City of San Diego

CONTRACTOR'S NAME: Burtech Pipeline Incorporated
ADDRESS: 102 Second Street, Encinitas, CA 92024
TELEPHONE NO.: 760-634-2822 **FAX NO.:** 760-634-2415
CITY CONTACT: Angelica Gil, **Contract Specialist**, **Email**: AngelicaG@sandiego.gov
Phone No. (619) 533-3622
R. Vejar-Parra / A. Rekani / LJI

BIDDING DOCUMENTS

e - Bidding

FINAL

FOR

AC WATER AND SEWER GROUP 1020

BID NO.: **K-18-1726-DBB-3**
SAP NO. (WBS/IO/CC): **B-15157, B-15148**
CLIENT DEPARTMENT: **2000**
COUNCIL DISTRICT: **3**
PROJECT TYPE: **KB, JA**

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
MARCH 16, 2018
CITY OF SAN DIEGO
PUBLIC WORKS CONTRACTS
525 B STREET, SUITE 750, MS 908A
SAN DIEGO, CA 92101

ENGINEER OF WORK

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

For Plan Sheets 38973-29-D to 38973-31-D and associated specifications

1) Registered Engineer — 2/5/18 Date — Seal:

For Plan Sheets 38973-32-D to 38973-44-D and associated specifications

2) Registered Engineer — 2/7/18 Date — Seal:

For Plan Sheets 38973-45-D to 38973-47-D and associated specifications

3) Registered Engineer — 02.08.18 Date — Seal:

4) For City Engineer — 2/8/2018 Date — Seal:

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NOTICE INVITING BIDS

1. **SUMMARY OF WORK:** This is the City of San Diego's (City) solicitation process to acquire Construction services for **AC WATER AND SEWER GROUP 1020.** For additional information refer to Attachment A.

2. **FULL AND OPEN COMPETITION:** This contract is open to full competition and may be bid on by Contractors who are on the City's current 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 **$4,040,000**.

4. **BID DUE DATE AND TIME ARE: March 16, 2018 at 2:00 PM.**

5. **PREVAILING WAGE RATES APPLY TO THIS CONTRACT:** Refer to Attachment D.

6. **LICENSE REQUIREMENT**: The City has determined that the following licensing classification(s) are required for this contract: **A or C34 or C42**

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 documentation, saved in searchable Portable Document Format (PDF) and stored on Compact Disc (CD) or Digital Video Disc (DVD), demonstrating the Bidder made a good faith effort to outreach to and include SLBE-ELBE Subcontractors required in this document within 3 Working Days of the Bid opening if the overall mandatory participation percentage is not met.

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 Base Bid plus all Alternates.

8.5. Once the low bid has been determined, the City may, at its sole discretion, award the contract for the Base bid plus one or more alternates.

9. SUBMISSION OF QUESTIONS:

9.1. The Director (or Designee) of the Public Works Department is 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:

Public Works Contracts
525 B Street, Suite 750
San Diego, California, 92101
Attention: Angelica Gil

OR:

AngelicaG@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. PHASED FUNDING: For Phased Funding Conditions, see Attachment B.

11. ADDITIVE ALTERNATES:

11.1. 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.

11.2. 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.

1. PREQUALIFICATION OF CONTRACTORS:

1.1. Contractors submittina 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. Complete information and links to the on-line prequalification application are available at:

http://www.sandiego.gov/cip/bidopps/prequalification.shtml

1.2. The completed application must be submitted online no later than 2 weeks prior to the bid opening.

1.3. 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 and 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 which 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, EOCP 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 Public Works 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 (90 days for federally funded contracts and contracts valued at $500,000 or less) 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.shtml.

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 10 Working Days after receiving the Contract forms. See 7-6, "The Contractors Representative" in The GREENBOOK and 7-6.1 in The WHITEBOOK.

7. **PREVAILING WAGE RATES WILL APPLY:** Refer to Attachment D.

8. **SUBCONTRACTING PARTICIPATION PERCENTAGES**: Subcontracting participation percentages apply to this contract. Refer to Attachment E.

9. INSURANCE REQUIREMENTS:

9.1. 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.

9.2. Refer to sections 7-3, "LIABILITY INSURANCE", and 7-4, "WORKERS' COMPENSATION INSURANCE" of the Supplementary Special Provisions (SSP) for the insurance requirements which must be met.

10. 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/	2015	PWPI070116-01
City of San Diego Standard Specifications for Public Works Construction ("The WHITEBOOK")* https://www.sandiego.gov/publicworks/edocref/greenbook	2015	PWPI070116-02
City of San Diego Standard Drawings* https://www.sandiego.gov/publicworks/edocref/standarddraw	2016	PWPI070116-03
Citywide Computer Aided Design and Drafting (CADD) Standards https://www.sandiego.gov/publicworks/edocref/drawings	2016	PWPI092816-04
California Department of Transportation (CALTRANS) Standard Specifications – http://www.dot.ca.gov/des/oe/construction-contract-standards.html	2015	PWPI092816-05
CALTRANS Standard Plans http://www.dot.ca.gov/des/oe/construction-contract-standards.html	2015	PWPI092816-06
California Manual on Uniform Traffic Control Devices Revision 1 (CA MUTCD Rev 1) - http://www.dot.ca.gov/trafficops/camutcd/	2014	PWPIO92816-07
NOTE: *Available online under Engineering Documents and References at: http://www.sandiego.gov/publicworks/edocref/index.shtml		

11. 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.

12. 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.

13. 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.

14. SUBCONTRACTOR INFORMATION:

14.1. 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; Paragraph 2-3, “Subcontracts”, 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.

14.2. 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.

14.3. 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.

15. SUBMITTAL OF "OR EQUAL" ITEMS: See Section 4-1.6, "Trade Names or Equals" in The WHITEBOOK and as amended in the SSP.

16. AWARD:

16.1. The Award of this contract is contingent upon the Contractor's compliance with all conditions precedent to Award.

16.2. 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.

16.3. 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.

17. SUBCONTRACT LIMITATIONS: The Bidder's attention is directed to Standard Specifications for Public Works Construction, Section 2-3, "SUBCONTRACTS" 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.

18. 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 Public Works Contracts.

19. ONLY ONE BID PER CONTRACTOR SHALL BE ACCCEPTED: 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.

20. 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.

21. BIDDER'S GUARANTEE OF GOOD FAITH (BID SECURITY) FOR DESIGN-BID-BUILD CONTRACTS:

21.1. 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.

21.2. 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.

21.3. 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.

21.4. 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. Within twenty-four (24) hours after the bid due date and time, the first five (5) apparent low bidders must provide the City with the original bid security.

21.5. Failure to submit the electronic version of the bid security at the time of bid submission AND failure to provide the original within twenty-four (24) hours may cause the bid to be rejected and deemed **non-responsive**.

22. AWARD OF CONTRACT OR REJECTION OF BIDS:

22.1. This contract may be awarded to the lowest responsible and reliable Bidder.

22.2. Bidders shall complete ALL eBid forms as required by this solicitation. Incomplete eBids will not be accepted.

22.3. 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.

22.4. 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.

22.5. 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.

22.6. 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.

22.7. 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.

22.8. 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.

23. BID RESULTS:

23.1. 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.

23.2. 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.

24. THE CONTRACT:

24.1. 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.

24.2. 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.

24.3. 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.

24.4. 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.

24.5. 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 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.

25. 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 2-7, 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.

26. CITY STANDARD PROVISIONS: This contract is subject to the following standard provisions. See The WHITEBOOK for details.

26.1. The City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace.

26.2. The City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act.

26.3. The City of San Diego Municipal Code §22.3004 for Contractor Standards.

26.4. The City of San Diego's Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776.

26.5. 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.

26.6. The City's Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code (SDMC).

26.7. The City's Information Security Policy (ISP) as defined in the City's Administrative Regulation 90.63.

27. PRE-AWARD ACTIVITIES:

27.1. The contractor selected by the City to execute a contract for this Work shall submit the required documentation as specified in the herein and in the Notice of Award. Failure to provide the information as specified may result in the Bid being rejected as **non-responsive.**

27.2. 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.

EXECUTED IN TRIPLICATE
BOND NO. 2269266
PREMIUM: $25,070.00
PREMIUM IS FOR CONTRACT TERM AND IS SUBJECT TO ADJUSTMENT BASED ON FINAL CONTRACT PRICE

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

Burtech Pipeline Incorporated, a corporation, as principal, and NORTH AMERICAN SPECIALTY INSURANCE 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 **Three Million Seven Hundred Thirty One Thousand Five Hundred and Zero Cents ($3,731,500.00)** for the faithful performance of the annexed contract, and in the sum of **Three Million Seven Hundred Thirty One Thousand Five Hundred and Zero Cents ($3,731,500.00)** 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.

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

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

Dated MARCH 29, 2018

Approved as to Form

Mara W. Elliott, City Attorney

By _____
Deputy City Attorney

Approved:

By _____
Stephen Samara
Principal Contract Specialist
Public Works Department

BURTECH PIPELINE, INCORPORATED
Principal

By _____

DOMINIC J. BURTECH, JR., PRESIDENT
Printed Name of Person Signing for Principal

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
Surety

By _____
Attorney-in-fact, MARK D. IATAROLA

6 HUTTON CENTRE DRIVE, SUITE 850
Local Address of Surety

SANTA ANA, CA 92707
Local Address (City, State) of Surety

714/550-4141
Local Telephone No. of Surety

Premium $ 25,070.00 PREMIUM IS FOR CONTRACT TERM AND IS SUBJECT TO ADJUSTMENT BASED ON FINAL CONTRACT PRICE

Bond No. 2269266

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 3/29/2018 *Date* before me, HELEN E. WHEALDON, NOTARY PUBLIC *Here Insert Name and Title of the Officer*,

personally appeared MARK D. IATAROLA *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.

NRO1 HELEN E. WHEALDON COMM. #2194350 Notary Public · California San Diego County My Comm. Expires Apr. 28, 2021 NRO1

Signature Helen E Whealdon
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: _____ Document Date: _____

Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

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

SWISS RE CORPORATE SOLUTIONS

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Overland Park, Kansas, and Washington International Insurance Company, a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Overland Park, Kansas, each does hereby make, constitute and appoint:

JOHN G. MALONEY, HELEN MALONEY, MARK D. IATAROLA, AND SANDRA FIGUEROA

HELEN E. WHEALDON

JOINTLY OR SEVERALLY

Its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

FIFTY MILLION ($50,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on the 9th of May, 2012:

"RESOLVED, that any two of the Presidents, any Managing Director, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."

AMERICAN SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1973 NEW HAMPSHIRE NORTH

By _____
Steven P. Anderson, Senior Vice President of Washington International Insurance Company & Senior Vice President of North American Specialty Insurance Company

By _____
Michael A. Ito, Senior Vice President of Washington International Insurance Company & Senior Vice President of North American Specialty Insurance Company

WASHINGTON INTERNATIONAL INSURANCE COMPANY CORPORATE SEAL NEW HAMPSHIRE

IN WITNESS WHEREOF, North American Specialty Insurance Company and Washington International Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 12 day of JANUARY, 2018.

North American Specialty Insurance Company
Washington International Insurance Company

State of Illinois
County of Cook ss:

On this 12 day of JANUARY, 2018, before me, a Notary Public personally appeared Steven P. Anderson, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Michael A. Ito, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.

OFFICIAL SEAL
M. KENNY
Notary Public - State of Illinois
My Commission Expires
12/04/2021

M. Kenny, Notary Public

I, Jeffrey Goldberg, the duly elected Assistant Secretary of North American Specialty Insurance Company and Washington International Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company and Washington International Insurance Company, which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 29th day of MARCH, 2018.

Jeffrey Goldberg, Vice President & Assistant Secretary of
Washington International Insurance Company & North American Specialty Insurance Company

CALIFORNIA ALL-PURPOSE CERTIFICATE OF 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 4/2/18 before me, Arthur P. Arquilla, Notary Public,
(Here insert name and title of the officer)

personally appeared Dominic Burtech,

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.

ARTHUR P. ARQUILLA
COMMISSION NO. 2225407
NOTARY PUBLIC-CALIFORNIA
SAN DIEGO COUNTY
COMMISSION EXPIRES JAN 7, 2022

Notary Public Signature (Notary Public Seal)

ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

(Title or description of attached document)

(Title or description of attached document continued)

Number of Pages _____ Document Date _____

CAPACITY CLAIMED BY THE SIGNER

- ☐ Individual (s)
- ☐ Corporate Officer

(Title)

- ☐ Partner(s)
- ☐ Attorney-in-Fact
- ☐ Trustee(s)
- ☐ Other _____

INSTRUCTIONS FOR COMPLETING THIS FORM

This form complies with current California statutes regarding notary wording and, if needed, should be completed and attached to the document. Acknowledgments from other states may be completed for documents being sent to that state so long as the wording does not require the California notary to violate California notary law.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they,~~ is /~~are~~) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
  - Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
  - Indicate title or type of attached document, number of pages and date.
  - Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document with a staple.

ATTACHMENTS

ATTACHMENT A

SCOPE OF WORK

SCOPE OF WORK

1. **SCOPE OF WORK:** Construction consists of installation of 8-inch water main, fire hydrants, water services, a new pressure regulator station with scada instrumentation and installation of 8-inch sewer main, sewer manholes and sewer laterals, pavement resurfacing, curb ramps and all other realted work and appurtenances.

1.1. The Work shall be performed in accordance with:

1.1.1. The Notice Inviting Bids, and Plans numbered **38973-01-D** through **38973-47-D**, inclusive.

2. **LOCATION OF WORK:** The location of the Work is as follows**:**

See Appendix E – Group 1020 Location Map.

Mergho Impasse, Bandini St, Hayden Way, Linwood St, Guy St, Miller St, Arden Way, Curlew St, W. Robinson Ave, Pennsylvania Ave, Brant St, Albatross St and Front St.

3. **CONTRACT TIME:** The Contract Time for completion of the Work, shall be **250 Working Days**.

ATTACHMENT B

PHASED FUNDING PROVISIONS

PHASED FUNDING PROVISIONS

1. PRE-AWARD

1.1. Within 10 Working Days after the Bid Opening date, the Apparent Low Bidder 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 9-3, "PAYMENT.

1.2. Your failure to perform any of the following may result cancelling your 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 Working Days after meeting with the City's Project Manager.

2. POST-AWARD

2.1. Do not start any construction activities for the next phase until the NTP has been issued by the Engineer. The City will issue separate Notice to Proceed (NTP) documents for each phase.

2.2. If requested, the Engineer may issue the NTP for the next phase before the end of the current approved phase.

PHASED FUNDING SCHEDULE AGREEMENT

The particulars left blank in this sample, 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-18-1726-DBB-3
CONTRACT OR TASK TITLE: AC WATER AND SEWER GROUP 1020
CONTRACTOR: BURTECH PIPELINE INC.

Funding Phase		Phase Description	Phase Start	Phase Finish	Not-to-Exceed Amount
Phase 1	Sewer	Work to be completed in **Phase 1** shall include Bonds, Mobilization, Trench Shoring and installation of Sewer Mains, Sewer Manholes and Sewer Laterals associated with this contract and specifications.	NTP	NOC	$186,000.00
	Water	Work to be completed in **Phase 1** shall include Bonds, Mobilization, Trench Shoring and installation of Water Pipes.	NTP	8/03/18	$600,000.00
Phase 2	Water	Work to be completed in **Phase 2** shall include Trench Shoring and installation of Water Pipes, Pressure Reducer Station, Fire Hydrants and Water Services associated with this contract and specifications.	08/06/18	07/30/19	$1,520,000.00
Phase 3	Water	Work to be completed in **Phase 3** shall include the remaining of the construction activities associated with this contract and specifications.	08/01/19	NOC	$1,425,500.00
				Contract Total	$3,731,500.00

Notes:
1) WHITEBOOK section 9-3.6, "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: Steve Lindsay
Construction Manager
Signature:
Date: 4/26/18

PRINT NAME: Roberto Vejar-Parra
Project Manager
Signature: Roberto Vejar-Parra
Date: 04/18/18

CONTRACTOR

PRINT NAME: DOMINIC J. BURTECH
Title: PRESIDENT & CEO
Signature:
Date: 4/18/2018

ATTACHMENT C

INTENTIONALLY LEFT BLANK

ATTACHMENT D

PREVAILING WAGES

ATTACHMENT D

PREVAILING WAGES

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 sections1810 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 Equal Opportunity Contracting Department at 619-236-6000.

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 City may ask Contractor for the most current list of subcontractors (regardless of tier), along with their DIR registration numbers, utilized on this Agreement at any time during performance of this contract, and Contractor shall provide the list within ten (10) working days of the City's request. Additionally, Contractor shall provide the City with a complete list of all subcontractors utilized on this contract (regardless of tier), within ten working days of the completion of the contract, along with their DIR registration numbers. The City shall withhold final payment to Contractor until at least 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 4.20.11 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 **2015 Edition** of the Standard Specifications for Public Works Construction (The "GREENBOOK").
2. The **2015 Edition** of the City of San Diego Standard Specifications for Public Works Construction (The "WHITEBOOK"), including the following:

   a) General Provisions (A) for all Contracts.

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

1-2 **TERMS AND DEFINITIONS.** To the "WHITEBOOK", item 54, "Normal Working Hours", ADD the following:

The **Normal Working Hours** are **8:30 AM** to **3:30 PM**.

SECTION 2 - SCOPE AND CONTROL OF WORK

1-3.2 **Common Usage.** To the "WHITEBOOK", ADD the following:

75. CASQA .....California Stormwater Quality Association

76. QSD.....Qualified SWPPP Developer

77. QSP .....Qualified SWPPP Practitioner

78. WPCM.....Water Pollution Control Manager

2-3.2 **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 50% of the base Bid **AND** 50% of any alternates.

2-5.3.3 **Shop Drawings.** To the "WHITEBOOK", TABLE 2-5.3.3**,** ADD the following:

ITEM	SUBSECTION NO.	TITLE	SUBJECT
7	206-10	VAULT ACCESS HATCHES	ACCESS HATCHES
8	219	PRECAST CONCRETE VAULTS	REINFORCED CONCRETE

ADD:

2-5.3.7 Contractor's Quality Control Plan (QCP).

1. You shall establish, implement, and maintain an effective Quality Control Plan (QCP) to perform quality control inspection and testing for all items of paving Work required by the Contract Documents, including those performed by subcontractors and material suppliers.
2. The QCP shall ensure conformance to applicable specification and plan requirements with respect to materials, workmanship, construction, finish, and functional performance.
3. The QCP shall detail the methods and procedures that will be taken to ensure that all materials and construction required for street pavement restoration will conform to the Contract Documents, and to ensure that information included will be recorded in Daily Quality Control (QC) Inspection Reports for the Engineer's verification and approval:
4. You shall establish a level of control that will:
    a) Provide for the production and delivery of acceptable quality materials.
    b) Provide documentation that construction meets Contract requirements.
5. During the pre-construction meeting, you shall be prepared to discuss and present details of your QCP. You shall not begin any production of materials or construction of surface preparation, pavement restoration, and other related work until your QCP has been reviewed and approved by the Engineer. No partial payment will be made for materials subject to specific quality control requirements until the QCP has been approved.
6. The quality control requirements contained in this section and elsewhere in the Contract Documents are in addition to and separate from the acceptance testing requirements discussed elsewhere in the contract specifications.

2-5.3.7.1 QCP Submittal.

1. Submit the QCP in a written document to the Engineer at the pre-construction meeting. The QCP shall be reviewed and approved by the Engineer prior to the start of any material delivery or paving work.
2. The QCP shall be organized to address, at a minimum, the following items:
    a) Quality Control Administrator
    b) Surface preparation and paving schedule.
    c) Inspection and documentation requirements (Daily Quality Control Inspection Report).
    d) Material quality control testing plan.
    e) Documentation of quality control activities.

f) Procedures for corrective action when quality control and/or acceptance criteria are not met.

3. You are encouraged to add any additional elements to the QCP as deemed necessary to adequately control all production and construction processes required by Contract Documents.

2-5.3.7.2 QCP Administrator.

1. You shall designate a QCP Administrator to implement the QCP.

   a) The QCP Administrator shall be your full-time employee or your consultant. The QCP Administrator shall have full authority to institute any and all actions necessary for the successful implementation of the QCP to ensure compliance with the Contract Documents.

   b) The QCP Administrator shall ensure that the following functions are performed and documented:

      i. Inspection of all materials, construction, plant, and equipment for conformance to the specifications.

      ii. Performance of all quality control tests as required by the Contract Documents.

      iii. Performance of density tests for the Engineer when required.

2-5.3.7.3 Inspection Requirements.

1. Quality control inspection functions shall be organized to provide inspections for all definable features of Work. You shall document all inspections.

2. Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the particular feature of Work. These shall include the following minimum requirement:

   a) During field operations, quality control test results and periodic inspections shall be utilized to ensure the quality of all materials and workmanship meets the requirements of the contract. All equipment utilized in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the specifications and are within the plan dimensions, lines, grades, and tolerances specified. The QCP shall document how these and other quality control functions will be accomplished and utilized.

2-5.3.7.4 Documentation.

1. You shall maintain current quality control records of all inspections performed. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

2. These records shall cover both conforming and defective or deficient features, and shall include a statement that all supplies and materials incorporated in the Work are in full compliance with the terms of the Contract. Legible copies of these records for the entire week of paving work shall be furnished to the Engineer after 2 Working Days. The records shall cover all Work placed subsequent to the previously furnished records and shall be verified and signed by the QCP Administrator.

3. Specific QCP records required for the Contract shall include, but are not necessarily limited to, the following records:

   a) **Daily Quality Control (QC) Inspection Reports.** The QCP Administrator shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These daily QC inspection reports shall provide factual evidence that continuous quality control inspections have been performed and shall, as a minimum, include the following items:

      i. Date and location/s of paving work performed.

      ii. Asphalt mix specifications and supplier.

      iii. Dig out locations.

      iv. Tack coat application rate for each location.

      v. Asphalt temperature at placement for each location.

      vi. Asphalt depth for each location.

      vii. Compaction test results for each location.

      viii. Documentation that the following have been verified to be in compliance:

         - Proper storage of materials and equipment.
         - Proper operation of all equipment.
         - Adherence to plans and technical specifications.
         - Review of quality control tests.
         - Safety inspection.

      ix. Location and nature of defects with remedial and corrective actions.

      x. Presence of City Laboratory representative.

      xi. Deviations from QCP.

      xii. Signature of QCP Administrator.

      The daily QC inspection reports shall identify inspections conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

b) The daily QC inspection reports shall be signed by the QCP Administrator. The Engineer shall be provided at least 1 copy of each daily QC inspection report for the entire week 2 Working Days following the end of the week.

c) See **Appendix K** for a sample of the daily QC inspection report. An updated version of this sample report will be provided at the pre-construction meeting.

2-5.3.7.5 Corrective Action Requirements.

1. The QCP shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control.

2. The requirements for corrective action shall include both general requirements for operation of the QCP as a whole and for individual items of Work contained in the specifications.

3. The QCP shall detail how the results of quality control inspections will be used for determining the need for corrective action and shall contain clear sets of rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

2-5.3.7.6 Noncompliance.

1. The Engineer will notify you of any noncompliance with any of the foregoing requirements. You shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the Engineer to you, shall be considered sufficient notice.

2. In cases where quality control activities do not comply with either the QCP or the contract provisions, or where you fail to properly operate and maintain an effective QCP, as determined by the Engineer, the Engineer may:

   a) Require replacement of ineffective or unqualified QCP personnel or subcontractors.

   b) Stop operations until appropriate corrective actions are taken.

2-5.3.7.7 Payment.

The payment for preparation, submittal, implementation and maintenance of the Quality Control Plan in accordance with the Contract Documents shall be included in the Contract Price.

ADD:

2-10 AUTHORITY OF THE BOARD AND THE ENGINEER. To the "GREENBOOK", Paragraph (2), DELETE in its entirety and SUBSTITUTE with the following:

The decision of the Engineer is final and binding on all questions relating to: quantities; acceptability of material, equipment, or work; execution, progress or sequence of work; requests for information (RFI), and interpretation of the Plans, Specifications, or other Contract Documents. This shall be precedent to any payment under the

Contract. The Engineer shall be the single point of contact and shall be included in all communications.

2-14.3 Coordination. To the "WHITEBOOK", ADD the following:

a) Other adjacent City projects are scheduled for construction for the same time period in the vicinity of AC Water and Sewer Group 1020. See Appendix "F" for the approximate location. Coordinate the Work with the adjacent projects as listed below:
   a) Disctict 2 Block 2E UUD, Ali Alaeipour, 619-533-5141
   b) Mission Hills Histor C St Lighting, Dayue Zhang, 619-533-7409
   c) FY14 PCC PANEL GROUP 1, Chris Hudson , 619-527-8081
   d) SANDAG, Steve Celniker, 619-533-3611

2-16 CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM. To the "WHITEBOOK", item 1, DELETE in its entirety.

SECTION 3 – CHANGES IN WORK

3-5.1 Claims. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

ADD:

3-5.1 Claims.

1. A Claim is a written demand by you that seeks an adjustment in the Contract Price, Contract Time, or other relief associated with a dispute arising under or relating to the Contract, including a breach of any provision thereof. A voucher, invoice, or other routine request for payment is not a Claim.
2. A Claim shall conform to these specifications and may be considered after the City has previously denied a request by you for a Change Order seeking the demanded relief.
3. You shall submit a Claim to the Engineer if a dispute occurs that arises from or relates to the Contract. The Claim shall seek all relief to which you assert you are entitled as a result of the event(s) giving rise to the dispute. Your failure to process a Claim in accordance with these specifications shall constitute a waiver of all relief associated with the dispute. Claims are subject to 6-11, "Right to Audit".
4. You shall continue to perform the Services and Work and shall maintain the Schedule during any dispute proceedings. The Engineer will continue to make payments for undisputed Services and Work.
5. The City's Claims process specified herein shall not relieve you of your statutory obligations to present claims prior to any action under the California Government Code.

3-5.1.1 Initiation of Claim.

1. You shall promptly, but no later than 30 Days after the event(s) giving rise to the Claim, deliver the Claim to the Engineer.

2. You shall not process a Claim unless the Engineer has previously denied a request by you for a Change Order that sought the relief to be pursued in the claim.

3-5.1.1.1 Claim Certification Submittal.

1. If your Claim seeks an increase in the Contract Price, the Contract Time, or both, submit with the Claim an affidavit certifying the following:

   a) The Claim is made in good faith and covers all costs and delays to which you are entitled as a result of the event(s) giving rise to the Claim.

   b) The amount claimed accurately reflects the adjustments in the Contract Price, the Contract Time, or both to which you believe you are entitled.

   c) All supporting costs and pricing data are current, accurate, and complete to the best of your knowledge. The cost breakdown per item of Work shall be supplied.

   d) You shall ensure that the affidavit is executed by an official who has the authority to legally bind you.

3-5.1.2 Initial Determination.

1. The Engineer will respond in writing to your Claim within 30 Days of receipt of the Claim.

3-5.1.3 Settlement Meeting.

1. If you disagree with the Initial Determination, you shall request a Settlement Meeting within 30 Days. Upon receipt of this request, the Engineer will schedule the Settlement Meeting within 15 Working Days.

3-5.1.4 City's Final Determination.

1. If a settle agreement is not reached, the City shall make a written Final Determination within 10 Working Days after the Settlement Meeting.

2. If you disagree with the City's Final Determination, notify the Engineer in writing of your objection within 15 Working Days after receipt of the written determination and file a "Request for Mediation" in accordance with 3-5.2, "Dispute Resolution Process".

3. Failure to give notice of objection within the 15 Working Days period shall waive your right to pursue the Claim.

3-5.1.5 Mandatory Assistance.

1. If a third party dispute, litigation, or both arises out of or relates in any way to the Services provided under the Contract, upon the City's request, you shall agree to assist in resolving the dispute or litigation. Your assistance includes, but is not limited to the following:

   a) Providing professional consultations.

   b) Attending mediations, arbitrations, depositions, trials, or any event related to the dispute resolution and litigation.

3-5.1.5.1 Compensation for Mandatory Assistance.

1. The City will reimburse you for reasonable fees and expenses incurred by you for any required assistance rendered in accordance with 3-5.1.8, "Mandatory Assistance" as Extra Work.

2. The Engineer will determine whether these fees and expenses were necessary due to your conduct or failure to act.

3. If the Engineer determines that the basis of the dispute or litigation in which these fees and expenses were incurred were the result of your conduct or your failure to act in part or in whole, you shall reimburse the City for any payments made for these fees and expenses.

4. Reimbursement may be through any legal means necessary, including the City's withholding of your payment.

3-5.2.3 Selection of Mediator. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. A single mediator, knowledgeable in construction aspects and acceptable to both parties, shall be used to mediate the dispute.

2. To initiate mediation, the initiating party shall serve a Request for Mediation at the American Arbitration Association (AAA) on the opposing party.

3. If AAA is used, the initiating party shall concurrently file with AAA a "Request for Mediation" along with the appropriate fees, a copy of requested mediators marked in preference order, and a preference for available dates.

4. If AAA is selected to coordinate the mediation (Administrator), within 10 Working Days from the receipt of the initiating party's Request for Mediation, the opposing party shall file the following:

a) A copy of the list of the preferred mediators listed in preference order after striking any mediators to which they have any objection.

b) A preference for available dates.

c) Appropriate fees.

5. If the parties cannot agree on a mediator, then each party shall select a mediator and those mediators shall select the neutral third party to mediate the matter.

3-5.3 **Forum of Litigation.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. It is the express intention that all legal actions and proceedings related to the Contract or Agreement with the City or to any rights or any relationship between the parties arising therefrom shall be solely and exclusively initiated and maintained in courts of the State of California for the County of San Diego.

SECTION 4 - CONTROL OF MATERIALS

4-1.3.3 **Inspection of Items Not Locally Produced.** To the "WHITEBOOK", DELETE in its entirety.

ADD:

4-1.3.3 **Inspection of Items Not Locally Produced.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. When you intend to purchase materials, fabricated products, or equipment from sources located more than 200 miles (321.9 km) outside the geographical limits of the City, City Lab staff or a qualified inspection agency approved by the Engineer, shall be engaged at your expense to inspect the materials, equipment, or process.

2. This approval shall be obtained before producing any material or equipment. City Lab staff or inspector shall evaluate the materials for conformance with the requirements of the Plans and Specifications. You shall forward reports required by the Engineer. No materials or equipment shall be shipped nor shall any processing, fabrication or treatment of such materials be done without proper inspection by City Lab staff or the approved agent. Approval by said agent shall not relieve you of responsibility for complying with the requirements of the Contract Documents.

3. The Engineer may elect City Lab staff to perform inspection of an out-of-town manufacturer. You shall incur additional inspection costs of the Engineer including lodging, meals, and incidental expenses based on Federal Per Diem Rates, along with travel and car rental expenses. If the manufacturing plant operates a double shift, a double shift shall be figured in the inspection costs.

a) At the option of the Engineer, full time inspection shall continue for the length of the manufacturing period. If the manufacturing period will exceed 3 consecutive weeks, you shall incur additional inspection expenses of the Engineer's supervisor for a trip of 2 Days to the site per month.

b) When the Engineer elects City Lab staff to perform out-of-town inspections, the wages of staff employed by the City shall not be part of the additional inspection expenses paid by you.

c) Federal Per Diem Rates can be determined at the location below:

https://www.gsa.gov/portal/content/104877

4-1.3.5 **Special Inspection**. To the "WHITEBOOK", ADD the following:

5. The payment for special inspection Work specified under this section shall be paid in accordance with 4-1.3.4.1, "Payment".

4-1.3.6 **Preapproved Materials.** To the "WHITEBOOK", ADD the following:

3. You shall submit in writing a list of all products to be incorporated in the Work that are on the AML.

4-1.6 **Trade Names or Equals.** 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 determination of the Apparent Low Bidder** and on the City's Product Submittal Form available at:

http://www.sandiego.gov/publicworks/edocref/index.shtml

SECTION 5 – UTILITIES

5-2 **PROTECTION.** To the "WHITEBOOK", item 2, ADD the following:

Refer to **Appendix L** for more information on the protection of AMI devices.

SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF WORK

6-1.1 **Construction Schedule.** To the " WHITEBOOK", item 22, subsection b, DELETE in its entirety and SUBSTITUTE with the following:

b) A curve value percentage comparison between the Contract Price and the updated cash flow forecast for each Project ID included in the Contract Documents. Curve values shall be set on a scale from 0% to 100% in intervals of 5% of the Contract Time. Refer to the Sample City Invoice materials in the Contract Documents and use the format shown. Your invoice amounts shall be supported by this curve value percentage. For previous periods, use the actual values and percentages and update the curve value percentages accordingly.

ADD:

6-3.2.1.1 Environmental Document.

1. The City of San Diego has prepared a **Addendum To Mitigated Negative Declaration** for **AC Water and Sewer Group 1020**, **Project No. 563428/WBS No. B-15157.02.06**, as referenced in the Contract Appendix. You shall comply with all requirements of the **AMND** as set forth in **Appendix A.**

2. Compliance with the City's environmental document shall be included in the Contract Price.

6-3.2.2 Archaeological and Native American Monitoring Program. To the "WHITEBOOK", ADD the following:

3. You shall retain a qualified archaeologist for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the archaeologist monitor. Notify the Engineer before noon of the Working Day before monitoring is required. See 2-11, "INSPECTION" for details.

6-7.1 General. To the "WHITEBOOK", item 3, ADD the following:

d) 30 Days for full depth asphalt final mill and resurfacing work required per SDG-107.

e) Where shutdowns of 16 inch and larger pipes are required, there is a shutdown moratorium from May until October. Plan and schedule Work accordingly. No additional payment or Working Days will be granted for delays due to the moratorium.

6-8.3 Warranty. To the "WHITEBOOK", item 1, DELETE in its entirety and SUBSTITUTE with the following:

1. Warranty and repair all defective materials and workmanship for a period of 1 year. This call back warranty period shall start on the date that the Work was accepted by the City. Additionally, you shall warranty the Work against all latent and patent defects for a period of 10 years.

SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR

7-3 INSURANCE. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

7-3 INSURANCE.

1. The insurance provisions herein shall not be construed to limit your indemnity obligations contained in the Contract.

7-3.1 Policies and Procedures.

1. You shall procure the insurance described below, at its 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 for the duration of this Contract and at all times thereafter when you are correcting, removing, or replacing Work in accordance with this Contract. Your liabilities under the Contract, e.g., your indemnity obligations, is not deemed limited to the insurance coverage required by this Contract.

4. The payment for insurance shall be included in the Contract Price as bid by you. Except as specifically agreed to by the City in writing, you are not entitled to any additional payment. Do not begin any Work under this Contract until you have provided and the City has approved all required insurance.

5. Policies of insurance shall provide that the City is entitled to 30 Days (10 Days for cancellation due to non-payment of premium) prior written notice of cancellation or non-renewal of the policy. Maintenance of specified insurance coverage is a material element of the Contract. Your failure to maintain or renew coverage or to provide evidence of renewal during the term of the Contract may be treated by the City as a material breach of the Contract.

7-3.2 Types of Insurance.

7-3.2.1 Commercial 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:

General Annual Aggregate Limit	Limits of Liability
Other than Products/Completed Operations	$2,000,000
Products/Completed Operations Aggregate Limit	$2,000,000
Personal Injury Limit	$1,000,000
Each Occurrence	$1,000,000

7-3.2.2 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.

7-3.2.3 Contractors Pollution Liability Insurance.

1. You shall procure and maintain at your expense or require your Subcontractor, as described below, to procure and maintain the Contractors Pollution Liability Insurance including contractual liability coverage to cover liability arising out of cleanup, removal, storage, or handling of hazardous or toxic chemicals, materials, substances, or any other pollutants by you or any Subcontractor in an amount not less than $2,000,000 limit for bodily injury and property damage.

2. All costs of defense shall be outside the limits of the policy. Any such insurance provided by your Subcontractor instead of you shall be approved separately in writing by the City.

3. 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.

4. Contractual liability shall include coverage of tort liability of another party to pay for bodily injury or property damage to a third person or organization. There shall be no endorsement or modification of the coverage limiting the scope of coverage for either "insured vs. insured" claims or contractual liability.

5. Occurrence based policies shall be procured before the Work commences and shall be maintained for the Contract Time. 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.

6. Except as provided for under California law, the policy or policies shall provide that the City is entitled to 30 Days prior written notice (10 Days for cancellation due to non-payment of premium) of cancellation or non-renewal of the policy or policies.

7-3.2.5 Contractors Builders Risk Property Insurance..

1. You shall provide at your expense, and maintain until Final Acceptance of the Work, a Special Form Builders Risk Policy or Policies. This insurance shall be in an amount equal to the replacement cost of the completed Work (without deduction for depreciation) including the cost of excavations, grading, and filling. The policy or policies limits shall be 100% of this Contract value of the Work plus 15% to cover administrative costs, design costs, and the costs of inspections and construction management.

2. Insured property shall include material or portions of the Work located away from the Site but intended for use at the Site and shall cover material or portions of the Work in transit. The policy or policies shall include as insured property scaffolding, falsework, and temporary buildings located at the Site. The policy or policies shall cover the cost of removing debris, including demolition.

3. The policy or policies shall provide that all proceeds thereunder shall be payable to the City as Trustee for the insured, and shall name the City, the Contractor, Subcontractors, and Suppliers of all tiers as named insured. The City, as Trustee, will collect, adjust, and receive all monies which may become due and payable under the policy or policies, may compromise any and all claims thereunder, and will apply the proceeds of such insurance to the repair, reconstruction, or replacement of the Work.

4. Any deductible applicable to the insurance shall be identified in the policy or policies documents and responsibility for paying the part of any loss not covered because of the application of such deductibles shall be apportioned among the parties except for the City as follows: if there is more than one claimant for a single occurrence, then each claimant shall pay a pro-rata share of the per occurrence deductible based upon the percentage of their paid claim to the total paid for insured. The City shall be entitled to 100% of its loss. You shall pay the City any portion of that loss not covered because of a deductible at the same time the proceeds of the insurance are paid to the City as trustee.

5. Any insured, other than the City, making claim to which a deductible applies shall be responsible for 100% of the loss not insured because of the deductible. Except as provided for under California law, the policy or policies

shall provide that the City is entitled to 30 Days prior written notice (10 Days for cancellation due to non-payment of premium) of cancellation or non-renewal of the policy or policies.

7-3.3 **Rating Requirements.** Except for the State Compensation Insurance Fund, all insurance required by this Contract as described herein 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, and that have been approved by the City.

7-3.3.1 **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 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 herein.

7-3.4 **Evidence of Insurance.** Furnish to the City documents e.g., certificates of insurance and endorsements evidencing the insurance required herein, and furnish renewal documentation prior to expiration of this insurance. Each required document shall be signed by the insurer or a person authorized by the insurer to bind coverage on its behalf. We reserve the right to require complete, certified copies of all insurance policies required herein.

7-3.5 **Policy Endorsements.**

7-3.5.1 **Commercial General Liability Insurance.**

7-3.5.1.1 **Additional Insured.**

1. You shall provide at your expense policy endorsement written on the current version of the ISO Occurrence form CG 20 10 11 85 or an equivalent form providing coverage at least as broad.
2. To the fullest extent allowed by law e.g., California Insurance Code §11580.04, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured.
3. The additional insured coverage for projects for which the Engineer's Estimate is $1,000,000 or more shall include 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.

4. The additional insured coverage for projects for which the Engineer's Estimate is less than $1,000,000 shall include liability arising out of:

   a) Ongoing operations performed by you or on your behalf,

   b) your products, or

   c) premises owned, leased, controlled, or used by you.

7-3.5.1.2 **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.

7-3.5.1.3 **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.

7-3.5.2 Commercial Automobile Liability Insurance.

7-3.5.2.1 **Additional Insured.** Unless the policy or policies of Commercial Auto Liability Insurance are written on an ISO form CA 00 01 12 90 or a later version of this form or equivalent form providing coverage at least as broad, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured, with respect to liability arising out of automobiles owned, leased, hired or borrowed by you or on your behalf. This endorsement is limited to the obligations permitted by California Insurance Code §11580.04.

7-3.5.3 Contractors Pollution Liability Insurance Endorsements.

7-3.5.3.1 Additional Insured.

1. The policy or policies shall be endorsed to include as an 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.

Except that in connection with, collateral to, or affecting any construction contract to which the provisions of subdivision (b) of § 2782 of the California Civil Code apply, this endorsement shall not provide any duty of indemnity coverage for the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives in any case where an agreement to indemnify the City and its respective elected officials, officers, employees, agents, and representatives would be invalid under subdivision (b) of §2782 of the California Civil Code.

2. In any case where a claim or loss encompasses the negligence of the Insured and the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives that are not covered because of California Insurance Code §11580.04, the insurer's obligation to the City and its respective elected officials, officers, employees, agents, and representatives shall be limited to obligations permitted by California Insurance Code §11580.04.

7-3.5.3.2 **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.

7-3.5.3.3 **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.

7-3.5.5 **Builders Risk Endorsements.**

7-3.5.5.1 **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.

7-3.5.5.2 **Builders Risk – Partial Utilization.** If the City desires to occupy or use a portion or portions of the Work prior to Acceptance in accordance with this Contract, the City will notify you and you shall immediately notify your Builder's Risk insurer and obtain an endorsement that the policy or policies shall not be cancelled or lapse on account of any such partial use or occupancy. You shall obtain the endorsement prior to the City's occupation and use.

7-3.6 **Deductibles and Self-Insured Retentions.** You shall pay for all 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.

7-3.7 **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.

7-3.8 **Notice of Changes to Insurance.** You shall notify the City 30 Days prior to any material change to the policies of insurance provided under this Contract.

7-3.9 **Excess Insurance.** Policies providing excess coverage shall follow the form of the primary policy or policies e.g., all endorsements.

7-3.10 **Architects and Engineers Professional Insurance (Errors and Omissions Insurance)**.

1. For Contracts with required engineering services (e.g., Design-Build, preparation of engineered Traffic Control Plans (TCP), and etc.) by you, you shall keep or require all of your employees or Subcontractors, who provide professional engineering services under this contract, Professional Liability coverage with a limit of $**1,000,000** per claim and $**2,000,000** annual aggregate in full force and effect.

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 3 years after completion of the Project or termination of this 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 above.

7-4 **NOT USED.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

7-4 **WORKERS' COMPENSATION INSURANCE AND EMPLOYERS LIABILITY INSURANCE.**

1. In accordance with the provisions of §3700 of the California Labor Code, 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 the requirements of this section.

2. Limits for this insurance shall be not less than the following:

Workers' Compensation	Statutory Employers Liability
Bodily Injury by Accident	$1,000,000 each accident
Bodily Injury by Disease	$1,000,000 each employee
Bodily Injury by Disease	$1,000,000 policy limit

3. By signing and returning the Contract you certify that you are aware of the provisions of §3700 of the Labor Code which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code and you shall comply with such provisions before commencing the Work as required by §1861 of the California Labor Code.

7-4.1 **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.

7-8.1 **General.** To the "WHITEBOOK"**,** ADD the following:

2. Use a PM-10 certified self-loading motorized street sweeper equipped with a functional water spray system for this project as directed by the Engineer.

7-8.6 **Water Pollution Control.** To the "WHITEBOOK", ADD the following:

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

7-8.6.1.1 **Terms, Definitions, and Acronyms.** To the "WHITEBOOK", item 1, Subsection "K", DELETE in its entirety.

To the "WHITEBOOK", item 1, ADD the following:

s) **Active and Inactive stockpiles** - Active stockpiles have been disturbed by adding or removing material within working hours. Inactive stockpiles have not been disturbed within working hours

t) **MS4** - Municipal Separate Storm Sewer System; as defined by the City of San Diego Municipal Codes Section 43.0302 a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) owned or operated by the City; (ii) designated or used for collecting or conveying storm water; (iii) which is not a combined sewer; and (iv) which is not part of the Publicly Owned Treatment Works as defined at 40 Code of Federal Regulations section 122.26.

u) **Water Pollution Control Manager (WPCM)** - The Water Pollution Control Manager shall be responsible for overseeing the Water Pollution Control requirements. The Water Pollution Control Manager shall review and become familiar with the Contract Documents. The WPCM shall be a certified QSP and QSD with demonstrated experience in at least one project of similar type, size and complexity in San Diego County.

7-8.6.4 Water Pollution Control Plan (WPCP). To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. **Water Pollution Control Manager (WPCM).** You shall retain one WPCM to develop and implement the WPCP. You shall make the designation in writing and submit a statement of qualifications as noted in 1-2, "TERMS AND DEFINITIONS" and shall obtain the City's approval prior to the Precon Meeting.

    a) The WPCM shall develop the WPCP using the City's WPCP template available at:

    https://www.sandiego.gov/sites/default/files/group_job_wpcp_template_-_august_2015_-_final.pdf

    b) You shall report all spills to the Engineer immediately. The WPCM shall notify you immediately, when spills are observed. WPCM shall oversee and enforce proper spill prevention and control measures.

    c) At the job site, the WPCM shall:

        i. Be primary contact for water pollution control work.

        ii. Oversee the maintenance of all BMPs.

        iii. Oversee and enforce hazardous waste management practices.

        iv. Have authority to repair BMPs.

        v. Train all employees during weekly tailgates on water pollution control requirements and standards.

        vi. Ensure that all employees have current water pollution control training.

vii. Ensure implementation of the accepted WPCP and amend the WPCP when required by the Engineer.

viii. When applicable, ensure compliance with the City of San Diego Storm Water Standards Manual and any amendments thereof.

ix. Monitor disposal procedure.

d) At the job site, the WPCM may designate any of the above tasks/activities to an employee by the Contractor and trained to do the activity appropriately, but shall ensure adequate deployment of all BMPs that demonstrates compliance with Storm Water regulations and minimizes sediment laden discharge from the project site.

e) The WPCM shall oversee (when applicable):

i. Inspections of BMPs identified in the WPCP.

ii. Inspections for visual monitoring.

iii. Sampling and analysis.

iv. BMP status reports.

f) The WPCM shall oversee inspections for BMPs identified in the WPCP.

i. Before a forecasted rain event.

ii. During a rain event.

iii. After a rain event.

iv. At 24-hour intervals during extended precipitation.

g) The WPCM shall oversee Daily inspections for:

i. Equipment staging areas.

ii. Material storage areas.

iii. Waste and Sanitary waste storage .

iv. Leaks and spills from vehicles and equipment at the job site.

v. BMPs implemented on-site.

h) When applicable, the WPCM shall oversee and monitor discharge activities related to the Drinking Water Discharge Permit (NPDES Order

WQ-2014-0194-DWQ), including performing the required sampling and completing sampling logs for submittal to the RE.

i) The WPCM is required to use the inspection reports provided in the accepted WPCP. Copies of the completed inspection reports shall be submitted to the Engineer at each progress meeting.

