

City of San Diego

CONTRACTOR'S NAME: Burtech Pipeline, Inc.
ADDRESS: 102 Second Street, Encinitas, CA 92024
TELEPHONE NO.: 760-634-2822 **FAX NO.:** 760-634-2415
CITY CONTACT: Ron McMinn, Contract Specialist, Email: RMcMinn@sandiego.gov
Phone No. (619) 533-4618
S. Cochinwala / J. Borja / I. Garcia

BIDDING DOCUMENTS



FOR

PIPELINE REHABILITATION AV-1

BID NO.: K-20-1838-DBB-3-A
SAP NO. (WBS/IO/CC): B-18062
CLIENT DEPARTMENT: 2000
COUNCIL DISTRICT: 4
PROJECT TYPE: 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:

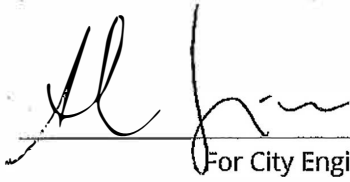
2:00 PM
NOVEMBER 7, 2019

CITY OF SAN DIEGO'S ELECTRONIC BIDDING SITE, PLANETBIDS

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

ENGINEER OF WORK

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



For City Engineer

9/16/19
Date

Seal:

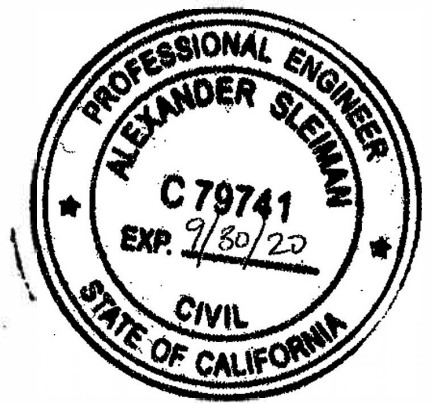


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REQUIRED DOCUMENTS SCHEDULE DURING BIDDING AND AWARDING

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

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

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

ITEM	DOCUMENT TO BE SUBMITTED	WHEN DUE	FROM
1.	Bid Bond	At Time of Bid	ALL BIDDERS
2.	Contractors Certification of Pending Actions	At Time of Bid	ALL BIDDERS
3.	Mandatory Disclosure of Business Interests	At Time of Bid	ALL BIDDERS
4.	Debarment and Suspension Certification	At Time of Bid	ALL BIDDERS
5.	Contractor's Experience and Past Project Documentation. See SSPs and 2018 WB Section 500-2.1, "Initial Submittals"	At Time of Bid	ALL BIDDERS
6.	Manufacturer Authorized Installer Certification. See SSP and 2018 WB Section 500-2.1, "Initial Submittals"	At Time of Bid	ALL BIDDERS
7.	Bid Bond (Original)	Within 24 Hours of Bid opening	5 APPARENT LOW BIDDERS
8.	SLBE Good Faith Effort Documentation	Within 3 working days of bid opening	ALL BIDDERS
9.	Form AA60 – List of Work Made Available	Within 3 working days of bid opening with Good Faith Effort (GFE) documentation	ALL BIDDERS
10.	Proof of Valid DBE-MBE-WBE-DVBE Certification Status e.g., Certs.	Within 3 working days of bid opening with Good Faith Effort (GFE) documentation	ALL BIDDERS

ITEM	DOCUMENT TO BE SUBMITTED	WHEN DUE	FROM
11.	Phased Funding Schedule Agreement (when required)	Within 10 working days of receipt by bidder of contract forms	APPARENT LOW BIDDER
12.	Pre-Award Schedule (Phased Funded Contracts Only)	Within 10 working days of receipt by bidder of contract forms	APPARENT LOW BIDDER
13.	Contract Forms - Agreement	Within 10 working days of receipt by bidder of contract forms	APPARENT LOW BIDDER
14.	Contract Forms - Payment and Performance Bond	Within 10 working days of receipt by bidder of contract forms	APPARENT LOW BIDDER
15.	Certificates of Insurance and Endorsements	Within 10 working days of receipt by bidder of contract forms	APPARENT LOW BIDDER
16.	Listing of "Other Than First Tier" Subcontractors	Within 10 working days of receipt by bidder of contract forms	APPARENT LOW BIDDER

NOTICE INVITING BIDS

1. **SUMMARY OF WORK:** This is the City of San Diego's (City) solicitation process to acquire Construction services for **Pipeline Rehabilitation AV-1**. For additional information refer to Attachment A.
2. **FULL AND OPEN COMPETITION:** This solicitation is subject to full and open competition and may be bid by Contractors on the City's approved Prequalified Contractors List. For information regarding the Contractors Prequalified list visit the City's web site: <http://www.sandiego.gov>.
3. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$3,790,000**.
4. **BID DUE DATE AND TIME ARE: November 7, 2019 at 2:00 PM**
5. **PREVAILING WAGE RATES APPLY TO THIS CONTRACT:** Refer to Attachment D
6. **LICENSE REQUIREMENT:** To be eligible for award of this contract, Prime contractor must possess the following licensing classification: **A** or **C-34**
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	6.0%
2. ELBE participation	9.3%
3. Total mandatory participation	15.3%
 - 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 a Universal Serial Bus (USB) Type-A, 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 the Base Bid.
- 8.5. Once the low bid has been determined, the City may, at its sole discretion, award the contract for the Base Bid alone.

9. SUBMISSION OF QUESTIONS:

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

Public Works Contracts
525 B Street, Suite 750 (7th Floor)
San Diego, California, 92101
Attention: Ron McMinn

OR:

RMcMinn@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.

INSTRUCTIONS TO BIDDERS

1. PREQUALIFICATION OF CONTRACTORS:

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

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

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

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

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

2.8. ACCESSIBILITY AND AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE: To request a copy of this solicitation in an alternative format, contact the 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 from the date of Bid opening. The duration of the Contract Price guarantee shall be extended by the number of days required for the City to obtain all items necessary to fulfill all conditions precedent.

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

to any other applicable law, or by order of any court or government agency, and the Contractor will hold the City harmless for release of this information.

5. CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM:

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

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

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

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

7. INSURANCE REQUIREMENTS:

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

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

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

Title	Edition	Document Number
Standard Specifications for Public Works Construction ("The GREENBOOK") http://www.greenbookspecs.org/	2018	PWPI010119-01
City of San Diego Standard Specifications for Public Works Construction ("The WHITEBOOK")* https://www.sandiego.gov/publicworks/edocref/greenbook	2018	PWPI010119 -02
City of San Diego Standard Drawings* https://www.sandiego.gov/publicworks/edocref/standarddraw	2018	PWPI010119 -03
Citywide Computer Aided Design and Drafting (CADD) Standards https://www.sandiego.gov/publicworks/edocref/drawings	2018	PWPI010119 -04

Title	Edition	Document Number
California Department of Transportation (CALTRANS) Standard Specifications – http://www.dot.ca.gov/des/oe/construction-contract-standards.html	2018	PWPI030119-05
CALTRANS Standard Plans http://www.dot.ca.gov/des/oe/construction-contract-standards.html	2018	PWPI030119-06
California Manual on Uniform Traffic Control Devices Revision 4 (CA MUTCD Rev 4) http://www.dot.ca.gov/trafficops/camutcd/	2014	PWPI030119-08
<p>NOTE: *Available online under Engineering Documents and References at: http://www.sandiego.gov/publicworks/edocref/index.shtml</p> <p>*Electronic updates to the Standard Drawings may also be found in the link above</p>		

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

within the description, the **PORTION** of the work which will be performed by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement may result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - Section 3-2, "SELF-PERFORMANCE", which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which Bidders are seeking recognition towards achieving any mandatory, voluntary (or both) subcontracting participation goals.

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

12.2. LISTING OF SUPPLIERS. Any Bidder seeking the recognition of Suppliers of equipment, materials, or supplies obtained from third party Suppliers towards achieving any mandatory or voluntary (or both) subcontracting participation goals shall provide, at a minimum, the **NAME, LOCATION (CITY), DIR REGISTRATION NUMBER** and the **DOLLAR VALUE** of each supplier. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for materials and supplies unless vendor manufactures or substantially alters materials and supplies, in which case, 100% will be credited. The Bidder is to indicate within the description whether the listed firm is a supplier or manufacturer. If no indication is provided, the listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage.

12.3. LISTING OF SUBCONTRACTORS OR SUPPLIERS FOR ALTERNATES. For subcontractors or suppliers to be used on additive or deductive alternate items, in addition to the above requirements, bidder shall further note "ALTERNATE" and alternate item number within the description.

13. SUBMITTAL OF "OR EQUAL" ITEMS: See Section 4-6, "Trade Names" in The WHITEBOOK and as amended in the SSP.

14. AWARD:

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

- 14.2.** Upon acceptance of a Bid, the City will prepare contract documents for execution within approximately 21 days of the date of the Bid opening and award the Contract approximately within 7 days of receipt of properly executed Contract, bonds, and insurance documents.
- 14.3.** This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form the City Attorney's Office.
- 15. SUBCONTRACT LIMITATIONS:** The Bidder's attention is directed to Standard Specifications for Public Works Construction, Section 3-2, "SELF-PERFORMANCE" in The GREENBOOK and as amended in the SSP which requires the Contractor to self-perform not less than the specified amount. Failure to comply with this requirement shall render the bid **non-responsive** and ineligible for award.
- 16. AVAILABILITY OF PLANS AND SPECIFICATIONS:** Contract Documents may be obtained by visiting the City's website: <http://www.sandiego.gov/cip/>. Plans and Specifications for this contract are also available for review in the office of the City Clerk or Public Works Contracts.
- 17. ONLY ONE BID PER CONTRACTOR SHALL BE ACCEPTED:** No person, firm, or corporation shall be allowed to make, file, or be interested in more than one (1) Bid for the same work unless alternate Bids are called for. A person, firm or corporation who has submitted a sub-proposal to a Bidder, or who has quoted prices on materials to a Bidder, is not hereby disqualified from submitting a sub-proposal or quoting prices to other Bidders or from submitting a Bid in its own behalf. Any Bidder who submits more than one bid will result in the rejection of all bids submitted.
- 18. SAN DIEGO BUSINESS TAX CERTIFICATE:** The Contractor and Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, First floor and submit to the Contract Specialist upon request or as specified in the Contract Documents. Tax Identification numbers for both the Bidder and the listed Subcontractors must be submitted on the City provided forms within these documents.
- 19. BIDDER'S GUARANTEE OF GOOD FAITH (BID SECURITY) FOR DESIGN-BID-BUILD CONTRACTS:**
- 19.1.** For bids \$250,000 and above, bidders shall submit Bid Security at bid time. Bid Security shall be in one of the following forms: a cashier's check, or a properly certified check upon some responsible bank; or an approved corporate surety bond payable to the City of San Diego for an amount of not less than 10% of the total bid amount.
- 19.2.** This check or bond, and the monies represented thereby, will be held by the City as a guarantee that the Bidder, if awarded the contract, will in good faith enter into the contract and furnish the required final performance and payment bonds.

- 19.3. The Bidder agrees that in the event of the Bidder's failure to execute this contract and provide the required final bonds, the money represented by the cashier's or certified check will remain the property of the City; and the Surety agrees that it will pay to the City the damages, not exceeding the sum of 10% of the amount of the Bid, that the City may suffer as a result of such failure.
- 19.4. At the time of bid submission, bidders must upload and submit an electronic PDF copy of the aforementioned bid security. Whether in the form of a cashier's check, a properly certified check or an approved corporate surety bond payable to the City of San Diego, the bid security must be uploaded to the City's eBidding system. 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.
- 19.5. 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**.

20. AWARD OF CONTRACT OR REJECTION OF BIDS:

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

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

21. BID RESULTS:

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

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

22. THE CONTRACT:

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

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

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

22.4. Pursuant to the San Diego City Charter section 94, the City may only award a public works contract to the lowest responsible and reliable Bidder. The City will require the Apparent Low Bidder to (i) submit information to determine the Bidder's responsibility and reliability, (ii) execute the Contract in form provided by the City, and (iii) furnish good and approved bonds and insurance certificates specified by the City within 14 Days, unless otherwise approved by the City, in writing after the Bidder receives notification from the City, designating the Bidder as the Apparent Low Bidder and formally requesting the above mentioned items.

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

25. PRE-AWARD ACTIVITIES:

- 25.1** The contractor selected by the City to execute a contract for this Work shall submit the required documentation as specified 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**.
- 25.2** The decision that bid is non-responsive for failure to provide the information required within the time specified shall be at the sole discretion of the City.

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

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 Three Hundred Eleven Thousand Eight Hundred Thirty One Dollars and Fifty Cents (\$3,311,831.50) for the faithful performance of the annexed contract, and in the sum of Three Million Three Hundred Eleven Thousand Eight Hundred Thirty One Dollars and Fifty Cents (\$3,311,831.50), for the benefit of laborers and materialmen designated below.

Conditions:

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

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

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

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

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 JANUARY 2, 2020

Approved as to Form

BURTECH PIPELINE, INCORPORATED

Principal

By 

DOMINIC J. BURTECH, JR., PRESIDENT

Printed Name of Person Signing for Principal

Mara W. Elliott, City Attorney

By 

Deputy City Attorney

NORTH AMERICAN
SPECIALTY INSURANCE COMPANY

Surety

By 

MARK D. IATAROLA, Attorney-in-fact

Approved:

777 SOUTH FIGUEROA STREET, SUITE 3700

Local Address of Surety

By 

Stephen Samara

Principal Contract Specialist
Public Works Department

LOS ANGELES, CA 90017

Local Address (City, State) of Surety

213/337-3078

Local Telephone No. of Surety

Premium \$ 22,677.00

PREMIUM IS FOR CONTRACT TERM
AND IS SUBJECT TO ADJUSTMENT
BASED ON FINAL CONTRACT PRICE

Bond No. 2298701

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 1/2/2020 before me, SANDRA FIGUEROA, NOTARY PUBLIC
Date 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.



Place Notary Seal and/or Stamp Above

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

WITNESS my hand and official seal.

Signature *Sandra Figueroa*
Signature of Notary Public

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

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

Signer is Representing: _____

Signer's Name: _____

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

Signer is Representing: _____

SWISS RE CORPORATE SOLUTIONS

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY
WESTPORT INSURANCE CORPORATION 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 Kansas City, Missouri 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 Kansas City, Missouri, and Westport Insurance Corporation, organized under the laws of the State of Missouri, and having its principal office in the City of Kansas City, Missouri does hereby make, constitute and appoint:

JOHN G. MALONEY, HELEN MALONEY, SANDRA FIGUEROA, MARK D. IATAROLA, and JESSICA SCHMAL
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: ONE HUNDRED TWENTY FIVE MILLION (\$125,000,000.00) 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 North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on March 24, 2000 and Westport Insurance Corporation by written consent of its Executive Committee dated July 18, 2011.

RESOLVED, that any two of the President, 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.



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

By Mike A. Ito, Senior Vice President of Washington International Insurance Company & Senior Vice President of North American Specialty Insurance Company & Senior Vice President of Westport Insurance Corporation



IN WITNESS WHEREOF, North American Specialty Insurance Company, Washington International Insurance Company and Westport Insurance Corporation have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 19TH day of JUNE, 20 19.

North American Specialty Insurance Company
Washington International Insurance Company
Westport Insurance Corporation

State of Illinois
County of Cook ss:

On this 19TH day of JUNE, 20 19, 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 Senior Vice President of Westport Insurance Corporation and Michael A. Ito Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Senior Vice President of Westport Insurance Corporation, 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.



M. Kenny, Notary Public

I, Jeffrey Goldberg, the duly elected Vice President and Assistant Secretary of North American Specialty Insurance Company, Washington International Insurance Company and Westport Insurance Corporation 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, Washington International Insurance Company and Westport Insurance Corporation which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 2ND day of JANUARY, 20 20.

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

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 1/6/20 before me, Arthur P. Arquilla, Notary Public
(Here insert name and title of the officer)

personally appeared Dominic Butech

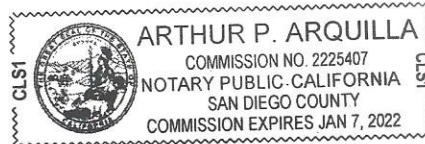
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), 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
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 of Pipeline Rehabilitation AV-1 project consists in the rehabilitation of approximately 33,313 lf (6.31) of existing 8" sewer mains, rehabilitation of sewer laterals with clean outs, sewer lateral replacement with cleanouts, rehabilitation existing manholes, replacing and installing manholes, repairing existing manholes, point repairs, the installation new sewer main clean outs and all other work and appurtenances shown in these specifications.

 - 1.1** The Work shall be performed in accordance with:

 - 1.1.1** The Notice Inviting Bids, and Exhibit plan map **1** through **21**, **Appendix N**, inclusive.

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

See Location Map, **Appendix E**

- 3. CONTRACT TIME:** The Contract Time for completion of the Work, shall be **403 Working Days**.

ATTACHMENT B
PHASED FUNDING PROVISIONS

PHASED FUNDING PROVISIONS

1. PRE-AWARD

1.1. Within 10 Working Days of the Notice of Intent to Award, the Contractor must contact the Project Manager to discuss fund availability for each phase and shall also submit the following:

1.1.1. Construction Cost Loaded Schedule in accordance with 6-1, "CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK" and 7-3, "PAYMENT."

Contractor's failure to perform any of the following may result cancelling the award of the Contract:

1.1.2. Meeting with the City's Project Manager to discuss the Phased Funding Schedule.

1.1.3. Agreeing to a Phased Funding Schedule within **thirty** days of meeting with the City's Project Manager.

2. POST-AWARD

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

2.2. The City may issue the NTP for a subsequent phase before the completion of the preceding phase.

PHASED FUNDING SCHEDULE AGREEMENT

The particulars left blank 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-20-1838-DBB-3-A

CONTRACT OR TASK TITLE: Pipeline Rehabilitation AV-1

CONTRACTOR: Burtech Pipeline Incorporated

Funding Phase	Phase Description	Phase Start	Phase Finish	Not-to-Exceed Amount
1	Bonds, mobilization, clean & pre-video of mains & laterals, sewer main cleanouts, sewer manholes, sewer main rehabilitation (6.3 miles), sewer main point repairs (where required), top hats, lateral lining with clean out installation	NTP	08-31-2020	\$2,389,581.50
2	Top hats, lateral lining with cleanout installation, post-CCTV, PUD review, punch list, closeout	09-01-2020	NOC	\$922,250.00
Contract Total				\$3,311,831.50

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

CONTRACTOR

PRINT NAME: Lotous Lenguyen
Construction Manager

PRINT NAME: Dominic Burtech

Signature: 

Title: President & CEO

Date: 12/31/19

Signature: 

PRINT NAME: Cochinwala Sabeen
Project Manager

Date: 12/31/2019

Signature: 

Date: 12/31/19

ATTACHMENT C

RESERVED

ATTACHMENT D
PREVAILING WAGE

PREVAILING WAGE

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

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

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

1.12. Exemptions for Small Projects. There are limited exemptions for installation, alteration, demolition, or repair work done on projects of \$25,000 or less. The Contractor shall still comply with Labor Code sections 1720 et. seq. The only recognized exemptions are listed below:

1.12.1. Registration. The Contractor will not be required to register with the DIR for small projects. (Labor Code section 1771.1).

1.12.2. Certified Payroll Records. The records required in Labor Code section 1776 shall be required to be kept and submitted to the City of San Diego, but will not be required to be submitted online with the DIR directly. The Contractor will need to keep those records for at least three years following the completion of the Contract. (Labor Code section 1771.4).

1.12.3. List of all Subcontractors. The Contractor shall not be required to hire only registered subcontractors and is exempt from submitting the list of all subcontractors that is required in section 1.11 above. (Labor code section 1773.3).

ATTACHMENT E
SUPPLEMENTARY SPECIAL PROVISIONS

SUPPLEMENTARY SPECIAL PROVISIONS

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

1. The **2018 Edition** of the Standard Specifications for Public Works Construction (The "GREENBOOK").
2. The **2018 Edition** of the City of San Diego Standard Specifications for Public Works Construction (The "WHITEBOOK"), including the following:
 - a) General Provisions (A) for all Construction Contracts.

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

1-2 TERMS AND DEFINITIONS. To the "WHITEBOOK", items 43, 56, 69, and 102, DELETE in its entirety and SUBSTITUTE with the following:

43. **Field Order** - A Field Order is a written agreement by the Engineer to compensate you for Work items in accordance with 2-8, "EXTRA WORK" or 2-9, "CHANGED CONDITIONS". A Field Order does not change the Contract Price, Contract Time, or the scope intent of the Contract.
56. **Notice of Completion (NOC)** - A document recorded with the County of San Diego to signify that the Contract Work has been completed and accepted by the City.
69. **Punchlist** - A list of items of Work or corrections generated after a Walk-through that is conducted when you consider that the Work and Services are complete, and as verified by the Owner. The Punchlist may be completed in phases if defined in the Contract.
102. **Walk-through** - The procedure the City uses to evaluate the status of the Project or the phase of the Project and to generate a Punchlist prior to Acceptance.

To the "WHITEBOOK", item 54, "Normal Working Hours", ADD the following:

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

To the "WHITEBOOK", ADD the following:

108. **Substantial Completion** – When all Contract Work is deemed complete by the Contractor in writing, and as verified by the Owner. Substantial Completion may be completed in phases if defined in the Contract.
109. **Acceptance of Work** – When all of the Contract work is deemed officially complete, including all Punchlist items, by the Owner.

110. **Occupancy** – When the Owner deems a building is ready for use, the Owner will issue a certificate of Occupancy in writing.

SECTION 3 – CONTROL OF THE WORK

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

1. You shall perform, with your own organization, Contract Work amounting to at least **30%** of the base Bid.
2. The self-performance percentage requirement will be waived for Prime Contractors meeting the Class B License requirement of this Contract.

3-8.7 Contractor’s Quality Control Plan (QCP). To the “WHITEBOOK”, ADD the following:

7. The establishment and implementation of a Quality Control Plan (QCP), as defined in the standard specifications, shall be required for this Contract.

3-13.1 Completion. To the “GREENBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

1. You shall submit a written assertion that the Work has been completed and is ready for Owner Acceptance. If, in the Engineer's judgment, the Work has been completed in accordance with the Contract Documents, the Engineer will set forth in writing the date the Work was completed. This will be the date that you are relieved from responsibility to protect and maintain the Work and to which liquidated damages will be computed.

3-13.1.1 Requirements Before Requesting a Walk-through. To the “WHITEBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

3-13.1.1 Requirements Before Requesting Substantial Completion.

1. The following items are required prior to requesting a Substantial Completion:
 - a) Remove temporary facilities from the Site.
 - b) Thoroughly cleaning the Site and removing all mark outs and construction staking.
 - c) Provide completed and signed Red-lines in accordance with 3-7.3 “Redlines and Record Documents”.
 - d) Provide all material and equipment maintenance and operation instructions and/or manuals.
 - e) Provide all tools which are permanent parts of the equipment installed in the Project.
 - f) Provide and properly identify all keys for construction and all keys for permanent Work.

- g) Provide all final Special Inspection reports required by the applicable building Code.
- h) Provide all items specified to be supplied as extra stock. Wrap, seal, or place in a container all items as necessary to allow for storage by the City for future use. Verify the specified quantities.
- i) Ensure that all specified EOCP and certified wage rate documentations covering the Contract Time have been submitted.
- j) Provide the spare parts for the proposed irrigation system as specified in the Special Provisions.
- k) If the Work includes sewer and storm drain installations, the inspection shall include televising in accordance with 306-18, "VIDEO INSPECTION".
- l) If the Work includes a Plant Establishment Period, Work in accordance with 801-6, "MAINTENANCE AND PLANT ESTABLISHMENT" shall be completed prior to requesting Substantial Completion, unless approved otherwise by the Owner.
- m) Notify the Engineer to arrange a final inspection of permanent BMPs installed.

3-13.1.2 Walk-through and Punchlist Procedure. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall notify the Engineer 15 Working Days in advance of date of anticipated Substantial Completion to allow time for Engineer to schedule a Walk-through. After you complete the requirements in 3-13.1.1, "Requirements Before Requesting Substantial Completion" and when you consider that the Work is Substantially Complete, you will notify the Engineer in writing that the Project is Substantially Complete. The Engineer will review your request and determine if the Project is ready for a Walk-through, by verifying whether you have completed all items as required by 3-13.1.1, "Requirements Before Requesting Substantial Completion". Within 7 Working Days, the City will either reject your request of a Walk-through in writing or schedule a Walk-through inspection. The Engineer shall facilitate the Walk-through.
2. The following documents shall be provided at the time of your Walk-through request: As-Built markup, Plans, specifications, technical data such as submittals and equipment manuals, draft final payment, warranties, material certifications, bonds, guarantees, maintenance service agreements, and maintenance and operating manuals.
3. Written warranties, except manufacturer's standard printed warranties, shall be on a letterhead addressed to you. Warranties shall be submitted in the format described in this section, modified as approved by the City, to suit the conditions pertaining to the warranty. Lack of submitting these items will delay start of Walk-through.

4. The Engineer will provide you with the Punchlist within 15 Working Days after the date of the Walk-through. The City shall not provide a preliminary Punchlist.
5. If the Engineer finds that the Project is not Substantially Complete as defined herein, the Engineer will terminate the Walk-through and notify you in writing.
6. If, at any time during the Engineer's evaluation of the corrective Work required by the Punchlist, the Engineer discovers that additional corrective Work is required, the Engineer may include that corrective Work in the Punchlist.
7. You shall remain solely responsible for the Project Site until the Project is completely operational, all Punchlist items have been corrected, and all operation and maintenance manuals have been accepted by the City.
8. The Engineer shall meet with you until all Punchlist items are corrected. You shall complete the Punchlist within 30 Working Days, and Working Days will continue to be counted until Acceptance of the Project.

3-13.2 Acceptance. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall provide the completed, signed, and stamped DS-563 to the Engineer prior to Acceptance.
2. You shall deliver the final As-builts and final billing prior to Acceptance.
3. You shall assemble and deliver to the Engineer a Final Summary Report and Affidavit of Disposal prior to Acceptance.
4. Acceptance shall occur after all of the requirements contained in the Contract Documents have been fulfilled. If, in the Engineer's judgment, you have fully performed the Contract, the Engineer will recommend to the City Engineer that your performance of the Contract be accepted. You shall receive notification of Acceptance in writing from the Owner and counting of working days shall cease and Warranty begins.
5. Retention can be released 35 Calendar Days after NOC. Submit your request for retention to the Resident Engineer and they will mail to you a "Release of Claims" form which shall be completed and returned before the retention will be released.

3-13.3 Warranty. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall warranty and repair all defective materials and workmanship for a period of 1 year. This call back warranty period shall start on the date the Work was accepted by the City unless the City has Beneficial Use or takes Occupancy of the project earlier (excluding water, sewer, and storm drain projects).
2. You shall warranty the Work free from all latent defects for 10 years and patent defects for a period of 4 years.

3. The warranty period for specific items covered under manufacturers' or suppliers' warranties shall commence on the date they are placed into service at the direction of the Engineer in writing.
4. All express warranties from Subcontractors, manufacturers', or Suppliers', of any tier, for the materials furnished and Work performed shall be assigned, in writing, to the City, and shall be delivered to the Engineer prior to the Acceptance of your performance of the Contract.
5. Replace or repair defective materials and workmanship in a manner satisfactory to the Engineer after notice to do so from the Engineer and within the time specified in the notice. If you fail to make such replacements or repairs within the time specified in the notice, the City may perform the replacement or repairs at your expense. If you fail to reimburse the City for the actual costs, your Surety shall be liable for the cost
6. Items that shall be warrantied free from defective workmanship and materials for a period longer than 1 year are as follows:

Specified Item	Minimum Warranty Period
Detectable Warning Tile Construction	3 Years of Manufacturer's Warranty
All Work Under SECTION 500 - PIPELINE REHABILITATION	3 Years
Fiber Optic Interconnect Cables	2 Years
Luminaires*	10 Years of Manufacturer's Warranty
LED Signal Modules	3 Years of Manufacturer's Warranty
Field Devices Associated with 700-6.3, "Adaptive Control Note"	See 700-6.3.9, "Warranty"

* Provide documentation verifying that the induction luminaire models being offered for the Project are covered by the 10 year warranty.

7. You shall provide the City and property owner a copy of the manufacturer's warranty for private sewer pumps, including the alarm panel and all other accessories.
 - a) You shall involve the manufacturer in the installation and startup as needed to secure any extended warranty required.

- b) Nothing in here is intended to limit any manufacturer's warranty which provides the City with greater warranty rights than set forth in this section or the Contract Documents.
 - c) The warranty shall include all components. The form of the warranty shall be approved by the Engineer in accordance with 3-13.3.2, "Warranty Format Requirements".
8. If, during the warranty period, any item of the Work is found to be Defective Work, you shall correct it promptly after receipt of written notice from the City to do so. The warranty period shall be extended with respect to portions of the Work corrected as part of the warranty requirements.

SECTION 4 - CONTROL OF MATERIALS

4-3.6 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.

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

- 11. You shall submit your list of proposed substitutions for an "equal" item **no less than 15 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 – LEGAL RELATIONS AND RESPONSIBILITIES

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

5-4 INSURANCE.

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

5-4.1 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.

5-4.2 Types of Insurance.

5-4.2.1 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:

<u>General Annual Aggregate Limit</u>	<u>Limits of Liability</u>
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

5-4.2.2 Commercial Automobile Liability Insurance.

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

5-4.2.3 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.

5-4.3 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.

5-4.3.1 Non-Admitted Carriers. The City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State 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.

5-4.4 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.

5-4.5 Policy Endorsements.

5-4.5.1 Commercial General Liability Insurance.

5-4.5.1.1 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.

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

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

5-4.5.2 Commercial Automobile Liability Insurance.

5-4.5.2.1 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.

5-4.5.3 Contractors Pollution Liability Insurance Endorsements.

5-4.5.3.1 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.

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

5-4.5.3.3 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.

5-4.6 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.

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

5-4.8 Notice of Changes to Insurance. You shall notify the City 30 Days prior to any material change to the policies of insurance provided under this Contract.

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

5-4.11 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:

<u>Workers' Compensation</u>	<u>Statutory Employers Liability</u>
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.

5-4.11.1. Waiver of Subrogation. The policy or policies shall be endorsed to provide that the insurer will waive all rights of subrogation against the City and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from Work performed by the Named Insured for the City.

5-13 ELECTRONIC COMMUNICATION. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. Virtual Project Manager shall be used on this Contract.
2. You shall post all communications addressed to the Engineer concerning construction including RFIs, submittals, daily logs including the Weekly Statement of Working Days (WSWD), Storm Water, and transmittals to the Virtual Project Manager (VPM) website established for the Projects. This shall not supersede any Federal requirements.
3. Maintain a list of scheduled activities including planned and actual execution dates for all major construction activities and milestones defined in the approved Schedule.
4. Review and act on all communications addressed to you in the VPM project website.
5. A user's guide to the VPM system is available on the City's website and shall be provided to you at the Pre-construction Meeting. Refer to the VPM training videos and forms at the location below:
<https://www.sandiego.gov/publicworks/edocref>
6. Submit the Sensitive Information Authorization Acknowledgement Form and VPM User Agreement located in the VPM user's guide at the Pre-construction Meeting.

SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK

6-1.1 Construction Schedule. To the "WHITEBOOK", item 1, subsection "s", DELETE in its entirety and SUBSTITUTE with the following:

- s) Submit an updated cash flow forecast with every pay request (for each Project ID or WBS number provided in the Contract) showing periodic and cumulative construction billing amounts for the duration of the Contract Time. If there has been any Extra Work since the last update, include only the approved amounts.
 - i. Refer to the Sample City Invoice materials in **Appendix D – Sample City Invoice with Cash Flow Forecast** and use the format shown.

- ii. See also the “Cash Flow Forecast Example” at the location below:
<https://www.sandiego.gov/publicworks/edocref>

6-2.1 Moratoriums. To the “WHITEBOOK”, ADD the following:

- 3. Do not Work in the areas where there is currently a moratorium issued by the City. The areas subject to moratorium are listed below:
 - a) Ace Street and Winlow Street between Streamview Drive and Dwight Street until after 05/05/21.
 - b) On Redwood Street from 55th Street to 60th Street, 60th Street from Redwood Street to Thorn Street, Thorn Street from 60th Street to Page Street until after 03/21/20.
 - c) Hanna Street from Fieger Street to 55th Street until after 10/02/20.
 - d) Ace Street and Winlow Street between Streamview Drive and Dwight Street until after 05/05/21.
 - e) Fieger Street until after 11/27/20.
 - f) Grape Street from Sultana Street to Bayview Heights Drive, Sultana Street from Grape Street to Tokay Street until after 10/31/20.
 - g) Olive Street from 54th Street to 55th Street and 55th Street from Olive Street to Laurel Street until after 03/15/22.

6-4.2 Extensions of Time. To the “WHITEBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

- 1. The Contract Time shall not be modified except by Change Order.
- 2. You shall notify the City in writing within **1 Working Day** after the occurrence and discovery of an event that impacts the Project Schedule.
 - a) If you believe this event requires a Change Order, you shall submit a **written Change Order request with a report to** the City that explains the request for Change Order within **5 Working Days**. The Change Order request must include supporting data, a general description of the discovery, the basis for extension, and the estimated length of extension. The City may grant an extension of time, in writing, for the Change Order request if you require more time to gather and analyze data.
- 3. The Engineer shall not grant an extension of Contract Time in accordance with 6-1.5, “Excusable Delays” unless you demonstrate, through an analysis of the critical path, the following:
 - a) The event causing the delay impacted the activities along the Project’s critical path.

- b) The increases in the time to perform all or part of the Project beyond the Contract Time arose from unforeseeable causes beyond your control and without your fault or negligence and that all project float has been used.
4. Any modifications to the Contract Time will be incorporated into the weekly document that the Engineer issues that stipulates the Contract Time. If you do not agree with this document, submit to the Engineer for review a written protest supporting your objections to the document within **30 Calendar Days** after receipt of the statement. Your failure to file a timely protest shall constitute your acceptance of the Engineer's weekly document.
- a) Your protest will be considered a claim for time extension and shall be subject to 2-10.1, "Claims".

ADD:

6-6.1.1 Environmental Document.

- 1. The City of San Diego has prepared a **Notice of Exemption and Notice of Right to Appeal Environmental Determination** for **Pipeline Rehabilitation AV-1**, Project No. **B-18062**, as referenced in the Contract Appendix . You shall comply with all requirements of the **Notice of Exemption and Notice of Right to Appeal Environmental Determination** as set forth in **Appendix A**.
- 2. Compliance with the City's environmental document shall be included in the Contract Price, unless separate bid items have been provided.

6-6.4 Written Notice and Report. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

- 1. Your failure to notify the Resident Engineer within **1 Working Day** OR provide a Change Order request within **5 Working Days** after the event, in accordance with 6-4.2, "Extensions of Time", will be considered grounds for refusal by the City to consider such request if your failure to notify prejudices the City in responding to the event.

SECTION 7 – MEASUREMENT AND PAYMENT

7-3.4.1 Payment. To the "WHITEBOOK", ADD the following:

- 4. The cost for mobilization excludes the costs for all mobilization and demobilization Work associated with each paving phase. The costs for all mobilization and demobilization Work associated with each paving phase shall be paid in accordance with 306-1.2.1, "Payment".

7-3.9

Field Orders. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. If the cumulative total of Field Order items of Work does not exceed the "Field Orders" Bid Item, the City shall pay those Field Orders as shown below:

TABLE 7-3.9
FIELD ORDER LIMITS

Contract Price	Maximum Field Order Work Amount
Less than \$100,001	\$2,500
\$100,001 to \$1,000,000	\$5,000
\$1,000,001 to \$5,000,000	\$10,000
\$5,000,001 to \$15,000,000	\$20,000
\$15,000,001 to \$30,000,000	\$40,000
Greater than \$30,000,000	\$50,000

2. Field Order items of Work for contracts greater than \$15,000,000 will require additional approvals from the City prior to its approval by the Resident Engineer.
3. The City will issue a Field Order only after the City's acceptance of the cost of the field order amount.
4. Field Orders shall not be used to add scope or to include extensions of time related to changes in work.
5. If in the event there is a change related to the critical path on the project which necessitates an extension of time and the change amount is within the Field Order limits shown on Table 7-3.9, then a Field Order can be issued to compensate you for the approved costs. Any extensions of time associated with the change shall be included in a subsequent Change Order and no additional compensation shall be granted as part of the change order for the extension of time.
6. The unused portions of Field Orders Bid item shall revert to the City upon Acceptance.

SECTION 306 – OPEN TRENCH CONDUIT CONSTRUCTION

ADD:

306-1.2

Phased Paving.

1. You shall implement phased paving, when directed and approved by the Engineer.
2. The Engineer will notify you when you can proceed with phased paving Work. Each phase shall be completed within **90 Working Days** after the Engineer's notification. Plan and schedule your Work accordingly to ensure each phase is complete.
3. When Phased Paving is initiated, the following Work shall be completed within the determined areas:
 - a) Installation of mains and appurtenances.
 - b) Operational checks and testing.
 - c) Mains are in service.
 - d) Trench restoration.
4. You may propose to change the limits of the determined phasing, in writing, for the Engineer's review and approval. If approved, there shall be no additional costs to the City. No additional Working Days will be granted for delays due to the City's review and approval of your proposed change and due to the implementation of that proposed change.
5. You may use multiple crews to complete each phase of paving.

ADD:

306-1.2.1

Payment.

The payment for all Work associated with Phased Paving shall be included in the Bid item for each "Phased Paving" area. This payment shall include the costs for all mobilization and demobilization Work associated with each paving phase regardless of the paving operation. No additional payment shall be made regardless of the number of mobilizations and demobilizations required to complete that phase.

306-16.6

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

6. The payment for replacing manhole in place shall be included in the Bid Item "Replace Manhole in Place" and shall include all necessary labor, materials and equipment including but not limited to: the polymer mortar, liner, and/or coating, removal and disposal of existing manhole, excavation, import backfill, pavement resurfacing, and installing of new manhole in place.

SECTION 500 – PIPELINE REHABILITATION

500-1 GENERAL. To the “WHITEBOOK”, ADD the following:

4. Any Cured-in-Place Pipe (CIPP) lining Work within a 1000 foot radius from school areas shall first be coordinated with the school and shall be performed outside of school hours at no expense to the City.

500-2.1 Initial Submittals. To the “WHITEBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

1. At Bid Due date, all bidders shall submit the following:
 - a) Contractor’s Experience and Past Project Documentation.
 - i. You shall submit documentation that you have performed similar main rehabilitation projects (of scope and size) successfully within the last 10 years in the United States. The scope shall include the same product, installation, and curing. The proposed product shall have at least 5 years or more of documented performance records.
 - ii. Your superintendent shall be assigned full time to this project and shall be present at the Site while Work is being performed. If CIPP is used, the superintendent shall have documentation conveying experience with the proposed resin and felt combination used and the installation of the proposed lateral sealing system with the pipe lining system.
 - b) Authorized Installer - The installation of the lining system shall be performed by a contractor authorized, certified, or both by the manufacture or owner of the process. You shall submit a copy of the authorization from all manufacturers for which they are authorized, certified, or both and a letter from the manufacturer(s) stating the name, address, point of contact, and telephone number. The Engineer will verify these authorizations.

502-5.6.1 Payment. To the “WHITEBOOK”, ADD the following:

2. The payment for repairing and rehabilitation of manhole Work shall be included in the vertical foot Bid item for “Repair and Rehabilitate Existing Manhole with Cured-In-Place Manhole Liner” and shall include all necessary labor, material, and equipment to clean, repair, and line the manhole as specified herein. The vertical foot liner measurement shall be defined as the distance between the top of shelf to the manhole cover seat.

**SECTION 601 – TEMPORARY TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE
WORK ZONES**

601-3.6 **Channelizing Devices.** To the “WHITEBOOK”, item 4, Barricades, ADD the following:

- h) You shall place “OPEN TRENCH” signs (C27(CA)) on Type 3 Barricade within the construction Work zone, ahead of any Work areas with open trenches that are greater than 3 inches in depth, in accordance with California MUTCD SECTION 6F.103 (CA). The barricades shall be placed in a continuous manner and shall prevent pedestrian, vehicular, and biker access to the open trench area.

SECTION 1001 – CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs)

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

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

SUPPLEMENTARY SPECIAL PROVISIONS
APPENDICES

APPENDIX A
NOTICE OF EXEMPTION
AND
NOTICE OF RIGHT TO APPEAL ENVIRONMENTAL DETERMINATION

NOTICE OF EXEMPTION

(Check one or both)

TO: Recorder/County Clerk
P.O. Box 1750, MS A-33
1600 Pacific Hwy, Room 260
San Diego, CA 92101-2400

FROM: City of San Diego
Public Works Department
525 B Street, Suite 750, MS 908A
San Diego, CA 92101

Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

Project Name: Pipeline Rehabilitation AV-1

Project No. / WBS No.: B-18062.02.06

Project Location-Specific: Drafter Pl, Dalehaven Pl, Euclid Ct, Euclid Ave, Perkon Pl, Perkon Ct, Laurel St, Indianapolis Ave, Gerald Ct, Elkhart St, 51st St, Kandace Wy, Caminito Mindy, Nutmeg St, Blackton Dr, 55th St, Balboa Vista Dr, Seifet St, Laurel St, 56th St, Faulconer St, Timothy Dr, Hanna St, Fieger St, Timothy Dr, Grape St, Sultana St, Carmen St, Tokay St, Fredonia St, Peru Pl, Muscat St, Collura St, Joyce Pl, Redwood St, 52nd St, 53rd St, Chollas Station Rd, 55th St, Easy St, 54th St, Winlow St, Streamview Dr, Spa St, Marvin St, Lynn St, Thorn St, 60th St, Bark St, Bates St, Rock St, Rock Pl, including multiple city easements and alley ways. Located within the Mid-City – Eastern Area Community Planning Area & Council District 4

Project Location-City/County: San Diego/San Diego

Description of nature and purpose of the Project: Rehabilitation of approximately 37,449 Linear Feet (LF) of existing 8-inch vitrified clay (VC) sewer mains, approximately 12 point repairs on 10 segments. Reconnection of approximately 659 sewer laterals as well as installation of 4 inch cleanouts at each lateral if need. Rehabilitation of approximately 33 existing manholes, repair of approximately 12 manholes, replacement of approximately 8 manholes and installation of approximately 8 manholes and 27 cleanouts. Any excavation within the City's right-of-way will occur within previously disturbed and improved right-of way. Excavation within easements will occur within previously disturbed soil.

Name of Public Agency Approving Project: City of San Diego

Name of Person or Agency Carrying Out Project: Natalie de Freitas, 525 B Street, Suite 750, San Diego, CA, 92101, (619) 533-4603

Exempt Status: (CHECK ONE)

- Ministerial (Sec. 21080(b)(1); 15268);
- Declared Emergency (Sec. 21080(b)(3); 15269(a));
- Emergency Project (Sec. 21080(b)(4); 15269 (b)(c))
- Categorical Exemption: 15301 – (Existing Facilities), 15303 – (New Construction)
- Statutory Exemptions:

Reasons why project is exempt: The City of San Diego conducted an environmental review and determined that the project meets the categorical exemption criteria set forth in CEQA State Guidelines, Section 15301 – (Existing Facilities), which allows for the repair and maintenance of existing public structures, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination; 15303 – (New Construction), which allows for the construction and location of limited numbers of new, small structures; and where the exceptions listed in Section 15300.2 would not apply.

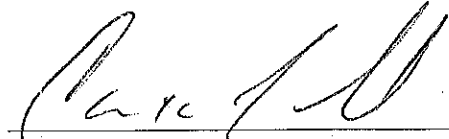
Lead Agency Contact Person: Natalie de Freitas

Telephone: (619) 533-4603

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a notice of exemption been filed by the public agency approving the project? Yes No

It is hereby certified that the City of San Diego has determined the above activity to be exempt from CEQA



Carrie Purcell, Assistant Deputy Director

11/6/18
Date

Check One:

- Signed By Lead Agency
 Signed by Applicant

Date Received for Filing with County Clerk or OPR:



THE CITY OF SAN DIEGO

Date of Notice: October 19, 2018

NOTICE OF RIGHT TO APPEAL ENVIRONMENTAL DETERMINATION

PUBLIC WORKS DEPARTMENT

WBS No. B-18062.02.06

PROJECT NAME/NUMBER: PIPELINE REHABILITATION AV-1

COMMUNITY PLAN AREA: Mid-City - Eastern Area

COUNCIL DISTRICT: 4

LOCATION: Drafter Pl, Dalehaven Pl, Euclid Ct, Euclid Ave, Perkon Pl, Perkon Ct, Laurel St, Indianapolis Ave, Gerald Ct, Elkhart St, 51st St, Kandace Wy, Caminito Mindy, Nutmeg St, Blackton Dr, 55th St, Balboa Vista Dr, Seifet St, Laurel St, 56th St, Faulconer St, Timothy Dr, Hanna St, Fieger St, Timothy Dr, Grape St, Sultana St, Carmen St, Tokay St, Fredonia St, Peru Pl, Muscat St, Collura St, Joyce Pl, Redwood St, 52nd St, 53rd St, Chollas Station Rd, 55th St, Easy St, 54th St, Winlow St, Streamview Dr, Spa St, Marvin St, Lynn St, Thorn St, 60th St, Bark St, Bates St, Rock St, Rock Pl, including multiple city easements and alley ways.

