
16	Main Bid	238910	Clearing and Grubbing	300-1.4	LS	1	\$45,000.00	\$45,000.00
17	Main Bid	237310	Asphalt Pavement Repair	301-1.7	TON	16	\$504.00	\$8,064.00
18	Main Bid	237310	Subgrade Imported Backfill	301-1.7	TON	1	\$25.00	\$25.00
19	Main Bid	237310	Class 2 Aggregate Base	301-2.4	TON	1	\$35.00	\$35.00
20	Main Bid	237310	Rubber Polymer Modified Slurry (RPMS) Type I	302-4.12.4	SF	92383	\$0.60	\$55,429.80
21	Main Bid	237310	Rubber Polymer Modified Slurry (RPMS) Type II	302-4.12.4	SF	69008	\$0.80	\$55,206.40
22	Main Bid	237310	Pavement Restoration Adjacent to Trench	302-5.2.1	SF	5330	\$15.00	\$79,950.00
23	Main Bid	237310	Crack Seal	302-15.5	LB	133	\$54.00	\$7,182.00
24	Main Bid	237310	Historical and Contractor Date Stamps and Impressions	303-5.9	EA	2	\$161.00	\$322.00
25	Main Bid	237310	Additional Curb and Gutter Removal and Replacement	303-5.9	LF	20	\$56.00	\$1,120.00
26	Main Bid	237310	Additional Sidewalk Removal and Replacement	303-5.9	SF	100	\$11.00	\$1,100.00
27	Main Bid	237310	Cross Gutter	303-5.9	SF	800	\$22.00	\$17,600.00
28	Main Bid	237310	Curb Ramp (Type D) without Detectable Warning Tiles	303-5.10.2	EA	2	\$3,210.00	\$6,420.00
29	Main Bid	237310	Curb Ramp (Type A) with Stainless Steel Detectable Warning Tiles	303-5.10.2	EA	2	\$4,922.00	\$9,844.00
30	Main Bid	237310	Curb Ramp (Type B) with Stainless Steel Detectable Warning Tiles	303-5.10.2	EA	2	\$4,815.00	\$9,630.00

31	Main Bid	237110	Removal or Abandonment of Existing Water Facilities	306-3.3.4	LF	118	\$32.00	\$3,776.00
32	Main Bid	237110	Abandon and Fill Existing Sewer Main (10 Inch) Outside of the Trench Limit	306-3.3.4	LF	2390	\$10.00	\$23,900.00
33	Main Bid	237110	Abandon and Fill Existing Sewer Main (8 Inch) Outside of the Trench Limit	306-3.3.4	LF	685	\$10.00	\$6,850.00
34	Main Bid	237110	Abandon Existing Manhole Outside of the Trench Limit	306-3.3.4	EA	8	\$1,282.00	\$10,256.00
35	Main Bid	237110	Handling and Disposal of Non-friable Asbestos Material	306-3.3.5.5	LF	2575	\$13.00	\$33,475.00
36	Main Bid	237110	Additional Bedding	306-15.1	CY	148	\$29.00	\$4,292.00
37	Main Bid	237110	Water Main (8 Inch, Class 305)	306-15.1	LF	3058	\$134.00	\$409,772.00
38	Main Bid	237110	Sewer Main (10 Inch)	306-15.1	LF	384	\$217.00	\$83,328.00
39	Main Bid	237110	Sewer Main (12 Inch)	306-15.1	LF	158	\$208.00	\$32,864.00
40	Main Bid	237110	Sewer Main (15 Inch)	306-15.1	LF	1494	\$214.00	\$319,716.00
41	Main Bid	237110	Sewer Main (18 Inch)	306-15.1	LF	255	\$323.00	\$82,365.00
42	Main Bid	237110	Sewer Main (8 Inch, SDR-26)	306-15.1	LF	53	\$542.00	\$28,726.00
43	Main Bid	237110	Sewer Main (10 Inch, SDR-26)	306-15.1	LF	124	\$385.00	\$47,740.00
44	Main Bid	237110	Engineered Trench Shoring	306-15.2	LS	1	\$225,750.00	\$225,750.00
45	Main Bid	237110	Gate Valve (8 Inch)	306-15.5	EA	12	\$3,182.00	\$38,184.00
46	Main Bid	237110	Fire Hydrant Assembly and Marker (6 Inch)	306-15.6	EA	7	\$11,951.00	\$83,657.00
47	Main Bid	237110	Water Service (1 Inch)	306-15.8	EA	73	\$3,534.00	\$257,982.00
48	Main Bid	237110	Blow-Off Valve Assembly (2 Inch)	306-15.8	EA	1	\$10,637.00	\$10,637.00
49	Main Bid	237110	Air and Vacuum (Air Release) Valve Assembly (1 Inch, Class 305)	306-15.8	EA	2	\$7,806.00	\$15,612.00
50	Main Bid	237310	Temporary Resurfacing	306-15.9	TON	282	\$125.00	\$35,250.00