2. **BMP Implementation Submittal.** You shall plan and develop a BMP implementation schedule that clearly shows when the BMPs will be installed in relationship with the rainy season and to soil-disturbing activities. In accordance with CASQA BMP EC-1, you shall demonstrate how construction sequencing is scheduled to minimize land disturbance during the rainy season.

   a) The schedule shall include dates and details of each activity and the corresponding sediment and erosion controls to be implemented in the event of rain.

   b) A Sample schedule is provided in the WPCP template, see section 7-8.6.4, item 1, subitem a).

   c) The schedule shall also include dates for operations or activities including, but not limited to: sawcutting, grinding, drilling, boring, pipe installation, paving, slurry-sealing, and hydrostatic testing, when applicable.

   d) The schedule and associated BMPs shall be included in the WPCP submittal prior to and no later than the Pre-construction Meeting. Every month a new schedule will be developed and the WPCM shall include the new updated schedule in the WPCP.

   e) The WPCP schedule shall be updated to reflect changes in the Contractor's operations that would affect the necessary implementation of the BMPs.

3. **Best Management Practices (BMP).**

   a) **Temporary Fiber Roll.** Temporary fiber rolls shall conform to CASQA BMP SE-5 and these special provisions. Temporary fiber rolls shall be furnished, installed, maintained, and removed at the locations shown on the plans.

      i. Temporary fiber roll shall consist of prefabricated wheat or rice straw in rolls with a minimum diameter of 8 inches (200 mm and up to 25 feet in length). The rolls shall be bound with an ultraviolet (UV) degradable plastic netting and shall weigh not less than 1.3 lb per linear foot (1.9 kg per linear meter). Stakes shall be fir or pine and shall have a cross-sectional area of at least 0.5 square inches (360 mm2) and a minimum length of 24 inches (600 mm).

      ii. Temporary fiber roll shall be installed in conjunction with stockpile protection and run-on protection and as shown on the WPCP. In lieu of staking, temporary fiber rolls shall be secured in place with temporary gravel bags a minimum of five (5) feet apart.

iii. When no longer required for the intended purpose, as determined by the Engineer, temporary fiber rolls shall be removed from the site of the work.

b) **Temporary Gravel Bag.** Temporary gravel bag shall conform to the details shown on the plans and these special provisions. Temporary gravel bag shall be furnished, installed, maintained and removed at the locations shown on the plans.

i. Temporary gravel bag berms shall be installed and maintained, in accordance with CASQA BMP SE-6 and shall be shown on the WPCP. Their removal shall be approved by the Resident Engineer. Maintenance of gravel bags shall include repair or replacement of gravel bags which are broken and are no longer effective, as well as the removal of built up sediment and debris.

ii. Gravel bag fill material shall be one-half to one-inch Class 2 aggregate base, clean and free from clay and deleterious material. Gravel bag fabric shall be woven high density polyethylene fabric with a minimum unit weight of 5 oz. /square yard. The fabric shall have Mullen burst strength of at least 350 psi, conforming to the requirements of ASTM Designation D 3786, and an ultraviolet (UV) stability exceeding 70 percent. Contractor shall imprint their company name on all gravel bags. Gravel bags, when filled, shall have nominal dimensions (length x width x height) of 16 in. x 12 in. x 6 in., and a fill mass of 35 to 60 pounds.

iii. Temporary gravel bags placed in multiple layers shall be installed as shown on the approved WPCP and in conformance with Detail SC-8 in the Construction Site Best Management Practices (BMPs) Manual of the Caltrans Storm Water Quality Handbooks.

iv. The Contractor shall use other methods if ponding will encroach into the traffic or onto erodible surfaces and slopes. Flow from a severe storm shall not overtop the curb. Temporary gravel bags shall be maintained to provide for adequate sediment holding capacity. The Contractor shall remove the sediment behind the barrier when it reaches one-third the height of the barrier and immediately before and after each storm event. When no longer required for the intended purpose, temporary gravel bag barriers shall be removed.

c) **Temporary Synthetic Sheeting**. Temporary sheeting shall conform to the details shown on the WPCP and these special provisions. Temporary sheeting shall be furnished, installed, maintained and removed at the locations shown on the WPCP.

i. Stockpiles of soils, cold mix, asphalt concrete, aggregate base and aggregate sub base shall be placed on and covered with temporary sheeting. The placement of sheeting serves to temporarily stabilize stockpiles and protect stockpiles from erosion by wind or water. Temporary sheeting shall have a minimum thickness of 6 millimeters and shall be firmly held in place with gravel bags or other weights placed no more than 10 feet apart. During windy conditions, more gravel bags may be necessary to ensure the plastic remains put. The use of plastic shall be limited to short periods of time and no more than 30 days. Any sheeting failures shall be repaired or replaced immediately. Completely remove and replace the sheeting if it begins to deteriorate due to ultraviolet radiation. Completely remove sheeting when no longer needed.

d) **Storm Drain Inlet Protection.** The Contractor shall install and maintain Storm Drain inlet protection, in accordance with CASQA BMP SE-10 Storm Drain Inlet Protection or Caltrans BMP SC-10, throughout construction and remove when project is completed and there is no longer a potential to discharge pollutants. The WPCM and contractor may propose other methods which employ new technology and achieve equivalent or better protection from the discharge of pollutants. The contractor shall identify proposed inlet protection BMP locations in the WPCP.

i. The Contractor shall be responsible for preventing any flooding associated with storm drain inlet protection during rain events. The area around the inlet shall allow water to pond without flooding the traveled way, structures and private property. Any BMP's temporarily removed by the Contractor to alleviate flooding during rain events shall be replaced or modified immediately as safety allows.

ii. The storm drain inlet control measures shall not impede the safe flow of traffic. The storm drain inlet control measures shall be of sufficient weight so as not to shift out of place, or shall be secured in place against movement.

iii. Inlet control measures shall be maintained daily or more often as needed. Maintaining inlet control measures shall include but not be limited to replacing damaged BMP's, removing and disposing of accumulated sediment, trash and debris. Waste materials shall be removed and disposed of in accordance with 7-8, "WORK SITE MAINTENANCE." Maintaining inlet control measures shall include removing and disposing of accumulated trash & debris when depth exceeds one third the height of filter/trap. Waste materials shall be removed and disposed in accordance with 7-8.1. Maintaining inlet control protection shall also include daily checks for excessive debris and for damaged inlet control measures. Damaged inlet control measures shall be repaired or replaced immediately.

iv. When storm drain inlet protection is no longer required for the work, as approved by the Resident Engineer, the inlet control measures shall be completely removed. Storm drain inlet protection shall not be removed until upstream soils are stabilized and streets are cleaned. Materials for inlet control shall become the property of the contractor and shall be removed from the site of the work and disposed off-site as specified in the contract.

4. **Good Housekeeping Measures.** The Contractor shall manage materials (both soil and construction materials) to avoid and prevent discharge on-site and off- site. When not in use all materials shall be covered and contained. Prior to any rain event all materials shall be covered and contained.

a) **Concrete Waste Control Measures.** Contractor shall implement practices to prevent the discharge of Portland cement concrete or AC waste from the construction site. The Contractor shall collect and dispose of Portland cement concrete or AC waste at locations where:

i. Concrete material, including grout, is used.

ii. Concrete dust and debris result from demolition.

iii. Sawcutting, coring, grinding, grooving, or hydro-concrete demolition of Portland cement concrete or AC creates a residue or slurry.

iv. Concrete truck or other concrete-coated equipment is cleaned at the job site**.**

b) **Temporary concrete washouts.**

i. When used, concrete washouts shall be constructed and in place prior to any placement of concrete; maintained and later removed. Location of the temporary concrete washouts shall be shown on the WPCP. The facility shall be located away from construction traffic or access areas to prevent disturbance and tracking. Temporary washout shall be located a minimum of 50 feet from downstream storm drain inlets, open drainage facilities, and any water course. The perimeter of the concrete washout shall be delineated by lath and flagging to prevent accidental access. Temporary concrete washout facilities shall be maintained daily or more often as needed. Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete. Concrete waste materials shall be removed and disposed in accordance with 7-8.1.1.

ii. When temporary concrete washout is no longer required for the work, the remaining concrete waste shall be removed and disposed of. Materials for temporary concrete washout shall become the property of the Contractor and shall be removed from the site of the work and disposed of outside the project area in accordance with 7-8.1.1.

iii. Trenches, depressions and pits caused by the removal of temporary concrete washout shall be backfilled in kind.

iv. The Resident Engineer may allow the Contractor to use the 55 gallon commercially available drums to dispose of concrete washout, provided that all necessary protection measures are in place to prevent any spillage.

c) **Construction Debris Prevention.**

i. The Contractor shall prevent these materials from entering storm drain systems or water courses or discharging from the construction site limits:

- Cementitious material
- Asphaltic material
- Aggregate or screenings
- Grinding or sawcutting residue
- Pavement chunks
- Shoulder backing
- Methacrylate

ii. The Contractor shall cover drainage inlets and use linear sediment barriers to protect downstream watercourses until paving, sealing, sawcutting, or grinding activities are completed and excess material has been removed. The Contractor shall cover drainage inlets and manholes during the application of seal coat, tack coat, slurry seal, or fog seal.

iii. When precipitation is predicted, the Contractor shall limit paving, sawcutting, and grinding to places where runoff can be effectively captured.

iv. The Contractor shall not start seal coat, tack coat, slurry seal, or fog seal activities when precipitation is predicted during application or curing period. The Contractor shall not excavate material from existing roadways during precipitation.

v. The contractor shall use a vacuum to remove slurry from sawcutting activities immediately after slurry is produced. The Contractor shall not allow slurry to run onto lanes open to public traffic or the gutter.

vi. The Contractor shall collect residue from Portland cement concrete grinding activities with a vacuum attachment on the grinding machine. The Contractor shall not leave residue on pavement or allow residue to flow across pavement

d) **Wind Erosion (Dust control).** Dust control methods to minimize the transport of dust and debris from the construction site are required. See CASQA BMP WE-1 for acceptable Wind Erosion Control practices. The contractor is cautioned regarding the over-watering of disturbed areas that may lead to track-out of sediment.

e) **Spill Prevention and Control.**

i. The Contractor shall implement spill and leak prevention procedures for chemicals and hazardous substances stored on the job site. As soon as it is safe, the Contractor shall contain and clean up spills of petroleum products, sanitary and septic waste substances listed under CFR Title 40, Parts 110, 117, and 302.

ii. Minor Spills are considered small quantities of oil, gasoline, paint, or other material that are small enough to be controlled by a first responder upon discovery of the spill. The Contractor shall clean up minor spills using these procedures:

- Contain spread of the spill.
- Recover spilled material using absorption.
- Clean contaminated area.

- Dispose of contaminated material promptly and properly.

iii. Semi-significant Spills are considered spills that can be controlled by a first responder with help from other personnel. The Contractor shall clean up semi-significant spills immediately using these procedures:

- Contain spread of the spill.
- Recover spilled material using absorption where the spill occurs on paved or an impermeable surface.
- Contain the spill with an earthen dike and dig up contaminated soil for disposal where the spill occurs on soil.
- When the spill occurs during precipitation, cover the spill with plastic or other material to prevent contaminated runoff.
- Dispose of contaminated material promptly and properly.

iv. The Contractor shall prevent spills from entering storm water runoff before and during cleanup. Spills shall not be buried or washed with water.

v. The Contractor shall keep material or waste storage areas clean, well-organized, and equipped with enough cleanup supplies for the material being stored.

f) **Material Management.** Material shall be delivered, used, and stored for this job in a way that minimizes or eliminates discharge of material into the air, storm drain systems, or watercourses.

i. You shall implement the practices described in this section while taking delivery of, using, or storing these materials:

- Hazardous chemicals (including Acids, Lime, Glues, Adhesives, Paints, Solvents, Curing compounds)
- Detergents
- Petroleum products (including Fuel, Oil, Grease)
- Asphalt components and concrete components

ii. You shall use these storage procedures:

- Store liquids, petroleum products, and substances listed in CFR Title 40, Parts 110, 117, and 302 in containers or drums approved by the United States Environmental Protection Agency, and place them in secondary containment facilities.

- Secondary containment facilities shall be impervious to the materials stored there for a minimum contact time of 72 hours.
- Cover secondary containment facilities during non-working days and when precipitation is predicted. Secondary containment facilities must be adequately ventilated.
- Keep secondary containment facility free of accumulated rainwater or spills. After precipitation, or in the event of spills or leaks, collect accumulated liquid and place into drums within 24 hours. Handle these liquids as hazardous waste under "Hazardous Waste" unless testing determines them to be nonhazardous.
- Do not store incompatible materials, such as chlorine and ammonia, in the same secondary containment facility.
- Store materials in the original containers with the original product labels maintained in legible condition. Replace damaged or illegible labels immediately.
- Secondary containment facility must have the capacity to contain precipitation from a 24- hour-long, 25-year storm; and 10 percent of the aggregate volume of all containers, or entire volume of the largest container within the facility, whichever is greater.
- Store bagged or boxed material on pallets. Protect bagged or boxed material from wind and rain during non-working days and while precipitation is predicted.
- Provide sufficient separation between stored containers to allow for spill cleanup or emergency response access. Storage areas must be kept clean, well organized, and equipped with cleanup supplies appropriate for the materials being stored.
- Repair or replace perimeter controls, containment structures, covers, and liners when no longer functioning. Inspect storage areas before and after precipitation, and at least weekly during other times.

5. **Non-Storm Water Management.**

a) **Water Use and Conservation.**

i. You shall manage water used for work activities to prevent erosion or discharge of pollutants into storm drain systems or watercourses. You shall obtain approval before washing anything on the job site with water that could discharge offsite and into the gutter, storm drain system or watercourse. The Contractor shall report discharges to the Engineer immediately.

ii. If water is used at the job site, you shall implement water conservation practices. You shall adjust watering schedules to prevent erosion, excess watering, or runoff. You shall shut off water source to broken lines, sprinklers, or valves immediately, and repair breaks within 24 hours. You shall sweep and vacuum or power-wash and vacuum paved areas.

iii. You shall direct job site water runoff, including water from water line repair, to areas where it can infiltrate into the ground and not enter storm drain systems or watercourses. Do not allow spilled water to escape water truck filling areas.

You shall direct water from off-site sources around the job site. The Contractor shall minimize the contact of off- site water with job site water.

b) **Storage/Staging Area Control Measures.**

i. Storage/Staging areas shall be your responsibility. The staging/storage area shall be as close as possible to the project site. You are responsible for obtaining any permits, leases, or any other items necessary to obtain staging areas.

ii. Storage of hazardous wastes, construction equipment material, and parking and fueling of equipment shall not be allowed in the MHPA or other biologically sensitive areas. Ensure the fueling of vehicles occurs only within designated staging areas using appropriate catch basins and devices.

iii. You shall be responsible for ensuring that all waste and debris generated during the period of construction is contained within the storage/staging area. Equipment not in use shall have drip pans or equivalent to contain leaking oils. Sediment accumulation in the area of parked equipment shall be swept until all loose sediment has been removed. No sediment, dust, oil, or contaminated run-off shall be allowed out of the staging/storage area. Perimeter and run-off control measures shall be installed around the staging/storage area. For storage/staging areas on private or City property, the entrance

to the construction staging/storage area shall have stabilized gravel entrances in accordance with CASQA BMP TC-1 to reduce tracking and create a sediment barrier between the storage/staging area and the adjacent roadway.

7-8.6.4.1 Site Management. To the "WHITEBOOK", DELETE in its entirety.

7-8.6.4.2 Payment. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUE with the following:

1. The payment for the development of the Water Pollution Control Plan, Water Pollution Control Manager and preparing and updating the schedule shall be included in the Bid item for "Water Pollution Control Manager". The payment for Water Pollution Control Manager shall include hiring, performance of responsibilities including but not limited to development of WPCP using the City's template, coordination with contractor to develop a monthly schedule, daily inspection reports and oversight of construction BMPs.

2. The payment for street sweeping shall be included in the lump sum bid item for " Street Sweeping". The contract lump sum price for street sweeping shall include all labor, materials, tools, equipment, and incidentals to perform this work.

3. Stockpile protection will be included in the bid item for "temporary synthetic/plastic sheeting". Stockpile protection shall include maintenance of the sheeting and protection at all times.

4. The payment for each temporary fiber roll shall be paid per unit bit item under "Temporary Fiber Roll". Temporary fiber roll shall include full compensation for furnishing all labor (except maintenance), materials, tools, equipment, and incidentals, and for doing all the work involved in installing temporary fiber rolls, complete in place, including removal of materials, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

    a) No adjustment of compensation will be made for any increase or decrease in the quantities of temporary fiber roll required, regardless of the reason for the increase or decrease. The provisions in Section 3-2.2.1 "General" shall apply to temporary fiber roll. The City and The Contractor shall share the cost of maintaining the temporary fiber roll. The Engineer and contractor shall determine and agree upon the maintenance cost and the Contractor shall be paid one-half of that cost from the bid item for "BMP Maintenance".

5. The payment for the temporary gravel bags shall be paid per unit bid item for each "Temporary Gravel Bag" installed in place. The temporary gravel bag shall include full compensation for furnishing all labor (except maintenance), materials, tools, equipment, and incidentals, and for doing all the work

involved in installing temporary gravel bag in place, including removal of materials, as shown on the approved WPCP, as specified in these special provisions, and as directed by the Engineer.

a) Temporary gravel bag placed at locations other than as shown on the project plans or directed by the Engineer, in accordance with the Contractor's WPCP will not be measured and will not be paid for.

b) No adjustment of compensation will be made for any increase or decrease in the quantities of temporary gravel bags required, regardless of the reason for the increase or decrease. The provisions in Section 3 - 2.2.1, of the Whitebook Standard Specifications shall apply to temporary gravel bags.

c) The City and The Contractor shall share the cost of maintaining the temporary gravel bags. The Engineer and contractor shall determine and agree upon the maintenance cost and the Contractor shall be paid one- half of that cost from the bid item for BMP Maintenance.

6. The payment for temporary sheeting shall be included in the unit bid item for "Temporary Synthetic Sheeting" in square yard and shall include full compensation for performing all the work involved in furnishing, installing, maintaining, removing and disposing of temporary plastic sheeting.

a) No adjustment of compensation will be made for any increase or decrease in the quantities of temporary plastic sheeting required, regardless of the reason for the increase or decrease. The provisions in Section 3-2.2.1 "General" shall apply to temporary plastic sheeting.

b) The City and the Contractor shall share the cost of maintaining the temporary synthetic/plastic sheeting. The Engineer and contractor shall determine and agree upon the maintenance cost and the Contractor shall be paid one-half of that cost from the bid item for BMP Maintenance.

7. The payment for each storm drain inlet protection shall be included in the unit bid item for each "Storm Drain Inlet Protection" and shall include full compensation for furnishing all labor materials, tools, equipment, and incidentals, and for performing all the work involved in furnishing, installing, maintaining, removing and disposing of storm drain inlet protection. Gravel bags used as part of the Inlet protection shall be paid by the Bid item for "Temporary Gravel Bags".

a) No adjustment of compensation will be made for any increase or decrease in the quantities of storm drain inlet protection required, regardless of the reason for the increase or decrease. The provisions in Section 3-2.2.1 "General" shall apply to storm drain inlet protection.

b) The City and The Contractor shall share the cost of maintaining the storm drain inlet protection. The Engineer and contractor shall determine and agree upon the maintenance cost and the Contractor shall be paid one- half of that cost from the bid item for BMP Maintenance.

8. The payment for concrete waste control measures shall be measured and paid for by the lump sum bid item for "Concrete Waste Control Measures". The contract lump sum price paid shall include full compensation for temporary concrete washout including furnishing all labor, materials, tools, equipment, and incidentals, and for performing all the work involved in furnishing, placing, maintaining, removing and disposing of concrete waste.

9. The payment for good housekeeping shall be included in the Lump Sum bid item for "Good Housekeeping" and shall include full compensation for furnishing the WPCM and furnishing all labor, materials, tools, equipment, and incidentals in placing, maintaining, removing and disposing of materials and for performing all the work involved in wind erosion, spill prevention and control, material management, waste management, non-storm water management, equipment maintenance, fueling, cleaning and storage including the handling and disposing of hazardous waste resulting from your activities for which there

10. The payment for BMP Maintenance shall be included in the Lump Sum bid item for "BMP Maintenance". BMP maintenance shall be used for the replacement of temporary gravel bags, temporary synthetic sheeting and temporary fiber rolls and inlet protection as agreed upon by yourself and the RE. You shall be paid one-half of that cost. For the Lump sum bid items for Street Sweeping and Concrete Waste Management that require additional maintenance, the RE and yourself agree that additional costs are considered subject to Section 3-3.1 for Extra Work and shall be paid for from the bid item for "BMP Maintenance". The Bid item for BMP Maintenance shall not be used to replace items that are destroyed yourself or are a result of normal wear and tear or are damaged as a result of improper installation by the contractor. The Bid item for BMP Maintenance shall be used for the replacement of bid items that are overwhelmed by rain events.

11. Submit a Schedule of Values for these Lump Sum Bid items in accordance with 9-2.1, "Schedule of Values (SOV)". The SOV shall itemize the Work further to show details of work included in each lump sum bid item

12. Payment for Wind Erosion is included in the Bid item for Good Housekeeping.

13. The payment for Storage/Staging Area Control Measures shall be included in the lump sum bid item for "Storage/Staging Area Control Measures". The contract lump sum price bid for storage/staging area and protection shall include full compensation for all costs associated with locating the site, securing necessary permits, complying with all local regulations. The cost for Storage/staging areas control measures including the erosion control and perimeter control, tracking, etc., as noted above shall be included in the

lump sum bid item. The lump sum price shall cover all storage/staging area regardless of the number of locations and shall include full compensation for furnishing all labor materials, tools, equipment, and incidentals, and for performing all the work involved in furnishing, installing, maintaining, removing and disposing of pollution control measures.

7-8.6.5.1 Payment. To the "WHITEBOOK", DELETE in its entirety.

ADD:

7-8.6.5.1 Chlorination Discharge Requirements.

1. If prior approval is obtained to discharge to the sewer system, you shall discharge the chlorinated water used for testing and acceptance of new water mains to the sewer system in accordance with the Contract Documents after de–chlorination as shown on the "Chlorination Discharge Locations" Plans. You shall submit to the Engineer a "Request for Batch Discharge Authorization to Discharge Potable Pipe Flushing Water to Sewer" form. The request form is found on the City website at the following location:

https://www.sandiego.gov/sites/default/files/batch_discharge_authorization_request_1.pdf

2. When discharging to the sewer system has been approved, you shall use a totalizer flow meter to record the total volume discharged to sewer and shall submit to the Engineer a log of actual discharged water quantities, dates, and locations. Failure to report this information to the Engineer is a violation of the authorization for discharge to the sanitary sewer. Within five (5) Working Days of the discharge, the Engineer shall report actual total flows to the sanitary sewer to the Public Utilities Department (PUD), Industrial Wastewater Control Program (IWCP).

3. If the discharge to the sewer system is not approved, you shall discharge the chlorinated water used for the testing of new mains to surface waters, storm drain inlets, or to other approved sources and you shall comply with 7-8.6.5, "Hydrostatic Discharge Requirements". All discharge activities related to the project shall comply with the State Water Resources Control Board, ORDER WQ 2014-0194-DWQ, STATEWIDE GENERAL NPDES PERMIT FOR DRINKING WATER SYSTEMS DISCHARGES as referenced by:

http://www.waterboards.ca.gov/water_issues/programs/npdes/docs/drinkingwater/final_statewide_wqo2014_0194_dwq.pdf

All testing shall be conducted by a QSP.

ADD:

7-8.6.5.2 Payment.

1. The payment for complying with the discharge requirements shall be included in the Bid item for the new water main.

7-13.4 **Contractor Standards and Pledge of Compliance.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. The Contract is subject to City's Municipal Code §22.3004 as amended 10/29/13 by ordinance O-20316.
2. You shall complete a Pledge of Compliance attesting under penalty of perjury that you complied with the requirements of this section.
3. You shall ensure that all Subcontractors complete a Pledge of Compliance attesting under penalty of perjury that they complied with the requirements of this section.
4. You may access the Pledge of Compliance at:

   http://www.sandiego.gov/purchasing/pdf/contractor_standards_questionnaire.pdf
5. You shall require in each subcontract that the Subcontractor shall abide by the provisions of the City's Municipal Code §22.3004. A sample provision is as follows:

   "Compliance with San Diego Municipal Code §22.3004: The Subcontractor acknowledges that it is familiar with the requirements of San Diego Municipal Code §22.3004 ("Contractor Standards"), and agrees to comply with requirements of that section. The Subcontractor further agrees to complete the Pledge of Compliance, incorporated herein by reference."

ADD:

7-13.8 **Equal Pay Ordinance.**

1. You shall comply with the Equal Pay Ordinance (EPO) codified in the San Diego Municipal Code (SDMC) in section 22.4801 through 22.4809, unless compliance is not required based on an exception listed in SDMC section 22.4804.
2. You shall require all of your Subcontractors to certify compliance with the EPO in their written subcontracts.
3. You shall post a notice informing your employees of their rights under the EPO in the workplace or job site.
4. By signing this Contract with the City of San Diego, you acknowledge the EPO requirements and pledge ongoing compliance with the requirements of SDMC Division 48, section 22.4801 et seq., throughout the duration of this Contract.

7-20 **ELECTRONIC COMMUNICATION.** To the "WHITEBOOK", ADD the following:

2. Virtual Project Manager shall be used on this Contract.

7-21.1 **General.** To the "WHITEBOOK", item 3, DELETE in its entirety and SUBSTITUTE with the following:

3. During the construction phase of projects, the minimum waste management reduction goal is 90% of the inert material (a material not subject to decomposition such as concrete, asphalt, brick, rock, block, dirt, metal, glass, and etc.) and 65% of the remaining project waste. You shall provide appropriate documentation, including a Waste Management Form attached as an appendix, and evidence of recycling and reuse of materials to meet the waste reduction goals specified.

SECTION 9 - MEASUREMENT AND PAYMENT

ADD:

9-3.7 **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 203 – BITUMINOUS MATERIALS

203-3.4.4.1 **General.** To the "WHITEBOOK", DELETE in its entirety.

ADD:

203-3.4.4.1 **General.** To the "GREENBOOK", paragraph (2), ADD the following:

e) Crumb rubber shall be a product of recycled material from the City if unavailable from the San Diego County region.

ADD:

203-5.6 **Rubber Polymer Modified Slurry (RPMS).**

203-5.6.1 **General.**

1. Rubber polymer modified slurry (RPMS) is a crumb rubber asphalt slurry-seal surface treatment. RPMS shall be a stable mixture of asphaltic emulsion, mineral aggregate, set-control additives, specially produced and graded crumb rubber, polymer, mineral fillers, carbon black, and water. The materials for RPMS shall conform to 203-5.4, "Emulsion-Aggregate Slurry (EAS)" and these specifications. Mixing and spreading of RPMS shall be as described in 302-4.12, "Rubber Polymer Modified Slurry (RPMS)".

2. RPMS shall be used for this Contract**.**

203-5.6.2 Materials.

1. The ingredients of RPMS immediately prior to the mixing shall conform to the following:

   a) Asphaltic emulsion shall be a quick-set type and shall conform to the requirements of CQS-1h and to the following requirements in accordance with the specified test methods:

Quality Tests for Emulsion	**Test**	**Requirements**
AASHTO T59	Residue after Distillation	60% min.
ASTM D244		
Quality Tests for Residue	**Test**	**Requirements**
AASHTO T49	Penetration at 77° F (25° C)	40% - 90%
ASTM D2397		

   b) Quick setting Type CQS-1h Asphaltic Emulsion shall test positive for Particle Charge when tested in accordance with the applicable ASTM test designation. If the Particle Charge Test result is inconclusive, the asphaltic emulsion shall meet a pH requirement of 6.7 maximum.

   c) Water shall be potable and of such quality that the asphalt will not separate from the emulsion before the application of slurry seal.

   d) If necessary for workability, a set-control agent that will not adversely affect the RPMS material may be added.

   e) Polymer additive shall be SBR Latex or approved equal, which is added at a minimum of 2% by weight of the asphaltic emulsion.

   f) Crumb Rubber.

      i. Crumb rubber shall be ambient granulated or ground from whole passenger tires, truck tires, or a combination only in conformance with the requirements indicated in Tables 203-5.6.2 (A), 203-5.6.2 (B), and 203-5.6.2 (C).

      ii. Un-curing or de-vulcanized rubber shall not be acceptable. Rubber tire buffing from either recapping or manufacturing processes may not be used as a supplement to the crumb rubber mixture.

iii. In order to remove steel and fabric, an initial separation stage which subjects the rubber to freezing temperatures may be used.

iv. The crumb rubber shall not be elongated or hair-like in shape and individual particles shall not be greater than 1/20 of an inch in length.

v. The crumb rubber shall be free of contaminants including fiber, metal, and mineral matter within the following tolerances: the fiber content shall be less than 0.30% by weight and the crumb rubber shall be free of metal particles. Metal imbedded in rubber particles shall not be allowed. The amount of mineral contaminants allowed shall not exceed 0.10% by weight.

vi. The crumb rubber shall be dry with a moisture content of less than 0.75%.

TABLE 203-5.6.2 (A)
CRUMB RUBBER CHEMICAL PROPERTIES SPECIFICATION

Property	Specification Limits
Specific Gravity	1.15 ± .05
Percent of Carbon Black	35.0 Maximum
Percent of Rubber Hydrocarbon	55.0 Maximum
Percent Ash	6.0 Maximum
Percent of Acetone Extract	10.0 Maximum
Percent of Chloroform Extract	3.0 Maximum
Percent Natural Rubber	40 Minimum

TABLE 203-5.6.2 (B)
CRUMB RUBBER GRADATION REQUIREMENTS

Sieve Size	Percent Passing
No. 30	100
No. 40	90 - 100
No. 50	75 - 85
No. 100	25 - 35
No. 200	0 - 10

TABLE 203-5.6.2 (C)
TESTING METHODS FOR CRUMB RUBBER ANALYSIS

Property	Test Method
Specific Gravity	ASTM D1817
Carbon Black	ASTM D297
Ash	ASTM D297
Chloroform Extract	ASTM D297
Natural/Synthetic Rubber	ASTM D297
Sieve Analysis	ASTM C136

vii. Carbon black solution shall be non-ionic in charge and liquid in form. The carbon black shall be compatible with the emulsion system, polymers, and additives being used and shall conform to the requirements indicated in 203-5.6.2 (D) and ASTM D1511.

TABLE 203-5.6.2 (D)

Specification	Tolerances
Total Solids	40 - 44
% Black by Weight	35 - 37
Type Black	Medium Furnace Color
Type Dispersing	Non-ionic

viii. Additives may be used to accelerate or retard the break-set of the RPMS. The use of additives shall be in quantities specified in the mix design.

ix. Mineral filler such as Portland cement, hydrated lime, limestone dust, fly ash, or other approved filler meeting the requirements of ASTM D242 shall be used if required by the mix design and may be used to facilitate set times as needed. Any cement used shall be considered as part of the dry aggregate weight for mix design purposes.

x. The mineral aggregate used shall be the type and grade specified for the particular Type of RPMS. The aggregate shall be manufactured crushed stone such as granite, slang, limestone, chat, other high quality aggregate, or a combination thereof. Aggregate shall consist of rock dust except that 100% of any aggregate of combination of aggregates larger than the No. 50 sieve size used in the mix shall be obtained by crushing

rock. The material shall be free from vegetable matter and other deleterious substances. The aggregate shall be free of caked lumps and oversized particles. The aggregate shall also conform to the following requirements in Table 203-5.6.2 (E).

TABLE 203-5.6.2 (E)

Test	California Test	Requirements
Sand Equivalent	217	45 min.
Durability Index	229	55 min.

xi. Crumb rubber shall be a product of recycled material from the City if unavailable from the San Diego County region.

203-5.6.3 Composition and Grading.

1. The percentage composition by weight of the aggregate shall conform to the requirements indicated in the tables below when determined by California Test 202 and modified by California Test 105 when there is a difference in specific gravity of 0.20 or more between blends of different aggregates.

TABLE 203-5.6.3 (A)
TYPE I SLURRY SEAL GRADATION

Sieve Size	Percentage Passing	Stockpile Tolerance
No.4	100	± 5%
No.8	90 - 100	± 5%
No.16	65 - 90	± 5%
No.30	40 - 60	± 5%
No.50	25 - 42	± 4%
No.200	10 - 20	± 2%

TABLE 203-5.6.3 (B)
TYPE II SLURRY SEAL GRADATION

Sieve Size	Percentage Passing	Stockpile Tolerance
No.3/8	100	± 5%
No.4	90 - 100	± 5%
No.8	65 - 90	± 5%
No.16	45 - 70	± 5%
No.30	30 - 50	± 5%
No.50	18 - 36	± 4%
No.100	10 - 24	± 3%
No.200	5 - 15	± 2%

TABLE 203-5.6.3 (C)
TYPE III SLURRY SEAL GRADATION

Sieve Size	Percentage Passing	Stockpile Tolerance
No.3/8	100	± 5%
No.4	70 - 90	± 5%
No.8	45 - 70	± 5%
No.16	28 - 50	± 5%
No.30	19 - 34	± 5%
No.50	12 - 25	± 4%
No.100	7 - 18	± 3%
No.200	5 - 15	± 2%

2. The job mix (target) gradation shall be within the gradation band for the desired type. After the target gradation has been submitted, the percent passing each sieve shall not be more than the stockpile tolerance.

3. The aggregate shall be accepted at the Site or stockpile. The stockpile shall be accepted based on 5 gradation tests according to California Test 202, modified by California Test 105 when there is a difference in specific gravity of 0.2 or more between blends of different aggregates. If the average of the 5 tests is within the gradation tolerances, then the material will be accepted. If the test shows the material to be out, you may choose to remove the material or blend other aggregates with the stockpile material to bring it into compliance with these specifications. Materials used in blending shall meet the quality test before blending and shall be blended in a manner to produce a consistent gradation.

4. When the results of either the Aggregate Grading or the Sand Equivalent test do not conform to the requirements specified, the aggregate shall be removed. However, if requested in writing and approved by the Engineer, the aggregate may be used and you shall pay to the agency $1.75 per ton for such aggregate left in place. No single aggregate grading or sand equivalent tests shall represent more than 300 tons or one day's production, whichever is smaller.

203-5.6.4 Mix Design.

1. Before Work begins, you shall submit laboratory reports of mix designs performed in accordance with the tests identified in Table 203-5.6.4 at your expense and shall utilize the specific materials to be used on the project. The design shall be prepared by a laboratory experienced in designing rubber asphalt slurry-seal surface treatments. After the mix design is approved, no substitution shall be made unless approved by the Engineer. The proposed rubber asphalt slurry-seal surface treatment mix design shall verify compatibility of the aggregate, emulsion, mineral filler, set-control additive, and rubber blend.

TABLE 203-5.6.4

Test	Description	Specification
ISSA T-106	Slurry Seal Consistency	Pass
ISSA TB-109	Excess Asphalt	50 grams/ft^2 maximum
ISSA TB-100 (Type I)	The Wet Track Abrasion	50 grams/ ft^2 maximum
ISSA TB-100 (Type II)	The Wet Track Abrasion	60 grams/ ft^2 maximum
ISSA TB-100 (Type III)	The Wet Track Abrasion	60 grams/ ft^2 maximum
ISSA TB-113	Mixing Time	Controllable to 150 seconds minimum
ISSA TB-114	The Wet Stripping	Pass

2. The Mixing Time test shall be done at the highest temperatures expected during construction. The original lab report shall be signed by the laboratory that performed the mix design and shall show the results of the tests on individual materials. The report shall clearly show the proportions of aggregate, mineral filler (minimum and maximum), water (minimum and maximum), additive (s) (usage), asphalt emulsion, and asphalt rubber blend based on the dry weight of the aggregate.

3. Component materials used in the mix design shall be representative of your proposed materials. The percentage of each individual material required shall be shown in the laboratory report. Adjustments may be required during the construction based on field conditions.

4. The component materials shall be within the following limits:

   a) Residual Asphalt Type I, 10% - 16% based on dry weight of aggregate.

   b) Residual Asphalt Type II, 7.5% - 13.5% based on dry weight of aggregate.

   c) Residual Asphalt Type III, 6.5% - 12% based on dry weight of aggregate.

   d) The crumb rubber will be added to the rubberized slurry mix at a rate of 5% by volume to the asphalt cement.

   e) Polymer additive shall be added at 2% of finished emulsion.

   f) Carbon Black shall be added at 1.3% to 2% of the finished emulsion.

   g) Mineral filler shall be 0.5% - 2.0% (if required by mix design) based on dry weight of aggregate.

   h) Additives, as needed.

i) Water, as needed to achieve proper mix consistency (total mix liquids shall not exceed the loose aggregate voids).

SECTION 206-MISCELLANEOUS METAL ITEMS

ADD:

206-10 VAULT ACCESS HATCH.

206-10.1 General. Hatch opening sizes, number of door leaves, direction of swing, and locations shall be as shown on the Drawings. Sizes given shall be for the clear opening. Where the number of leaves is not given, openings larger than 42 inches in either direction shall have double-leaf doors. Unless indicated otherwise, door hinges shall be located on the longer dimension side.

1. Submit manufacturer's data and shop drawings in accordance with 2-5.3, "Submittals".

2. Hatches shall be fabricated from Aluminum 6061 T6 unless otherwise specified. Hardware shall be Type 316 stainless steel.

3. Hatches shall be reinforced to support AASHTO H-20 wheel load with a maximum deflection of 1/150th of the span when located behind street curbs or in pedestrian areas. Hatches located in streets, parking lots, or where subjected to motor vehicle traffic shall be rated for direct H-20 traffic loading. Provide structural calculations stamped by a registered professional engineer upon request.

4. Door leaves shall be a minimum of 1/4-inch checkered pattern plate. Channel frames shall be a minimum of 1/4-inch material with an anchor flange around the perimeter.

5. Hatches shall be designed to be water-tight and shall be equipped with a joint gutter and moat-type edge drain. A minimum, 1-1/2 inch diameter drain connection shall be provided and located by the manufacturer. The Contractor shall field verify hatch installation conditions via shop drawings and route hatch drain to atmosphere.

6. Hatch cover shall be equipped with a hold-open arm and a separate release handle. The hold-open arm shall automatically lock the cover in the open position. Hatches shall be designed for easy opening from both inside and outside.

7. Covers shall be equipped with compression spring operators enclosed in telescopic tubes. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe fastened to a formed 1/4" gusset support plate. Compression spring tubes and all fasteners shall be Type 316 stainless steel material.

8. Hatches shall have a recess for a padlock. The recess shall have a lockable, hinged lid that is flush with the hatch cover.

9. Install hatches in accordance with the manufacturer's instructions.

10. Manufacturer shall guarantee against defects in material or workmanship for a period of five years.

11. Access hatches shall be manufactured by Bilco, Type J-AL (single door) or JD-AL (double door), or approved equal.

SECTION 209 – PRESSURE PIPE

209 PRESSURE PIPE. 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.

ADD:

209-4.8 Pressure Control Valves.

209-4.8.1 General. This section includes requirements for automatic control valves for pressure reducing functions in a water pressure control station.

2. Pressure reducing valves shall maintain a constant downstream pressure regardless of changing flow rate and/or inlet pressure.

209-4.8.2 Submittals. Submit the following manufacturer data in accordance with 2-5.3, "Submittals":

1. Manufacturer's catalog data to include valve dimensions, laying lengths, end connections, orientation, size, quantity, pressure rating, and parts list. Submit information on pilot control systems, valve position indicators, and switches.

2. Manufacturer's certification that all linings and coatings have been factory tested and comply with the specified requirements.

3. Operation and maintenance data to include, but not be limited to, installation and operating instructions, maintenance procedures, list of special tools, and spare parts list.

4. Submit signed, dated, and certified factory test data for each valve requiring certification prior to shipment.

209-4.8.3 Main Valve.

1. The main valve shall be hydraulically operated, single diaphragm-actuated, globe pattern. The valve shall consist of three major components: the body with seat installed, the cover with bearings installed, and the diaphragm

assembly. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the main valve or pilot controls.

209-4.8.4 Main Valve Body.

1. No separate chambers shall be allowed between the main valve cover and body. Valve body and cover shall be ductile iron. No fabrication or welding shall be used in the manufacturing process.

2. The valve shall contain a resilient, synthetic rubber disc, with a rectangular cross section contained on three and one-half sides by a disc retainer and forming a tightseal against a single, removable seat insert. No O-ring type discs (circular, square, or quad type) shall be permitted as the seating surface. The disc guide shall be of the contoured type to permit smooth transition of flow and shall hold the disc firmly in place. The disc retainer shall be of a sturdy one-piece design capable of withstanding opening and closing shocks. It must have straight edge sides and a radius at the top edge to prevent excessive diaphragm wear as the diaphragm flexes across this surface. No hourglass-shaped disc retainers shall be permitted and no V-type guides shall be used, except when anti-cavitation trim is specified.

3. The diaphragm assembly containing a non-magnetic 303 stainless steel stem of sufficient diameter to withstand high hydraulic pressures shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. The seat shall be a solid, one-piece design and shall have a minimum of a five-degree taper on the seating surface for a positive, drip-tight shut off. No center guides shall be permitted. The stem shall be drilled and tapped in the cover end to receive and affix such accessories as may be deemed necessary. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure.

4. The flexible, non-wicking, FDA approved diaphragm shall consist of nylon fabric bonded with synthetic rubber compatible with the operating fluid. The center hole for the main valve stem must be sealed by the vulcanized process or a rubber grommet sealing the center stem hole from the operating pressure. The diaphragm must withstand a Mullins Burst Test of a minimum of 600 psi per layer of nylon fabric and shall be cycle tested 100,000 times to ensure longevity. The diaphragm shall not be used as the seating surface. The diaphragm shall be fully supported in the valve body and cover by machined surfaces which support no less than one-half of the total surface area of the diaphragm in either the fully opened or fully closed position.

5. The main valve seat and the stem bearing in the valve cover shall be removable. The cover bearing and seat in 6-inch and smaller size valves shall be threaded into the cover and body. Valve seat in 8-inch and larger size valves shall be retained by flat head machine screws. The lower bearing of the valve stem shall be contained concentrically within the seat and shall be exposed to the flow on all sides. The valve body and cover shall be machined with a locating lip for proper alignment. No "pinned" covers to the valve body shall be permitted. Cover bearing, disc retainer, and seat shall be made of the same material. All necessary repairs and/or modifications other than replacement of the main valve body shall be possible without removing the valve from the pipeline. Packing glands and/or stuffing boxes shall not be permitted and components including cast material shall be of American manufacturers.

6. The valve manufacturer shall warrant the valve to be free of defects in material and workmanship for a period of three years from date of shipment, provided the valve is installed and used in accordance with all applicable instruction. Electrical components shall have a one-year warranty.

7. A direct factory representative shall be made available for start-up service, inspection and necessary adjustments.

8. The valve manufacturer shall be able to supply a complete selection of complementary equipment for the valve size specified. The valve manufacturer shall provide a computerized cavitation chart of flow rate, differential pressure, percentage of valve opening, Cv factor, system velocity, and cavitation damage potential.

209-4.8.5 Material Requirements for Main Valve.

1. Main Valve Size, Style: 6-inch, globe style

2. Body and Cover Material: ASTM A536 Ductile iron

3. Disc Guide, Seat, Bearing: Stainless Steel

4. End Detail: Flanged

5. Pressure Rating: ANSI B16.42, Class 150

6. Rubber Material: Buna N

7. Coating: Liquid epoxy per AWWA C210, minimum 12 mils dry film thickness, certified holiday-free

8. Options: CV Flow Control (open and close); x117C valve position transmitter; stainless steel valve trim, x144 e-Flowmeter

9. Approved Manufacturers: Cla-Val Model 90-01 (pressure reducing) or approved equal.

209-4.8.6 Pilot Control System.

1. The pressure reducing pilot control shall be a direct-acting, adjustable, springloaded, normally open, diaphragm valve designed to permit flow when controlled pressure is less than the spring setting. The pilot control is held open by the force of the compression on the spring above the diaphragm and it closes when the delivery pressure acting on the underside of the diaphragm exceeds the spring setting. The pilot control system shall include a fixed orifice. No variable orifices shall be permitted. The pilot system shall include an opening speed control.

2. The pressure sustaining pilot control shall be a direct-acting adjustable spring loaded control which opens when upstream pressure exceeds the spring setting on the pilot.The pilot control system shall include an X44A strainer and orifice assembly.

3. The control pilots shall be bronze with stainless steel trim. Pressure adjustment range shall be 30 to 300 psi.

4. The pilot control shall have a second downstream sensing port which can be utilized to install a pressure gauge. A full range of spring settings shall be available in ranges of 0 to 450 psi.

5. Manufacturer: Cla-Val CRD-33 or approved equal.

6. The Electronic Actuated Pressure Reducing Pilot Controls shall have an integral hydraulic pilot and electronic controller contained in a submersible enclosure to provide interface between remote telemetry and valve set-point control.

7. It will compare a remote 4-20 mA analog command signal with an internal position sensor signal and adjust the hydraulic pilot control spring mechanism to a new setpoint position. Remote analog signal input shall be isolated and reverse polarity protected.

8. Local 4-20 mA actuator position feedback shall be supplied standard.

9. Assembly shall be factory calibrated to the spring range listed for each PRV.

10. If power fails, the control pilot valve shall continue to control main valve to last set-point command.

11. If the Remote Set-Point signal is lost the actuator shall be programmable to go to either the 4mA, Last, or 20mA command set-point. No mechanical adjustments shall be necessary to the actuator.