PROJECT DESCRIPTION: Rehabilitation of approximately 37,449 Linear Feet (LF) of existing 8-inch vitrified clay (VC) sewer mains, approximately 12 point repairs on 10 segments. Reconnection of approximately 659 sewer laterals as well as installation of 4 inch cleanouts at each lateral if need. Rehabilitation of approximately 33 existing manholes, repair of approximately 12 manholes, replacement of approximately 8 manholes and installation of approximately 8 manholes and 27 cleanouts. Any excavation within the City's right-of-way will occur within previously disturbed and improved right-of way. Excavation within easements will occur within previously disturbed soil.

ENTITY CONSIDERING PROJECT APPROVAL: City of San Diego

ENVIRONMENTAL DETERMINATION: Categorically exempt from CEQA pursuant to CEQA State Guidelines, Section 15301 – (Existing Facilities), 15303 – (New Construction)

ENTITY MAKING ENVIRONMENTAL DETERMINATION: City of San Diego Public Works Department

STATEMENT SUPPORTING REASON FOR ENVIRONMENTAL DETERMINATION: The City of San Diego conducted an environmental review and determined that the project meets the categorical exemption criteria set forth in CEQA State Guidelines, Section 15301 – (Existing Facilities), which allows for the repair and maintenance of existing public structures, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination; 15303 – (New Construction), which allows for the

construction and location of limited numbers of new, small structures; and where the exceptions listed in Section 15300.2 would not apply.

CITY PROJECT MANAGER: Natalie de Freitas
MAILING ADDRESS: 525 B Street, Suite 750, San Diego, CA 92101
PHONE NUMBER: (619) 533-4603

On October 19, 2018 the City of San Diego made the above-referenced environmental determination pursuant to the California Environmental Quality Act (CEQA). This determination is appealable to the City Council. If you have any questions about this determination, contact the City Project Manager listed above.

Applications to appeal CEQA determination made by staff (including the City Manager) to the City Council must be filed in the office of the City Clerk within 10 business days from the date of the posting of this Notice (November 2, 2018). The appeal application can be obtained from the City Clerk, 202 'C' Street, Second Floor, San Diego, CA 92101.

This information will be made available in alternative formats upon request.

POSTED IN THE OFFICE OF DSD
OCT 17 2018 SS
Posted _____
Removed NOV 06 2018
Posted by *Natalie de Freitas*

APPENDIX B
FIRE HYDRANT METER PROGRAM

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

1. **PURPOSE**

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

2. **AUTHORITY**

- 2.1 All authorities and references shall be current versions and revisions.
- 2.2 San Diego Municipal Code (NC) Chapter VI, Article 7, Sections 67.14 and 67.15
- 2.3 Code of Federal Regulations, Safe Drinking Water Act of 1986
- 2.4 California Code of Regulations, Titles 17 and 22
- 2.5 California State Penal Code, Section 498B.0
- 2.6 State of California Water Code, Section 110, 500-6, and 520-23
- 2.7 Water Department Director

Reference

- 2.8 State of California Guidance Manual for Cross Connection Programs
- 2.9 American Water Works Association Manual M-14, Recommended Practice for Backflow Prevention
- 2.10 American Water Works Association Standards for Water Meters
- 2.11 U.S.C. Foundation for Cross Connection Control and Hydraulic Research Manual

3. **DEFINITIONS**

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

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SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 2 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

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

4. **POLICY**

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

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

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SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 4 OF 10	EFFECTIVE DATE October 15, 2002
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11. When a private meter malfunctions, the customer will be notified and the meter will be removed by the City and returned to the customer for repairs. Testing and calibration results shall be given to the City prior to any re-installation.
 12. The register shall be hermetically sealed straight reading and shall be readable from the inlet side. Registration shall be in hundred cubic feet.
 13. The outlet shall have a 2 ½ “National Standards Tested (NST) fire hydrant male coupling.
 14. Private fire hydrant meters shall not be transferable from one contracting company to another (i.e. if a company goes out of business or is bought out by another company).
- 4.4 All fire hydrant meters and appurtenances shall be installed, relocated and removed by the City of San Diego, Water Department. All City owned fire hydrant meters and appurtenances shall be maintained by the City of San Diego, Water Department, Meter Services.
- 4.5 If any fire hydrant meter is used in violation of this Department Instruction, the violation will be reported to the Code Compliance Section for investigation and appropriate action. Any customer using a fire hydrant meter in violation of the requirements set forth above is subject to fines or penalties pursuant to the Municipal Code, Section 67.15 and Section 67.37.
- 4.6 Conditions and Processes for Issuance of a Fire Hydrant Meter**
- Process for Issuance
- a. Fire hydrant meters shall only be used for the following purposes:
 1. Temporary irrigation purposes not to exceed one year.

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

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

4.7 Relocation of Existing Fire Hydrant Meters

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

4.8 Disconnection of Fire Hydrant Meter

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

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for removal of the meter.

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

5. **EXCEPTIONS**

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

6. **MOBILE METER**

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

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

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

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

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

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

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

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7. **FEE AND DEPOSIT SCHEDULES**

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

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

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

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

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

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

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

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

Water Department Director

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

APPENDIX

Administering Division: Customer Support Division

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

Distribution: DI Manual Holders



Application for Fire Hydrant Meter (EXHIBIT A)

(For Office Use Only)

NS REQ	FAC#
DATE	BY

METER SHOP (619) 527-7449

Meter Information

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

Fire Hydrant Location: (Attach Detailed Map//Thomas Bros. Map Location or Construction drawing.) 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: <small>(PERSON IN ACCOUNTS PAYABLE)</small>			Phone: ()
Site Contact Name and Title:			Phone: ()
Responsible Party Name:			Title:
Cal ID#			Phone: ()
Signature:		Date:	
<small>Guarantees Payment of all Charges Resulting from the use of this Meter. Insures that employees of this Organization understand the proper use of Fire Hydrant Meter</small>			

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

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

WATER USES WITHOUT ANTICIPATED CHARGES FOR RETURN TO SEWER

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

Note:

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

Date

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

Subject: Discontinuation of Fire Hydrant Meter Service

Dear Water Department Customer:

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

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

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

Sincerely,

Water Department

APPENDIX C

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Water stops (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 down drains, reducers, coupling bands and slip joints
22. Metal target plates
23. Paint (traffic striping)
24. Conductors
25. Painting of electrical equipment
26. Electrical components
27. Engineering fabric
28. Portland Cement
29. PCC admixtures
30. Minor concrete, asphalt
31. Asphalt (oil)
32. Liquid asphalt emulsion
33. Epoxy

APPENDIX D

SAMPLE CITY INVOICE WITH CASH FLOW FORECAST

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

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

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

SAMPLE REFERENCE

APPENDIX E
LOCATION MAP

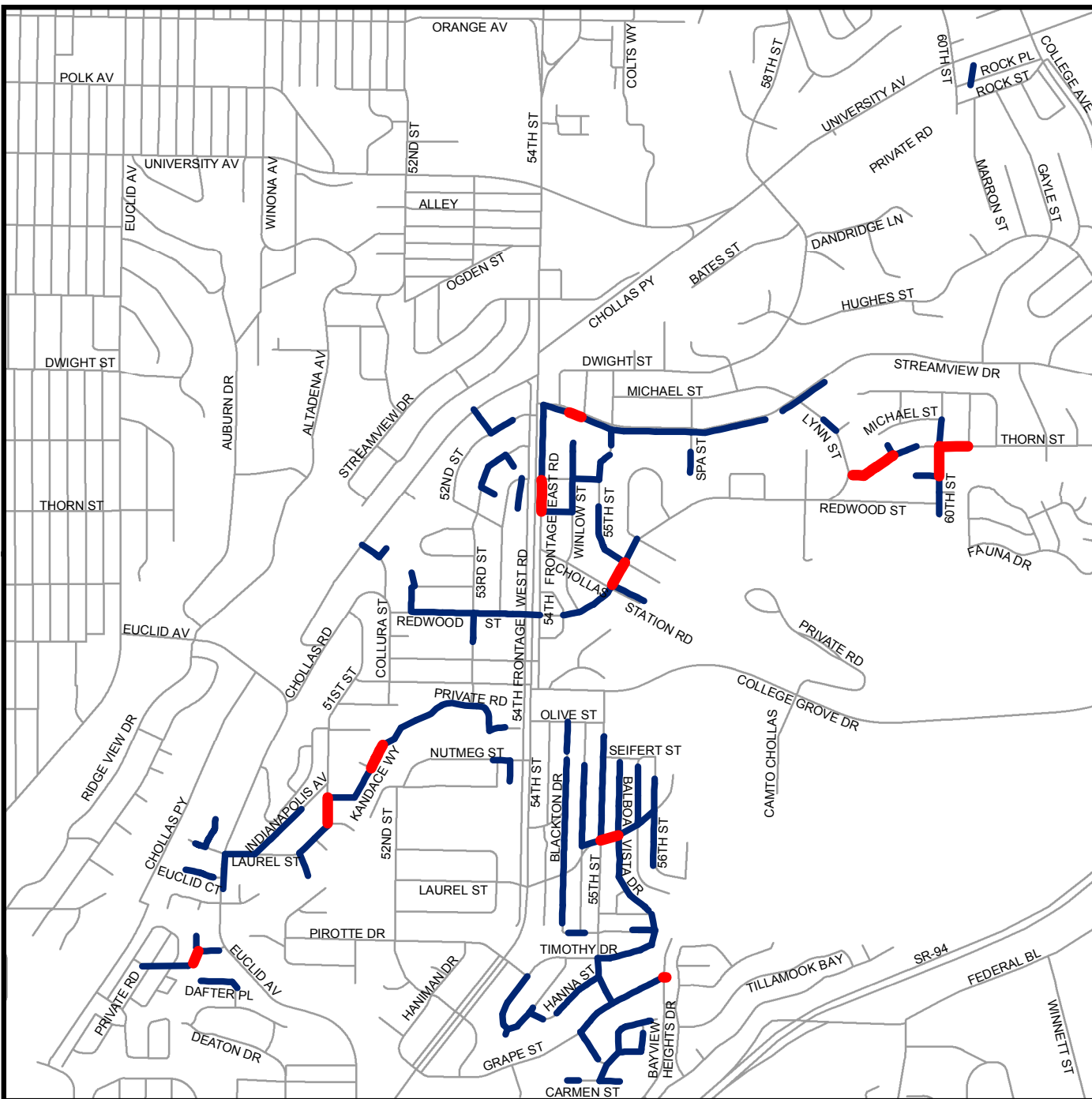
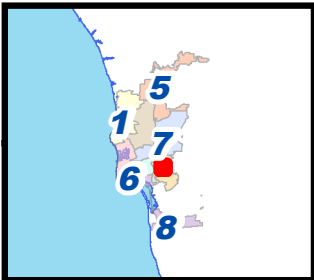
PIPELINE REHABILITATION AV-1 PROJECT

SENIOR ENGINEER
Alex Sleiman
619-533-7588

PROJECT MANAGER
Sabeen Cochinwala
619-533-4661

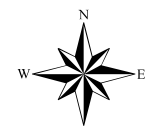
PROJECT ENGINEER
Salvador Castillo
619-533-4609

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



LOCATION MAP

COMMUNITY NAME: MID CITY - EASTERN AREA
COUNCIL DISTRICT: 4



NOT TO SCALE

Legend

- Sewer Mains to be Rehabilitated
- Sewer Mains to be Point Repaired and Rehabilitated

Date: December 06, 2018

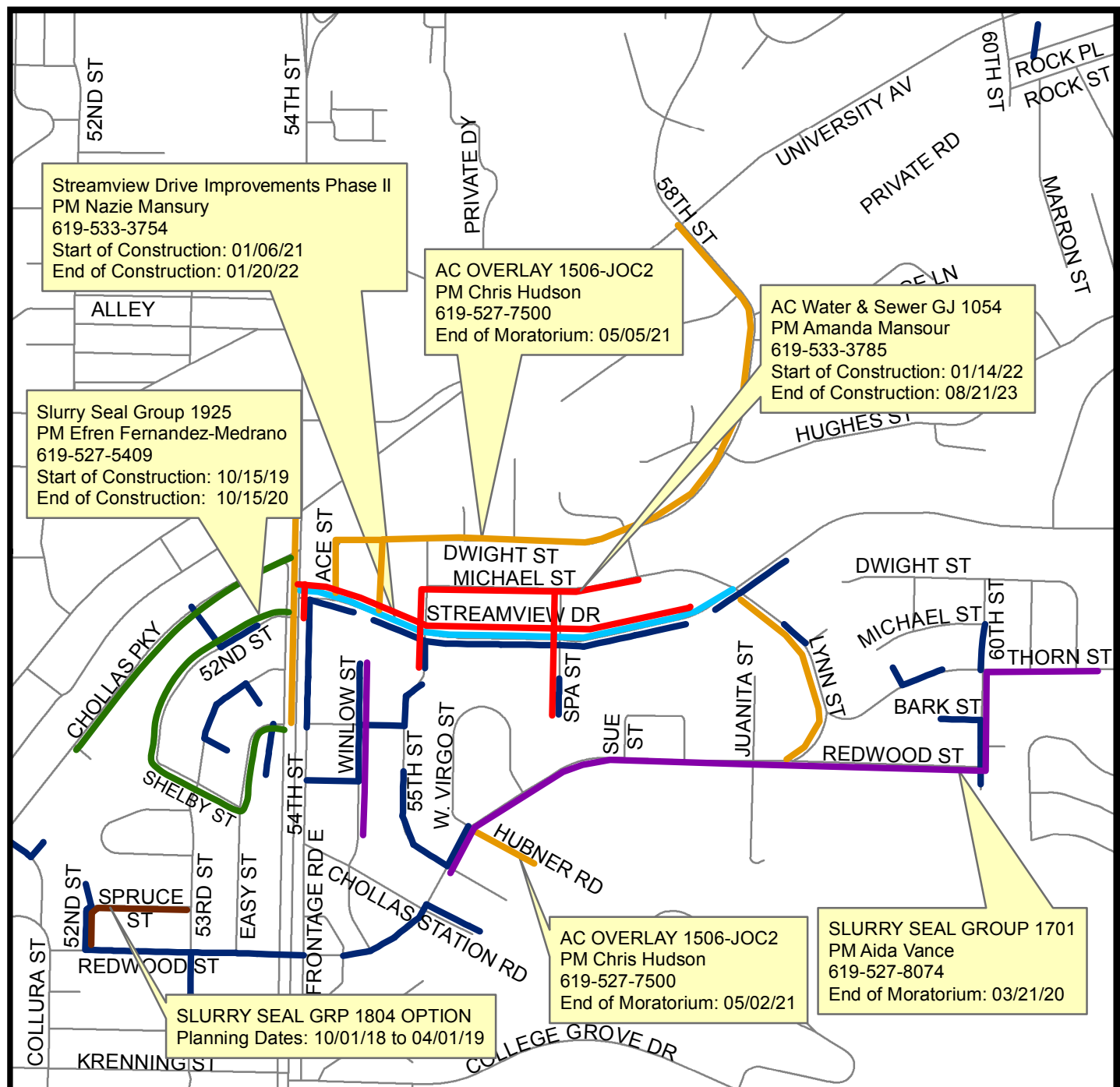


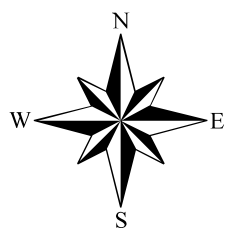

WBS. NO.: B-18062

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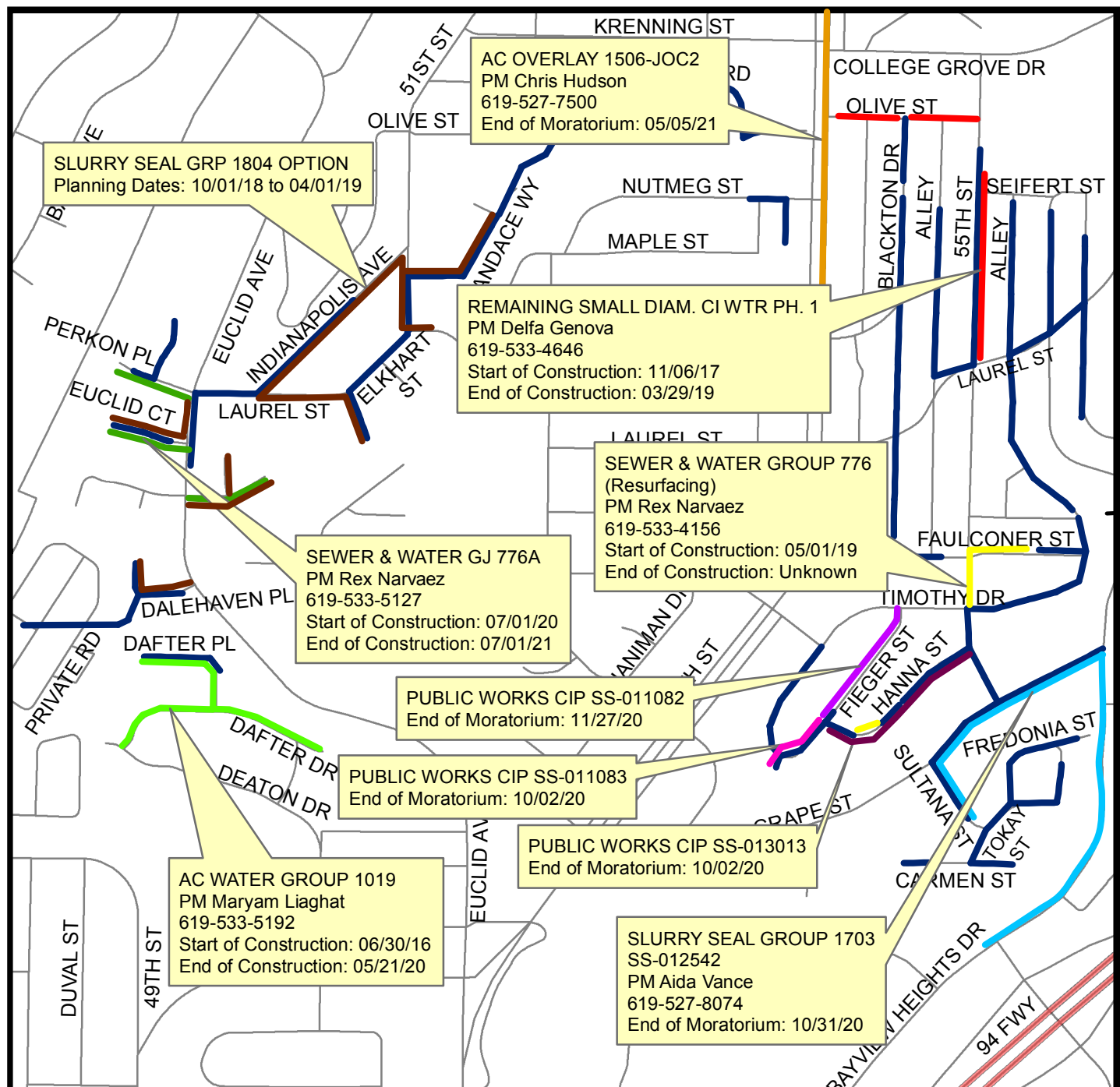
APPENDIX F
ADJACENT PROJECTS


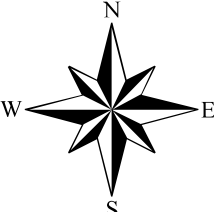
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<p>The City of SAN DIEGO Public Works</p>	<p>PIPELINE REHABILITATION AV-1 COMMUNITY NAME: MID CITY - EASTERN AREA COUNCIL DISTRICT: 4</p>	<p>WBS. No. : B-18062</p>
<p>SENIOR ENGINEER Alex Sleiman 619-533-7588</p> <p>PROJECT MANAGER Sabeen Cochinwala 619-533-4661</p> <p>PROJECT ENGINEER Sal Castillo 619-533-4609</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> — PIPELINE REHABILITATION AV-1 — AC WATER & SEWER GJ 1054 — AC OVERLAY 1506-JOC2 — STREAMVIEW DR IMPROVEMENTS PH. II — SLURRY SEAL GROUP 1925 — SLURRY SEAL GROUP 1701 — SLURRY SEAL GRP 1804 OPTION 	 <p>NOT TO SCALE</p>
	<p>ADJACENT PROJECTS CONFLICT MAP</p>	<p>SHEET NO. 1</p>

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<p>The City of SAN DIEGO Public Works</p>	<p>PIPELINE REHABILITATION AV-1 COMMUNITY NAME: MID CITY - EASTERN AREA COUNCIL DISTRICT: 4</p>	<p>WBS. No. : B-18062</p>
<p>SENIOR ENGINEER Alex Sleiman 619-533-7588</p> <p>PROJECT MANAGER Sabeen Cochinwala 619-533-4661</p> <p>PROJECT ENGINEER Sal Castillo 619-533-4609</p> 	<p>LEGEND:</p> <ul style="list-style-type: none"> — PIPELINE REHABILITATION AV-1 — AC OVERLAY 1506-JOC2 — PUBLIC WORKS CIP SS-013013 — PUBLIC WORKS CIP SS-011083 — SLURRY SEAL GROUP 1703 — SEWER & WATER GJ 776A — SEWER & WATER GJ 776 — REMAINING SMALL DIAM. CI WTR PH. 1 — SLURRY SEAL GRP 1804 OPTION — AC WATER GROUP 1019 — PUBLIC WORKS CIP SS-011082 <p>ADJACENT PROJECTS CONFLICT MAP</p>	 <p>NOT TO SCALE</p> <p>SHEET NO. 2</p>

APPENDIX G
HAZARDOUS WASTE LABEL/FORMS

**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 HAZARDOUS PROPERTIES FLAMMABLE TOXIC
 SOLID LIQUID CORROSIVE REACTIVE OTHER _____

HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES

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?	<input type="checkbox"/>	<input type="checkbox"/>
2. Did anyone, other than employees in the immediate area of the release, evacuate?	<input type="checkbox"/>	<input type="checkbox"/>
3. Did the release cause off-site damage to public or private property?	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the release greater than or equal to a reportable quantity (RQ)?	<input type="checkbox"/>	<input type="checkbox"/>
5. Was there an uncontrolled or unpermitted release to the air?	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>
7. Will control, containment, decontamination, and/or clean up require the assistance of federal, state, county, or municipal response elements?	<input type="checkbox"/>	<input type="checkbox"/>
8. Was the release or threatened release involving an unknown material or contains an unknown hazardous constituent?	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>

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 <input type="checkbox"/> Yes <input type="checkbox"/> 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?: <input type="checkbox"/> Yes <input type="checkbox"/> 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 <input type="checkbox"/> GAL <input type="checkbox"/> LBS <input type="checkbox"/> FT ³
Chemical	Quantity <input type="checkbox"/> GAL <input type="checkbox"/> LBS <input type="checkbox"/> FT ³
Chemical	Quantity <input type="checkbox"/> GAL <input type="checkbox"/> LBS <input type="checkbox"/> 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
D	CHECK IF CHEMICAL IS LISTED IN 40 CFR 355, APPENDIX A <input type="checkbox"/>	CHECK IF RELEASE REQUIRES NOTIFICATION UNDER 42 U.S.C. Section 9603 (a) <input type="checkbox"/>	
D	PHYSICAL STATE CONTAINED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS	PHYSICAL STATE RELEASED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS	QUANTITY RELEASED
D	ENVIRONMENTAL CONTAMINATION <input type="checkbox"/> AIR <input type="checkbox"/> WATER <input type="checkbox"/> GROUND <input type="checkbox"/> 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)		
	<input type="checkbox"/> ACUTE OR IMMEDIATE (explain) _____		
	<input type="checkbox"/> CHRONIC OR DELAYED (explain) _____		
	<input type="checkbox"/> 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.

APPENDIX H
SAMPLE OF PUBLIC NOTICE



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



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.
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• "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.

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 I

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

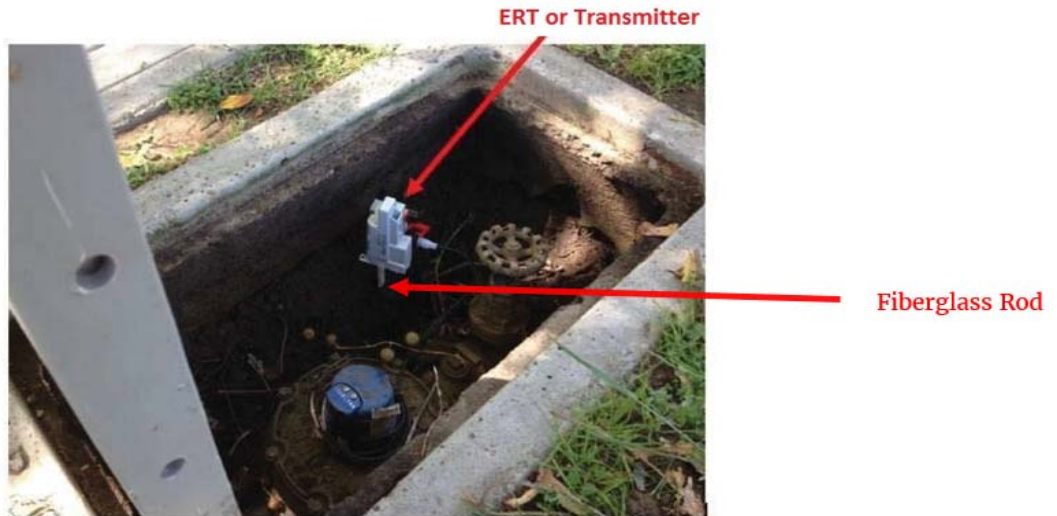


Photo 6 below is an example of disturbance that shall be avoided:

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



Network Device

Photo 9



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

APPENDIX J

SEWER PIPELINE REHABILITATION SCOPE OF WORK

APPENDIX J

SEWER PIPELINE REHABILITATION SCOPE OF WORK

PLAN SHT #	FSN	LENGTH	SIZE	MATERIAL	REMARKS	WORK TO BE DONE
3	58909	168	8	VC		REHAB MAIN
4	51894	125	8	VC		REHAB MAIN
4	51960	200	8	VC		REHAB MAIN & MH REPAIR
4	51985	229	8	VC		REHAB MAIN & MH REPAIR
4	51987	277	8	VC		REHAB MAIN & MH REPAIR
4	52197	133	8	VC		REHAB MAIN
4	52199	281	8	VC		REHAB MAIN, MH REHAB & MH REPAIR
4	52200	190	8	VC		REHAB MAIN & MH REPAIR
5	51964	300	8	VC		REHAB MAIN & MH REPAIR
5	51965	60	8	VC		REHAB MAIN, MH REHAB & INSTALL CLEANOUT
5	51966	270	8	VC		REHAB MAIN & MH REHAB
5	51967	250	8	VC		REHAB MAIN & MH REHAB
5	51968	160	8	VC		REHAB MAIN
5	51969	124	8	VC		REHAB MAIN & INSTALL CLEANOUT
5	51970	150	8	VC		REHAB MAIN & INSTALL CLEANOUT
5	51971	115	8	VC		REHAB MAIN
5	51975	300	8	VC		REHAB MAIN
5	51977	256	8	VC		REHAB MAIN & MH REHAB
5	51980	111	8	VC		REHAB MAIN
5	51981	300	8	VC		REHAB MAIN
5	52193	310	8	VC		REHAB MAIN & MH REHAB
5	52320	292	8	VC		REHAB MAIN
6	51818	300	8	VC		REHAB MAIN
6	51819	346	8	VC		REHAB MAIN
6	51823	300	8	VC		REHAB MAIN
6	51827	138	8	VC		REHAB MAIN

APPENDIX J

SEWER PIPELINE REHABILITATION SCOPE OF WORK

PLAN SHT #	FSN	LENGTH	SIZE	MATERIAL	REMARKS	WORK TO BE DONE
6	51832	200	8	VC	No conflict with AC Resurfacing Group 1511. Keep New Manhole and Rehab in project scope.	REHAB MAIN & INSTALL MH
7	51824	263	8	VC		REHAB MAIN
7	51857	171	8	VC		REHAB MAIN
7	51870	300	8	VC		REHAB MAIN
7	51873	169	8	VC		REHAB MAIN
8	51841	111	8	VC		REHAB MAIN & MH REHAB
8	51842	237	8	VC		REHAB MAIN & MH REHAB
8	51844	226	8	VC		REHAB MAIN, MH REHAB & INSTALL MH
8	51847	260	8	VC		REHAB MAIN & MH REHAB
8	52151	147	8	VC		REHAB MAIN & MH REHAB
8	52161	200	8	VC		REHAB MAIN & INSTALL MH
9	52043	100	8	VC		REHAB MAIN
9	52044	126	8	VC		REHAB MAIN
9	52046	290	8	VC		REHAB MAIN & MH REHAB
9	52048	40	8	VC		REHAB MAIN
9	52049	207	8	VC		REHAB MAIN
9	52060	233	8	VC		REHAB MAIN & MH REHAB
10	52265	125	8	VC		REHAB MAIN & MH REHAB
10	52266	244	8	VC		REHAB MAIN & MH REHAB
10	52275	30	8	VC		REHAB MAIN, MH REPLACE & INSTALL CLEANOUT
10	52304	250	8	VC		REHAB MAIN
10	52312	300	8	VC		REHAB MAIN
10	52313	230	8	VC		REHAB MAIN & MH REPLACE
11	52190	250	8	VC		REHAB MAIN
11	52191	65	8	VC		REHAB MAIN & MH REPLACE
11	52211	165	8	VC		REHAB MAIN

APPENDIX J

SEWER PIPELINE REHABILITATION SCOPE OF WORK

PLAN SHT #	FSN	LENGTH	SIZE	MATERIAL	REMARKS	WORK TO BE DONE
11	52212	234	8	VC		REHAB MAIN
11	52221	250	8	VC		REHAB MAIN
11	52258	158	8	VC		REHAB MAIN
11	52264	160	8	VC		REHAB MAIN
11	52280	161	8	VC		REHAB MAIN & MH REHAB
11	52282	266	8	VC		REHAB MAIN
11	52302	100	8	VC		REHAB MAIN & MH REHAB
12	45140	440	8	VC		REHAB MAIN & MH REHAB
12	45417	63	8	VC		REHAB MAIN & MH REHAB
12	45418	298	8	VC		REHAB MAIN & MH REPAIR
12	45421	65	8	VC		REHAB MAIN, INSTALL CLEANOUT & MH REPAIR
12	45432	51	8	VC		REHAB MAIN
12	45433	200	8	VC	No conflict with AC Resurfacing Group 1901	REHAB MAIN & INSTALL MH
12	45436	107	8	VC		REHAB MAIN & INSTALL CLEANOUT
13	44997	139	8	VC		REHAB MAIN
13	44998	146	8	VC		REHAB MAIN & MH REPAIR
13	44999	85	8	VC		REHAB MAIN & MH REPAIR
13	45002	260	8	VC		REHAB MAIN
13	45010	386	8	VC		REHAB MAIN & MH REHAB
13	45014	330	8	VC		REHAB MAIN
13	45015	260	8	VC		REHAB MAIN
13	45016	286	8	VC		REHAB MAIN & MH REHAB
14	52022	159	8	VC		REHAB MAIN & MH REPLACE
14	52024	246	8	VC		REHAB MAIN
14	52025	188	8	VC		REHAB MAIN & MH REPLACE
14	52034	270	8	VC		REHAB MAIN & MH REHAB
14	52037	45	8	VC		REHAB MAIN & MH REHAB

APPENDIX J

SEWER PIPELINE REHABILITATION SCOPE OF WORK

PLAN SHT #	FSN	LENGTH	SIZE	MATERIAL	REMARKS	WORK TO BE DONE
14	52042	267	8	VC		REHAB MAIN & MH REHAB
14	52130	17	8	VC		REHAB MAIN
15	52032	120	8	VC		REHAB MAIN & MH REHAB
15	52035	117	8	VC		REHAB MAIN & MH REHAB
15	52088	197	8	VC		REHAB MAIN, MH REPAIR & INSTALL CLEANOUT
15	52089	223	8	VC		REHAB MAIN & MH REHAB
15	52093	155	8	VC		REHAB MAIN & MH REHAB
15	52094	267	8	VC		REHAB MAIN & MH REHAB
15	52097	346	8	VC		REHAB MAIN & MH REHAB
15	52138	66	8	VC		REHAB MAIN, MH REHAB & MH REPAIR
15	52293	145	8	VC		REHAB MAIN & INSTALL CLEANOUT
15	52295	155	8	VC		REHAB MAIN
16	52137	130	8	VC		REHAB MAIN & INSTALL CLEANOUT
16	52140	275	8	VC		REHAB MAIN
16	52147	260	8	VC		REHAB MAIN
16	52148	40	8	VC		REHAB MAIN & INSTALL CLEANOUT
16	52192	240	8	VC		REHAB MAIN
16	52203	300	8	VC		REHAB MAIN & MH REPAIR
16	52204	160	8	VC		REHAB MAIN, MH REPAIR & INSTALL CLEANOUT
16	52206	250	8	VC		REHAB MAIN
16	52207	195	8	VC		REHAB MAIN & INSTALL CLEANOUT
16	52208	300	8	VC		REHAB MAIN
16	52225	198	8	VC		REHAB MAIN & INSTALL CLEANOUT
16	52232	285	8	VC		REHAB MAIN & MH REPLACE
16	52244	275	8	VC		REHAB MAIN & INSTALL MH
16	52245	275	8	VC		REHAB MAIN
17	52109	205	8	VC		REHAB MAIN
17	52113	190	8	VC		REHAB MAIN

APPENDIX J

SEWER PIPELINE REHABILITATION SCOPE OF WORK

PLAN SHT #	FSN	LENGTH	SIZE	MATERIAL	REMARKS	WORK TO BE DONE
17	52125	182	8	VC		REHAB MAIN & MH REPLACE
17	52131	180	8	VC		REHAB MAIN
17	52135	220	8	VC		REHAB MAIN & INSTALL MH
17	52139	275	8	VC		REHAB MAIN
17	52149	215	8	VC		REHAB MAIN & INSTALL MH
17	52150	302	8	VC		REHAB MAIN
17	52201	300	8	VC		REHAB MAIN, MH REPAIR & MH REPLACE
17	52205	236	8	VC		REHAB MAIN
17	52241	209	8	VC		REHAB MAIN
17	52247	205	8	VC		REHAB MAIN
17	52250	320	8	VC		REHAB MAIN
17	52251	320	8	VC		REHAB MAIN
17	52254	290	8	VC		REHAB MAIN
18	52255	145	8	VC		REHAB MAIN & INSTALL CLEANOUT
18	52425	300	8	VC		REHAB MAIN & MH REHAB
18	52426	239	8	VC	Coordinate with Slurry Seal Group 1703, perform construction after 10/31/2020	REHAB MAIN & MH REPLACE
18	52428	210	8	VC		REHAB MAIN & INSTALL MH
18	52429	143	8	VC		REHAB MAIN
18	52430	300	8	VC		REHAB MAIN & MH REPAIR
18	52431	112	8	VC		REHAB MAIN & MH REPAIR
18	52449	150	8	VC		REHAB MAIN & INSTALL CLEANOUT
18	52496	140	8	VC		REHAB MAIN
18	52497	210	8	VC		REHAB MAIN
18	52498	128	8	VC		REHAB MAIN
18	52499	170	8	VC		REHAB MAIN
18	52511	181	8	VC		REHAB MAIN & MH REHAB
18	52512	130	8	VC		REHAB MAIN & MH REHAB

APPENDIX J

SEWER PIPELINE REHABILITATION SCOPE OF WORK

PLAN SHT #	FSN	LENGTH	SIZE	MATERIAL	REMARKS	WORK TO BE DONE
18	52513	100	8	VC	Coordinate with Public Works CIP, perform construction after 10/2/2020	REHAB MAIN & INSTALL CLEANOUT
18	52514	155	8	VC	Coordinate with Public Works CIP, perform construction after 10/2/2020	REHAB MAIN & INSTALL CLEANOUT
18	52521	145	8	VC		REHAB MAIN & INSTALL CLEANOUT
19	52467	100	8	VC		REHAB MAIN & MH REHAB
19	52471	154	8	VC		REHAB MAIN
19	52472	99	8	VC		REHAB MAIN
19	52473	185	8	VC		REHAB MAIN
19	52474	59	8	VC		REHAB MAIN
19	52475	50	8	VC		REHAB MAIN & INSTALL CLEANOUT
19	52506	308	8	VC		REHAB MAIN & MH REHAB
19	52509	30	8	VC		REHAB MAIN & MH REHAB
19	52510	42	8	VC		REHAB MAIN & INSTALL CLEANOUT
20	52341	205	8	VC		REHAB MAIN
20	52342	176	8	VC		REHAB MAIN & INSTALL CLEANOUT
20	52434	290	8	VC		REHAB MAIN
20	52456	55	8	VC		REHAB MAIN
20	52458	228	8	VC		REHAB MAIN
20	52459	175	8	VC		REHAB MAIN
20	52462	161	8	VC		REHAB MAIN, MH REHAB & MH REPLACE
20	52463	165	8	VC		REHAB MAIN & MH REPLACE
20	52464	190	8	VC		REHAB MAIN, MH REHAB & INSTALL CLEANOUT
20	52484	230	8	VC		REHAB MAIN, MH REHAB & MH REPAIR
20	52489	105	8	VC		REHAB MAIN, MH REHAB & INSTALL CLEANOUT
20	52597	100	8	VC		REHAB MAIN & MH REHAB

APPENDIX K
SEWER MANHOLE SCOPE OF WORK

APPENDIX K

SEWER MANHOLE SCOPE OF WORK

MANHOLES TO BE REHAB						
PLAN SHEET #	MH FSN	INVERT IE	DEPTH FT	FIELD BOOK PG	MH ID #	REMARKS
3	118242	300.41	9	K19S	31	
4	118874	294.75	5	K20S	256	
5	118558	295.38	8	K19S	369	
5	118562	310.43	7	K19S	373	
5	118578	271.27	6	K19S	389	
8	118438	399.32	7	K19S	245	Includes; the installation of a new Frame and Cover with locking device per Standard Dig SDM-113, removal of ladder rungs, spot repairs as needed inside manhole.
8	118442	414.49	6	K19S	249	
8	118436	379.3	6	K19S	243	
8	118437	395.99	5	K19S	244	
8	118439	405.49	6	K19S	246	
8	118441	432.23	9	K19S	248	
9	118786	266.62	7	K20S	166	
10	118721	274.95	12	K20S	98	
10	118725	274.14	10	K20S	102	
11	118689	299.13	10	K20S	66	
12	112109	161.52	8	J21S	238	
13	111797	174.35	7	J20S	312	
14	118835	207.35	11	K20S	215	
14	118845	211.3	7	K20S	225	
14	118846	217.85	7	K20S	226	
14	118847	217.14	7	K20S	227	
15	118838	246.2	9	K20S	218	
15	118839	241.31	11	K20S	219	
15	118840	243.45	11	K20S	220	
15	118843	259.3	5	K20S	223	

APPENDIX K

SEWER MANHOLE SCOPE OF WORK

15	118849	240.07	12	K20S	229	
15	118850	239.11	12	K20S	230	
15	118851	222	5	K20S	231	
18	119148	283.1	6	K21S	304	
19	119138	298.2	7	K21S	294	
19	119140	278.15	8	K21S	296	
20	118965	315.14	7	K21S	62	
20	118968	314.14	7	K21S	65	
20	118986	272.23	8	K21S	84	
		TOTAL VF =	268			
ADDITIONAL MANHOLES TO BE REHAB & REPAIRED						REMARKS
	MH FSN	MH IE	DEPTH FT	FIELD BOOK PG	MH ID #	
4	118552	269.12	6	K19S	363	
4	118568	246.5	14	K19S	379	
4	118554	283.77	6	K19S	365	
5	118557	288.67	6	K19S	368	
12	111953	191.77	12	J21S	19	
12	111958	223.95	6	J21S	24	
13	111785	165.09	8	J20S	297	
15	118844	262.11	5	K20S	224	
16	118857	309.52	8	K20S	237	
16	118858	301.12	6	K20S	238	
18	119163	340.24	7	K21S	367	
20	118985	303.34	6	K21S	83	
		TOTAL VF =	90			

APPENDIX K

SEWER MANHOLE SCOPE OF WORK

MANHOLES TO BE REPLACED						
11	118642	301.44	4	K20S	19	
14	118823	193.77	16	K20S	203	
16	118903	298.12	8	K20S	287	
17	118855	297.12	8	K20S	235	
18	119065	299.75	6	K21S	200	
20	118983	313.34	6	K21S	81	
MANHOLES TO BE INSTALLED AT EXISTING SEWER PLUGS						
6	118426	329.38	5	K19S	232	
8	118440	435.85	6	K19S	247	
8	118897	442.97	6	K20S	281	
10	118683	273.54	5	K20S	60	
12	112136	175.1	9	J21S	277	
16	118673	374.12	6	K20S	50	
17	118662	390.12	6	K20S	39	
17	118944	369.12	5	K21S	41	
18	118941	355.12	7	K21S	38	