51	Main Bid	237110	Manhole No. 4, No. 21 & No. 24 Vault Installation	306-16.6	EA	3	\$240,305.00	\$720,915.00
52	Main Bid	237110	Manhole (4 ft x 3 ft)	306-16.6	EA	12	\$10,025.00	\$120,300.00
53	Main Bid	237110	Manhole (PVC Lined, 5 ft x 3 ft)	306-16.6	EA	8	\$21,140.00	\$169,120.00
54	Main Bid	237110	Connection to Existing Manhole and Rechanneling	306-16.6	EA	1	\$1,906.00	\$1,906.00
55	Main Bid	237110	Sewer Lateral and Cleanout (4 Inch, Street)	306-17.2	EA	52	\$3,771.00	\$196,092.00
56	Main Bid	237110	Sewer Lateral and Cleanout (4 Inch, Special Strength SDR 26, Street)	306-17.2	EA	3	\$5,225.00	\$15,675.00
57	Main Bid	237110	Video Inspection of Pipelines and Culverts for Acceptance	306-18.7	LF	4766	\$1.40	\$6,672.40
58	Main Bid	237110	Sewer Main by Jacking Operation with Steel Casing (18 Inch, 36 Inch Casing)	307-1.7	LF	700	\$2,398.00	\$1,678,600.00
59	Main Bid	237110	Sewer Main by Jacking Operation with Steel Casing (18 Inch, 48 Inch Casing)	307-1.7	LF	1370	\$2,399.00	\$3,286,630.00
60	Main Bid	237110	Sewer Main by Jacking Operation with Steel Casing (15 Inch, 48 Inch Casing)	307-1.7	LF	180	\$2,384.00	\$429,120.00
61	Main Bid	237110	Jack and Bore Launching Pit at MH No. 3 (Sheet C-1)	307-1.7	LS	1	\$13,648.00	\$13,648.00
62	Main Bid	237110	Jack and Bore Receiving Pit at MH No. 5 (Sheet C-2)	307-1.7	LS	1	\$8,444.00	\$8,444.00
63	Main Bid	237110	Jack and Bore Launching Pit at MH No. 6 (Sheet C-2)	307-1.7	LS	1	\$9,704.00	\$9,704.00
64	Main Bid	237110	Jack and Bore Launching Pit at MH No 7 (Sheet C-3)	307-1.7	LS	1	\$7,814.00	\$7,814.00
65	Main Bid	237110	Jack and Bore Launching Pit at MH No. 8 (Sheet C-3)	307-1.7	LS	1	\$11,174.00	\$11,174.00

66	Main Bid	237110	Jack and Bore Pit Receiving Pit at MH No. 9 (Sheet C-4)	307-1.7	LS	1	\$8,234.00	\$8,234.00
67	Main Bid	237110	Jack and Bore Pit Receiving Pit at MH No. 10 (Sheet C-4)	307-1.7	LS	1	\$8,024.00	\$8,024.00
68	Main Bid	237110	Jack and Bore Pit Launching Pit at MH No. 11 (Sheet C-4)	307-1.7	LS	1	\$9,914.00	\$9,914.00
69	Main Bid	237310	Removal and Replacement of Existing Thermoplastic Striping and Markings	314-4.4.6	LS	1	\$4,280.00	\$4,280.00
70	Main Bid	238990	Video Recording of Existing Conditions	400-1.1.1	LS	1	\$3,745.00	\$3,745.00
71	Main Bid	237310	Adjust Existing Manhole Frame and Cover to Grade	403-5	EA	19	\$522.00	\$9,918.00
72	Main Bid	237310	Adjust Existing Gate Valve Frame and Cover to Grade	403-5	EA	17	\$337.00	\$5,729.00
73	Main Bid	237310	Adjust Existing Survey Monument to Grade	403-5	EA	3	\$1,500.00	\$4,500.00
74	Main Bid	541330	Traffic Control and Working Drawings	601-7	LS	1	\$15,000.00	\$15,000.00
75	Main Bid	561730	Hydro Seed	801-9	SF	15246	\$11.80	\$179,902.80
76	Main Bid	561730	Shrub (1 Gallon)	801-9	EA	420	\$65.00	\$27,300.00
77	Main Bid	237310	Construction Fencing and Access Route	802-4	LS	1	\$128,400.00	\$128,400.00
78	Main Bid	541330	25-Month Revegetation Maintenance and Monitoring Program	802-4	LS	1	\$93,625.00	\$93,625.00
79	Main Bid	237110	Contractor Furnished Materials for the City Forces High-line Work	900-1.9	LF	6130	\$2.00	\$12,260.00
80	Main Bid	237110	Pavement Restoration for Final Connection	901-2.5	SF	500	\$18.00	\$9,000.00
81	Main Bid	541330	WPCP Development	1001-4.2	LS	1	\$803.00	\$803.00
82	Main Bid	237310	WPCP Implementation	1001-4.2	LS	1	\$175,000.00	\$175,000.00