12. The low and high position range adjustment shall be accomplished only with valve manufacturer’s components and instructions to be supplied in a separate kit.

13. Provide Manufacturers software and special USB communication cable.

14. The assembly shall be supplied with 250 feet of cable.

209-4.8.7 Flowmeter.

1. Manufacturer: Cla-Val X144 e-FlowMeter; or approved equal.

2. Function:

   (a) The flow meter shall be vortex shedding insertion flow meter, designed to be installed in the inlet tapping of the PRV to provide accurate flow measurement data.

   (b) The flow meter shall be configured so that it can either be retrofitted into an existing Cla-Val PRV or factory installed in a new Cla-Val PRV or approved equal.

3. Meter Characteristics:

   (a) The flow meter configuration shall include a threaded swivel insert with measurement cylinder, fittings, and electronics housing fabricated from stainless steel and shall have no moving parts.

   (b) The meter shall be configured so that it can be inserted into valve body inlet tappings as small as ½-inch, and then rotated using a tool provided with the unit by the manufacturer. The rotation of the measurement cylinder shall be parallel with the flow direction through the valve. The flow meter shall be capable of being installed in valves from 2 through 16 inch.

   (c) Flow shall be measured using the vortex shedding methodology, employing a bluff body within the measurement cylinder that causes vortices to be generated. The vortices shall be, in turn, counted by an internal piezoelectric sensor that communicates with the integral circuit board located in the meter head. The flow meter shall be IP-68 submersible.

   (d) The flow meter shall have been subjected to performance testing by at least one independent laboratory. The laboratory test results shall illustrate that flow data measured by the flow meter is accurate to within +/- 2% of full scale.

   (e) The flow meter's power requirement shall be 12/24 VDC, 0.7 watts minimum. It shall be capable of connecting with most commercially available data loggers.

4. Installation:

   (a) The flow meter shall be capable of being installed in either inlet tapping of a Cla-Val or approved equal main valve body using an insertion tool that is provided with the flow meter. Installation shall be performed in accordance with the manufacturer's O&M manual or the Quick Start and Wiring Instruction which must be shipped with the unit.

   (b) Provisions shall be made for bleeding pressure from the valve prior to installation using main line isolation valves installed on the inlet and outlet sides of the valve.

   (c) A 250-foot cable shall be provided with the flow meter to complete the wiring. Field wiring shall be done in accordance with the manufacturers O&M manual or the Quick Start and Wiring Instruction which must be shipped with the unit.

5. Signal Interface:

   (a) The flow meter shall be 4-20 mA loop powered and capable of communicating with SCADA, a remote mounted PLC, or other communication devices. The flow data signal shall be converted to 4-20mA, pulse, or digital pulse, depending on the application. The flow meter's Analog Range (4-20mA Scaling) shall be set at the factory prior

6. Factory Settings and Field Adjustment:

   (a) Factory settings must be adjustable in the field without removal of the meter or the valve from the pipeline using a cable and downloadable, proprietary software from the manufacturer.

7. Maintenance:

   (a) The flow meter must be removable for inspection, cleaning, and maintenance. The internal sensor and measurement cylinder with integral bluff body shall be replaceable using replacement parts or repairs kit available through the original manufacturer.

ADD:

209-4.8.8 Pressure Gauges.

209-4.8.8.1 General. Pressure Pressures gauges shall be industrial quality, liquid-filled type with Type 316 stainless steel movement and stainless steel case. Unless otherwise shown or specified, gauges shall have 2-1/2-inch minimum diameter faces with black graduations on white background and a clear acrylic window with Buna-N gasket.

1. Gauges shall be calibrated to read in ten psi increments with an accuracy of plus or minus 1 percent, to 150 percent of the working pressure or vacuum of the pipe or vessel to which they are connected.

2. The gauge shall have a 1/4-inch MNPT lower mount process connection and Type 316 stainless steel snubber. Connect to the pipe with Type 316 stainless steel nipple, isolation ball valve, and air release cock. Fill the diaphragm seal and gauge with glycerin and provide a fitting for refilling.

3. Gauges shall be manufactured by Ashcroft, U.S. Gauge (Ametek), Marshalltown, or equal.

4. Snubber shall be manufactured by Ashcroft, Weksler Instrument Corporation, or equal.

SECTION 217 – BEDDING AND BACKFILL MATERIALS

217-2.2 Stones, Boulders, and Broken Concrete. To the "GREENBOOK", Table 217-2.2, DELETE in its entirety and SUBSTITUTE with the following:

TABLE 217-2.2

Zone	Zone Limits	Maximum Size (greatest dimension)	Backfill Requirements in Addition to 217-2.1
Street or Surface Zone	From ground surface to 12" (300 mm) below pavement subgrade or ground surface	2.5" (63 mm)	As required by the Plans or Special Provisions.
Street or Surface Zone Backfill of Tunnels beneath Concrete Flatwork		Sand	Sand equivalent of not less than 30.
Trench Zone	From 12" (300 mm) below pavement subgrade or ground surface to 12" (300 mm) above top of pipe or box	6" (150 mm)	
Deep Trench Zone (Trenches 3' (0.9 m) wide or wider)	From 60" (1.5 m) below finished surface to 12" (300 mm) above top of pipe or box	Rocks up to 12" (300 mm) excavated from trench may be placed as backfill	
Pipe Zone	From 12" (300 mm) above top of pipe or box to 6" (150 mm) below bottom of pipe or box exterior	2.5" (63 mm)	Sand equivalent of not less than 30 or a coefficient of permeability greater than 1-½ inches/hour (35 mm per hour).
Overexcavation	Backfill more than 6" (150 mm) below bottom of pipe or box exterior	6" (150 mm)	Sand equivalent of not less than 30 or a coefficient of permeability greater than 1-½ inches/hour (35 mm per hour). Trench backfill slurry (100-E-100) per 201-1 may also be used.

SECTION 219 - PRECAST CONCRETE VAULTS

ADD:

219-1 **GENERAL.** This specification covers materials and manufacture of precast, reinforced concrete vaults.

219-1.1 **Design.** Precast concrete vaults shall comply with ASTM C858 except as modified herein. Design loads shall consist of dead load, live load, impact load, hydrostatic and seismic loads. Traffic live load shall be HS-20 per AASHTO standard specifications for highway bridges. The live load shall be applied such that it produces the maximum shear and bending moment in the structure.

1. Design live and dead loads shall conform to ASTM C857. Vaults shall withstand soil conditions and traffic loading of A-16 per Table 1 of ASTM C857 with a 30 percent increase due to impact. Soil lateral loads shall be as determined by ASTM C857. Alternate design by the strength design method shall include a load factor of 1.7 times the lateral earth or hydrostatic pressures. Design shall evaluate site-specific seismic loading.

2. The maximum steel reinforcement ratio shall be one-half the reinforcement ratio that would produce a balanced strain condition.

3. Calculations shall be prepared by a Civil or Structural Engineer registered in the State of California and regularly engaged in the design of precast concrete vaults for hydraulic structures.

219-1.2 **Submittals.** The Contractor shall submit the following information:

1. Quality control procedures established by the precast manufacturer in accordance with the NPCA Quality Control Manual for Precast Concrete Plants.

2. Submit shop drawings and supporting information in accordance with the requirements of 2-5.3.3, “Shop Drawings” and 2-5.3.4, “Supporting Information”, respectively, for review by the Engineer.

   (a) Provide complete design calculations to enable the Engineer to evaluate the adequacy of the proposed vaults for the intended purpose. Calculations shall include the analysis of lifting stresses, the sizing of lifting devices, and anchorage.

   (b) Include details of vault layout, dimensions, piping penetrations, steel reinforcement, hatch or access manhole frames, and concrete mix design. Field survey the existing grades at each vault location to determine the necessary wall heights and floor slopes where sloping grades occur such as sidewalk cross slopes or sloping top of curb grade.

   (c) Provide product data sheets and installation instructions for accessory items including, but not limited to hatches and their mounting frames, pipe entry connectors, sealants, gaskets, ladders, gratings, and other items installed before or after delivery.

219-1.3 **MATERIALS.** Materials of construction for precast concrete vaults shall conform to the requirements of 216-2, "Materials" for precast reinforced concrete box.

219-1.4 **FABRICATION.** Fabrication of precast concrete vaults shall conform to the requirements of 216-3, "Fabrication" of precast reinforced concrete box and the following:

1. Manufacture shall conform to the National Precast Concrete Association (NPCA) Quality Control Manual for Precast Concrete Plants unless specified otherwise.

2. Fabricate vaults to the dimensions shown on the Drawings, in accordance with the approved drawings, and with a minimum thickness of any structure element not less than 6 inches. Vaults located adjacent to street curbs shall have a minimum wall thickness of 8 inches. Include a minimum live load soil surcharge of 2 feet in the design of the walls.

3. If a sump is shown on the Drawings, construct the vault floor with positive slope toward the sump.

4. Design and construct vaults to be watertight when subjected to groundwater over the entire height of the vault.

5. Provide openings or embedded items in precast vaults for piping and access. Provide cast in place inserts in slabs and walls at the locations shown or required on the Drawings. Field coring of openings shall not be allowed.

6. All items embedded in concrete shall be of the type required for the intended use and meet the following standards:

   (a) Structural steel plates, angles, etc. shall conform to ASTM A36.

   (b) Hot-dipped galvanizing shall conform to ASTM A152.

   (c) Embed pre-fabricated items in accordance with manufacturers' published literature.

8. Cast the floor and walls of vaults monolithically. Do not use horizontally segmented vault wall sections without the approval of the Engineer. Do not use vaults comprised of mechanically connected wall panels.

9. Finish the exposed top edges of buried concrete vaults with a 3/8-inch to 1/2-inch radius edge tool.

10. Shop-apply exterior vault waterproofing conforming to the requirements of Section 201-8.4 on all below-ground surfaces.

219-1.5 **TESTING REQUIREMENTS.** Test specimens shall conform to 201-1.1.5, "Test for Portland Cement Concrete" and the following:

219-1.6 **Compression Testing of Cylinders.** Prepare a minimum of three cylinders for each PCC mix used for each day of precast vault production. The average of all tests shall be equal to or greater than the specified 28-day compressive strength and no single test has a compressive strength less than 80 percent of the specified compressive strength. Remove all concrete represented by compressive strength tests that fail to meet the requirements of this subsection from the Work. Do not core for strength testing of concrete which failed to meet the compressive strength testing on specimens.

219-1.7 **Slump Testing of Concrete.** Conduct slump testing on each batch of concrete sampled for the preparation of concrete specimens for compressive strength testing.

219-1.8 **PERMISSILBLE VARIATIONS**

219-1.8.1 **Internal Dimensions.** Internal dimensions shall not vary more than 1 percent from the dimensions shown on the Drawings.

219-1.8.2 **Slab and Wall Thickness.** Slab and wall thickness shall not be less than that shown on the Drawings by more than 5 percent or 3/16-inch, whichever is greater.

219-1.8.3 **Position of Reinforcement.** The maximum variation in the position of reinforcement shall be 1/2-inch. Hooks and bends shall conform to ACI 318.

219-1.8.4 **CAUSES FOR REJECTION.** Inspection as may be deemed necessary will be made by the Engineer at the place of manufacturer. Rejection of precast vaults may occur due to any of the following unless repairs are approved by the Engineer and made by the manufacturer:

1. Fractures or cracks exceeding 0.10 inch in width.
2. Mixing and molding defects, honeycombed or open texture that would adversely affect the function of the precast unit.
3. Failure to meet the permissible variations specified.
4. Exposure of reinforcement arising from misplacement thereof.

219-1.8.5 **BASIS OF ACCEPTANCE.** The basis of acceptance shall be by one of the following:

1. Compliance with these specifications, inspection of the fabrication and inspection of the completed unit.
2. Acceptance of a Certificate of Compliance conforming to 4-1.5, "Certificate of Compliance". Such acceptance, however, shall be considered a tentative acceptance and final acceptance will only be made when fabrication is completed.

SECTION 221 - FIBERGLASS REINFORCED PLASTIC (FRP) FABRICATIONS

ADD:

221-1 **GENERAL.** This section includes shop fabricated Fiberglass Reinforced Plastic (FRP) pultruded and molded fabrications. Furnish, fabricate, and/or install all FRP components with all appurtenances, accessories and incidentals necessary to produce a complete, operable and serviceable installation as specified herein.

221-1.1 **Reference Specifications, Codes, and Standards.** The publications listed below (latest revision applicable) form a part of this specification to the extent referenced herein.

a) The Fiberglass Grating Manual, ANSI/ASCE/ACMA FGM-2003

b) ASTM D 635 - Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position

c) ASTM E84 - Surface Burning Characteristics of Building Materials

d) ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

e) ASTM D638 - Tensile Properties of Plastics

f) ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics

g) ASTM D2344 - Apparent Interlaminar Shear Strength of Parallel Fiber Composites by Short Beam Method

h) ASTM D495 - High Voltage, Low-Current, Dry Arc Resistance of Solid Electrical Insulation

i) ASTM D696 - Coefficient of Linear Thermal Expansion for Plastics

j) OSHA - Code of Federal Regulations (CFR), Volume 29

221-1.2 **Submittals.**

The following shall be submitted in accordance with 2-5.3, “Submittals”:

1. Submit manufacturer's shop drawings of all fabricated gratings clearly showing material sizes, types, styles, part or catalog numbers, complete details for the fabrication and erection of components including, but not limited to, location, lengths, type and sizes of fasteners, clip angles, member sizes, and connection details.

2. Submit the manufacturer’s published literature including structural design data, structural properties data, grating load/deflection tables, corrosion resistance tables, certificates of compliance, test reports as applicable and design calculations for systems not sized or designed in the contract documents.

3. Submit sample pieces of each item specified herein, manufactured by the method used in the Work and as to quality and color.

221-1.3 Design Criteria.

1. The design criteria of the FRP products including connections shall be in accordance with governing building codes and generally accepted standards in the FRP industry.

2. Gratings: Design live loads of the FRP gratings for walkway applications shall be 50 psf uniformly distributed load (or as required by the governing building code) with a maximum deflection of 3/8" or L/120 at the center of a simple span, or a concentrated load of 250 pounds with a maximum deflection of ¼" at the center of a simple span.

3. Stair Treads: Stair treads shall be designed for a uniform live load of 100 psf at the center of a simple span or a 300 pound line load at the center of the tread, whichever produces the greater stress.

4. Structures: Structures shall be designed for 65 psf live load with a maximum deflection of L/180 for the structural member being considered.

ADD:

221-2 MATERIALS.

221-2.1 General.

a) All FRP items furnished shall be composed of fiberglass reinforcement and resin in qualities, quantities, properties, arrangements and dimensions as necessary to meet the design requirements and dimensions as specified.

b) Fiberglass reinforcement for molded and pultruded grating shall be continuous roving. For pultruded gratings, reinforcements shall include a combination of continuous strand mat and surfacing veils. All reinforcements shall be in sufficient quantities as needed by the application and/or physical properties required.

c) Resin shall be polyester for all systems except for FRP components used in chemical storage or containment areas which shall only be molded and which shall be vinyl ester resin system, with chemical formulations as necessary to provide the corrosion resistance, strength and other physical properties as required.

d) All finished surfaces of FRP items and fabrications shall be smooth, resin-rich, free of voids and without dry spots, cracks, crazes or unreinforced areas. All glass fibers shall be well covered with resin to protect against their exposure due to wear or weathering.

e) All pultruded components shall be further protected from ultraviolet (UV) light with

   1) Integral UV inhibitors in the resin and

   2) A synthetic surfacing veil to help produce a resin rich surface.

f) All FRP products shall have a tested flame spread rating of 25 or less when tested in accordance with the ASTM E-84 Tunnel Test. Gratings shall also have a tested burn time of less than 30 seconds and an extent of burn rate of less than or equal to 10 millimeters per ASTM D635. Manufacturer shall provide certification of ASTM E84 test on grating panels from an independent testing laboratory. Test data shall be from full scale testing of actual production grating of the same type of material supplied on the project. Test data performed only on the base resin shall not be acceptable.

g) All grating clips shall be manufactured of galvanized steel except that FRP components in corrosive environments shall be Type 316SS.

h) After fabrication, all cut ends, holes and abrasions of FRP grating shall be sealed with a resin comparable to the grating panel.

i) Approved Manufacturers, or approved equal:

1. American Grating
2. Creative Pultrusions
3. Fibergrate Composite Structures Inc.
4. Horsco Industrial IKG
5. Precisioneering
6. Strongwell

221-2.2 Molded Grating and Treads.

a) Manufacture: Grating shall be of a one piece molded construction with tops and bottoms of bearing bars and cross bars in the same plane. Grating shall have a square mesh pattern providing bidirectional strength. Grating shall be reinforced with continuous rovings of equal number of layers in each direction. The top layer of reinforcement shall be no more than 3/16" below the top surface of the grating. Percentage of glass (by weight) shall not exceed 40%.

b) After molding, no dry glass fibers shall be visible on any surface of bearing bars or cross bars. All bars shall be smooth and uniform with no evidence of fiber orientation irregularities, inter-laminar voids, porosity, resin rich or resin starved areas.

c) Non-slip surfacing: Grating shall be manufactured with a concave profile on the top of each bar providing maximum slip resistance. Applied grit shall be allowed as long as the top surface does not exceed 1/16". Grit molded integrally during the manufacturing process shall be allowed, with the top surface not exceeding 3/16".

d) Color: gray or safety yellow, submittal required.

e) Grating configuration shall be:

1. 1″ deep, 1-1/2″ square mesh
2. 1-1/2″ deep, 1-1/2″ square mesh
3. 2″ deep, 2″ square mesh
4. 1″ deep, 1″ x 4″ rectangular mesh

f) Substitutions: Other products of equal strength, stiffness, corrosion resistance and overall quality shall be submitted to the Engineer for approval in accordance with 4- 1.6, "Trade Names or Equal."

221-2.3 Pultruded Grating and Treads.

a) Manufacture: Grating components shall be manufactured by the pultrusion process, shall be of high strength and high stiffness elements having a maximum of 70% and a minimum of 65% glass content (by weight) of continuous roving and continuous strand mat fiberglass reinforcements. The finished surface of the product shall be provided with a surfacing veil to provide a resin rich surface which improves corrosion resistance and resistance to ultraviolet degradation.

b) Grating bearing bars shall be joined into panels, interlocked and epoxy-fastened into the proper spacing by passing a continuous, notched cross rod or cross rods through the web of each bearing bar. The notches shall be spaced on centers to match the distance between the load bars. A continuous keeper shall be driven behind the notched cross rod to affix it into place. Chemical bonding shall complete the assembly of the cross bar system to ensure both a mechanical and chemical lock.

c) Non-slip surfacing: Grating shall be provided with a grit bonded to the top surface of the finished grating product.

d) Color: gray or yellow, submittal required.

e) Grating configuration shall be:

1. 1″ deep I-40
2. 1″ deep I-60
3. 1-1/2″ deep I-40
4. 1-1/2″ deep I-60
5. 2″ deep T-33
6. 2″ deep T-50

f) Substitutions: Other products of equal strength, stiffness, corrosion resistance and overall quality shall be submitted to the Engineer for approval in accordance with 4- 1.6, “Trade Names or Equal.”

221-2.4 Grating Fabrication.

a) Measurements: Grating supplied shall meet the minimum dimensional requirements as shown or specified. The Contractor shall provide and/or verify measurements in field for work fabricated to fit field conditions as required by grating manufacturer to complete the work. Determine correct size and locations of required holes or cutouts from field dimensions before grating fabrication.

b) Layout: Each grating section shall be readily removable, except where indicated on drawings. Manufacturer to provide openings and holes where located on the Drawings. Grating supports shall be provided at openings in the grating by Contractor where necessary to meet load and deflection requirements specified herein. Grating openings which fit around protrusions (pipes, cables, machinery, etc.) shall be discontinuous at approximately the centerline of opening so each section of grating is readily removable. Gratings shall be fabricated free from warps, twists, or other defects which affect appearance and serviceability.

c) Sealing: All shop fabricated grating cuts shall be coated with a resin comparable to grating resin to provide maximum corrosion resistance. All field fabricated grating cuts shall be coated similarly by the contractor in accordance with the manufacturer's instructions.

d) Hardware: Hold-down clips shall be provided and spaced at a maximum of four feet apart with a minimum of four per piece of grating, or as recommended by the manufacturer.

221-2.5 Structural Shapes.

a) All structural shapes are to be manufactured by the pultrusion process with a glass content minimum of 45%, maximum of 55% by weight for maximum sunlight and chemical resistance. The structural shapes shall be composed of fiberglass reinforcement and resin in qualities, quantities, properties, arrangements and dimensions as necessary to meet the design requirements and dimensions as specified in the Contract Documents.

b) Pultruded structural shapes are to have the minimum longitudinal mechanical properties listed below:

Property	ASTM Test Method	Value	Units
Tensile Strength	D-638	30,000 (206)	psi (MPa)
Tensile Modulus	D-638	2.5 x 106 (17.2)	psi (GPa)
Flexural Strength	D-790	30,000 (206)	psi (MPa)
Flexural Modulus	D-790	1.8 x 106 (12.4)	psi (GPa)
Short Beam Shear (Transverse)	D-2344	4,500 (31)	psi (MPa)
Coefficient of Thermal Expansion	D-696	8.0 x 10-6 (1.4 x 10 -6)	in/in/°F (cm/cm/°C)
Flame Spread	E-84	25 or less	

221-2.6 Ladders and Cages.

a) All ladder and cage systems shall be compliant to OSHA 1910.27.

b) All ladder side rails, rungs and cage straps shall be structural shapes, manufactured by the pultrusion process. Cage hoops and ladder mounting brackets shall be produced by the open molded hand lay-up method.

c) All pultruded ladder components shall be further protected from ultraviolet (UV) attack with 1) integral UV inhibitors in the resin and 2) a synthetic surfacing veil to help produce a resin rich surface.

d) All FRP products shall have a tested flame spread rating of 25 or less per ASTM E84 Tunnel Test.

e) All ladder and cage components are to be integrally pigmented safety yellow. All wall and floor mount brackets shall be hand layup and pigmented safety yellow.

f) Ladders and cages to be located outdoors in direct UV shall additionally be shop coated with a two-part polyurethane coating, 2 mils thick minimum, for improved durability and UV resistance.

g) The ladder side rail shall be 2" square tube with a wall thickness of 1/4" (50 mm x 6 mm) or greater. The rungs shall be 1" (25 mm) diameter solid round bar, gritted to provide a non-slip surface. Rungs shall be mechanically attached to the ladder with both FRP dowels and chemically bonded with epoxy.

h) Ladder wall and floor mount shall be 3/8" (9.5 mm) minimum thickness.

i) Cage hoops shall be hand layup FRP and have integral mounting loops to provide a free and clear hand path so that climbers do not have to use rungs for climbing. The ladder cage vertical bars shall be 2" wide by ¼" thick (50.8 mm x 6.4 mm) flat bars. Top, intermediate, and bottom hoops shall be 3" wide by 1/4" thick minimum (76.2 mm x 6.4 mm).

j) Type 316SS round head bolts shall be provided for attaching ladder cage vertical bars to hoops and ladder cage hoops to ladder rails to eliminate a point of catch or snag to worker clothes and hands. Ladder standoff and base brackets shall be connected by 316SS bolts.

ADD:

221-3 INSTALLATION.

1. Install gratings in accordance with manufacturer's assembly drawings. Use holddown fasteners to securely lock grating panels in place.

2. Field cut and drill fiberglass reinforced plastic products with carbide or diamond tipped bits and blades. Seal cut or drilled surfaces in accordance with manufacturer's instructions. Follow manufacturer's instructions when cutting or drilling fiberglass products or using resin products.

SECTION 302 – ROADWAY SURFACING

ADD:

302-4.12.2.1.1 Slurry Treatment.

1. When slurry treatment is required by the Contract Documents, notify the Engineer at least 10 Working Days prior to the first application of slurry. The Engineer, upon assessment of street condition and classification, will verify the slurry type to be applied.

2. Application of sequential layers of slurry shall not commence until approved by the Engineer and until the following have been completed:

   a) Mix design and wet track abrasion testing for the first-step slurry application has been approved by the Engineer. Unless otherwise directed by the Engineer, this testing may require 4 Working Days from field sampling to reporting of test results to the Engineer.

   b) Corrective actions have been executed in accordance with 302-4.11.1.2, "Reduction in Payment Based on WTAT" such as reductions in payment, non-payment, or removal of material not meeting specifications, as directed by the Engineer.

302-4.12.4 Measurement and Payment. To the "WHITEBOOK", item 2, DELETE in its entirety and SUBSTITUTE with the following:

2. The payment for RPMS shall be the total square footage used on the project calculated using the method described and shall be paid under the following Bid items:

BID DESCRIPTION	UNIT
Rubber Polymer Modified Slurry (RPMS) Type I	SF
Rubber Polymer Modified Slurry (RPMS) Type II	SF
Rubber Polymer Modified Slurry (RPMS) Type III	SF
Rubber Polymer Modified Slurry (RPMS) Type I (Bike Lane)	SF

The Bid items for RPMS shall include full compensation for the specified surface preparation not included in other Bid items and shall include the Work necessary to construct the RPMS as specified on the Plans. Sweeping, removals, and furnishing the aggregate required for the mix design shall also be included in this Bid item.

302-5.9 **Measurement and Payment.** To the "WHITEBOOK", item 2, DELETE in its entirety.

302-7.4 **Payment.** To the "WHITEBOOK", item 1, last sentence, DELETE in its entirety and SUBSTITUTE with the following:

Payment shall not be made for additional fabric for overlapped areas.

SECTION 304 –METAL FABRICATION AND CONSTRUCTION

304-5 **PAYMENT.** To the "WHITEBOOK", REVISE section "**304-5**" to "**304-6**".

SECTION 306 – OPEN TRENCH CONDUIT CONSTRUCTION

306-1 **General.** To the "GREENBOOK", ADD the following:

Build the Project in accordance with the water high-lining phasing shown on the Plans and in phases as follows:

1. Phase 1:
    a. LINWOOD ST - from Hayden Way to end of cul-de-sac
    b. CURLEW ST – from Ostego Dr to Idylwild St
    c. W. PENNSYLVANIA AVE – from Curlew St to Brant St
    d. BRANT ST – from Pennsylvania Ave to W. Robinson Av
2. Phase 2:
    a. HAYDEN WAY – from Linwood St to Bandini St
    b. PENNSYLVANIA AVE – from Brant St to Albatross St
    c. ALBATROSS ST – from Pennsylvania Ave to cut&plug

3. Phase 3:

    a. BANDINI ST –from Hayden Way to Rodelane Ave

    b. ALBATROSS ST – from cut&plug to end of cul-de-sac

    c. W ROBINSON AVE – from Idylwild St to Front St

    d. FRONT ST – from W Robinson Ave to University Ave

4. Phase 4:

    a. BANDINI ST - from Rodelane Ave to cut&plug

    b. RODELANE AVE – from Bandini St to end of cul-de-sac

    c. FRONT ST - from W Robinson Ave to end of cul-de-sac

5. Phase 5:

    a. GUY ST – from Couts St to Bandini St

    b. MILLER ST – from Bandini St to Arden Way

    c. ARDEN WAY – from Miller St to Sunset Blvd

6. Phase 6:

    a. MERGHO IMPASSE – from cul-de-sac to Bandini St

7. Phase 7:

    a. BANDINI ST – from Hayden Way to Mergho Impasse

306-6.5.1 **General.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. For PVC water pipes:

    a) Bedding material shall:

        i. Either be sand, crushed aggregate, or native free-draining granular material.

        ii. 100% of the bedding material shall pass the no. 4 sieve and shall have an expansion when saturated with water of not more than 0.5%.

        iii. Have a sand equivalent of SE 50. SE 30 or higher may be substituted for SE 50 as bedding material if all of the following requirements are met:

- The top of the pipe and haunch areas are mechanically compacted by means of tamping, vibrating roller, or other mechanical tamper.
- Equipment is of size and type approved by the Engineer.
- 90% relative compaction or better is achieved.

b) When jetting, care shall be exercised to avoid floating of the pipe.

2. PVC sewer pipes shall be bedded in 3/8 inch (9.5 mm) or 1/2 inch (12.5 mm) crushed rock in accordance with 200-1.2, "Crushed Rock and Rock Dust". Crushed rock for PVC sewer pipes may contain recycled Portland Cement Concrete and shall conform to gradation requirements for 3/8 inch or1/2 inch nominal size as shown in Table 200-1.2.1 (A).

3. Storm drains and all types of non-PVC sewer mains shall be bedded in 3/4 inch (19 mm) crushed rock in accordance with 200-1.2, "Crushed Rock and Rock Dust". Crushed rock for storm drains may contain recycled Portland Cement Concrete and shall conform to gradation requirements for 3/4 inch nominal size as shown in Table 200-1.2.1 (A). Bedding shall be placed to a depth of 4 inches (101.6 mm) below the outside diameter of the pipe or 1 inch (25.4 mm) below the bell of the pipe, whichever is greater.

306-7.8.2.1 General. To the "WHITEBOOK", item 2, ADD the following:

a) Specified test pressure for Class 235 pipe shall be 150 psi.

b) Specified test pressure for Class 305 pipe shall be 200 psi.

ADD:

306-20 PRESSURE REDUCING STATION (PRS).

306-20.1 General. Pressure reducing station shall consist of the following principle items:

1. Precast concrete vault per 219 "PRECAST CONCRETE VAULTS".

2. Vault access hatch per 206-8, "VAULT ACCESS HATCH" and access ladder per 221, "FIBERGLASS REINFORCED PLASTIC (FRP) FABRICATIONS" and ladder safety post per 306-24.2.1, "Ladder Safety Post".

3. Pressure reducing or pressure reducing/sustaining control valves per 209-4.8, "Pressure Control Valves".

4. Pipe and fittings, process valves and tubing, flow meters, pressure gauges, sump pump, and appurtenances as specified elsewhere in the Specifications and the Drawings.

5. Installation of a cathodic protection system on pressure reducing station piping in accordance with the specifications in the Supplement to the SSP and the Drawings.

6. Installation, hydrostatic pressure testing, disinfection, start-up operation, and testing of the completed station. The initial settings for the pressure reducing valve is shown below. The Contractor shall coordinate the final control valve set points with City Water Operations staff.

STATION	APPROXIMATE VALVE ELEVATION	UPSTREAM HGL	DOWNSTREAM HGL
Sloane Avenue	215	536	390

7. Preparation and submittal of Operation and Maintenance Manuals.

8. Salvage of existing pressure reducing station equipment and/or valves to the City and demolition of remaining, existing, pressure reducing station components.

306-20.2 Materials. Pressure reducing station components shall be selected from the City AML unless otherwise specified herein or on the Drawings.

306-20.3 Ladder Safety Post.

a) Provide pre-assembled ladder safety post conforming to the following performance characteristics:

1. Tubular post shall lock automatically when fully extended.
2. Safety post shall have controlled upward and downward movement.
3. Release lever shall disengage the post to allow it to be returned to its lowered position.
4. Post shall have adjustable mounting brackets to fit ladder rung spacing up to 14" on center and clamp brackets to accommodate ladder rungs up to 1-3/4" in diameter.

b) Post shall be manufactured of high strength square tubing. A pull up loop shall be provided at the upper end of the post to facilitate raising the post.

c) Material of construction shall be Type 304 stainless steel.

d Provide a spring balancing mechanism for smooth and controlled operation when raising and lowering the safety post.

e All mounting hardware shall be Type 316 stainless steel.

f Factory finish shall be mill finish stainless steel.

g Manufacturers: Bilco (Model LU-3) or approved equal.

306-20.4 Installation.

a) Submit product design drawings for review and approval before fabrication.

b) Check field conditions and verify the manufacturer's ladder safety post details for accuracy to fit the application prior to fabrication. The installer shall comply with the ladder safety post manufacturer's installation instructions.

c) Furnish fasteners necessary for installing ladder safety post on ladder.

306-20.5 **Payment.** The lump sum price for the Pressure Reducing Station shall include full compensation for all labor, material, tools, equipment and incidentals necessary to construct pressure reducing station and shall include all excavation, dewatering, concrete construction, pipe bedding, backfilling, compaction, testing, cleaning, disinfection, connections to pipelines, and all other items or work necessary for a complete and functional installation in accordance with the Contract Documents and no additional payment will be allowed therefore.

ADD:

306-21 ELECTRICAL AND INSTRUMENTATION.

306-21.1 **General.** Electrical and instrumentation for the pressure reducing station shall consist of the following principle items:

1. Installation of new electrical service and coordination with the City and the utility company.
2. Installation of remote control and instrumentation panels and radio antenna.
3. Installation of electronic actuated pressure reducing pilot control system.
4. Installation of a valve mounted flow meter.
5. Installation of alarms, switches, electrical appurtenances, conduit, control wiring, and process tubing between the field instruments and remote control and instrument panels.
6. Preparation and submittal of Operation and Maintenance Manuals.
7. Start-up operation and testing of electrical, instrumentation, and telemetry systems and coordination with City. City or its subcontractor will perform SCADA programming.

306-21.2 **Materials.** Material requirements for Electrical and Instrumentation are described in the Supplement to the SSP and the Drawings.

306-21.3 **Payment.** Payment for Electrical and Instrumentation shall include full compensation for all labor, material, tools, and equipment necessary to construct new electrical, instrumentation, and radio telemetry systems and shall include all excavation; dewatering; reinforced concrete construction; backfilling; compaction; testing; cleaning; commissioning; and all other incidental items and work necessary for a complete and functional electrical, instrumentation, and telemetry systems in accordance with the Contract Documents and no additional payment will be allowed therefore.

ADD:

306-22 DEMOLISH EXISTING PRESSURE REDUCING STATION.

306-22.1 **General.** Demolition of the existing pressure reducing station shall consist of the following principle items:

1. Removal and legal disposal of vault roof and manhole cover and rings.
2. Removal of a minimum of 3-ft of the vault walls and their legal disposal.
3. Core drill holes in the vault floor slab.
4. Removal and salvage of existing pressure reducing valves and isolation valves and delivery of items to the City.
5. Pipe and fittings as specified in the Specifications and the Drawings.
6. Installation, hydrostatic pressure testing, disinfection, start-up operation, and testing of the new pipe.

306-22.2 **Materials.** Material requirements for Demolition of Existing Pressure Reducing Station shall be selected from the City AML unless otherwise specified herein or on the Drawings.

306-22.3 **Payment.** Payment for Demolition of Existing Pressure Reducing Station shall include full compensation for all labor, material, tools, and equipment necessary to demolish existing pressure reducing station and construct new pipe and shall include all excavation; dewatering; backfilling; compaction; testing; cleaning; commissioning; and all other incidental items and work necessary for a complete and functional pipeline in accordance with the Contract Documents and no additional payment will be allowed therefore.

SECTION 314 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS

314-4.3.7 **Payment.** To the "GREENBOOK", ADD the following:

1. The payment for the replacement of existing traffic striping, pavement markings, and pavement markers shall be included in the Bid item for "Striping" and shall also include the payment for new installations of traffic striping, pavement markings, and pavement markers.

314-4.4.6 **Payment.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. No separate payment shall be made for establishing alignment for stripes and layout Work.
2. The payment for the replacement of existing traffic striping, pavement markings, and pavement markers shall be included in the Bid item for "Striping".

SECTION 600 - ACCESS

ADD:

600-1 **GENERAL.** To the "WHITEBOOK", item 5, DELETE in its entirety and SUBSTITUTE with the following:

5. If the City's crews are unable to provide the citizens with the mandated services due to your failure to comply with these specifications, you shall collect trash, recyclables, and yard waste on the City's schedule and deliver to the City's designated locations. If you fail to perform this Work, you shall incur additional costs for the City to reschedule pick up of an area.

SECTION 700 – MATERIALS

700-9.1 **Pedestrian Barricade.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. Pedestrian barricades shall be constructed in accordance with the City of San Diego Standard Drawing SDE-103, "Pedestrian Barricade".

2. Assembly shall be commercial quality galvanized material.

SECTION 701 – CONSTRUCTION

701-2 **PAYMENT.** To the "WHITEBOOK", ADD the following:

19. The payment for Pedestrian Barricades shall be included in the Bid item for each "Pedestrian Barricade".

SECTION 900 – MATERIALS

900-1.1.1 **Galvanized Pipe.** To the "WHITEBOOK", Item 8, DELETE in its entirety and SUBSTITUTE with the following:

8. Hoses:

   a) User Connection (Service Meters).

      i. For meters up to 1 inch (25.4 mm), the hose shall be 1 inch (25.4 mm) potable water hose with 300 WP rating. End connections shall be galvanized steel, "Chicago" 2-lug, quarter-turn, quick-disconnect fittings banded to the hose.

      ii. Materials shall meet the NSF/ANSI 61 certification for potable water use in conformance with AWWA C651-14.

   b) Curves and Curbs.

      i. Hose shall be 2 inch (50.8 mm) potable water hose with 300 WP rating. End connections shall be galvanized steel grooved mechanical end fittings in compliance with ASTM C606 banded to the hose.

ii. Materials shall meet the NSF/ANSI 61 certification for potable water use in conformance with AWWA C651-14.

900-1.1.3 **Yelomine Pipe**. To the "WHITEBOOK", Item 8, DELETE in its entirety and SUBSTITUTE with the following:

8. Hoses:

a) User Connection (Service Meters).

i. For meters up to 1 inch (25.4 mm), the hose shall be 1 inch (25.4 mm) potable water hose with 300 WP rating. End connections shall be galvanized steel, "Chicago" 2-lug, quarter-turn, quick-disconnect fittings banded to the hose.

ii. Materials shall meet the NSF/ANSI 61 certification for potable water use in conformance with AWWA C651-14.

b) Curves and Curbs.

i. Hose shall be 2 inch (50.8 mm) potable water hose with 300 WP rating. End connections shall be galvanized steel grooved mechanical end fittings in compliance with ASTM C606 banded to the hose.

ii. Materials shall meet the NSF/ANSI 61 certification for potable water use in conformance with AWWA C651-14.

900-1.2 **Payment.** To the "WHITEBOOK", item 2, DELETE in its entirety and SUBSTITUTE with the following:

2. The Payment for your high-lining materials (fittings, valves, and hardware), including delivery and unloading, shall be paid for under the linear foot Bid item "Furnished Materials for Contractor High-line Work".

SECTION 901 – INSTALLATION AND CONNECTION

901-2.5 **Payment.** To the "WHITEBOOK", item 3, DELETE in its entirety and SUBSTITUTE with the following:

3. Traffic control, saw cutting the trench area, trench caps, and other spot repairs in the vicinity of the disturbed area at each restored connection shall be included in the square foot Bid item for "Pavement Restoration for Final Connection". Asphalt overlay and slurry seal Work shall be paid for under separate Bid items.

EQUAL OPPORTUNITY CONTRACTING PROGRAM (EOCP) SECTION A – GENERAL REQUIREMENTS

4.1 **Nondiscrimination in Contracting Ordinance.** To the "WHITEBOOK", subsection 4.1.1, paragraph (2), sentence (1), DELETE in its entirety and SUBSTITUTE with the following:

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.

END OF SUPPLEMENTARY SPECIAL PROVISIONS (SSP)

PRS TECHNICAL SPECIFICATIONS

SECTION 13110 – CATHODIC PROTECTION

PART 1 – GENERAL

1.1 WORK OF THIS SECTION

A. The Contractor shall provide all labor, materials, tools, and incidentals to install a cathodic protection system for the new 6-inch and 8-inch dielectrically coated ductile iron pipe (DIP) associated with the Sloane Avenue Pressure Reducing Station (PRS). The cathodic protection system shall include all electrical connections, anodes, test stations, insulators, and all accessories required for a complete and operable system.

B. The Contractor shall retain a qualified Corrosion Engineer to direct the construction of facilities specified herein. The Corrosion Engineer shall test and certify that the corrosion control facilities for this project are constructed properly and as specified, and are fully functional.

1.2 DEFINITIONS

A. Contractor: The licensed prime installer selected by the Owner to install the pipeline.

B. Owner: The City of San Diego.

C. Corrosion Engineer: A qualified Corrosion Engineer retained by the Contractor who is either a Registered Professional Corrosion Engineer or NACE- International Certified Cathodic Protection Specialist or Corrosion Specialist.

D. Engineer: The City of San Diego's Resident Engineer or designated representative.

E. City's Corrosion Engineer: The Engineer's appointed representative from the City's Corrosion Section.

1.3 CONTRACTOR QUALIFICATIONS

A. All work must be conducted by qualified, experienced personnel working under continuous, competent supervision. Cathodic protection installation and testing shall be done under the direct supervision of a Corrosion Engineer.

1.4 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Commercial Standards:

1. AWWA C217 - Wax Coating Systems for Underground Piping Systems
2. Green Book - Standard Specifications for Public Works Construction, 2015 edition.
3. NACE SP0169 - Standard Practice, Control of External Corrosion on Underground or Submerged Metallic Piping Systems
4. NACE SP0286 - Electrical Isolation of Cathodically Protected Pipelines
5. NEC 70 – National Electrical Code
6. NEMA LE - Cotton Phenolic Resin – Electrical Grade
7. NEMA CE - Canvas Phenolic Resin - General Purpose Grade
8. NEMA G10 – Glass Reinforced Epoxy
9. Standard Specifications of Public Works Construction City Supplement (White Book) latest edition
10. Standard Drawings for Public Works Construction latest edition.

1.5 CONTRACTOR SUBMITTALS

A. The Contractor shall furnish the following documents (Submittals) AS ONE SUBMITTAL PACKAGE:
   1. Catalog cuts and other information for products to be used including:
      a. Wire, Leads, and Cable
      b. Anode Shunts
      c. Ready Mix Concrete
      d. Plastic Warning Tape
      e. Exothermic Weld Kits
      f. Elastomeric Weld Caps
      g. Exothermic Weld Coating
      h. At-Grade Concrete Test Box
      i. Phenolic Test Board
      j. Flange Isolation Kits
      k. Wax Tape Coating System
      l. Standard Potential Galvanic Anodes
   2. As-Built Drawings: The Contractor shall maintain as-built drawings showing the exact locations of test stations, insulators, and wire trenching runs. Location changes shall be clearly indicated in red on a copy of the design drawings. These drawings shall be submitted to the Engineer before the work is considered complete. Provide sub-foot GPS coordinates for all test stations.

B. Qualifications: The Contractor shall submit documentation of the qualifications of the Corrosion Engineer.

1.6 PACKAGING AND SHIPPING

A. The Contractor shall coil wires, secure and package anodes as required to prevent damage during shipment.

1.7 NOTIFICATION FOR TESTING AND INSPECTION

A. The Contractor shall notify the Engineer at least seven days in advance of the installation of insulators, anodes, and test stations. The Engineer or the Owner's Representative shall witness all corrosion control installations at their discretion.

1.8 CORROSION ENGINEER QUALIFICATIONS SUBMITTAL

A. Services of Corrosion Engineer: Obtain the services of a Corrosion Engineer to inspect, activate, adjust, and evaluate the effectiveness of the cathodic protection system. The Corrosion Engineer is herein defined as a registered Professional Engineer with certification or licensing that includes education and experience in cathodic protection of buried or submerged metal structures, or a person accredited or certified by NACE International at the level of Corrosion Specialist or Cathodic Protection Specialist (i.e. NACE International CP Level 4). The Corrosion Engineer shall directly oversee the Cathodic Protection Technician, review all specification section 13110 related inspections and field measurements, and certify the accuracy and completeness of all cathodic protection submittals and reports.

B. Services of Cathodic Protection Technician: Obtain the services of a Cathodic Protection Technician to inspect, activate, adjust, and evaluate the effectiveness of the cathodic protection system. The Cathodic Protection Technician is herein

defined as a person accredited or certified by NACE International as a Cathodic Protection Level 2 Technician.

PART 2 – PRODUCTS

2.1 WIRES

A. General: Conform to applicable requirements of NEMA WC 70. All wires shall be single conductor, unless otherwise specified. All wires shall be single conductor, stranded copper wire with 600-volt HMWPE insulation, unless otherwise specified.
B. Joint Bond: Two No. 8 AWG HMWPE.
C. Test Station Pipeline Leads: No. 8 AWG HMWPE.
D. Galvanic Anode Leads: No. 12 AWG THWN (WHITE).

2.2 SHUNTS

A. Galvanic Anode Test Stations: The shunt resistance shall be such that a 2-Amp. Shunts shall be flat manganin ribbon style as manufactured by Cott or approved equal.

2.3 CONCRETE

A. Reinforcing steel: ASTM A615, Grade 60 deformed bars and welded wire fabric.
B. Welded Wire Fabric: ASTM A497.
C. Formwork: Plywood, earth cuts may be used.
D. Concrete with minimum 3,000 psi compressive strength at 28 days.

2.4 ANCILLARY MATERIALS

A. Electrical Tape: Linerless rubber high-voltage splicing tape and vinyl electrical tape suitable for moist and wet environments. Use Scotch 130C and Scotch 88 as manufactured by 3M Products or approved equal.
B. Wire Connectors: One-piece, tin-plated crimp-on lug connector as manufactured by Burndy Co., Thomas and Betts or approved equal.
C. Insulating Resin: At Contractor's option, bitumastic coating (Koppers 50 or equal) may be used if allowed to dry completely before covering.

2.5 MARKING TAPE

A. Inert polyethylene, impervious to known alkalis, acids, chemical reagents, and solvents likely to be encountered in soil.
B. Thickness: Minimum 4-mils.
C. Width: 6-inches.
D. Identifying Lettering: Minimum 1-inch high, permanent black lettering imprinted continuously over entire length.
E. Color: Red with black lettering as follows: "CAUTION CATHODIC PROTECTION CABLES BURIED BELOW."

2.6 EXOTHERMIC WELDS

A. General: Wire sleeves, welders, and weld cartridges according to the weld manufacturer's recommendations for each wire size and pipe or fitting size and material. Welding materials and equipment shall be the product of a single manufacturer. Interchanging materials of different manufacturers will not be accepted.

B. Weld Caps: Exothermic welds shall be sealed with a pre-fabricated plastic cap filled with formable mastic compound on a base of elastomeric tape. Use Royston Handy Cap or approved equivalent. Primer for weld caps shall be Royston Roybond Primer 747 or approved equivalent.