APPENDIX L
SEWER LATERAL SCOPE OF WORK

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
4	346137	3352	52ND	ST	4	VC	
4	236760	3358	52ND	ST	4	VC	
4	346099	3364	52ND	ST	4	VC	
4	236856	3365	52ND	ST	4	VC	
4	236582	3370	52ND	ST	4	VC	
4	346145	3371	52ND	ST	4	VC	
4	346013	3376	52ND	ST	4	VC	
4	345973	5319	CHOLLAS	PY	4	UNK	MATERIAL OF LATERAL TO BE FIELD VERIFIED.
4	236281	5329	CHOLLAS	PY	4	UNK	MATERIAL OF LATERAL TO BE FIELD VERIFIED.
5	238705	3221	54TH FRONTAGE EAST	RD	4	VC	
5	238532	3229	54TH FRONTAGE EAST	RD	4	VC	
5	347148	3239	54TH FRONTAGE EAST	RD	4	VC	
5	238268	3245	54TH FRONTAGE EAST	RD	4	VC	
5	347002	3251	54TH FRONTAGE EAST	RD	4	VC	
5	346299	3341	54TH FRONTAGE EAST	RD	4	VC	
5	346204	3349	54TH FRONTAGE EAST	RD	4	VC	
5	346103	3355	54TH FRONTAGE EAST	RD	4	VC	
5	345977	3361	54TH FRONTAGE EAST	RD	4	VC	
5	346927	3263	55TH	ST	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
5	237953	3303	55TH	ST	4	VC	
5	237830	3311	55TH	ST	4	VC	
5	346746	3312	55TH	ST	4	VC	
5	237619	3318	55TH	ST	4	VC	
5	237706	3319	55TH	ST	4	VC	
5	237589	3325	55TH	ST	4	VC	
5	346618	3326	55TH	ST	4	VC	
5	237477	3333	55TH	ST	4	VC	
5	346597	3334	55TH	ST	4	VC	
5	346840	5424	MARVIN	ST	4	VC	
5	238065	5444	MARVIN	ST	4	VC	
5	345878	5403	STREAMVIEW	DR	4	VC	
5	345889	5411	STREAMVIEW	DR	4	VC	
5	345903	5417	STREAMVIEW	DR	4	VC	
5	238710	3221	WINLOW	ST	4	VC	
5	347372	3222	WINLOW	ST	4	VC	
5	238598	3231	WINLOW	ST	4	VC	
5	347285	3232	WINLOW	ST	4	VC	
5	238465	3241	WINLOW	ST	4	VC	
5	347181	3242	WINLOW	ST	4	VC	
5	347109	3251	WINLOW	ST	4	VC	
5	238314	3252	WINLOW	ST	4	VC	
5	347012	3255	WINLOW	ST	4	VC	
5	238203	3256	WINLOW	ST	4	VC	
5	237955	3303	WINLOW	ST	4	VC	
5	237794	3311	WINLOW	ST	4	VC	
5	346755	3312	WINLOW	ST	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
5	237661	3318	WINLOW	ST	4	VC	
5	346687	3319	WINLOW	ST	4	VC	
5	237508	3326	WINLOW	ST	4	VC	
5	346582	3327	WINLOW	ST	4	VC	
8	346944	3309	60TH	ST	4	VC	
8	237970	3315	60TH	ST	4	VC	
8	237831	3321	60TH	ST	4	VC	
8	237684	3327	60TH	ST	4	VC	
8	346630	3333	60TH	ST	4	VC	
8	UNK	3303	60TH	ST	4	VC	
8	238058	5905	BARK	ST	4	VC	
8	237981	5906	BARK	ST	4	VC	
8	346982	5915	BARK	ST	4	VC	
8	237983	5916	BARK	ST	4	VC	
8	346983	5927	BARK	ST	4	VC	
8	237988	5928	BARK	ST	4	VC	
8	346984	5939	BARK	ST	4	VC	
8	237992	5940	BARK	ST	4	VC	
8	238155	5951	BARK	ST	4	VC	
8	237997	5952	BARK	ST	4	VC	
9	348017	3176	COLLURA	ST	4	VC	
9	239545	5105	JOYCE	PL	4	VC	
9	239551	5106	JOYCE	PL	4	VC	
9	239443	5125	JOYCE	PL	4	VC	
9	347874	5126	JOYCE	PL	4	VC	
10	240924	3060	53RD	ST	4	VC	
10	348730	3103	53RD	ST	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
10	240861	3060	54TH FRONTAGE WEST	RD	4	VC	
10	240916	3060	54TH FRONTAGE WEST	RD	4	VC	
10	348732	3103	EASY	ST	4	VC	
10	348731	3104	EASY	ST	4	VC	
10	348877	5303	REDWOOD	ST	4	VC	
10	240743	5311	REDWOOD	ST	4	VC	
10	240745	5319	REDWOOD	ST	4	VC	
10	240749	5323	REDWOOD	ST	4	VC	
10	240752	5337	REDWOOD	ST	4	VC	
10	348842	5343	REDWOOD	ST	4	VC	
10	348844	5351	REDWOOD	ST	4	VC	
10	348846	5359	REDWOOD	ST	4	VC	
11	239632	3103	55TH	ST	4	VC	
11	348096	3108	55TH	ST	4	VC	
11	239596	3109	55TH	ST	4	VC	
11	348054	3116	55TH	ST	4	VC	
11	239519	3117	55TH	ST	4	VC	
11	347983	3122	55TH	ST	4	VC	
11	347846	3123	55TH	ST	4	VC	
11	239497	3128	55TH	ST	4	VC	
11	347777	3131	55TH	ST	4	VC	
11	347833	3134	55TH	ST	4	VC	
11	347768	3140	55TH	ST	4	VC	
11	239160	3141	55TH	ST	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
11	239116	3144	55TH	ST	4	VC	
11	347602	3203	55TH	ST	4	VC	
11	238980	3204	55TH	ST	4	VC	
11	347509	3209	55TH	ST	4	VC	
11	348432	5512	CHOLLAS STATION	RD	4	VC	
11	240284	5520	CHOLLAS STATION	RD	4	VC	
11	348672	5467	REDWOOD	ST	4	VC	
11	240503	5473	REDWOOD	ST	4	VC	
11	348535	5480	REDWOOD	ST	4	VC	
11	348564	5481	REDWOOD	ST	4	VC	
11	240186	5489	REDWOOD	ST	4	VC	
11	348234	5495	REDWOOD	ST	4	VC	
11	239825	5496	REDWOOD	ST	4	VC	
12	246188	4903	DAFTER	PL	4	VC	
12	246343	4907	DAFTER	PL	4	VC	
12	246328	4915	DAFTER	PL	4	VC	
12	246326	4921	DAFTER	PL	4	VC	
12	352625	4922	DAFTER	PL	4	VC	
12	352703	4929	DAFTER	PL	4	VC	
12	352629	4930	DAFTER	PL	4	VC	
12	246329	4935	DAFTER	PL	4	VC	
12	352630	4936	DAFTER	PL	4	VC	
12	352127	4918	DALEHAVEN	PL	4	VC	
12	352383	4951	DALEHAVEN	PL	4	VC	
12	352311	4984	DALEHAVEN	PL	4	VC	
12	245473	4901	DALEHAVEN	PL	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
12	245447	4902	DALEHAVEN	PL	4	VC	
12	245446	4910	DALEHAVEN	PL	4	VC	
12	245545	4911	DALEHAVEN	PL	4	VC	
12	245596	4921	DALEHAVEN	PL	4	VC	
12	245699	4931	DALEHAVEN	PL	4	VC	
12	245757	4941	DALEHAVEN	PL	4	VC	
12	245698	4956	DALEHAVEN	PL	4	VC	
12	245800	4961	DALEHAVEN	PL	4	VC	
12	245696	4970	DALEHAVEN	PL	4	VC	
12	245802	4971	DALEHAVEN	PL	4	VC	
12	245793	4981	DALEHAVEN	PL	4	VC	
12	245761	2320	EUCLID	AV	4	VC	
13	244485	4966	EUCLID	CT	4	VC	
13	244578	4967	EUCLID	CT	4	VC	
13	351505	4976	EUCLID	CT	4	VC	
13	351576	4977	EUCLID	CT	4	VC	
13	244544	4986	EUCLID	CT	4	VC	
13	244624	4987	EUCLID	CT	4	VC	
13	244634	4997	EUCLID	CT	4	VC	
13	244223	2506	INDIANAPOLIS	AV	4	VC	
13	351160	2511	INDIANAPOLIS	AV	4	VC	
13	351128	2516	INDIANAPOLIS	AV	4	VC	
13	351095	2525	INDIANAPOLIS	AV	4	VC	
13	351103	2526	INDIANAPOLIS	AV	4	VC	
13	243909	2529	INDIANAPOLIS	AV	4	VC	
13	243914	2536	INDIANAPOLIS	AV	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
13	350933	2559	INDIANAPOLIS	AV	4	UNK	MATERIAL OF LATERAL TO BE FIELD VERIFIED.
13	1140254	2559	INDIANAPOLIS	AV	4	ABS	MIGHT NOT NEED TO REHAB SINCE ABS, TO BE ASSESED IN THE FIELD.
13	1146555	2567	INDIANAPOLIS	AV	4	ABS	MIGHT NOT NEED TO REHAB SINCE ABS, TO BE ASSESED IN THE FIELD.
13	351267	5010	LAUREL	ST	4	VC	
13	244341	5015	LAUREL	ST	4	VC	
13	244344	5025	LAUREL	ST	4	VC	
13	244221	5030	LAUREL	ST	4	VC	
13	244345	5035	LAUREL	ST	4	VC	
13	351071	2520	PERKON	CT	4	VC	
13	351057	2521	PERKON	CT	4	VC	
13	350993	2530	PERKON	CT	4	VC	
13	243862	2531	PERKON	CT	4	VC	
13	244195	4965	PERKON	PL	4	VC	
13	244083	4966	PERKON	PL	4	VC	
14	243634	2684	51ST	ST	4	VC	
14	351281	5075	ELKHART	ST	4	VC	
14	5058020	5080	ELKHART	ST	4	ABS	MIGHT NOT NEED TO REHAB SINCE ABS, TO BE ASSESED IN THE FIELD.
14	243870	5092	ELKHART	ST	4	VC	
14	280290	2666	GERALD	CT	4	VC	
14	377864	2667	GERALD	CT	4	VC	
14	244441	2676	GERALD	CT	4	VC	
14	244505	2677	GERALD	CT	4	VC	
14	244401	2686	GERALD	CT	4	VC	
14	351413	2687	GERALD	CT	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
14	351372	2697	GERALD	CT	4	VC	
14	350833	2581	INDIANAPOLIS	AV	4	VC	
14	350779	2591	INDIANAPOLIS	AV	4	VC	
14	243380	2704	KANDACE	WY	4	VC	
14	243506	2707	KANDACE	WY	4	VC	
14	350729	2712	KANDACE	WY	4	VC	
14	243507	2717	KANDACE	WY	4	VC	
14	243378	2720	KANDACE	WY	4	VC	
14	243504	2737	KANDACE	WY	4	VC	
15	243112	2634	54TH FRONTAGE WEST	RD	4	VC	
15	243041	2640	54TH FRONTAGE WEST	RD	4	VC	
15	242920	2646	54TH FRONTAGE WEST	RD	4	VC	
15	243123	2631	BALSA	ST	4	VC	
15	350476	2639	BALSA	ST	4	VC	
15	242934	2645	BALSA	ST	4	VC	
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5271	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5335	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5335	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	UNK	5335	CAMINITO MINDY	(PVT ST)	4	VC	IN RYAN MANOR PRIVATE SUBDIVISION
15	350350	5332	NUTMEG	ST	4	VC	
15	350353	5338	NUTMEG	ST	4	VC	
15	242838	5348	NUTMEG	ST	4	VC	
16	350770	2604	55TH	ST	4	VC	
16	350870	2554	55TH	ST	4	VC	
16	350816	2564	55TH	ST	4	VC	
16	243416	2605	55TH	ST	4	VC	
16	243361	2614	55TH	ST	4	VC	
16	243350	2615	55TH	ST	4	VC	
16	350681	2624	55TH	ST	4	VC	
16	243281	2625	55TH	ST	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
16	350630	2634	55TH	ST	4	VC	
16	243202	2635	55TH	ST	4	VC	
16	243153	2644	55TH	ST	4	VC	
16	242999	2664	55TH	ST	4	VC	
16	350422	2674	55TH	ST	4	VC	
16	350657	2624	56TH	ST	4	VC	
16	350598	2634	56TH	ST	4	VC	
16	350554	2644	56TH	ST	4	VC	
16	243132	2654	56TH	ST	4	VC	
16	350691	5572	56TH	ST	4	VC	
16	243728	2510	BALBOA VISTA	DR	4	VC	
16	243596	2531	BALBOA VISTA	DR	4	VC	
16	243554	5605	LAUREL	ST	4	VC	
16	242342	5455	OLIVE	ST	4	VC	
17	351052	2514	55TH	ST	4	VC	
17	244397	2415	56TH	ST	4	VC	
17	244326	2437	56TH	ST	4	VC	
17	244253	2447	56TH	ST	4	VC	
17	244085	2461	56TH	ST	4	VC	
17	351110	2467	56TH	ST	4	VC	
17	243911	2473	56TH	ST	4	VC	
17	243854	2479	56TH	ST	4	VC	
17	350974	2485	56TH	ST	4	VC	
17	350936	2491	56TH	ST	4	VC	
17	351602	2401	BALBOA VISTA	DR	4	VC	
17	244577	2411	BALBOA VISTA	DR	4	VC	
17	378740	2421	BALBOA VISTA	DR	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
17	377862	2431	BALBOA VISTA	DR	4	VC	
17	378739	2431	BALBOA VISTA	DR	4	VC	
17	378738	2441	BALBOA VISTA	DR	4	VC	
17	378736	2451	BALBOA VISTA	DR	4	VC	
17	351118	5492	LAUREL	ST	4	VC	
17	350963	5545	LAUREL	ST	4	VC	
18	246327	2121	55TH	ST	4	VC	
18	246144	2131	55TH	ST	4	VC	
18	352540	2140	55TH	ST	4	VC	
18	352486	2141	55TH	ST	4	VC	
18	245391	2302	55TH	ST	4	VC	
18	245290	2301	BALBOA VISTA	DR	4	VC	
18	351973	2309	BALBOA VISTA	DR	4	VC	
18	352044	2310	BALBOA VISTA	DR	4	VC	
18	245163	2315	BALBOA VISTA	DR	4	VC	
18	245092	2323	BALBOA VISTA	DR	4	VC	
18	351981	2309	BLACKTON	DR	4	VC	
18	245236	2310	BLACKTON	DR	4	VC	
18	245150	2317	BLACKTON	DR	4	VC	
18	352130	5435	FAULCONER	ST	4	VC	
18	352133	5445	FAULCONER	ST	4	VC	
18	352128	5455	FAULCONER	ST	4	VC	
18	352040	5544	FAULCONER	ST	4	VC	
18	352041	5552	FAULCONER	ST	4	VC	
18	245323	5560	FAULCONER	ST	4	VC	
18	352683	5455	HANNA	ST	4	VC	
18	352441	5515	TIMOTHY	DR	4	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
18	245788	5516	TIMOTHY	DR	4	VC	
18	245890	5521	TIMOTHY	DR	4	VC	
18	245762	5526	TIMOTHY	DR	4	VC	
18	352415	5527	TIMOTHY	DR	4	VC	
18	245833	5535	TIMOTHY	DR	4	VC	
18	245726	5536	TIMOTHY	DR	4	VC	
18	245732	5575	TIMOTHY	DR	4	VC	
19	246465	5431	TIMOTHY	DR	4	VC	
19	246369	5434	TIMOTHY	DR	4	VC	
19	246401	5435	TIMOTHY	DR	4	VC	
19	352705	5438	TIMOTHY	DR	4	VC	
19	352698	5439	TIMOTHY	DR	4	VC	
19	246246	5443	TIMOTHY	DR	4	VC	
20	247728	5501	CARMEN	ST	4	VC	
20	247686	5506	CARMEN	ST	4	VC	
20	353758	5507	CARMEN	ST	4	VC	
20	353673	5515	CARMEN	ST	4	VC	
20	353788	5511	CARMEN	ST	4	VC	
20	247683	5516	CARMEN	ST	4	VC	
20	247683	5512	CARMEN	ST	4	VC	
20	353754	5531	CARMEN	ST	4	VC	
20	247831	5535	CARMEN	ST	4	VC	
20	353677	5538	CARMEN	ST	4	VC	
20	247833	5539	CARMEN	ST	4	VC	
20	247692	5542	CARMEN	ST	4	VC	
20	247865	5543	CARMEN	ST	4	VC	
20	247696	5550	CARMEN	ST	6	VC	

APPENDIX L

SEWER LATERAL SCOPE OF WORK

PLAN SHT #	LAT FSN	ADDRESS #	STREET NAME	STREET SUFFIX	SIZE	MATERIAL	REMARKS
20	353290	2011	MUSCAT	ST	4	VC	
20	247073	2020	MUSCAT	ST	4	VC	
20	353228	2021	MUSCAT	ST	4	VC	
20	247255	2013	SULTANA	ST	4	VC	
20	247368	2012	SULTANA	ST	4	VC	
20	247007	2031	MUSCAT	ST	4	VC	
20	353386	2016	SULTANA	ST	4	VC	
20	247179	2017	SULTANA	ST	4	VC	
20	353330	2020	SULTANA	ST	4	VC	
20	247112	2021	SULTANA	ST	4	VC	

APPENDIX M

SEWER MAIN CLEANOUT AND CURB RAMP SCOPE OF WORK

APPENDIX M

SEWER MAIN CLEANOUT AND CURB RAMP SCOPE OF WORK

MAIN CLEAN OUTS TO BE INSTALLED AT EXISTING SEWER PLUGS						
PLAN SHEET #	PLUG FSN	INVERT_ELE	DEPTH_QTY	FIELD BOOK PG	MAP_ID	REMARKS
12	111959	228.05	7	J21S	25	
12	112153	166.12	6	J21S	300	
3	118265	380	UNK	K19S	54	
3	118266	392	UNK	K19S	55	
3	118268	374.5	UNK	K19S	57	
5	118487	UNK	UNK	K19S	296	
5	118561	287.02	UNK	K19S	372	
5	118563	312.22	6	K19S	374	
16	118659	377.92	4	K20S	36	
16	118752	363.62	5	K20S	129	
15	118817	276.99	UNK	K20S	197	
15	118842	286.01	UNK	K20S	222	
16	118873	325.12	4	K20S	255	
16	118877	341.12	6	K20S	259	
16	118906	307.52	6	K20S	290	
1	118942	365.95	7	K21S	39	
20	118969	315.09	UNK	K21S	66	
20	118994	315.67	UNK	K21S	101	
20	119059	334.67	7	K21S	187	
18	119063	300.58	7	K21S	198	
18	119118	297	UNK	K21S	268	
18	119121	UNK	UNK	K21S	271	
19	119131	296.19	UNK	K21S	287	
19	119135	UNK	UNK	K21S	291	
18	119154	313.52	UNK	K21S	310	
18	119156	313.23	UNK	K21S	312	

APPENDIX M

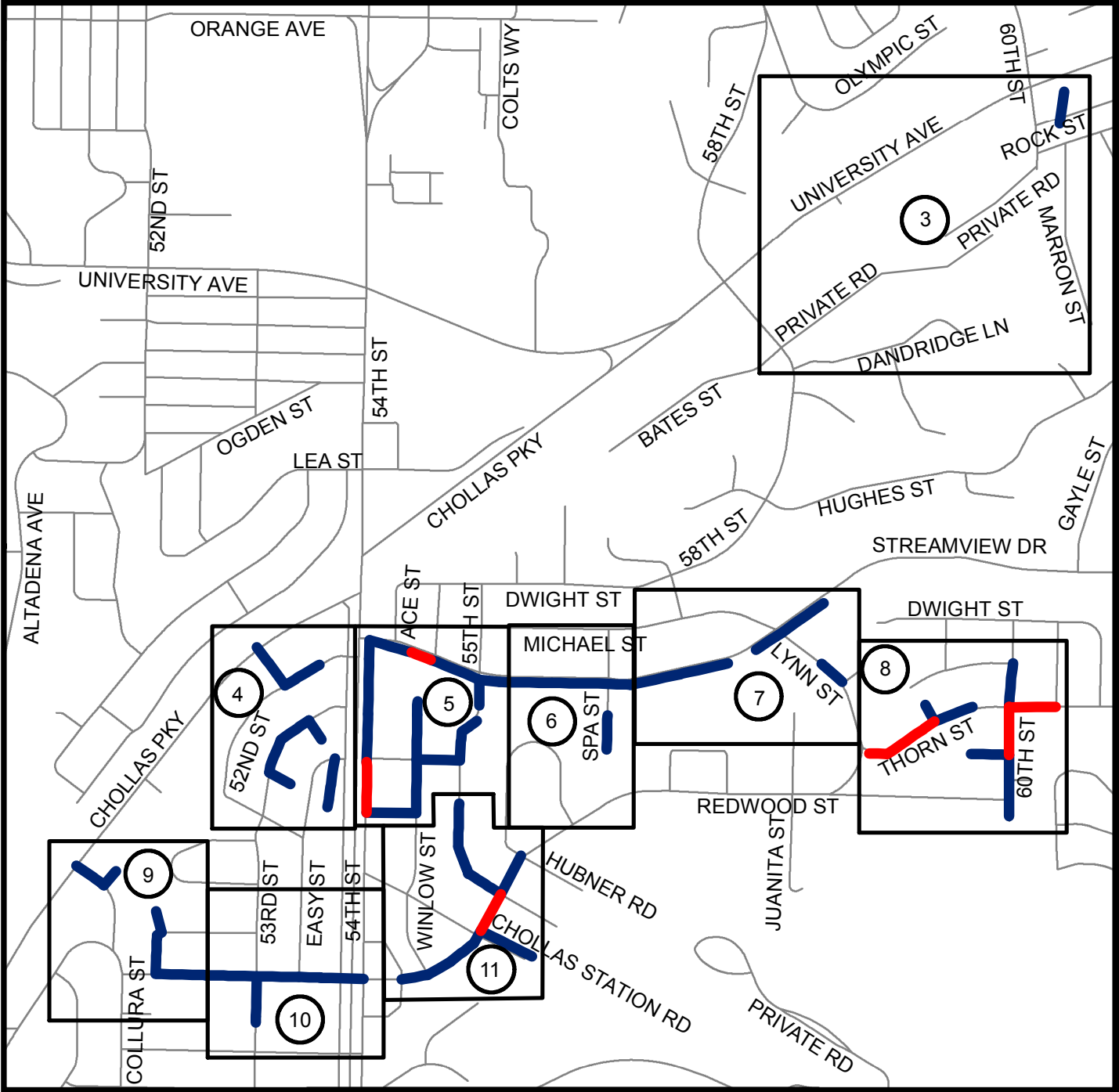
SEWER MAIN CLEANOUT AND CURB RAMP SCOPE OF WORK





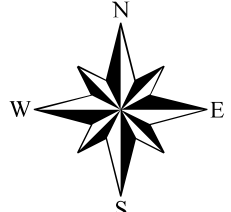
CURB RAMP INSTALLATION						
PLAN SHEET #	TYPE	WITH DWT	FIELD BOOK PG	REMARKS		
18	B	YES	K21S			

APPENDIX N

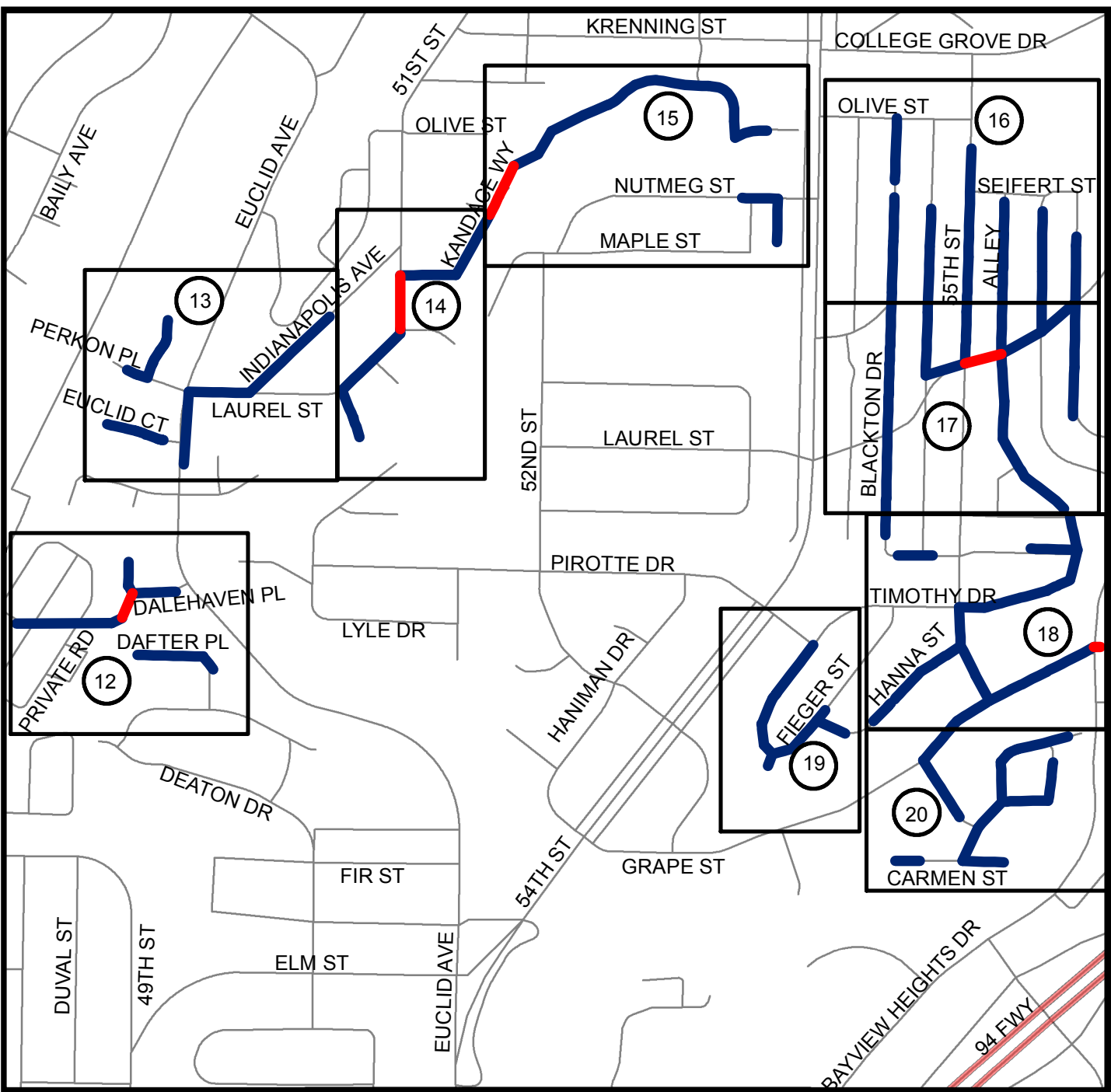
**SEWER REHABILITATION EXHIBIT PLAN MAPS
AND STREET RESURFACING SHEETS**


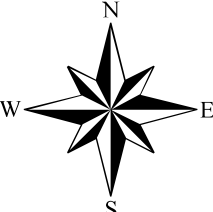
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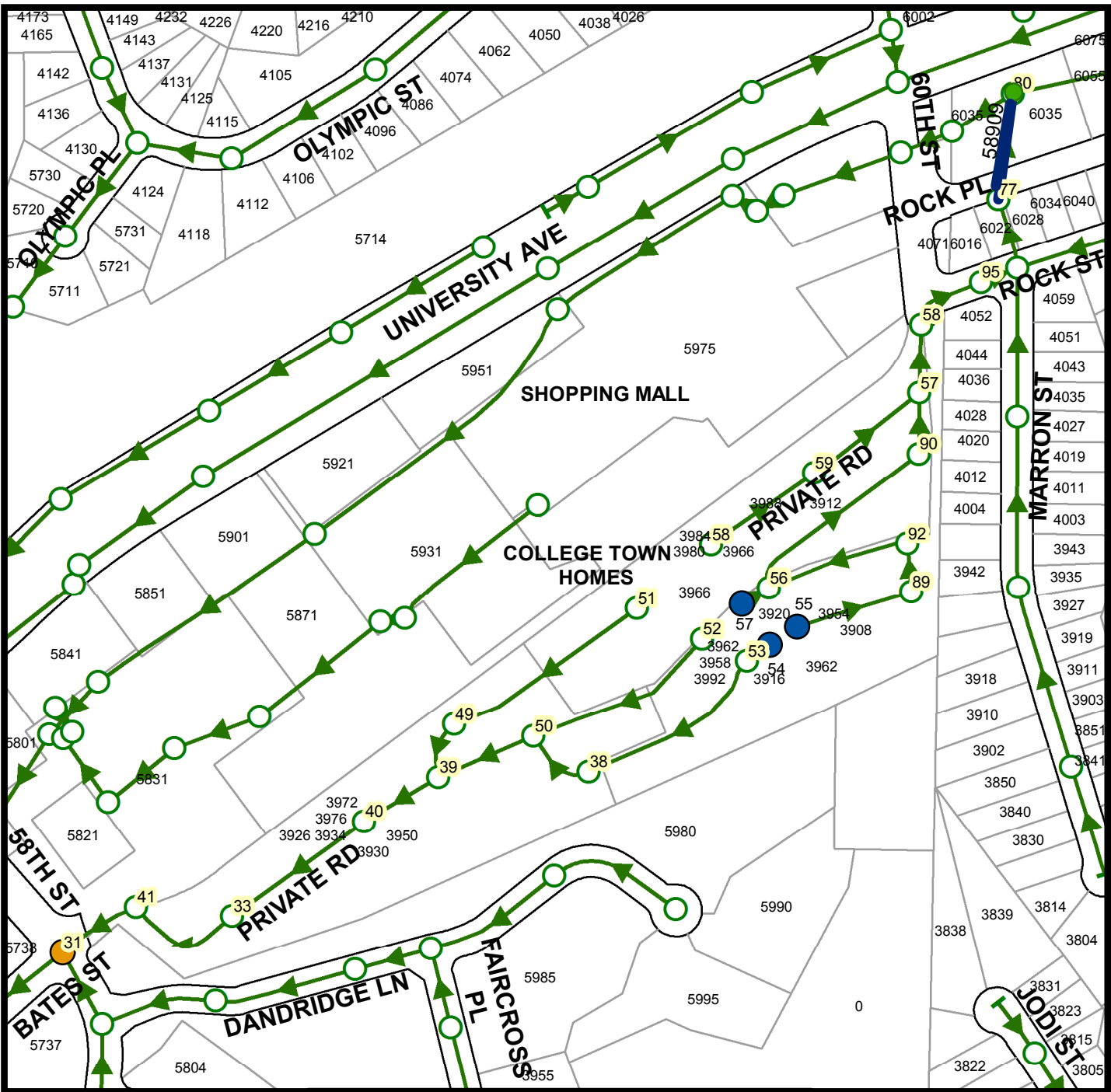
<p>The City of SAN DIEGO Public Works</p>	<p>PIPELINE REHABILITATION AV-1</p>	<p>WBS. No. : B-18062</p>
<p>SENIOR ENGINEER Alex Sleiman 619-533-7588</p> <p>PROJECT MANAGER Sabeen Cochinwala 619-533-4661</p> <p>PROJECT ENGINEER Salvador Castillo 619-533-4609</p> 	<p>LEGEND:</p> <ul style="list-style-type: none">  Point Repair & Rehab Main  Rehab Main  Exhibit Plan Sheets <p>COMMUNITY NAME: MID CITY - EASTERN AREA COUNCIL DISTRICT: 4</p>	 <p>NOT TO SCALE</p>
<p>*NOTE: CONTRACTOR TO USE EXTREME CAUTION WHEN WORKING DUE TO LOW OVERHEAD AND UNDERGROUND UTILITIES.</p>	<p>KEY MAP</p>	<p>SHEET NO. 1</p>

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<p>The City of SAN DIEGO Public Works</p>	<p>PIPELINE REHABILITATION AV-1</p>	<p>WBS. No. : B-18062</p>
<p>SENIOR ENGINEER Alex Sleiman 619-533-7588</p> <p>PROJECT MANAGER Sabeen Cochinwala 619-533-4661</p> <p>PROJECT ENGINEER Salvador Castillo 619-533-4609</p> 	<p>LEGEND:</p> <ul style="list-style-type: none"> — Point Repair & Rehab Main — Rehab Main ① Exhibit Plan Sheets <p>COMMUNITY NAME: MID CITY - EASTERN AREA COUNCIL DISTRICT: 4</p> <p style="text-align: center;">KEY MAP</p>	 <p style="text-align: center;">NOT TO SCALE</p> <p style="text-align: center;">SHEET NO. 2</p>

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The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

LEGEND:

- New Sewer Main Clean Outs
- Repair and Rehab Manhole
- New Manhole
- Rehab Manhole
- Replace Manhole in Place
- Point Repair and Rehab Existing 8" VC Pipe
- Rehab Existing 8" VC Pipe
- Existing Drop Manhole
- 52193 FSN: Main Facility Sequence Number
- 236 Manhole ID Numbers
- Existing Sewer Mains & Flow Direction
- Existing Sewer Manholes
- - - Rehab Sewer Laterals with Cleanout More than 7ft Deep
- - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
- Existing Sewer Main Plugs & ID Numbers

FSN's ON THIS SHEET
58909.



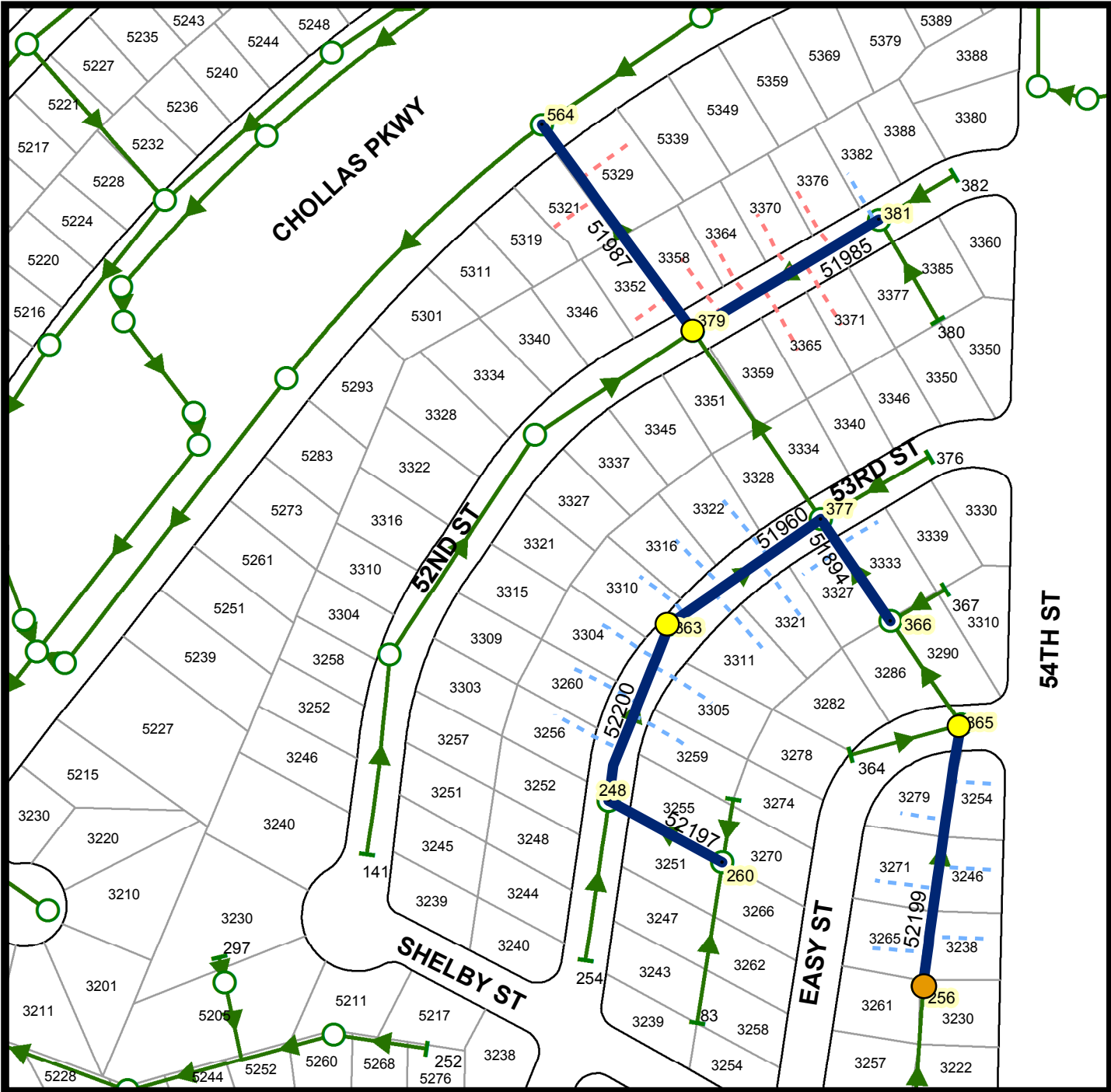
NOT TO SCALE

COUNCIL DISTRICT: 4

COMMUNITY NAME:
MID CITY - EASTERN AREA

SHEET NO. 3

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The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

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- - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
- T 233 Existing Sewer Main Plugs & ID Numbers

FSN's ON THIS SHEET

51960, 51894, 51985, 51987, 52199, 52197, 52200.



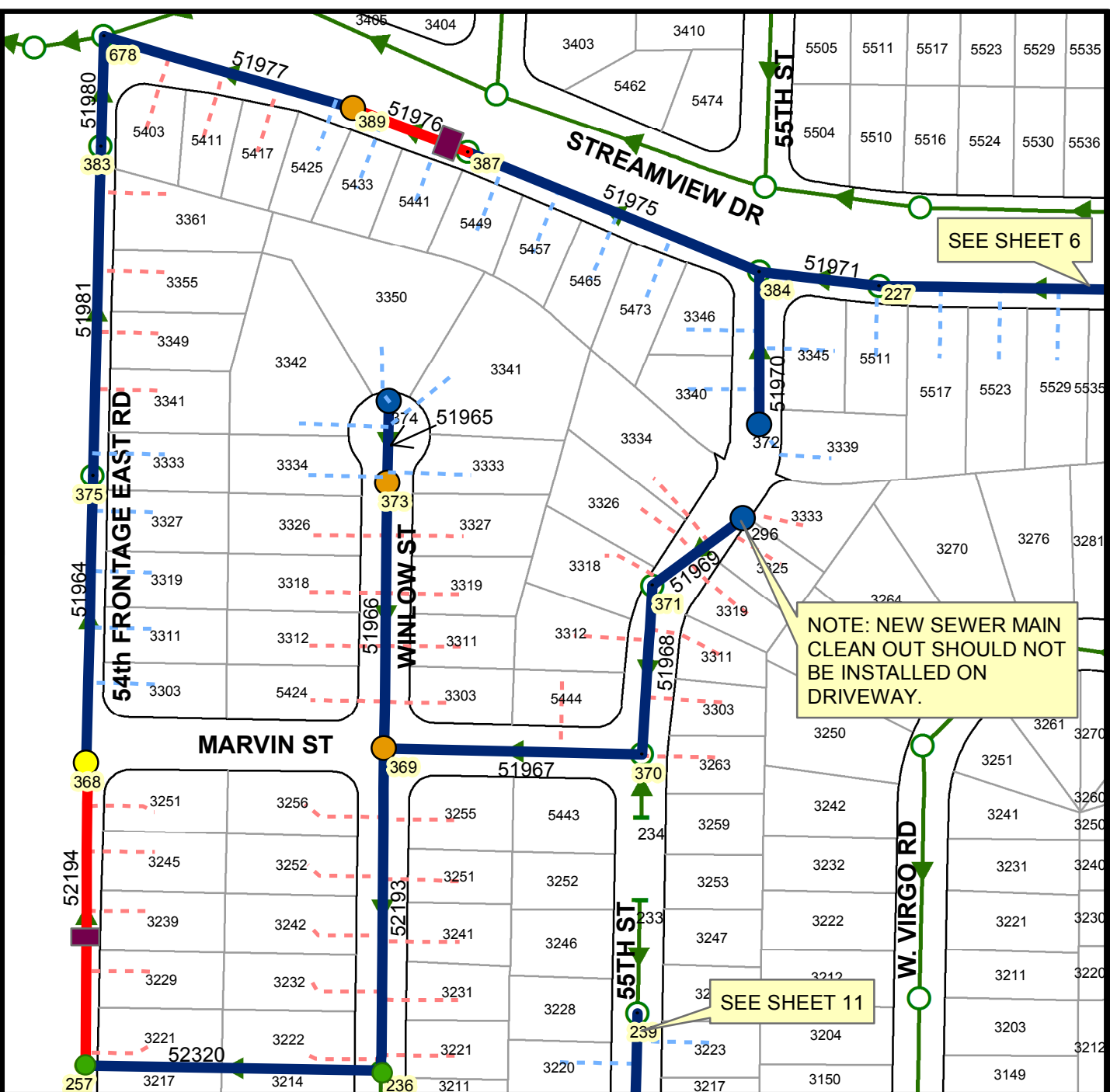
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COUNCIL DISTRICT: 4

**COMMUNITY NAME:
MID CITY - EASTERN AREA**

SHEET NO. 4

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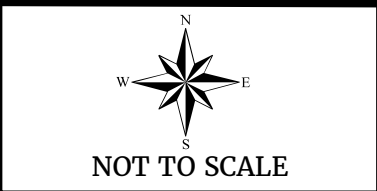
The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

LEGEND:	
	New Sewer Main Clean Outs
	Repair and Rehab Manhole
	New Manhole
	Rehab Manhole
	Replace Manhole in Place
	Point Repair and Rehab Existing 8" VC Pipe
	Rehab Existing 8" VC Pipe
	Existing Drop Manhole
	Existing Sewer Mains & Flow Direction
	Existing Sewer Manholes
	Rehab Sewer Laterals with Cleanout More than 7ft Deep
	Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
	Existing Sewer Main Plug & ID Numbers
	52193 FSN: Main Facility Sequence Number
	236 Manhole ID Numbers

FSN's ON THIS SHEET
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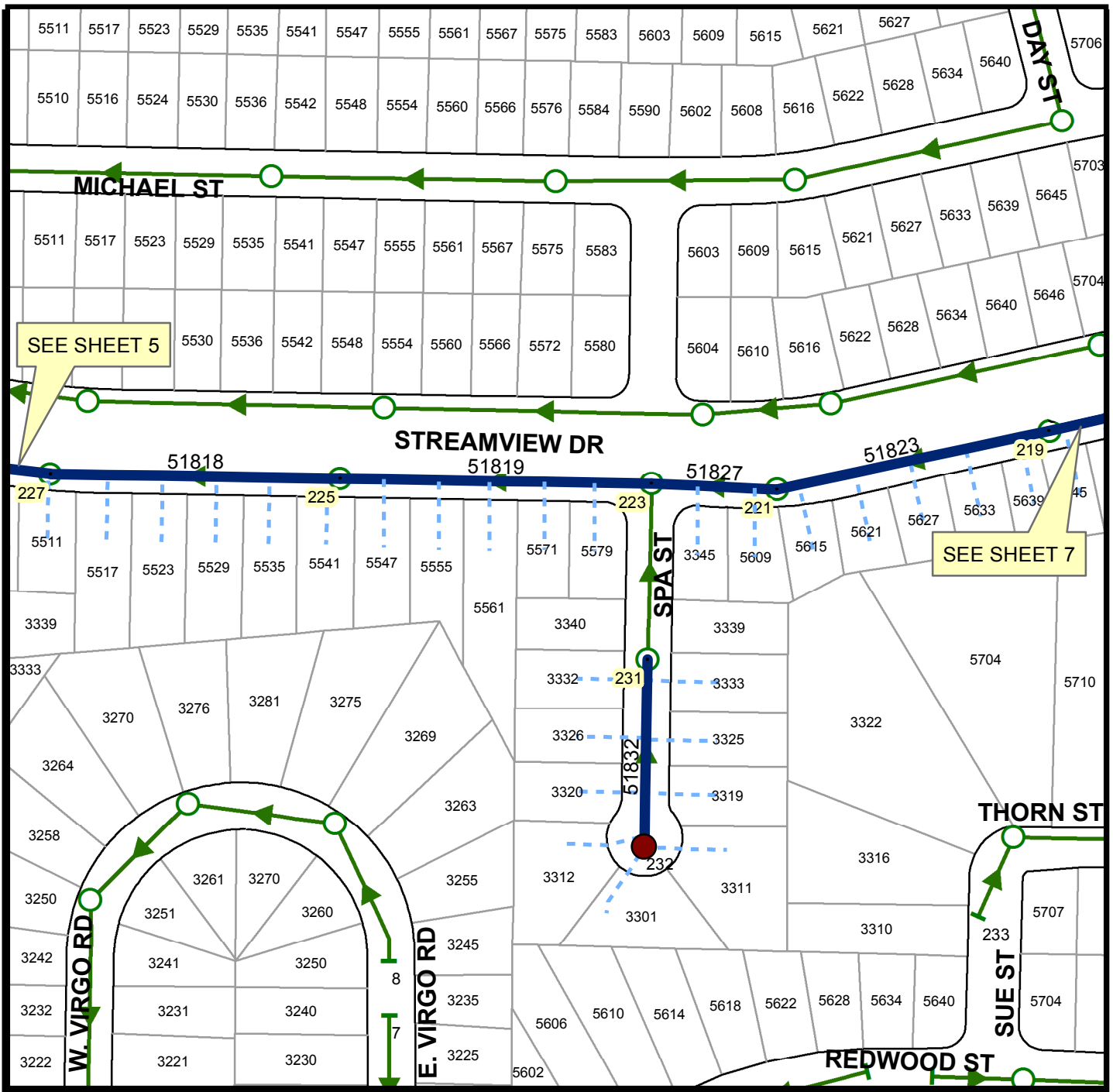


COUNCIL DISTRICT: 4

**COMMUNITY NAME:
MID CITY - EASTERN AREA**

SHEET NO. 5

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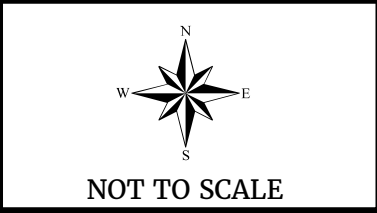
The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

- LEGEND:**
- New Sewer Main Clean Outs
 - Repair and Rehab Manhole
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 - ▬ Rehab Existing 8" VC Pipe
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 - - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
 - └ Existing Sewer Main Plugs & ID Numbers

FSN's ON THIS SHEET
51818, 51819, 51823, 51827, 51832.

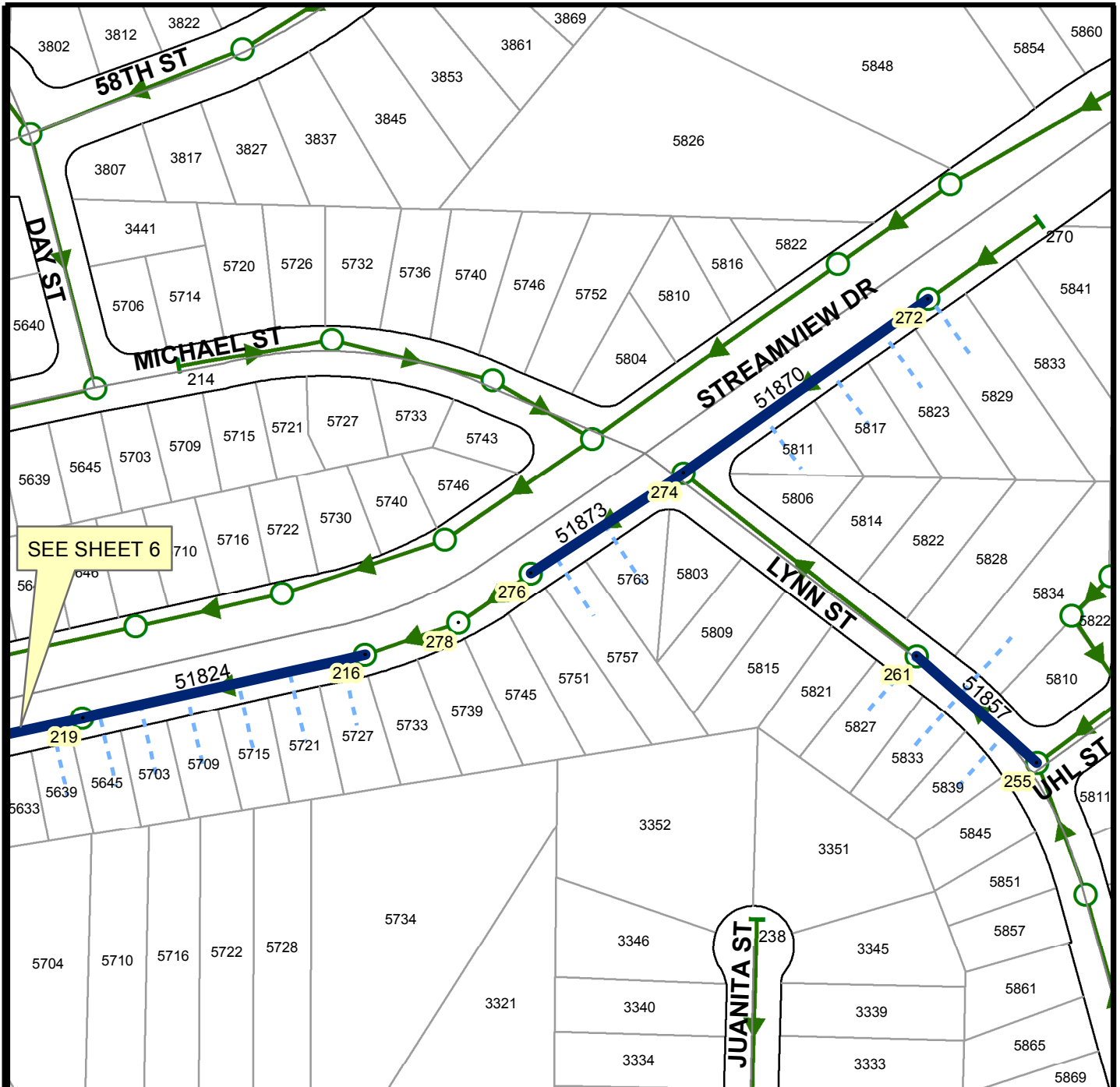


COUNCIL DISTRICT: 4

**COMMUNITY NAME:
MID CITY - EASTERN AREA**

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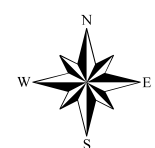
The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

- LEGEND:**
- New Sewer Main Clean Outs
 - Repair and Rehab Manhole
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 - Existing Sewer Manholes
 - - - Rehab Sewer Laterals with Cleanout More than 7ft Deep
 - - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
 - ▬ Existing Sewer Main Plugs & ID Numbers

FSN's ON THIS SHEET
51824, 51857, 51870, 51873.