83	Main Bid	541820	Exclusive Community Liaison Services	5-10.4	LS	1	\$53,000.00	\$53,000.00
84	Main Bid	237110	Sewer Lateral Connection	306-17.2	EA	2	\$2,500.00	\$5,000.00
							Subtotal	\$10,303,274.10
85	Additive Alternate A	237110	Furnished Materials for Contractor High-line Work	900-1.9	LF	1	\$10.00	\$10.00
86	Additive Alternate A	237110	High-lining Installation by the Contractor	901-1.3	LF	6130	\$6.00	\$36,780.00
87	Additive Alternate A	237110	High-lining Removed by the Contractor	901-1.3	LF	6130	\$3.00	\$18,390.00
							Subtotal	\$55,180.00
88	Deductive Alternate B	237110	Contractor Furnished Materials for the City Forces High-line Work [(Deductive) Enter Unit Price as Negative (-)]	900-1.9	LF	-6130	\$7.00	-\$42,910.00
							Subtotal	-\$42,910.00
89	Additive Alternate C	237110	Connections to The Existing System by Contractor (8 Inch through 12 Inch)	901-2.5	EA	3	\$4,127.00	\$12,381.00
90	Additive Alternate C	237110	Cut-in Tee by Contractor (8 Inch through 12 Inch)	901-2.5	EA	3	\$8,831.00	\$26,493.00
91	Additive Alternate C	237110	Cut-in Cross by Contractor (8 Inch through 12 Inch)	901-2.5	EA	1	\$11,945.00	\$11,945.00
92	Additive Alternate C	237110	Cut and Plug by Contractor	901-2.5	EA	2	\$1,428.00	\$2,856.00
							Subtotal	\$53,675.00
93	Additive Alternate D	237310	Cold Mill AC Pavement (> 1½ Inch - 3 Inch)	404-12	SF	67258	\$1.00	\$67,258.00
94	Additive Alternate D	237310	Asphalt Concrete Overlay	302-5.9	TON	1180	\$134.00	\$158,120.00
95	Additive Alternate D	237310	Cold Milling Full Width	404-12	SF	67258	\$0.80	\$53,806.40
							Subtotal	\$279,184.40

96	Deductive Alternate E	237310	Crack Seal [(Deductive) Enter Unit Price as Negative (-)]	302-15.5	LB	-100	\$43.00	-\$4,300.00
97	Deductive Alternate E	237310	Rubber Polymer Modified Slurry (RPMS) Type I [(Deductive) Enter Unit Price as Negative (-)]	302-4.12.4	SF	-67258	\$0.20	-\$13,451.60
98	Deductive Alternate E	237310	Rubber Polymer Modified Slurry (RPMS) Type II [(Deductive) Enter Unit Price as Negative (-)]	302-4.12.4	SF	-67258	\$0.30	-\$20,177.40
99	Deductive Alternate E	237310	Asphalt Pavement Repair [(Deductive) Enter Unit Price as Negative (-)]	301-1.7	TON	-14	\$161.00	-\$2,254.00
							Subtotal	-\$40,183.00
							Total	\$10,608,220.50

SUBCONTRACTOR LISTING (OTHER THAN FIRST TIER)

Pursuant to California Senate Bill 96 and in accordance with the requirements of Labor Code sections 1771.1 and 1725.5, by submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the California Department of Industrial Relations (DIR). **The Bidder is to list below the name, address, license number, DIR registration number of any (known tiered subcontractor)** - who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement pursuant to the contract. **If none are known at this time, mark the table below with non-applicable (N/A).**

Prime Contractor Name: S C Valley Engineering Inc.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	DIR REGISTRATION NUMBER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____	N/A			
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____				
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____				
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____				

**** USE ADDITIONAL FORMS AS NECESSARY ****