C. Weld Coating: All bare metal shall be coated. Exothermic welds and weld caps shall be coated with a cold-applied, fast-drying mastic consisting of bituminous resin and solvents per MIL-C-18480B. Use Royston R28, Royston R28 Zero VOC, Royston A51 Plus, Royston A51 Low VOC, Tapecoat TC Mastic or approved equal.

2.7 AT-GRADE TEST STATIONS

A. At-Grade (Flush) Mounted:
B. Test Box: Concrete box of dimensions as shown on the Drawings. Use precast concrete San Diego Pre-cast Model 1BSD\K with cast iron lid. The cast iron lid shall be 9-1/2 inch diameter with the letters "City of San Diego Corrosion Test Station".
C. Each CP Test Box shall include a 5 inch x 5 inch cross-laminated phenolic terminal board with a minimum thickness of 1/4-inch. The phenolic material shall be NEMA type CE or LE. The terminal board shall contain individual electrical lugs for each wire entering the test station or junction box.

2.8 PIPE FLANGE ISOLATION KIT

A. For purposes of this specification, the terms "Pipe Flange Isolation Kit", "Insulating Flange", "Insulating Joint", and "Dielectric Flange" are used synonymously.
B. The Contractor shall over drill flange holes where insulating kits are to be used per AWWA C207 to accommodate insulating sleeves.
C. The Pipe flange isolation kit materials shall be designated by the manufacturer as suitable for service at the operating temperatures and pressures specified on the Plans.
D. Flange isolation kits shall consist of a one piece, full-face, insulating gasket, an insulating sleeve for each bolt, insulating washers, and steel washers. For nominal pipe diameters up to and including 36-inches, provide one insulating washer and one steel washer on each side of the flange for each flange bolt.
E. Insulating Gasket: Insulating gasket retainers shall be full face, Type E, NEMA G- 10 glass reinforced epoxy retainers with an Ethylene Propylene Diene Monomer (EPDM) rubber rectangular cross section O-ring seal. Minimum total gasket thickness shall not be less than 1/8-inch. The gasket shall have the same outside diameter as the pipe flange. For steel pipe the gasket's inside diameter shall be equal to the inside diameter of the pipe's steel cylinder. At valve to pipe connections where the inside diameters are not equal, the gasket's inside diameter shall be equal to the smaller of the two inside diameters. Dielectric strength shall be not less than 550-volts per mil, and compressive strength shall be not less than 50,000-psi. The manufacturer's name and date of manufacture shall be marked on both sides of the gasket with minimum two-inch tall block letters using a durable marking ink or paint. The gasket shall be installed within 12 months of its date of manufacture. Do not store insulated flange gaskets at jobsites under direct sunlight or at temperatures exceeding 110 degrees Fahrenheit. Use PSI Linebacker insulating gasket, or approved equal.
F. Insulating Sleeves: Provide full length, one piece, NEMA G-10 glass reinforced epoxy insulating flange bolt sleeves. Dielectric strength shall be not less than 400-volts per mil. The length of the insulating sleeves shall provide an air gap between the end of the insulating sleeve and inside surface of the

stud bolt nut with a tolerance of 1/32-inch minimum and 1/8-inch maximum. Insulating sleeve length must be adjusted for the actual thickness of the washers and insulating washer thickness.

G. Insulating Washers: Insulating washers shall be NEMA G-10 glass reinforced epoxy with a minimum thickness of 1/8-inch. Dielectric strength shall not be less than 550-volts per mil, and compressive strength shall not be less than 50,000- psi. The insulating washer's inside diameter shall be sized to fit over the insulating sleeves outside diameter.

H. Steel Washers: Provide hardened steel washers that conform to ASTM F436 for insulated flanges greater than 36 inches in nominal diameter. Double steel washers (4 steel washers per flange bolt) are required for insulated flanges greater than 36 inches in nominal diameter. The inside and outside diameter of the steel washers shall match those of the insulating washers. The steel washers must be able to freely rotate around the insulating sleeve. Attention must be paid to the fit between the steel washers and the insulating sleeve in order to avoid the washers twisting and cracking the sleeves when the flange bolts are torqued.

I. Provide four extra insulating sleeves and eight extra insulating washers for each insulating flange upon successful inspection of the insulating flange by the Engineer.

2.9 WAX TAPE COATING FOR BURIED SURFACES AND BURIED ISOLATION FLANGES

A. All buried pipe sections of pipe, specials, and fitting surfaces that are not tape wrapped or epoxy coated shall be wrapped with a petrolatum wax tape coating per AWWA C217 with plastic outer wrap. No bare metallic surfaces shall be buried, backfilled, or in contact with the soil.

B. Apply a wax tape coating system which conforms to AWWA C217 and consists of three parts: surface primer, wax-tape, and outer covering.

C. The primer shall be a blend of petrolatum, plasticizer, and corrosion inhibitors having a paste like consistency. It shall have a pour point of 100-degrees F to 110-degrees F and a flash point of 350-degrees. Use Trenton Wax-Tape Primer, or approved equal.

D. The wax-tape shall consist of a synthetic-fiber felt, saturated with a blend of high melt microcrystalline wax, solvents, and corrosion inhibitors, forming a tape coating that is easily formable over irregular surfaces and which firms up after application. The tape shall have a saturant pour point between 125-degrees F and 130-degrees F and a dielectric strength equal to a minimum of 100-volts per mil. Tape thickness shall be 70-mils to 90-mils in 6-inch wide rolls. Use Trenton No. 1 wax-tape, or equal.

E. The outer covering shall consist of two layers of a plastic wrapper. The plastic wrapper material shall consist of three 10-mil thick clear polyvinylidene chloride, high cling membranes wound together as a single sheet. Use Trenton Poly-Ply, or equal.

2.10 STANDARD POTENTIAL MAGNESIUM ANODES

A. CAPACITY. Standard potential magnesium anodes shall have a theoretical energy content of 1000 ampere-hours per pound and have a minimum useful output

of 500 ampere-hours per pound.

B. CHEMICAL COMPOSITION (STANDARD POTENTIAL MAGNESIUM) ASTM B843

aluminum	5.30 to 6.70 percent
manganese	0.15 to 0.70 percent
zinc	2.50 to 3.50 percent
copper	0.02 percent max
nickel	0.002 percent max
iron	0.003 percent max
silicon	0.10 percent max
others, total	0.30 percent max
magnesium	remainder

C. OPEN CIRCUIT POTENTIAL. The open circuit potential of all anodes, buried in the soil, shall be between 1.45 and 1.55 volts dc versus a copper-copper sulfate reference electrode.

D. INGOT SIZE AND WEIGHT. Anodes shall be 17-pound pre-packaged, standard potential ingots with a trapezoidal cross section. Ingot length shall be 25.25 inches long. The total packaged weight shall be 45 lbs.

E. ANODE CONSTRUCTION. Anodes shall be cast magnesium with a galvanized steel core rod recessed on one end to provide access to the rod for connection of the lead wire. Silver braze the lead wire to the rod and make the connection mechanically secure. Insulate the connection to a 600 volt rating by filling the recess with epoxy and covering any exposed bare steel core or wire with heat shrinkable tubing. The insulating tubing shall extend over the lead wire insulation by not less than 1/2 inch. The anode lead wire shall be stranded copper and shall be connected directly to the anode steel core as described above. There shall be NO wire splices between the anode steel core and the tag end at the test station.

F. ANODE PRE-PACKAGED BACKFILL MATERIAL. The anodes shall be completely encased and centered within a permeable cloth bag in a special low resistivity backfill mix with the following composition:

Gypsum	75%
Powdered bentonite	20%
Anhydrous sodium sulfate	5%

G. Backfill grains shall be such that 100 percent is capable of passing through a screen of 100 mesh. Backfill shall be firmly packed around the anode such that the ingot is approximately in the center of the backfill. The resistivity of the backfill shall be no greater than 50 ohm-cm when tested wet in a soil box. Total prepackaged weight shall be approximately 45 pounds.

PART 3 – EXECUTION

3.1 GENERAL

A. Work not specifically described herein shall conform to NACE SP0169, NACE SP0286, the Standard Specifications for Public Works Construction 2015 (Greenbook) and City Supplement White Book and Standard Drawings.

3.2 WIRE-TO-PIPE CONNECTIONS

A. Exothermic Weld:

1. Use exothermic weld method for electrical connection of copper wire to steel surfaces. Observe proper safety precautions, welding procedures, weld charge selection, and surface preparation recommended by the welder manufacturer. Assure that the pipe or fitting wall thickness is of sufficient thickness that the exothermic weld process will not damage the integrity of the pipe or fitting wall or protective lining. One exothermic weld shall be used for one wire only.
2. Preparation of Metal: Remove all coating, dirt, grime, and grease from the metal surface by wire brushing and/or use of suitable safe solvents. Clean the surface to a bright, shiny surface free of all pits and flaws. The surface must be completely dry.
3. Testing: After the weld connection has cooled, remove slag, visually inspect, and physically test wire connection by striking the weld with a 2-lb hammer while pulling firmly on the wire. All unsound welds shall be completely removed, the surface prepared again, and re-welded. All weld slag shall be removed from the weld before applying coating and weld cap.

B. Protective Coating: The Contractor shall furnish all materials, clean surfaces and repair any damage to protective coatings and linings damaged as a result of the welding.

A coating shall be applied to all exothermic weld locations. The coating for dielectrically coated steel shall be as described in Section 2.14 above. All surfaces must be clean and dry and free of oil, dirt, loose particles and all other foreign materials before application of the coating. The coating must cure per the manufacturer's recommendations prior to backfill. The mortar rockshield shall be repaired per the manufacturer's recommendations.

3.3 MAGNESIUM ANODES

A. INSPECTION. All lead wires shall be inspected to ensure that the lead wire is securely connected to the anode core and that no damage has occurred to the lead wire. Lead wire failures shall require replacement of the complete anode and lead wire.

B. PRE-PACKAGED ANODE INSPECTION. Each anode shall be inspected to ensure that the backfill material completely surrounds the anode and that the cloth bag containing the anode and backfill material is intact. If the prepackaged anodes are supplied in a waterproof container or covering, that container or covering shall be removed before installation. The CONTRACTOR shall notify the ENGINEER at least seven (7) days in advance of installing the anodes.

C. LOCATION. Anodes are to be installed in augured holes as shown in the drawings. Anode positions can be adjusted slightly to avoid interference with existing structures. Alternate anode positions must be approved by the ENGINEER.

D. HANDLING. Care shall be taken to ensure that the anode is never lifted, supported, transported, or handled by the lead wire. All anodes shall be lowered into the hole using a sling or a rope.

E. ANODE HOLE SIZE AND DEPTH. Anodes shall be placed vertically at the bottom of

a 12 feet deep augured hole, 12 inches in diameter (minimum).

F. SOAKING REQUIREMENTS, PRE-PACKAGED ANODES. Once the prepackaged anodes are in the hole, water shall be poured into the hole so that the anodes are completely covered with water. Allow the anodes to soak for a minimum of 30 minutes before any soil backfill is added.

G. SOIL BACKFILL. After the pre-packaged anodes are soaked, the hole is backfilled with stone-free, native soil. No voids shall exist around the anode bags and the anode lead wire shall not be damaged. The backfill shall be tamped and compacted in 18 inch lifts above the anode taking care not to damage the anode lead wire.

3.4 AT-GRADE TEST STATIONS

A. LOCATION. At-grade corrosion monitoring test boxes shall be located behind the curb or sidewalk and NOT in traffic lanes or gutters. All test box locations shall be approved by the ENGINEER.

B. TEST BOX BOTTOM. Test boxes shall be set in native soil.

C. TEST LEAD ATTACHMENT. Test leads shall be attached to the pipe using the exothermic weld process. An 18-inch length of slack wire shall be coiled at each weld and inside each test box.

D. CONCRETE PAD. A 24-inch square by 4-inch thick reinforced concrete pad is required around each at-grade test station. Test boxes and concrete pad shall be flush with the top of the median curb.

3.5 EXTERNAL COATING

A. All insulating couplings shall be covered with a 3-layer wax tape coating system per AWWA C217 with plastic outer wrap. Additionally, all in-line valves, flanges couplings, and adapters that are not coated with a bonded dielectric coating shall be wax tape coated per AWWA C217 with plastic outer wrap.

B. Primer: Surfaces must be cleaned of all dirt, grime, and dust by using a wire brush and clean cloth. The surface shall be dry. Apply the primer by hand or brush. A thin coating of primer shall be applied to all surfaces and worked into all crevices. The primer shall be applied generously around bolts, nuts, and threads, and shall fully cover all exposed areas. The primer should overlap the pipe coating by a minimum of 3-inches.

C. Petrolatum Saturated Tape: The wax tape can be applied immediately after the primer. Short lengths of tape shall be cut and carefully molded around each individual bolt, nut, and stud end. For long bolts (such as in couplings), short lengths of tape shall be cut and circumferentially wrapped around each individual bolt. After the bolts are covered, the tape shall be circumferentially wrapped around the flange with sufficient tension to provide continuous adhesion without stretching the tape. The tape shall be formed, by hand, into all voids and spaces. There shall be no voids or gaps under the tape. The tape shall be applied with a 1-inch minimum overlap. Minimum thickness of 70 mils over flat surfaces. Minimum thickness of 140 mils over edges.

D. Outer Covering: A plastic outer cover shall be applied over the petrolatum-saturated tape. The plastic shall be a minimum of 50-guage (10-mils) and shall have two layers applied.

3.6 INSTALLATION OF FLANGE ISOLATION MATERIALS

A. Provide a minimum of five days advance notice to the Engineer before assembling insulated pipe flanges to allow for coordination and observance of its installation. The Engineer shall inspect the condition of the gasket's O-ring immediately before the gasket is installed to ensure it is free of cracks, dry rot, cuts, or other defects.

B. Install pipe flange insulating materials at the locations shown on the Plans. Install pipe flange insulating materials in accordance with the manufacturer's recommendations and NACE recommended practice SP0286, "Electrical Isolation of Cathodically Protected Pipelines. Particular attention shall be paid to properly aligning the flanges prior to inserting the insulating sleeves around flange bolts.

C. Prevent moisture, soil, or other foreign matter from contacting any portion of the insulated flange prior to or during installation. If moisture, soil, or other foreign matter contacts any portion of the insulated flange, disassemble it, clean with a suitable solvent and dry prior to reassembling. Follow the manufacturer's recommendations regarding the torque pattern of the bolts and the amount of torque to be used when installing the flange insulating kit. Do not use conductive grease on the flange bolts or any other flange components. Note: the following products have been tested for electrical conductivity and approved for use: Huskey 2000 Lubricating Paste & Anti-Seize compound, Triflow aerosol lubricant with Teflon additive, or approved equal.

D. All insulating flange kits that will be buried must be tested and approved by the City's Corrosion Engineer before burial. Failure to have written approval by the City before burial may require the contractor to re-excavate the insulating flange assembly for proper testing at the contractor's expense.

PART 4 – TESTING AND INSPECTION

4.1 General

A. The CP system shall be activated by the Contractor's Corrosion Engineer. The Contractor is required to contact the City's Corrosion Section (phone number 619-527-5439) at least 5 days in advance of all corrosion control/cathodic protection facility installations. The Engineer, City's Corrosion Engineer, or the Owner's Representative shall witness all testing and installations at their discretion. All test data shall be submitted to the City's Corrosion Engineer within seven (7) days of the completion of the testing. All testing shall be conducted under the supervision of a qualified Corrosion Engineer who is retained by the Contractor. All deficiencies found to be due to faulty materials or workmanship shall be repaired or replaced by the Contractor and at his/her expense.

4.2 TEST LEADS AND BOND WIRES

A. Responsibility: The Contractor shall be responsible for testing and inspecting all test leads, bond wires, and exothermic welds.

B. Test Method: All completed wire connections shall be tested by striking the weld with a 2-lb. Hammer while pulling firmly on the wire. Failed welds shall be completely removed, the surface re-prepared, and re-welded. Welds shall be spot tested by the Engineer. After backfilling, all test leads shall be tested using a standard ohmmeter.

C. Acceptance: The resistance between each pair of test leads shall not exceed

120% of the total wire resistance as determined from published wire data.

4.3 TEST LEAD TRENCHING AND BACKFILL

A. Responsibility: The Engineer, at his or her discretion, shall inspect wire trenches and backfill material and methods.

B. Test Method: The depth, trench bottom padding, and backfill material shall be visually inspected before backfilling.

C. Acceptance: Conformance with specifications.

4.4 FLANGE ISOLATION KIT TESTING

A. Each buried insulating flange shall be tested for its electrical isolation effectiveness by and acceptable to the City's Corrosion Engineer prior to burial. The insulating flange shall be tested for electrical isolation before the wax tape coating is applied. Testing shall be performed and deemed as acceptable as described in the above grade testing procedure.

B. Each above grade or insulating flange within a vault shall be tested for its electrical isolation effectiveness. This testing shall be performed by the Contractor's Cathodic Protection Technician and witnessed by the City's Corrosion Engineer. The Contractor shall provide written notice of this testing to the Engineer a minimum of two days in advance. If the insulated pipe flange will be buried, At the Engineer's option, the City of San Diego may repeat this testing during or immediately after the installation of the insulating flange. Replace or repair any insulated pipe flange that is determined to not meet the minimum electrical isolation requirements in this specification. The effectiveness of insulating flanges shall be determined using the following test techniques in the order shown until one of the criteria is achieved or as otherwise directed by the Engineer.

C. Electrical Potential Difference Test: Electrically bond the pipe on the vault or unburied side of the insulating flange to an electrical ground with a maximum resistance to remote soil of 5-Ohms. If the pipe on both sides of the insulating flange is mechanically connected to a minimum 50-feet of buried pipe, then the pipe does not need to be bonded to an electrical ground for this test. Measure the CP Potential of the pipe on both sides of the insulating flange using a copper/copper sulfate reference electrode. If the difference in CP Potentials is greater than or equal to 500-millivolts, the insulating flange is providing adequate electrical isolation. This test must be performed with all cathodic protection systems and anodes disconnected from the pipeline. If this criterion is not met, perform the Nilsson 400 Meter Direct Resistance Test to verify the effectiveness of the insulating flange.

D. Direct Resistance Test: Measure the electrical resistance across the insulated flange using a 97-Hertz square wave null balancing ohmmeter such as the Model 400 Miller Soil Resistance Meter and the four-wire resistance technique. A standard handheld digital multi-test meter's ohmmeter circuit (e.g. Fluke 97 or Beckman HD110) is not suitable for properly making these resistance measurements. Perform this test by connecting the meter's P1 and C1 terminals to one side of the insulating flange, using two wires, and then connecting the meter's P2 and C2 terminals to the other side of the insulating flange, using two additional wires. Use vise grips or temporary exothermic welds to make the wire connections to the flange or pipe. The criterion for a pipe filled with water is a

minimum measurement of 5-Ohms. The criterion for a dry or a partially filled pipe is a minimum measurement of 100-Ohms. If none of the applicable criteria are met, perform the Inductive Ammeter Direct Resistance Test to verify the effectiveness of the insulating flange.

E. Inductive Ammeter Direct Resistance Test: Connect two separate wires via two separate connections to the pipe on both sides of the insulating flange. Use vise grips or temporary exothermic welds to make the wire connections. Use two pairs of test wires, one for current flow, one for voltage measurement. Using the first set of test wires, apply a minimum 12-volt DC electrical current across the insulating flange. Using the second set of test wires, measure the voltage across the insulating flange developed by the DC current flow. Use an inductive ammeter hoop (e.g. Swain hoop) clamped around the pipe immediately adjacent to the insulating flange to measure the change in DC current flow in the pipe, through the insulated flange. Calculate the electrical resistance across the insulating flange in Ohms by dividing the change in DC Volts by the change in DC Amps (i.e. Ohm's Law). The criterion for a pipe filled with water is a minimum measurement of 5-Ohms. The criterion for a dry pipe is a minimum measurement of 100-Ohms. If either of the applicable criteria is not met, perform the NACE Insulating Flange Leakage Test, per NACE SP0286, to verify the effectiveness of the insulating flange.

F. NACE Insulating Flange Leakage Test: This test procedure shall conform to the "Leakage Test" described in the NACE Standard SP0286, Section 8, "Field Testing and Maintenance", Figure 12. The test current used shall be between 3 and 5 DC Amps. The criterion for a pipe filled with water is a maximum “electrical leakage value” of 10-percent of the test current. The criterion for a dry pipe is a maximum “electrical leakage value” of 5-percent of the test current.

G. Individual Flange Bolt Testing: For all insulated flanges to be buried and for all other insulating flanges that do not meet any of the other criteria, measure the electrical resistance of each flange bolt to both sides of the insulated flange using a Nilsson Model 400 Soil Resistance Meter and four-wire resistance technique. The measured resistance value for each flange through-bolt shall be a minimum of 1,000-Ohms, as measured from each bolt to both flanges. This criterion applies to the flange through-bolts and does not apply to valve cap bolts which are threaded on one side. Remove, inspect, and replace all dielectric flange bolt sleeves and washers that do not meet the minimum resistance criterion.

H. If an insulated flange with threaded cap bolts passes the resistance tests for all the “through-bolts” yet fails the other previous tests, remove all the threaded cap bolts, inspect and replace all imperfect dielectric flange bolt sleeve and washer materials and retest.

I. In order to make an accurate resistance measurement that passes any of these criteria it may be necessary to disable the pipe inside a vault, flow control facility, or pump station on one side of the insulated flange (or temporarily remove any electrically grounded appurtenances) so that the pipe is not grounded on one side of the insulated flange. This temporary change may eliminate an electrical path which interferes with making an accurate resistance measurement.

4.5 ELECTRICAL CONTINUITY TESTING OF PIPE WITH BONDED JOINTS

A. Conduct electrical continuity testing to demonstrate that all buried pipe joints (except insulated flanges) are either welded joints or have been electrically bonded across with bond cables. This testing shall be performed by the Contractor's Cathodic Protection Technician and witnessed by the Engineer. The Contractor shall demonstrate to the Engineer's satisfaction that full electrical continuity has been achieved and shall make all required bond cable connections in the event that electrical continuity of the pipeline is not achieved.

B. Perform electrical continuity tests between test stations. Circulate a 12-volt electrical direct current (DC) through the pipeline. Use two pairs of test wires, one for current flow, one for voltage measurement. Measure the voltage difference developed by the DC current flow. Calculate the electrical resistance of the pipeline section in Ohms using Ohm's Law.

C. The resistance acceptance criterion for each pipeline section tested is less than 120 percent of the calculated resistance value. The resistance value shall be calculated using the steel cross section area of the pipe, its length, and consideration for the joint bond cables at each bonded joint.

D. If other electrical continuity test methods are proposed, the Contractor shall prepare a written test procedure specifying the alternate method and equipment that will be used. A standard handheld digital multi-test meter's ohmmeter circuit (e.g. Fluke 87) is not suitable for properly making these electrical resistance measurements. Submit in writing the alternate proposed test method to the City's Corrosion Engineer for approval a minimum of 30 days before the pipe laying begins.

4.6 CP TEST STATION WIRE INTEGRITY TESTING

A. Testing of Completed Welds: Exothermically welded wire-to-pipeline connections shall be inspected by the Engineer prior to backfilling the pipeline. At the Engineer's direction, tests to verify the soundness of the welds shall be conducted by the Contractor. Tests for this purpose shall consist of striking the weld nugget with a 2-pound hammer while steadily pulling on the wire. Note that the wire near the weld shall not be unnecessarily cold worked during installation or testing. Remove and re-weld any welds that break loose or show signs of separating, as determined by the Engineer.

B. Wire Identification: The Engineer shall be given two day's advance notice to verify that buried pipe lead wires and anode lead wires are properly identified prior to backfilling the wires.

C. CP Test Wire Resistance Tests: After the pipeline is backfilled and the CP test wires are trenched to the CP Test Box or CP Monitoring Station, each pair of CP test wires shall be tested for integrity. The CP Technician shall measure the electrical resistance of one CP test wire to the pipeline and back on the second CP test wire. If more than twice the theoretical resistance of the total wire length installed is measured, the Contractor shall re-excavate the pipeline and replace or re-weld the CP test wires to the pipeline. Use the following copper wire unit resistance values to calculate the theoretical resistance of each pair of CP test wires.

1. No. 2 AWG wire 0.162 Ohms / 1000 feet

2.	No. 4 AWG wire	0.258 Ohms / 1000 feet
3.	No. 6 AWG wire	0.411 Ohms / 1000 feet
4.	No. 8 AWG wire	0.653 Ohms / 1000 feet
5.	No. 10 AWG wire	1.038 Ohms / 1000 feet
6.	No. 12 AWG wire	1.650 Ohms / 1000 feet
7.	No. 14 AWG wire	2.624 Ohms / 1000 feet

4.7 ELECTRICAL ISOLATION TESTING BETWEEN PIPE AND STEEL REINFORCEMENT

A. Prior to placing concrete, all pipe/wall/slab penetrations must be inspected by the City's Corrosion Engineer. Testing shall be performed and deemed acceptable as described herein. A seven-day notice is required before placing concrete.

B. Conduct visual and electrical testing at all steel pipe penetrations through reinforced concrete structures before and after the concrete is placed. This testing is required to demonstrate that all buried steel pipe is not in contact with any metallic objects embedded in the concrete wall or concrete slab including all of the following:
rebar
rebar tie wire
snap ties
shebolts
tie rods
taper
ties
dowels

C. Perform this testing no more than 1 day before each concrete placement and no more than 1 day after each concrete placement. Correct all direct contacts detected between sections of pipe to be buried and concrete reinforcing components by trimming or repositioning the reinforcement components. If pipe to reinforcement contacts are detected after concrete is in place, use chipping hammers and other concrete demolition tools to remove as much concrete as is necessary to eliminate all metallic points of contact with the steel pipe. A representative from the City of San Diego, Water System Operations, Corrosion Section shall be notified a minimum of 7 days before the first pipe-vault penetration concrete is placed in order to witness and ensure proper electrical isolation. The failure for a new buried steel pipeline to pass this electrical isolation test may require concrete and reinforcing steel to be incrementally demolished by the contractor at no cost to the City of San Diego until the new pipeline passes the electrical isolation test.

D. Perform all electrical resistance measurements for this test using a 97-Hertz square wave null balancing ohmmeter such as the Miller Model 400 Soil Resistance Meter or the MC Miller Model 400A and the four-wire resistance technique to compensate for the test wire and connection resistances. A standard handheld digital multi-test meter's ohmmeter circuit (e.g. Fluke 87) is not suitable for properly making these resistance measurements. Perform this test by connecting the meter's P1 and C1 terminals to the pipe, using two different wires and two different connections, and then connecting the meter's P2 and C2 terminals to the rebar, using two additional wires and connections. Use vise grips or temporary exothermic welds to make the wire connections to the pipe and

rebar.

E. Rebar Ground Cable Connections at Pipe Encasements and Vault Penetrations: Select two exposed pieces of rebar separated by at least 2 feet that are wire tied to a minimum of 6 other perpendicular pieces of rebar for use as electrical ground reference test points. Using temporary connections such as vice grips or other compression clamps measure the electrical resistance between the two different pieces of rebar to ensure that the rebar test points are electrically continuous with the bulk of the rebar in the concrete structure. If either piece of rebar is not securely wire tied to all the other rebar in the encasement or vault, then the electrical resistance measurement will yield erroneous or misleading data. A maximum resistance of 0.10 Ohm between the two rebar test points is required before continuing with the electrical isolation test. Connect two unspliced lengths of minimum size #6 AWG bare copper stranded grounding cable to two different pieces of rebar. Each ground cable connection to the rebar shall be made with a separate exothermic weld or a separate mechanical compression ground clamp.

F. Direct Resistance Isolation Test: Testing shall first be performed using the Direct Resistance Test. Attach one pair of the resistance test leads to the pipe and one pair of resistance test leads to the rebar then measure the pipe to rebar resistance. If the resistance is 10 Ohms or more, the pipe is sufficiently electrically isolated from the rebar. If the test reading is less than 10 Ohms, proceed with the Steel Polarization Isolation Test described below.

G. Steel Polarization Isolation Test:

Step 1: Measure the baseline CP potentials of the buried pipeline and of the rebar using a stationary location for a copper sulfate reference electrode. Place the reference electrode in soil at an offset distance from the pipeline equal to approximately the length or width (whichever is greater) of the concrete structure under construction. If the difference between the readings of the pipe and rebar is 500 millivolts DC or more, that indicates sufficient electrical isolation. This test must be done with all nearby sources of cathodic protection electrical current turned off or disconnected, and with all welding equipment turned off. If the difference is less than 500 millivolts DC, record the baseline CP Potentials and proceed to the next step.

Step 2: Set up a temporary DC power source such as a truck battery, a minimum 300 Watt, 2 to 4 Ohm, power rheostat, a calibrated electrical shunt, and two minimum #6 AWG test cables. Set up the DC power source with the positive cable connected to the rebar and the negative cable connected to the pipe. Initially adjust the rheostat for the largest resistance/smallest current and measure the current flow. Adjust the electrical power to a minimum current of 1 DC Amp, maximum of 10 DC Amps. Allow the DC current to flow for a minimum of 5 minutes then shut off the test current.

Step 3: Re-measure CP Potentials of the pipe and rebar using the same reference electrode in the same location with the test current off. These are called polarized CP potentials.

Step 4: Compare the polarized CP Potentials with the previously measured baseline CP Potentials. If the pipe is electrically isolated from the rebar, the test current will polarize the buried pipeline's steel cathodically (i.e. a more negative CP Potential) and shift the rebar anodically (i.e. a more positive CP Potential). If

the difference between the polarized potentials of the pipeline and rebar is less than 300 millivolts DC there are one or more metallic contacts between the buried pipeline and the rebar. If the difference is 300 millivolts DC or greater the steel pipeline is sufficiently electrically isolated from the rebar.

H. In no case shall an electrical resistance measurement made with a hand held volt-ohm multimeter be accepted as an accurate isolation test procedure. In the event of a question regarding the electrical isolation of the pipeline, the Engineer shall make the final determination.

I. Electrical isolation tests shall be conducted for each pipeline encasement, each pipe to vault penetration, and any other reinforced concrete structure that a pipeline passes through. The electrical isolation tests must be performed by the City's Corrosion Engineer one day before concrete is placed, and the day after concrete is placed. The Engineer will witness the electrical isolation test conducted before the concrete is placed.

J. After the pipeline passes the rebar isolation test, direct bury the two bare copper ground cables connected to the rebar to a flush-to-grade concrete ground box near the pipe-vault penetration. Provide a cover for the test box marked "GROUND". Provide a minimum of two (2) feet of extra ground cable inside the rebar ground test box. If there is a nearby cathodic protection test box, the rebar ground wires can be run into that box. If the rebar test wires are not long enough to reach the permanent test box, splice additional wire to them using two brass split bolts for each splice. No coating is required for the connections.

4.8 PIPELINE CONTINUITY THROUGH IN-LINE APPURTENANCES AND PIPE JOINTS

A. The CONTRACTOR'S CORROSION ENGINEER shall measure the linear resistance of sections of pipe in which in-line valves, non-welded pipe joints, or other flanged mechanical joints have been installed. All testing shall be done by the CORROSION ENGINEER in the presence of the ENGINEER.

B. TEST METHOD. Resistance shall be measured by the linear resistance method. A direct current shall be impressed from one end of the test section to the other (test station to test station). A voltage drop is measured for a given current level. The measured resistance (R) is calculated using the equation R=dV/I, where dV is the voltage drop between the test span and I is the corresponding current. The resistance shall be measured at least three (3) times for accuracy.

C. ALTERNATIVE METHODS. If other electrical continuity test methods are proposed, the CONTRACTOR shall prepare a written test procedure specifying the alternate method and equipment that will be used. A standard handheld digital multi-test meter's ohmmeter circuit (e.g. Fluke 87) is not suitable for properly making these electrical resistance measurements. Submit in writing the alternate proposed test method to the ENGINEER for approval a minimum of 30 days before the pipe laying begins. The alternative method must be acceptable to the City's Corrosion Engineer with written approval before being conducted by the Contractor.

D. ACCEPTANCE. Acceptance is a comparison between the measured resistance (from the field test data) and the theoretical resistance. The theoretical resistance must consider the pipe (length and wall thickness) and the resistance of the bond wires. The measured resistance shall not exceed the theoretical

resistance by more than 120% to determine electrical continuity. The CONTRACTOR'S CORROSION ENGINEER shall submit, within seven (7) days of the completion of the testing, and in a report format, to the ENGINEER, all calculations of the theoretical resistance and measured pipe resistance for each section tested.

4.9 CATHODIC PROTECTION PERFORMANCE

A. Responsibility: The cathodic protection system shall be activated and tested by the Corrosion Engineer in the presence of the City's Corrosion Engineer. Upon completion of the performance testing, the Contractor shall measure the structure-to-electrolyte potential with respect to a saturated copper/copper sulfate (CSE) reference electrode. This potential may be either a direct measurement of the polarized potential or a current-applied potential. Interpretation of a current- applied measurement requires consideration of the significance of voltage drops in the earth and metallic paths.

B. Test Method: Achievement of cathodic protection shall be accomplished by a pipe-to-soil potential survey at each test station of the pipeline. In the event that the full length of the pipeline has not been installed, then the extent of the survey shall be determined by the Engineer. Potential survey data shall include native pipe-to-soil potentials and instant-off pipe-to-soil potentials.

C. Acceptance Criterion for Pipe with Dielectric Coating: The operation of the cathodic protection system for pipelines with a dielectric coating shall be tested to ensure that all portions of the buried pipeline are provided a full level of corrosion protection. The standard used to evaluate the CP potential measurements shall be as follows -0.850-Volt CP Instant Off POTENTIAL, a negative voltage of at least -0.850-Volt as measured between the buried pipeline and a copper sulfate reference electrode contacting the soil immediately over or adjacent to the pipeline in accordance with NACE SP0169. Determination of this voltage is to be made with the cathodic protection current momentarily interrupted. Voltage drops must be considered for valid interpretation of this voltage measurement.

4.10 COMPLIANCE WITH SPECIFICATIONS

A. Deficiencies: Any deficiencies or omission in materials or workmanship shall be rectified by the Contractor and at his expense. Deficiencies shall include, but not limited to: anode failures, electrical discontinuities, lack of electrical isolation, broken or missing test leads or test boxes, improper or unclean trench backfill, and other deficiencies associated with the workmanship, installation, and non-functioning equipment.

****END OF SECTION****

SECTION 13300 – INSTRUMENTATION AND CONTROL

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

A. The CONTRACTOR shall provide all Instrumentation and Control systems (I&C) complete and operable, in accordance with the Contract Documents. The requirements of this Section apply to all components of the I&C unless indicated otherwise.

B. The Contractor shall provide PLC Programming for the project. Programming of the Central HMI system will be done by the City under a separate contract.

C. Responsibilities

1. The CONTRACTOR, through the use of a qualified Instrumentation Subcontractor or vendor and qualified electrical and mechanical installers, shall be responsible to the CITY for the implementation of the I&C and the integration of the I&C with other required instrumentation and control devices. Any supplier wishing to qualify must apply in writing to the Engineer a minimum of 21 days prior to the bid opening date. Each applicant will be thoroughly examined, investigated, and then judged as to capability to execute the Scope of Work required on this project within the time frame allotted. Each applicant will be notified as to his approval prior to the scheduled bid opening. Each applicant will be evaluated for the following minimum criteria.

a. Demonstrate the company's ability to successfully complete projects of similar size and nature. Provide references (including contact name and telephone number) for at least three projects where the following tasks were performed by personnel directly employed by your firm as a Instrumentation Subcontractor; system engineering and documentation including panel assembly, schematics, and wiring diagrams; software configuration and documentation; field testing, calibration, and start-up; and operating instructions and maintenance training.

b. Name the individual persons who will be responsible for office engineering and project management; software configuration; field testing, calibration and start-up; and operator instruction and maintenance training. References called for in the previous item shall include recent project of these individual persons.

c. Document that the company is actively in the business of furnishing integrated instrumentation, telemetry, control and electrical equipment for the water and waste water industries.

d. Have a qualified service facility with permanent employees located within 100 miles of the job site. Facility to include all tools, spare parts, and test equipment to repair, calibrate, test and start-up the equipment to be provided on this contract.

e. For this project the prequalified system suppliers are as follows:

1) INTEGRATED CONTROLS, Orange (714) 516-9531
2) SYNTECH AUTOMATION, San Diego,(858) 712-3460
3) FREEDOM AUTOMATION, Oceanside, (760) 231-6192
4) TESCO CONTROLS, INC., Cerritos, (310) 614-0841

1. Due to the complexities associated with the interfacing of numerous control system devices, the Instrumentation Subcontractor or vendor shall be responsible to the CONTRACTOR for the integration of the I&C with existing devices and devices provided under other Sections and provide a completely-integrated control system free of signal incompatibilities.

2. As a minimum, the Instrumentation Subcontractor or vendor shall perform the following work:

a. Implementation of the I&C:

1) Prepare complete and accurate shop drawings
2) Design, develop, and electronically verify complete and accurate control panel design and functionality according to specifications.
3) Conduct operations and maintenance training for owners personnel on maintenance calibration and repair of all instrumentation provided under this contract.
4) Procure hardware and provide a complete and accurate bill of materials.
5) Fabricate panels
6) Perform factory tests on panels
7) Perform bench calibration and verify calibration after installation
8) Oversee and guarantee installation for accuracy and totality to design and functionality.
9) Oversee, complete set of documents. Label all wires, verify and guarantee complete loop testing results.
10) Oversee, document, and certify system commissioning
11) Perform comprehensive testing that guarantee accurate and complete system functionality, as well as testing component level accuracy to within manufactures specifications.
12) Provide complete and accurate operations and maintenance manuals to include drawings, BOM, specifications, procedures, calibrations, certificates.
13) Conduct operations and maintenance training for owners personnel on maintenance calibration and repair of all instrumentation provided under this contract.
14) Provide drawings that are complete, correct and of sufficient quantity to have copies located at every maintenance location.
15) Prepare calibration sheets
16) Certify the installation of the I&C
17) Perform complete loop check test on all analog/digital signals. Tests continuity and label all wires on panel.

b. Integration of the I&C with instrumentation and control devices being

provided under other Sections:

1) Develop all requisite loop drawings and record loop drawings associated with equipment provided under other Divisions and OWNER-furnished and existing equipment.
2) Resolve signal, power, ground and/or functional incompatibilities between I&C and all interfacing devices. Document and guarantee results.

3. Instrumentation Subcontractor or vendor responsibilities in addition to the items identified above shall be at the discretion of the CONTRACTOR. Additional requirements in this Section and Division 13 that are stated to be the CONTRACTOR's responsibility may be performed by the Instrumentation Subcontractor or vendor.

D. Certification of Intent:

1. Fifteen days after Notice of Apparent Low Bidder, the CONTRACTOR shall submit a certification from the selected Instrumentation Subcontractor or vendor. The certification shall be typed on letterhead paper of the Instrumentation Subcontractor or vendor firm. The certification shall be signed by an authorized representative of the Instrumentation Subcontractor or vendor. The certification shall include the following statements:

a. (Company name) "Hereby certifies intent to assume and execute full responsibility to the CONTRACTOR to perform all tasks defined under Subsection 13300-1.1C.3 in full compliance with the requirements of the Contract Documents."
b. “It is certified that the quotation to the CONTRACTOR includes full and complete compliance with the requirements of the Contract Documents without exception."

E. Documentation of Instrumentation Subcontractor Qualifications:

1. List of at least two instrumentation and control system projects successfully completed, of size and scope similar to that described herein, in which the applicant performed system engineering, system fabrication and installation, documentation (including schematic, wiring and panel assembly drawings), field testing, calibration and start-up, operator instruction and maintenance training. Each of the references cited must be accompanied by a written confirmation of the accuracy of the data by a managerial member of the control system operational staff.

2. In addition, list the following information for each project above:

a. Name of plant, OWNER, contact name, and telephone number. All phone numbers and contacts shall be verified by the applicant before submission.
b. Name of manufacturer(s) for the majority of instrumentation

provided.

c. Type of equipment furnished (i.e., transmitters, recorders, indicators, etc.)
d. Manufacturer and model number of DCS, SCADA, or PLC to which the analog system interfaced.
e. Date of completion or acceptance.

3. Furnish the name of the individual person who will be responsible for office engineering and management of this project, and the individual who will be responsible for field testing, calibration, start-up, and operator training for this project. Include references of recent projects of these individual persons.

4. Submit specific documentation which verifies that Instrumentation Subcontractor employs the minimum of individuals who have been formally trained in the application of the:

a. Indicated operating systems.
b. Indicated software packages.
c. Indicated graphical user interface software packages.

5. Document that the applicant's company has been actively involved in the instrumentation systems business (under the same corporate name).

1.2 RELATED SECTIONS

A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.

1. Section 16010 Basic Electrical Materials and Methods
2. Division 13

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. The Work of this Section shall comply with the current editions of the following codes as adopted by the City of San Diego Municipal code:

1. National Electrical Code (NEC)
2. Uniform Building Code (UBC)

B. Except as otherwise indicated, the current editions of the following apply to the Work of this Section:

1. ANSI/SA S 5.1 Instrumentation Symbols and Identification
2. ISA-S20 Specification Forms for Process Measurement and Control Instruments

1.4 CONTRACTOR SUBMITTALS

A. General: Submittals shall be furnished in accordance with the following:

1. Coordinate the instrumentation Work so that the complete instrumentation and control system will be provided and will be supported by accurate shop drawings and record drawings.
2. Symbology and Nomenclature: In these Contract Documents, all systems, all meters, all instruments, and all other elements are represented schematically, and are designated by symbology as derived from Instrument Society of America Standard ANSI/ISA S5.1 - Instrumentation Symbols and Identification. The nomenclature and numbers designated herein and on the Drawings shall be employed exclusively throughout shop drawings, and similar materials. No other symbols, designations, or nomenclature unique to the manufacturer's standard methods shall replace those prescribed above, used herein, or on the Drawings.

B. Instrument Submittal:

1. Provide a complete index that lists each device by tag number, type and manufacturer. Provide a data sheet for each different type of instrument with the list of tag names. Provide a technical brochure for each data sheet.

C. Shop Drawings:

1. General:

a. Shop drawings shall include the letter head or title block of the Instrumentation Subcontractor. The title block shall include, as a minimum, the Instrumentation Subcontractor's registered business name and address, project name, drawing name, revision level, and personnel responsible for the content of the drawing.
b. Organization of the shop drawing submittals shall be compatible with eventual submittals for later inclusion in the operations and maintenance information. Submittals that are improperly organized or incomplete for a given loop will be rejected.
c. Shop drawing information shall be bound in standard size, 3 ring, loose leaf, vinyl plastic, hard cover binders suitable for bookshelf storage. Binder ring size shall not exceed 3 inches.
d. Interfaces between instruments, motor starters, control valves, variable speed drives, flow meters, chemical feeders and other equipment related to the I&C shall be included in the shop drawing submittal.

2. Project-Wide Loop Drawing Submittal: Furnish a Project-wide Loop Drawing Submittal (PLDS) that completely defines and documents the contents of each monitoring, alarming, interlock, and control loop associated with equipment provided under the instrumentation sections, equipment provided under sections in other Divisions, existing, and OWNER-furnished equipment that is to be incorporated into the I&C. The PLDS shall be a singular complete

bound package electronically drafted in INTERGRAPH MICROSTATION format, submitted within 120 days after contract award, and shall include the following:

a. A complete index in the front of each bound volume. The loop drawings shall be indexed by systems or process areas. All loops shall be tagged in a manner consistent with the Contract Documents. Loop drawings shall be submitted for every analog and discrete monitoring and control loop.

b. Drawings showing definitive diagrams for every instrumentation loop system. These diagrams shall show and identify each component of each loop or system using legend and symbols from ANSI/ISA S5.4 - Instrument Loop Drawings, and as defined by the most recent revision in ISA. Each system or loop diagram shall be drawn on a separate drawing sheet. Loop drawings shall be developed for loops in equipment vendor supplied packages, equipment provided under the instrumentation sections, and OWNER furnished equipment. The loop drawings shall also show all software modules and linkages. In addition to the expanded ISA S5.4 requirements the loop diagrams shall also show the following details:

    1) Functional name of each loop.
    2) Reference name, drawing, and loop diagram numbers for any signal continuing off the loop diagram sheet.
    3) MCC panel, circuit, and breaker numbers for all power feeds to the loops and instrumentation.
    4) Designation, and if appropriate, terminal assignments associated with every manhole, pull box, junction box, conduit, and panel through which the loop circuits pass.
    5) Vendor panel, instrument panel, conduit, junction boxes, equipment and PLC I/O terminations, termination identification wire numbers and colors, power circuits, and ground identifications.

c. Itemized instrument summary. The instrument summary shall list all of the key attributes of each instrument provided under this Contract. As a minimum, attributes shall include:

    1) Tag number
    2) Manufacturer
    3) Model number
    4) Service
    5) Area location
    6) Calibrated range
    7) Loop drawing number
    8) Associated LCP (Local Control Panel), PLC (Programmable Logic Controller), PCM (Process Control Module), or RCP (Remote Control Panel)

3. Test Procedure Submittals:

   a. Submit the proposed procedures to be followed during tests of the I&C and its components.
   b. Preliminary Submittal: Outlines of the specific proposed tests and examples of proposed forms and checklists.
   c. Detailed Submittal: After approval of the Preliminary Submittal, the CONTRACTOR shall submit the proposed detailed test procedures, forms, and checklists. This submittal shall include a statement of test objectives with the test procedures.
   d. Certify in writing that for each loop or system checked out, and all discrepancies have been corrected.

4. Calibration Sheets: Each instrument calibration sheet shall provide the following information and a space for sign-off on individual items and on the completed unit:

   a. Project name
   b. Loop number
   c. Tag number
   d. Manufacturer
   e. Model number
   f. Serial number
   g. Calibration range
   h. Calibration data: Input, output, and error at 10, 50 and 90% of span
   i. Switch setting, contact action, and dead band for discrete elements
   j. Space for comments
   k. Space for sign-off by Instrumentation Supplier and date
   l. Test equipment used and associated serial numbers

5. Training Submittals: The CONTRACTOR shall submit a training plan that includes:
   a. Schedule of training courses including dates, durations, and locations of each class.
   b. Resumes of the instructors who will actually implement the plan.