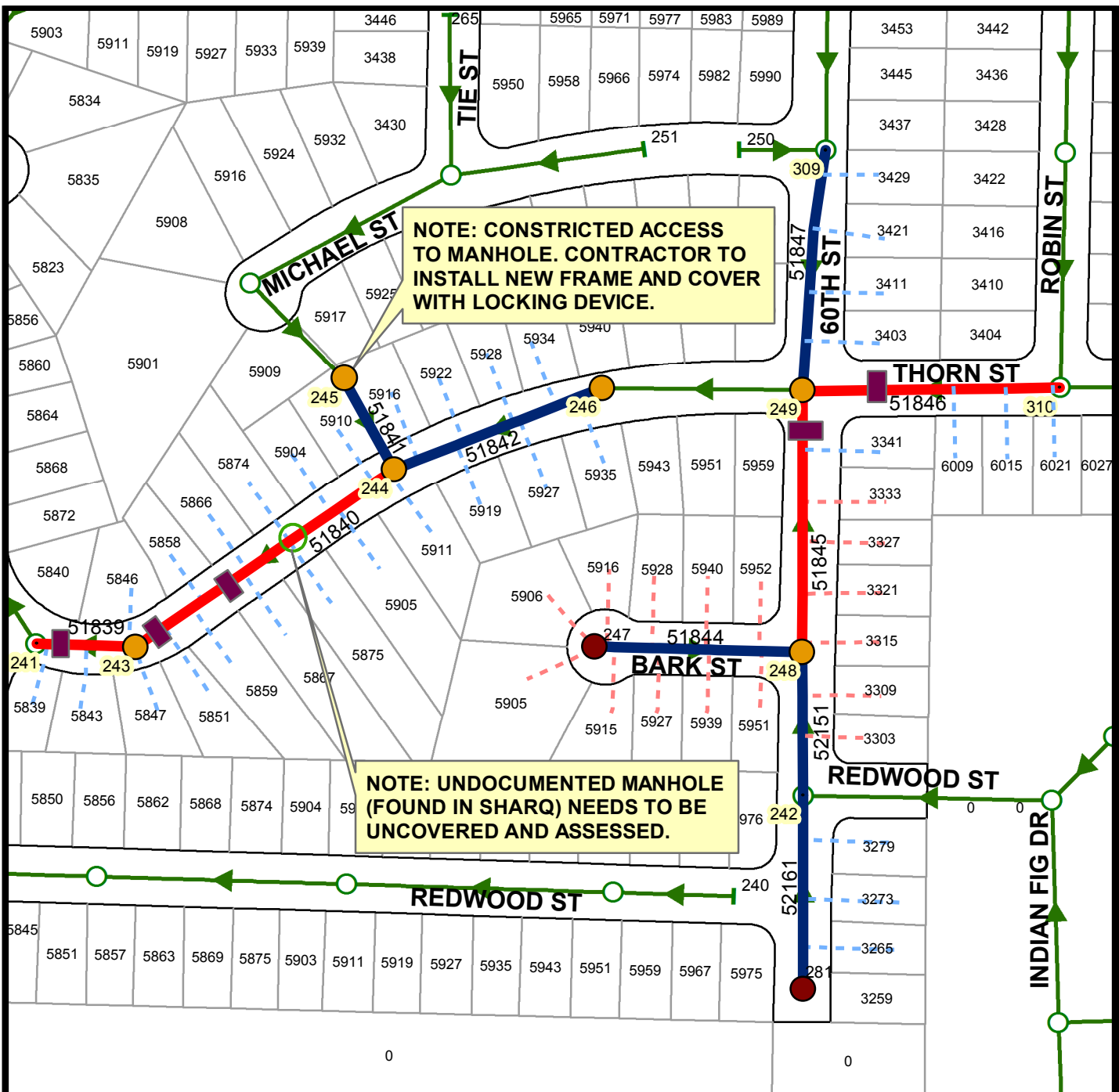
NOT TO SCALE

COUNCIL DISTRICT: 4

COMMUNITY NAME:
MID CITY - EASTERN AREA

SHEET NO. 7

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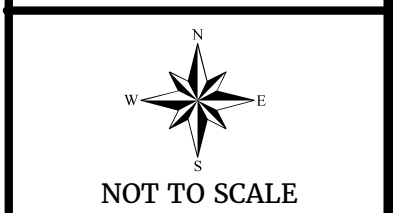


The City of **SAN DIEGO** Public Works **PIPELINE REHABILITATION AV-1** **WBS. No. : B-18062**

LEGEND:

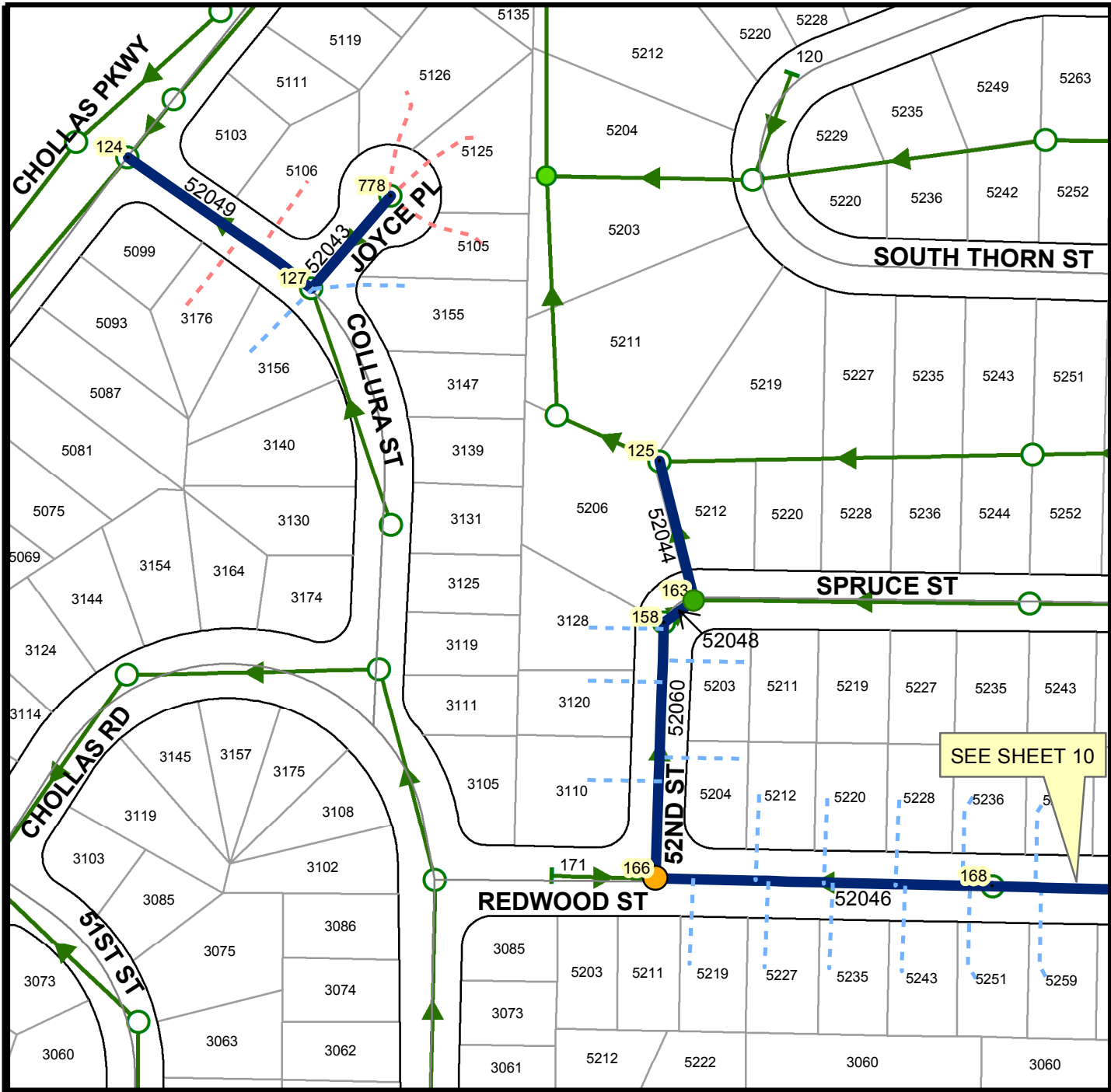
- New Sewer Main Clean Outs
- Repair and Rehab Manhole
- New Manhole
- Rehab Manhole
- Replace Manhole in Place
- Point Repair and Rehab Existing 8" VC Pipe
- Rehab Existing 8" VC Pipe
- Existing Drop Manhole
- 236 Manhole ID Numbers
- ← Existing Sewer Mains & Flow Direction
- Existing Sewer Manholes
- - - Rehab Sewer Laterals with Cleanout More than 7ft Deep
- - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
- | Existing Sewer Main Plug

FSN's ON THIS SHEET
 51839, 51840, 51841, 51842, 51844, 51845, 51846, 51847, 52151, 52161.



COUNCIL DISTRICT: 4 **COMMUNITY NAME: MID CITY - EASTERN AREA** **SHEET NO. 8**

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The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

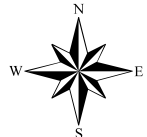
WBS. No. : B-18062

LEGEND:

- New Sewer Main Clean Outs
- Repair and Rehab Manhole
- New Manhole
- Rehab Manhole
- Replace Manhole in Place
- Point Repair and Rehab Existing 8" VC Pipe
- Rehab Existing 8" VC Pipe
- Existing Drop Manhole
- 52193 FSN: Main Facility Sequence Number
- 236 Manhole ID Numbers
- Existing Sewer Mains & Flow Direction
- Existing Sewer Manholes
- - - Rehab Sewer Laterals with Cleanout More than 7ft Deep
- - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
- Existing Sewer Main Plugs & ID Numbers

FSN's ON THIS SHEET

52043, 52044, 52046, 52048, 52049, 52060.



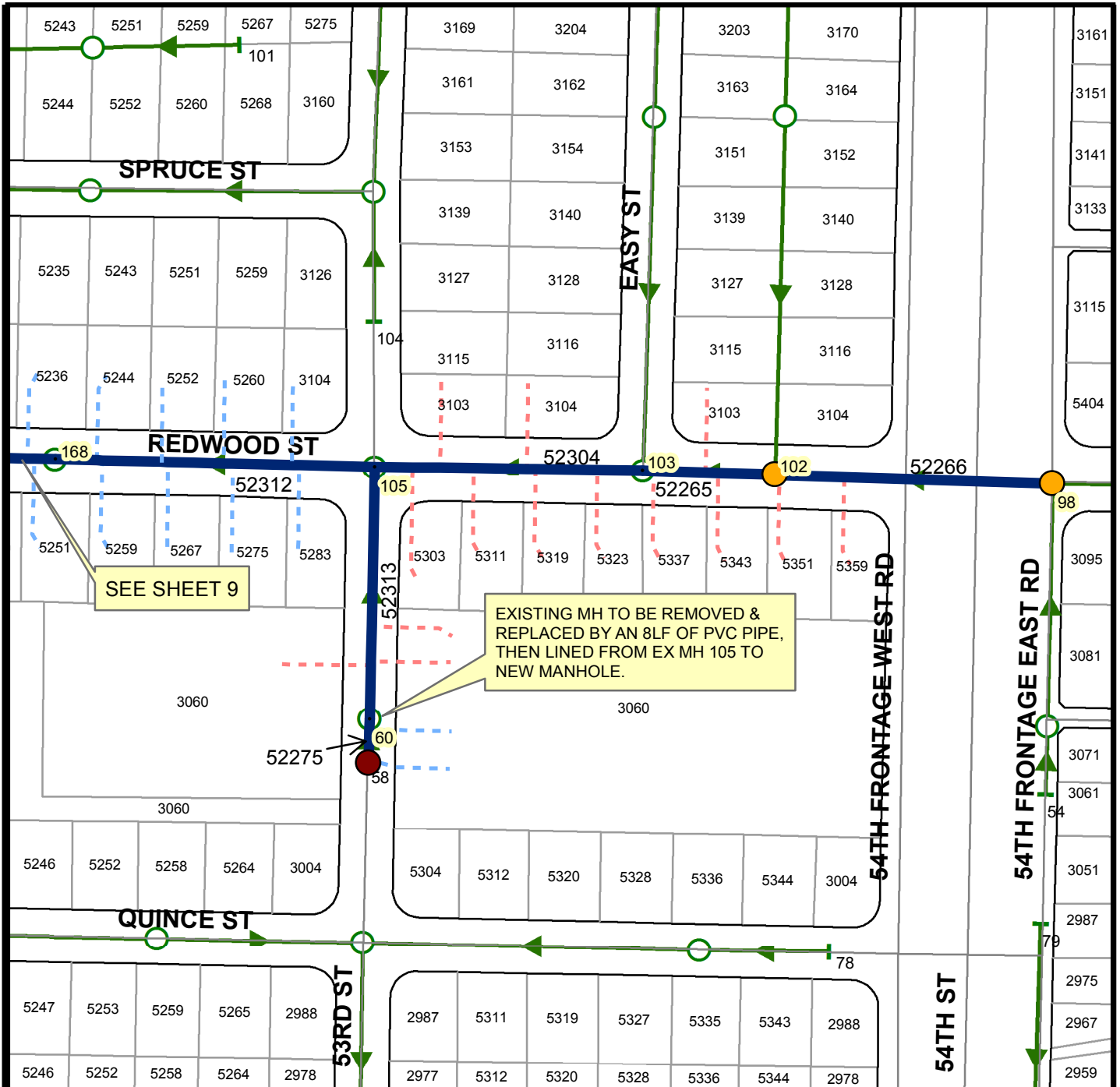
NOT TO SCALE

COUNCIL DISTRICT: 4

**COMMUNITY NAME:
MID CITY - EASTERN AREA**

SHEET NO. 9

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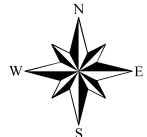
The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

- LEGEND:**
- New Sewer Main Clean Outs
 - Repair and Rehab Manhole
 - New Manhole
 - Rehab Manhole
 - Replace Manhole in Place
 - Point Repair and Rehab Existing 8" VC Pipe
 - Rehab Existing 8" VC Pipe
 - Existing Drop Manhole
 - 52193 FSN: Main Facility Sequence Number
 - 236 Manhole ID Numbers
 - ← Existing Sewer Mains & Flow Direction
 - Existing Sewer Manholes
 - - - Rehab Sewer Laterals with Cleanout More than 7ft Deep
 - - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
 - | Existing Sewer Main Plugs & ID Numbers

FSN's ON THIS SHEET
52265, 52266, 52275, 52304, 52312, 52313.



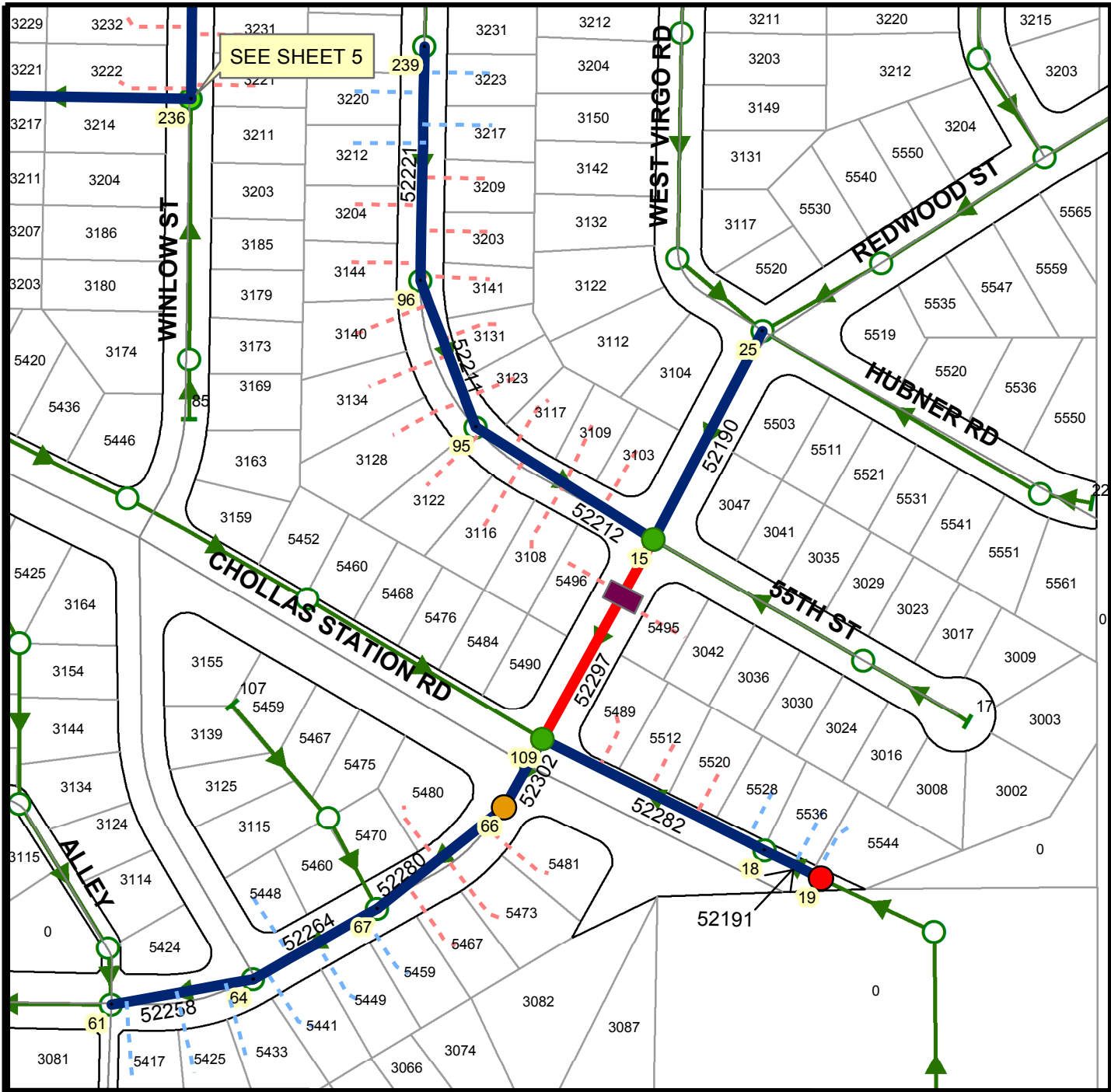
NOT TO SCALE

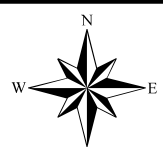
COUNCIL DISTRICT: 4

**COMMUNITY NAME:
MID CITY - EASTERN AREA**

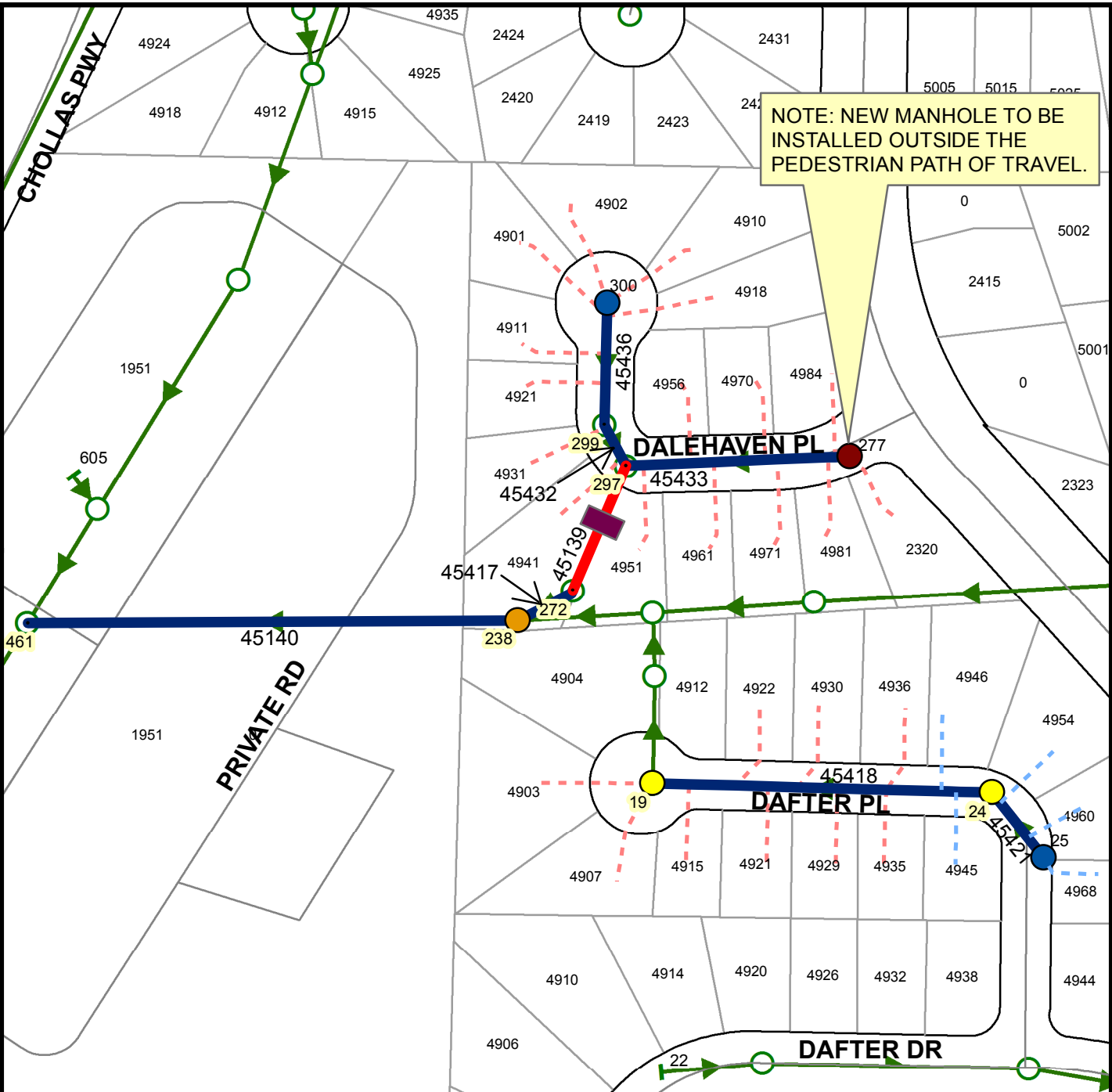
SHEET NO. 10

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The City of SAN DIEGO Public Works	PIPELINE REHABILITATION AV-1	WBS. No. : B-18062
LEGEND:		
<ul style="list-style-type: none"> ● New Sewer Main Clean Outs ● Repair and Rehab Manhole ● New Manhole ● Rehab Manhole ● Replace Manhole in Place ■ Point Repair and Rehab Existing 8" VC Pipe — Rehab Existing 8" VC Pipe ● Existing Drop Manhole 	<ul style="list-style-type: none"> 236 Manhole ID Numbers → Existing Sewer Mains & Flow Direction ○ Existing Sewer Manholes - - - Rehab Sewer Laterals with Cleanout More than 7ft Deep - - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep → Existing Sewer Main Plugs & ID Numbers 	FSN's ON THIS SHEET 52190, 52191, 52211, 52212, 52221, 52258, 52264, 52280, 52282, 52297, 52302.
COUNCIL DISTRICT: 4	COMMUNITY NAME: MID CITY - EASTERN AREA	 NOT TO SCALE
SHEET NO. 11		

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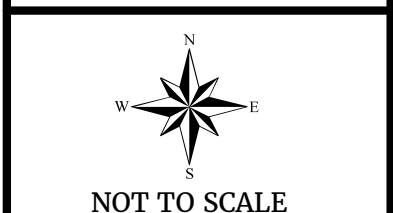


The City of **SAN DIEGO** Public Works **PIPELINE REHABILITATION AV-1** **WBS. No. : B-18062**

LEGEND:

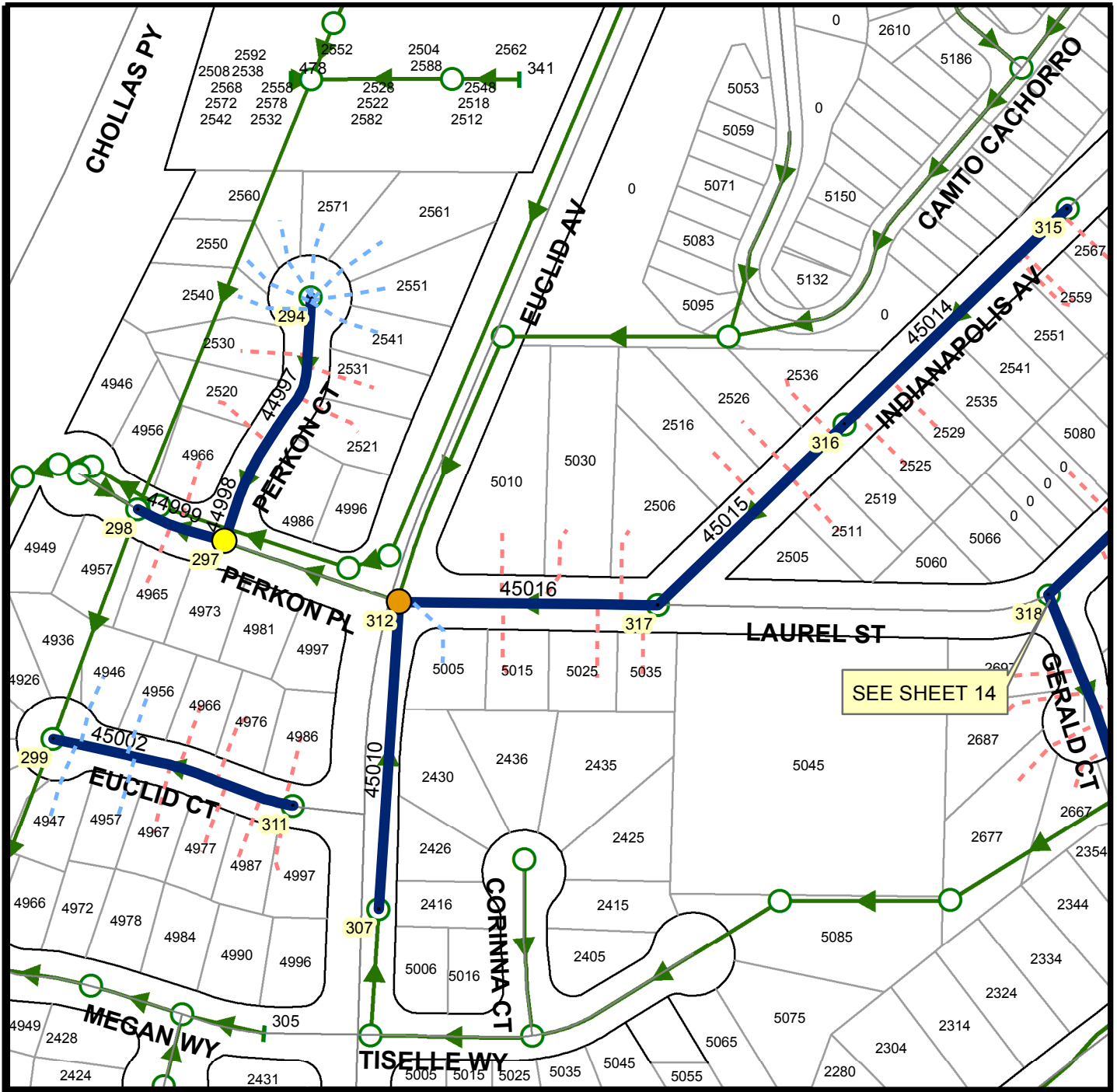
	New Sewer Main Clean Outs	52193	FSN: Main Facility Sequence Number
	Repair and Rehab Manhole	236	Manhole ID Numbers
	New Manhole		
	Rehab Manhole		
	Replace Manhole in Place		
	Point Repair and Rehab Existing 8" VC Pipe		
	Rehab Existing 8" VC Pipe		
	Existing Drop Manhole		
	Existing Sewer Mains & Flow Direction		
	Existing Sewer Manholes		
	Rehab Sewer Laterals with Cleanout More than 7ft Deep		
	Rehab Sewer Laterals with Cleanout Less Than 7ft Deep		
	Existing Sewer Main Plugs & ID Numbers	233	

FSN's ON THIS SHEET
 45139, 45140, 45417, 45418, 45421, 45432, 45433, 45436.



COUNCIL DISTRICT: 4 **COMMUNITY NAME: MID CITY - EASTERN AREA** **SHEET NO. 12**

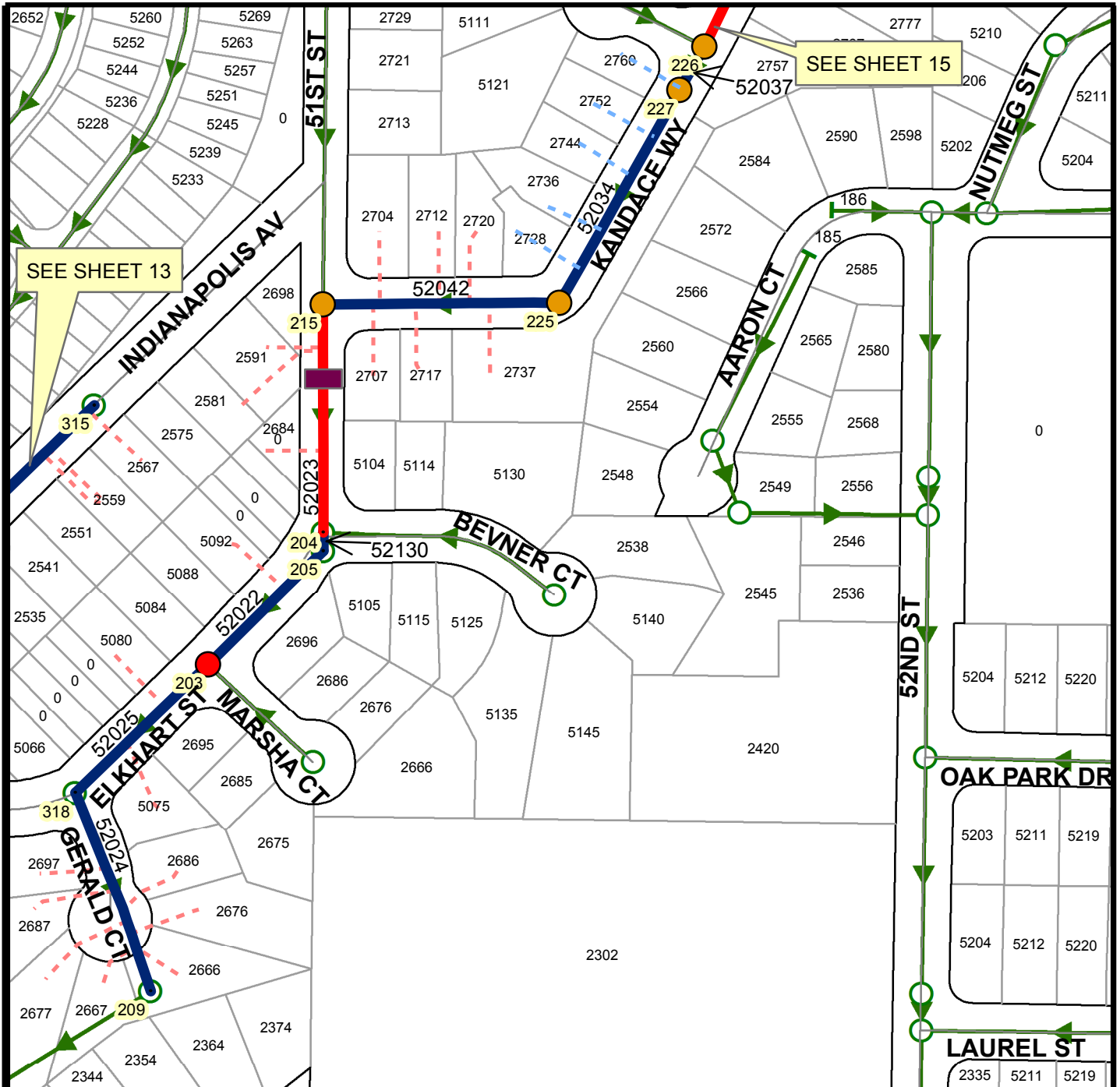
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SEE SHEET 14

		PIPELINE REHABILITATION AV-1		WBS. No. : B-18062	
LEGEND:					
<ul style="list-style-type: none"> ● New Sewer Main Clean Outs ● Repair and Rehab Manhole ● New Manhole ● Rehab Manhole ● Replace Manhole in Place ■ Point Repair and Rehab Existing 8" VC Pipe — Rehab Existing 8" VC Pipe ● Existing Drop Manhole 	<ul style="list-style-type: none"> 52193 FSN: Main Facility Sequence Number 236 Manhole ID Numbers → Existing Sewer Mains & Flow Direction ○ Existing Sewer Manholes - - - Rehab Sewer Laterals with Cleanout More than 7ft Deep - - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep └ Existing Sewer Main Plugs & ID Numbers 	FSN's ON THIS SHEET 44997, 44998, 44999, 45002, 45010, 45014, 45015, 45016.			
COUNCIL DISTRICT: 4		COMMUNITY NAME: MID CITY - EASTERN AREA		<p>NOT TO SCALE</p>	
SHEET NO. 13					

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The City of **SAN DIEGO** Public Works

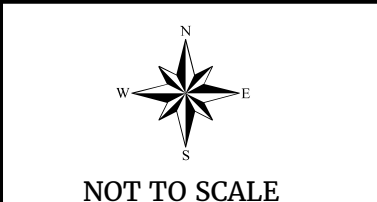
PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

LEGEND:

	New Sewer Main Clean Outs	52193	FSN: Main Facility Sequence Number
	Repair and Rehab Manhole	236	Manhole ID Numbers
	New Manhole		
	Rehab Manhole		
	Replace Manhole in Place		
	Point Repair and Rehab Existing 8" VC Pipe		
	Rehab Existing 8" VC Pipe		
	Existing Drop Manhole		
	Existing Sewer Mains & Flow Direction		
	Existing Sewer Manholes		
	Rehab Sewer Laterals with Cleanout More than 7ft Deep		
	Rehab Sewer Laterals with Cleanout Less Than 7ft Deep		
	Existing Sewer Main Plugs & ID Numbers	233	

FSN's ON THIS SHEET
 52022, 52023, 52024, 52025,
 52034, 52037, 52042, 52130.



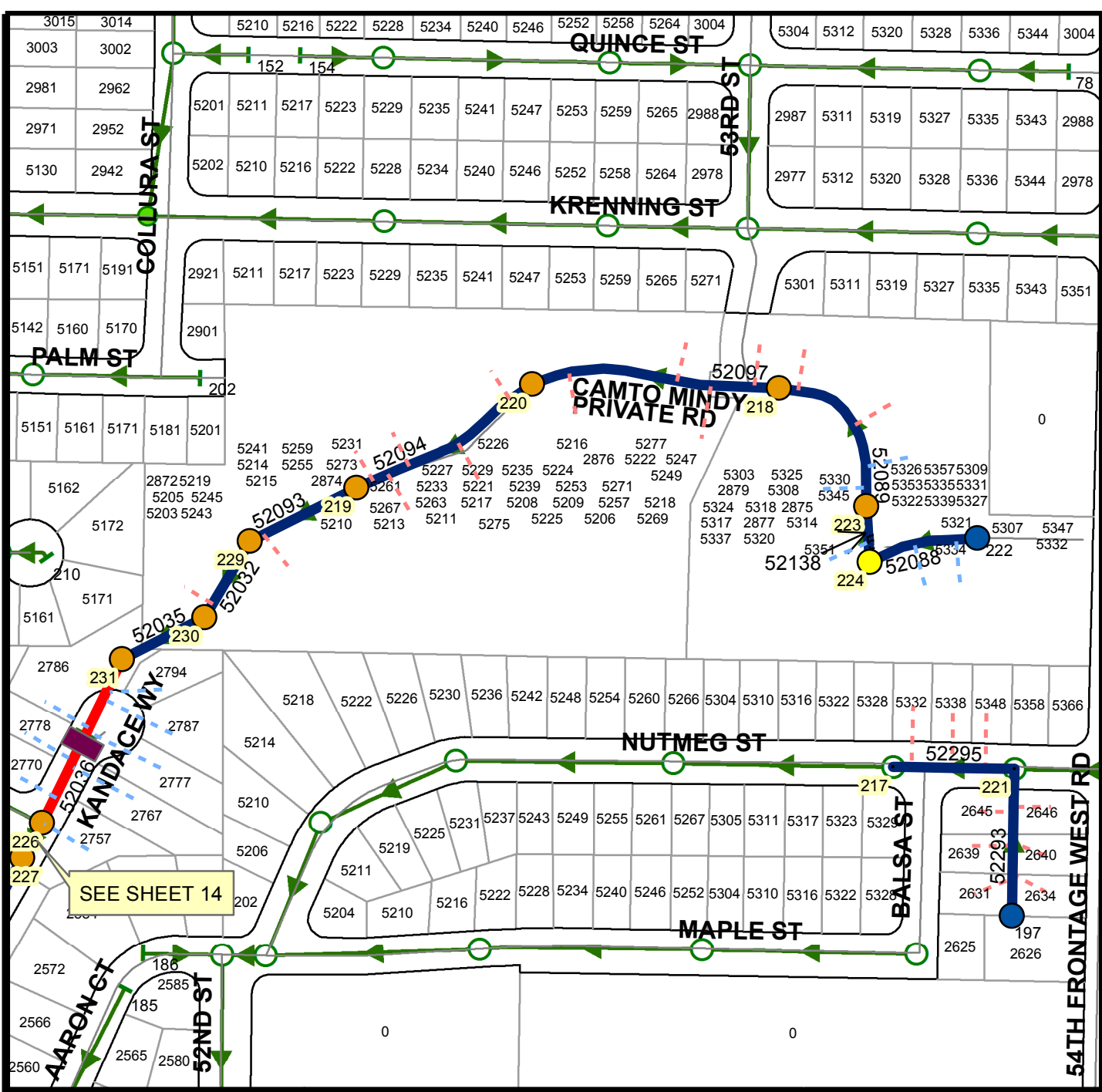
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COUNCIL DISTRICT: 4

**COMMUNITY NAME:
 MID CITY - EASTERN AREA**

SHEET NO. 14

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The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

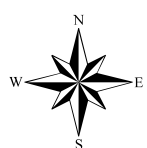
WBS. No. : B-18062

LEGEND:

- New Sewer Main Clean Outs
- Repair and Rehab Manhole
- New Manhole
- Rehab Manhole
- Replace Manhole in Place
- Point Repair and Rehab Existing 8" VC Pipe
- Rehab Existing 8" VC Pipe
- Existing Drop Manhole
- Existing Sewer Manholes
- Existing Sewer Mains & Flow Direction
- - - Rehab Sewer Laterals with Cleanout More than 7ft Deep
- - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
- Existing Sewer Main Plugs & ID Numbers
- 52193 FSN: Main Facility Sequence Number
- 236 Manhole ID Numbers

FSN's ON THIS SHEET

52032, 52035, 52036, 52088, 52089, 52093, 52094, 52097, 52138, 52293, 52295.



NOT TO SCALE

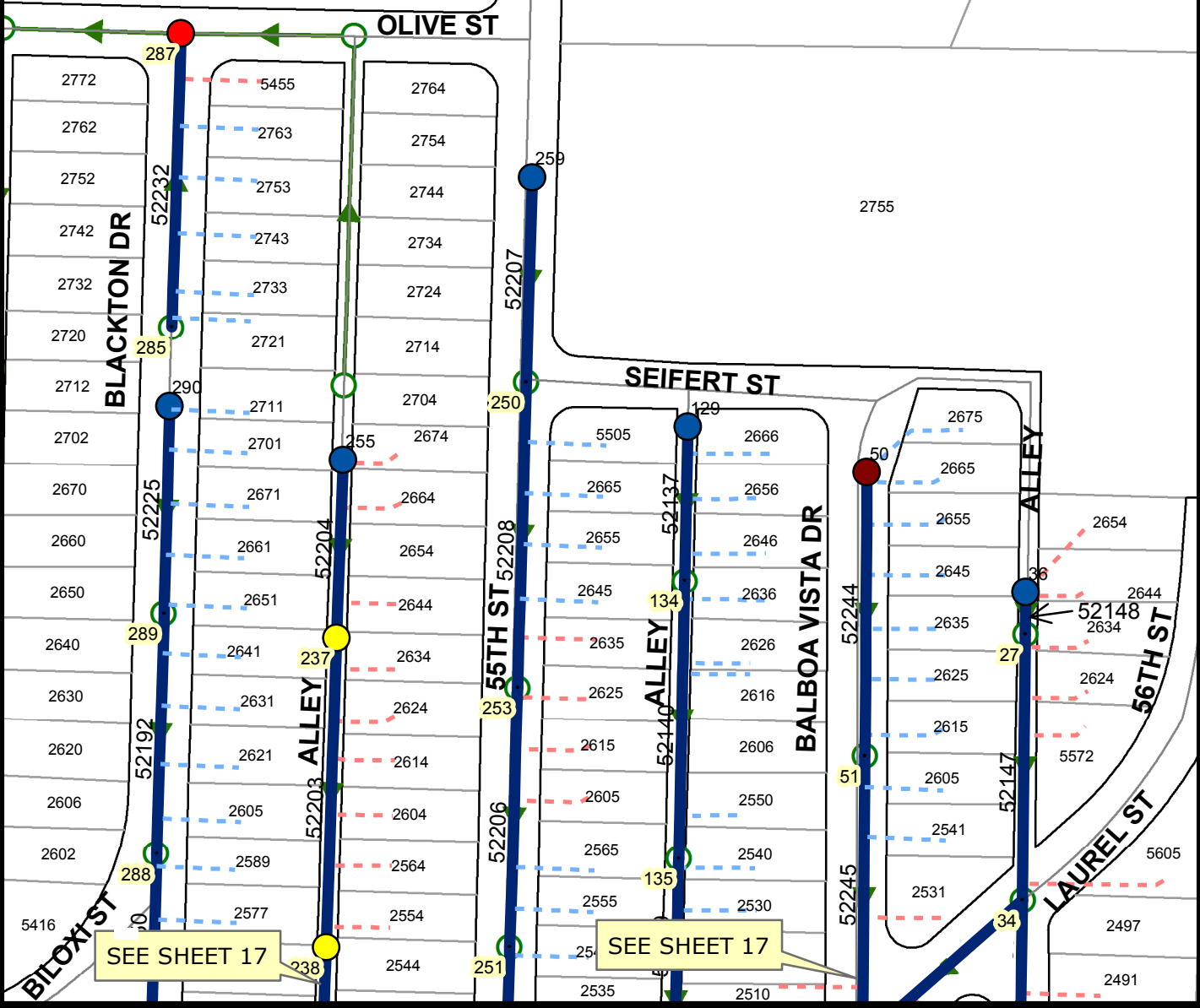
COUNCIL DISTRICT: 4

**COMMUNITY NAME:
MID CITY - EASTERN AREA**

SHEET NO. 15

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5484	5454	5404	5494	5414	5464	5474
5444	5444	5444	5494	5454	5404	5424
5464	5474	5494	5494	5464	5474	
5404	5414		5434		5474	
5434	5444	5484	5484	5424		



The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

LEGEND:

- New Sewer Main Clean Outs
- Repair and Rehab Manhole
- New Manhole
- Rehab Manhole
- Replace Manhole in Place
- Point Repair and Rehab Existing 8" VC Pipe
- Rehab Existing 8" VC Pipe
- Existing Drop Manhole
- 52193 FSN: Main Facility Sequence Number
- 236 Manhole ID Numbers
- Existing Sewer Mains & Flow Direction
- Existing Sewer Manholes
- - - Rehab Sewer Laterals with Cleanout More than 7ft Deep
- - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
- Existing Sewer Main Plugs & ID Numbers

FSN's ON THIS SHEET

52137, 52140, 52147, 52148, 52192, 52203, 52204, 52206, 52207, 52208, 52225, 52232, 52244, 52245.



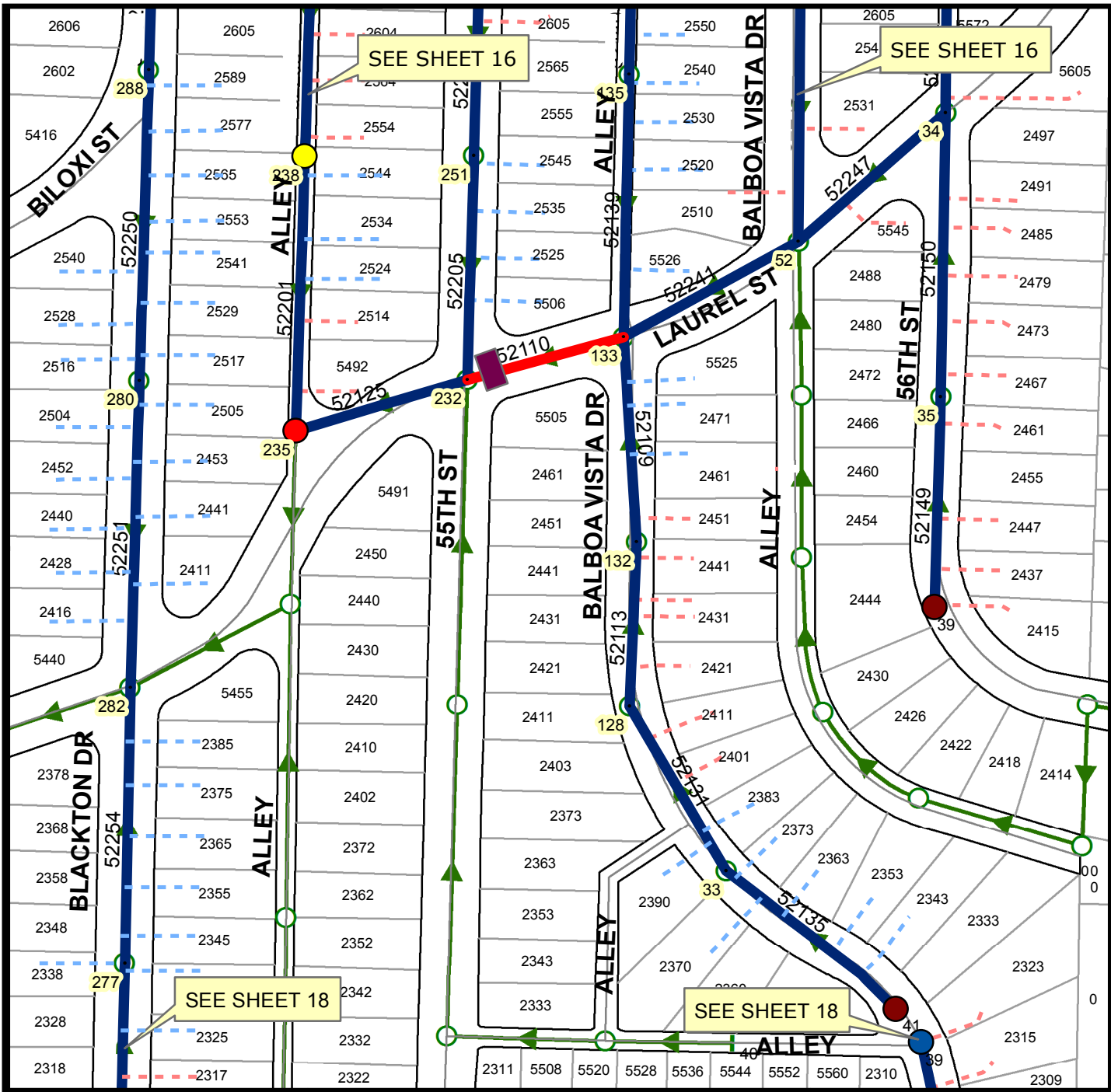
NOT TO SCALE

COUNCIL DISTRICT: 4

**COMMUNITY NAME:
MID CITY - EASTERN AREA**

SHEET NO. 16

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The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

LEGEND:

- New Sewer Main Clean Outs
- Repair and Rehab Manhole
- New Manhole
- Rehab Manhole
- Replace Manhole in Place
- Point Repair and Rehab Existing 8" VC Pipe
- Rehab Existing 8" VC Pipe
- Existing Drop Manhole
- Existing Sewer Mains & Flow Direction
- Existing Sewer Manholes
- - - Rehab Sewer Laterals with Cleanout More than 7ft Deep
- - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
- Existing Sewer Main Plugs & ID Numbers
- 52193 FSN: Main Facility Sequence Number
- 236 Manhole ID Numbers

FSN's ON THIS SHEET

52109, 52110, 52113, 52125, 52131, 52135, 52139, 52149, 52150, 52201, 52205, 52241, 52247, 52250, 52251, 52254.



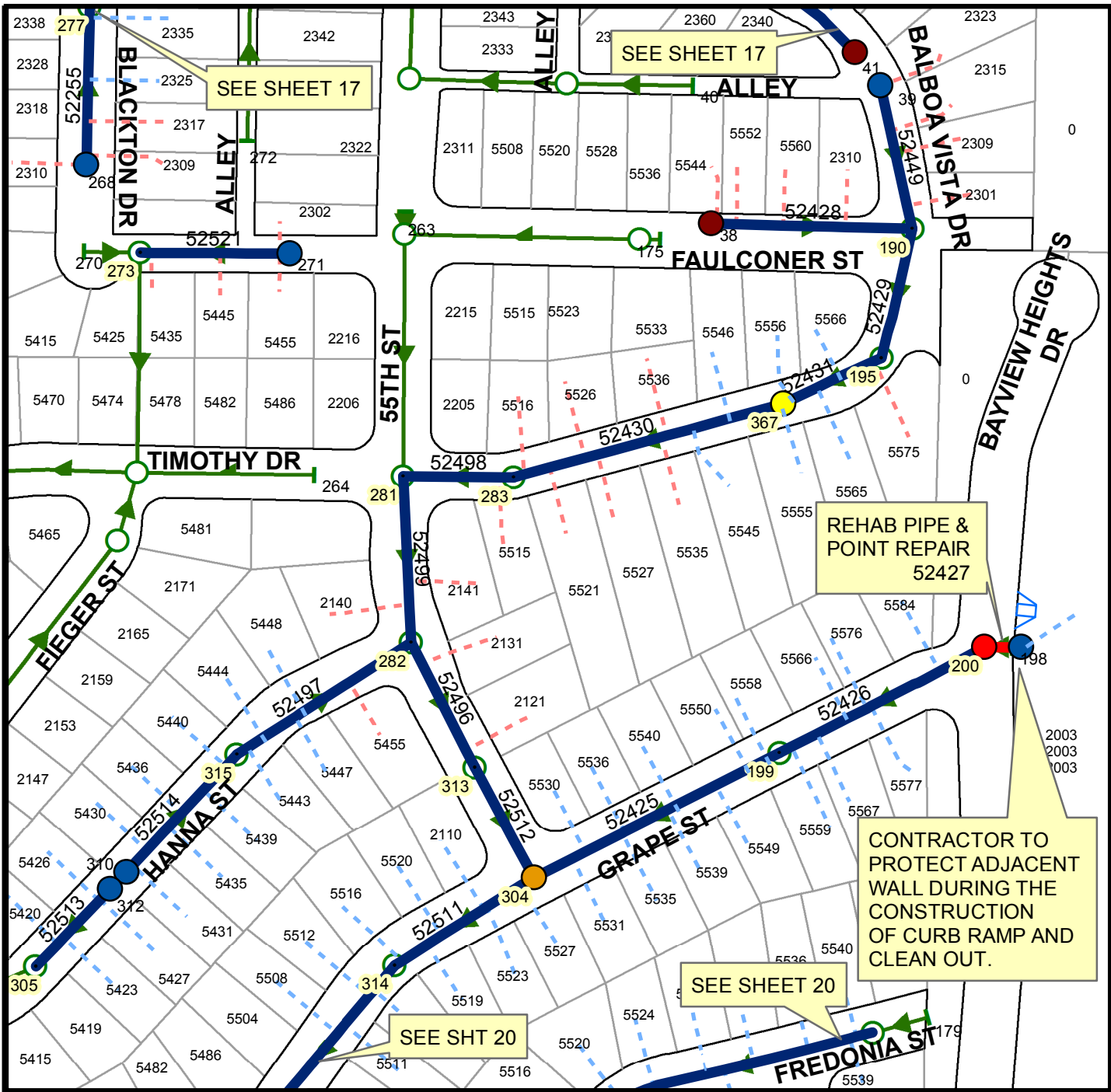
NOT TO SCALE

COUNCIL DISTRICT: 4

**COMMUNITY NAME:
MID CITY - EASTERN AREA**

SHEET NO. 17

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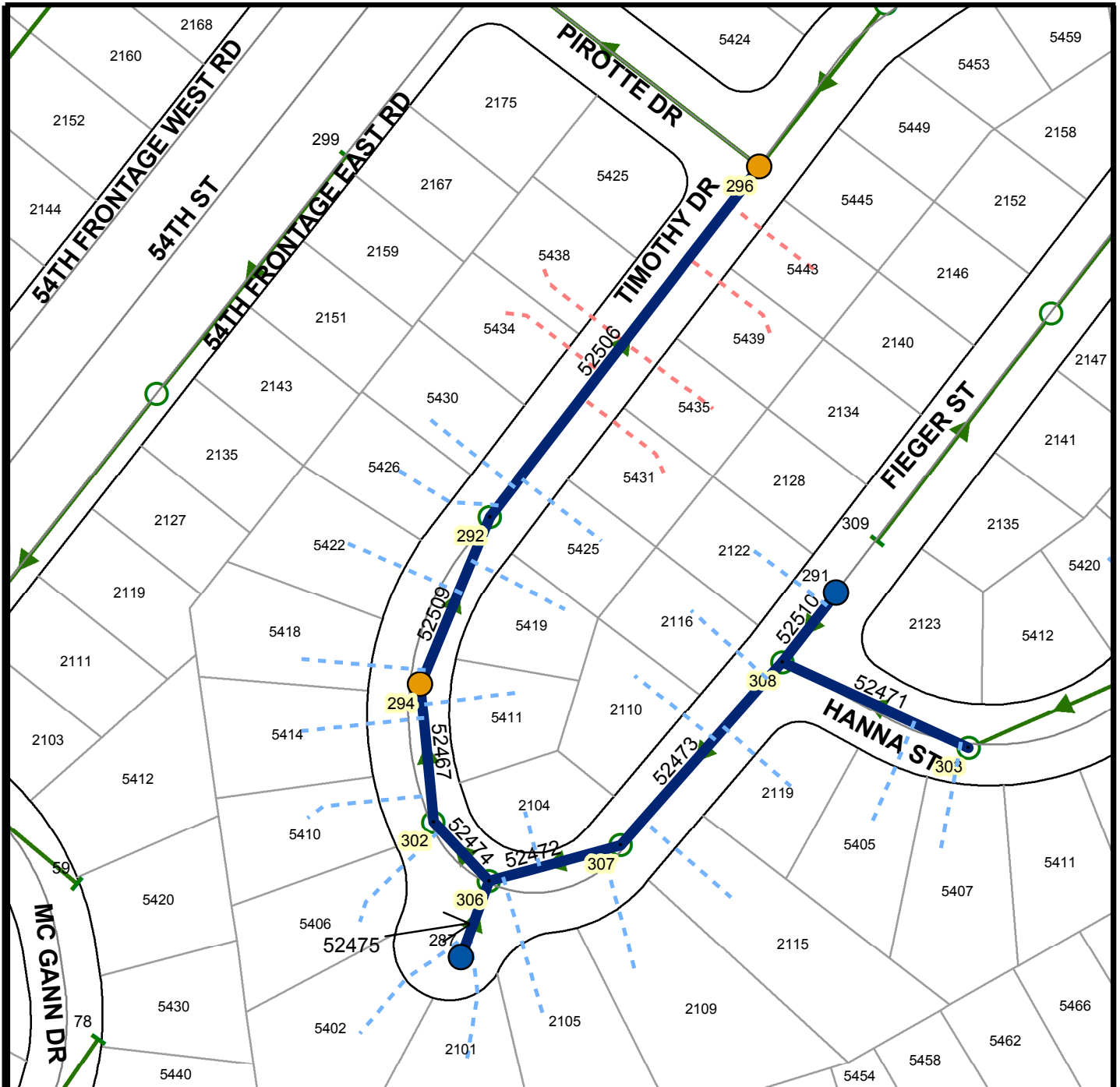


	PIPELINE REHABILITATION AV-1	WBS. No. : B-18062
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LEGEND:		
<ul style="list-style-type: none"> ● New Sewer Main Clean Outs ● Repair and Rehab Manhole ● New Manhole ● Rehab Manhole ● Replace Manhole in Place ■ Point Repair and Rehab Existing 8" VC Pipe — Rehab Existing 8" VC Pipe ● Existing Drop Manhole 	<ul style="list-style-type: none"> → Existing Sewer Mains & Flow Direction ○ Existing Sewer Manholes --- Rehab Sewer Laterals with Cleanout More than 7ft Deep --- Rehab Sewer Laterals with Cleanout Less Than 7ft Deep — Existing Sewer Main Plugs & ID Numbers ▤ Proposed Curb Ramp Type B with SS DWT 	<p>FSN's ON THIS SHEET</p> <p>52255, 52425, 52426, 52427, 52428, 52429, 52430, 52431, 52449, 52496, 52497, 52498, 52499, 52511, 52512, 52513, 52514, 52521.</p>

COUNCIL DISTRICT: 4	COMMUNITY NAME: MID CITY - EASTERN AREA	SHEET NO. 18
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The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

LEGEND:

- New Sewer Main Clean Outs
- Repair and Rehab Manhole
- New Manhole
- Rehab Manhole
- Replace Manhole in Place
- Point Repair and Rehab Existing 8" VC Pipe
- Rehab Existing 8" VC Pipe
- Existing Drop Manhole
- 52193 FSN: Main Facility Sequence Number
- 236 Manhole ID Numbers
- Existing Sewer Mains & Flow Direction
- Existing Sewer Manholes
- - - Rehab Sewer Laterals with Cleanout More than 7ft Deep
- - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep
- 233 Existing Sewer Main Plugs & ID Numbers

FSN's ON THIS SHEET
 52467, 52471, 52472, 52473, 52474, 52475, 52506, 52509, 52510.



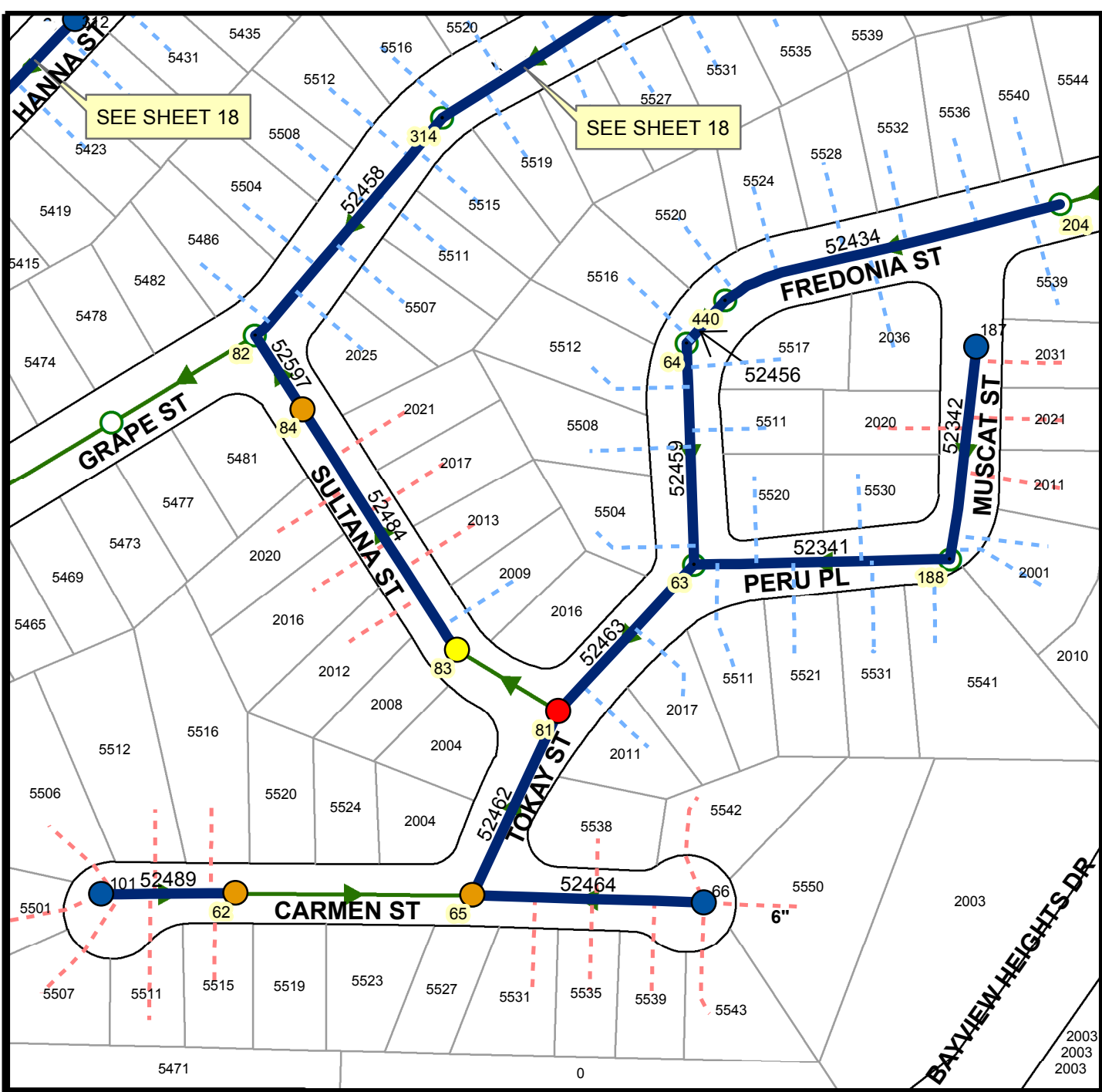
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COUNCIL DISTRICT: 4

**COMMUNITY NAME:
 MID CITY - EASTERN AREA**

SHEET NO. 19

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<p>The City of SAN DIEGO Public Works</p>	<p>PIPELINE REHABILITATION AV-1</p>	<p>WBS. No. : B-18062</p>
<p>LEGEND:</p> <ul style="list-style-type: none"> ● New Sewer Main Clean Outs ● Repair and Rehab Manhole ● New Manhole ● Rehab Manhole ● Replace Manhole in Place ■ Point Repair and Rehab Existing 8" VC Pipe — Rehab Existing 8" VC Pipe ● Existing Drop Manhole 52193 FSN: Main Facility Sequence Number 236 Manhole ID Numbers → Existing Sewer Mains & Flow Direction Existing Sewer Manholes - - - Rehab Sewer Laterals with Cleanout More than 7ft Deep - - - Rehab Sewer Laterals with Cleanout Less Than 7ft Deep — Existing Sewer Main Plugs & ID Numbers 		<p>FSN's ON THIS SHEET</p> <p>52341, 52342, 52434, 52456, 52458, 52459, 52462, 52463, 52464, 52484, 52489, 52597.</p>
<p>NOT TO SCALE</p>		
<p>COUNCIL DISTRICT: 4</p>	<p>COMMUNITY NAME: MID CITY - EASTERN AREA</p>	<p>SHEET NO. 20</p>

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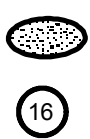


The City of **SAN DIEGO** Public Works

PIPELINE REHABILITATION AV-1

WBS. No. : B-18062

LEGEND



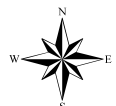
APPROXIMATE LOCATION OF 20' X 20' CONCRETE REPLACEMENT WHERE POINT REPAIRS, OR CLEANOUTS, OR MANHOLES ARE TO BE INSTALLED

PLAN SHEET NUMBER

RESURFACING SHEET

PAVING SCHEDULE NOTES

SHEET NO.	STREET LOCATION	RESTORATION REQUIRED	APPROX AREA
16	ALLEYS	CONCRETE (6.5")	1,200 SF
17	LAUREL ST	CONCRETE (7")	800 SF
17	BALBOA VISTA DR	CONCRETE (7")	400 SF



NOT TO SCALE

COUNCIL DISTRICT: 4

**COMMUNITY NAME:
MID CITY - EASTERN AREA**

SHEET NO. 21

ATTACHMENT F
RESERVED

ATTACHMENT G
CONTRACT AGREEMENT

ATTACHMENT G
CONTRACT AGREEMENT

CONSTRUCTION CONTRACT

This Phase-Funded contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and Burtech Pipeline, Inc., herein called "Contractor" for construction of Pipeline Rehabilitation AV-1; Bid No. **K-20-1838-DBB-3-A**; in the total amount Three Million Three Hundred Eleven Thousand Eight Hundred Thirty One Dollars and Fifty Cents (\$3,311,831.50), which is comprised of the Base Bid consisting of an amount not to exceed \$2,389,581.50 for Phase I and \$922,250.00 for Phase II.

IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

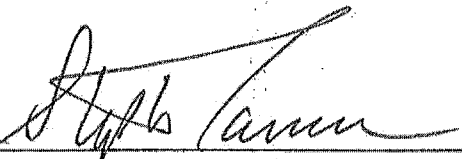
1. The following are incorporated into this contract as though fully set forth herein:
 - (a) The attached Faithful Performance and Payment Bonds.
 - (b) The attached Proposal included in the Bid documents by the Contractor.
 - (c) Reference Standards listed in the Instruction to Bidders and the Supplementary Special Provisions (SSP).
 - (d) Phase Funding Schedule Agreement.
 - (e) That certain documents entitled Pipeline Rehabilitation AV-1, on file in the office of the Public Works Department as Document No. B-18062, 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 Pipeline Rehabilitation AV-1, Bid No. K-20-1838-DBB-3-A, 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 (See WHITEBOOK, Section 7-3.10, Phased Funding Compensation).
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 and is approved by the City Attorney in accordance with San Diego Charter Section 40.

CONTRACT AGREEMENT (continued)

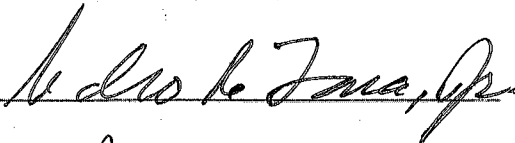
IN WITNESS WHEREOF, this Agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code § 22.3102 authorizing such execution.

THE CITY OF SAN DIEGO

APPROVED AS TO FORM

By: 

Mara W. Elliott, City Attorney

By: 

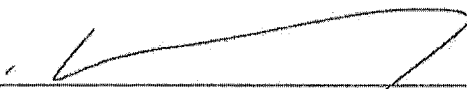
Print Name: Stephen Samara
Principal Contract Specialist
Public Works Department

Print Name: Pedro De Lara Jr.
Deputy City Attorney

Date: 1-30-20

Date: 1/30/20

CONTRACTOR

By: 

Print Name: Dominic J. Burtezn

Title: President & CEO

Date: 01/29/2020

City of San Diego License No.: B1996002066

State Contractor's License No.: 718202

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER: 1000006324

CERTIFICATIONS AND FORMS

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

BIDDER'S GENERAL INFORMATION

To the City of San Diego:

Pursuant to "Notice Inviting Bids", specifications, and requirements on file with the City Clerk, and subject to all provisions of the Charter and Ordinances of the City of San Diego and applicable laws and regulations of the United States and the State of California, the undersigned hereby proposes to furnish to the City of San Diego, complete at the prices stated herein, the items or services hereinafter mentioned. The undersigned further warrants that this bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

The undersigned bidder(s) further warrants that bidder(s) has thoroughly examined and understands the entire Contract Documents (plans and specifications) and the Bidding Documents therefore, and that by submitting said Bidding Documents as its bid proposal, bidder(s) acknowledges and is bound by the entire Contract Documents, including any addenda issued thereto, as such Contract Documents incorporated by reference in the Bidding Documents.

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER 23
UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106**

State of California

County of San Diego

The bidder, being first duly sworn, deposes and says that he or she is authorized by the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

CONTRACTOR CERTIFICATION

DRUG-FREE WORKPLACE

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in the WHITEBOOK, Section 5-1.3, "Drug-Free Workplace", of the project specifications, and that;

This company has in place a drug-free workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of subdivisions a) through c) of the policy as outlined.

CONTRACTOR CERTIFICATION

AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the Americans With Disabilities Act (ADA) outlined in the WHITEBOOK, Section 5-1.2, "California Building Code, California Code of Regulations Title 24 and Americans with Disabilities Act", of the project specifications, and that:

This company has in place workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

CONTRACTOR CERTIFICATION

CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

I declare under penalty of perjury that I am authorized to make this certification on behalf of the company submitting this bid/proposal, that as Contractor, I am familiar with the requirements of City of San Diego Municipal Code § 22.3004 regarding Contractor Standards as outlined in the WHITEBOOK, Section 5-1.4, ("Contractor Standards and Pledge of Compliance"), 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:

Pipeline Rehabilitation AV-1

(Project Title)

As particularly described in said contract and identified as Bid No. **K-20-1838-DBB-3-A**; SAP No. **B-18062** (WBS/IO/CC); 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 - Section 3-2, "SELF-PERFORMANCE", which stipulates the percentage of the Work to be performed with the Bidder's own forces. The Bidder is to also list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which the Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB®	WHERE CERTIFIED®	CHECK IF JOINT VENTURE PARTNERSHIP
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____							
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____							

- ① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ② As appropriate, Bidder shall indicate if Subcontractor is certified by:
- | | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | | |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

NAMED EQUIPMENT/MATERIAL SUPPLIER LIST

***** PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY *** TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY *** SEE INSTRUCTIONS TO BIDDERS FOR FURTHER INFORMATION**

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIAL OR SUPPLIES	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB ^①	WHERE CERTIFIED ^②
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						

- ① As appropriate, Bidder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ② As appropriate, Bidder shall indicate if Vendor/Supplier is certified by:
- | | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | | |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

ELECTRONICALLY SUBMITTED FORMS

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 File with the bid in PlanetBids.

- A. BID BOND – See Instructions to Bidders, Bidders Guarantee of Good Faith (Bid Security) for further instructions**
- B. CONTRACTOR’S CERTIFICATION OF PENDING ACTIONS**
- C. MANDATORY DISCLOSURE OF BUSINESS INTERESTS FORM**
- D. DEBARMENT AND SUSPENSION CERTIFICATION**
- E. CONTRACTOR’S EXPERIENCE AND PAST PROJECT DOCUMENTATION. SEE SSP AND 2018 WB SECTION 500-2.1, INITIAL SUBMITTALS, ITEM 2, a.**
- F. MANUFACTURER AUTHORIZED INSTALLER CERTIFICATION. SEE SSP AND 2018 WB SECTION 500-2.1, INITIAL SUBMITTAL, ITEM 2, b.**

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


PIPELINE REHABILITATION AV-1

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 5TH day of NOVEMBER, 2019

BURTECH PIPELINE, INCORPORATED (SEAL)
(Principal)

NORTH AMERICAN
SPECIALTY INSURANCE COMPANY (SEAL)
(Surety)

By: 
(Signature)
DOMINIC J. BURTECH, JR., PRESIDENT

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 }

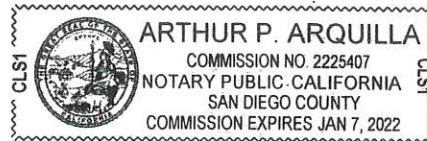
On 11/6/19 before me, Arthur P. Arquilla, Notary Public
(Here insert name and title of the officer)

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

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

WITNESS my hand and official seal.

[Signature]
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.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE § 1189

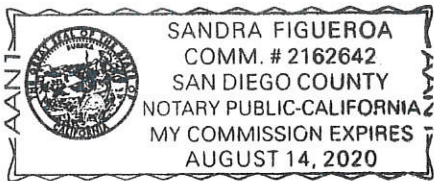
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of SAN DIEGO }

On 11/5/2019 before me, SANDRA FIGUEROA, NOTARY PUBLIC
Date 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.



Place Notary Seal and/or Stamp Above

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

WITNESS my hand and official seal.

Signature *Sandra Figueroa*
Signature of Notary Public

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

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

Signer is Representing: _____

Signer's Name: _____

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

Signer is Representing: _____

SWISS RE CORPORATE SOLUTIONS

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY
WESTPORT INSURANCE CORPORATION 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 Kansas City, Missouri 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 Kansas City, Missouri, and Westport Insurance Corporation, organized under the laws of the State of Missouri, and having its principal office in the City of Kansas City, Missouri does hereby make, constitute and appoint:

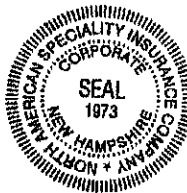
JOHN G. MALONEY, HELEN MALONEY, SANDRA FIGUEROA, MARK D. IATAROLA, and JESSICA SCHMAL
JOINTLY OR SEVERALLY

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: ONE HUNDRED TWENTY FIVE MILLION (\$125,000,000.00) 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 North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on March 24, 2000 and Westport Insurance Corporation by written consent of its Executive Committee dated July 18, 2011.

RESOLVED, that any two of the President, 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.



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

By Mike A. Ito, Senior Vice President of Washington International Insurance Company & Senior Vice President of North American Specialty Insurance Company & Senior Vice President of Westport Insurance Corporation



IN WITNESS WHEREOF, North American Specialty Insurance Company, Washington International Insurance Company and Westport Insurance Corporation have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 19TH day of JUNE, 20 19.

North American Specialty Insurance Company
Washington International Insurance Company
Westport Insurance Corporation

State of Illinois
County of Cook ss:

On this 19TH day of JUNE, 20 19, 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 Senior Vice President of Westport Insurance Corporation and Michael A. Ito Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Senior Vice President of Westport Insurance Corporation, 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.



M. Kenny, Notary Public

I, Jeffrey Goldberg, the duly elected Vice President and Assistant Secretary of North American Specialty Insurance Company, Washington International Insurance Company and Westport Insurance Corporation 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, Washington International Insurance Company and Westport Insurance Corporation which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 5TH day of NOVEMBER, 20 19.

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

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


PIPELINE REHABILITATION AV-1

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 5TH day of NOVEMBER, 2019

BURTECH PIPELINE, INCORPORATED (SEAL)
(Principal)

NORTH AMERICAN
SPECIALTY INSURANCE COMPANY (SEAL)
(Surety)

By: 
(Signature)
DOMINIC J. BURTECH, JR., PRESIDENT

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 11/6/19 before me, Arthur P. Arquilla, Notary Public,
(Here insert name and title of the officer)

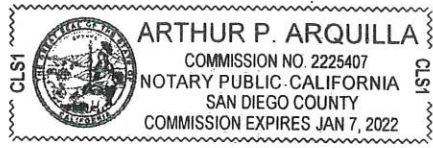
personally appeared Dominic Butech,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s)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

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

WITNESS my hand and official seal.

[Signature]
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.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE § 1189

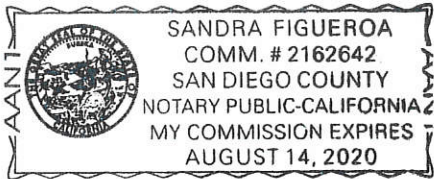
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of SAN DIEGO }

On 11/5/2019 before me, SANDRA FIGUEROA, NOTARY PUBLIC
Date 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.



Place Notary Seal and/or Stamp Above

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

WITNESS my hand and official seal.

Signature *[Handwritten Signature]*
Signature of Notary Public

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

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

Signer is Representing: _____

Signer's Name: _____

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

Signer is Representing: _____

SWISS RE CORPORATE SOLUTIONS

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY
WESTPORT INSURANCE CORPORATION 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 Kansas City, Missouri 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 Kansas City, Missouri, and Westport Insurance Corporation, organized under the laws of the State of Missouri, and having its principal office in the City of Kansas City, Missouri does hereby make, constitute and appoint:

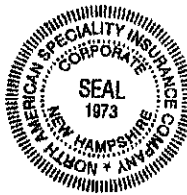
JOHN G. MALONEY, HELEN MALONEY, SANDRA FIGUEROA, MARK D. IATAROLA, and JESSICA SCHMAL
JOINTLY OR SEVERALLY

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: ONE HUNDRED TWENTY FIVE MILLION (\$125,000,000.00) 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 North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on March 24, 2000 and Westport Insurance Corporation by written consent of its Executive Committee dated July 18, 2011.

RESOLVED, that any two of the President, 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.



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

By Mike A. Ito, Senior Vice President of Washington International Insurance Company & Senior Vice President of North American Specialty Insurance Company & Senior Vice President of Westport Insurance Corporation



IN WITNESS WHEREOF, North American Specialty Insurance Company, Washington International Insurance Company and Westport Insurance Corporation have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 19TH day of JUNE, 20 19.

North American Specialty Insurance Company
Washington International Insurance Company
Westport Insurance Corporation

State of Illinois
County of Cook ss:

On this 19TH day of JUNE, 20 19, 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 Senior Vice President of Westport Insurance Corporation and Michael A. Ito Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Senior Vice President of Westport Insurance Corporation, 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.



M. Kenny, Notary Public

I, Jeffrey Goldberg, the duly elected Vice President and Assistant Secretary of North American Specialty Insurance Company, Washington International Insurance Company and Westport Insurance Corporation 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, Washington International Insurance Company and Westport Insurance Corporation which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 5TH day of NOVEMBER, 20 19.

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

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, inc.

Certified By Dominic J. Burtech Title President & CEO

Name



Signature

Date November 7, 2019

USE ADDITIONAL FORMS AS NECESSARY

Mandatory Disclosure of Business Interests Form

BIDDER/PROPOSER INFORMATION

Legal Name	DBA		
<u>BURTECH PIPELINE, INCORPORATED</u>			
Street Address	City	State	Zip
<u>102 Second Street,</u>	<u>Encinitas,</u>	<u>CA</u>	<u>92024</u>
Contact Person, Title	Phone	Fax	
<u>Buddy Aquino - Chief Estimator</u>	<u>(760) 634-2822</u>	<u>(760) 634-2415</u>	

Provide the name, identity, and precise nature of the interest* of all persons who are directly or indirectly involved** in this proposed transaction (SDMC § 21.0103).

* The precise nature of the interest includes:

- the percentage ownership interest in a party to the transaction,
- the percentage ownership interest in any firm, corporation, or partnership that will receive funds from the transaction,
- the value of any financial interest in the transaction,
- any contingent interest in the transaction and the value of such interest should the contingency be satisfied, and
- any philanthropic, scientific, artistic, or property interest in the transaction.

** Directly or indirectly involved means pursuing the transaction by:

- communicating or negotiating with City officers or employees,
- submitting or preparing applications, bids, proposals or other documents for purposes of contracting with the City, or
- directing or supervising the actions of persons engaged in the above activity.

<u>Dominic J. Burtech</u>	<u>President & CEO</u>
Name	Title/Position
<u>Encinitas, CA 92024</u>	

City and State of Residence	Employer (if different than Bidder/Proposer)
<u>51%</u>	
Interest in the transaction	

<u>Julie J. Burtech</u>	<u>Exec. VP & Secretary</u>
Name	Title/Position
<u>Encinitas, CA 92024</u>	

City and State of Residence	Employer (if different than Bidder/Proposer)
<u>49%</u>	
Interest in the transaction	

* Use Additional Pages if Necessary *

Under penalty of perjury under the laws of the State of California, I certify that I am responsible for the completeness and accuracy of the responses contained herein, and that all information provided is true, full and complete to the best of my knowledge and belief. I agree to provide written notice to the Mayor or Designee within five (5) business days if, at any time, I learn that any portion of this Mandatory Disclosure of Business Interests Form requires an updated response. Failure to timely provide the Mayor or Designee with written notice is grounds for Contract termination.

<u>Dominic J. Burtech, President & CEO</u>		<u>November 7, 2019</u>
Print Name, Title	Signature	Date

Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed Mandatory Disclosure of Business Interests Form is submitted.

DEBARMENT AND SUSPENSION CERTIFICATION

EFFECT OF DEBARMENT OR SUSPENSION

To promote integrity in the City's contracting processes and to protect the public interest, the City shall only enter into contracts with responsible bidders and contractors. In accordance with San Diego Municipal Code §22.0814 (a): *Bidders and contractors* who have been *debarred or suspended* are excluded from submitting bids, submitting responses to requests for proposal or qualifications, receiving *contract awards*, executing *contracts*, participating as a *subcontractor*, employee, agent or representative of another *person* contracting with the City.

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of Names of the Principal Individual owner(s)

The names of all persons interested in the foregoing proposal as Principals are as follows:

NAME	TITLE
Dominic J. Burtech	President & CEO
Julie J. Burtech	Exec. VP & Secretary

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Bidder or other interested person is an individual, state first and last names in full.

The Bidder, under penalty of perjury, certifies that, except as noted below, he/she or any person associated therewith in the capacity of owner, partner, director, officer, manager:

- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal, State or local agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal, State or local agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

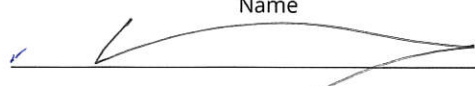
If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Contractor Name: Burtech Pipeline, Inc.

Certified By Dominic J. Burtech Title President & CEO

Name



Signature

Date November 7, 2019

NOTE: Providing false information may result in criminal prosecution or administrative sanctions.

ENGINEER OF WORK

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

Alfi

For City Engineer

10/24/19

Date

Seal:



A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

B. ADDITIONAL CHANGES

- The following are additional changes to the Line Items in the PlanetBids Tab:

For clarity where applicable, **ADDITIONS**, if any, have been **Underlined** and **DELETIONS**, if any, have been **Stricken out**.

Section	Item Code	Description	UoM	Quantity	Payment Reference
Main Bid	237310	Additional Sidewalk Removal and Replacement	SF	16775 <u>11778</u>	303-5.9
Main Bid	237110	Cleaning and Video Inspection of Existing Laterals	LF	672 <u>673</u>	306-18.7
Main Bid	237110	Video Inspection of Pipeline and Culverts for Acceptance (Sewer Laterals)	EA	672 <u>673</u>	306-18.7
Main Bid	237110	Service Lateral Connection	EA	671 <u>672</u>	501-9

James Nagelvoort, Director
Public Works Department

Dated: *October 25, 2019*
San Diego, California

JN/JB/ig

Bid Results

Bidder Details

Vendor Name Burtech Pipeline Incorporated
Address 102 Second Street
 Encinitas, CA 92024
 United States
Respondee BUDDY AQUINO
Respondee Title CHIEF ESTIMATOR
Phone 760-634-2822 Ext.
Email buddy@burtechpipeline.com
Vendor Type PQUAL,CADIR,Local
License # 718202
CADIR 1000006324

Bid Detail

Bid Format Electronic
Submitted November 7, 2019 1:24:27 PM (Pacific)
Delivery Method
Bid Responsive
Bid Status Submitted
Confirmation # 195036
Ranking 0

Respondee Comment

Buyer Comment

Attachments

File Title	File Name	File Type
Contractors Certification of Pending Actions	Contractors Certification of Pending Actions.pdf	Contractors Certification of Pending Actions
Mandatory Disclosure of Business Interests	Mandatory Disclosure of Business Interests Form.pdf	Mandatory Disclosure of Business Interests
Debarment and Suspension Certification	Debarment and Suspension Certification.pdf	Debarment and Suspension Certification
Contractors Experience & Past Project Documentation	Contractors Experience & Past Project Documentations.pdf	Contractor's Experience and Past Project Documentation
Manufacturer Authorized Installer Certification	Manufacturer Authorized Installer Certification.pdf	Manufacturer Authorized Installer Certification
Bid Bond	Bid Bond.pdf	Bid Bond

Line Items

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
	Main Bid					
1	Bonds (Payment and Performance)					
	524126	LS	1	\$28,000.00	\$28,000.00	
2	Sewage Bypass and Pumping Plan (Diversion Plan)					
	237110	LS	1	\$1,000.00	\$1,000.00	

Bid Results

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
3	Mobilization					
	237110	LS	1	\$20,000.00	\$20,000.00	
4	Field Orders (EOC Type II)					
		AL	1	\$200,000.00	\$200,000.00	
5	Pavement Restoration Adjacent to Trench					
	237310	SF	756	\$1.00	\$756.00	
6	Additional Curb and Gutter Removal and Replacement					
	237310	LF	50	\$1.00	\$50.00	
7	Additional Sidewalk Removal and Replacement					
	237310	SF	11778	\$1.00	\$11,778.00	
8	Curb Ramp (Type B) with Detectable Warning Tiles					
	237310	EA	1	\$4,000.00	\$4,000.00	
9	Concrete Pavement					
	237310	CY	42	\$1.00	\$42.00	
10	Additional Bedding					
	237110	CY	3	\$1.00	\$3.00	
11	Sewer Main (8 Inch)					
	237110	LF	8	\$1.00	\$8.00	
12	Temporary Resurfacing					
	237310	TON	8	\$300.00	\$2,400.00	
13	Imported Trench Backfill					
	237110	TON	52	\$1.00	\$52.00	
14	Manholes (4 ft x 3 ft)					
	237110	EA	6	\$7,500.00	\$45,000.00	
15	Replace Manhole in Place (4 ft x 3 ft)					
	237110	EA	9	\$11,000.00	\$99,000.00	
16	Sewer Lateral and Cleanout (4 Inch, Less Than 7 ft Deep)					
	237110	EA	10	\$3,500.00	\$35,000.00	
17	Sewer Lateral and Cleanout (4 Inch, 7 ft or Greater in Depth)					
	237110	EA	10	\$2,500.00	\$25,000.00	
18	Sewer Main Cleanout					
	237110	EA	26	\$4,500.00	\$117,000.00	

Bid Results

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
19	Cleaning and Video Inspection of Existing Pipelines and Culverts (Sewer Mains)					
	237110	LF	33313	\$1.00	\$33,313.00	
20	Cleaning and Video Inspection of Existing Laterals					
	237110	LF	673	\$30.00	\$20,190.00	
21	Video Inspection of Pipelines and Culverts for Acceptance (Sewer Mains)					
	237110	LF	33313	\$0.50	\$16,656.50	
22	Video Inspection of Pipelines and Culverts for Acceptance (Sewer Laterals)					
	237110	EA	673	\$10.00	\$6,730.00	
23	Point Repair for Existing Sewer Main (8 Inch)					
	237110	EA	13	\$3,000.00	\$39,000.00	
24	Additional Point Repair for Existing Sewer Main (8 Inch)					
	237110	LF	50	\$1.00	\$50.00	
25	Rehabilitate Sewer Main (8 Inch)					
	237110	LF	33313	\$21.00	\$699,573.00	
26	Service Lateral Connection					
	237110	EA	672	\$768.00	\$516,096.00	
27	Service Lateral Connection (6 Inch)					
	237110	EA	1	\$1,000.00	\$1,000.00	
28	Rehabilitate Existing Manhole with Cured-In-Place Manhole Liner					
	237110	VF	268	\$1,073.00	\$287,564.00	
29	Repair and Rehabilitate Existing Manhole with Cured-In-Place Manhole Liner					
	237110	VF	90	\$1,073.00	\$96,570.00	
30	Service Lateral Rehabilitation with Cleanout Up to 7 ft in Depth					
	237110	EA	370	\$1,700.00	\$629,000.00	
31	Service Lateral Rehabilitation with Cleanout Greater than 7 ft in Depth					
	237110	EA	302	\$1,200.00	\$362,400.00	
32	Service Lateral Rehabilitation with Cleanout Greater than 7 ft in Depth (6 Inch)					
	237110	EA	1	\$3,000.00	\$3,000.00	
33	Traffic Control and Working Drawings					
	541330	LS	1	\$10,000.00	\$10,000.00	
34	WPCP Development					
	541330	LS	1	\$600.00	\$600.00	

Bid Results

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
35	WPCP Implementation					
	541330	LS	1	\$1,000.00	\$1,000.00	
				Subtotal	\$3,311,831.50	
				Total	\$3,311,831.50	

Subcontractors

Name & Address	Description	License Num	CADIR	Amount	Type
Nu-Line Technologies, LLC 102 Second Street, Suite B Encinitas, CA 92024 United States	Sewer Rehabilitation, CCTV Inspection and Cleaning	997520	1000003808	\$749,542.50	FEM,MBE,CADIR,W BE
McGrath Consulting PO BOX 2488 El Cajon, CA 92021 United States	WPCP Development	ELBE	1000037165	\$600.00	ELBE,CADIR
Payneco Specialties Inc 120 North Second Ave Chula Vista, CA 91910 United States	Striping & Legends	298637	1000003515	\$4,791.00	CADIR,CAU,DBE,FE M,SDB,SLBE,WBE,W OSB
Jerusalem Construction, Inc. DBA Miramar General Engineering 1827 Cleveland Ave National City, CA 91950 United States	Bid Items 6-9 Concrete Works, Manholes, Cleanouts	1009541	1000033057	\$471,208.00	ELBE,CADIR,PQUAL
Sancon Technologies, Inc. 5841 Engineer Drive Huntington Beach , CA 92649 United States	Bid Items 28 & 29 for Cured- In-Place Manhole Liner	774055	1000008879	\$384,134.00	

\$1610275.50 / 3311831.50 = 48 % 52 Self Performance = MET

April 1, 2006

To Whom It May Concern

This is to certify that Burtech Pipeline, Inc. is a certified trained and licensed installer of CIPP (Cured In Place Pipe) lining materials and process that conform to ASTM F-1216 and ASTM F-1743. Pipe Lining Supply Corporation is a manufacturer and wholesale distributor of CIPP lining and AIPPR coating process that has been in business since 2003. Pipe Lining Supply materials meet all industry standards and the methods of installation conforming to those standards. Burtech Pipeline, Inc. has been trained in the CIPP process including the CIPP standards as well as the California Greenbook standards using materials manufactured specifically for this process.