D. Operations and Maintenance Information:

1. General: Operations and maintenance information shall be based upon the approved shop drawing submittals as modified for conditions encountered in the field during the Work.

2. Operations and maintenance information submitted shall be organized as follows for each process:

   a. Section A - Loop Drawings
   b. Section B - Instrument Summary
   c. Section C - Instrument Data Sheets
   d. Section D - Sizing Calculations
   e. Section E - Instrument Installation Details
   f. Section F - Test Results

3. CONTRACTOR-certified results from Calibration Loop Testing, Precommissioning, and Performance Testing shall be included in Section H of the operations and maintenance information.

E. Record Drawings:

1. Keep current a set of complete loop and schematic diagrams which shall include all field and panel wiring, piping and tubing runs, routing, mounting details, point-to-point diagrams with cable, wire, tube and termination numbers. These drawings shall include all instruments and instrument elements. One set of record drawings electronically formatted in INTERGRAPH MICROSTATION format and 2 hard copies shall be submitted after completion of all Precommissioning tasks but before Performance Testing. All such drawings shall be submitted for review before acceptance of the completed Work.

1.5 FACTORY TESTING

A. Arrange for the Manufacturers of the equipment and fabricators of panels and cabinets supplied under this Section to allow the ENGINEER to inspect and witness the testing of the equipment at the site of fabrication. Equipment shall include the cabinets, special control systems, flow measuring devices, and other pertinent systems and devices. A minimum of 10 working days notification shall be provided to the ENGINEER before testing. No shipments shall be made without the ENGINEER's approval.

1.6 PERIOD FOR CORRECTION OF DEFECTS

A. Correct all defects in the I&C upon notification from the OWNER within one year from the date of Substantial Completion. Corrections shall be completed within 5 days after notification.

1.7 SYSTEM DESCRIPTION

A. All instruments shall return automatically and immediately to accurate measurement upon restoration of power after a power failure, except where specifically noted.

B. Provide and install two-wire transmitters in local panels or enclosures with receiver/indicator/retransmitter as required.

C. Provide instrument transmitters which produce isolated 4-20 mAdc analog signals. Follow ISA-S50.1.

D. For instruments which produce a pulse signal, use dc pulse frequency signals whose repetition rate is directly proportional to the process variable over a 10:1 range. Use 24 Vdc power source.

E. Provide instruments with conformably coated printed circuit boards to prevent damage by dust, moisture, fungus, and airborne contaminants.

F. Provide instruments complete with mounting hardware, floor stands, wall brackets, or

instrument racks.

G. Use linear, direct reading indicators unless otherwise specified.

1.8 QUALITY ASSURANCE

A. Provide instrumentation of rugged construction designed for the site conditions. Provide only new, standard, first-grade materials.

B. Provide material and equipment in accordance with applicable codes and standards, except as modified by the specifications.

C. Use single source manufacturer for each instrument type. Use the same manufacturer for different instrument types whenever possible.

D. Coordinate instrumentation to assure proper interface and system integration. Provide signal processing equipment, to include, but not be limited to, process sensing and measurement, transducers, signal converters, conditioners, transmitters, receivers, and power supplies. Coordinate the various subcontractors, equipment suppliers, and manufacturers.

1.9 WARRANTY

A. Warranty the instrumentation, materials, workmanship, and installation to be free from defects for a period of one year from the date of final acceptance of the equipment.

B. Furnish and install replacement parts during the warranty period for any defective component at no additional cost. Replace spare parts consumed during the warranty period with new equipment at no additional cost, immediately after use, to restore the spare parts inventory.

PART 1 - PRODUCTS

1.1 GENERAL

A. Code and Regulatory Compliance: All I&C Work shall conform to or exceed the applicable requirements of the National Electrical Code. Conflicts between the requirements of the Contract Documents and any codes or referenced standards or specifications shall be resolved with the more stringent requirement having precedence.

B. Current Technology: All meters, instruments, and other components shall be the most recent field-proven models marketed by their manufacturers at the time of submittal of the shop drawings unless otherwise required to match existing equipment.

C. Hardware Commonality: All instruments that use a common measurement principle (for example, d/p cells, pressure transmitters, level transmitters that monitor hydrostatic head) shall be furnished by a single Manufacturer. All panel mounted instruments shall have matching style and general appearance. Instruments performing similar functions shall be of the same type, model, or class, and shall be from a single Manufacturer.

D. Loop Accuracy: The accuracy of each instrumentation system or loop shall be determined as a probable maximum error; this shall be the square-root of the sum of the squares of certified "accuracies" of the designated components in each system, expressed as a percentage of the actual span or value of the measured variable. Each individual instrument shall have a minimum accuracy of ±0.5% of full scale and a minimum repeatability of ±0.25% of full scale unless otherwise indicated. Instruments that do not conform to or improve upon these criteria are not acceptable.

E. Instrument and Loop Power: Power requirements and input/output connections for all components shall be verified. Power for transmitted signals shall, in general, originate in and be supplied by the control panel devices. The use of "2- wire" transmitters is preferred, and use of "4-wire" transmitters shall be minimized. Individual loop or redundant power supplies shall be provided as required by the Manufacturer's instrument load characteristics to ensure sufficient power to each loop component. All power supplies shall be mounted within control panels or in the field at the point of application.

F. Loop Isolators and Convertors: Signal isolators shall be provided as required to ensure adjacent component impedance match where feedback paths may be generated, or to maintain loop integrity during the removal of a loop component. Dropping precision wire-wound resistors shall be installed at all field side terminations in the control panels to ensure loop integrity. Signal conditioners and converters shall be provided where required to resolve any signal level incompatibilities or provide required functions.

G. Environmental Suitability: All indoor and outdoor control panels and instrument enclosures shall be suitable for operation in the ambient conditions associated with the locations designated in the Contract Documents. Heating, cooling, and dehumidifying devices shall be provided in order to maintain all instrumentation devices 20% within the minimums and maximums of their rated environmental operating ranges. Provide all power wiring for these devices. Enclosures suitable for the environment shall be furnished. All instrumentation in hazardous areas shall be suitable for use in the particular hazardous or classified location in which it is to be installed.

H. Signal Levels: Analog measurements and control signals shall be as indicated herein, and unless otherwise indicated, shall vary in direct linear proportion to the measured variable. Electrical signals outside control panels shall be 4 to 20 mA DC except as indicated. Signals within enclosures may be 1 to 5 VDC. All electric signals shall be electrically or optically isolated from other signals. All pneumatic signals shall be 3 to 15 psig with 3 psig equal to 0% and 15 psig equal to 100%.

I. Control Panel Power Supplies: All power supplies shall have an excess rated capacity of 40%. The failure of a power supply shall be repeated to the SCADA System.

1.2 OPERATING CONDITIONS

A. The I&C shall be designed and constructed for satisfactory operation and long, low maintenance service under the following conditions:

1. Environment - Coastal

2. Temperature Range - 32 through 104 degrees F

3. Thermal Shock - 1 degree F per minute, maximum

4. Relative Humidity - 20 through 90%, non-condensing

1.3 SPARE PARTS AND SPECIAL TOOLS

A. Spare Parts: Furnish the spare parts selected by the ENGINEER from the priced list of spare parts in the Instrument Submittal and Control Panel Engineering Submittal in conformance with Section 13370 - Control Panels.

B. Special Tools: Furnish a priced list of all special tools required to calibrate and maintain all of the instrumentation provided under the Contract Documents. After approval, furnish all listed tools.

C. Timing of Submittals: All special tools and spare parts shall be submitted before startup starts, and shall be suitably wrapped and identified.

1.4 LIMIT SWITCH

A. Each intrusion alarm limit switch shall transmit a signal when the monitored door or hatch is not in the closed position.

B. Each limit switch shall be SPDT, rated for 5 amps. Conduit entrance and terminals shall be epoxy sealed. Limit switch mounting and actuator shall be determined by the Contractor to provide a reliable, positive, and accurate indication of entrance. The switch shall be normally open (actuated closed when the door or hatch is closed). Switch shall be mounted for minimum obstruction of access. Limit switches shall be Type "C" by Square D Class 9007, Allen Bradley 802T, or equal.

Tag No.	Service	Trip Set Point	NEMA Rating
ZS-A	PRS Vault	N/A	4
ZS-B	PRS Vault	N/A	4
ZS-C	RCP Panel	N/A	4
ZS-D	PIT Enclosure	N/A	4

1.5 COPPER TUBING AND CONNECTORS

A. Copper tubing shall be ASTM B88 or 75, type K or L, Annealed temper (soft copper).

B. Connectors shall be compression fitted and made of cast copper alloy, brass, or stainless steel. Cast copper alloy fittings shall comply with ASME/ANSI B16.26 specifications.

C. Thread compounds and lubricants shall be used according to the manufacturer's recommendations. Teflon tape shall not be used.

D. Copper tubing and connectors shall be Swagelock, Hoke or equal.

E. Copper tubing supports shall be two hole mounted, made of 304 stainless steel, and have SBR rubber inserts. Use Mc Master-Carr catalog number 8981T25 or equal. Single hole rubber cushioned loop straps are not acceptable.

PART 2 - EXECUTION

2.1 PRODUCT HANDLING

A. Shipping Precautions: After completion of shop assembly, factory test, and approval, all equipment, cabinets, panels, and consoles shall be packed in protective crates and enclosed in heavy duty polyethylene envelopes or secured sheeting to provide complete protection from damage, dust, and moisture. Dehumidifiers shall be placed inside the polyethylene coverings. The equipment shall then be skid-mounted for final transport. Lifting rings shall be provided for moving without removing protective covering. Boxed weight shall be shown on shipping tags together with instructions for unloading, transporting, storing, and handling at the job site.

B. Special Instructions: Special instructions for proper field handling, storage, and installation required by the Manufacturer shall be securely attached to each piece of equipment before packaging and shipment.

C. Tagging: Each component shall be tagged to identify its location, instrument tag number, and function in the system. A permanent stainless steel or other non-corrosive material tag firmly attached and permanently and indelibly marked with the instrument tag number, as given in the tabulation, shall be provided on each piece of equipment in the I&C. Identification shall be prominently displayed on the outside of the package.

D. Storage: Equipment shall not be stored outdoors. Equipment shall be stored in dry permanent shelters, including in-line equipment, and shall be adequately protected against mechanical injury. If any apparatus has been damaged, such damage shall be repaired by the CONTRACTOR at no additional cost to the OWNER. If any apparatus has been subject to possible injury by water, it s h a l l be thoroughly dried out and put through tests as directed by the ENGINEER. Such tests shall be at no additional cost to the OWNER, and if the equipment fails the tests, it shall be replaced at no additional cost to the OWNER.

2.2 MANUFACTURER'S SERVICES

A. Manufacturer's services shall be furnished for the following equipment:

1. All flow meters in new or potable water streams that relate to process control, mass balance calculations, and billing of customers.

2. All process analyzers

3. All hazardous gas detection equipment

4. Instruments that require specialized knowledge, such as vibration detectors.

B. Furnish the following Manufacturer's services for the instrumentation listed above:

1. Perform bench calibration

2. Oversee installation

3. Verify installation of installed instrument

4. Certify installation and reconfirm Manufacturer's accuracy statement

5. Oversee loop testing, prepare loop validation sheets, and certify loop testing

6. Oversee precommissioning, prepare precommissioning validation sheets, and certify precommissioning

7. Train the OWNER's personnel

2.3 INSTALLATION

A. General:

1. All instrumentation, including instrumentation furnished under other Divisions, shall be installed under Division 13 and the manufacturers' instructions.

2. Equipment Locations: The monitoring and control system configurations indicated are diagrammatic. The locations of equipment are approximate. The exact locations and routing of wiring and cables shall be governed by structural conditions and physical interferences and by the location of electrical terminations on equipment. All equipment shall be located and installed so that it will be readily accessible for operation and maintenance. Where job conditions require reasonable changes in approximated locations and arrangements, or when the OWNER exercises the right to require changes in location of equipment that do not impact material quantities or cause material rework, make such changes without additional cost to the OWNER.

B. Conduit, Cables, and Field Wiring

1. All conduit shall be provided under Division 16.

2. All 4-20 mA signal circuits, process equipment control wiring, signal wiring to field instruments, SCADA and PLC input and output wiring and other field wiring and cables shall be provided under Division 16.

3 All SCADA and PLC equipment cables, data highway communication networks shall be provided under Division 13.

4 All terminations and wire identification at I&C equipment furnished under this or any other Division shall be provided under Division 13.

C. Instrumentation Tie-Downs: All instruments, control panels, and equipment shall be anchored by methods that comply with seismic requirements that apply to the site.

D. Ancillary Devices: The Contract Documents show all necessary conduit and instruments required to make a complete instrumentation system. The CONTRACTOR shall be responsible for providing any additional or different type connections as required by the instruments and specific installation requirements at no additional cost to the OWNER. All such additions and all such changes, including the proposed method of installation, shall be submitted to the ENGINEER for approval before commencing the Work. Such changes shall not be a basis of claims for extra work or delay.

E. Installation Criteria and Validation: All field-mounted components and assemblies shall be installed and connected according to the requirements below:

1. Installation personnel have been instructed on installation requirements of the Contract Documents.

2. Technical assistance is available to installation personnel at least by telephone.
3. Installation personnel have at least one copy of the approved shop drawings and data.
4. All power and signal wires shall be terminated with crimped type lugs.
5. All connectors shall be, as a minimum, water tight.
6. All wires shall be mounted clearly with an identification tag that is of a permanent and reusable nature.
7. All wire and cable shall be arranged in a neat manner and securely supported in cable groups and connected from terminal to terminal without splices unless specifically approved by the ENGINEER. All wiring shall be protected from sharp edges and corners.
8. All mounting stands and bracket materials and workmanship shall comply with requirements of the Contract Documents.
9. Verify the correctness of each installation, including polarity of electric power and signal connections, and making sure all process connections are free of leaks. Certify in writing that for each loop or system checked out, all discrepancies have been corrected.
10. The OWNER will not be responsible for any additional cost of rework attributable to actions of the CONTRACTOR or the Instrumentation Subcontractor.

2.4 LOOP TESTING

A. General: Individual instrument loop diagrams per ISA Standard S5.4 - Instrument Loop Diagrams, expanded format, shall be submitted to the ENGINEER for review before the loop tests. The CONTRACTOR shall notify the ENGINEER of scheduled tests a minimum of 30 days before the estimated completion date of installation and wiring of the I&C. After the ENGINEER's review of the submitted loop diagrams for correctness and compliance with the specifications, loop testing shall proceed. The loop check shall be witnessed by the ENGINEER.

B. Instrument and Instrument Component Validation: Each instrument shall be field tested, inspected, and adjusted to its indicated performance requirement in accordance its Manufacturer's specifications and instructions. Any instrument that fails to meet any Contract requirement, or, in the absence of a Contract requirement, any published manufacturer performance specification for functional and operational parameters, shall be repaired or replaced, at the discretion of the ENGINEER at no additional cost to the OWNER.

C. Loop Validation: Controllers and electronic function modules shall be field tested and exercised to demonstrate correct operation. All control loops shall be checked under simulated operating conditions by impressing input signals at the primary control elements and observing appropriate responses of the respective control and monitoring elements, final control elements, and the graphic displays associated with the SCADA and PLC. Actual signals shall be used wherever available. Following any necessary corrections, the loops shall be retested. Specified accuracy tolerances for each analog network are defined as the root-mean-square-summation of individual

component accuracy requirements. Individual component accuracy requirements shall be as indicated by Contract requirements or by published manufacturer accuracy specifications, whenever Contract accuracy requirements are not indicated. Each analog network shall be tested by applying simulated analog or discrete inputs to the first element of an analog network. For networks that incorporate analog elements, simulated sensor inputs corresponding to 20, 40, 60, 80 and 100% of span shall be applied, and the resulting element outputs monitored to verify compliance to calculated root-mean-square-summation accuracy tolerance requirements. Continuously variable analog inputs shall be applied to verify the proper operation and setting of discrete devices. Provisional settings shall be made on controllers and alarms during analog loop tests. All analog loop test data shall be recorded on tests that include calculated root-mean-square-summation system accuracy tolerance requirements for each output.

D. Loop Validation Sheets: Prepare loop confirmation sheets for each loop covering each active instrumentation and control device except simple hand switches and lights. Loop confirmation sheets shall form the basis for operational tests and documentation. Each loop confirmation sheet shall cite the following information and shall provide spaces for sign-off on individual items and on the complete loop by the Instrumentation Supplier:

1. Project name
2. Loop number
3. Tag number, description, manufacturer and model number for each element
4. Installation bulletin number
5. Specification sheet number
6. Loop description number
7. Adjustment check
8. Space for comments
9. Space for loop sign-off by Instrumentation Supplier and date
10. Space for ENGINEER witness signature and date

E. Loop Certifications: When installation tests have been successfully completed for all individual instruments and all separate analog control networks, a certified copy of all test forms signed by the ENGINEER or the ENGINEER representative as a witness, with test data entered, shall be submitted to the City together with a clear and unequivocal statement that all instrumentation has been successfully calibrated, inspected, and tested.

2.5 PRECOMMISSIONING

A. General: Precommissioning shall start after acceptance of all wire test, calibration tests and loop tests, and all inspections have demonstrated that the instrumentation and control system complies with all Contract requirements. Precommissioning shall demonstrate proper operation of all systems with process equipment operating over full operating ranges under conditions as closely resembling actual operating conditions as possible.

B. Precommissioning Procedures and Documentation: All precommissioning and test activities shall follow detailed test procedures and check lists accepted by the Resident Engineer. All test data shall be acquired using equipment as required and

shall be recorded on test forms accepted by the ENGINEER, that include calculated tolerance limits for each step. Completion of all system precommissioning and test activities shall be documented by a certified report, including all test forms with test data entered, delivered to the ENGINEER with a clear and unequivocal statement that all system precommissioning and test requirements have been satisfied.

C. Operational Validation: Where feasible, system precommissioning activities shall include the use of water to establish service conditions that simulate, to the greatest extent possible, normal final control element operating conditions in terms of applied process loads, operating ranges, and environmental conditions. Final control elements, control panels, and ancillary equipment shall be tested under start-up and steady-state operating conditions to verify that proper and stable control is achieved using local field mounted control circuits. All hardwired and software control circuit interlocks and alarms shall be operational. The control of final control elements and ancillary equipment shall be tested using both manual and automatic (where provided) control circuits. The stable steady-state operation of final control elements running under the control of field mounted automatic analog controllers or software based controllers shall be assured by adjusting the controllers as required to eliminate oscillatory final control element operation. The transient stability of final control elements operating under the control of field mounted, and software based automatic analog controllers shall be verified by applying control signal disturbances, monitoring the amplitude and decay rate of control parameter oscillations (if any) and making necessary controller adjustments as required to eliminate excessive oscillatory amplitudes and decay rates.

D. Loop Tuning: All electronic control stations incorporating proportional, integral or differential control circuits shall be optimally tuned, experimentally, by applying control signal disturbances and adjusting the gain, reset, or rate settings as required to achieve a proper response. Measured final control element variable position/speed set point settings shall be compared to measured final control element position/speed values at 20, 40, 60, 80 and 100% of span and the results checked against indicated accuracy tolerances.

E. Precommissioning Validation Sheets: Precommissioning shall be documented on one of two types of test forms as follows:

1. For functions that can be demonstrated on a loop-by-loop basis, the form shall include:

    a. Project name
    b. Loop number
    c. Loop description
    d. Tag number, description, manufacturer and data sheet number for each component.
    e. Space for sign-off and date by both the Instrumentation Subcontractor and ENGINEER.

2. For functions that cannot be demonstrated on a loop-by-loop basis, the test form shall be a listing of the specific tests to be conducted. With each test description the following information shall be included:
    a. Specification page and paragraph of function demonstrated
    b. Description of function
    c. Space for sign-off and date by both the Instrumentation Subcontractor and ENGINEER.

F. Precommissioning Certification: Submit an instrumentation and control system precommissioning completion report that shall state that all Contract requirements have been met and shall include a listing of all instrumentation and control system maintenance and repair activities conducted during the precommissioning testing. Acceptance of the instrumentation and control system precommissioning testing must be provided in writing by the ENGINEER before the performance testing may begin.

2.4 ONSITE SUPERVISION

A. Furnish the services of an on-site service engineer to supervise and coordinate installation, adjustment, testing, and start-up of the I&C. The ENGINEER will be present during the total period required to affect a complete operating system. A qualified team of the Instrumentation Subcontractor personnel shall be on site for 8 hours to check all equipment, perform the tests indicated in this Section, and furnish startup services.

2.5 PERFORMANCE TEST

A. The entire I&C shall operate for 7 days without failure.
B. Furnish all necessary support staff as required to operate the system and to satisfy the repair or replacement requirements.
C. If any component fails during the performance test, it shall be repaired or replaced and the I&C shall be restarted on another 7-day period.

2.6 TRAINING

A. General: Train the OWNER's personnel on the maintenance, calibration and repair of all instruments provided under this Contract.
B. Instructions: The training shall be performed by qualified representatives of the equipment manufacturers and shall be specific to each piece of equipment.
C. Duration: Each training class shall be a minimum of 8 hours in duration and shall cover, as a minimum, operational theory, maintenance, troubleshooting/repair, and calibration of instruments.
D. Schedule: Training shall be performed during the precommissioning phase of the project. The training sessions shall be scheduled a minimum of 3 weeks in advance of when the courses are to be initiated. The ENGINEER will review the course outline for suitability and provide comments that shall be incorporated.
E. Agenda: The training shall include operation and maintenance procedures, troubleshooting with necessary test equipment, and changing set points, and calibration for that specific piece of equipment.
F. Documentation: Within 10 days after the completion of each session the CONTRACTOR shall submit the following:

1. List of all OWNER personnel who attended the session.
2. Evaluation of OWNER personnel via written testing or equivalent evaluation.
3. Copy of the training materials used including all notes, diagrams, and comments.

2.7 ACCEPTANCE

A. For the purpose of this Section, the following conditions shall be fulfilled before the Work is considered substantially complete:

1. All submittals have been completed and approved.
2. The I&C has been calibrated, loop tested and precommissioned.
3. The OWNER training has been performed.
4. All required spare parts and expendable supplies and test equipment have been delivered to the ENGINEER.
5. The performance test has been successfully completed.
6. All punch-list items have been corrected.
7. All record drawings in both hard copy and electronic format have been submitted.
8. Revisions to the operations and maintenance manuals information that may have resulted from the field tests have been made and reviewed.
9. All debris associated with installation of instrumentation has been removed.
10. All probes, elements, sample lines, transmitters, tubing, and enclosures have been cleaned and are in like-new condition.

****END OF SECTION****

SECTION 13370 – CONTROL PANELS

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

A. General: The CONTRACTOR shall provide control panels, complete and operable, in accordance with the Contract Documents.

B. The provisions of this Section apply to local control panels provided in equipment systems specified in other sections unless indicated otherwise in those sections.

1.2 RELATED SECTIONS

A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, also apply to the extent required for proper performance of this Work:

1. Section 13300 Instrumentation and Control
2. Section 13374 Control Panel Instrumentation

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Except as otherwise indicated, the current editions of the following commercial standards apply to the Work of this Section:

1.	ASTM A36	Specification for Carbon Structural Steel
2.	ASTM A283	Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
3.	NEMA ICS-1-101	Industrial Control Systems
4.	SSPC-SP6	Specification for the Society for Protective Coating B Commercial Blast

B. Underwriters Laboratories (UL) Publication:

1. 508 Industrial Control Equipment

1.4 CONTRACTOR SUBMITTALS

A. Shop drawings shall be submitted in accordance with Section 13300 - Instrumentation and Control.

B. Control Panel Engineering Submittal: The CONTRACTOR shall submit a control panel engineering submittal (CPES) for each control panel and enclosure provided under Division 13. The CPES shall completely define and document the construction, finish, layout, power circuits, signal and safety grounding circuits, fuses, circuit breakers, signal circuits, internally mounted instrumentation and SCADA system components,

face plate mounted instrumentation components, internal panel arrangements, and external panel arrangements. All panel drawings shall be "B" size, and all data sheets and manufacturer specification sheets shall be "A" size. The submittal shall be in conformance with NEMA Standard ICS-1-1.01, shall be submitted as a singular complete bound volume or multi-volume package within 120 calendar days after Notice to Proceed and shall have the following content:

1. A complete index shall appear in the front of each bound volume. Panels shall be indexed by system or process area, and drawings and data associated with a panel shall be grouped together. All panel tagging and nameplate nomenclature shall be consistent with the requirements of the Contract Documents.

2. Scale construction drawings which define and quantify the type and gauge of steel to be used for panel fabrication, the ASTM A36 grade proposed for structural shapes and straps, panel door locks and hinge mechanisms, type of bolts and bolt locations for section joining and anchoring, details and proposed locations on the use of "Unistrut" members, stiffener materials and locations, electrical terminal box and outlet locations, electrical access locations, print pocket locations, writing board locations and lifting lug material and locations.

3. Scale physical arrangement drawings which define and quantify the physical groupings comprising control panel sections, auxiliary panels, subpanels, and racks. Cutout locations with nameplate identifications shall be indicated.

4. Front of panel layouts for all control panels.

5. Schematic/elementary diagrams depicting all control devices and circuits and their functions.

6. Wiring/connection diagrams locating and identifying electrical devices, terminals and interconnecting wiring. These diagrams shall show interconnecting wiring by lines, designate terminal assignments, and show the physical location of all electrical and control devices.

7. Interconnection diagrams locating and identifying all external connections between the control panel/control panel devices and associated equipment. These diagrams shall show interconnecting wiring by lines, designate terminal assignments, and show the physical location of all panel ingress and egress points.

8. Completed ISA-S20 data sheets for all instrumentation devices associated with each control panel, supplemented with manufacturer specification sheets which verify conformance to the requirements of the Contract Documents.

9. A bill of material which enumerates all devices associated with the control panel.

10. A priced listing of analog spare parts in conformance with Section 13300 - Instrumentation and Control.

1.5 SPARE PARTS AND SPECIAL TOOLS

A. Control panel spare parts selected by the ENGINEER and special tools shall be provided in accordance with Section 13300 - Instrumentation and Control.

B. All spare parts and special tools shall be submitted before startup commences, suitably wrapped and identified.

1.6 CERTIFICATION

A. Each control panel shall bear the UL label. The UL label shall apply to the specific equipment supplied with the enclosure, and the installation and wiring of the equipment within and on the enclosure. If required for UL labeling, provide ground fault interrupters, isolation transformers, fuses, and any other necessary equipment, even though such equipment is not indicated on the Drawings. The fabricator shall be an approved UL listed manufacturer.

B. The shop that builds the controller must be a UL 508A listed panel shop/fabricator/builder (certified & authorized by UL). This shop will then install a UL sticker of approval on the assembled controller. Otherwise UL or a UL listed third party is needed to inspect, evaluate the work, issue an evaluation report and install the UL approval sticker.

PART 2 - PRODUCTS

1.1 GENERAL

A. Environmental Suitability: All outdoor control panels and instrument enclosures shall be suitable for operation in the ambient conditions associated with the locations designated in the Contract Documents. Heating, cooling, and dehumidifying devices shall be provided in order to maintain all instrumentation devices no less than 20% below the maximum rated environmental operating level, and at least 20% above the minimum rated environmental operating level. The CONTRACTOR shall provide all power wiring for these devices. Enclosures suitable for the environment shall be furnished.

B. The control panel controls shall be as shown on the drawings. Control conductors shall be provided in accordance with the indicated requirements.

C. Each source of foreign voltage shall be isolated by providing disconnecting or pull-apart terminal blocks or a disconnect operable from the control panel front. Each control panel shall be provided with identified terminal strips for the connection of all external conductors. Provide sufficient terminal blocks to connect 25% additional conductors for future use. Discrete outputs from the control panel shall be provided by electrically isolated contacts rated for 5 A at

120 VAC. Analog inputs and outputs shall be an isolated 4-20 mA, 2-wire signals with power supply.

D. Programmable Logic Controllers (PLCs) may be provided in lieu of relays if the programmable logic controllers match the PLCs provided under Section 13374 - Control Panel Instrumentation.

E. All control panel mounted devices shall be mounted a minimum of 3 feet above finished floor elevation.

F. Painting: The interior of the control panel, back-panel, and side-panel(s) shall have a white finish coat.

1.2 CONTROL PANELS

A. Remote Control Panel RCP:

1. Fabricate panels, install instruments, plumb and wire in the factory.
2. Furnish termination panels, if required. Include terminal blocks; interface hardware, wiring, and cabling necessary for a complete system.
3. Use panel fabrication techniques that allow for removal and maintenance of all equipment after installation.
4. Provide equipment-mounting racks of standard construction and dimensions. Provide front access doors only unless specified otherwise. Provide space for internal wiring and for the connection of external wiring.
5. Do not locate any equipment within bottom two inches of panel.
6. All equipment located within the panel shall be rigidly secured.
7. All outdoor panels shall be provided with breather/drain plugs.
8. Provide a hasp on all enclosure covers (doors) for Owner furnished locks. The Owner will supply padlocks. Enclosures shall be 316 stainless steel. Provide single door NEMA type 4X with back panels.
9. Provide structural reinforcements within enclosures to insure a plane surface, to limit vibration and to provide rigidity during shipment, installation and operation without distortion or damage to the panel or to any instrument.
10. Grind and sand exterior welds to a smooth finish free of burrs. Make surfaces free of ridges, nuts, bolt heads and similar protrusions.
11. Internally, supply the enclosures with a structural steel framework or bracing for equipment support and enclosure bracing. Where two or more enclosures are shown mounted immediately adjacent to one another, bolt them securely together with their front faces parallel.
12. Provide each enclosure with full gaskets on covers.

B. Electrical Requirements:

1. Conduit, wireways, switches, wire, and electrical fittings shall be provided for all 115 V circuits to instruments and other electrical devices as required for a complete and operable installation.

2. Conduit, wireways, junction boxes, and fittings shall be provided for all signal wire, thermocouple, or resistance thermometer lead wire. Conduit or wireway runs shall include those required between temperature sensors and temperature transmitters and between the thermocouple wireway or junction box to instruments.
3. Each terminal connection shall have a plastic plate with a terminal and instrument tag number. All wiring shall be identified with stamped tubular wire and markers.
4. Panels shall be provided with two switched 500 lumen LED panel lights. Two lights shall be provided for every 4 feet of panel width and shall be mounted inside and in the top of the back-of-panel area.
5. The RCP shall be provided with a 15-A, 120-V, service outlet circuit within the back-of-panel area. The circuit shall be provided with 3-wire, 120-V, 15-A, duplex receptacles one for every 4 feet of panel width (one minimum per panel), spaced evenly along the back-of-panel area.
6. Wall mounted or pedestal mounted panels shall be so sized as to adequately dissipate heat generated by equipment mounted in or on the panel.
7. The RCP shall be provided with thermostatically controlled heaters that maintain inside temperature above 40 degrees F.
8. A door switch shall control two LED panel lights within the RCP.
9. Wiring methods and materials for all panels shall be in accordance with the NEC requirements for General Purpose (no open wiring) unless otherwise indicated.
10. Signal and Control Circuit Wiring:

    a. Wire type and sizes: Conductor shall be flexible stranded copper machine tool wire UL listed Type MTW, and shall be rated 600 V. Wires for instrument signal circuits and alarm input circuits shall be No. 14 AWG. All other wires, including shielded cables, shall be No. 16 AWG, minimum.
    b. Wire Marking: Each signal, control, alarm, and indicating circuit conductor connected to a given electrical point shall be designated by a single unique number which shall be shown on all shop drawings. These numbers shall be marked on all conductors at every terminal using white numbered wire markers which shall be plastic-coated cloth, Brady Type B-500 or equal or shall be permanently marked by heat-shrink plastic.
    c. Flexible conduit is not acceptable except when specifically approved by the ENGINEER in writing.
    d. Conduit fittings shall be Crouse-Hinds cast fittings or equal.
    e. Splicing of wires in conduits is discouraged. If permitted, splicing shall be approved by the ENGINEER and splices shall be soldered or pressure type crimped.
    f. For case grounding, panels shall be provided with a 1/4-inch by 1-inch copper ground bus complete with solderless connector for one No. 4 AWG bare stranded copper cable. The copper cable shall be connected to a system ground loop.

11. DIN Rail Mounted Terminal Blocks:

    a. Provide factory assembled terminal blocks on a mounting channel and bolt the channel to the inside of the panel. Space terminal block strips no closer than 6 inches center to center.
    b. Provide screw type 600 V terminals with pressure plate to accept wire size #12 AWG and smaller. Do not use miniature terminal blocks.
    c. Provide a continuous marking strip with the terminals. Provide a separate terminal for terminating each shield wire.
    d. Reserve one side of each terminal strip for field incoming conductors. Do not make common connections and jumpers required for internal wiring on the field side of the terminal. Terminate no more than two wires at any one terminal.
    e. Provide a minimum of 25 percent spare terminals.
    f. The terminal block shall terminate wires without additional preparation such as tinning of wire ends, special connectors, etc.
    g. The insulation shall have wire entry funnels to facilitate insertion of wires.
    h. The insulating housing shall prevent stray strands from shorting out adjacent terminal blocks.
    i. The terminations shall be gastight to prevent corrosion due to corrosive atmosphere.
    j. Terminal screws shall be captive in the metal body or via the insulation housing.
    k. Once tightened terminal screws shall be useable with accessories such as center or insertion bridges; test sockets; separating plates, end covers, etc.
    l. Provide fusible terminal blocks with fuses and blown fuse indicators for each signal loop.
    m. Manufacturer: Phoenix Contact or equal.

12. DIN Rail Mounted Circuit Breakers:

    a. Circuit breakers shall be 115 VAC, single pole as manufactured by Allen Bradley Series 1492-GH; or approved equal.

13. Relay Sockets:

    a. Sockets for control relays shall be rated 5 amperes. Terminal screws shall be on the "Pressure Screw" type. Sockets shall be mounted via DIN rail and related hardware. Sockets shall be as manufactured by Allen Bradley Series 700-HN101; or approved equal.

14. Control Relay:

    a. Magnetically held relays shall have one spare contact. Control relays shall have contacts rated for 10-ampere inductive load, 125 volts, with coil voltage, number of poles, and pole arrangement as indicated on the plans. Relays shall be of the indicating type. Provide Allen Bradley Series 700-HA; or approved equal.

15. Selector Switches and Indicating Lights:

    a. Selector switches and indicating lights shall be supplied by one manufacturer and be of the same series or model type.
    b. Type: Heavy duty, oil tight.
    c. Selector switch contacts shall be rated for AC or DC current with devices simultaneously operated by the switch contacts but not less than 10 Amps resistive at 120 VAC/VDC continuous.
    d. Indicating lights shall be rated for 120 VAC. Lamps shall be high visibility LED type, long life (20,000 hours minimum). Indicating lights shall be push-to-test.

16. Electrical Locations:

    a. Terminal boxes for incoming and outgoing signal leads shall be located at the top or bottom of the panel as indicated or as otherwise required.

17. Power Supply Wiring:

    a. Unless otherwise indicated, all instruments, alarm systems, and motor controls shall operate on 24 VDC.
    b. At a location near the top of the panel (or bottom), the panel fabricator shall provide terminal box connections for the main power supply entry.
    c. Instruments located on the same panel section and serving the same process unit may be connected to a common branch circuit from the power supply. The number of circuits depends on the circuit load as indicated. Different panel sections or different process units shall not use common branch circuits. When instruments are not equipped with integral fuses, fuses shall be provided as required for the protection of individual instruments against fault currents. Fuses shall be mounted on the back of the panel in a fuse holder, and each fuse shall be identified by a service name tag.
    d. Each potentiometer type instrument, electronic transducer, controller, or analyzer shall have an individual disconnect switch. Disconnect switches shall have metal or plastic tags indicating instrument tag numbers. Individual plug and cord set power supply connections may be used without switches when indicated.

18. Alarm Wiring: The panel vendor shall provide all alarms including light cabinets, audible signal units, test and acknowledge switches, and remote logic units as indicated. Interconnecting wiring to panel mounted initiating devices shall also be wired by the panel vendor. The wiring from external initiating devices shall be provided by the installation contractor. Where plug and cord sets are provided for component interconnection, the panel vendor shall harness and support the cables in neat and orderly fashion. Where separate wire is required, panel vendor shall install No. 16 AWG with THWN or THHN insulation between all components.

19. Signal Wiring:

a. Signal Wire - Non Computer Use:

1) Signal wire shall be twisted pair or triads in conduit or troughs. Cable shall be constructed of No. 16 AWG copper signal wires with THWN or THHN insulation.

2) Color code for instrument signal wiring shall be as follows:

Positive (+): Black
Negative (-): White

3) Multiconductor cables where indicated shall consist of No. 16 AWG copper signal wires twisted in pairs, with 90–C, 600-V fault insulation. A copper drain wire shall be provided for the bundle with a wrap of aluminum polyester shield. The overall bundle jacket shall be PVC.

b. Multi-conductor cables, wireways and conduit shall be sized to allow for 10% spare signal wire.

20. 24 VDC Power Supply:

a. Panels shall be equipped with a linear 24 volt D.C. power supply for driving current loops and other D.C. powered equipment. It shall be solidly mounted, labeled and located in plain view oriented for ease of maintenance. Unit shall be sized based on 200% of load requirements of equipment actually furnished. 24 VDC power supply shall be SITOP order No. 6EP3334-8SB00- 0AY0, 120/230 Vac input, 24 Vdc output, 10A (12A up to +45°C), with 3% +/- voltage regulation from no-load to full-load.

21. UPS System:

a. The UPS system shall be Siemens DC UPS module SITOP UPS500S – 24V / 15A, RFI specification – class B, and Degree of protection – IP20. Output current rated value shall be 15A and charge current approximately 1A.

1) Basic Unit Order No. 6EP1 933-2EC51; Qty. 1.
2) Expansion Module Order No. 6EP1 935-5PG01; Qty. 5.

C. Labor and Workmanship: All panels shall be fabricated, piped and wired by fully qualified workmen who are properly trained, experienced, and supervised.

PART 3 - EXECUTION

1.1 INSTALLATION

A. Preparation and Shipping:

1. Crate panels for shipment using a heavy framework and skids. The panel sections shall be cushioned to protect the finish of the instruments and panel during shipment. All instruments which are shipped with the panel shall further have suitable shipping stops and cushioning material installed to protect parts which could be damaged due to mechanical shock. Each separate panel unit shall be provided with removable lifting lugs to facilitate handling.

2. All shipments shall be by air ride van, unless otherwise indicated.

3. All control panel testing and inspection shall be performed before shipping.

B. Control panels shall be installed in accordance with Section 13300 - Instrumentation and Control.

1.2 CONTROL PANEL SIGNAL AND CONTROL CIRCUIT WIRING

A. Wiring Installation: All wires shall run in plastic wireways except for the following:

1. Field wiring.
2. Wiring between mating blocks in adjacent sections.
3. Wiring to panel-mounted components.

B. Wiring to Rear Terminals: Wiring to rear terminals on panel-mount instruments shall be in plastic wireways secured to horizontal brackets above or below the instruments in about the same plane as the rear of the instruments.

C. Shop drawings shall show conformance to the above wiring installation requirements.

D. Wire Marking: Each signal, control, alarm, and indicating circuit conductor connected to a given electrical point shall be designated by a single unique number which shall be shown on all shop drawings. These numbers shall be marked on all conductors at every terminal using white numbered wire markers which shall be plastic-coated cloth, or permanently marked heat-shrink plastic.

E. Wires shall be fitted with a crimp type spade lug of the proper size at screw terminals except in the cases of termination fittings designed for compression or solder type termination. There shall be at least 2" of unencumbered wire extending from any point of attachment within the panel. Wire numbers shall be located within 1" of the point of attachment and shall be applied such that the number can be read from the front of the panel without rotating the wire. No more than two wires shall be located at any point of termination, including terminal blocks (terminal blocks specified are designed to accept two points of termination at each side).

F. Wires shall be routed through Panduit brand wireway of the size shown on the drawings. Routing shall separate 24 Vdc paths from 120 Vac paths as far as possible. Wireway shall be secured to the removable back panel by multiple pan head screws of the proper size at intervals of one at every other mounting hole station provided by Panduit. The mounting hole station shall be completely utilized at the extreme ends of each wireway segment. Within wireway, wire bundles shall be loosely bound with individual plastic tie wraps at intervals of approximately two feet.

G. External to wireway, wire shall be bundled neatly and secured with plastic tie wraps at intervals of approximately 8". Wire splicing within the Instrument Panel is not acceptable.

1. Wiring color code shall be as shown in this subsection

a. Blue: 24vdc +
b. Brown: 24vdc B
c. White: 120vac common
d. Black: 120vac power
e. Red: 120vac control power
f. Green: ground
g. Violet: 12vdc +
h. Yellow: 12vdc B
i. Belden black (+)
j. Belden clear (-)

H. Panels shall be fitted with a duplex electrical outlet as shown on the drawings. Illumination at the panel interior shall be by LED panel lights operated by a door switch. Provide a door switch wired to the terminal blocks, as shown on the drawings, to indicate when the RCP door is open.

I. Legend plates shall be laminated plastic or phenolic, black over white engraved by removing black material to reveal white letters. Lettering shall be sharp and clear, 3/16" nominal height. Engraving which is not uniform either letter to letter or within each character will not be accepted. Tags identifying interior components shall be affixed to the cabinet back panel.

1. The following interior components shall be labeled with phenolic tags:

a. Low voltage relay
b. Control relays
c. Modicon PLC
d. Microwave Data Systems Radio
e. AC line surge arrestor
f. DC UPS
g. DC power supply
h. Each terminal strip

1.3 CALIBRATION, TESTING, AND INSTRUCTION

A. General: Calibration, testing, and instruction shall be performed in accordance with Section 13300 - Instrumentation and Control.

B. Inspection and Approval:

1. The panel fabricator shall conduct the following tests before shipment:

   a. All alarm circuits rung out to determine their operability.
   b. All electrical circuits checked for continuity and where applicable, operability.
   c. All nameplates checked for correct spelling and size of letters.
   d. Any other test required to place the panel in an operating condition.

2. The CONTRACTOR shall furnish all necessary testing devices and sufficient manpower to perform the tests required by the ENGINEER.

3. If the above tests have not been performed before shipment, the CONTRACTOR shall be liable for back charges by the ENGINEER for the extra time required for inspections.

4. Each control panel shall be tested in the field for functional operation after the connection of external conductors, and before equipment startup.

****END OF SECTION****

SECTION 16950 – ELECTRICAL TESTS

PART 1 – GENERAL

1.1 WORK OF THIS SECTION

A. The CONTRACTOR shall test, commission and demonstrate that the electrical work satisfies the criteria of these Specifications and functions as required by the Contract Documents.

1.2 GENERAL

A. The Work of this Section includes furnishing the labor, equipment and power required to support the testing in other Divisions of these Specifications. This scope may require the CONTRACTOR to activate circuits, shutdown circuits, run equipment, make electrical measurements, replace blown fuses, and install temporary jumpers.

1.3 RELATED SECTIONS

A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.

1. Section 16010 - Basic Electrical Requirements

1.4 CODES

A. The Work of this Section shall comply with the current editions of the National Electrical Code as adopted by the City of San Diego.

1.5 STANDARDS

A. Except as otherwise indicated, the current editions of the following apply to the Work of this Section:

1. NETA National Electrical Testing Association
2. ICEA Insulated Cable Engineers Association

1.6 TESTING

A. The following test requirements are intended to supplement test and acceptance criteria that may be stated elsewhere.

1. Test ground interrupter (GFI) receptacles and circuit breakers for proper operation by methods sanctioned by the receptacle manufacturer.

2. A functional test and check of all electrical components is required prior to performing subsystem testing and commissioning. Compartments and

equipment shall be cleaned as required by other provisions of these Specifications before commencement of functional testing. Functional testing shall comprise:

a. Visual and physical check of cables and connections associated with all new and modified equipment.

3. Complete ground testing of all grounding electrodes prior to operating the equipment. Use a three-point ground test.)

B. Subsystem testing shall occur after the proper operation of alarm and status contacts has been demonstrated or otherwise accepted by the Resident Engineer and after process control devices have been adjusted as accurately as possible. It is intended that the CONTRACTOR will adjust limit switches and level switches to their operating points prior to testing.

C. Provide ground resistance tests in the presence of the Resident Engineer and submit results. Use a ground resistance meggar "Earth" tester with a maximum of 0-50 scale. Use the full of potential method or the three terminal method as described by Biddle or NETA.

D. General: Carry out tests for individual items of materials and equipment indicated in other Sections.

1.7 COMMISSIONING

A. Commissioning shall not be attempted until all subsystems have been found to operate satisfactorily; commissioning shall only be attempted as a function of normal plant operation in which plant process flows and levels are routine and equipment operates automatically in response to flow and level parameters or computer command, as applicable. Simulation of process parameters will be considered only upon receipt of a written request.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

****END OF SECTION****

SUPPLEMENTARY SPECIAL PROVISIONS

APPENDICES

APPENDIX A

ADDENDUM TO MITIGATED NEGATIVE DECLARATION

THE CITY OF SAN DIEGO

ADDENDUM TO
MITIGATED NEGATIVE DECLARATION No. 255100

SCH No. 2011091045

Project No. 563428/WBS No. B-15157.02.06

SUBJECT: AC Water and Sewer Group Job 1020

I. PROJECT DESCRIPTION:

Applicant: City of San Diego Public Engineering and Capital Projects Department, Right of Way Division

Project Location

The AC Water and Sewer Group 1020 project is located within the City right-of-way and City utility easements on and near the following streets within the Uptown Community Planning Area (Council District 3). The project is split between two alignments: Alignment 1 is generally bounded by Sunset Boulevard to the north, Arden Way to the east, Rode Lane to the south, and Hayden Way to the west; and Alignment 2 is generally bounded by West University Avenue to the north, Front Street to the east, Otsego Drive to the south, and Curlew Street to the west. (See attached Location Maps).