John M. Heisler
V. President

*YOUR CURED IN PLACE PIPE (CIPP) &
APPLIED IN PLACE PIPE REHABILITATION (AIPPR) SUPPLIER*



DTA Trenchless Supplies

3124 E Isaiah Ave.

Gilbert, AZ 85298

www.dtatrenchlessupplies.com

LINER INSTALLATION LICENSE

Date: October 31, 2019

This is to certify that Burtech Pipeline, Inc, is a licensed CIPP installer of Easy Liner. DTA Trenchless Supplies is a subsidiary of Easy Liner and has over 30 years experience of liner manufacturing. Easy Liners are manufactured in accordance with the specifications of DTA Trenchless Supplies and comply with the requirements of ASTM F1216. Easy Liners are comprised of Felt and coated components from Applied Felts, Non-Woven Solutions, and Haartz Materials. Additionally, the liner utilizes a resin from AOC or interplastic with a catalyst system from Akzo Nobel.

A handwritten signature in black ink, appearing to read "Missy Grady", is written over a horizontal line. The signature is fluid and cursive.

Missy Grady, CFO



Statement of Qualifications

Nu-Line Technologies, LLC has been successfully protecting infrastructure utilities since January of 2015. Nu-Line Technologies, LLC was introduced to the local wastewater and storm water infrastructure with the City of San Diego in 2015. Prior to our name change in January of 2015, we successfully completed infrastructure projects with the City of San Diego and other local agencies as Burtech Pipeline Inc. since 2007. With a new focus on infrastructure rehabilitation in our immediate San Diego Market, Nu-Line Technologies, LLC was launched to focus strictly on infrastructure rehabilitation methodologies with the advancement of mainline Cured-In-Place lining as well as service lateral connections (UV Curing) and lateral lining rehabilitation.

Installation Experience

Our installation crews have a minimum 10 years of experience in the Cured in Place field and have successfully completed projects throughout the western United States. Our Field Superintendent, Jorge Beltran has overseen and completed smaller to large scale projects throughout the western region since 1999. We are a fully licensed and bonded General Engineering Contractor and have completed many projects as Nu-Line Technologies, LLC similar in size and scale in California and New Mexico.

Industry Qualifications

- Licensed General Contractor in the State of California, License No. 997520 - A
- City of Los Angeles/Greenbook Approved materials for Cured In Place and UV Service Lateral Connections
- Confined Space Certified, First aid and CPR certified.
- Certified Installer of Cosmic UV Top Hats & Sectional Liner
- Certified Installer of Applied Felts CIPP liner materials.
- Certified Installer of Sekisui SPR Americas Spiral Wound Pipeline products.
- Certified Installer of MTC (Aegion) CIPP Liner Products.
- ISNetworld trained and certified

Nu-Line Technologies, LLC. and its employees are fully cognizant and comply with all Federal and State OSHA regulations regarding confined space entry and procedures.

Frank Durazo

A handwritten signature in black ink, appearing to read "Frank Durazo", written in a cursive style.

Operations Manager — Nu-Line Technologies, LLC.



APPLIED FELTS

Applied Felts, Inc. 450 College Drive, Martinsville, Virginia 24112
Telephone (276) 656-1904 Fax: (276) 656-1909
office@appliedfelts.com

April 3, 2015

To Whom It May Concern:

This letter certifies that Applied Felts manufactured tubes meet the material requirements of ASTM F1216-09 (paragraph 5.1) and ASTM F 1743-08(section 6) as well as meet the minimum strength requirements of ASTM-D5813-04 (paragraph 6.1). All our materials and finished products are tested to ensure suitability to the application. Each liner is typically tested in 28 different ways and traceable test data is available for any particular liner.

Applied Felts has provided polymer coated felt tubes for use in Cured In Place Pipe (CIPP) lining for more than fifteen years, and supplied materials for the CIPP industry for more than twenty years. Over 75 million feet of our liner has been successfully installed in North America. Our liners are assembled in Martinsville, VA, using only components made in the USA.

Applied Felts is a registered ISO 9001:2008 company.
Nu-Line Technologies, LLC is a certified installer of Applied Felts lining products.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Mark Sanders'.

W. Mark Sanders
General Manager



FERRATEX
Professional Cured-In-Place wet out services built on 25 years of experience!

20520 Unico Road
McKenney, VA 23872
804.451.3667
www.FerraTex.com

LINER INSTALLATION LICENSE

Date: January 3, 2015

This is to certify that Nu-Line Technologies, LLC is a licensed CIPP installer of the FerraTex Liner. FerraTex is a subsidiary of Spiniello Companies and has 25 years' experience of liner manufacturing in the United States. FerraTex Liners are manufactured in accordance with the specifications of FerraTex and comply with the requirements of ASTM F1216. FerraTex liners are comprised of Felt and coated felt components from Applied Felts, Non-Woven Solutions, and Haartz Materials. Additionally the liner utilizes a resin from AOC or interplastics with a catalyst system from Akzo Nobel.

Gerhardt Rodenberger
Division Manager, CIPP



Certificate of Registration

COPY

QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

This is to certify that:

**Applied Felts Inc.
450 College Drive
Martinsville
Virginia
24112
USA**

Holds Certificate No: **FM 55735**

and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:

Manufacture of textile products used in pipeline rehabilitation.

For and on behalf of BSI:

Gary Fenton, Global Assurance Director

Originally Registered: **08/15/2000**

Latest Issue: **05/14/2012**

Expiry Date: **05/31/2015**



Page: 1 of 1

This certificate remains the property of BSI and shall be returned immediately upon request.
An electronic certificate can be authenticated [online](#). Printed copies can be validated at www.bsigroup.com/ClientDirectory
To be read in conjunction with the scope above or the attached appendix.
Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 845 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.





APPLIED FELTS

Applied Felts, Inc. 450 College Drive, Martinsville, Virginia 24112
Telephone (276) 656-1904 Fax: (276) 656-1909
office@appliedfelts.com



Material Health and Safety Data Sheet

EFFECTIVE DATE: APRIL 26, 2012

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

PRODUCT NAME: POLYURETHANE COATED LINER

SUPPLIER: Applied Felts, Inc
450 College Drive
Martinsville, VA 24112

TELEPHONE: (276) 656-1904

FAX: (276) 656-1909

2. COMPOSITION/INFORMATION ON INGREDIENTS

COATING: Thermoplastic Polyurethane Polymer
SUBSTRATE: Polyethylene Terephthalate Felt

3. HAZARDS IDENTIFICATION

HAZARDS DESIGNATION: Not Classified as a Hazardous Material.
POTENTIAL HEALTH HAZARDS: During decomposition or combustion, the product can cause irritation to eyes, skin, or respiratory tract. As a delayed effect, sensitization to isocyanates may occur.

4. FIRST AID MEASURES

INHALATION: No effects anticipated
INGESTION: No effects anticipated
SKIN: No effects anticipated
EYES: No effects anticipated



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 Telephone (276) 656-1904 Fax: (276) 656-1909
 office@appliedfelts.com



5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	Water, Foam, Dry Chemical
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon Dioxide (CO ²), Carbon Monoxide (CO), Hydrogen Cyanide (HCN), Oxides of Nitrogen, Hydrocarbons and Diisocyanate
SPECIAL PROTECTIVE EQUIPMENT:	Positive pressure self-contained breathing apparatus

6. ACCIDENTAL RELEASE MEASURES

SPILL CLEAN-UP METHODS:	N/A
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7. HANDLING AND STORAGE

USAGE PRECAUTIONS:	N/A
STORAGE PRECAUTIONS:	N/A

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

PROTECTIVE EQUIPMENT	
VENTILATION:	N/A
RESPIRATORS:	N/A
PROTECTIVE GLOVES:	N/A
EYE PROTECTION:	N/A
GENERAL PROTECTIVE AND HYGIENIC MEASURES:	Standard industry safety and hygiene principles should be exercised

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM:	Polyurethane coated liner
COLOR:	White
ODOR:	Faint
MELT POINT – FELT	260° C
MELT POINT – COATING	> 177° C
DENSITY – FELT	150 – 200 Kg/m ³
DENSITY – COATING	1100 – 1300 Kg/m ³
FLAMMABILITY	N/A



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office@appliedfelts.com



10. STABILITY AND REACTIVITY

STABILITY:

Normally Stable

CONDITIONS/MATERIALS TO BE AVOIDED:

Excessive heat, Organic solvents

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon Dioxide (CO²), Carbon Monoxide (CO), Hydrogen Cyanide (HCN), Oxides of Nitrogen, Hydrocarbons and Diisocyanate, are all anticipated at levels above trace

FIRE CREATES:

11. TOXICOLOGICAL INFORMATION

HEALTH WARNINGS:

No health risk at ambient temperatures.
Elevated temperatures may cause this product to emit irritating vapors

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS:

Not biologically degradable.
Bioaccumulation improbable
Generally not hazardous to water

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:

Dispose of waste by incineration or in landfill in accordance with local regulations

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS CARGO

15. REGULATORY INFORMATION

DESIGNATION ACCORDING TO EUROPEAN COMMISSION GUIDELINES:

No known regulations related to this product.
Observe the local safety regulations for handling chemicals.



APPLIED FELTS

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Telephone (276) 656-1904 Fax: (276) 656-1909
office@appliedfelts.com



16. OTHER INFORMATION

This data is based on our present knowledge. However, they shall not be constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

NFPA® HAZARD RATING

HEALTH:	1	Slight
FIRE:	1	Slight
REACTIVITY	0	Minimal

HMIS® HAZARD RATING

HEALTH:	1	Slight
FIRE:	1	Slight
PHYSICAL:	0	Minimal

SUPERSEDES MSDS DATED: JUNE 4, 2008

Product Information

Vipel® Isophthalic Based Resin for Underground Sewer Pipe Liners

TYPICAL LIQUID RESIN PROPERTIES*(1) Vipel® L704-NET-11 see back page

	Nominal
Viscosity @ 77°F/25°C, RVF Brookfield Spindle #4 @ 20 RPM, cps.	5,600
Thix Index 2/20	4.3
Color	Opaque
Specific Gravity @ 77°F/25°C	1.11
Non-Volatiles, %	62
Gel Time @ 140°F with (1.0% Di-(4-tert-butyl-cyclohexyl) peroxydicarbonate and 0.5% Trigonox® KSM), minutes	11
Pot Life @ 77°F/25°C (1% Di-(4-tert-butyl-cyclohexyl) peroxydicarbonate and + 0.5% Trigonox® KSM), hours	40

Trigonox is a trademark of Akzo Nobel Chemicals

TYPICAL CAST MECHANICAL PROPERTIES* (2) see back page

		Test Method
Tensile Strength, psi/MPa	13,500/93.1	ASTM D 638
Tensile Modulus, psi/GPa	600,000/4.1	ASTM D 638
Tensile Elongation, %	3.0	ASTM D 638
Flexural Strength, psi/MPa	23,300/161	ASTM D 790
Flexural Modulus, psi/GPa	630,000/4.3	ASTM D 790
Heat Distortion Temperature, °F/°C @ 264 psi	212/100	ASTM D 648
Barcol Hardness	40	ASTM D 2583

*Typical properties are not to be construed as specifications.



DESCRIPTION

The Vipel® L704-NET-11 is a high molecular weight isophthalic/unsaturated polyester resin. Vipel® L704-NET-11 Series provides the corrosion resistance, durability and toughness that is required for cured in place pipe applications. Refer to the AOC Corrosion Resistant Resin Guide for corrosion resistance information listed under Vipel® F701.

FEATURES

- Excellent catalyzed pot life
- Superior mechanical properties
- High molecular weight
- High viscosity version

BENEFITS

Adaptability

AOC's Vipel® L704-NET-11 molecular architecture provides an excellent balance of corrosion and physical properties.

Vipel® L704-NET-11 Polyester Resin

PERFORMANCE GUIDELINES

A. Keep full strength catalyst levels between 1.0% - 3.0% of the total resin weight.

B. Maintaining shop temperatures between 65°F/ 18°C and 90°F/32°C and humidity between 40% and 90% will help the fabricator make a high quality part. Consistent shop conditions contribute to consistent gel times.

STORAGE STABILITY

Resins are stable for three months from date of production when stored in the original containers away from sunlight at no more than 77°F/25°C. After extended storage, some drift may occur in gel time.

During the hot summer months, no more than two months stability at 86°F/30°C should be anticipated.

SAFETY

See appropriate Material Safety Data Sheet for guidelines.

ISO 9001:2000 CERTIFIED

The Quality Management Systems at every AOC manufacturing facility have been certified as meeting ISO 9001:2000 standards. This certification recognizes that each AOC facility has an internationally accepted model in place for managing and assuring quality. We follow the practices set forth in this model to add value to the resins we make for our customers.

FOOTNOTES

(1)

The pot life times shown are typical but may be affected by catalyst, promoter and inhibitor concentrations in resin, and environmental temperature. Variations in gelling characteristics can be expected between different lots of catalysts and at extremely high humidities. Pigment and fillers can retard or accelerate gelation. It is recommended that the fabricator check the gelling characteristics of a small quantity of resin under actual operating conditions prior to use.

(2)

Based on tests on Vipel™ L704-NET-11 pipe at 77°F/25° and 50% relative humidity. Castings were prepared using 1.0% Perkadox 16 and 0.5 Trigonox C.

The information contained in this data sheet is based on laboratory data and field experience. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume any liability for occurrences arising out of its use. The user, by accepting the products described herein, agrees to be responsible for thoroughly testing each such product before committing to production.

Our recommendations should not be taken as inducements to infringe any patent or violate any law, safety code or insurance regulation.



950 HIGHWAY 57 EAST
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Fax: (44) 1473 216080
europe@aoc-resins.com




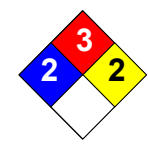

**ASTM F1216 TEST RESULTS ON L704 SERIES
ONE MONTH RESULTS AT 77°F**

	L704 (Isophthalic)	REQUIREMENTS %	PASS OR FAIL
CONTROL SAMPLE			
FLEXURAL STRENGTH, psi	9,544		
STANDARD DEVIATION	252		
FLEXURAL MODULUS, psi	564,989		
STANDARD DEVIATION	15,329		
TAP WATER			
FLEXURAL STRENGTH, psi	10,915		
STANDARD DEVIATION	432		
% FLEXURAL STRENGTH, psi RETENTION	100	>80	PASS
FLEXURAL MODULUS, psi	563,496		
STANDARD DEVIATION	10,993		
% FLEXURAL MODULUS RETENTION	100	>80	PASS
5% NITRIC ACID			
FLEXURAL STRENGTH, psi	10,672		
STANDARD DEVIATION	894		
% FLEXURAL STRENGTH, psi RETENTION	100	>80	PASS
FLEXURAL MODULUS, psi	528,173		
STANDARD DEVIATION	13,842		
% FLEXURAL MODULUS RETENTION	100	>80	PASS
10% PHOSPHORIC ACID			
FLEXURAL STRENGTH, psi	10,301		
STANDARD DEVIATION	1,439		
% FLEXURAL STRENGTH, psi RETENTION	100	>80	PASS
FLEXURAL MODULUS, psi	552,544		
STANDARD DEVIATION	9,333		
% FLEXURAL MODULUS RETENTION	98	>80	PASS
10% SULFURIC ACID			
FLEXURAL STRENGTH, psi	12,438		
STANDARD DEVIATION	620		
% FLEXURAL STRENGTH, psi RETENTION	100	>80	PASS
FLEXURAL MODULUS, psi	545,889		
STANDARD DEVIATION	6,319		
% FLEXURAL MODULUS RETENTION	97	>80	PASS
AMOCO GASOLINE			
FLEXURAL STRENGTH, psi	9,209		
STANDARD DEVIATION	1278		
% FLEXURAL STRENGTH, psi RETENTION	97	>80	PASS
FLEXURAL MODULUS, psi	567,531		
STANDARD DEVIATION	4,611		
% FLEXURAL MODULUS RETENTION	100	>80	PASS

VEGETABLE OIL			
FLEXURAL STRENGTH, psi	11,809		
STANDARD DEVIATION	2,484		
% FLEXURAL STRENGTH, psi RETENTION	100	>80	PASS
FLEXURAL MODULUS, psi	549,755		
STANDARD DEVIATION	27,235		
% FLEXUARAL MODULUS RETENTION	97	>80	PASS
0.1% DETERGENT			
FLEXURAL STRENGTH, psi	8,073		
STANDARD DEVIATION	1,732		
% FLEXURAL STRENGTH, psi RETENTION	85	>80	PASS
FLEXURAL MODULUS, psi	511,284		
STANDARD DEVIATION	15,837		
% FLEXUARAL MODULUS RETENTION	91	>80	PASS
0.1% SOAP			
FLEXURAL STRENGTH, psi	11,756		
STANDARD DEVIATION	325		
% FLEXURAL STRENGTH, psi RETENTION	100	>80	PASS
FLEXURAL MODULUS, psi	549,192		
STANDARD DEVIATION	11,869		
% FLEXURAL MODULUS RETENTION	97	>80	PASS

August 1, 1999

The information contained in this data sheet is based on laboratory data and field experience. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume any liability for occurrences arising out of its use. The user, by accepting the products described herein, agrees to be responsible for thoroughly testing any application before committing to production.
Our recommendation should not be taken as inducements to infringe any patent or violate any law, safety code or insurance regulation.

<p>WHMIS (Canada)</p>  <p>B-2 D-2A D-2B</p>	<p>NFPA (USA)</p> <p>Fire</p>  <p>Health Reactivity</p> <p>Specific hazard</p>	<p>HMIS (USA)</p> <table border="1"> <tr> <td>Health hazards</td> <td>* 2</td> </tr> <tr> <td>Flammability</td> <td>3</td> </tr> <tr> <td>Physical hazards</td> <td>2</td> </tr> <tr> <td>Personal protection</td> <td>X</td> </tr> </table>	Health hazards	* 2	Flammability	3	Physical hazards	2	Personal protection	X	<p>Protective clothing</p> 
Health hazards	* 2										
Flammability	3										
Physical hazards	2										
Personal protection	X										

Section 1. Chemical product and company identification

Trade name	L704-NET-11	
Product type	Polyester Resin Solution	
Chemical family	Aromatic.	
Material uses	Used in the manufacture of thermoset plastic parts.	
Manufacturer	AOC, LLC 950 Highway 57 East Collierville, TN U.S.A. 38017 Website: www.aoc-resins.com Phone Number: (901) 854-2800 8am-5pm (Central Time) Mon-Fri	<p>In case of emergency</p> <p>CHEMTREC (US): 24 hours/7 days (800) 424-9300 CANUTEC (Canada): 24 hours/7 days (613) 996-6666</p>

Section 2. Hazards identification

OSHA status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Routes of entry	Eye contact, Skin contact, Inhalation, Ingestion
Potential acute health effects	<p>Eyes: Severe eye irritant which may result in redness, burning, tearing and blurred vision.</p> <p>Skin: Skin irritant which may result in burning sensation. Repeated or prolonged skin contact may cause dermatitis.</p> <p>Ingestion: Ingestion may result in mouth, throat and gastrointestinal irritation, nausea, vomiting and diarrhea.</p> <p>Inhalation: Inhalation of spray mist or liquid vapors may cause upper respiratory irritation and possible central nervous system effects including headaches, nausea, vomiting, dizziness, drowsiness, loss of coordination, impaired judgement and general weakness.</p>
Potential chronic health effects	<p>CARCINOGENIC EFFECTS: Styrene: Classified A4 (not classifiable for human or animal) by ACGIH. Classified 2B (possible for human) by IARC. An increased incidence of lung tumors was observed in mice from a recent inhalation study. The relevance of this finding is uncertain since data from other long-term animal studies and from epidemiology studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic to humans. Lung effects have been observed in mouse studies following repeated exposure.</p> <p>Silica, Amorphous: Classified 3 (not classifiable for human) by IARC.</p> <p>MUTAGENIC or TERATOGENIC EFFECTS: No known effect according to our database.</p>

Section 3. Composition/information on ingredients

Name	CAS #	% by weight
1) Styrene	100-42-5	40.7
2) Silica, Amorphous	7631-86-9	1 - 5

Section 4. First aid measures

Eye contact	Flush with a continuous flow of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Use of buffered baby shampoo will aid in removal. Seek medical attention.
Skin contact	Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. If irritation persists, seek medical attention.
Inhalation	Move the victim to a safe area as soon as possible. Allow the victim to rest in a well-ventilated area. If breathing is difficult, give oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.
Ingestion	Do not induce vomiting. Seek immediate medical attention.

Section 5. Fire-fighting measures

The product is:	Flammable liquid, Class IC.
Auto-ignition temperature	914°F(490°C) Styrene
Flash point	87.6°F (31°C) Styrene
Flammable limits	Lower: 0.9% Upper: 6.8% (Styrene)
Products of combustion	May produce carbon monoxide, carbon dioxide, and irritating or toxic vapors, gases or particulate.
Fire hazard	Flammable in the presence of open flames, sparks, or heat.
Explosion hazard	Can react with oxidizing materials. Explosive in the form of vapor when exposed to heat or flame. Material may polymerize when container is exposed to heat (fire) and polymerization will increase pressure in a closed container which may cause the container to rupture violently.
Fire-fighting media and instructions	SMALL FIRE: Use carbon dioxide, foam, dry chemical or water fog to extinguish. LARGE FIRE: Evacuate surrounding areas. Use carbon dioxide, foam, dry chemical or water fog to extinguish. Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Cool containing vessels with water spray in order to prevent pressure build-up, autoignition or explosion. Prevent run off to sewers or other water ways.

Section 6. Accidental release measures

Small spill	Absorb with an inert material and place in an appropriate waste disposal container.
Large spill	Stop leak if without risk. Eliminate all ignition sources. Contain with an inert material, recover as much as possible and place the remainder in an appropriate waste disposal container. Warn unauthorized personnel to move away. Prevent entry into sewers or confined areas.

Section 7. Handling and storage

Handling	WARNING! Use only in well-ventilated areas. Store away from direct sunlight. Avoid inhalation and contact with eyes, skin, and clothing. Wear appropriate personal protective equipment for your task. Ground and bond all containers when transferring the material. Empty containers may retain product and product vapor. Do not expose to heat, flame, sparks or other ignition sources such as cutting, welding, drilling, grinding or static electricity. Do not pressurize. Provide adequate safety showers and eyewashes in the area of use. Note: If product contains metal compounds (Section III), avoid dust from dried product or grinding of articles made from this material.
Storage	Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Containers should be grounded.

Section 8. Exposure controls/personal protection

Exposure limits	Styrene	<p>ACGIH TLV (United States, 2/2010). Absorbed through skin. TWA: 20 ppm 8 hour(s). TWA: 85 mg/m³ 8 hour(s). STEL: 40 ppm 15 minute(s). STEL: 170 mg/m³ 15 minute(s).</p> <p>OSHA PEL Z2 (United States, 11/2006). TWA: 100 ppm 8 hour(s). CEIL: 200 ppm AMP: 600 ppm 5 minute(s).</p> <p>NIOSH REL (United States, 6/2009). TWA: 50 ppm 10 hour(s). TWA: 215 mg/m³ 10 hour(s). STEL: 100 ppm 15 minute(s). STEL: 425 mg/m³ 15 minute(s).</p> <p>NIOSH REL (United States, 6/2009). TWA: 6 mg/m³ 10 hour(s).</p> <p>While the federal workplace exposure limit for styrene is 100 ppm, OSHA accepted the styrene industry's proposal to voluntarily meet a PEL of 50 ppm on an 8 hours TWA.</p>
	Silica, Amorphous	
Engineering controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Provide adequate safety showers and eyewashes in the area of use.	
Personal protection	<p>Personal protective equipment may vary depending on the job being performed.</p> <p>Eye/face: Wear eye protection such as safety glasses with side shields, splash goggles or face shield with safety glasses.</p> <p>Skin: Avoid skin contact. Impervious gloves should be worn. Other items may include long sleeves, lab coats, or impervious jackets.</p> <p>Respiratory: Determine if airborne concentrations are below the recommended exposure limits in accordance your company's PPE program and regulatory requirements. If they are not, select a NIOSH-approved respirator that provides adequate protection from the concentration levels encountered. Air-purifying respirators are generally adequate for organic vapors. Use positive pressure, supplied-air respirators if there is potential for an uncontrolled release, if exposure levels are unknown, or under circumstances where air-purifying respirators may not provide adequate protection. Reference OSHA 29 CFR 1910.134.</p>	
Personal protection in case of a large spill	Chemical resistant gloves, full protective suit, and boots. Respiratory protection in accordance with OSHA regulation 29 CFR 1910.134. A self-contained breathing apparatus should be used to avoid inhalation of the product vapors.	

Section 9. Physical and chemical properties

Physical state	Liquid.
Color	Clear to Amber.
Odor	Aromatic.
Molecular weight (g/mol)	1000 to 15000
Boiling point	293°F(145°C) Styrene
Melting point	Not available.
pH (1% soln/water)	Not applicable.
Vapor pressure	4.5 mm Hg@ 68°F (20°C) Styrene
Vapor density	3.59 Styrene (Air = 1)
Specific gravity	1.1 (Water = 1)
Water/oil dist. coeff.	Not available.
Evaporation rate	Not available.

Section 9. Physical and chemical properties

Odor threshold	0.14 ppm Styrene
Solubility in water	Slight.
Dispersibility properties	Not dispersed in water.

Section 10. Stability and reactivity

Stability	This product is normally stable, but can become unstable at elevated temperatures and undergo polymerization, which could produce heat and fumes resulting in over-pressurization and rupture in a closed container.
Instability temperature	>170°F (77°C)
Conditions of instability	Heat.
Incompatibility with various substances	Polymerizes in the presence of organic peroxides, oxidizing materials, or heat.
Corrosivity	Our database contains no additional remark on the corrosivity of this product

Section 11. Toxicological information

Toxicity to animals	Name	Result	Species	Dose	Exposure
	Styrene	LD50 Oral	Rat	2650 mg/kg	-
		LC50 Inhalation Vapor	Rat	5634.2 ppm	4 hours
Special remarks on toxicity to animals	Lung effects have been observed in mouse studies following repeated exposure.				
Special remarks on chronic effects on humans	No additional remark.				
Special remarks on other toxic effects on humans	No additional remark.				


Section 12. Ecological information

Ecotoxicity	Toxic to aquatic organisms. Should not be released to sewage system or other bodies of water at concentrations above limits established in regulations or permits.
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Section 13. Disposal considerations

Waste disposal	Recycle to process, if possible. Consult your local or regional authorities. Ignitable characteristic.
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Section 14. Transport information

DOT	UN1866; Resin Solution; 3; III.	Labels 
TDG	UN1866; Resin Solution; 3; III.	
IATA/IMDG	UN1866; Resin Solution; 3; III	
Additional information	US regulations require the reporting of spills when the amount exceeds the Reportable Quantity (RQ) for specific components of this material. See CERCLA in Section 15, Regulatory Information, for the Reportable Quantities.	

Section 14. Transport information**Section 15. Regulatory information****Other regulations**

This section does not reference all applicable regulatory compliance lists.

TSCA: All ingredients are listed or compliant with TSCA.

DSL: All ingredients are listed or compliant with the NSNR.

Proposition 65 Warning: This product contains a chemical(s) known to the State of California to cause cancer, birth defects and/or reproductive harm.

SARA 302 component(s): None.

SARA 313 component(s): Styrene.

CERCLA(RQ): Styrene - 1000 lbs. (453.6 kg)

Section 16. Other information**Prepared by**

AOC, LLC - Corporate Regulatory Affairs.

CA; FL; ON

LEGAL DISCLAIMER

The information contained in this data sheet is furnished in good faith and without warranty, representation, or inducement or license of any kind, except that it is accurate to the best of AOC, LLC's knowledge, or was obtained from sources believed by AOC, LLC to be reliable. The accuracy, adequacy or completeness of health and safety precautions set forth herein cannot be guaranteed, and the buyer is solely responsible for ensuring that the product is used, handled, stored, and disposed of safely and in compliance with applicable federal, state or provincial, and local laws. AOC, LLC disclaims liability for any loss, damage or personal injury that arises from, or is in any way related to, use of the information contained in this data sheet.

CLIENT: AOC
950 Hwy 57 East
Collierville, TN 38017
Attn: Bruce Curry

Re: PO 5061

MATERIAL: One set of fifty rectangular coupons made with 6mm felt impregnated with Vipel™L704 resin were submitted and identified by the client.

TESTING: Chemical Resistance testing per ASTM D5813-95, paragraphs 6.4.1 and 8.2.1 was conducted. Coupons were exposed in accordance with ASTM D543-95 in the solutions shown in the table below at room temperature for a one-year immersion period. Flexural properties testing as described below will be conducted at the conclusion of the immersion period.

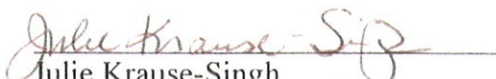
Chemical Solution	Concentration, %
Nitric acid	1
Sulfuric acid	5
ASTM Fuel C	100
Vegetable oil	100
Detergent	0.1
Soap	0.1


One set of Control coupons was tested for initial flexural properties as reported in Hauser Laboratories Test Report No. M00248A on August 31, 1999. A second set of Control coupons was exposed for one year at 50% Relative Humidity, and 23°C. These coupons were tested on August 9, 2000 along with the exposed coupons. All testing was conducted in accordance with ASTM D790-98, Procedure A using a span-to-depth ratio of 16:1.

RESULTS: The results are summarized in Table 1 and presented in detail in Table 2. All values exceeded the ASTM D5813 requirements of at least 80% retention of flexural modulus after one-year immersion in all solutions.

TESTING SUPERVISED BY:

TESTING CONDUCTED BY:


Julie Krause-Singh
Department Manager


Dale J. Beasley
Technician III

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TABLE 1
SUMMARY OF CHEMICAL RESISTANCE TEST RESULTS

Solution	Average Retention of Flexural Strength*	Average Retention of Flexural Modulus*
	%	%
Nitric Acid	89	96
Sulfuric Acid	103	95
ASTM Fuel C	145	97
Mineral Oil	112	98
Detergent	118	95
Soap	90	94
ASTM D5813 Requirement		80 minimum

*These calculations were based on the data from the Control sample tested 8/9/00.

TABLE 2
 CHEMICAL RESISTANCE TEST RESULTS

Specimen No.	Flexural Strength psi	Flexural Modulus psi
Vipel™L704		
Control 8/31/99		
1	4570	736000
2	5300	709000
3	5410	686000
4	4680	682000
5	7600	665000
6	8670	726000
7	8560	681000
Average	6400	698000
Std. Dev.	1820	26300
Control 8/9/00		
1	8530	528000
2	5180	548000
3	7750	548000
4	4520	590000
5	5340	586000
6	4530	556000
Average	5980	559000
Std. Dev.	1730	24200
1% Nitric Acid		
1	5580	528000
2	5650	531000
3	5800	543000
4	4400	527000
5	5080	521000
6	5300	555000
Average	5300	534000
Std. Dev.	510	12700

TABLE 2 CONTINUED
 CHEMICAL RESISTANCE TEST RESULTS

Specimen No.	Flexural Strength psi	Flexural Modulus psi
5% Sulfuric Acid		
1	5820	530000
2	5220	519000
3	5430	520000
4	5750	545000
5	7550	538000
6	6980	537000
Average	6130	531000
Std. Dev.	930	10300
ASTM Fuel C		
1	10300	521000
2	7640	535000
3	4990	536000
4	8490	574000
5	9080	542000
6	11600	560000
Average	8670	545000
Std. Dev.	2280	19200
Mineral Oil		
1	6680	523000
2	5930	509000
3	7790	582000
4	8610	571000
5	5030	566000
6	6290	548000
Average	6720	550000
Std. Dev.	1290	29000

TABLE 2 CONTINUED
 CHEMICAL RESISTANCE TEST RESULTS

Specimen No.	Flexural Strength psi	Flexural Modulus psi
Detergent		
1	7320	529000
2	7690	564000
3	4890	514000
4	7480	536000
5	7000	549000
6	7920	507000
Average	7050	533000
Std. Dev.	1100	21600
Soap		
1	5170	508000
2	5410	517000
3	4600	535000
4	5630	526000
5	4330	520000
6	6980	537000
Average	5350	524000
Std. Dev.	940	11100

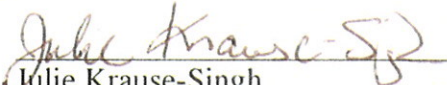
CLIENT: AOC
950 Highway 57 East
Collierville, TN 38017
Attn: Dave Treadwell

MATERIAL: Six each rectangular specimens from two plastic materials identified as felt composites L471 and L704 were submitted by the client. The specimens were each approximately 6 inches x ½ inch x 0.3 inches.

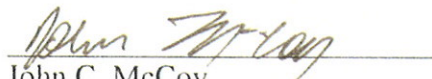
TESTING: Flexural creep testing per ASTM D2990-95 using a three-point static-load configuration with a span to depth ratio of approximately 16:1 and a stress level of 400 psi at 23°C and 50% Relative Humidity.

RESULTS: The results for 10000 hours are presented as both graphical and tabular data of flexural modulus versus time for each group of five specimens tested. Tabular results for sample L471 are presented in Table 1 and tabular results for sample L704 are presented in Table 2

TESTING SUPERVISED BY:


Julie Krause-Singh
Department Manager

TESTING CONDUCTED BY:


John C. McCoy
Technician II

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TABLE 2
 FLEXURAL CREEP DATA
 SAMPLE L704

TEMPERATURE: 23° C/ 50% RH
 STRESS: 400 psi

Elapsed Time Hours	FLEXURAL MODULUS, psi					Average
	1	2	3	4	5	
0.00						
0.02	810900	879100	649100	664400	739500	748600
0.10	810900	879100	649100	655900	729500	744900
0.20	798400	879100	641200	631600	710300	732100
0.50	774600	865200	633400	631600	710300	723000
1.00	774600	851700	618500	601900	666400	702600
2.00	741400	838600	604300	588000	666400	687800
3.43	720800	825900	597500	574800	658300	675500
22.08	632900	707900	547700	522000	580400	598200
68.58	625300	681300	505500	491900	550800	571000
114.2	570300	656700	469400	465100	509200	534200
257.4	503900	524100	381000	409300	461400	455900
456.0	439800	514200	378200	362800	412100	421400
792.8	393200	454200	339200	332200	374900	378700
1414.3	368100	436000	326600	321800	350500	360600
1651.6	360400	425800	320600	315800	339500	352400
1802.0	341400	400800	303900	292300	325200	332700
2011.3	339200	400800	303900	292300	323200	331900
2109.6	337000	400800	302200	290700	321300	330400
2154.9	337000	397900	302200	290700	321300	329800
2322.8	332700	397900	302200	289000	317500	327900
2660.8	332700	397900	300400	289000	315700	327100
2808.1	330600	395000	300400	287400	313800	325400
3002.1	330600	395000	300400	287400	313800	325400
3193.5	328500	386600	292100	285800	312000	321000
3312.6	314500	378500	288900	278000	305000	313000
3547.9	310800	373300	282700	272100	301600	308100
3618.8	309800	372100	282700	272100	301600	307700
3834.1	308900	370800	282700	272100	299900	306900
4003.4	307100	370800	282700	272100	299900	306500
4171.3	305300	370800	282700	270700	298200	305500
4513.7	300000	365800	281200	267900	295000	302000

TABLE 2 CONTINUED
 FLEXURAL CREEP DATA
 SAMPLE L704

Elapsed Time Hours	FLEXURAL MODULUS, psi					Average
	1	2	3	4	5	
4676.1	298300	365800	279700	266500	295000	301000
5012.2	298300	363400	278200	265100	295000	300000
5186.1	298300	363400	278200	265100	295000	300000
5392.3	296600	361000	278200	262400	293400	298300
5689.7	296600	361000	276700	262400	293400	298000
5901.7	294900	361000	275300	262400	293400	297400
6021.8	294900	361000	273800	262400	291800	296800
6167.8	291600	361000	273800	259700	290200	295300
6331.0	291600	361000	275300	259700	290200	295500
6719.3	291600	358600	273800	259700	290200	294800
7338.3	283600	349400	268200	254500	281100	287400
7507.1	283600	349400	271000	253300	281100	287700
7866.4	285200	349400	266900	254500	282600	287700
8251.8	285200	347200	266900	253300	281100	286700
8376.1	282100	347200	266900	253300	281100	286100
8512.6	282100	347200	266200	253300	281100	286000
9016.1	279800	345000	266900	252000	278200	284400
9261.1	279000	342800	265500	250800	278200	283300
9324.3	278300	342800	265500	250800	276800	282800
9571.7	278300	342800	265500	249600	276800	282600
9911.3	274600	338600	264200	248400	275400	280200
10025.4	274600	338600	264200	248400	275400	280200

FLEXURAL CREEP DATA SAMPLE L704
AT 400 PSI STRESS

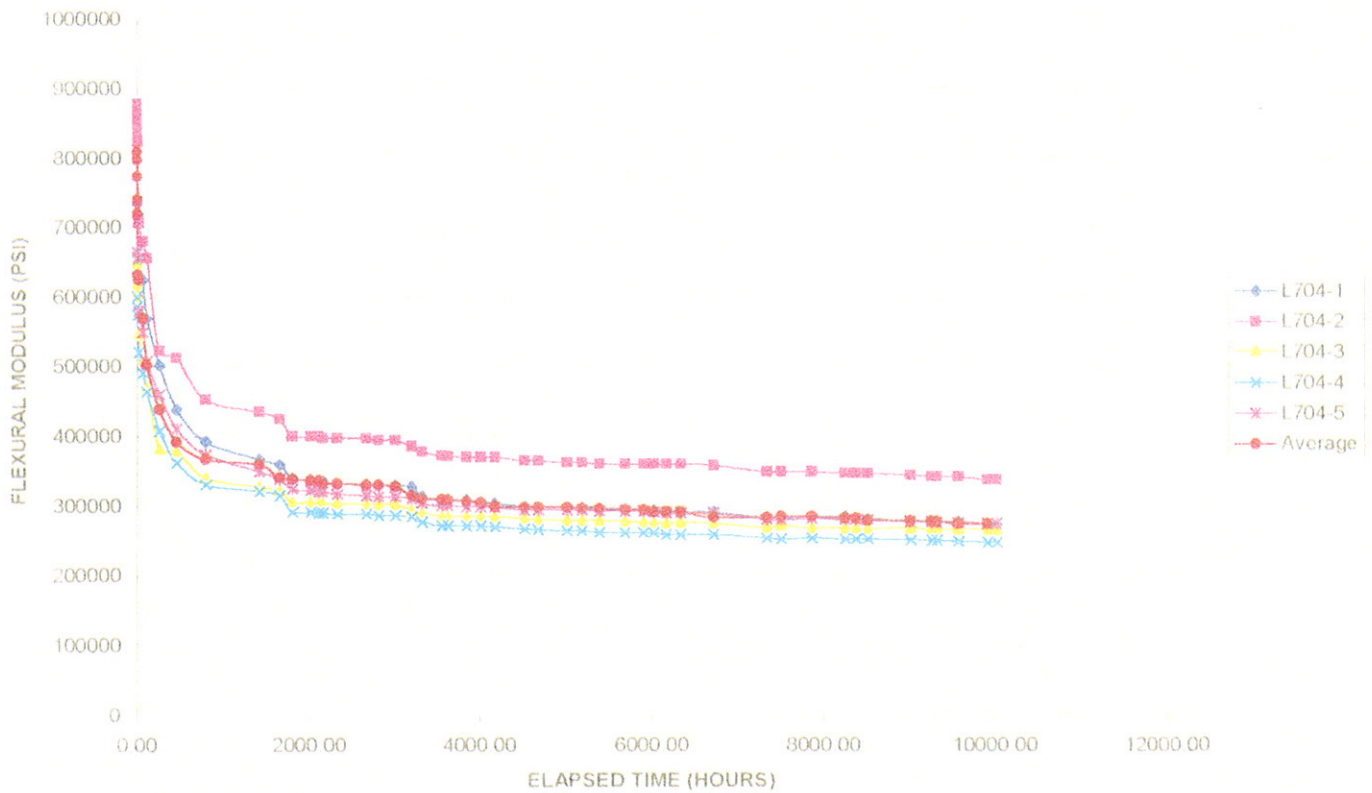


TABLE 1
 FLEXURAL CREEP DATA
 SAMPLE L471

TEMPERATURE: 23° C/ 50% RH
 STRESS: 400 psi

Elapsed Time Hours	FLEXURAL MODULUS, psi					Average
	1	2	3	4	5	
0.00						
0.02	643500	648300	562900	635700	696200	631600
0.10	643500	648300	562900	616100	672900	617300
0.20	629900	626200	547800	603600	658300	603300
0.50	623400	626200	547800	597600	658300	601300
1.00	604500	605600	528900	574600	630900	578200
2.00	598400	605600	528900	569100	630900	576300
3.67	586700	592500	524400	558500	605700	562900
22.4	529600	529900	487000	524200	571400	527500
68.8	498700	501000	468400	466900	513300	482800
114.4	460300	471000	441400	429900	488400	453300
257.6	393700	393600	383500	360000	406500	383300
456.3	367100	369800	354700	332000	371600	352700
793.1	328800	330000	319600	297300	329200	315300
1414.6	308500	309600	302300	274100	299800	292100
1651.9	297700	302800	295000	265600	291200	283900
1802.3	294800	278300	272700	252200	280400	268400
2011.5	275800	275500	269100	245900	272800	262600
2109.8	275800	275500	269100	245900	271600	262200
2155.2	274500	271500	266800	242900	266800	258800
2323.0	273300	270100	266773	242900	266800	258800
2661.0	270800	267500	263300	239000	262200	254900
2808.4	268400	266200	263300	236200	259900	253200
3002.4	266000	261200	258900	234400	255500	249600
3193.7	260200	258700	2535500	227200	250300	243700
3312.9	257900	256300	251466	224700	248200	241400
3548.2	256800	255100	250400	224700	247200	240800
3619.0	255700	255100	250400	224700	246200	240400
3834.4	255700	255100	250400	223800	245200	239800
4003.7	252500	252800	247400	221300	243200	237300
4171.6	252500	252800	247400	220500	243200	237100
4513.9	251400	249300	245400	219700	243233	236124

TABLE 1 CONTINUED
 FLEXURAL CREEP DATA
 SAMPLE L471

Elapsed Time Hours	FLEXURAL MODULUS, psi					Average
	1	2	3	4	5	
4676.4	248300	247100	243500	218100	241300	234300
5012.4	248300	246000	241600	216500	239400	232500
5186.3	247300	244900	240600	215700	238400	231600
5392.6	247300	244400	240600	215700	238400	231600
5689.9	247300	243800	240600	215700	237500	231300
5901.9	243300	242800	240600	215000	237500	231000
6022.0	242300	242800	240600	215000	236600	230700
6168.1	241300	241700	239700	213400	233800	229000
6331.3	246300	241700	239700	213400	233800	229000
6719.6	246300	241700	239700	213400	233800	229000
7338.6	241300	238600	236000	209700	232100	225900
7507.4	240300	238600	236000	209700	232100	225900
7866.7	240300	238600	236000	209700	232100	225900
8252.1	239400	238600	236000	209700	232100	225900
8376.3	239400	238600	235991	209700	232100	225909
8512.8	238400	238600	236000	209000	231200	225400
9016.3	237500	238600	236000	208200	230300	224800
9261.4	236500	237500	236000	208200	230300	224800
9324.6	236500	237500	236000	208200	230300	224800
9572.0	236500	237500	235100	207500	230300	224800
9911.6	235600	236500	234600	206100	227700	222800
10025.7	235600	236500	234600	206100	227700	222800

FLEXURAL CREEP DATA SAMPLE L471
AT 400 PSI STRESS





October 29, 2017

To Whom It May Concern:

This letter is to certify that the following licensee of Sekisui SPR Americas LLC has been trained and certified to install SPR-EX spiral wound liners.

Nuline Technologies – Effective date – November 2015

With the license, the customer has purchased equipment as well as completed a training course on the proper installation method of SPR-EX spiral wound rehabilitation process.

Kind Regards,

Joseph P. Dominguez
Sr. Technical Services Engineer,
Sekisui SPR Americas LLC

SUBMITTAL SUPPORT DOCUMENT
SPR™ EX



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1 Sekisui SPR Group Profile

The Sekisui SPR Group offers solutions for the challenges posed by ageing and deteriorating underground pipe infrastructure in the form of a variety of trenchless technologies.

Sekisui SPR employs some of the world's leading technical and operational infrastructure specialists and is thus positioned to provide solutions for all requirements – from planning through to construction – all from a single source.

In delivering those solutions, SEKISUI SPR operates in three divisions: Sales & Support, Trenchless Infrastructure Solutions and Construction. In concrete terms, this provides for a global interchange of experience between individual experts so as to devise the optimum infrastructure solution for the problem at hand.

For further information, please contact your local Sekisui SPR representative.

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Europe	KMG LinerTec GmbH An der Brehnaer Straße 1 06794 Glebitzsch Germany Christopher Moritz mail.linertec@sekisuispr.com

2 SPR™ EX Product Description

2.1 Product Overview

SPR™ EX is the result of extensive research and development performed by Sekisui SPR over a number of years. The SPR™ EX system was developed in Australia in 1983 and is a revolutionary process by which the efficiency, reliability and integrity of ageing sewers, storm drains and culverts can be improved.

The development of SPR™ EX has continued over the years with the introduction of additional profiles to cater for the rehabilitation of larger diameter pipelines. The equipment has also been updated with a state-of-the-art control system, drive-tray and driven cage technology.

SPR™ EX provides a “close-fit” structural liner and is suitable for non-pressure applications. It is commonly used for drainage, sewer and road culvert applications for diameters between 150mm (6in) and 1050mm (42in). The design and selection of cages can be implemented according to the actual diameters of the pipes to be rehabilitated. This effectively means that any diameter between 150mm (6in) and 1050mm (42in) can be rehabilitated with the SPR™ EX system.

The SPR™ EX liner system consists of a factory-extruded plastic profile, a patented winding machine and ancillary equipment such as specialised spools for profile handling and hydraulic power packs. The design of the machine enables the liner to be placed in close contact with the host pipe and can therefore be designed as a close fit liner.

The profiles are extruded in a factory environment where the quality of the process can be closely monitored and controlled. All seals required for the performance of the profile are also applied in this same environment. This ensures a product of consistently high quality.

SPR™ EX has a unique double-locking configuration (Figure 1). The secondary lock is formed using hot melt adhesive which holds the liner at a constant diameter as it is wound in the winding machine at the base of the access chamber; this diameter is set smaller than the host pipe (Figure 2). The winding machine also inserts a high strength steel “cutting wire” between the primary and secondary locks as the edges of the profile are locked together.

After the liner is wound from one manhole to the next, the end of the liner is held in position and the secondary lock progressively severed by pulling the cutting wire. The edges of the profile are then free to slide relative to one another, along the primary lock, as the winding machine continues to wind more profile; it is this mechanical process that causes the liner to expand. Expansion continues until the liner contacts the wall of the host pipe. The primary lock contains a slow-setting lubricating sealant that, until it sets, aids the expansion process by acting as a lubricant.

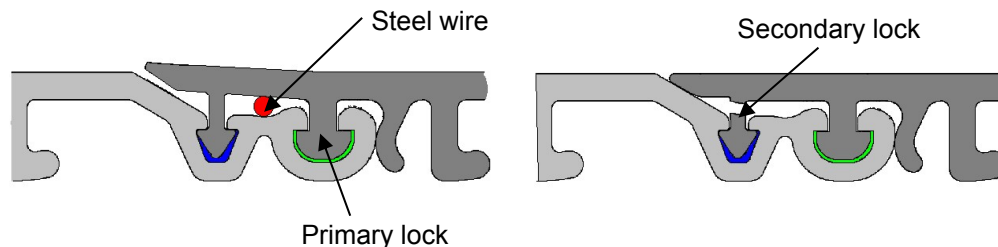


Figure 1: Example of an SPR™ EX lock, before (left) and after (right) expansion of the liner



Figure 2: The SPR™ EX Installation Process

This process means that SPR™ EX provides a maximum internal diameter liner, with a circular cross section and constant wall thickness irrespective of the size and shape of the deteriorated host pipe.

Several different sizes and configurations of plastic profile are available to provide a structural liner that meets the size and structural requirements of the design.

Lateral connections to the mains can be remotely cut then, if required, sealed with polyurethane or other approved types of sealant.

As an alternative to expanding the liner until it presses against the interior surface of the existing pipeline, the liner can be kept at a fixed diameter within the host pipe with the annular space between the liner and the existing pipe being grouted (Figure 3). This is an infrequent requirement and the manufacturer should be consulted.

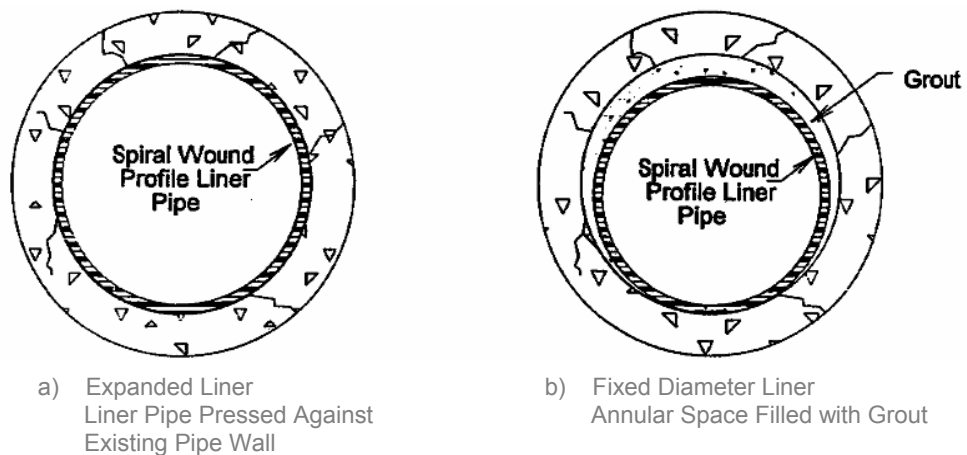


Figure 3: UngROUTED Expanded Liner and Grouted Fixed Diameter Liner

A range of SPR™ EX profiles can be produced to meet different stiffness requirements. SPR™ EX has been tested in accordance with the relevant international standards and is approved for use in various countries.

SPR™ EX profiles have been installed in ambient temperatures in excess of 35°C (95°F) and less than 0°C (32°F) without any adverse effects. The nature of the installation process and the use of factory manufactured profiles allow the use of preheating to prevent installation problems in low ambient temperatures (less than 15°C (59°F)). At such temperatures other lining systems can experience problems, adding yet another variable to their lining process.

Profile Range

As the pipe diameter increases, the height of the profile also increases to achieve the required stiffness. The profiles have a height ranging from 7mm (0.276in) to 20mm (0.787in), and are shown in Figure 4 below.





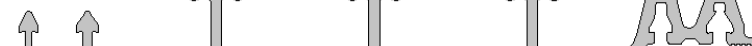
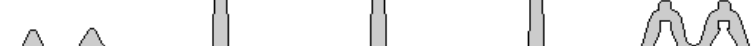

Profile
56-7EX 
85-7EX 
85-8EX 
126-13EX 
126-15EX 
126-20EX 
126-30EX 

Figure 4: The SPR™ EX profile range

2.2 Applications

2.2.1 Stormwater Drainage and Sewer

SPR™ EX liners can be used to rehabilitate stormwater and sewer pipes in residential subdivisions and industrial estates, and are also suited for remote areas and steep terrain. Heavily damaged concrete sewer pipes can be fully rehabilitated rather than being removed (Figure 5).



Figure 5: Sulfide-corroded concrete pipe

SPR™ EX can be used to rehabilitate even the worst pipes, including those with missing inverts, obverts or other structural defects. It produces a circular structural cross section with a constant wall thickness and hence constant strength.

2.2.2 Road Culverts

The strength of SPR™ EX liners makes it an ideal pipelining product for use in small to medium diameter road culverts.

Corroded corrugated steel pipe culverts can be rehabilitated to produce better hydraulic conditions than when they were first installed (Figure 6 and Figure 7).



Figure 6: Heavily corroded corrugated steel culvert



Figure 7: Culvert after rehabilitation

3 SPR™ EX Features and Benefits

The two major benefits of SPR™ EX are the **low risk** and **low cost** of installation.

Low Risk

As diameters increase, the risk and consequences of failure when performing an installation using a Cured In Place method increase significantly; this is because the mass of uncured resin increases proportionally. It is fair to say that as the diameters increase so does the risk.

SPR™ EX is the best solution for small to medium diameters because all of the rehabilitation material is delivered to site in its final form. Having been produced in a factory environment with stringent quality controls, there are no risks associated with curing the material underground at the project site where the conditions are uncontrollable.

In addition, the process can be started and stopped as required, should unexpected underground situations occur. SPR™ EX is the clever solution for the small to medium diameter pipe market.

Low Cost

In addition to being low risk, SPR™ EX materials and the corresponding installation process are low cost. The intelligent use of materials in the profile design allows high strength to weight ratios and means far less material is used than a solid-walled alternative.

In addition to the principle benefits mentioned above, the SPR™ EX relining system offers many other advantages, such as:

- > Speed of Installation
- > Adaptability
- > Reduced Flow Bypassing Costs
- > Hydraulic Efficiency
- > Pipeline Sealing
- > Light Weight and Ease of Transportation
- > Simple and Compact Machinery
- > Ease of Installation

3.1 Speed of Installation

One of the key benefits of the SPR™ EX system is the speed of installation. High installation speeds can be attained due to the liner being manufactured off-site, as opposed to many other systems available. The profile is then installed into the deteriorated host pipe using a mechanical winding process rather than a chemical or heat-based process. The fact that the liner can be installed on site in a single, well-controlled process ensures exceptional speed and quality of installation.

The time savings achieved with the SPR™ EX system are not limited simply to the speed at which the liner is installed. As with all systems, the total time on site is critical to the cost effectiveness of a project; this includes time for mobilising, setting up, relocating to new lines, opening laterals, cleaning up and demobilising. The SPR™ EX system minimises the time spent on each of these operations.

Support vehicles are kept to a minimum and as a result the SPR™ EX system can be relocated and demobilised very rapidly. It can be expected that minimal preparatory work will be required within the access chamber. Typically, this will involve the partial removal of benching in order to accommodate the winding cage.

Where line lengths and orientations permit, the SPR™ EX liner can pass through successive access chambers without the need for repeated setting up.

3.2 Adaptability

A pipeline in need of rehabilitation will not always be smooth and circular. Joints between successive pipes may be misaligned and sections may have collapsed leaving voids. Alternatively, some pipes may have already been subject to point repairs resulting in local changes in diameter. These problems result in a pipe of varying cross section and structural stability. Conventional close-fit lining processes rely on the host pipe to provide an outer formwork against which the liner is formed.

The SPR™ EX system works by expanding the liner to become intimate with the host pipe. This enables the system to adapt to the site conditions and maximise cross-sectional area without compromising the performance of the liner as a whole. At locations where offset joints or local deflections have reduced the pipe cross-section, the liner conforms to these local discontinuities, maximising the liner diameter through these sections. Upon passing a local discontinuity the liner will expand to fit the host pipe, returning to full size.

Where pipe sections are missing, the SPR™ EX system spans the missing section, leaving a circular cross-section and maximising hydraulic efficiency and structural strength. Where required by design, the void associated with the missing pipe section can be filled with grout from the surface or by using no-dig grouting techniques from within the liner.

3.3 Reduced Flow Bypassing Costs

Conventional pipeline rehabilitation techniques require flow bypassing, which is both disruptive and costly. In low flow conditions it is possible to use the SPR™ EX system without flow bypassing.

A stopper can be placed in the upstream manhole and the flow is allowed to back up for the duration of the liner installation. If some of the backed up sewage must be released during the course of the installation, the sewage can be allowed to flow through the partially completed liner.

3.4 Hydraulic Efficiency

An important consideration when evaluating any rehabilitation technique is its impact on flow capacity. As the SPR™ EX system can install a liner which is in contact with the interior wall of the host pipe, it is able to minimise the loss of cross-sectional area. Coupled with the fact that the interior surface of the liner is typically hydraulically smoother than that of the host pipe, the capacity of the rehabilitated pipe will typically meet or exceed the capacity of the host pipe.

In cases where successive pipe lengths are misaligned, SPR™ EX will reduce turbulence and reduce the risk of blockages by providing a smooth, continuous pipe between access chambers.

The hydraulic performance of SPR™ EX liners is further discussed in Section 8.

3.5 Pipeline Sealing

Two of the major concerns with deteriorated pipelines are infiltration of ground water into the pipe and exfiltration of flow into aquifers or ground water.

Infiltration of ground water into the pipeline increases the volume of flow which needs to be treated and can result in the treatment plant becoming overloaded. Additionally, infiltration of highly saline groundwater can cause problems with the treatment of sewer flow and can affect the quality of reclaimed water.

Infiltration of ground water into the pipeline also erodes the backfill material; extensive migration of the backfill material can lead to catastrophic failures at the ground surface.

Exfiltration of sewage from the pipeline into the surrounding soil pollutes the soil and ground water, which can have serious health implications in areas which rely on ground water for the supply of potable water.

The superior sealing performance of SPR™ EX liners means that these problems can be solved. The sealing performance is further discussed in Section 7 Sealing Properties, Performance and Testing.

3.6 Light Weight and Ease of Transportation

The SPR™ EX system enables the production of the pipe on site, reducing the shipping requirements for the installation. The pre-extruded plastic profile is supplied to site on custom-designed spools, dramatically reducing the cost of transportation when compared to traditional pipes, where the majority of the volume is free space.

3.7 Strength

SPR™ EX is designed as a standalone structural liner. A range of PVC profiles is available to meet the specific design requirements.

SPR™ EX typically has structural performance equal to or greater than the host pipe. If the host pipe is at the point of failure, SPR™ EX gains support from the surrounding soil through the remnants of the host pipe, utilising the strength of the soil (Figure 8).

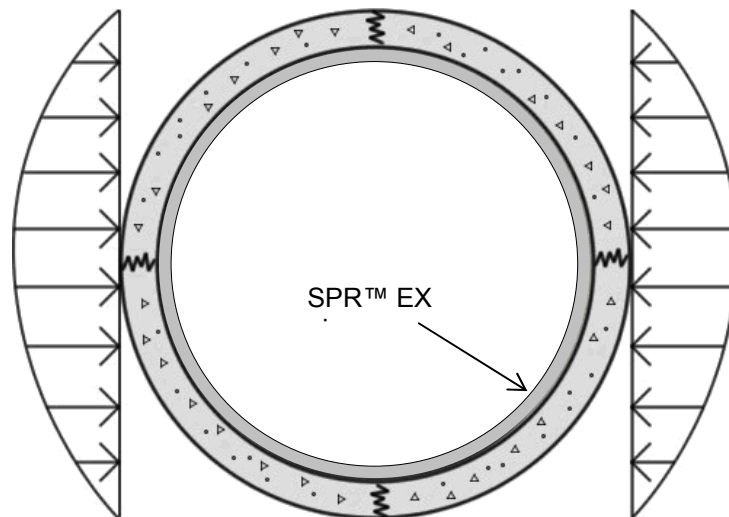


Figure 8: Structural enhancement of the host pipe

4 SPR™ EX Installation Method

The SPR™ EX system can generally be installed in accordance with ASTM F1741 'Standard Practice for Installation of Spiral Wound PVC Liner Pipe for Rehabilitation of Existing Sewers and Conduits.'

Prior to cleaning, surveying and lining of the pipe, the contractor will typically carry out the following activities:

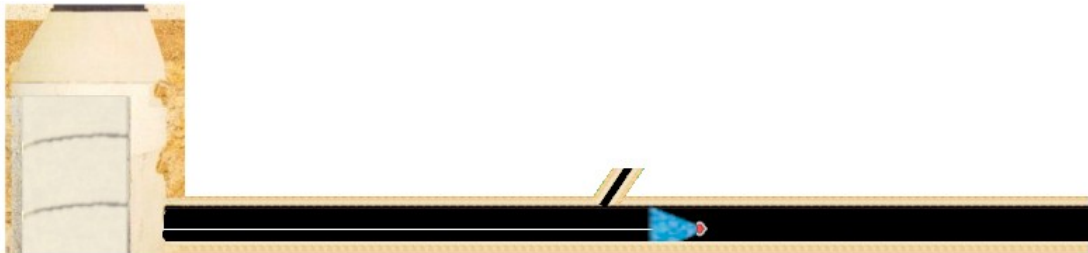
- > Obtaining necessary approvals and permits, and implementing approved traffic and pedestrian control measures as required.
- > Isolation of the sewer section and installation of flow bypassing equipment if required (normally not required with SPR™ EX).

As well as a part time supervisor normally being required on site, a typical SPR™ EX winding crew would consist of 4 trained members as follows:

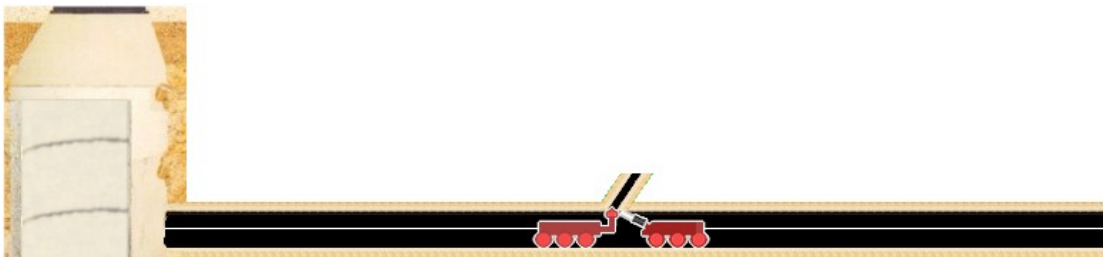
- > Control panel operator
- > Spool operator
- > Machine operator (at the access chamber)
- > Support operator (at the far end access chamber)

4.1 The Installation Process

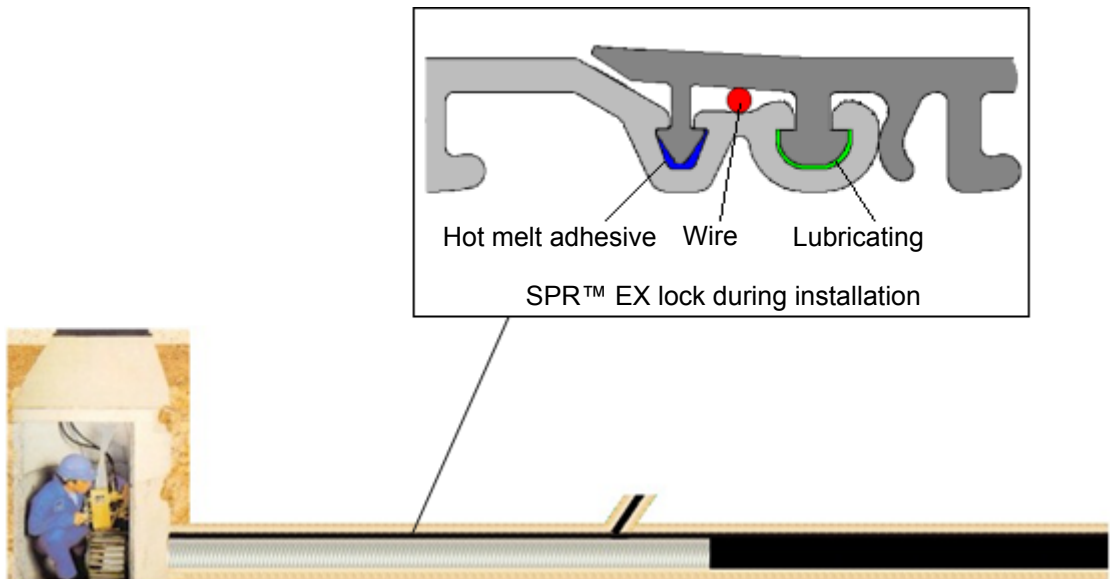
Step 1: Cleaning and inspecting: The deteriorated pipeline is first cleared of debris, cleaned and inspected using CCTV equipment.



Step 2: Logging of Junction Positions: The positions of lateral junctions are logged using the cutting robot and CCTV camera.



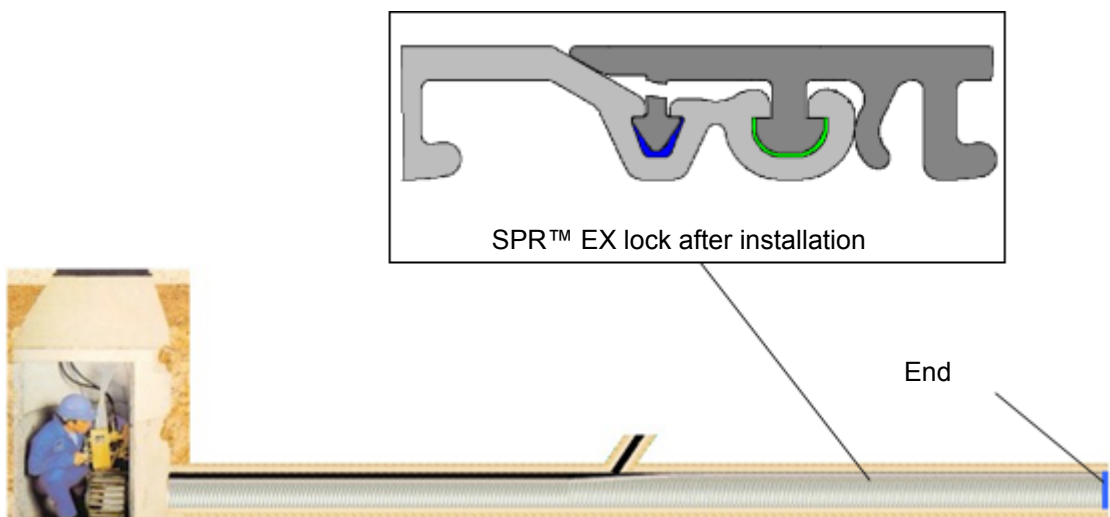
Step 3: Winding at Fixed Diameter: The SPR™ EX liner is wound at a fixed diameter and is generally installed in the upstream direction. Winding may be undertaken during normal flow conditions, or the pipeline can be plugged upstream and, if necessary, flow released at intervals; bypass pumping is rarely required.



The winding machine is placed at the base of the access chamber and profile is fed into the winding machine from the above-ground spool. The machine then interlocks the edges of the strip as it spirally winds to form a continuous liner inside the host pipe.

While the profile edges are being locked together in the winding machine, a lubricating sealant is pumped into the primary female lock and a wire is inserted between the two locks. Winding is stopped when the wound pipe reaches the upstream access chamber.

Step 4: Liner Expansion: Expansion of the liner commences by pulling the cutting wire, severing the secondary (sacrificial) lock that had held the liner at a fixed diameter.



While the cutting wire is being progressively removed, the winding machine continues to wind more profile. The lubricating sealant in the primary lock allows adjacent profile wraps to slide relative to one another as more profile is wound into the pipeline.

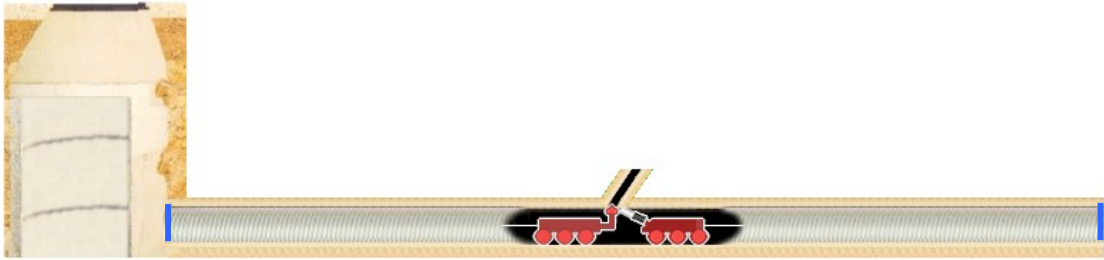
The end of the liner is torsionally restrained during the process, so sliding of adjacent profile wraps causes the liner to expand radially. As the liner expands in diameter, it fits tightly against the inside wall of the deteriorated pipe, and this process continues progressively down the pipeline.

A CCTV camera inside the liner monitors the progress of this expansion, and is viewed by the above-ground operator. The process continues until the liner has been expanded over the full length of the deteriorated pipeline between manholes.

Just prior to the expansion of the final portion of the liner, a sealing material is placed around the end of the liner so that an end seal is in place when expansion is complete. Finally, the ends of the liner can be rendered with a quick-setting cement mortar to make them flush with the host pipe.

Step 5: Junction Re-connection

Junctions with lateral pipelines can be immediately reinstated using robotic cutting equipment, and sealed if required.



4.2 Installation Equipment

The following table lists equipment typically required for the installation of an SPR™ EX system:

Drive Tray	The key to the winding process, feeding of profile and controlling the rate of profile installation. Consists of a series of drive rollers powered by a hydraulic motor. Various sizes are available to suit the range of diameters.
Winding Head	Mounted on the drive tray, the winding head determines the diameter of the liner being produced. The winding head consists of a series of rollers positioned between two rings of the required diameter.
Computer	The electronic automatic control system that controls the profile installation. This increases the efficiency of the system and removes an aspect of human error from the process.
Camera	A closed-circuit television (CCTV) camera that can be either pulled through the pipeline or mounted on a remote-controlled tractor. Used in surveying the pipe and monitoring the progress of installation.
Ancillary Equipment	<ul style="list-style-type: none"> Profile Spool and Holder Wire Puller Glue System Remote Cutter (for the reinstatement of lateral connections, if applicable) Truck (transport, control centre, crane facility etc.) Packers (for grouting, if applicable) Plugs (for testing and flow control)

Safety Equipment As required by local regulations.

In addition, the following equipment would normally be required:

- > Truck with a crane
- > Generator
- > Compressor
- > SPR™ EX specialised winding equipment
- > Ventilation Equipment

Typically, a footprint of no more than 50m² (540 ft²) is required. Equipment can be confined to one lane of traffic and can be positioned directly next to the manhole of the line to be rehabilitated.

4.3 Bends

The SPR™ EX system can easily accommodate long-radius bends; sharp-radius bends must be evaluated on a case-by-case basis.

4.4 Testing

Testing should be performed in accordance with acceptable practice or according to the requirements of the customer.

4.5 Repairs and Maintenance

4.5.1 Cleaning

The purpose of pipe cleaning is generally to remove foreign material from the pipe and restore the flow capacity to a minimum of 95% of the original capacity. The success of other phases of work is heavily influenced by the internal pipe condition, and as such this phase of the operation is very important. Pipe cleaning is performed using a combination of high-velocity jets, mechanically-powered equipment and hydraulically-propelled, moveable dam-type equipment.

4.5.2 Repairs

'Point repairs' are required when a host pipe which has been relined with an SPR™ EX liner is damaged locally, after rehabilitation, such that the structural integrity of the liner is compromised. The repair method involves local excavation of the damaged section of pipe and liner and subsequent replacement with a PVC pipe repair piece, cut from standard piping material and secured using stainless steel clamps.

4.5.3 New Connections

In order to create a new service connection to a pipe which has been relined with an SPR™ EX liner, local excavation and coring is performed on the section of pipe and liner where the service connection is to be made. Following this, a rubber sleeve and PVC hub adaptor are inserted and secured using a stainless steel clamp, which can then be connected to the lateral pipe in the normal manner.

5 Material Properties, Performance and Testing

5.1 uPVC (Unplasticised Polyvinyl Chloride)

5.1.1 PVC Resin

The PVC resin used in the production of SPR™ EX profiles is unplasticised Polyvinyl Chloride (uPVC), which is manufactured by Australian Vinyls in Mentone, Victoria. The type of resin is “K67”. The K value relates to the particle size of the resin. The cell class of the resin is 13354.

uPVC is made by various manufacturers in many different countries. The specifications for this resin are typical compared to similar products produced worldwide. Please refer to Appendices A and B for Technical Data Sheets and Material Safety Data Sheets.

5.1.2 PVC Additives

All uPVC contains a range of additives including impact modifiers, heat stabilisers, UV stabilisers, fillers and flow additives. The uPVC used in SPR™ EX is comprised of standard materials; however the exact composition is proprietary information.

5.1.3 PVC Mechanical Properties

The table below summarises the typical values of key properties of the PVC material. The important values of Tensile Modulus and Flexural Modulus are as measured by the independent testing laboratory, Ramtech (California, USA). Control charts showing more than 3 years of data demonstrate the very small variation over this period (less than $\pm 4\%$). This is indicative of low variation of material inputs, extrusion conditions and measurement methods.

Property	ASTM	Value	Unit	Value	Unit
Tensile Strength	D638	41.4	MPa	6,000	psi
Tensile Modulus	D638	2758	MPa	400,000	psi
Flexural Strength	D790	77.2	MPa	11,188	psi
Flexural Modulus	D790	2758	MPa	400,000	psi
Density	D1505	1.43	g/cm ³	89.3	pcf
Elongation at Break	D638	22	%	22	%
Heat Deflection Temperature @ 455kPa (66 psi)	D648	70	°C	158	°F

5.2 Sealing Materials

SPR™ EX utilises a sealant within the primary lock. This acts as a slow-curing lubricating sealant which aids the expansion process until final cure.

5.3 Chemical Resistance

PVC is partially or totally resistant to many of the chemicals which are responsible for the deterioration of existing commonly used pipe materials.

To verify the chemical resistance of the PVC component materials, the Polymer Technology Centre at the Royal Melbourne Institute of Technology (RMIT) was commissioned to undertake material testing in accordance with ASTM D543 'Resistance of Plastics to Chemical Reagents'. Samples of extruded PVC were exposed to the following reagents at a temperature of 23°C (73.4°F) for a period of 7 days:

Reagent	Concentration
Potable Water	100%
Sea Water	100%
Nitric Acid	5%
Phosphoric Acid	10%
Sulphuric Acid	10%
Vegetable Oil	100%
Detergent	0.1%
Soap	0.1%

All specimens were checked, both during immersion and upon removal from the chemical reagents, for any evidence of the following characteristics:

- > Loss of gloss
- > Developed texture
- > Decomposition
- > Discolouration
- > Swelling
- > Clouding
- > Tackiness
- > Rubberiness
- > Crazeing
- > Solubility

5.3.1 Deflected Liner Performance

The chemical resistance tests detailed above were suitable for verifying the resistance of the component materials to particular chemicals under controlled laboratory conditions in the absence of external load. SPR™ EX liners, however, are designed to provide either corrosion protection or structural enhancement to the host pipe as applicable, and therefore may be subjected to the combined effects of external loading and sewer reagents.

Groundwater can be highly saline. In conjunction with the chemically aggressive nature of sewage, this creates a very difficult environment in which the liner pipes are required to function over a life span of 50 years. It was therefore decided that a definitive practical test that simulated actual field conditions was necessary in verifying the performance of the liner.

5.3.2 Testing Procedure

A testing procedure was discussed with members of the visiting delegation from Abu Dhabi Municipality and Parsons Engineering Science during December 1996. This involved placing SPR™ ST liners (having PVC profiles with the same Cell Classification as SPR™ EX) under load causing a constant deflection of 5%, whilst exposed internally and externally to sewer reagents at elevated temperatures. The objective was to determine the effect of applied load and accelerated exposure conditions on the liner component materials, and the subsequent effect on material properties, in order to assess the likely long-term performance of the liner under actual conditions.

The Abu Dhabi Municipality Drainage Network Division undertook surveys of conductivity readings at various manholes throughout the sewer network of Abu Dhabi and Mussafah with the following results:

- > Acidity - minimum pH = 1.6
- > Salinity - maximum 100,000 μ S/cm (equivalent to 25,000ppm)
- > Temperature - minimum = 18°C (64°F), maximum = 27°C (80°F)

Deflected Liner Testing was carried out on the PVC profiles. The testing was conducted by the Material Services Division of Amdel Limited Industrial Services, an independent Australian testing laboratory.

The liner samples were tested under a constant deflection of 5%. The liner sections were exposed internally to a sulphuric acid solution (pH 1.1) for a period of 1000 hours at temperatures of 35°C (95°F) and 60°C (140°F). The test conditions for the respective deflected liner samples are summarised in the following table:

Pipe ID	Inside Reagent	Temp	Hrs Tested
#1	pH 1.1 (H ₂ SO ₄)	35°C (95°F)	1000
#2	pH 1.1 (H ₂ SO ₄)	35°C (95°F)	1000
#3	pH 1.1 (H ₂ SO ₄)	60°C (140°F)	1000
DLS1	pH 1.1 (H ₂ SO ₄)	60°C (140°F)	1000
DLS2	pH 1.1 (H ₂ SO ₄)	60°C (140°F)	1000

In addition to the exposed liner samples above, two liner samples (#4 and DLS3) were used as control specimens.

Testing was carried out both initially (0 hours) and again after 1000 hours on both the exposed and control deflected liner samples to determine any changes in mechanical or physical properties, with the following properties being tested:

- > Tensile Testing in accordance with ASTM D638-1997 'Standard Test Methods for Tensile Properties of Plastics'.
- > Impact Testing in accordance with ASTM D256-1997 'Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics'.
- > Shore D Hardness Testing in accordance with ASTM D2240-1997 'Standard Test Method for Rubber Property - Durometer Hardness'.

Fifteen PVC profile samples were also supplied to Amdel, with five of each being placed inside deflected liner samples at 35°C (95°F) and 60°C (140°F), and the remaining five of each being used as control specimens. These specimens were all weighed and measured, both initially and again after 1000 hours, to determine any change in dimensions or weight.

The mechanical and physical properties obtained for the deflected liner samples exposed internally to sulphuric acid (pH 1.1) at elevated temperatures for a period of 1000 hours were then compared to those obtained for the unexposed control liner samples. The results conclusively prove that these conditions had no detrimental effect on the deflected liner samples.

5.3.3 Chemical Resistance ("Pickle Jar") Test

The City of Los Angeles has conducted chemical resistance testing on samples of the SPR™ EX PVC material, where the samples were tested for weight change, tensile strength, hardness, elongation and ash content after exposure to a number of chemical solutions. Testing was performed in accordance with the Standard Specifications for Public Works Construction 1994 edition, section 210-2.3.3; all specimens tested exceeded the requirements of the standard.

5.4 Abrasion Resistance

Plastic has a far higher abrasion threshold than many other pipe materials such as concrete or clay; below this abrasion threshold damage does not occur. In abrasion testing, the pipe materials are generally subjected to much more severe conditions than could be expected in typical stormwater or sewer applications to ensure that damage does occur. Using this approach, the relative performance of the various materials can be obtained.

5.4.1 North-Rhine Westphalia, Dortmund, Germany

A series of tests was undertaken at the State Materials Testing Bureau in North-Rhine Westphalia, Dortmund, Germany, in order to gain a Certificate of Approval for the SPR™ EX lining system. Three tests were carried out, specifically:

- > Abrasion by means of a gravity chute in accordance with DIN 1230 Part 2.
- > Behaviour under cold impact load at 0°C (32°F).
- > Behaviour under external water overpressure (short- and long-term loading).

The results of the tests indicated that the lining system met the requirements with regards to resistance against mechanical stress and behaviour under abrasion.

5.4.2 Duncan Tool and Gauge Pty Ltd

In order to verify the performance of an uPVC liner in a sewer environment, Sekisui SPR coordinated the removal of two samples from a liner installed in 1990. The 300mm (12in.) diameter sewer was lined as a trial with the Engineering and Water Supply Department in South Australia. This particular line was chosen for the trial due to excessive infiltration of saline groundwater and sand. Infiltration is still a problem with upstream sewers. This has resulted in large amounts of sand being transported by the sewer.

Of the two samples removed, one was from the crown of the pipe and the other from the invert. By comparing the wall thicknesses of the two samples, the abrasion of the invert could be quantified.

A series of measurements was taken at the National Association of Testing Authorities Australia accredited laboratory of Duncan Tool and Gauge Pty Ltd. The mean thicknesses from the invert and crown samples varied by no more than 0.003mm (0.00012in.) or 0.1%. As the uncertainty of measurement is 0.004mm (0.00013in.), it can be concluded that no measurable abrasion had occurred.

6 Structural Properties, Performance and Testing

SPR™ EX is designed to perform as a standalone structural liner and withstand the following loads:

- > Earth loads
- > Live loads due to traffic
- > Hydrostatic loads

This section presents the design methodologies and the important structural performance data and tests.

6.1 Design Standards

There are several internationally applicable design standards; three of the more commonly used standards are **ASTM F1741**, **AS/NZS 2566** and **ATV-DVWK-M 127 E**.

In each of these standards the important input data is the Long Term Stiffness (and Enhancement Factor in the case of the Partially Deteriorated design). These values are shown for SPR™ EX in the tables in section 5.2.

6.2 Pipe Stiffness & Creep Ratio

Five SPR™ EX profiles are used to cover the diameter range from 150mm (6 in.) to 1050mm (42 in.). The tables below show the important structural information for these profiles as a function of diameter:

56-7EX Profile

Host Diameter mm	Internal Diameter of SPR™ EX Liner mm	Nominal Ring Stiffness N/m/m	Long Term Nominal Ring Stiffness N/m/m	Creep Ratio (50yr)	Enhancement Factor
150	136.5	9058	4419	2.05	4
200	186.5	4157	2028	2.05	4
Host Diameter in.	Internal Diameter of SPR™ EX Liner in.	Pipe Stiffness psi	Long Term Pipe Stiffness psi	Creep Ratio (50yr)	Enhancement Factor
6	5.5	67.7	33.0	2.05	4
8	7.5	31.0	15.1	2.05	4

85-7EX Profile

Host Diameter mm	Internal Diameter of SPR™ EX Liner mm	Nominal Ring Stiffness N/m/m	Long Term Nominal Ring Stiffness N/m/m	Creep Ratio (50yr)	Enhancement Factor
200	186.4	4028	1965	2.05	4
225	211.4	2904	1417	2.05	4
250	236.4	2159	1053	2.05	4
300	286.4	1284	626	2.05	4
Host Diameter in.	Internal Diameter of SPR™ EX Liner in.	Pipe Stiffness psi	Long Term Pipe Stiffness psi	Creep Ratio (50yr)	Enhancement Factor
8	7.5	30.0	14.7	2.05	4
10	9.5	16.1	7.8	2.05	4
12	11.5	9.6	4.7	2.05	4

85-8EX Profile

Host Diameter	Internal Diameter of SPR™ EX Liner	Nominal Ring Stiffness	Long Term Nominal Ring Stiffness	Creep Ratio	Enhancement Factor
mm	mm	N/m/m	N/m/m	(50yr)	
200	183.6	6164	3007	2.05	4
225	208.6	4535	2212	2.05	4
250	233.6	3421	1669	2.05	4
300	283.6	2075	1012	2.05	4
Host Diameter	Internal Diameter of SPR™ EX Liner	Pipe Stiffness	Long Term Pipe Stiffness	Creep Ratio	Enhancement Factor
in.	in.	psi	psi	(50yr)	
8	7.4	46.1	22.5	2.05	4
10	9.4	25.5	12.5	2.05	4
12	11.4	15.5	7.5	2.05	4

126-13EX Profile

Host Diameter	Internal Diameter of SPR™ EX Liner	Nominal Ring Stiffness	Long Term Nominal Ring Stiffness	Creep Ratio	Enhancement Factor
mm	mm	N/m/m	N/m/m	(50yr)	
375	348.5	3682	1796	2.05	4
450	423.5	2221	1084	2.05	4
525	498.5	1437	701	2.05	4
600	573.5	981	478	2.05	4
Host Diameter	Internal Diameter of SPR™ EX Liner	Pipe Stiffness	Long Term Pipe Stiffness	Creep Ratio	Enhancement Factor
in.	in.	psi	psi	(50yr)	
15	14	27.5	13.4	2.05	4
18	17	16.5	8.1	2.05	4
21	20	10.7	5.2	2.05	4
24	23	7.3	3.6	2.05	4

126-15EX Profile

Host Diameter	Internal Diameter of SPR™ EX Liner	Nominal Ring Stiffness	Long Term Nominal Ring Stiffness	Creep Ratio	Enhancement Factor
mm	mm	N/m/m	N/m/m	(50yr)	
375	344	4073	1987	2.05	4
450	419	2614	1275	2.05	4
525	494	1753	855	2.05	4
600	569	1226	598	2.05	4
Host Diameter	Internal Diameter of SPR™ EX Liner	Pipe Stiffness	Long Term Pipe Stiffness	Creep Ratio	Enhancement Factor
in.	in.	psi	psi	(50yr)	
15	13.8	27.5	13.4	2.05	4
18	16.8	15.5	7.6	2.05	4
21	19.8	9.6	4.7	2.05	4
24	22.8	6.3	3.1	2.05	4



126-20EX Profile

Host Diameter	Internal Diameter of SPR™ EX Liner	Nominal Ring Stiffness	Long Term Nominal Ring Stiffness	Creep Ratio	Enhancement Factor
mm	mm	N/m/m	N/m/m	(50yr)	
450	410	5074	2475	2.05	4
525	485	3395	1656	2.05	4
600	560	2368	1155	2.05	4
675	635	1710	834	2.05	4
750	710	1273	621	2.05	4
Host Diameter	Internal Diameter of SPR™ EX Liner	Pipe Stiffness	Long Term Pipe Stiffness	Creep Ratio	Enhancement Factor
In.	in.	Psi	psi	(50yr)	
18	16.4	38.0	18.5	2.05	4
21	19.4	25.4	12.4	2.05	4
24	22.4	17.7	8.6	2.05	4
27	25.5	12.7	6.2	2.05	4
30	28.4	9.5	4.6	2.05	4

126-30EX Profile

Host Diameter	Internal Diameter of SPR™ EX Liner	Nominal Ring Stiffness	Long Term Nominal Ring Stiffness	Creep Ratio	Enhancement Factor
mm	mm	N/m/m	N/m/m	(50yr)	
600	539	6060	2956	2.05	4
675	614	4346	2120	2.05	4
750	689	3216	1569	2.05	4
900	839	1898	926	2.05	4
1050	989	1209	590	2.05	4
Host Diameter	Internal Diameter of SPR™ EX Liner	Pipe Stiffness	Long Term Pipe Stiffness	Creep Ratio	Enhancement Factor
In.	in.	psi	psi	(50yr)	
24	21.6	41.6	20.3	2.05	4
27	24.6	28.5	13.9	2.05	4
30	27.6	20.4	9.9	2.05	4
36	33.6	11.4	5.6	2.05	4
42	39.6	7.1	3.4	2.05	4

6.3 Structural Testing

The following structural tests have been performed on SPR™ EX liners and profiles. Testing was conducted in-house by Sekisui SPR.

6.3.1 Ring Stiffness: EN ISO 9969 Thermoplastics Pipes: Determination of Ring Stiffness

This strength test requires an external load to be applied to the pipe at a constant rate to achieve a deflection. The load and deflection are used to calculate ring stiffness.

6.3.2 Creep Ratio: EN ISO 9967 Thermoplastics Pipes: Determination of Creep Ratio

The Creep Test involves applying a constant load to the pipe for a period of 1000 hours. The initial load is determined as being that which is required to deflect the pipe initially by 1.5%. The deflection is measured over the duration of the test, and from this data long-term creep curves are generated which are used to predict the deflection of the pipe over its lifetime. The ratio of short-term strength to long-term strength is defined as the creep ratio.

6.3.3 Enhancement Factor

The enhancement factor test aims to determine the pressure required to buckle the liner when it is in contact with the host pipe. The enhancement factor is defined as this pressure divided by the unsupported buckling pressure, and is an important design parameter in the case of close-fit liners.

Theoretical models for the determination of the enhancement factor (cited in *Buckling Models and Influencing Factors for Pipe Rehabilitation Design*, Leslie K. Guice and J.Y. Li, Louisiana Tech University) and testing undertaken by Sekisui SPR to date advocate the use of a minimum value of 4 for the enhancement factor for use with SPR™ EX profiles.

Upon simplifying the theoretical models, the enhancement factor can be determined from the equation:

$$EF = \frac{D^{0.8}t^{2.2}}{24I}$$

where: D = diameter (mm or in.)
t = effective thickness, twice the depth to neutral axis of profile (mm or in.)
I = unit second moment of area (mm⁴/mm or in.⁴/in.)

This theory demonstrates that increases in enhancement factor can be expected at larger diameters.

Theoretical results have given higher values for enhancement factors than empirical testing has shown in the past. Taking this into account, enhancement factor values of 4 have been shown to be conservative at the minimum diameters at which SPR™ EX profiles are used.

7 Sealing Properties, Performance and Testing

The objective of forming a pipe from the SPR™ EX profile is to produce a uniform polyvinyl chloride inner wall using a mechanical lock and a continuous seal.

The profile lock holds pressure by means of compression of the male lock within the female lock. The lock forms an interference compression force on the seal capable of withstanding pressure.

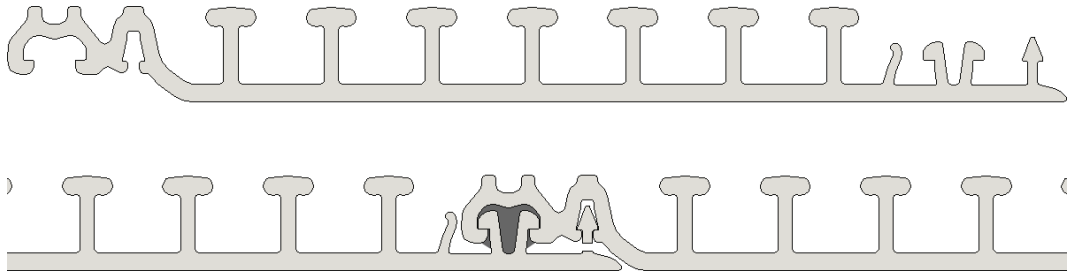


Figure 9: Typical SPR™ EX Profile (top, female lock on left, male lock on right) and Locking Mechanism after cutting wire removed (bottom)

This lock configuration is capable of withstanding pressures over 74kPa (10.7psi), as specified by the requirements of ASTM F1741.

8 Hydraulic Properties, Performance and Testing

8.1 Flow Coefficients

The surface roughness of PVC is generally considered to be among the lowest of all pipe materials. This can be quantified in a number of ways and is shown in the table below.

Testing was carried out by Techsearch at the University of South Australia in May 1991, to determine fluid friction loss coefficients, pipe wall roughness parameters etc. required for application in:

- > Manning equation
- > Colebrook-White equation
- > Hazen-Williams equation

Test results indicated a Manning's n coefficient of between 0.0080 and 0.0094 for SPR™ EX pipe.

Manning's n	0.009
Colebrook White k	0.015mm (0.00059in.)
Hazen Williams C	143

Manning equation

$$Q = \frac{k}{n} AR^{2/3} S^{1/2}$$

- Where:
- k = 1 for SI units, 1.486 for US customary units
 - n = Manning coefficient
 - Q = flow (m³/s or ft³/s)
 - A = area (m² or ft²)
 - R = hydraulic radius (Area/Perimeter) (m or ft)
 - S = slope of the line, hydraulic gradient (m/m or ft/ft)

Colebrook-White equation

$$Q = \frac{\pi D^2}{4} \sqrt{2gDS} \log_{10} \left(\frac{D}{\frac{k}{3.7} + \frac{2.51\nu}{\sqrt{2gDS}}} \right)^2$$

- Where:
- S = slope of the line, hydraulic gradient (m/m or ft/ft)
 - Q = flow (m³/s or ft³/s)
 - k = Roughness height (m or ft)
 - D = Diameter (m or ft)
 - g = gravitational acceleration (9.81 m/s² or 32.2 ft/s²)
 - ν = Kinematic viscosity of water (m²/s or ft²/s)

Hazen-Williams equation

$$Q = kCAR^{0.63}S^{0.54}$$

Where:

A = area (m² or ft²)

k = 0.849 for SI units, 1.318 for US customary units

Q = flow (m³/s or ft³/s)

C = Hazen-Williams roughness coefficient

R = hydraulic radius (m or ft) (Area/Perimeter)

S = slope of the line, hydraulic gradient (m/m or ft/ft)

8.2 Flow Comparison

The reduced surface roughness and relatively small loss of cross sectional area that result from a close-fit liner means that in all cases, rehabilitating concrete pipes does not result in a loss of flow capacity.