Project Description

The proposed scope of work would include replacement and installation of approximately 10,425 linear feet (LF) of water mains and sewer mains. Approximately 6,485 LF of existing 8-inch diameter asbestos cement (AC) water pipe would be replaced -in-place with polyvinyl chloride (PVC) piping within the same trench at the same or shallower depth. Approximately 3,940 LF of water main will be installed within new trenches at a depth of 3-4 feet. The project will rehabilitate (trenchless) approximately 109 LF of 8-inch diameter sewer.

The project includes the abandonment of 751 LF of existing water mains all located within the public right -of way. The existing Pressure Reducing Station (PRS) located near the intersection of Sloane Avenue and Curlew Street will be abandoned -in-place and replaced with a new underground PRS that will be installed outside of the traffic travel right of way.

The project will also include the following improvements: installation of curb ramps, laterals, cleanouts, water meters, water boxes; rehabilitation of existing manholes; installation of new manholes; and slurry seal street resurfacing. All construction staging would occur in the public right –of–way. The widths of the trenches would be approximately 3 to 5 feet.

The AC Water and Sewer Group Job 1020 project is part of the City of San Diego's on-going Sewer Main and Water Main Replacement Program. The existing sewer and water mains are old, and are nearing the end of their service life. Construction of the project will reduce maintenance requirements, correct hydraulic deficiencies, improve reliability and accessibility, and bring the sewer and water main systems up to current design standards.

The project would comply with the requirements described in the *Standard Specifications for Public Works Construction*, and California Department of Transportation's *Manual of Traffic Controls for Construction and Maintenance Work Zones*. A traffic controls plan would be prepared and implemented in accordance with the *City of San Diego Standard Drawings Manual of Traffic Control for Construction and Maintenance Work Zones*. Best Management Practices will be required and specified within the approved Water Pollution Control Plan for erosion control and storm drain inlet protection.

II. ENVIRONMENTAL SETTING: The AC Water and Sewer Group Job 1020 project would occur within the developed public right-of-way and public utility easements of previously disturbed private property within the City of San Diego described above under Project Location. Surrounding land uses include existing residential, institutional, industrial, and commercial developments, and open space areas. See attached MND for the environmental setting for the overall Citywide Pipeline Projects.

III. PROJECT BACKGROUND: A Citywide Pipelines Projects Mitigated Negative Declaration (MND) No. 255100 was prepared by the City of San Diego's Development Services Department (DSD) and was certified by the City Council on November 30, 2011 (Resolution No. 307122). The Citywide Pipelines Projects MND provides for the inclusion of subsequent pipeline projects that are located within the public right-of-way and would not result in any direct impacts to sensitive biological resources. Pursuant to the City of San Diego's Municipal Code Section 128.0306 and Section 15164(c) of State CEQA Guidelines addenda to environmental documents are not required to be circulated for public review.

Archaeological Resources

The Citywide Pipelines Project MND No. 255100 concluded that pipeline projects located within the public right-of-way and city easements could result in significant environmental impacts relating to archaeological resources, which included mitigation to reduce impacts to archaeological resources to below a level of significance. Portions of the project area identified with the AC Water and Sewer Group Job 1020 project would include excavation of previously undisturbed soil which has the potential to contain sensitive archaeological resources.

To reduce potential archaeological resource impacts to below a level of significance, excavation within previously undisturbed soil, for either new trench alignments or for replacement of pipelines within the same trench alignment occurring at a deeper depth than the previously existing pipeline, would be monitored by a qualified archaeologist or archaeological monitor and Native American monitor. Any significant archaeological resources encountered would be recovered and curated in accordance with the mitigation monitoring and Reporting Program (MMRP) detailed in Section V.

IV. DETERMINATION:

The City of San Diego previously prepared Mitigated Negative Declaration No. 255100 for the project described in the attached MND.

Based upon a review of the current project, it has been determined that:

a. There are no new significant environmental impacts not considered in the previous MND;
b. No substantial changes have occurred with respect to the circumstances under which the project is undertaken; and
c. There is no new information of substantial importance to the project.

Therefore, in accordance with Section 15164 of the State CEQA Guidelines this addendum has been prepared. No public review of this addendum is required.

V. MITIGATION, MONITORING AND REPORTING PROGRAM INCORPORATED INTO THE PROJECT:

Historical Resources (Archaeology)

I. Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check
   1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring have been noted on the applicable construction documents through the plan check process.

B. Letters of Qualification have been submitted to ADD
   1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
   2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project meet the qualifications established in the HRG.
   3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search
   1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
   2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.

3. The PI may submit a detailed letter to MMC requesting a reduction to the ¼ mile radius.

B. PI Shall Attend Precon Meetings

1. Prior to beginning any work that requires monitoring; the Applicant shall arrange a Precon Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Construction Manager (CM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist and Native American Monitor shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Construction Manager and/or Grading Contractor.
   a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.

2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)
   The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.
3. Identify Areas to be Monitored
   a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate construction documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits.
   b. The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances and/or any known soil conditions (native or formation).
   c. MMC shall notify the PI that the AME has been approved.
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 indicating when and where monitoring will occur.
   b. The PI may submit a detailed letter to MMC 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 age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.
5. Approval of AME and Construction Schedule
   After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Construction Schedule from the CM.

III. <u>During Construction</u>

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The Archaeological Monitor shall be present full-time during all soil disturbing and grading/excavation/trenching activities which could result in impacts to archaeological resources as identified on the AME. <u>The Construction Manager is</u>

responsible for notifying the RE, 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 AME.

2. The Native American consultant/monitor shall determine the extent of their presence during soil disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop and the Discovery Notification Process detailed in Section III.B-C and IV.A-D shall commence.
3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Record (CSVR). The CSVR's shall be faxed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process
   1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil disturbing activities, including but not limited to digging, trenching, excavating or grading activities in the area of discovery and in the area reasonably suspected to overlay adjacent resources and immediately notify the RE or BI, as appropriate.
   2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
   3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
   4. No soil shall be exported off-site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance
   1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.
      a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
      b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, CM and RE. ADRP and any mitigation must be approved by MMC, RE and/or CM before ground disturbing activities in the area of discovery will be allowed to resume. Note: If a unique archaeological site is also an historical resource as defined in

CEQA Section 15064.5, then the limits on the amount(s) that a project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.

(1). Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."

c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.

(1). Note: For Pipeline Trenching and other linear projects in the public Right-of-Way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.

(2). Note, for Pipeline Trenching and other linear projects in the public Right-of-Way, if significance cannot be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching and other Linear Projects in the Public Right-of-Way.

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the Public Right-of-Way including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

1. Procedures for documentation, curation and reporting
   a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.
   b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.
   c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
   d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains;

and the following procedures as set forth in CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

A. Notification
   1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS) of the Development Services Department to assist with the discovery notification process.
   2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

B. Isolate discovery site
   1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
   2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
   3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.

C. If Human Remains **ARE** determined to be Native American
   1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, **ONLY** the Medical Examiner can make this call.
   2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information.
   3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Section 15064.5(e), the California Public Resources and Health & Safety Codes.
   4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
   5. Disposition of Native American Human Remains will be determined between the MLD and the PI, and, if:
      a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR;
      b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, THEN
      c. To protect these sites, the landowner shall do one or more of the following:
         (1) Record the site with the NAHC;
         (2) Record an open space or conservation easement; or
         (3) Record a document with the County.
      d. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site

utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 5.c., above.

D. If Human Remains are **NOT** Native American
   1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.
   2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
   3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

V. Night and/or Weekend Work

A. If night and/or weekend work is included in the contract
   1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
   2. The following procedures shall be followed.
      a. 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 fax by 8AM of the next business day.
      b. Discoveries
         All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction, and IV – Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.
      c. Potentially Significant Discoveries
         If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction and IV-Discovery of Human Remains shall be followed.
      d. The PI shall immediately contact the RE and MMC, or by 8AM of the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.

B. If night and/or weekend work becomes necessary during the course of construction
   1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
   2. The RE, or BI, as appropriate, shall notify MMC immediately.

C. All other procedures described above shall apply, as appropriate.

VI. Post Construction

A. Submittal of Draft Monitoring Report
   1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Historical Resources Guidelines (Appendix C/D) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE

for review and approval within 90 days following the completion of monitoring. It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day timeframe as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.

   a. For significant archaeological resources encountered during monitoring, the Archaeological Data Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
   b. Recording Sites with State of California Department of Parks and Recreation The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.

2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
4. MMC shall provide written verification to the PI of the approved report.
5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.

B. Handling of Artifacts
   1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
   2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.

C. Curation of artifacts: Accession Agreement and Acceptance Verification
   1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.
   2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section IV – Discovery of Human Remains, Subsection C.
   3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
   4. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.
   5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.

D. Final Monitoring Report(s)

1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or BI as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
2. The RE 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.

Mark Brunette, Senior Planner
Development Services Department

August 29, 2017
Date

Analyst: Mark Brunette

Attachments: Location Maps
Mitigated Negative Declaration No. 255100

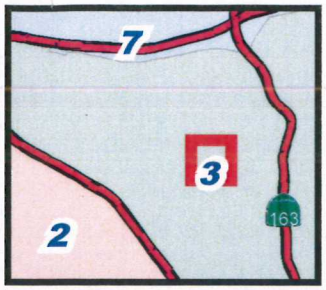
The Addendum to Mitigated Negative Declaration No. 255100 was not circulated for public review pursuant to San Diego Municipal Code (SDMC) Chapter 6, Article 9, Paragraph 69.0211 (Addenda to Environmental Reports). The final Addendum was distributed to the following City of San Diego staff members for informational purposes in accordance with CEQA Section 15164.

DISTRIBUTION:

City of San Diego
Development Services
Peter Kann, Development Project Manager
Mark Brunette, Environmental Analyst
Sam Johnson, MMC

Public Works
Reyna Rendon Rojas, Project Engineer
Roberto Vejar Parra, Project Manager
Megan Hickey, Associate Planner

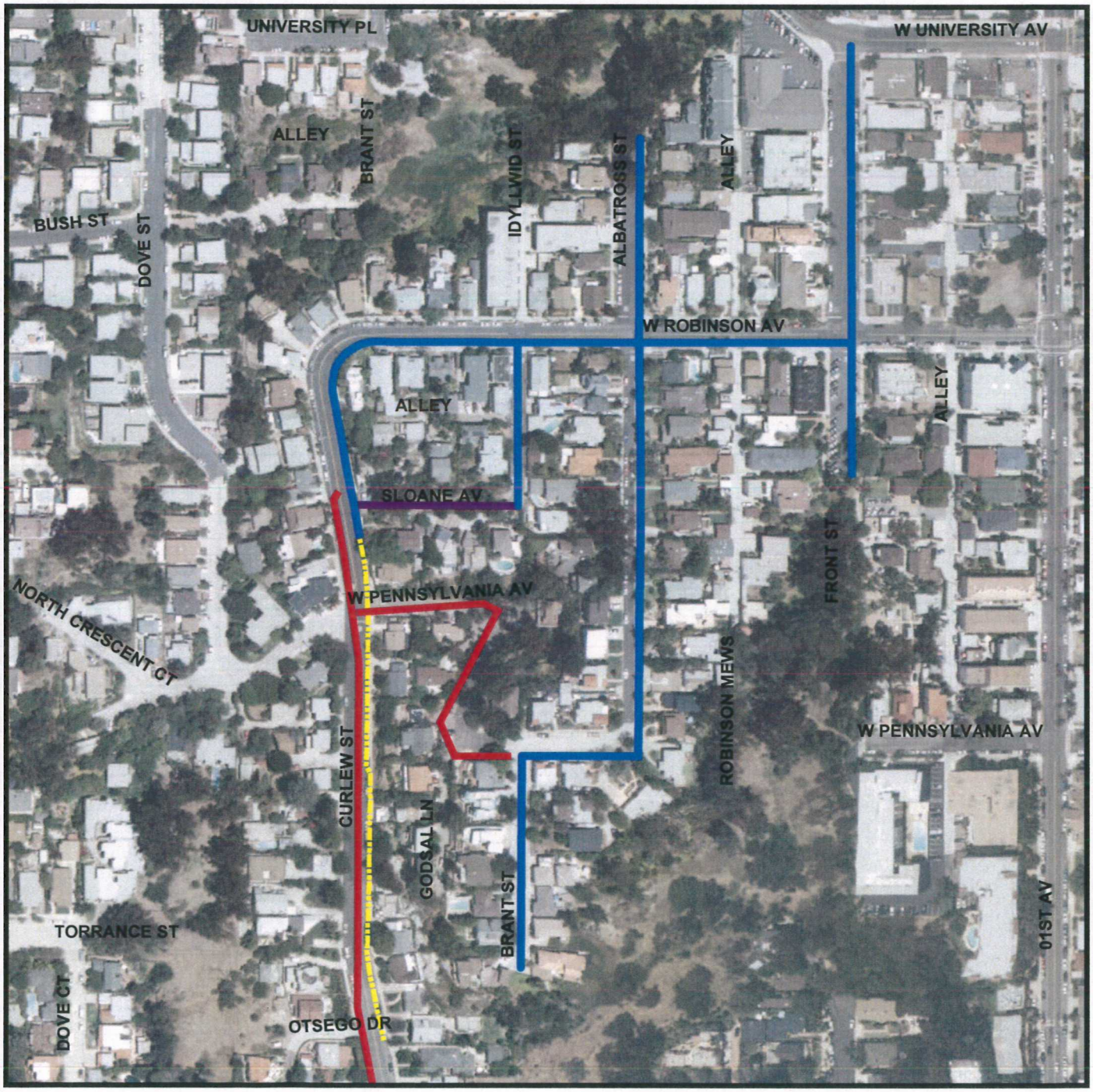
Copies of the addendum, the final MND, the Mitigation Monitoring and Reporting Program, and any technical appendices may be reviewed in the office of the Entitlements Division of the Development Services Department, or purchased for the cost of reproduction.



The City of SAN DIEGO Public Works

AC WATER AND SEWER GROUP 1020

SENIOR ENGINEER	PROJECT MANAGER	PROJECT ENGINEER	FOR QUESTIONS ABOUT THIS PROJECT
NABIL BATTA	ROBERTO VEJAR-PARRA	REYNA RENDON ROJAS	Call: 619-533-4207
619-533-4145	619-533-5402	619-533-7465	Email: engineering@sandiego.gov



LEGEND

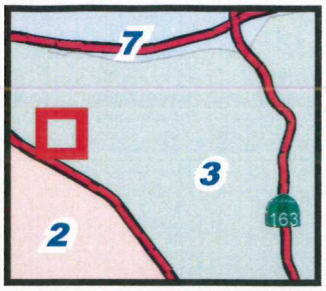
- PROPOSED WATER REPLACE IN PLACE - OPEN TRENCH
- PROPOSED NEW WATER ALIGNMENT - OPEN TRENCH
- EXISTING WATER - TO BE ABANDONED IN PLACE
- EXISTING WATER MAIN

N W E S

COMMUNITY NAME: UPTOWN | COUNCIL DISTRICT: 3 | SAP ID: B-15148 (S) \ B-15157 (W)

Date: July 11, 2017

SanGIS



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AC WATER AND SEWER GROUP 1020

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LEGEND

PROPOSED WATER REPLACE IN PLACE - OPEN TRENCH

PROPOSED SEWER REPLACE IN PLACE - OPEN TRENCH

N W E S

COMMUNITY NAME: UPTOWN

COUNCIL DISTRICT: 3

SAP ID: B-15148 (S) \ B-15157 (W)

Date: July 11, 2017

SanGIS

City of San Diego
Development Services

ENTITLEMENTS DIVISION
(619) 446-5460

MITIGATED NEGATIVE ECLARATION

Project No. 255100
SCH No. 2011091045

SUBJECT: Citywide Pipeline Projects: COUNCIL APPROVAL to allow for the replacement, rehabilitation, relocation, point repair, new trenching, trenchless construction, and abandonment of water and/or sewer pipeline alignments and associated improvements such as curb ramps, sewer lateral connections, water service connections, manholes, new pavement/slurry, the removal and/or replacement of street trees and the removal and/or replacement of street lights. This environmental document covers the analysis for ~~five~~ four ~~(5)~~ (4) near-term pipeline projects (Harbor Drive Pipeline, Water Group 949, ~~Sewer Group 787~~, Water Group 914, and Sewer/Water Group 732), as well as any subsequent future pipeline projects. The construction footprint for a typical pipeline project, including staging areas and other areas (such as access) would be located within the City of San Diego Public Right-of-Way (PROW) and/or within public easements and may include planned pipeline construction within private easements from the PROW to the service connection. A signed agreement between the City and the property owner would be required for work conducted on private property. Project types that would be included in the analysis contained herein would consist of sewer and water group jobs, trunk sewers, large diameter water pipeline projects, new and/or replacement manholes, new/or replacement fire hydrants, and other necessary appurtenances . All associated equipment would be staged within the existing PROW adjacent to the work areas. The near-term and future projects covered in the document would not impact *Sensitive Biological Resources* or *Environmentally Sensitive Lands (ESL)* as defined in the Land Development Code and would not encroach into the City's Multi-Habitat Planning Area (MHPA). Applicant: The City of San Diego Engineering and Capital Projects Department AND Public Utilities Department.

Update 10/20/2011

Revisions to this document have been made when compared to the Draft Mitigated Negative Declaration (DMND) dated September 9, 2011. In response to the Comment Letter received from The California Department of Fish and Game, further description and graphics of Water Group 949 as it relates to the MHPA has been added to the Final MND. Please note that Sewer Group 787, which is adjacent to the MHPA, has been removed from the project description and is no longer covered in this MND.

The modifications to the FMND are denoted by ~~strikeout~~ and underline format. In accordance with the California Environmental Quality Act, Section 15073.5 (c)(4), the addition of new information that clarifies, amplifies, or makes insignificant modification does not require recirculation as there are no new impacts and no new mitigation identified. An environmental document need only be recirculated when there is identification of new significant environmental impact or the addition of a new mitigation measure required to avoid a significant environmental impact. The addition

of corrected mitigation language within the environmental document does not affect the environmental analysis or conclusions of the MND.

Construction for the near-term and any future projects is anticipated to occur during the daytime hours Monday through Friday, but may occur during the weekend, if necessary. The contractor would comply with all applicable requirements described in the latest edition of the *Standard Specifications for Public Works Construction ("GREENBOOK")* and the latest edition of the *City of San Diego Standard Specifications for Public Works Construction ("WHITEBOOK")*. The City's supplement addresses unique circumstances to the City of San Diego that are not addressed in the GREENBOOK and would therefore take precedence in the event of a conflict. The contractor would also comply with the California Department of Transportation *Manual of Traffic Controls for Construction and Maintenance Work Zones*. If the Average Daily Traffic (ADT) within a given project(s) vicinity is 10,000 ADT or greater, a traffic control plan would be prepared and implemented in accordance with the *City of San Diego Standard Drawings Manual of Traffic Control for Construction and Maintenance Work Zones*. For proposals subject to 10,000 ADT or less, traffic control may be managed through shop drawings during construction. Construction methods to be employed would consist of, but not be limited to:

Open Trenching: The open trench method of construction would be used for complete replacement and new alignment portions of the project. Trenches are typically four feet wide and are dug with excavations and similar large construction equipment.

Rehabilitation: Rehabilitation of alignment involves installing a new lining in old pipelines. The insertion is done through existing manhole access points and does not require removal of pavement or excavation of soils.

Abandonment: Pipeline abandonment activities would be similar to rehabilitation methods in that no surface/subsurface disturbance would occur. This process may involve slurry or grout material injected into the abandoned lines via manhole access. The top portion of the manhole is then typically removed and the remaining space backfilled and paved over.

Potholing: Potholing would be used to verify reconnection of laterals to main where lines would be raised or realigned (higher than existing depth, but still below ground) or to verify utility crossings. These "potholes" are made by using vacuum type equipment to open up small holes into the street of pavement.

Point Repairs: Point repairs include replacing a portion of a pipe segment by open trench excavation methods in which localized structural defects have been identified. Generally, point repairs are confined to an eight-foot section of pipe.

The following near term project(s) have been reviewed by the City of San Diego, Development Services Department (DSD) for compliance with the Land Development Code and have been determined to be exempt from a Site Development Permit (SDP) and/or a Coastal Development Permit (CDP). These projects would involve excavation in areas having a high resource sensitivity and potential for encountering archaeological and paleontological resources during construction related activities. Therefore, mitigation would be required to reduce potential significant impacts to archaeological and paleontological resources to below a level of significance. With respect to Storm Water, all projects would be reviewed for compliance with the City's Storm Water Standards

Manual. All projects that are not-exempt from the Standard Urban Storm Water Mitigation Plan (SUSMP) would incorporate appropriate Permanent Best Management Practices (BMPs) and construction BMPs into the project design(s) and during construction, as required. As such, all projects would comply with the requirement of the Municipal Storm Water Permit.

HARBOR DRIVE PIPELINE (PROJECT NO. 206100)

The Harbor Drive Pipeline includes the replacement of 4.4 miles of 16-inch cast iron (CI) and asbestos cement (AC) pipe that comprises the Harbor Drive 1st and 2nd Pipelines (HD-1 and HD-2) at a depth no greater than five (5) feet. Facility age and cast iron main replacement are the primary drivers for these projects, but due to the history of AC breaks in the area, approximately 1.0 mile of AC replacement is also included. The project is anticipated to be awarded in Fiscal Year 2013.

HD-1 and HD-2 were built primarily in the 1940's and 1950's and were made out of cast iron or asbestos cement and serve the western most part of the University Heights 390 Zone and the northern section of the Point Loma East 260 Zone. The pipelines also serve as redundancy to each other. Several segments were replaced by various City of San Diego Public Utilities Department projects throughout the years and those segments are not a part of the current scope. Previously replaced segments were 16 inch PVC, except for the bridge crossing which used 24-inch CMLC. The pipeline is located entirely within the PROW, will not require any easements, and is not adjacent to the MHPA or located within any designated historical districts. The following streets would be affected by this project: West Laurel, Pacific Highway, North Harbor Drive (within the roadway, under the bridge and within landscape areas), Nimitz Boulevard, Rosecrans Street, Evergreen Street, Hugo Street, Locust Street, Canon Street, Avenida De Portugal, and Point Loma Avenue.

Mitigation for the Harbor Drive Pipeline: Historical Resources (Archaeological Monitoring)

WATER GROUP 949 (PROJECT NO. 232719)

Water Group 949 would consist of the replacement and installation of 5.27 miles of water mains within the Skyline- Paradise Hills, University, Clairemont Mesa, Southeastern San Diego (Greater Golden Hills) community planning areas. 16,931 Linear Feet (LF) of 16-inch cast iron water mains would be replace-in-place with new 16-inch polyvinyl chloride (PVC) pipe within the existing trench. The remaining 10,913 LF of new 16-inch PVC would be installed in new trenches. All work within Regents Road, Site 2 (Figure 8), adjacent to the MHPA would only occur within the developed footprint such as the paved right of way, and concrete sidewalk or slab areas. In addition, all work within 100 feet of the MHPA would observe mitigation such as but not limited to, bird breeding season measures, avoidance of discharge into the MHPA, and avoidance of direct lighting towards the MHPA areas. As such, no impacts to MHPA and/or sensitive resources would occur. The project would also include replacement and reinstallation of valves, water services, fire hydrants, and other appurtenances and would also included the construction of curb ramps, and street resurfacing. Traffic control measures and Best Management Practices (BMPs) would be implemented during construction. Any street tree removal, relocation, and/or trimming would be done under the supervision of the City Arborist. All staging of construction equipment will be located outside of any potentially sensitive areas. The following streets and nearby alleyways would be affected by this project: Tuther Way, Cielo Drive, Woodman Street, Skyline Drive, Regents Road, Hidalgo Avenue, Clairemont Mesa Boulevard, Luna Avenue, B Street, F Street, Ash Street, 25th Street, and 27th Street.

Mitigation Required for Water Group 949: This project would require the implementation of MHPA Land Use Adjacency Guidelines in the University and Clairemont Mesa Community Planning areas that are adjacent (within 100 feet) to the MHPA and Historical Resources (Built Environment) mitigation for the area of the project located within the Greater Golden Hill Historic District.

~~SEWER GROUP 787 (PROJECT NO. 231928)~~

~~Sewer Group 787 would consist of the replacement of 26,436 lineal feet (LF) of existing 16-inch cast iron sewer pipe with new 16-inch polyvinyl chloride (PVC) pipe within the existing trench. A total of 1,267 LF of new 16 inch PVC sewer alignment would be installed in new trenches. In addition, the project would abandon 1,606 LF of existing 16-inch cast iron pipe. The proposed project would be installed by conventional excavation (open trench) in trenches from 3-5 feet deep. The project would affect the following streets and nearby alleyways: 42nd Street, Monroe Avenue, Edgeware Road, Polk Avenue, Orange Avenue, Menlo Avenue, 47TH Street , Dwight Street, Myrtle Avenue, Manzanita Place, Heather Street, Dahlia Street, Poplar Street, Columbine Street, Pepper Drive, Juniper Street, Marigold Street, Sumac Drive, 44TH Street, Laurie Lane, and Roseview Place all within the City Heights and Kensington-Talmadge Community Planning Areas.~~

~~**Mitigation Required for Water Group 787: This project would require the implementation of MHPA Land Use Adjacency Guidelines in the City Heights and Kensington-Talmadge Community Planning areas that are adjacent (within 100 feet) to the MHPA, Historical Resources (Archaeological and Paleontological Monitoring).**~~

WATER GROUP 914 (PROJECT NO. 233447)

Water Group 914 would consist of the replacement and installation of approximately 21,729 lineal feet (LF) of existing 6-inch, 8-inch and 12-inch cast iron pipes and 6-inch asphalt concrete pipes with new 8-inch, 12-inch and 16-inch polyvinyl chloride (PVC) pipe. Also included would be the construction of two underground pressure regulator stations that measure 54 square-feet and 6.5 feet deep each. 17,472 LF would be located in existing trenches and 4,257 LF would be located in new trench lines. The proposed project would be installed by conventional excavation (open trench) in trenches from 3-5 feet deep. However two 300 LF parallel line sections (600 LF total) of the water alignment would be installed by trenchless methodology utilizing two (2) 40 square foot launch and receiver pits. The trenchless installation would occur at the intersection of Coronado Avenue and Ebers Street and is designed to avoid a recorded archaeological resource at this intersection. The trenchless methodology would employ directional underground boring that would install the pipe at a depth deeper than the recorded resource. In addition, a 4-inch AC water segment of approximately 520 LF located along Point Loma Avenue between Guizot Street and Santa Barbara Street will be abandoned in place. The project would affect the following streets and nearby alleyways: Point Loma Avenue, Santa Barbara Street, Bermuda Avenue, Pescadero Avenue, Cable Street, Orchard Avenue, Froude Street, Sunset Cliffs Boulevard, Savoy Circle, and Del Monte Avenue all within the Ocean Beach and Peninsula Community Planning Areas.

Mitigation for Water Group 914: Historical Resources (Archaeological Monitoring) and (Built Environment)

SEWER AND WATER GROUP 732 (PROJECT NO. 206610)

Sewer and Water Group Job 732 would consist of the installation of approximately 5,500 total linear feet (LF) of 8 inch Polyvinyl Chloride (PVC) sewer pipe, and approximately 3,000 total linear feet (LF) of 12 inch PVC water pipe. Approximately, 1,035 LF of water pipe would be rehabilitated using trenchless technology in the same trench, with the remainder of the installation accomplished through open trenching. Related work would include construction of new manholes, replacement and re-plumbing of sewer laterals, installation of curb ramps, pavement restoration, traffic control, and storm water best management practices. Construction of the project would affect portions of the following streets and adjacent alleys in the Peninsula Community Plan area: Xenephon Street, Yonge Street, Zola Street, Alcott Street, Browning Street, Plum Street, Willow Street, Evergreen Street, Locust Street, and Rosecrans Street.

Mitigation Required for Sewer and Water Group 732: Historical Resources (Archaeological and Paleontological Monitoring).

SUBSEQUENT PIPELINE PROJECT REVIEW (LONG TERM)

Applications for the replacement, rehabilitation, relocation, point repair, open trenching and abandonment of water and/or sewer pipeline alignments within the City of San Diego PROW as indicated in the Subject block above and in the Project Description discussion of the Initial Study would be analyzed for potential environmental impacts to Historical Resources (Archaeology. Paleontology and the Built Environment) and Land Use (MSCP/MHPA), and reviewed for consistency with this Mitigated Negative Declaration (MND). Where it can be determined that the project is "consistent" with this MND and no additional potential significant impacts would occur pursuant to State CEQA Guideline § 15162 (i.e. the involvement of new significant environmental effects of a substantial increase in the severity of previously identified effects) or if the project would result in minor technical changes or additions, then an Addendum to this MND would be prepared pursuant to §15164. Where future projects are found not to be consistent with this MND, then a new Initial Study and project specific MND shall be prepared.

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 near term projects and any future subsequent projects could have a significant environmental effect in the following areas(s): Land Use (MSCP/MHPA Land Use Adjacency), Historical Resources (Built Environment), Historical Resources (Archaeology) and Paleontology. When subsequent projects are submitted to DSD, the Environmental Analysis Section (EAS) will determine which of the project specific mitigation measures listed in Section V. would apply. Subsequent revisions in the project proposal create the specific mitigation identified in Section V of this Mitigated Negative Declaration. Projects as revised now avoid or mitigate 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 – PART I
Plan Check Phase (prior to permit issuance)

1. Prior to Bid Opening/Bid Award 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 have been incorporated.

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:

   http://www.sandiego.gov/development-services/industry/standtemp.shtml

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

B. GENERAL REQUIREMENTS – PART II
Post Plan Check (After permit issuance/Prior to start of construction)

1. **PRE CONSTRUCTION MEETING IS REQUIRED TEN (10) WORKING DAYS 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 as necessary:

   Biologist, Archaeologist, Native American Monitor, Historian and Paleontologist

   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**

2. **MMRP COMPLIANCE:** This Project, Project Tracking System (PTS) No. 255100, or for subsequent future projects the associated PTS No, shall conform to the mitigation requirements contained in the associated Environmental Document and implemented to the satisfaction of the DSD's ED, 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.

3. **OTHER AGENCY REQUIREMENTS:** Evidence that any other agency requirements or permits have been obtained or are in process 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 as applicable.

4. **MONITORING EXHIBITS:** All consultants are required to submit, to RE and MMC, a monitoring exhibit on 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.

5. **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/Note*
General	Consultant Qualification Letters	Prior to Pre-construction Mtg.
General	Consultant Const. Monitoring	Prior to or at Pre-Construction Mtg.
Biology	Biology Reports	Limit of Work Verification
Historical	Historical Reports	Historical observation (built envirnmt)
Archaeology	Archaeology Reports	Archaeology observation
Paleontology	Paleontology Reports	Paleontology observation
Final MMRP		Final MMRP Inspection

SPECIFIC MMRP ISSUE AREA CONDITIONS/REQUIREMENTS:

A. LAND USE [MULTIPLE SPECIES CONSERVATION PROGRAM (MSCP) For PROJECTS WITHIN 100 FEET OF THE MHPA]

I. Prior to Permit Issuance

A. Prior to issuance of any construction permit, the DSD Environmental Designee (ED) shall verify the Applicant has accurately represented the project's design in the Construction Documents (CDs) that are in conformance with the associated discretionary permit conditions and Exhibit "A", and also the City's Multi-Species Conservation Program (MSCP) Land Use Adjacency Guidelines for the Multiple Habitat Planning Area (MHPA), including identifying adjacency as the potential for direct/indirect impacts where applicable. In addition, all CDs where applicable shall show the following:

1. **Land Development / Grading / Boundaries** –MHPA boundaries on-site and adjacent properties shall be delineated on the CDs. The ED shall ensure that all grading is included within the development footprint, specifically manufactured slopes, disturbance, and development within or adjacent to the MHPA..
2. **Drainage / Toxins** –All new and proposed parking lots and developed area in and adjacent to the MHPA shall be designed so they do not drain directly into the MHPA, All developed and 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 permanent methods that are designed to minimize negative impacts, such as excessive water and toxins into the ecosystems of the MHPA.
3. **Staging/storage, equipment maintenance, and trash** –All areas for staging, storage of equipment and materials, trash, equipment maintenance, and other construction related activities are within the development footprint. Provide a note on the plans that states: *"All construction related activity that may have potential for leakage or intrusion shall be monitored by the Qualified Biologist/Owners Representative to ensure there is no impact to the MHPA."*
4. **Barriers** –All new development within or adjacent to the MHPA shall provide fencing or other City approved barriers along the MHPA boundaries to direct public access to appropriate locations, to reduce domestic animal predation, and to direct wildlife to appropriate corridor crossing. Permanent barriers may include, but are not limited to, fencing (6-foot black vinyl coated chain link or equivalent), walls, rocks/boulders, vegetated buffers, and signage for access, litter, and educational purposes.
5. **Lighting** – All building, site, and landscape lighting adjacent to the MHPA shall be directed away from the preserve using proper placement and adequate shielding to protect sensitive habitat. Where necessary, light from traffic or other incompatible uses, shall be shielded from the MHPA through the utilization of including, but not limited to, earth berms, fences, and/or plant material.
6. **Invasive Plants** – Plant species within 100 feet of the MHPA shall comply with the Landscape Regulations (LDC142.0400 and per table 142-04F, Revegetation and Irrigation Requirements) and be non invasive. Landscape plans shall include a note that states: *"The ongoing maintenance requirements of the property owner shall*

prohibit the use of any planting that are invasive, per City Regulations, Standards, guidelines,etc., within 100 feet of the MHPA."

7. **Brush Management** –All new development adjacent to the MHPA is set back from the MHPA to provide the required Brush Management Zone (BMZ) 1 area (LDC Sec. 142.0412) within the development area and outside of the MHPA. BMZ 2 may be located within the MHPA and the BMZ 2 management shall be the responsibility of a HOA or other private entity.
8. **Noise-** Due to the site's location adjacent to or within the MHPA, construction noise that exceeds the maximum levels allowed shall be avoided, during the breeding seasons for protected avian species such as: *California Gnatcatcher (3/1-8/15); Least Bell's vireo (3/15-9/15); and Southwestern Willow Flycatcher (5/1-8/30).* If construction is proposed during the breeding season for the species, U.S. Fish and Wildlife Service protocol surveys shall be required in order to determine species presence/absence. When applicable, adequate noise reduction measures shall be incorporated. Upon project submittal EAS shall determine which of the following project specific avian protocol surveys shall be required.

COASTAL CALIFORNIA GNATCATCHER

NO CLEARING, GRUBBING, GRADING, OR OTHER CONSTRUCTION ACTIVITIES SHALL OCCUR BETWEEN MARCH 1 AND AUGUST 15, THE BREEDING SEASON OF THE COASTAL CALIFORNIA GNATCATCHER, UNTIL THE FOLLOWING REQUIREMENTS HAVE BEEN MET TO THE SATISFACTION OF THE CITY MANAGER:

a. A QUALIFIED BIOLOGIST (POSSESSING A VALID ENDANGERED SPECIES ACT SECTION 10(a)(1)(A) RECOVERY PERMIT) SHALL SURVEY THOSE HABITAT AREAS ~~WITHIN~~ ADJACENT TO THE MHPA THAT WOULD BE SUBJECT TO CONSTRUCTION NOISE LEVELS EXCEEDING 60 DECIBELS [dB(A)] HOURLY AVERAGE FOR THE PRESENCE OF THE COASTAL CALIFORNIA GNATCATCHER. SURVEYS FOR THE COASTAL CALIFORNIA GNATCATCHER SHALL BE CONDUCTED PURSUANT TO THE PROTOCOL SURVEY GUIDELINES ESTABLISHED BY THE U.S. FISH AND WILDLIFE SERVICE WITHIN THE BREEDING SEASON PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. IF GNATCATCHERS ARE PRESENT, THEN THE FOLLOWING CONDITIONS MUST BE MET:

   BETWEEN MARCH 1 AND AUGUST 15, NO CLEARING, GRUBBING, OR GRADING OF OCCUPIED GNATCATCHER HABITAT SHALL BE PERMITTED. AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; AND

   1. BETWEEN MARCH 1 AND AUGUST 15, NO CONSTRUCTION ACTIVITIES SHALL OCCUR WITHIN ANY PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES WOULD RESULT IN NOISE LEVELS EXCEEDING 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED GNATCATCHER HABITAT. AN ANALYSIS SHOWING THAT NOISE GENERATED BY CONSTRUCTION

ACTIVITIES WOULD NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED HABITAT MUST BE COMPLETED BY A QUALIFIED ACOUSTICIAN (POSSESSING CURRENT NOISE ENGINEER LICENSE OR REGISTRATION WITH MONITORING NOISE LEVEL EXPERIENCE WITH LISTED ANIMAL SPECIES) AND APPROVED BY THE CITY MANAGER AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES DURING THE BREEDING SEASON, AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; OR

2. AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES, UNDER THE DIRECTION OF A QUALIFIED ACOUSTICIAN, NOISE ATTENUATION MEASURES (e.g., BERMS, WALLS) SHALL BE IMPLEMENTED TO ENSURE THAT NOISE LEVELS RESULTING FROM CONSTRUCTION ACTIVITIES WILL NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF HABITAT OCCUPIED BY THE COASTAL CALIFORNIA GNATCATCHER. CONCURRENT WITH THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES AND THE CONSTRUCTION OF NECESSARY NOISE ATTENUATION FACILITIES, NOISE MONITORING* SHALL BE CONDUCTED AT THE EDGE OF THE OCCUPIED HABITAT AREA TO ENSURE THAT NOISE LEVELS DO NOT EXCEED 60 dB(A) HOURLY AVERAGE. IF THE NOISE ATTENUATION TECHNIQUES IMPLEMENTED ARE DETERMINED TO BE INADEQUATE BY THE QUALIFIED ACOUSTICIAN OR BIOLOGIST, THEN THE ASSOCIATED CONSTRUCTION ACTIVITIES SHALL CEASE UNTIL SUCH TIME THAT ADEQUATE NOISE ATTENUATION IS ACHIEVED OR UNTIL THE END OF THE BREEDING SEASON (AUGUST 16).

* Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

b. IF COASTAL CALIFORNIA GNATCATCHERS ARE NOT DETECTED DURING THE PROTOCOL SURVEY, THE QUALIFIED BIOLOGIST SHALL SUBMIT SUBSTANTIAL EVIDENCE TO THE CITY MANAGER AND APPLICABLE RESOURCE AGENCIES WHICH DEMONSTRATES WHETHER OR NOT MITIGATION MEASURES SUCH AS NOISE WALLS ARE NECESSARY BETWEEN MARCH 1 AND AUGUST 15 AS FOLLOWS:

1. IF THIS EVIDENCE INDICATES THE POTENTIAL IS HIGH FOR COASTAL CALIFORNIA GNATCATCHER TO BE PRESENT BASED ON HISTORICAL RECORDS OR SITE CONDITIONS, THEN CONDITION A.III SHALL BE ADHERED TO AS SPECIFIED ABOVE.

2. IF THIS EVIDENCE CONCLUDES THAT NO IMPACTS TO THIS SPECIES ARE ANTICIPATED, NO MITIGATION MEASURES WOULD BE NECESSARY.

LEAST BELL'S VIREO (State Endangered/Federally Endangered)

NO CLEARING, GRUBBING, GRADING, OR OTHER CONSTRUCTION ACTIVITIES SHALL OCCUR BETWEEN MARCH 15 AND SEPTEMBER 15, THE BREEDING SEASON OF THE LEAST BELL'S VIREO, UNTIL THE FOLLOWING REQUIREMENTS HAVE BEEN MET TO THE SATISFACTION OF THE CITY MANAGER:

A. A QUALIFIED BIOLOGIST (POSSESSING A VALID ENDANGERED SPECIES ACT SECTION 10(a)(1)(A) RECOVERY PERMIT) SHALL SURVEY THOSE WETLAND AREAS THAT WOULD BE SUBJECT TO CONSTRUCTION NOISE LEVELS EXCEEDING 60 DECIBELS [dB(A)] HOURLY AVERAGE FOR THE PRESENCE OF THE LEAST BELL'S VIREO. SURVEYS FOR THE THIS SPECIES SHALL BE CONDUCTED PURSUANT TO THE PROTOCOL SURVEY GUIDELINES ESTABLISHED BY THE U.S. FISH AND WILDLIFE SERVICE WITHIN THE BREEDING SEASON PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. IF THE LEAST BELL'S VIREO IS PRESENT, THEN THE FOLLOWING CONDITIONS MUST BE MET:

BETWEEN MARCH 15 AND SEPTEMBER 15, NO CLEARING, GRUBBING, OR GRADING OF OCCUPIED LEAST BELL'S VIREO HABITAT SHALL BE PERMITTED. AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; AND

BETWEEN MARCH 15 AND SEPTEMBER 15, NO CONSTRUCTION ACTIVITIES SHALL OCCUR WITHIN ANY PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES WOULD RESULT IN NOISE LEVELS EXCEEDING 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED LEAST BELL'S VIREO OR HABITAT. AN ANALYSIS SHOWING THAT NOISE GENERATED BY CONSTRUCTION ACTIVITIES WOULD NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED HABITAT MUST BE COMPLETED BY A QUALIFIED ACOUSTICIAN (POSSESSING CURRENT NOISE ENGINEER LICENSE OR REGISTRATION WITH MONITORING NOISE LEVEL EXPERIENCE WITH LISTED ANIMAL SPECIES) AND APPROVED BY THE CITY MANAGER AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. PRIOR TO THE COMMENCEMENT OF ANY OF CONSTRUCTION ACTIVITIES DURING THE BREEDING SEASON, AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED

UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; OR

AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES, UNDER THE DIRECTION OF A QUALIFIED ACOUSTICIAN, NOISE ATTENUATION MEASURES (e.g., BERMS, WALLS) SHALL BE IMPLEMENTED TO ENSURE THAT NOISE LEVELS RESULTING FROM CONSTRUCTION ACTIVITIES WILL NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF HABITAT OCCUPIED BY THE LEAST BELL'S VIREO. CONCURRENT WITH THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES AND THE CONSTRUCTION OF NECESSARY NOISE ATTENUATION FACILITIES, NOISE MONITORING* SHALL BE CONDUCTED AT THE EDGE OF THE OCCUPIED HABITAT AREA TO ENSURE THAT NOISE LEVELS DO NOT EXCEED 60 dB(A) HOURLY AVERAGE. IF THE NOISE ATTENUATION TECHNIQUES IMPLEMENTED ARE DETERMINED

TO BE INADEQUATE BY THE QUALIFIED ACOUSTICIAN OR BIOLOGIST, THEN THE ASSOCIATED CONSTRUCTION ACTIVITIES SHALL CEASE UNTIL SUCH TIME THAT ADEQUATE NOISE ATTENUATION IS ACHIEVED OR UNTIL THE END OF THE BREEDING SEASON (SEPTEMBER 16).

* Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

B. IF LEAST BELL'S VIREO ARE NOT DETECTED DURING THE PROTOCOL SURVEY, THE QUALIFIED BIOLOGIST SHALL SUBMIT SUBSTANTIAL EVIDENCE TO THE CITY MANAGER AND APPLICABLE RESOURCE AGENCIES WHICH DEMONSTRATES WHETHER OR NOT MITIGATION MEASURES SUCH AS NOISE WALLS ARE NECESSARY BETWEEN MARCH 15 AND SEPTEMBER 15 AS FOLLOWS:

I. IF THIS EVIDENCE INDICATES THE POTENTIAL IS HIGH FOR LEAST BELL'S VIREO TO BE PRESENT BASED ON HISTORICAL RECORDS OR SITE CONDITIONS, THEN CONDITION A.III SHALL BE ADHERED TO AS SPECIFIED ABOVE.

II. IF THIS EVIDENCE CONCLUDES THAT NO IMPACTS TO THIS SPECIES ARE ANTICIPATED, NO MITIGATION MEASURES WOULD BE NECESSARY.

SOUTHWESTERN WILLOW FLYCATCHER (Federally Endangered)

1. Prior to the first reconstruction meeting, the City Manager (or appointed designee) shall verify that the following project requirements regarding the southwestern willow flycatcher are shown on the construction plans:

NO CLEARING, GRUBBING, GRADING, OR OTHER CONSTRUCTION ACTIVITIES SHALL OCCUR BETWEEN MAY 1 AND SEPTEMBER 1, THE BREEDING SEASON OF THE SOUTHWESTERN WILLOW FLYCATCHER, UNTIL

THE FOLLOWING REQUIREMENTS HAVE BEEN MET TO THE SATISFACTION OF THE CITY MANAGER:

A. A QUALIFIED BIOLOGIST (POSSESSING A VALID ENDANGERED SPECIES ACT SECTION 10(a)(1)(A) RECOVERY PERMIT) SHALL SURVEY THOSE WETLAND AREAS THAT WOULD BE SUBJECT TO CONSTRUCTION NOISE LEVELS EXCEEDING 60 DECIBELS [dB(A)] HOURLY AVERAGE FOR THE PRESENCE OF THE SOUTHWESTERN WILLOW FLYCATCHER. SURVEYS FOR THIS SPECIES SHALL BE CONDUCTED PURSUANT TO THE PROTOCOL SURVEY GUIDELINES ESTABLISHED BY THE U.S. FISH AND WILDLIFE SERVICE WITHIN THE BREEDING SEASON PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. IF THE SOUTHWESTERN WILLOW FLYCATCHER IS PRESENT, THEN THE FOLLOWING CONDITIONS MUST BE MET:

BETWEEN MAY 1 AND SEPTEMBER 1, NO CLEARING, GRUBBING, OR GRADING OF OCCUPIED SOUTHWESTERN WILLOW FLYCATCHER HABITAT SHALL BE PERMITTED. AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; AND

BETWEEN MAY 1 AND SEPTEMBER 1, NO CONSTRUCTION ACTIVITIES SHALL OCCUR WITHIN ANY PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES WOULD RESULT IN NOISE LEVELS EXCEEDING 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED SOUTHWESTERN WILLOW FLYCATCHER HABITAT. AN ANALYSIS SHOWING THAT NOISE GENERATED BY CONSTRUCTION ACTIVITIES WOULD NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED HABITAT MUST BE COMPLETED BY A QUALIFIED ACOUSTICIAN (POSSESSING CURRENT NOISE ENGINEER LICENSE OR REGISTRATION WITH MONITORING NOISE LEVEL EXPERIENCE WITH LISTED ANIMAL SPECIES) AND APPROVED BY THE CITY MANAGER AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES DURING THE BREEDING SEASON, AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; OR AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES, UNDER THE DIRECTION OF A QUALIFIED ACOUSTICIAN,

NOISE ATTENUATION MEASURES (e.g., BERMS, WALLS) SHALL BE IMPLEMENTED TO ENSURE THAT NOISE LEVELS RESULTING FROM CONSTRUCTION ACTIVITIES WILL NOT EXCEED 60 dB(A) HOURLY AVERAGE AT THE EDGE OF HABITAT OCCUPIED BY THE SOUTHWESTERN WILLOW FLYCATCHER. CONCURRENT WITH THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES AND THE CONSTRUCTION OF NECESSARY NOISE ATTENUATION FACILITIES, NOISE MONITORING* SHALL BE CONDUCTED AT THE EDGE OF THE OCCUPIED HABITAT AREA TO ENSURE THAT NOISE LEVELS DO NOT EXCEED 60 dB(A) HOURLY AVERAGE. IF THE NOISE ATTENUATION TECHNIQUES IMPLEMENTED ARE DETERMINED TO BE INADEQUATE BY THE QUALIFIED ACOUSTICIAN OR BIOLOGIST, THEN THE ASSOCIATED CONSTRUCTION ACTIVITIES SHALL CEASE UNTIL SUCH TIME THAT ADEQUATE NOISE ATTENUATION IS ACHIEVED OR UNTIL THE END OF THE BREEDING SEASON (SEPTEMBER 1).

* Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

B. IF SOUTHWESTERN WILLOW FLYCATCHER ARE NOT DETECTED DURING THE PROTOCOL SURVEY, THE QUALIFIED BIOLOGIST SHALL SUBMIT SUBSTANTIAL EVIDENCE TO THE CITY MANAGER AND APPLICABLE RESOURCE AGENCIES WHICH DEMONSTRATES WHETHER OR NOT MITIGATION MEASURES SUCH AS NOISE WALLS ARE NECESSARY BETWEEN MAY 1 AND SEPTEMBER 1 AS FOLLOWS:

I. IF THIS EVIDENCE INDICATES THE POTENTIAL IS HIGH FOR SOUTHWESTERN WILLOW FLYCATCHER TO BE PRESENT BASED ON HISTORICAL RECORDS OR SITE CONDITIONS, THEN CONDITION A.III SHALL BE ADHERED TO AS SPECIFIED ABOVE.

II. IF THIS EVIDENCE CONCLUDES THAT NO IMPACTS TO THIS SPECIES ARE ANTICIPATED, NO MITIGATION MEASURES WOULD BE NECESSARY.

II. Prior to Start of Construction

A. Preconstruction Meeting

The Qualified Biologist/Owners Representative shall incorporate all MHPA construction related requirements, into the project's Biological Monitoring Exhibit (BME).

The Qualified Biologist/Owners Representative is responsible to arrange and perform a focused pre-con with all contractors, subcontractors, and all workers involved in grading or other construction activities that discusses the sensitive nature of the adjacent sensitive biological resources.

III. During Construction

A. The Qualified Biologist/Owners Representative, shall verify that all construction related activities taking place ~~within or~~ adjacent to the MHPA are consistent with the CDs, the MSCP/MHPA Land Use Adjacency Guidelines. The Qualified Biologist/Owners Representative shall monitor and ensure that:

1. **Land Development /Grading Boundaries -** The MHPA boundary and the limits of grading shall be clearly delineated by a survey crew prior to brushing, clearing, or grading. Limits shall be defined with orange construction fence and a siltation fence (can be combined) under the supervision of the Qualified Biologist/Owners Representative who shall provide a letter of verification to RE/MMC that all limits were marked as required. ~~Within or a~~Adjacent to the MHPA, all manufactured slopes associated with site development shall be included within the development footprint.
2. **Drainage/Toxics -** No Direct drainage into the MHPA shall occur during or after construction and that filtration devices, swales and/or detention/desiltation basins that drain into the MHPA are functioning properly during construction, and that permanent maintenance after construction is addressed. These systems should be maintained approximately once a year, or as often a needed, to ensure proper functioning. Maintenance should include dredging out sediments if needed, removing exotic plant materials, and adding chemical-neutralizing compounds (e.g. clay compounds) when necessary and appropriate.
3. **Staging/storage, equipment maintenance, and trash** - Identify all areas for staging, storage of equipment and materials, trash, equipment maintenance, and other construction related activities on the monitoring exhibits and verify that they are within the development footprint. Comply with the applicable notes on the plans
4 **Barriers -** New development adjacent to the MHPA provides city approved barriers along the MHPA boundaries
5. **Lighting -** Periodic night inspections are performed to verify that all lighting adjacent to the MHPA is directed away from preserve areas and appropriate placement and shielding is used.
6. **Invasives -** No invasive plant species are used ~~in or~~ adjacent (within 100 feet) to the MHPA ~~and that within the MHPA, all plant species must be native~~.
7. **Brush Management -** BMZ1 is within the development footprint and outside of the MHPA, and that maintenance responsibility for the BMZ 2 located within the MHPA is identified as the responsibility of an HOA or other private entity.
8. **Noise –** For any area of the site that is adjacent to ~~or within~~ the MHPA, construction noise that exceeds the maximum levels allowed, shall be avoided, during the breeding seasons, for protected avian species such as: *California Gnatcatcher (3/1-8/15); Least Bell's vireo (3/15-9/15); and Southwestern Willow Flycatcher (5/1-8/30).* If construction is proposed during the breeding season for the species, U.S. Fish and Wildlife Service protocol surveys will be required in order to determine species presence/absence. When applicable, adequate noise reduction measures shall

be incorporated.

IV. Post Construction

A. Preparation and Submittal of Monitoring Report

The Qualified Biologist/Owners Representative shall submit a final biological monitoring report to the RE/MMC within 30 days of the completion of construction that requires monitoring. The report shall incorporate the results of the MMRP/MSCP requirements per the construction documents and the BME to the satisfaction of RE/MMC.

B. HISTORICAL RESOURCES (ARCHAEOLOGY)

Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check
   1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring have been noted on the applicable construction documents through the plan check process.

B. Letters of Qualification have been submitted to ADD
   1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
   2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project meet the qualifications established in the HRG.
   3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search
   1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
   2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
   3. The PI may submit a detailed letter to MMC requesting a reduction to the ¼ mile radius.

B. PI Shall Attend Precon Meetings
   1. Prior to beginning any work that requires monitoring; the Applicant shall arrange a Precon Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Construction Manager (CM)

and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist and Native American Monitor shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Construction Manager and/or Grading Contractor.

a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.

2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)
The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.
3. Identify Areas to be Monitored
   b. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate construction documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits.
   c. The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances and/or any known soil conditions (native or formation).
   d. MMC shall notify the PI that the AME has been approved.
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 indicating when and where monitoring will occur.
   b. The PI may submit a detailed letter to MMC 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 age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.
5. Approval of AME and Construction Schedule
After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Construction Schedule from the CM.

III. During Construction

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The Archaeological Monitor shall be present full-time during all soil disturbing and grading/excavation/trenching activities which could result in impacts to archaeological resources as identified on the AME. **The Construction Manager is responsible for notifying the RE, 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 AME.**
2. The Native American consultant/monitor shall determine the extent of their presence during soil disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are

encountered during the Native American consultant/monitor's absence, work shall stop and the Discovery Notification Process detailed in Section III.B-C and IV.A-D shall commence.

3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Record (CSVR). The CSVR's shall be faxed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process
   1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil disturbing activities, including but not limited to digging, trenching, excavating or grading activities in the area of discovery and in the area reasonably suspected to overlay adjacent resources and immediately notify the RE or BI, as appropriate.
   2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
   3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
   4. No soil shall be exported off-site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance
   1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.
      a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
      b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, CM and RE. ADRP and any mitigation must be approved by MMC, RE and/or CM before ground disturbing activities in the area of discovery will be allowed to resume. **Note: If a unique archaeological site is also an historical resource as defined in CEQA Section 15064.5, then the limits on the amount(s) that a project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.**
         (1). Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."
      c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.

(1). Note: For Pipeline Trenching and other linear projects in the public Right-of-Way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.

(2). Note, for Pipeline Trenching and other linear projects in the public Right-of-Way, if significance cannot be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching and other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the Public Right-of-Way including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

1. Procedures for documentation, curation and reporting
   a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.
   b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.
   c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
   d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

A. Notification
   1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS) of the Development Services Department to assist with the discovery notification process.
   2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

B. Isolate discovery site
   1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can

be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.

2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.

C. If Human Remains **ARE** determined to be Native American
   1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, **ONLY** the Medical Examiner can make this call.
   2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information.
   3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Section 15064.5(e), the California Public Resources and Health & Safety Codes.
   4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
   5. Disposition of Native American Human Remains will be determined between the MLD and the PI, and, if:
      a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR;
      b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, THEN
      c. To protect these sites, the landowner shall do one or more of the following:
         (1) Record the site with the NAHC;
         (2) Record an open space or conservation easement; or
         (3) Record a document with the County.
      d. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 5.c., above.

D. If Human Remains are **NOT** Native American
   1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.
   2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
   3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

V. Night and/or Weekend Work

A. If night and/or weekend work is included in the contract
   1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
   2. The following procedures shall be followed.
      a. 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 fax by 8AM of the next business day.
      b. Discoveries
         All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction, and IV – Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.
      c. Potentially Significant Discoveries
         If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction and IV-Discovery of Human Remains shall be followed.
      d. The PI shall immediately contact the RE and MMC, or by 8AM of the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.

B. If night and/or weekend work becomes necessary during the course of construction
   1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
   2. The RE, or BI, as appropriate, shall notify MMC immediately.

C. All other procedures described above shall apply, as appropriate.

VI. Post Construction

A. Submittal of Draft Monitoring Report
   1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Historical Resources Guidelines (Appendix C/D) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. **It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day timeframe as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.**
      a. For significant archaeological resources encountered during monitoring, the Archaeological Data Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
      b. Recording Sites with State of California Department of Parks and Recreation
         The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.

2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
4. MMC shall provide written verification to the PI of the approved report.
5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.

B. Handling of Artifacts
1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.

C. Curation of artifacts: Accession Agreement and Acceptance Verification
1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.
2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section IV – Discovery of Human Remains, Subsection C.
3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
4. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.
5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.

D. Final Monitoring Report(s)
1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or BI as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
2. The RE 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.

C. PALEONTOLOGICAL RESOURCES

I. Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check
1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Paleontological Monitoring have been noted on the appropriate construction documents.

B. Letters of Qualification have been submitted to ADD
1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (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.

2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the paleontological monitoring of the project.
3. Prior to the start of work, the applicant shall obtain approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search

1. 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.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.

B. PI Shall Attend Precon Meetings

1. Prior to beginning any work that requires monitoring, the Applicant shall arrange a Precon Meeting that shall include the PI, Construction Manager (CM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified paleontologist shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Paleontological Monitoring program with the Construction Manager and/or Grading Contractor.
   a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.
2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects) The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the paleontological monitoring program.
3. Identify Areas to be Monitored

a. 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) to MMC 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.

   b. b. 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).
   c. c. MMC shall notify the PI that the PME has been approved.

d. 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 indicating when and where monitoring will occur.
   b. The PI may submit a detailed letter to MMC 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
   After approval of the PME by MMC, the PI shall submit to MMC written authorization of the PME and Construction Schedule from the CM.

III. During Construction

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The 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. **The Construction Manager is responsible for notifying the RE, 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.**
2. The PI may submit a detailed letter to MMC 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.
3. The monitor shall document field activity via the Consultant Site Visit Record (CSVR). The CSVR's shall be faxed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion**), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process

1. 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 or BI, as appropriate.
2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.

C. Determination of Significance

1. The PI shall evaluate the significance of the resource.
   a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required. The determination of significance for fossil discoveries shall be at the discretion of the PI.
   b. If the resource is significant, the PI shall submit a Paleontological Recovery Program (PRP) and obtain written approval of the program from MMC, MC and/or RE. PRP and any mitigation must be approved by MMC, RE and/or CM before ground disturbing activities in the area of discovery will be allowed to resume.

(1). Note: For pipeline trenching projects only, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."

c. 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.

d. The PI shall submit a letter to MMC 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.

(1). 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.

(2). Note, for Pipeline Trenching Projects Only: If significance can not be determined, the Final Monitoring Report and Site Record shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching Projects
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.

1. Procedures for documentation, curation and reporting

a. 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.

b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.

c. 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 City's Paleontological Guidelines. The forms shall be submitted to the San Diego Natural History Museum and included in the Final Monitoring Report.

d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Night and/or Weekend Work

A. If night and/or weekend work is included in the contract

1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.

2. The following procedures shall be followed.

a. 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 via fax by 8AM on the next business day.

b. Discoveries
All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction.
c. Potentially Significant Discoveries
If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction shall be followed.
d. The PI shall immediately contact the RE and MMC, or by 8AM on the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.

B. If night and/or weekend work becomes necessary during the course of construction
1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
2. The RE, or BI, as appropriate, shall notify MMC immediately.

C. All other procedures described above shall apply, as appropriate.

V. Post Construction

A. Preparation and Submittal of Draft Monitoring Report
1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Paleontological Guidelines which describes the results, analysis, and conclusions of all phases of the Paleontological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring,
   a. For significant paleontological resources encountered during monitoring, the Paleontological Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
   b. Recording Sites with the San Diego Natural History Museum
   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 City's Paleontological Guidelines, and submittal of such forms to the San Diego Natural History Museum with the Final Monitoring Report.
2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
4. MMC shall provide written verification to the PI of the approved report.
5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.

B. Handling of Fossil Remains
1. The PI shall be responsible for ensuring that all fossil remains collected are cleaned and catalogued.

C. Curation of artifacts: Deed of Gift and Acceptance Verification
1. The PI shall be responsible for ensuring that all fossil remains associated with the monitoring for this project are permanently curated with an appropriate institution.
2. The PI shall submit the Deed of Gift and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
3. The RE or BI, as appropriate shall obtain signature on the Deed of Gift and shall return to PI with copy submitted to MMC.

4. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.

D. Final Monitoring Report(s)
   1. The PI shall submit two copies of the Final Monitoring Report to MMC (even if negative), within 90 days after notification from MMC of the approved report.
   2. The RE 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.

D. HISTORICAL RESOURCES (BUILT ENVIRONMENT)

When a future project requires implementation of this mitigation measure, the following paragraph shall be included in the subsequent environmental document and applicable Historic District name, boundary and district guidelines, if applicable shall be inserted as noted below in [brackets]:

The project is located within the [[insert District name]] Historic District, bounded by [[enter District boundary]] All work within the District boundary must be consistent with the City's Historical Resources Regulations, the U.S. Secretary of the Interior's Standards and the [[enter district guidelines if applicable]] District Design Guidelines. The following mitigation measures are required within the District boundary and shall ensure consistency with these regulations, Standards and guidelines.

A. Prior to beginning any work at the site, a Pre Construction meeting that includes Historic Resources and MMC staff shall be held at the project site to review these mitigation measures and requirements within the District boundary.

B. A Historic Sidewalk Stamp Inventory prepared by a qualified historic consultant or archaeologist and approved by HRB staff is required prior to the Pre-Construction (Pre-Con) meeting. The Inventory shall include photo documentation of all existing stamps within the project area keyed to a project site plan.

C. Existing sidewalk stamps shall be preserved in place. Where existing sidewalk stamps must be impacted to accommodate right-of-way improvements, the following actions are required:

   1. A mold of the sidewalk stamp will be made to allow reconstruction of the stamp if destroyed during relocation.
   2. The sidewalk stamp shall be saw-cut to preserve the stamp in its entirety; relocated as near as possible to the original location; and set in the same orientation.
   3. If the sidewalk stamp is destroyed during relocation, a new sidewalk stamp shall be made from the mold taken and relocated as near as possible to the original location and set in the same orientation.

D. No new sidewalk stamps shall be added by any contactor working on the project.

E. Existing historic sidewalk, parkway and street widths shall be maintained. Any work that requires alteration of these widths shall be approved by Historic Resources staff.

F. Existing historic curb heights and appearance shall be maintained. Any work that requires alteration of the existing height or appearance shall be approved by Historic Resources staff.

G. Sections of sidewalk which may be impacted by the project shall be replaced in-kind to match the historic color, texture and scoring pattern of the original sidewalks. If the original color, scoring pattern or texture is not present at the location of the impact, the historically appropriate color, texture and scoring pattern found throughout the district shall be used.

H. Truncated domes used at corner curb ramps shall be dark gray in color.

I. Existing historic lighting, such as acorn lighting shall remain. New lighting shall be consistent with existing lighting fixtures, or fixtures specified in any applicable District Design Guidelines.

J. Existing mature street trees shall remain. New street trees shall be consistent with the prevalent mature species in the District and/or species specified in any applicable District Design Guidelines.

K. Any walls located within the right-of-way or on private property are considered historic and may not be impacted without prior review and approval by Historic Resources staff.

VI. PUBLIC REVIEW DISTRIBUTION:

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

United States Government
- Fish and Wildlife Service (23)
- MCAS Miramar (13)
- Naval Facilities Engineering Command Southwest (8)

State of California
- Department of Fish and Game (32A)
- State Clearing House (46)
- Resources Agency (43)
- Native American Heritage Commission (56)
- State Historic Preservation Officer (41)
- Regional Water Quality Control Board (44)
- Water Resources (45)
- Water Resources Control Board (55)
- Coastal Commission (48)
- Caltrans District 11 (31)

County of San Diego
- Department of Environmental Health (75)
- Planning and Land Use (68)
- Water Authority (73)

City of San Diego
- Office of the Mayor (91)
- Council President Young, District 4 (MS 10A)
- Councilmember Lightner, District 1 (MS 10A)
- Councilmember Faulconer, District 2 (MS 10A)
- Councilmember Gloria, District 3 (MS 10A)
- Councilmember DeMaio, District 5 (MS 10A)

Councilmember Zapf, District 6 (MS 10A)
Councilmember Emerald, District 7 (MS 10A)
Councilmember Alvarez, District 8 (MS 10A)
Historical Resource Board (87)
City Attorney (MS 56A)
Shannon Thomas (MS 93C)
Engineering and Capital Projects
Marc Cass (MS 908A)
Allison Sherwood (MS 908A)
Matthew DeBeliso (MS 908A)
Akram Bassyouni (MS 908A)
Michael Ninh (MS 908A)
Roman Anissi (MS 908A)
Daniel Tittle (MS 908A)
Development Services Department
Myra Herrmann (MS 501)
Kristen Forburger (MS 401)
Jeanne Krosch (MS 401)
Kelley Stanco (MS 501)
Library Dept.-Gov. Documents MS 17 (81)
Balboa Branch Library (81B)
Beckwourth Branch Library (81C)
Benjamin Branch Library (81D)
Carmel Mountain Ranch Branch (81E)
Carmel Valley Branch Library (81F)
City Heights/Weingart Branch Library (81G)
Clairemont Branch Library (81H)
College-Rolando Branch Library (81I)
Kensington-Normal Heights Branch Library (81K)
La Jolla/Riford branch Library (81L)
Linda Vista Branch Library (81M)
Logan Heights Branch Library (81N)
Malcolm X Library & Performing Arts Center (81O)
Mira Mesa Branch Library (81P)
Mission Hills Branch Library (81Q)
Mission Valley Branch Library (81R)
North Clairemont Branch Library (81S)
North Park Branch Library (81T)
Oak Park Branch Library (81U)
Ocean Beach Branch Library (81V)
Otay Mesa-Nestor Branch Library (81W)
Pacific Beach/Taylor Branch Library (81X)
Paradise Hills Branch Library (81Y)
Point Loma/Hervey Branch Library (81Z)
Rancho Bernardo Branch Library (81AA)
Rancho Peñasquitos Branch Library (81BB)
San Carlos Branch Library (81DD)
San Ysidro Branch Library (81EE)
Scripps Miramar Ranch Branch Library (81FF)

Serra Mesa Branch Library (81GG)
Skyline Hills Branch Library (81HH)
Tierrasanta Branch Library (81II)
University Community Branch Library (81JJ)
University Heights Branch Library (81KK)
Malcolm A. Love Library (457)

Other Interested Individuals or Groups

Community Planning Groups

Community Planners Committee (194)
Balboa Park Committee (226 + 226A)
Black Mountain Ranch –Subarea I (226C)
Otay Mesa - Nestor Planning Committee (228)
Otay Mesa Planning Committee (235)
Clairemont Mesa Planning Committee (248)
Greater Golden Hill Planning Committee (259)
Serra Mesa Planning Group (263A)
Kearny Mesa Community Planning Group (265)
Linda Vista Community Planning Committee (267)
La Jolla Community Planning Association (275)
City Heights Area Planning Committee (287)
Kensington-Talmadge Planning Committee (290)
Normal Heights Community Planning Committee (291)
Eastern Area Planning Committee (302)
North Bay Community Planning Group (307)
Mira Mesa Community Planning Group (310)
Mission Beach Precise Planning Board (325)
Mission Valley Unified Planning Organization (331)
Navajo Community Planners Inc. (336)
Carmel Valley Community Planning Board (350)
Del Mar Mesa Community Planning Board (361)
Greater North Park Planning Committee (363)
Ocean Beach Planning Board (367)
Old Town Community Planning Committee (368)
Pacific Beach Community Planning Committee (375)
Pacific Highlands Ranch – Subarea III (377A)
Rancho Peñasquitos Planning Board (380)
Peninsula Community Planning Board (390)
Rancho Bernardo Community Planning Board (400)
Sabre Springs Community Planning Group (406B)
Sabre Springs Community Planning Group (407)
San Pasqual - Lake Hodges Planning Group (426)
San Ysidro Planning and Development Group (433)
Scripps Ranch Community Planning Group (437)
Miramar Ranch North Planning Committee (439)
Skyline - Paradise Hills Planning Committee (443)
Torrey Hills Community Planning Board (444A)
Southeastern San Diego Planning Committee (449)
Encanto Neighborhoods Community Planning Group (449A)

College Area Community Council (456)
Tierrasanta Community Council (462)
Torrey Highlands – Subarea IV (467)
Torrey Pines Community Planning Group (469)
University City Community Planning Group (480)
Uptown Planners (498)

Town/Community Councils - PUBLIC NOTICE ONLY
Town Council Presidents Association (197)
Harborview Community Council (246)
Carmel Mountain Ranch Community Council (344)
Clairemont Town Council (257)
Serra Mesa Community Council (264)
Rolando Community Council (288)
Oak Park Community Council (298)
Webster Community Council (301)
Darnell Community Council (306)
La Jolla Town Council (273)
Mission Beach Town Council (326)
Mission Valley Community Council (328 C)
San Carlos Area Council (338)
Ocean Beach Town Council, Inc. (367 A)
Pacific Beach Town Council (374)
Rancho Penasquitos Community Council (378)
Rancho Bernardo Community Council, Inc. (398)
Rancho Penasquitos Town Council (383)
United Border Community Town Council (434)
San Dieguito Planning Group (412)
Murphy Canyon Community Council (463)

Other Interested Individuals or Groups
San Diego Unified Port District (109)
San Diego County Regional Airport Authority (110)
San Diego transit Corporation (112)
San Diego Gas & Electric (114)
Metropolitan Transit Systems (115)
San Diego Unified School District (125/132)
San Ysidro Unified School District (127)
San Diego Community College District (133)
The Beach and Bay Beacon News (137)
Sierra Club (165)
San Diego Canyonlands (165A)
San Diego Natural History Museum (166)
San Diego Audubon Society (167)
Jim Peugh (167A)
California Native Plant Society (170)
San Diego Coastkeeper (173)
Endangered Habitat League (182 and 182A)
South Coastal Information Center @ San Diego State University (210)

San Diego Historical Society (211)
Carmen Lucas (206)
Clint Linton (215b)
San Diego Archaeological Center (212)
Save Our Heritage Organization (214)
Ron Christman (215)
Louie Guassac (215A)
San Diego County Archaeological Society (218)
Kumeyaay Cultural Heritage Preservation (223)
Kumeyaay Cultural Repatriation Committee (225)
Native American Distribution (NOTICE ONLY 225A-T)
San Diego Historical Society (211)
Theresa Acerro (230)
Unified Port of San Diego (240)
Centre City Development Corporation (242)
Centre City Advisory Committee (243)
Balboa Avenue CAC (246)
Theresa Quiros (294)
Fairmount Park Neighborhood Association (303)
John Stump (304)
San Diego Baykeeper (319)
Debbie Knight (320)
Mission Hills Heritage (497)

VII. RESULTS OF PUBLIC REVIEW:

( ) No comments were received during the public input period.

( ) Comments were received but did not address the draft Mitigated Negative Declaration finding or the accuracy/completeness of the Initial Study. No response is necessary. The letters are attached.

(x) Comments addressing the findings of the draft Mitigated Negative Declaration and/or accuracy or completeness of the Initial Study were received during the public input period. The letters and responses follow.

Copies of the draft Mitigated Negative Declaration, the Mitigation, Monitoring and Reporting Program and any Initial Study material are available in the office of the Entitlements Division for review, or for purchase at the cost of reproduction.

Myra Herrmann, Senior Planner
Development Services Department

September 14, 2011
Date of Draft Report

October 24, 2011
Date of Final Report

Analysts: J. Szymanski/M. Herrmann

Attachments:
Figure 1 - Harbor Drive Pipeline Location Map
Figure 2 - Water Group 949 Site 1 Location Map
Figure 3- Water Group 949 Site 2 Location Map
Figure 4- Water Group 949 Site 3 Location Map
Figure 5- Sewer Group 787 Location Map
Figure 6- Water Group 914 Location Map
Figure 7- Sewer and Water Group 732 Location Map
Figure 8- Water Group 949-Site 2 with the MHPA
Initial Study Checklist

AC WATER AND SEWER GROUP JOB 1020 PROJECT
ADDENDUM TO MITIGATED NEGATIVE DECLARATION NO. 255100
(Project No. 563428)
AND
MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

ADOPTED ON SEPTEMBER 5, 2017

WHEREAS, on July 18, 2017, The City of San Diego Public Works Department submitted an application to the Development Services Department for a Public Project Assessment for the AC Water and Sewer Group Job 1020 project (Project), for approval of minor technical changes or additions to the Citywide Pipeline Projects scope that was analyzed by adopted Mitigated Negative Declaration No. 255100; and

WHEREAS, the matter was considered without a public hearing by the Deputy Director of the Development Services Department as designated by the City Manager of the City of San Diego on September 5, 2017; and

WHEREAS, on September 5, 2017, the Deputy Director of the Development Services considered the issues discussed in Addendum to Mitigated Negative Declaration No. 255100 (Declaration), a copy of which is on file in the Development Services Department, in accordance with the California Environmental Quality Act of 1970 (CEQA) (Public Resources Code Section 21000 et seq.), as amended, and the State CEQA Guidelines thereto (California Code of Regulations, Title 14, Chapter 3, Section 15000 et seq.); and

WHEREAS, State CEQA Guidelines section 15164(a) allows a lead agency to prepare an Addendum to a final Mitigated Negative Declaration if such Addendum meets the requirements of CEQA; NOW, THEREFORE,

BE IT RESOLVED, by the Deputy Director of the Development Services Department of the City of San Diego as follows:

1. That the information contained in the final Mitigated Negative Declaration No. 255100 along with the Addendum thereto, including any comments received during the public review process, has been reviewed and considered by this Deputy Director of the Development Services Department prior to making a decision on the Project.

2. That there are no substantial changes proposed to the Project and no substantial changes with respect to the circumstances under which the Project is to be undertaken that would require major revisions in the Mitigated Negative Declaration for the Project.

3. That no new information of substantial importance has become available showing that the Project would have any significant effects not discussed previously in Mitigated Negative Declaration or that any significant effects previously examined will be substantially more severe than shown in the Mitigated Negative Declaration.

4. That no new information of substantial importance has become available showing that mitigation measures or alternatives previously found not to be feasible are in fact feasible which would substantially reduce any significant effects, but that the Project proponents decline to adopt, or that there are any considerably different mitigation measures or alternatives not previously considered which would substantially reduce any significant effects, but that the Project proponents decline to adopt.

5. That pursuant to State CEQA Guidelines Section 15164, only minor technical changes or additions are necessary, and therefore, the Deputy Director of the Development Services Department adopts Addendum to Mitigated Negative Declaration No. 255100 with respect to the Project, a copy of which is on file in the office of the Development Services Department.

6. That pursuant to CEQA Section 21081.6, the Deputy Director of the Development Services Department adopts the Mitigation Monitoring and Reporting Program, or alterations to implement the changes to the project as required by this Deputy Director of the Development Services Department in order to mitigate or avoid significant effects on the environment, which is attached hereto as Exhibit A.

7. That DEVELOPMENT SERVICES STAFF is directed to file a Notice of Determination with the Clerk of the Board of Supervisors for the County of San Diego regarding the Project.

APPROVED: Kerry Santoro, Deputy Director, Development Services Department

By:  Date: September 5, 2017

ATTACHMENT: EXHIBIT A – MITIGATION MONITORING AND REPORTING PROGRAM

EXHIBIT A

MITIGATION MONITORING AND REPORTING PROGRAM
AC WATER AND SEWER GROUP JOB 1020 PROJECT
PROJECT NO. 563428

This Mitigation Monitoring and Reporting Program is designed to ensure compliance with Public Resources Code Section 21081.6 during implementation of mitigation measures. This program identifies at a minimum: the department responsible for the monitoring, what is to be monitored, how the monitoring shall be accomplished, the monitoring and reporting schedule, and completion requirements. A record of the Mitigation Monitoring and Reporting Program will be maintained at the offices of the Entitlements Division, 1222 First Avenue, Fifth Floor, San Diego, CA, 92101.

Historical Resources (Archaeology)

I. Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check
   1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring have been noted on the applicable construction documents through the plan check process.

B. Letters of Qualification have been submitted to ADD
   1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
   2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project meet the qualifications established in the HRG.
   3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search
   1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
   2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
   3. The PI may submit a detailed letter to MMC requesting a reduction to the ¼ mile radius.

B. PI Shall Attend Precon Meetings
   1. Prior to beginning any work that requires monitoring; the Applicant shall arrange a Precon Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Construction Manager (CM) and/or

Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist and Native American Monitor shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Construction Manager and/or Grading Contractor.

a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.

2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)
   The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.
3. Identify Areas to be Monitored
   a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate construction documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits.
   b. The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances and/or any known soil conditions (native or formation).
   c. MMC shall notify the PI that the AME has been approved.
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 indicating when and where monitoring will occur.
   b. The PI may submit a detailed letter to MMC 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 age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.
5. Approval of AME and Construction Schedule
   After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Construction Schedule from the CM.

III. <u>During Construction</u>

A. Monitor Shall be Present During Grading/Excavation/Trenching
   1. The Archaeological Monitor shall be present full-time during all soil disturbing and grading/excavation/trenching activities which could result in impacts to archaeological resources as identified on the AME. <u>The Construction Manager is responsible for notifying the RE, 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 AME.</u>
   2. The Native American consultant/monitor shall determine the extent of their presence during soil disturbing and grading/excavation/trenching activities based on

the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop and the Discovery Notification Process detailed in Section III.B-C and IV.A-D shall commence.

3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Record (CSVR). The CSVR's shall be emailed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (**Notification of Monitoring Completion)**, and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process
   1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil disturbing activities, including but not limited to digging, trenching, excavating or grading activities in the area of discovery and in the area reasonably suspected to overlay adjacent resources and immediately notify the RE or BI, as appropriate.
   2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
   3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by email with photos of the resource in context, if possible.
   4. No soil shall be exported off-site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance
   1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.
      a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
      b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, CM and RE. ADRP and any mitigation must be approved by MMC, RE and/or CM before ground disturbing activities in the area of discovery will be allowed to resume. Note: If a unique archaeological site is also an historical resource as defined in CEQA Section 15064.5, then the limits on the amount(s) that a project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.
         (1). Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."

c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.
    (1). Note: For Pipeline Trenching and other linear projects in the public Right-of-Way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.
    (2). Note, for Pipeline Trenching and other linear projects in the public Right-of-Way, if significance cannot be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching and other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the Public Right-of-Way including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

1. Procedures for documentation, curation and reporting
    a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.
    b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.
    c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
    d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

A. Notification
    1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS) of the Development Services Department to assist with the discovery notification process.

2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

B. Isolate discovery site
   1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
   2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
   3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.

C. If Human Remains **ARE** determined to be Native American
   1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, **ONLY** the Medical Examiner can make this call.
   2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information.
   3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Section 15064.5(e), the California Public Resources and Health & Safety Codes.
   4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
   5. Disposition of Native American Human Remains will be determined between the MLD and the PI, and, if:
      a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR;
      b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, THEN
      c. To protect these sites, the landowner shall do one or more of the following:
         (1) Record the site with the NAHC;
         (2) Record an open space or conservation easement; or
         (3) Record a document with the County.
      d. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 5.c., above.

D. If Human Remains are **NOT** Native American
   1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.

2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

V. Night and/or Weekend Work

A. If night and/or weekend work is included in the contract
   1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
   2. The following procedures shall be followed.
      a. 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 email by 8AM of the next business day.
      b. Discoveries
         All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction, and IV – Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.
      c. Potentially Significant Discoveries
         If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction and IV-Discovery of Human Remains shall be followed.
      d. The PI shall immediately contact the RE and MMC, or by 8AM of the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.

B. If night and/or weekend work becomes necessary during the course of construction
   1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
   2. The RE, or BI, as appropriate, shall notify MMC immediately.

C. All other procedures described above shall apply, as appropriate.

VI. Post Construction

A. Submittal of Draft Monitoring Report
   1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the Historical Resources Guidelines (Appendix C/D) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day timeframe as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.

a. For significant archaeological resources encountered during monitoring, the Archaeological Data Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
b. Recording Sites with State of California Department of Parks and Recreation The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.

2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.
3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
4. MMC shall provide written verification to the PI of the approved report.
5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.

B. Handling of Artifacts
1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.

C. Curation of artifacts: Accession Agreement and Acceptance Verification
1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.
2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section IV – Discovery of Human Remains, Subsection C.
3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.
4. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.
5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.

D. Final Monitoring Report(s)
1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or BI as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
2. The RE 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.

The above mitigation monitoring and reporting program will require additional fees and/or deposits to be collected prior to the issuance of building permits, certificates of occupancy and/or final maps to ensure the successful completion of the monitoring program.

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.)

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.

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.

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.

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

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

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

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.

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. Theses 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.

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)

City of San Diego PUBLIC UTILITIES Water & Wastewater

(For Office Use Only)

NS REQ	FAC#
DATE	BY

METER SHOP (619) 527-7449

Application Date	Requested Install Date:

Meter Information

Fire Hydrant Location: (Attach Detailed Map//Thomas Bros. Map Location or Construction drawing.) Zip:	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:	☐	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: (PERSON IN ACCOUNTS PAYABLE)			Phone: ( )
Site Contact Name and Title:			Phone: ( )
Responsible Party Name:			Title:
Cal ID#			Phone: ( )
Signature:		Date:	

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

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

☐ City Meter	☐ 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 SPEND CURVE

City of San Diego, CM&FS Div., 9753 Chesapeake Drive, SD CA 92123

Project Name:

Work Order No or Job Order No.

City Purchase Order No.

Resident Engineer (RE):

RE Phone#: Fax#:

Contractor's Name:

Contractor's Address:

Contractor's Phone #:

Contractor's fax #:

Contact Name:

Invoice No.

Invoice Date:

Billing Period: (To)

Item #	Item Description	Contract Authorization				Previous Totals To Date		This Estimate		Totals to Date	
		Unit	Price	Qty	Extension	%/QTY	Amount	% / QTY	Amount	% / QTY	Amount
1					$ -		$ -		$ -	0.00	$ -
2					$ -		$ -		$ -	0.00%	$ -
3					$ -		$ -		$ -	0.00%	$ -
4					$ -		$ -		$ -	0.00%	$ -
5					$ -		$ -		$ -	0.00%	$ -
6					$ -		$ -		$ -	0.00%	$ -
7					$ -		$ -		$ -	0.00%	$ -
8					$ -		$ -		$ -	0.00%	$ -
5					$ -		$ -		$ -	0.00%	$ -
6					$ -		$ -		$ -	0.00%	$ -
7					$ -		$ -		$ -	0.00%	$ -
8					$ -		$ -		$ -	0.00%	$ -
9					$ -		$ -		$ -	0.00%	$ -
10					$ -		$ -		$ -	0.00%	$ -
11					$ -		$ -		$ -	0.00%	$ -
12					$ -		$ -		$ -	0.00%	$ -
13					$ -		$ -		$ -	0.00%	$ -
14					$ -		$ -		$ -	0.00%	$ -
15					$ -		$ -		$ -	0.00%	$ -
16					$ -		$ -		$ -	0.00%	$ -
17	**Field Orders**				$ -		$ -		$ -	0.00%	$ -
					$ -		$ -		$ -	0.00%	$ -
	CHANGE ORDER No.				$ -		$ -		$ -	0.00%	$ -
					$ -		$ -		$ -	0.00%	$ -
	Total Authorized Amount (including approved Change Order)				**$ -**		**$ -**		$ -	**Total Billed**	$ -

SUMMARY

A. Original Contract Amount	$ -
B. Approved Change Order #00 Thru #00	$ -
C. Total Authorized Amount (A+B)	$ -
D. Total Billed to Date	$ -
E. Less Total Retention (5% of D)	$ -
F. Less Total Previous Payments	$ -
G. Payment Due Less Retention	**$0.00**
H. Remaining Authorized Amount	$0.00

I certify that the materials have been received by me in the quality and quantity specified

_____

Resident Engineer

_____

Construction Engineer

Retention and/or Escrow Payment Schedule

Total Retention Required as of this billing (Item E)	$0.00
Previous Retention Withheld in PO or in Escrow	$0.00
Add'l Amt to Withhold in PO/Transfer in Escrow:	***$0.00***
Amt to Release to Contractor from PO/Escrow:	

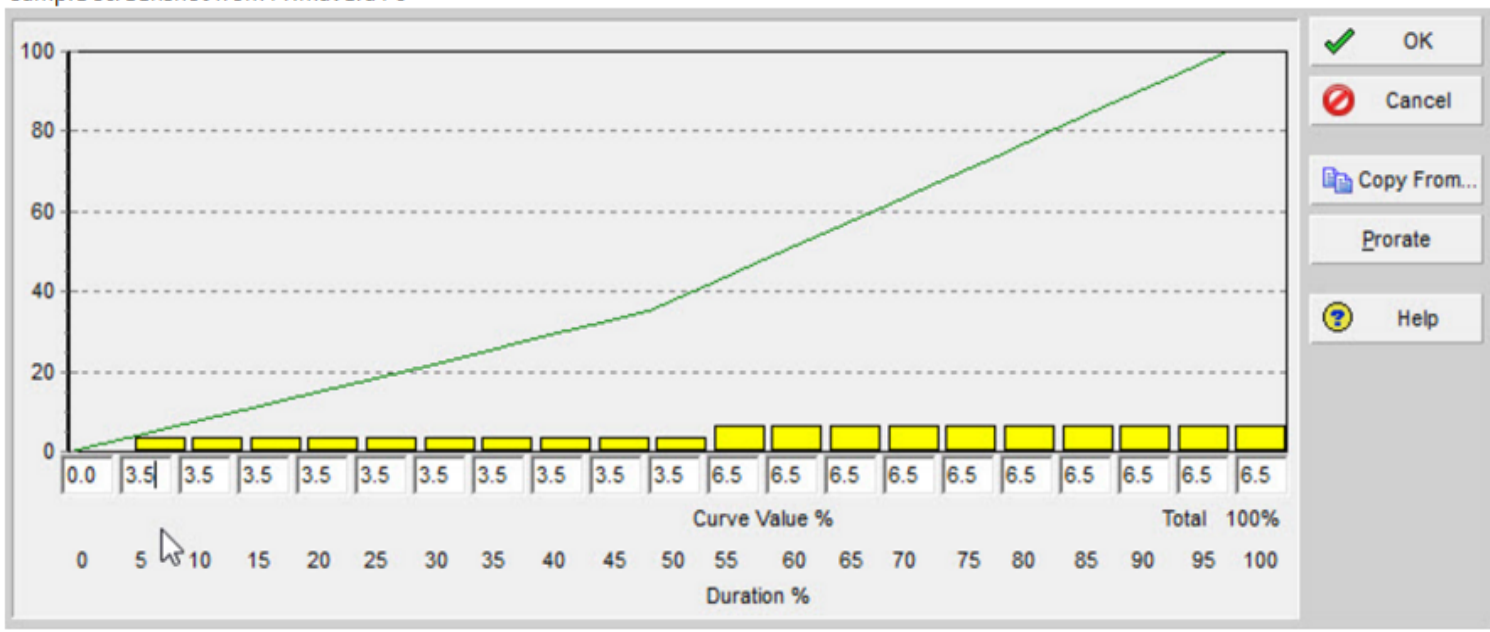
Contractor Signature and Date: _____

Sample Project Spend Curve

Sample Date Entries Required

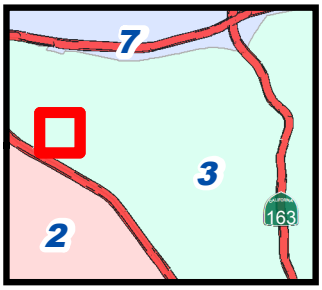
Incremental Curve Value	0.0%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%
Duration % Increment	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%

Sample Screenshot from Primavera P6



APPENDIX E

LOCATION MAPS



The City of SAN DIEGO

AC WATER AND SEWER GROUP 1020

SENIOR ENGINEER	PROJECT MANAGER	PROJECT ENGINEER	FOR QUESTIONS ABOUT THIS PROJECT
NABIL BATTA	ROBERTO VEJAR-PARRA	REYNA RENDON ROJAS	Call: 619-533-4207
619-533-4145	619-533-5402	619-533-7465	Email: engineering@sandiego.gov

LEGEND

PROPOSED WATER REPLACE IN PLACE - OPEN TRENCH

PROPOSED SEWER REPLACE IN PLACE - OPEN TRENCH

N
W E

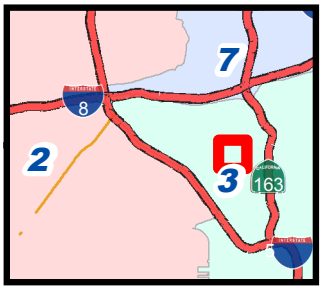
COMMUNITY NAME: UPTOWN

Date: July 11, 2017

COUNCIL DISTRICT: 3

SanGIS

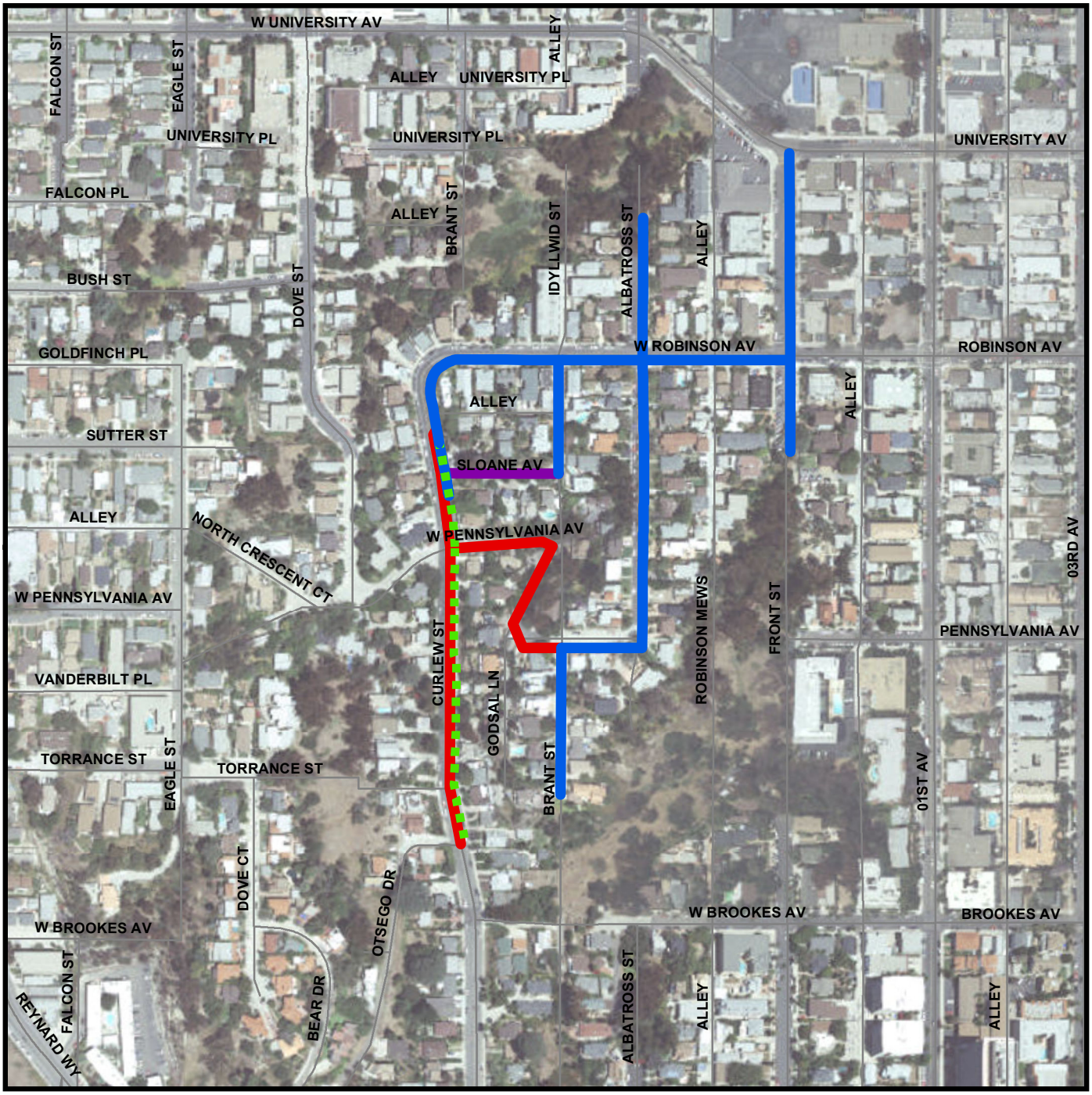
SAP ID: B-15148 (S) \ B-15157 (W)



The City of SAN DIEGO Public Works

AC WATER AND SEWER GROUP 1020

SENIOR ENGINEER	PROJECT MANAGER	PROJECT ENGINEER	FOR QUESTIONS ABOUT THIS PROJECT
NABIL BATTA	ROBERTO VEJAR-PARRA	REYNA RENDON ROJAS	Call: 619-533-4207
619-533-4145	619-533-5402	619-533-7465	Email: engineering@sandiego.gov



Legend

- Existing Water
- Proposed Water Main - Replace in Place
- Proposed Water Main
- Existing Water to be Abandoned

N
W
E

COMMUNITY NAME: UPTOWN
Date: July 11, 2017

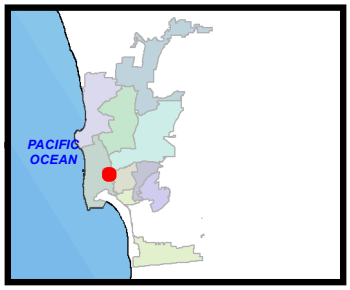
COUNCIL DISTRICT: 3

SanGIS

SAP ID: B-15148 (S) \
B-15157 (W)

APPENDIX F

ADJACENT PROJECTS



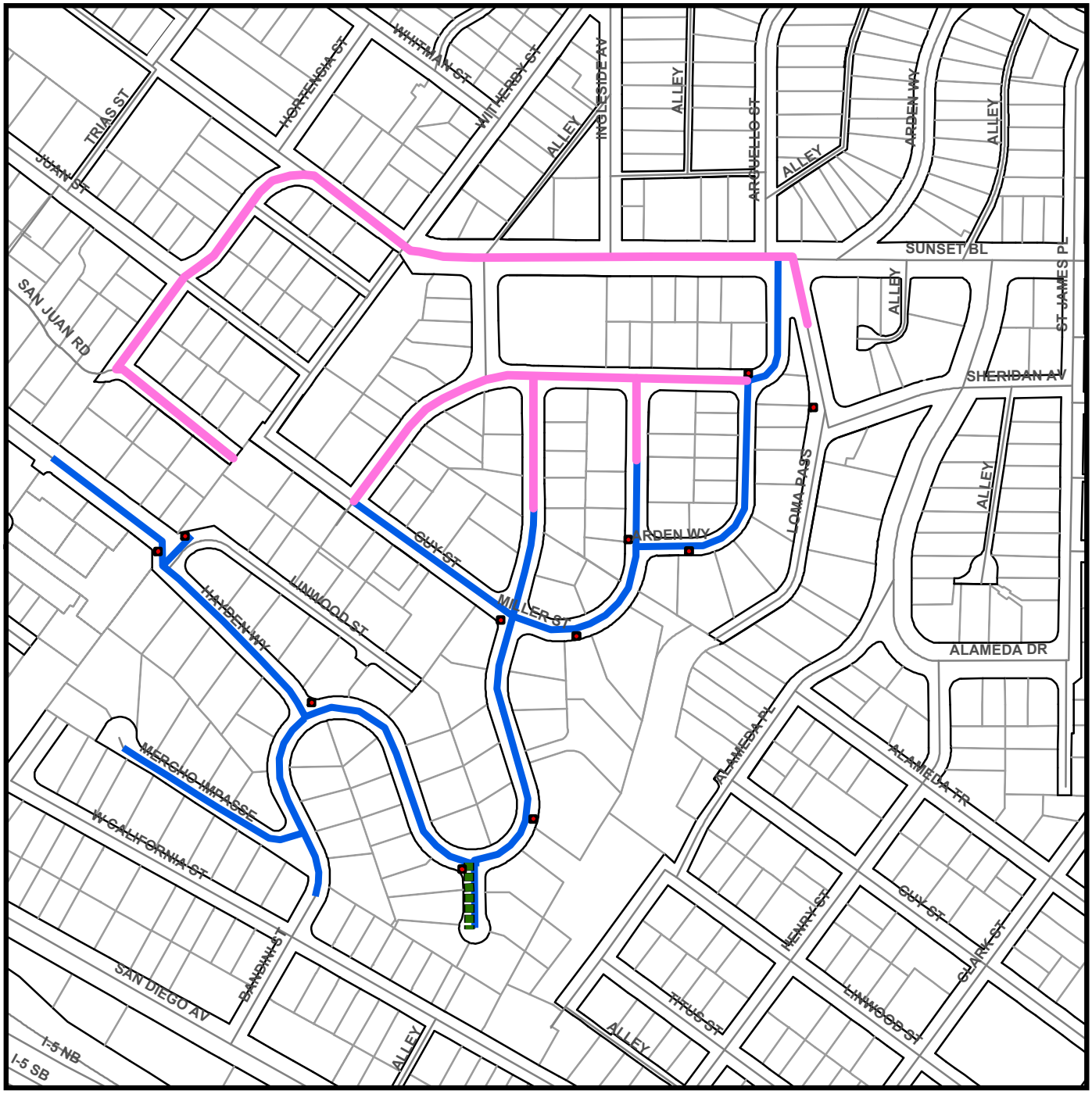
The City of SAN DIEGO Public Works

APPENDIX F- ADJACENT PROJECTS

AC WATER & SEWER GROUP 1020

(MAP 1 of 2)

SENIOR ENGINEER	PROJECT MANAGER	PROJECT ENGINEER	FOR QUESTIONS ABOUT THIS PROJECT
NABIL BATTA	ROBERTO VEJAR-PARRA	REYNA RENDON ROJAS	Call: (619) 533-4207
(619) 533-4145	(619) 533-5402	(619)-533-7465	Email: engineering@sandiego.gov



Legend

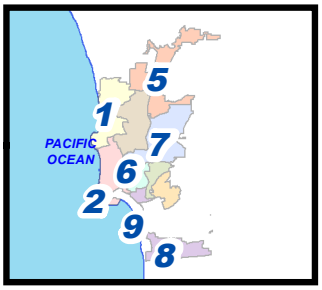
- Proposed Sewer
- Proposed Water
- District 2 Block 2E UUD
- Mission Hills Histor C St. Lighting

N W E S

COMMUNITY NAME: Uptown
COUNCIL DISTRICT: 3
SAP ID: B15148 (S) \ B15157 (W)

AC Water and Sewer Group 1020 Appendix F- Adjacent Projects
Date: 12/19/17

SanGIS



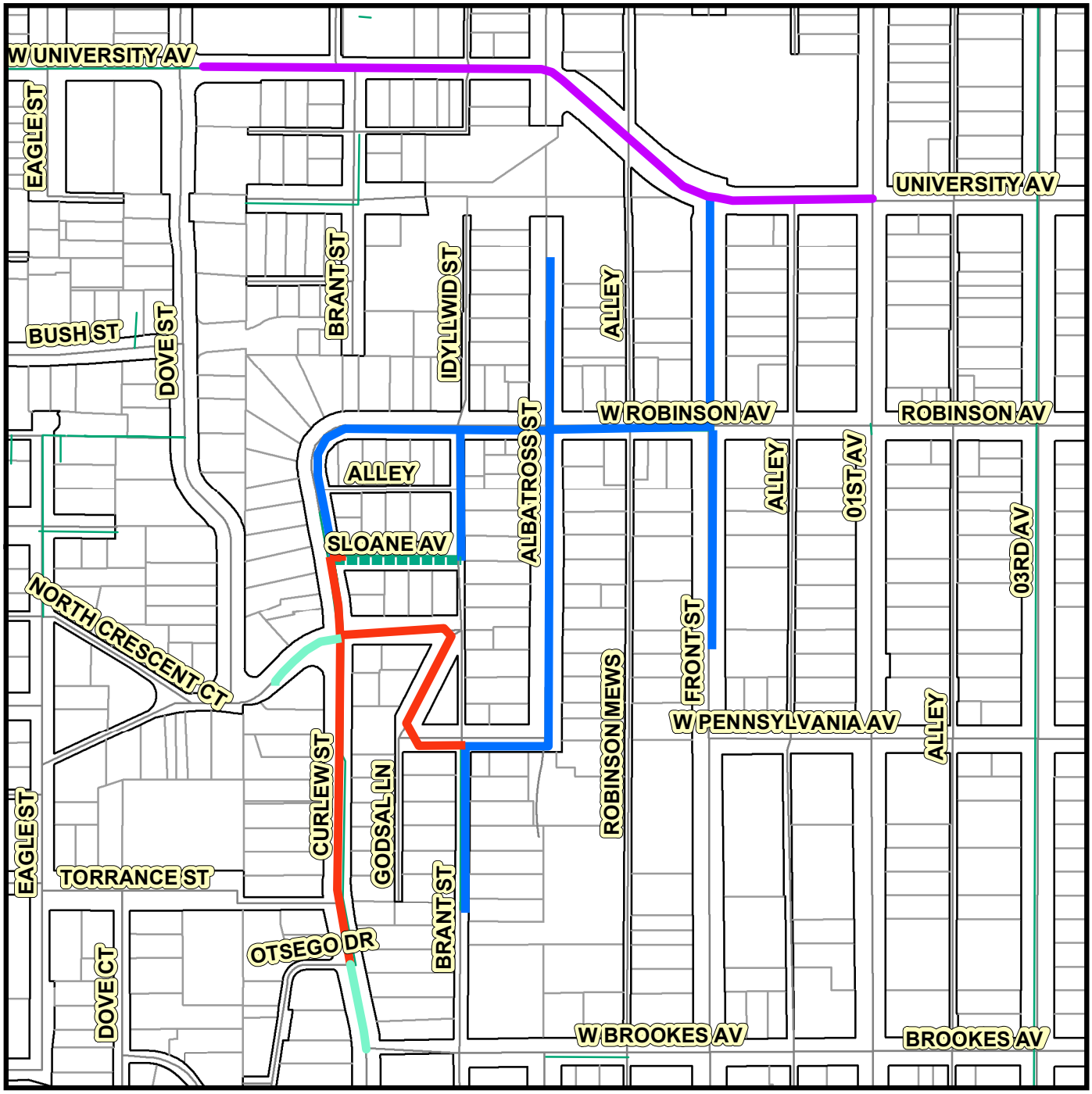
The City of SAN DIEGO Public Works

APPENDIX F- ADJACENT PROJECTS

AC WATER & SEWER GROUP 1020

(MAP 2 of 2)

SENIOR ENGINEER	PROJECT MANAGER	PROJECT ENGINEER	FOR QUESTIONS ABOUT THIS PROJECT
NABIL BATTA	ROBERTO VEJAR-PARRA	REYNA RENDON ROJAS	Call: 619-533-4207
619-533-4145	619-533-5402	619-533-7465	Email: engineering@sandiego.gov



Legend

- PROPOSED WATER MAIN REPLACEMENT
- PROPOSED WATER MAIN TO BE ABANDONED
- EXIST WATER MAIN - NEW ALINGMENT (Open Trench)
- FY 14 PCC PANEL GROUP 1
- SS-008-462

N W E S

COMMUNITY NAME: UPTOWN

COUNCIL DISTRICT: 3

SAP ID: B-15148 (S) \ B-15157 (W)

AC Water and Sewer Group 1020 Appendix F- Adjacent Projects

Date: 12/19/17

SanGIS

APPENDIX G

MONTHLY DRINKING WATER DISCHARGE MONITORING FORM

MONTHLY DRINKING WATER DISCHARGE MONITORING FORM

All discharge activities related to this project comply with the State Water Resources Control Board ORDER WQ 2014-0194-DWQ, STATEWIDE GENERAL NPDES PERMIT FOR DRINKING WATER SYSTEMS DISCHARGES as referenced by (http://www.waterboards.ca.gov/water_issues/programs/npdes/docs/drinkingwater/final_statewide_wqo2014_0194_dwq.pdf), and as follows:

Project Name:		**WBS or IO No.:**			**Contract No.**	
QSP Conducting Tests:		***Signature of QSP:**				

BMPs MUST BE IN PLACE PRIOR TO ANY SCHEDULED DISCHARGE

*By signing, I certify that all of the statements and conditions for drinking water discharge events are correct.

Event #	Discharge Location[1]	Discharge Description[2]	Catergory[3]	Sampling[4] Measurement	Unit	Time	Result	Limit	Exceedance? No	Exceedance? Yes	Notes *report discharge exceedances to the RE immediately and complete attached Monitoring Exceedance Form
1	**Location** **Start Date** **Start Time** **End Time** **End Date**	☐ Scheduled ☐ Emergency	☐ Chlorinated[5] ☐ > 1 acre-foot (325,850 gal)[5] ☐ Chollas Creek[5] ☐ Groundwater Well[5] ☐ Other[5]_____	***Volume*** (estimate)	**gal**	Diverted					
					gal	To Sewer					
					gal	To Storm Drain					
					gal	Total					
				Chlorine *(Minimum samples first 10, first 60, and last 10 minutes)*	**mg/L**			0.1 mg/L =Exceedance			
				Turbidity *(Minimum samples first 10, first 60, and last 10 minutes)*	**NTU**			20 NTU =Exceedance for Surface Waters 225 NTU = Exceedance for Ocean			
				PH *(Minimum samples first 10, first 60, and last 10 minutes)*	**Units**			Range 6.0 to 9.0			
				Additional Samples (Chollas Creek Only)	**mg/L**	Total Hardness					
					mg/L	Copper					
					mg/L	Lead					
					mg/L	Zinc					

See Instructions on Sheet 2

Revised 3/8/2017

Receiving Water Monitoring

1) Go to the location where the discharge enters the receiving water.

☐ Accessible ☐ Unable to Determine ☐ No Safe Access

2) If accessible, take pictures and complete the visual monitoring table below. If unable to determine, notify the RE. If no safe access, stop here.

Visual Monitoring		
Is the discharge into the receiving water…		
…causing erosion	☐ Yes	☐ NO
…carrying floating or suspended matter	☐ Yes	☐ NO
…causing discoloration	☐ Yes	☐ NO
…causing and impact to the aquatic life present	☐ Yes	☐ NO
…observed with visible film	☐ Yes	☐ NO
…observed with an sheen or coating	☐ Yes	☐ NO
…causing potential nuisance conditions	☐ Yes	☐ NO

3) If all answers are no, stop here. If any answers are yes, take pictures, document and immediately notify the RE

Instructions

1) Summarize the location of the discharge by connection location. For example: Albatross St (4th Av to 5th Av). Inlcude the start date and time and the end date and time
2) Please select either scheduled or emergency. Scheduled discharges are those that the City knows in advance, for example CIP group jobs. Emergency discharges are those un planned discharges that the City is unaware of until after the discharge has commenced. PWD will only report on emergencies associated with CIP projects.
3) Select chlorinated, >1 acre-foot, well development or rehabilitation, or other discharges. Chlorinated are discharges of water that is dosed with chlorine in order to adequately sanitize and disinfect drinking water system facilities. Discharges >1 acre-foot are large discharges that are greater than 325,850 gallons, are not chlorinated, or not from a groundwater well. Chollas Creek are discharge located in the Chollas HSA, No. 908.22 as designated on the plans. Groundwater wells are projects associated with wells including development and rehabilitation.
4) Sampling Requirements:

Category	Measure	Limit
Emergency	Volume, Estimate	N/A
Chlorinated	Volume, Estimate	N/A
	Chlorine, Field	0.10 mg/L
	Turbidity, Visual Estimate	20 NTU (surface water) or 225 NTU (ocean)
	pH, Field	6.0 to 9.0
>1 ac-ft (325,850 gal)	Volume, estimate	N/A
	Chlorine, Field	0.10 mg/L
	Turbidity, Visual Estimate	20 NTU (surface water) or 225 NTU (ocean)
	pH, Field	6.0 to 9.0
Additional for Chollas Creek	Total Hardness (Lab)	
	Copper (Lab)	
	Lead (Lab)	
	Zinc (Lab)	

Revised 3/8/2017

Use Additional Sheets as necessary

Submit completed form to Resident Engineer at end of month

APPENDIX H

HAZARDOUS FORMS/LABEL

INCIDENT/RELEASE ASSESSMENT FORM [1]

If you have an emergency, Call 911

Handlers of hazardous materials are required to report releases. The following is a tool to be used for assessing if a release is reportable. Additionally, a non-reportable release incident form is provided to document why a release is not reported (see back).

Questions for Incident Assessment:	YES	NO
1. Was anyone killed or injured, or did they require medical care or admitted to a hospital for observation?	❒	❒
2. Did anyone, other than employees in the immediate area of the release, evacuate?	❒	❒
3. Did the release cause off-site damage to public or private property?	❒	❒
4. Is the release greater than or equal to a reportable quantity (RQ)?	❒	❒
5. Was there an uncontrolled or unpermitted release to the air?	❒	❒
6. Did an uncontrolled or unpermitted release escape secondary containment, or extend into any sewers, storm water conveyance systems, utility vaults and conduits, wetlands, waterways, public roads, or off site?	❒	❒
7. Will control, containment, decontamination, and/or clean up require the assistance of federal, state, county, or municipal response elements?	❒	❒
8. Was the release or threatened release involving an unknown material or contains an unknown hazardous constituent?	❒	❒
9. Is the incident a threatened release (a condition creating a substantial probability of harm that requires immediate action to prevent, reduce, or mitigate damages to persons, property, or the environment)?	❒	❒
10. Is there an increased potential for secondary effects including fire, explosion, line rupture, equipment failure, or other outcomes that may endanger or cause exposure to employees, the general public, or the environment?	❒	❒

If the answer is YES to any of the above questions – report the release to the California Office of Emergency Services at 800-852-7550 and the local CUPA daytime: (619) 338-2284, after hours: (858) 565-5255. Note: other state and federal agencies may require notification depending on the circumstances.

Call 911 in an emergency

If all answers are NO, complete a Non Reportable Release Incident Form (page 2 of 2) and keep readily available. Documenting why a "no" response was made to each question will serve useful in the event questions are asked in the future, and to justify not reporting to an outside regulatory agency.

If in doubt, report the release.

[1] This document is a guide for accessing when hazardous materials release reporting is required by Chapter 6.95 of the California Health and Safety Code. It does not replace good judgment, Chapter 6.95, or other state or federal release reporting requirements.

NON REPORTABLE RELEASE INCIDENT FORM

1. RELEASE AND RESPONSE DESCRIPTION Incident #_____

Date/Time Discovered	Date/Time Discharge	Discharge Stopped ☐ Yes ☐ No
Incident Date / Time:		
Incident Business / Site Name:		
Incident Address:		
Other Locators (Bldg, Room, Oil Field, Lease, Well #, GIS)		
Please describe the incident and indicate specific causes and area affected. Photos Attached?: ☐Yes ☐No		
Indicate actions to be taken to prevent similar releases from occurring in the future.		

2. ADMINISTRATIVE INFORMATION

Supervisor in charge at time of incident:	Phone:
Contact Person:	Phone:

3. CHEMICAL INFORMATION

Chemical	Quantity ☐ GAL ☐ LBS ☐ FT^3
Chemical	Quantity ☐ GAL ☐ LBS ☐ FT^3
Chemical	Quantity ☐ GAL ☐ LBS ☐ FT^3
Clean-Up Procedures & Timeline:	
Completed By:	Phone:
Print Name:	Title:

EMERGENCY RELEASE FOLLOW - UP NOTICE REPORTING FORM

A

BUSINESS NAME	FACILITY EMERGENCY CONTACT & PHONE NUMBER ( ) -

B

INCIDENT DATE MO DAY YR	TIME OES NOTIFIED (use 24 hr time)	OES CONTROL NO.

C

INCIDENT ADDRESS LOCATION	CITY / COMMUNITY	COUNTY ZIP

D

CHEMICAL OR TRADE NAME (print or type)	CAS Number

CHECK IF CHEMICAL IS LISTED IN 40 CFR 355, APPENDIX A ☐	CHECK IF RELEASE REQUIRES NOTIFI - CATION UNDER 42 U.S.C. Section 9603 (a) ☐

PHYSICAL STATE CONTAINED ☐ SOLID ☐ LIQUID ☐ GAS	PHYSICAL STATE RELEASED ☐ SOLID ☐ LIQUID ☐ GAS	QUANTITY RELEASED

ENVIRONMENTAL CONTAMINATION ☐ AIR ☐ WATER ☐ GROUND ☐ OTHER	TIME OF RELEASE	DURATION OF RELEASE ___DAYS ___HOURS ___MINUTES

E

ACTIONS TAKEN

F

KNOWN OR ANTICIPATED HEALTH EFFECTS (Use the comments section for addition information)

☐ ACUTE OR IMMEDIATE (explain) _____

☐ CHRONIC OR DELAYED (explain) _____

☐ NOTKNOWN (explain)

G

ADVICE REGARDING MEDICAL ATTENTION NECESSARY FOR EXPOSED INDIVIDUALS

H

COMMENTS (INDICATE SECTION (A - G) AND ITEM WITH COMMENTS OR ADDITIONAL INFORMATION)

I

CERTIFICATION: I certify under penalty of law that I have personally examined and I am familiar with the information submitted and believe the submitted information is true, accurate, and complete.

REPORTING FACILITY REPRESENTATIVE (print or type) _____

SIGNATURE OF REPORTING FACILITY REPRESENTATIVE _____ DATE: _____

EMERGENCY RELEASE FOLLOW-UP NOTICE
REPORTING FORM INSTRUCTIONS

GENERAL INFORMATION:

Chapter 6.95 of Division 20 of the California Health and Safety Code requires that written emergency release follow-up notices prepared pursuant to 42 U.S.C. § 11004, be submitted using this reporting form. Non-permitted releases of reportable quantities of Extremely Hazardous Substances (listed in 40 CFR 355, appendix A) or of chemicals that require release reporting under section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. § 9603(a)] must be reported on the form, as soon as practicable, but no later than 30 days, following a release. The written follow-up report is required in addition to the verbal notification.

BASIC INSTRUCTIONS:

- The form, when filled out, reports follow-up information required by 42 U.S.C § 11004. Ensure that all information requested by the form is provided as completely as possible.
- If the incident involves reportable releases of more than one chemical, prepare one report form for each chemical released.
- If the incident involves a series of separate releases of chemical(s) at different times, the releases should be reported on separate reporting forms.

SPECIFIC INSTRUCTIONS:

Block A: Enter the name of the business and the name and phone number of a contact person who can provide detailed facility information concerning the release.

Block B: Enter the date of the incident and the time that verbal notification was made to OES. The OES control number is provided to the caller by OES at the time verbal notification is made. Enter this control number in the space provided.

Block C: Provide information pertaining to the location where the release occurred. Include the street address, the city or community, the county and the zip code.

Block D: Provide information concerning the specific chemical that was released. Include the chemical or trade name and the Chemical Abstract Service (CAS) number. Check all categories that apply. Provide best available information on quantity, time and duration of the release.

Block E: Indicate all actions taken to respond to and contain the release as specified in 42 U.S.C. § 11004(c).

Block F: Check the categories that apply to the health effects that occurred or could result from the release. Provide an explanation or description of the effects in the space provided. Use Block H for additional comments/information if necessary to meet requirements specified in 42 U.S.C. § 11004(c).

Block G: Include information on the type of medical attention required for exposure to the chemical released. Indicate when and how this information was made available to individuals exposed and to medical personnel, if appropriate for the incident, as specified in 42 U.S.C. § 11004(c).

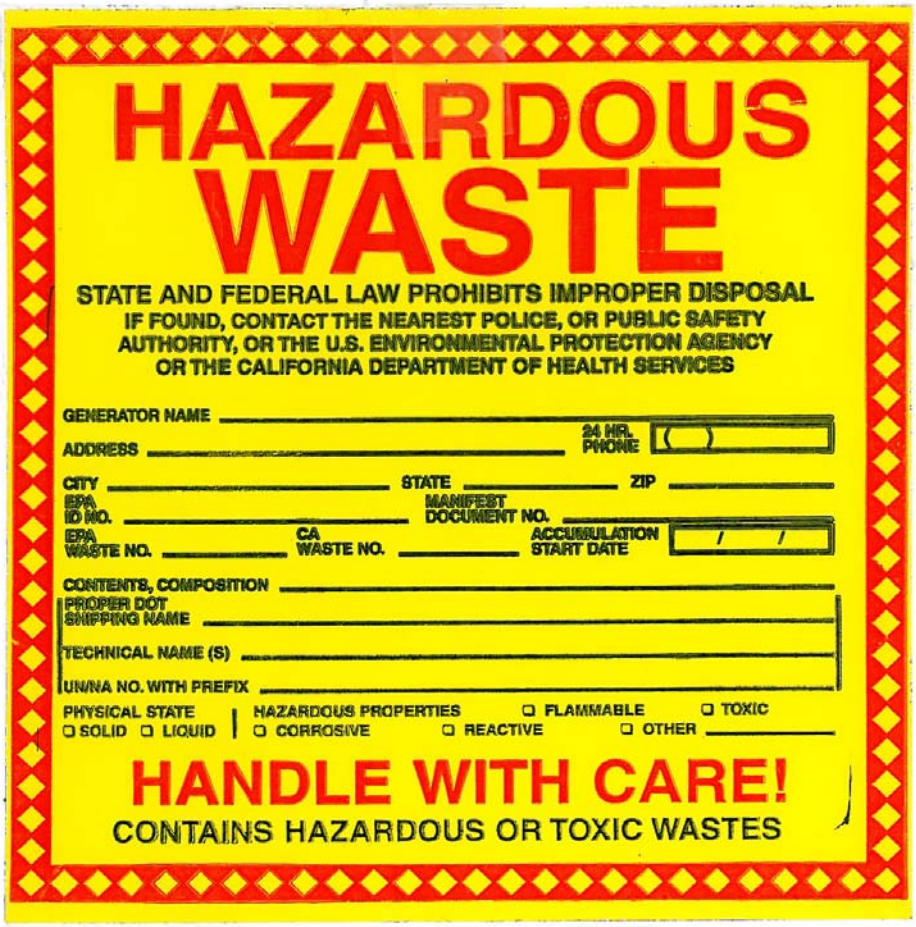
Block H: List any additional pertinent information.

Block I: Print or type the name of the facility representative submitting the report. Include the official signature and the date that the form was prepared.

MAIL THE COMPLETED REPORT TO:

State Emergency Response Commission (SERC)
Attn: Section 304 Reports
Hazardous Materials Unit
3650 Schriever Avenue
Mather, CA 95655

NOTE: Authority cited: Sections 25503, 25503.1 and 25507.1, Health and Safety Code. Reference: Sections 25503(b)(4), 25503.1, 25507.1, 25518 and 25520, Health and Safety Code.


HAZARDOUS
WASTE
STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY
AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY
OR THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES
GENERATOR NAME
ADDRESS
24 HR. PHONE
CITY
STATE
ZIP
EPA ID NO.
MANIFEST DOCUMENT NO.
EPA WASTE NO.
CA WASTE NO.
ACCUMULATION START DATE
CONTENTS, COMPOSITION
PROPER DOT SHIPPING NAME
TECHNICAL NAME (S)
UN/NA NO. WITH PREFIX
PHYSICAL STATE
SOLID
LIQUID
HAZARDOUS PROPERTIES
CORROSIVE
FLAMMABLE
REACTIVE
TOXIC
OTHER
HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES

APPENDIX I

SAMPLE ARCHAEOLOGY INVOICE

(FOR ARCHAEOLOGY ONLY)
Company Name
Address, telephone, fax

Date: Insert Date

To: Name of Resident Engineer
City of San Diego
Field Engineering Division
9485 Aero Drive
San Diego, CA 92123-1801

Project Name: Insert Project Name

SAP Number (WBS/IO/CC): Insert SAP Number

Drawing Number: Insert Drawing Number

Invoice period: Insert Date to Insert Date

Work Completed: Bid item Number – Description of Bid Item – Quantity – Unit Price– Amount

Detailed summary of work completed under this bid item: Insert detailed description of Work related to Archaeology Monitoring Bid item. See Note 1 below.

Summary of charges:

Description of Services	Name	Start Date	End Date	Total Hours	Hourly Rate	Amount
Field Archaeologist	Joe Smith	8/29/2011	9/2/2011	40	$84	$3,360
Laboratory Assistant	Jane Doe	8/29/2011	9/2/2011	2	$30	$60
Subtotal						$3,420

Work Completed: Bid item Number – Description of Bid Item – Quantity – Unit Price– Amount

Detailed summary of work completed under this bid item: Insert detailed description of Work related to Archaeology Curation/Discovery Bid item. See Note 2 below.

Summary of charges:

Description of Services	Where work occurred (onsite vs offsite/lab)	Name	Start Date	End Date	Total Hours	Hourly Rate	Amount
Field Archaeologist		Joe Smith	8/29/2011	9/2/2011	40	$84	$3,360
Laboratory Assistant		Jane Doe	8/29/2011	9/2/2011	2	$30	$60
Subtotal							$3,420

Total this invoice: $_____

Total invoiced to date: $_____

Note 1:

For monitoring related bid items or work please include summary of construction work that was monitored from Station to Station, Native American monitors present, MMC coordination, status and nature of monitoring and if any discoveries were made.

Note 2:

For curation/discovery related bid items or work completed as part of a discovery and curation process, the PI must provide a response to the following questions along with the invoice:

1. Preliminary results of testing including tentative recommendations regarding eligibility for listing in the California Register of Historical Resources (California Register).

    a. Please briefly describe your application (consideration) of all four California Register criteria.

    b. If the resource is eligible under Criterion D, please define the important information that may be present.

    c. Were specialized studies performed? How many personnel were required? How many Native American monitors were present?

    d. What is the age of the resource?

    e. Please define types of artifacts to be collected and curated, including quantity of boxes to be submitted to the San Diego Archaeological Center (SDAC). How many personnel were required? How many Native American monitors were present?

2. Preliminary results of data recovery and a definition of the size of the representative sample.

    a. Were specialized studies performed? Please define types of artifacts to be collected and curated, including quantity of boxes to be submitted to the SDAC. How many personnel were required? How many Native American monitors were present?

3. What resources were discovered during monitoring?

4. What is the landform context and what is the integrity of the resources?

5. What additional studies are necessary?

6. Based on application of the California Register criteria, what is the significance of the resources?

    a. If the resource is eligible for the California Register, can the resource be avoided by construction?

    b. If not, what treatment (mitigation) measures are proposed? Please define data to be recovered (if necessary) and what material will be submitted to the SDAC for curation. Are any specialized studies proposed?

(After the first invoice, not all the above information needs to be re-stated, just revise as applicable).

APPENDIX J

SAMPLE OF PUBLIC NOTICE

FOR SAMPLE REFERENCE ONLY

The City of SAN DIEGO

CONSTRUCTION NOTICE

PROJECT TITLE

Work on your street will begin within one week to replace the existing water mains servicing your community.

The work will consist of:

- Saw-cutting and trench work on Ingulf Street from Morena Boulevard to Galveston Street to install new water mains, water laterals and fire hydrants.
- Streets where trenching takes place will be resurfaced and curb ramps will be upgraded to facilitate access for persons with disabilities where required.
- This work is anticipated to be complete in your community by December 2016.

How your neighborhood may be impacted:

- Water service to some properties during construction will be provided by a two-inch highline pipe that will run along the curb. To report a highline leak call 619-515-3525.
- Temporary water service disruptions are planned. If planned disruptions impact your property, you will receive advance notice.
- Parking restrictions will exist because of the presence of construction equipment and materials.
- "No Parking" signs will be displayed 72 hours in advance of the work.
- Cars parked in violation of signs will be TOWED.

Hours and Days of Operation:
Monday through Friday X:XX AM to X:XX PM.

City of San Diego Contractor:
Company Name, XXX-XXX-XXXX

To contact the City of San Diego: SD Public Works
619-533-4207 | engineering@sandiego.gov | sandiego.gov/CIP

This information is available in alternative formats upon request.

The City of SAN DIEGO

CONSTRUCTION NOTICE

PROJECT TITLE

Work on your street will begin within one week to replace the existing water mains servicing your community.

The work will consist of:

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Hours and Days of Operation:
Monday through Friday X:XX AM to X:XX PM.

City of San Diego Contractor:
Company Name, XXX-XXX-XXXX

To contact the City of San Diego: SD Public Works
619-533-4207 | engineering@sandiego.gov | sandiego.gov/CIP

This information is available in alternative formats upon request.

APPENDIX K

SAMPLE CONTRACTOR'S DAILY QUALITY CONTROL INSPECTION REPORT

Appendix ___

City of San Diego
Asphalt Concrete Overlay
Contractor's Daily Quality Control Inspection Report

Project Title:_____ Date: _____

Locations: 1._____
2._____
3._____

Asphalt Mix Specification: Attached Supplier:_____

Dig out Locations: 1._____
2._____
3._____

Tack Coat Application Rate @ Locations:
1._____
2._____
3._____

Asphalt Temperature at Placement @ Locations:
1._____
2._____
3._____

Asphalt Depth @Locations:
1._____
2._____
3._____

Compaction Test Result @Locations:
1._____
2._____
3._____

Location and nature of defects:

1._____

2._____

3._____

Remedial and Corrective Actions taken or proposed for Engineer's approval:

1._____

2._____

3._____

Date's City Laboratory representative was present:

1._____

2._____

3._____

Verified the following: Initials:

1. Proper Storage of Materials & Equipment _____
2. Proper Operation of Equipment _____
3. Adherence to Plans and Specs _____
4. Review of QC Tests _____
5. Safety Inspection _____

Deviations from QCP_____ (see attached)

Quality Control Plan Administrator's Signature: Date Signed:

_____ _____

APPENDIX L

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 5-2, "Protection", of the 2015 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:

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

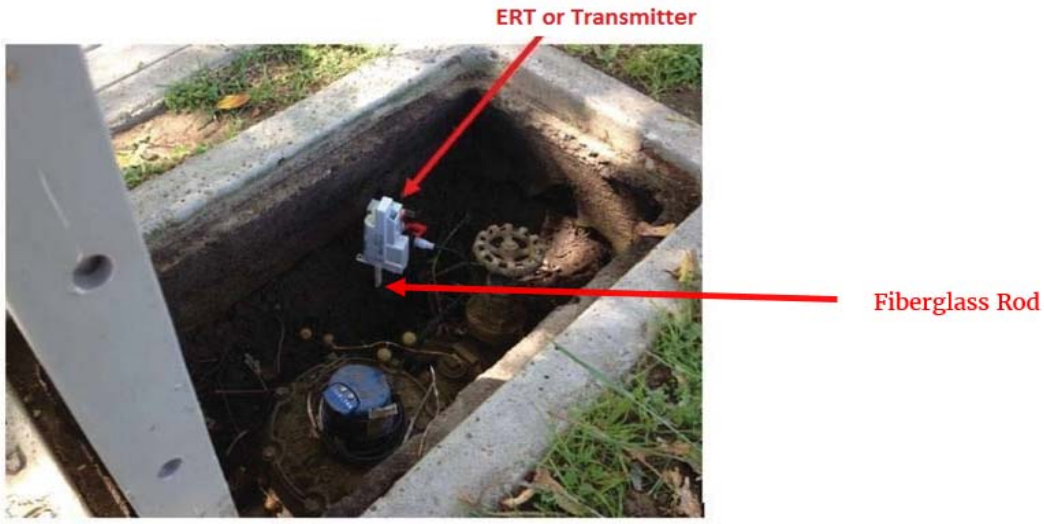

Photo 6 below is an example of disturbance that shall be avoided:

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

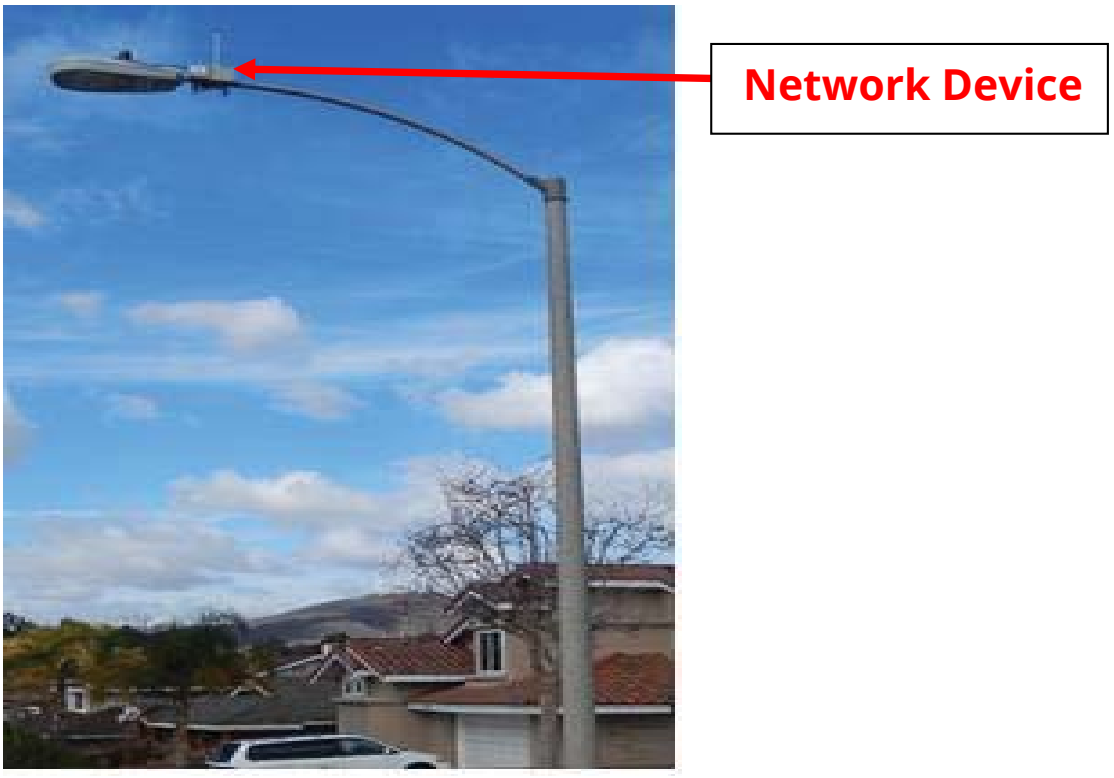

Photo 9

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.

ATTACHMENT F

INTENTIONALLY LEFT BLANK

ATTACHMENT G

CONTRACT AGREEMENT

CONTRACT AGREEMENT

CONSTRUCTION CONTRACT

This contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and **Burtech Pipeline Incorporated**, herein called "Contractor" for construction of **AC Water and Sewer Group 1020**; Bid No. **K-18-1726-DBB-3** in the amount of **Three Million Seven Hundred Thirty One Thousand Five Hundred and Zero Cents ($3,731,500.00)**, which is comprised of the Base Bid.

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.

   (e) That certain documents entitled **AC Water and Sewer Group 1020**, on file in the office of the City Clerk as Document No. **B-15157, B-15148**, as well as all matters referenced therein.

2. 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 **AC Water and Sewer Group 1020, K-18-1726-DBB-3,** San Diego, California.

3. 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.

4. 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.

5. This contract is effective as of the date that the Mayor or designee signs the agreement.

CONTRACT AGREEMENT (continued)

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 §22.3102 authorizing such execution.

THE CITY OF SAN DIEGO

By _____

Print Name: Stephen Samara
Principal Contract Specialist
Public Works Department

Date: 5/23/2018

APPROVED AS TO FORM

Mara W. Elliott, City Attorney

By _____

Print Name: Pedro DeLara, Jr.
Deputy City Attorney

Date: 6/11/18

CONTRACTOR

By _____

Print Name: Dominic J. Burtech

Title: President & CEO

Date: April 2, 2018

City of San Diego License No.: B19960020660

State Contractor's License No.: 718202

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER: 1000006324

CERTIFICATIONS AND FORMS

The Bidder / Proposer, by submitting its electronic bid or proposal, 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 submission 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

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 7-13.3, "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

AMERICAN 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 American With Disabilities Act (ADA) outlined in the WHITEBOOK, Section 7-13.2, "American 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 7-13.4, ("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.

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:

AC Water and Sewer Group 1020
(Name of Project)

as particularly described in said contract and identified as Bid No.; **K-18-1726-DBB-3,** SAP No. (WBS/IO/CC) **B15157 / B15148**; 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	DIR Registration Number	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED ②	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	DIR Registration Number	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 SDVOSB①	WHERE CERTIFIED②
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.

SUBCONTRACTORS ADDITIVE/DEDUCTIVE ALTERNATE (USE ONLY WHEN ADDITIVE ALTERNATES ARE REQUIRED)

ALTERNATE A

ADDITIVE/ DEDUCTIVE ALTERNATE	NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	DIR Registration Number	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED ②	CHECK IF JOINT VENTURE PARTNER SHIP
	Name:_____ Address:_____ City:_____ State:_____ Zip:_____ Phone:_____ Email:_____		NONE - BURTECH PIPELINE INC.						
	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.

SUBCONTRACTORS ADDITIVE/DEDUCTIVE ALTERNATE (USE ONLY WHEN ADDITIVE ALTERNATES ARE REQUIRED)

ALTERNATE B

ADDITIVE/ DEDUCTIVE ALTERNATE	NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	DIR Registration Number	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED ②	CHECK IF JOINT VENTURE PARTNER SHIP
	Name: Address: City: State: Zip: Phone: Email:		NONE - BURTECH PIPELINE INC.						
	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.

ELECTRONICALLY SUBMITTED FORMS

THE FOLLOWING FORMS MUST BE SUBMITTED IN PDF FORMAT WITH BID SUBMISSION

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**

Bids will not be accepted until ALL the above-named forms are submitted as part of the bid submittal

BID BOND

See Instructions to Bidders, Bidder Guarantee of Good Faith (Bid Security)

KNOW ALL MEN BY THESE PRESENTS,

That BURTECH PIPELINE, INCORPORATED as Principal, and

NORTH AMERICAN SPECIALTY INSURANCE 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

AC WATER AND SEWER GROUP 1020

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 6TH day of MARCH, 2018

BURTECH PIPELINE, INCORPORATED (SEAL)
(Principal)

By: _____
(Signature)
DOMINIC J. BURTECH, JR., PRESIDENT

NORTH AMERICAN SPECIALTY INSURANCE COMPANY (SEAL)
(Surety)

By: _____
(Signature)
MARK D. IATAROLA, ATTORNEY-IN-FACT

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

CALIFORNIA ALL- PURPOSE CERTIFICATE OF 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 3/14/18 before me, **Arthur P. Arquilla, Notary Public**
(Here insert name and title of the officer),

personally appeared Dominic Burtech,

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.

Notary Public Signature (Notary Public Seal)

CLS1 ARTHUR P. ARQUILLA CLS1
COMMISSION NO. 2225407
NOTARY PUBLIC-CALIFORNIA
SAN DIEGO COUNTY
COMMISSION EXPIRES JAN 7, 2022

ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

(Title or description of attached document)

(Title or description of attached document continued)

Number of Pages ____ Document Date____

CAPACITY CLAIMED BY THE SIGNER

- ☐ Individual (s)
- ☐ Corporate Officer
  (Title)
- ☐ Partner(s)
- ☐ Attorney-in-Fact
- ☐ Trustee(s)
- ☐ Other ____

INSTRUCTIONS FOR COMPLETING THIS FORM

This form complies with current California statutes regarding notary wording and, if needed, should be completed and attached to the document. Acknowledgments from other states may be completed for documents being sent to that state so long as the wording does not require the California notary to violate California notary law.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he~~/she/~~they,~~ is /~~are~~) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
  - Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
  - Indicate title or type of attached document, number of pages and date.
  - Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document with a staple.

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 3/6/2018 *Date* before me, HELEN E. WHEALDON, NOTARY PUBLIC *Here Insert Name and Title of the Officer*,

personally appeared MARK D. IATAROLA *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.

NRO1 HELEN E. WHEALDON COMM. #2194350 Notary Public - California San Diego County My Comm. Expires Apr. 28, 2021 NRO1

Signature Helen E Whealdon
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: _____ Document Date: _____

Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

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

NAS SURETY GROUP

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Manchester, New Hampshire, and Washington International Insurance Company, a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Schaumburg, Illinois, each does hereby make, constitute and appoint:

JOHN G. MALONEY, HELEN MALONEY, SANDRA FIGUEROA,
and MARK D. IATAROLA
JOINTLY OR SEVERALLY

Its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

FIFTY MILLION ($50,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on the 9th of May, 2012:

"RESOLVED, that any two of the Presidents, any Managing Director, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."

NORTH AMERICAN SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1973 NEW HAMPSHIRE

By _____
Steven P. Anderson, Senior Vice President of Washington International Insurance Company & Senior Vice President of North American Specialty Insurance Company

By _____
Michael A. Ito, Senior Vice President of Washington International Insurance Company & Senior Vice President of North American Specialty Insurance Company

WASHINGTON INTERNATIONAL INSURANCE COMPANY CORPORATE SEAL NEW HAMPSHIRE

IN WITNESS WHEREOF, North American Specialty Insurance Company and Washington International Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 17th day of September, 2015.

North American Specialty Insurance Company
Washington International Insurance Company

State of Illinois
County of Cook ss:

On this 17th day of September, 2015, before me, a Notary Public personally appeared Steven P. Anderson, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Michael A. Ito, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.

OFFICIAL SEAL
M. KENNY
Notary Public - State of Illinois
My Commission Expires
12/06/2021

M. Kenny, Notary Public

I, Jeffrey Goldberg, the duly elected Assistant Secretary of North American Specialty Insurance Company and Washington International Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company and Washington International Insurance Company, which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 6TH day of MARCH, 20 18.

Jeffrey Goldberg, Vice President & Assistant Secretary of
Washington International Insurance Company & North American Specialty Insurance Company

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
	NONE				

Contractor Name: BURTECH PIPELINE INCORPORATED

Certified By DOMINIC J. BURTECH Title PRESIDENT & CEO

Name

Signature

Date 3/16/2018

USE ADDITIONAL FORMS AS NECESSARY