The following family of charts compares flow capacity of an SPR™ EX liner with a concrete host pipe – both in the new (n=0.012) and deteriorated condition (n=0.015). As can be seen, the lower Manning's coefficient of an SPR™ EX liner actually results in a gain in flow capacity in most cases.

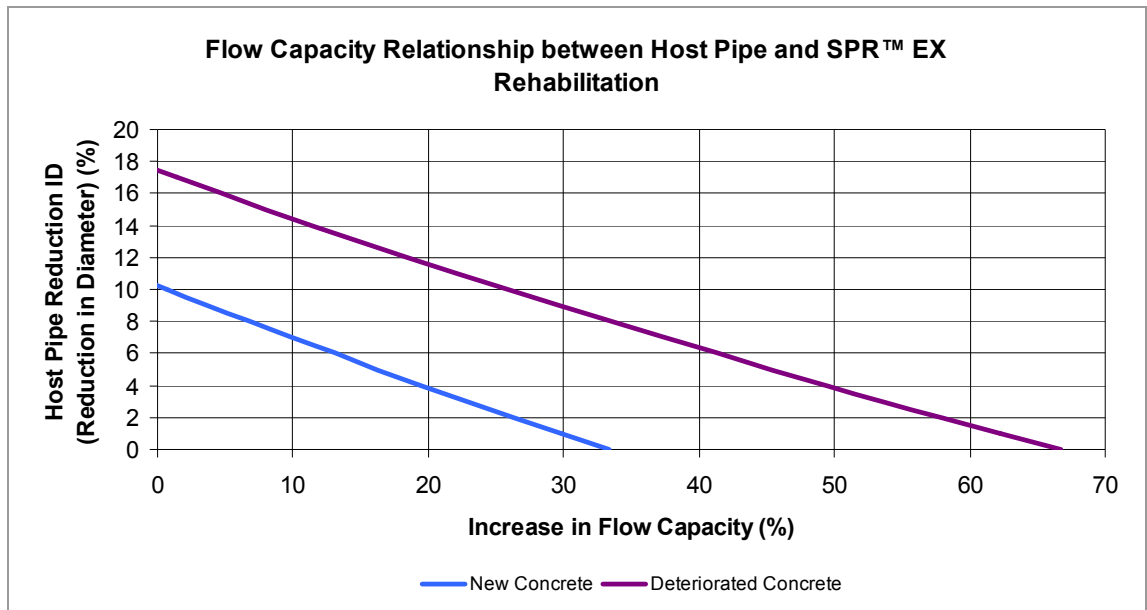


Figure 10: Flow relationships between host and liner pipes

It is important to know, as an input variable for modelling, how much the diameter (ID) of the host pipe will be reduced after lining with SPR™ EX. A comparison of the various profiles is shown below:

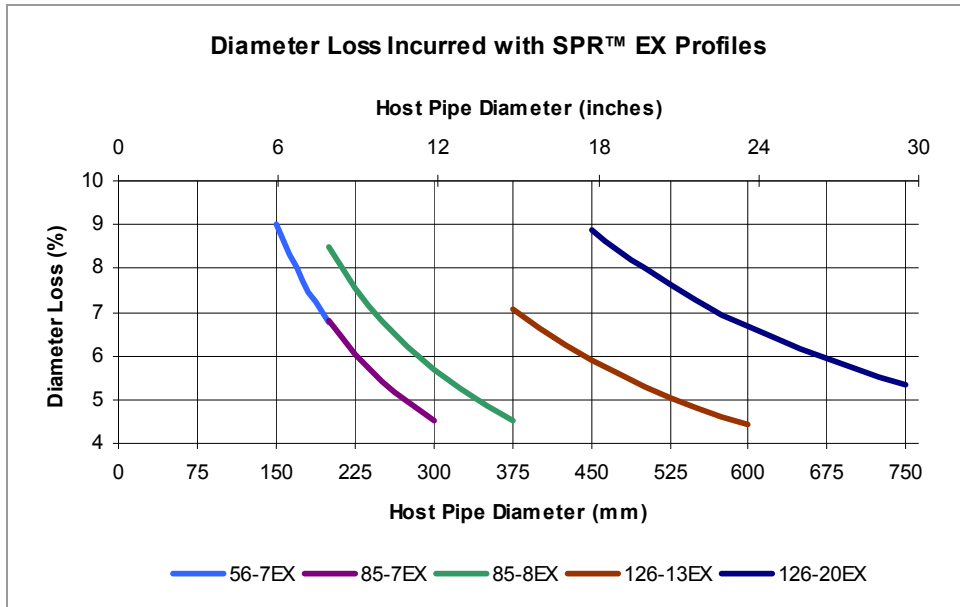


Figure 11: Percentage diameter loss after SPR™ EX rehabilitation

The following plots show the flow relationship between the SPR™ EX pipe and host pipe for each SPR™ EX profile:

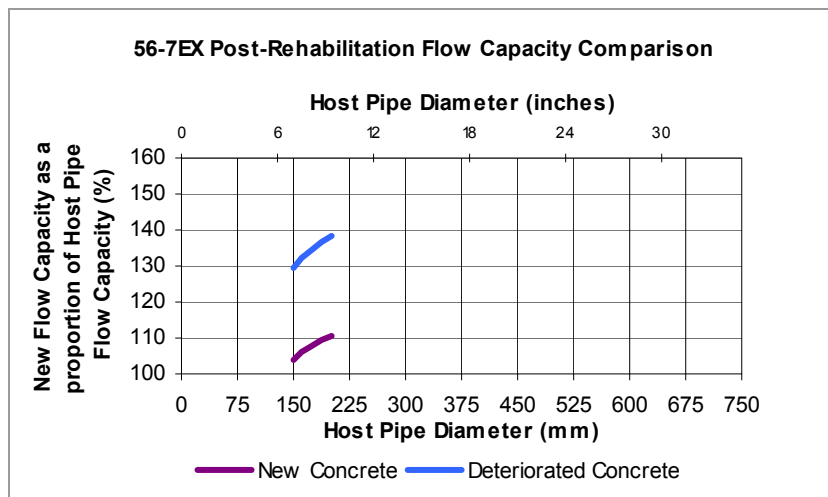


Figure 12: 56-7EX flow capacity comparison after rehabilitation

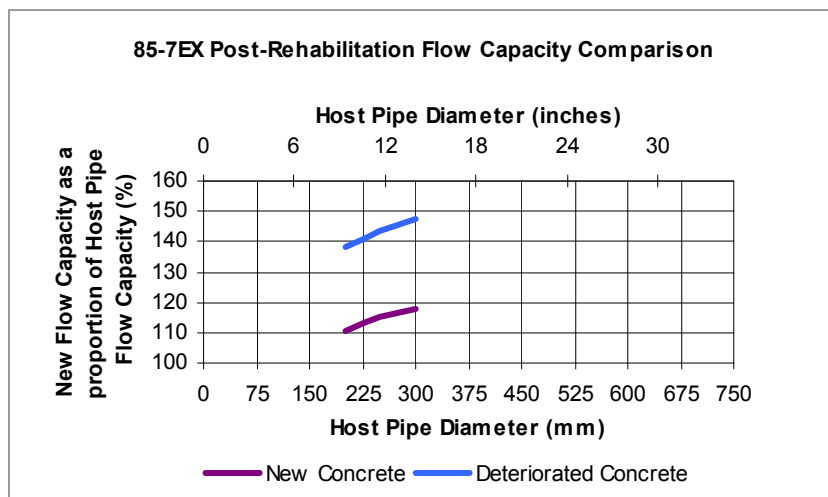


Figure 13: 85-7EX flow capacity comparison after rehabilitation

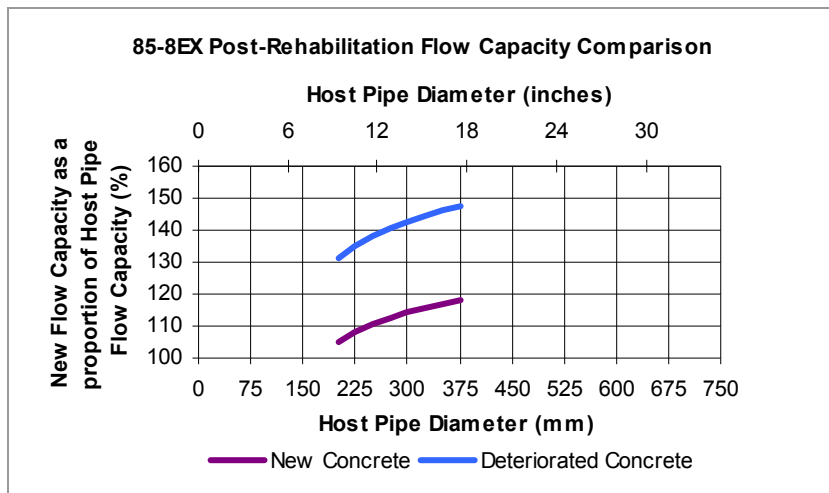


Figure 14: 85-8EX flow capacity comparison after rehabilitation

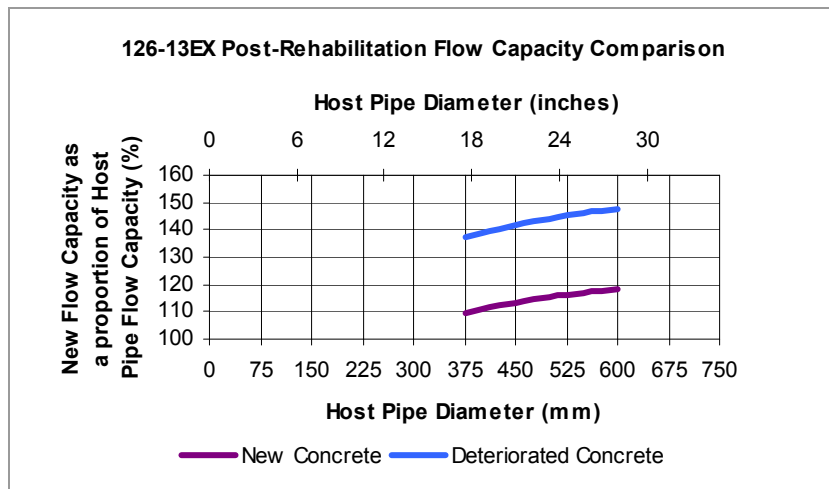


Figure 15: 126-13EX flow capacity comparison after rehabilitation

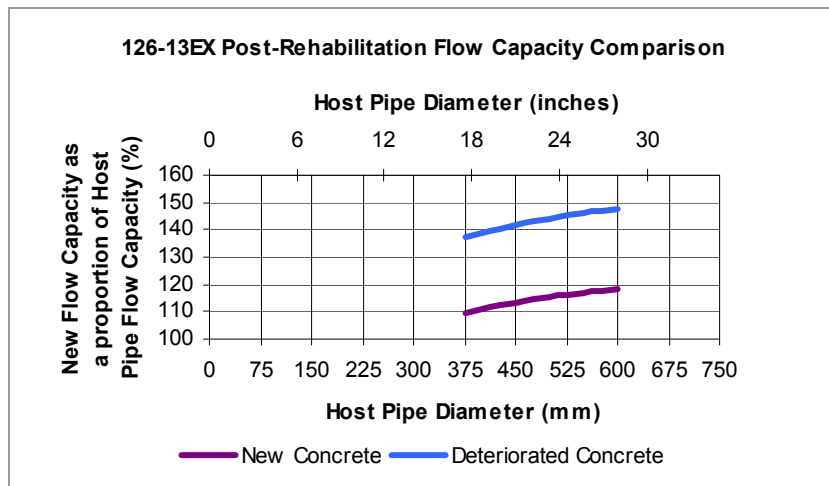


Figure 16: 126-20EX flow capacity comparison after rehabilitation

9 ISO 9001 Quality System

SPR™ EX is manufactured by an ISO 9001 certified facility.

The quality system incorporates systems, procedures, work instructions and forms addressing all functional areas and activities.

For the production of SPR™ EX profile, the manufacturing facility has systems, procedures and work instructions for the quality control of:

- > Raw materials
- > Mixing of PVC dry blend for extrusion
- > Extrusion of profile
- > Testing of profile
- > Packing and transportation of profile

10 Environmental Impact

The mechanical installation process used by SPR™ EX allows the system to leave a smaller environmental footprint than other competing systems in the marketplace. No chemical processes are used in the installation, and therefore there is no risk of chemical spills or contamination, and no requirement for the safe disposal of contaminated process water. Furthermore, no heat or steam is used in the installation process, removing the environmental impact of released heat.

The SPR™ EX process is also very quiet, as the installation occurs underground; the only perceivable noise produced is from the generator used to supply hydraulic power to drive the winding machine. This noise can be further reduced through the use of sound proofing, which may easily be incorporated into the process. Other forms of noise production are also eliminated using the SPR™ EX system: the elimination of large pumps required for flow bypassing and the minimal number of vehicles on site ensure noise is kept to a minimum. This very low noise level makes the SPR™ EX system ideal for use in residential areas, and the lack of flow bypassing provides further benefit in residential areas, as there is no access restriction that would occur if flow bypassing piping was present.

As environmental impact has become a greater concern in recent years, damaged or leaking pipelines in sensitive areas have drawn greater attention, and government-imposed penalties for those causing damage to the environment have become more common. Due to the minimal number of support vehicles required and the ability of the system to function remotely from these vehicles, the SPR™ EX system is ideal for use in extremely sensitive areas.

Another significant environmental advantage of the system is its ability to operate without the need for any excavation. The winding machine can be disassembled to fit through existing access chamber openings and the site can be secured at the end of each working day by simply replacing the access chamber covers.

The development of SPR™ EX, the cost-effective method of pipe rehabilitation, has allowed water authorities to take advantage of early and widespread rehabilitation of existing pipelines, reducing the environmental impact associated with the breakdown of decayed pipes.

11 Global SPR™ EX Usage and Approvals

SPR™ EX has been widely approved for use in Australia in the major capital cities and many regional cities and areas. Over 1,260km (4.1 million feet) of SPR™ EX liners have been installed in Australia since 2001, as of mid-2009.

SPR™ EX has been used in many countries outside of Australia, including New Zealand, Hong Kong, China, Taiwan, Singapore, India, United Arab Emirates, Saudi Arabia, France, Germany and the United States of America. Over 130km (400,000 ft) of pipe has been installed internationally since 2001, as of mid-2009.

11.1 Greenbook Inclusion

The Standard Specifications for Public Works Construction, commonly referred to as the 'Greenbook', is a collection of specifications which have general applicability to public works projects. The Greenbook originated in California and is used as standard for public works specifications by over 200 cities, councils and agencies in the area; it is now also being used across the United States, Canada and worldwide. SPR™ EX is included within the current editions and supplements of the Greenbook.

MACHINE SPIRAL WOUND PVC LINER USING THE SPR™ EX METHOD

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Materials and procedures for machine spiral wound polyvinyl chloride (PVC) pipe liner using the SPR™ EX installation method.

1.2 SUMMARY

- A. Machine spiral wound PVC liner is intended for use in the rehabilitation of sanitary and storm sewers without excavation. The lining process uses a continuous one piece PVC profile strip, which is machine wound directly into the deteriorated pipeline from an existing access chamber or manhole.
- B. The system consists of a single, one part PVC profile strip with “T” shaped ribs on one side. The edges of the strip interlock as it is spirally wound to form a liner inside the host pipe.
- C. A range of PVC profiles are available with different profile, rib and thickness configurations to match project design requirements.
- D. The winding process is continuous until the complete length of the existing pipe between access points or manholes has been lined.
- E. The liner is wound at a fixed diameter, leaving an annular space between the liner and host pipe wall. It is then radially expanded by mechanical means, without the applications of heat, until the liner makes contact with the inside wall of the existing pipe.

1.3 REFERENCES

- A. ASTM D 256 : Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
- B. ASTM D 638 : Standard Test Method for Tensile Properties of Plastics
- C. ASTM D 790 : Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- D. ASTM D 1784 : Standard Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds
- E. ASTM F 1697 : Standard Specification for Poly Vinyl Chloride (PVC) Profile Strip for Machine Spiral-Wound Liner Pipe Rehabilitation of Existing Sewers and Conduits

- F. ASTM F 1741 : Standard Practice for Installation of Machine Wound Poly Vinyl Chloride (PVC) Liner Pipe for Rehabilitation of Existing Sewers and Conduits

PART 2 - MATERIALS

2.1 MATERIAL COMPOSITION

- A. The extruded profile strip shall be made from unplasticised PVC compounds meeting the minimum requirements for cell classification 13354 or higher, as defined in ASTM D 1784.
- B. PVC profile strip for machine spiral wound liner pipe rehabilitation of existing sewers shall comply with ASTM F 1697, except as modified herein.

2.2 MATERIAL AND EQUIPMENT ACCEPTANCE

- A. At the time of manufacture, each lot of extruded profile strip shall be inspected for defects and tested for physical properties as specified. A “lot” is defined as a continuous extrusion run of a given profile designation on a spool.
- B. PVC profile strip minimum dimensions and initial stiffness factors shall be in accordance with Table 1 below. In accordance with ASTM F 1697, other profile configurations are permitted, provided similar details are provided as in Table 1.

TABLE 1

Profile Type	Minimum Width		Minimum Height		Minimum Waterway Wall		Minimum Initial Stiffness Factor (EI)	
	mm	(in.)	mm	(in.)	mm	(in.)	MPa-mm ³	(in ³ – lbf/in ²)
1	51.0	2.00	5.5	0.216	1.4	0.0551	21.2x10 ³	188.0
2	80.0	3.14	8.0	0.314	1.4	0.0551	63.4x10 ³	561.0
3	121.0	4.76	13.0	0.511	1.6	0.0630	242.7x10 ³	2148.0
7	121.0	4.76	19.0	0.748	2.1	0.0830	450x10 ³	3983.0

Note: Initial Stiffness Factors are derived from testing in accordance with ASTM D 790 as modified by ASTM F1697, using flat strips of profile

- C. The following values of modulus of elasticity of PVC shall be used in design:
 Short Term: 400,000psi (2,750 MPa)
 Long Term: 116,000psi (800 MPa)
- D. Design stiffness values for a specific PVC profile strip are available from the manufacturer.

- E. Sealants and gaskets necessary for effective interlocking of the edges of PVC strip are pre-applied at the time of manufacture. They shall be suitable for use in a sewer environment.

2.3 MATERIAL TESTING

- A. Before installation of the liner has commenced, a sample of profile from each production run shall be tested to confirm that the value of initial stiffness factor detailed in Table 1 exceeds specified minimum values.

2.4 MARKING

- A. Each PVC profile strip shall be distinctly marked on its inside surface at intervals not to exceed 60 inches with a code number identifying the manufacturer, plant, date of manufacture and shift, and profile type. This information shall also appear on each reel.

PART 3 - EXECUTION

3.1 INSTALLATION AND FIELD INSPECTION

- A. Installation of machine spiral wound PVC liner pipe for rehabilitation of existing sewers shall comply with ASTM F 1741 except as modified herein.
- B. The existing pipeline shall be cleaned of any obstructions, to a standard suitable for installation of the liner, and televised. All existing live service connections shall be precisely located longitudinally and radially, and logged for subsequent reinstatement following installation of the liner.
- C. Bypass pumping is not mandatory for installation of the spiral wound liner. The Contractor shall be responsible for deciding the need for flow diversion to allow successful liner installation.
- D. During installation the winding machine shall perform the following operations simultaneously:
- A continuous ribbed liner profile strip is supplied from a reel and fed down through the existing manhole to the winding machine positioned at the base of the manhole
 - Joint lubricating sealant shall be placed into the primary lock of the self-interlocking edges of the ribbed profile (Note: An elastomeric adhesive, which prevents the liner from expanding prematurely during winding, is applied to the secondary lock during manufacture of the ribbed profile)
 - High tensile wire shall be inserted (Note: The wire remains only temporarily as it is pulled out during the expansion stage)
 - The winding machine winds the PVC strip into a liner pipe by interlocking the edges

- Winding continues until the full length of the deteriorated pipe between manholes has been lined
 - The liner is then radially expanded by mechanical means, without the application of heat, until the liner makes contact with the inside wall of the existing pipe
- E. End seals between the liner pipe and the existing pipe shall be installed with a sealing material that is compatible with the liner pipe material.
- F. The transition between the liner invert and the invert in the manhole base shall be rendered smooth to reinstate the sewer flow line.

3.2 SERVICE CONNECTIONS

- A. The Contractor shall reinstate all live junctions immediately after installation of the liner. Service connections may be reinstated by excavation or internally.
- B. The service connection openings shall conform to the shape and size of the inside diameter of the existing service connection. Service connection openings shall be reinstated to 95 -100% of their diameter and free from rough edges or protrusions.

3.3 POST INSTALLATION INSPECTION

- A. A closed circuit television (CCTV) inspection shall be carried out after installation to establish that the lining has been installed as specified and all live junctions have been reinstated.
- B. The finished lining shall be free of defects that would affect long term strength or hydraulic performance.

Disclaimer

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Installation Procedure for Rehabilitation of Line using the SPR Expanda Pipe Process

Preparation

Approvals/Permits

Granting of necessary approvals and permits and implementation of approved traffic and pedestrian control measures should be carried out as required.

Sewer Flows and Overpumping

Storage of flow upstream is generally undertaken during the installation process. An inflatable plug is placed to stop flow from the upstream pipeline from entering the terminating manhole. Upstream storage must be carefully monitored to ensure there is no danger of sewerage overflow. If necessary, flow stored upstream can be released at intervals during installation.

As a result, bypass pumping (overpumping) is rarely required with Rib Loc Expanda Pipe. If necessary, the bypass pumping arrangement must be agreed with the relevant authority.

Manhole Preparation

It is sometimes necessary to break out a section of the channel at the base of a manhole to allow the winding machine to fit. The base must be restored to its original condition at the conclusion of liner installation.

Host Pipe Preparation

The host pipe shall be cleaned, with any protrusions being removed. Debris should typically be removed to avoid backing up of any flows. Any necessary CCTV surveys must be completed before relining works can commence.

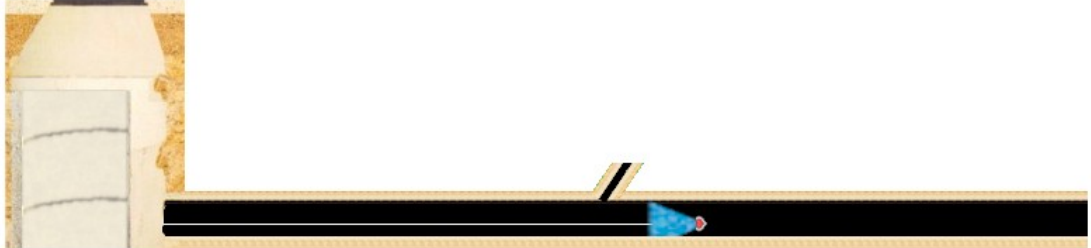
Should any laterals exist in the line, their location should be accurately measured and logged for later cutting (and sealing where required by the client).

Above Ground Access

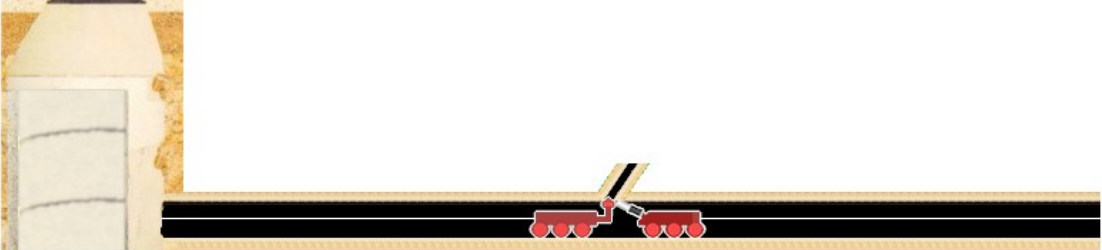
Direct access to the manhole shall be available for the above ground mobilization of a truck (complete with Hi-ab style crane) which will deliver the profile spools and Expanda winding equipment. The destination manhole must be available for the placement of the CCTV camera and to torsionally restrain the liner.

The Expanda Winding Process

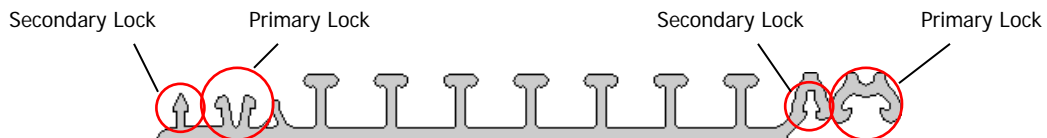
- The deteriorated pipeline is first cleared of debris, cleaned and CCTV inspected.



- The positions of laterals are logged using a lateral locator device and the CCTV camera. Prior to inserting the lateral locator in the line a wire is connected to the rear of the locator. The locator is then moved forward until it is positioned directly adjacent to the first lateral. The position of the locator is logged by crimping a marker onto the wire at the access chamber. This process continues until all laterals are logged.

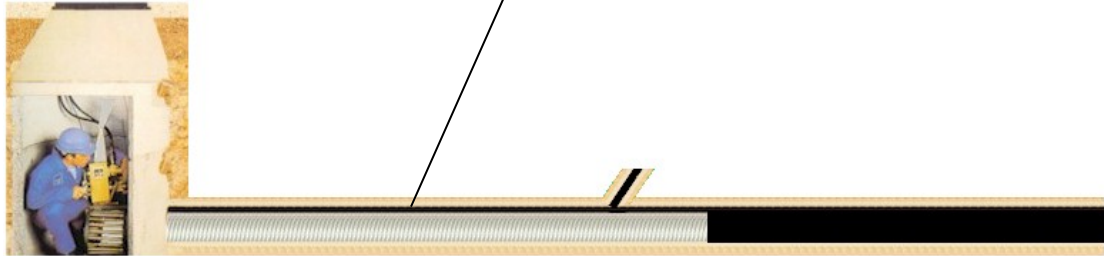
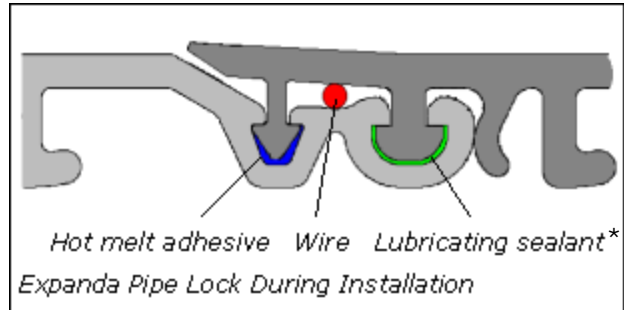


- The PVC profile strip is delivered to site on large spools containing sufficient profile for a complete line length. The profile has two sets of locks on each edge designed to interlock with each other. The larger lock is called the “Primary” lock and holds the profile together as well as giving the liner its sealing capacity. The smaller lock is called the “Secondary” or “Sacrificial” lock. The purpose of the Secondary lock is to keep the liner at a fixed diameter whilst the liner is being wound out from one access chamber to the next. To enable the Secondary lock to keep the liner at a fixed diameter an adhesive is pre-applied in the female Secondary lock in the factory.

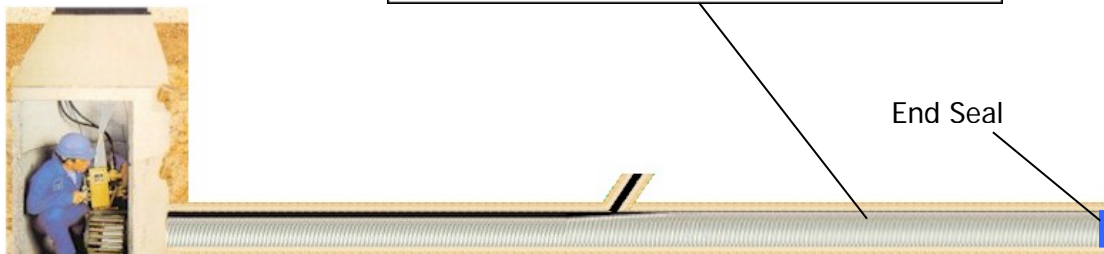
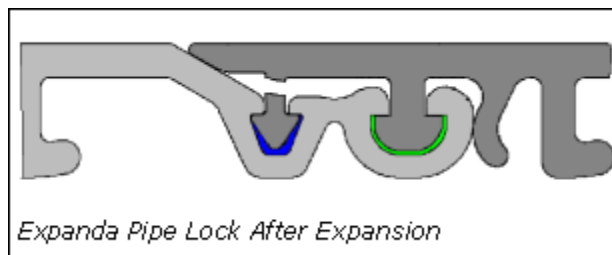


- The profile is fed from the spool into the Expanda Pipe Winding machine. The Expanda Pipe Winding machine drives the profile into the attached winding head where the profile is wound to form a pipe with an outside diameter smaller than the inside diameter of the host pipe.
- After the profile has been fed into the Rib Loc winding machine, it is lowered to the base of the access chamber.

- Once the Winding Machine is in position the profile is wound to form a pipe which is small enough in diameter to pass through any obstacles in the host pipe. As the profile is wound a cutting wire is inserted between the Primary and Secondary locks and a lubricating sealant* is applied to the female Primary lock.



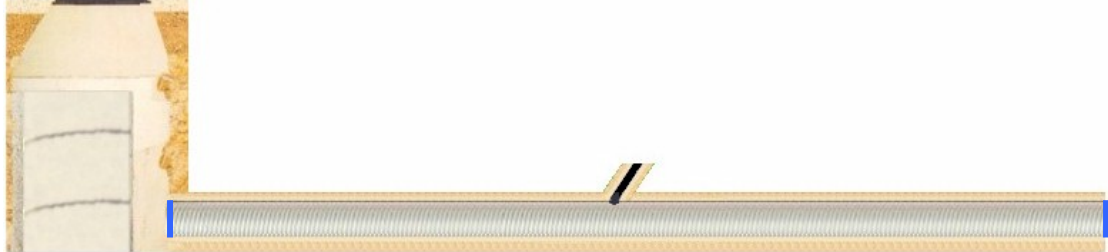
- Winding is stopped when the wound pipe reaches the upstream access chamber. The end of the Expandable Pipe is then torsionally restrained by drilling two holes through the end of the liner and inserting a bar through the holes. An end seal is placed around the liner so that when it is expanded an end seal is in place. Expansion of the liner commences with the pulling of the cutting wire, severing the secondary (sacrificial) lock.



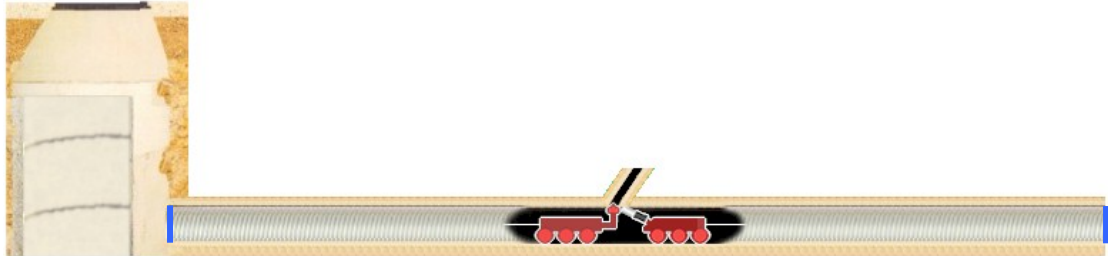
- As the cutting wire is progressively removed, more profile is wound into the line. The lubricating sealant* in the primary lock allows adjacent profile wraps to slide relative to each other. In response to the additional profile,

the liner expands in diameter to fit tightly against the inside wall of the deteriorated pipe.

- The process continues until the liner has been expanded for the full length of the deteriorated pipeline between manholes. Just prior to the full expansion an end seal is placed around the liner, so that when expansion is complete, an end seal is in place. Then the lining is complete.



- The ends of the liner at both manholes are sealed with a *material* compatible with the liner material and rendered to make them smooth with the host pipe.
- Laterals can be immediately reinstated by robotic cutting, with the joint being pressure sealed, if required.



* Lubricating sealant can be Polyurethane or Silicone.

Manhole Inverts

Where possible the Rib Loc liner will be wound through successive manholes. This is dependent on the manhole configuration.

Crew Size

A maximum crew of 5 trained people is required for the Expanda winding crew, although lesser numbers can be successfully used. Separate personnel can be used for cutting and sealing (if required) of laterals.

Post Installation Testing

Post installation testing (if required) is carried out in accordance with the requirements of the relevant specifications.

Post-Lining Activities

Where applicable, the following post-lining activities are typically undertaken by the main contractor using currently employed methods:

- Rehabilitation of manhole structure as required.
- Post-lining CCTV survey.
- Hand-over inspection, final Consultant approval and Client acceptance.
- Demobilisation of isolation or any overpumping equipment (if used).

Site Safety

As with all industrial processes, site safety is an important issue. Local regulations should be followed in the establishment and monitoring of safety systems on site.



TOPIC	Repair Method for SPR™ EX
DATE	17 th March 2015
DOCUMENT NUMBER	REH TN 013
ADDITIONAL NOTES	This document is a copy of the previous 2007 document

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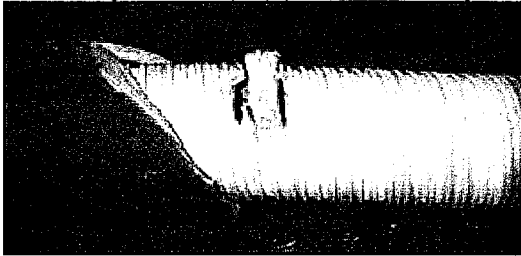
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Introduction

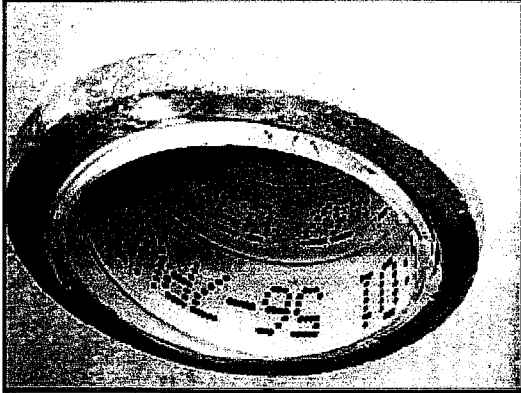
This Technical Note provides a repair method for clay or concrete pipes which have been relined with Rib Loc Expanda PVC liner, and subsequently damaged locally such that the structural integrity of the liner is compromised. The method involves local excavation of the damaged section of pipe and liner, and replacement with a PVC pipe repair piece cut from standard piping material. This is to be joined to the pipe by proprietary flexible PVC adaptor couplings, secured by stainless steel clamps

Procedure

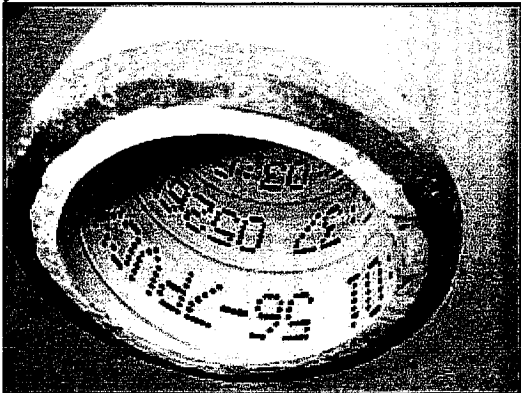
1. Cut damaged section of pipe and liner using disc saw, leaving a smooth square finish to both ends.



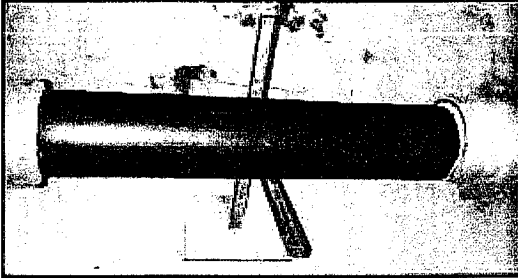
2. Inspect inside of pipe ends to ensure remaining liner is sound; if not cut more of the pipe until the damaged section is completely removed. Remove any protruding slivers of profile tee.



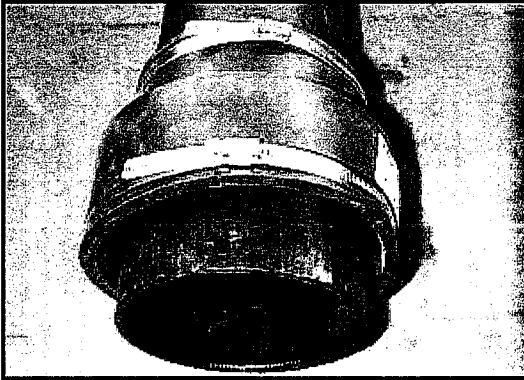
3. Apply approved sealant between liner tees around circumference of annulus. This may be a mastic or polyurethane sealant.



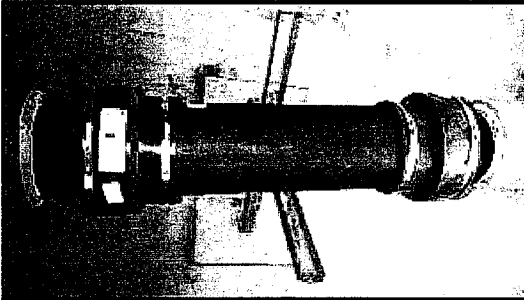
4. Cut repair piece to length required to exactly fit removed section of pipe, and round or bevel the inner edges, to prevent snagging of trash.



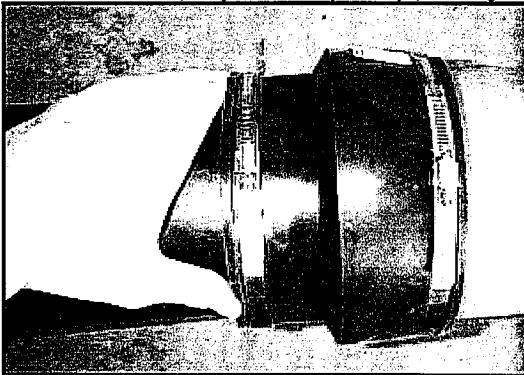
5. Loosen the stainless steel clamps on the couplings without removing them, and slide onto each end of the repair piece, smaller end first.



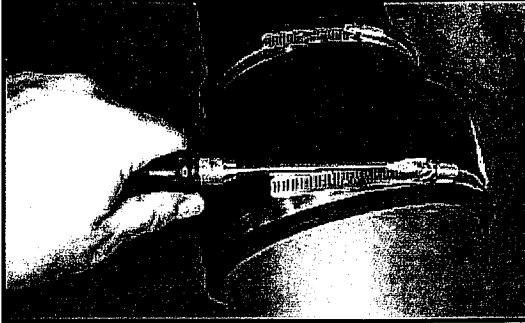
6. Position repair piece into pipeline.



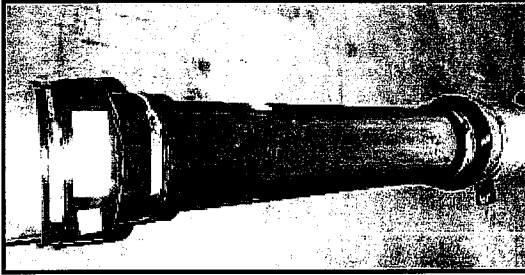
7. Centre each coupling over the joint by pushing level with the pipe ends.



8. Tighten down stainless steel bands to manufacturer's specification.



9. Repair is now finished.



10. After assembly ensure bedding under pipe and in haunching zone is properly compacted.

REPAIR SECTION DIAMETERS

The expected internal diameter of the liner will depend on the internal diameter of the clay or concrete pipe, and the thickness of the Rib Loc Expanda profile used. Typical values are indicated in the table below, but these should be verified at site:

Pipe/Liner	I.D. (mm)	I.D. (in)
6in (150mm) with 56Ex	139	5.47
8in (200mm) with 85LEx	189	7.46
10in (250mm) with 85LEx	239	9.39
12in (300mm) with 85LEx	291	11.46
12in (300mm) with 85Ex	287	11.31



TOPIC	Connection Method for SPR™ EX
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Introduction

The aim of this procedure is to provide a method for making new service connections to clay or concrete pipes which have been relined with Rib Loc Expandable PVC liner. The method involves local excavation and coring of the section of pipe and liner where the service connection is to be made, and insertion of a proprietary rubber sleeve and PVC hub adaptor secured by stainless steel clamp. This can then be connected to the lateral pipe in the normal manner.

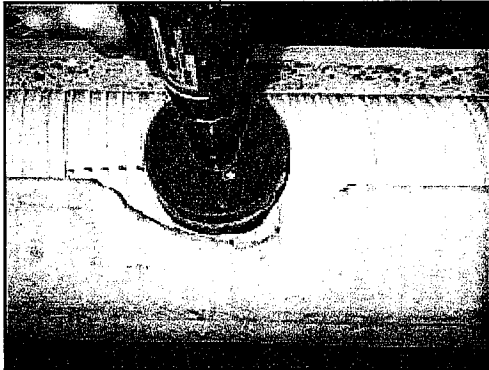
This repair method utilises "Inserta Tee" three piece service connections, manufactured by Inserta Fittings Co., PO Box 767, Hillsboro, Oregon 97123, Tel 503/357-2110 Fax 503/359-5417. The appropriate service connection should be chosen from the manufacturer's catalogue, to suit the liner size and profile type, and the intended service connection diameter and class.

Procedure

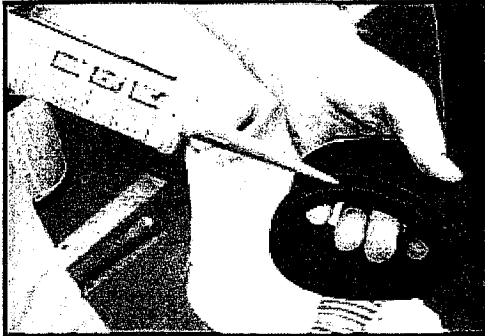
1. Expose section of liner to be connected.



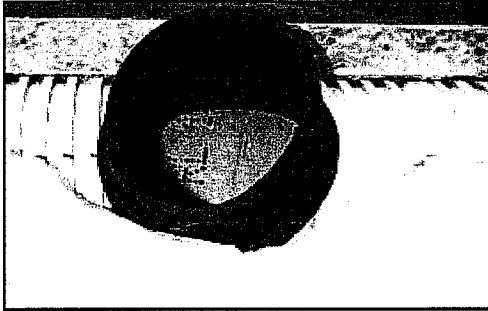
2. Drill or core hole as per manufacturer's specification (eg. for 4" connection, cut 4½")



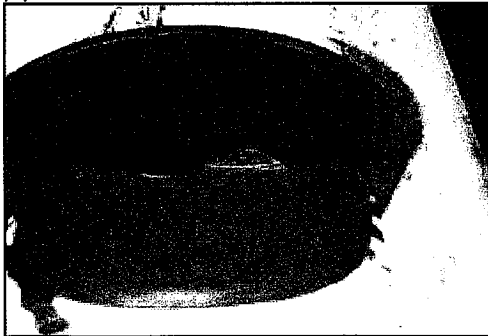
3. Apply manufacturer recommended sealing solution to inside of rubber sleeve.



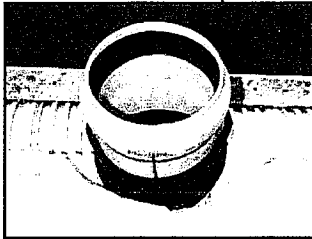
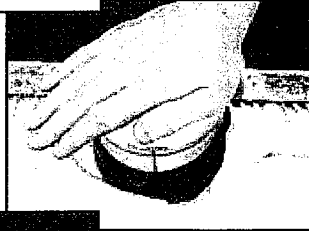
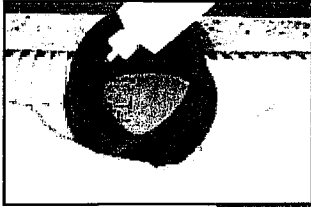
4. Install rubber sleeve of service connection.



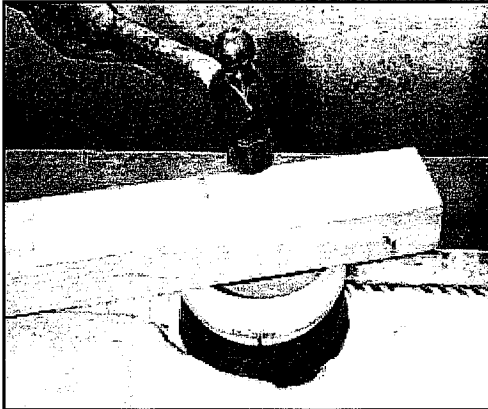
5. Ensure upper segment of rubber sleeve is on top of the profile ribs, and lower segment on the inside of the pipe.



6. Use Inserta Tee lubricant and insert PVC hub adaptor, with alignment marks as recommended.



7. Hammer the PVC adaptor in using a piece of 2" x 4" timber.



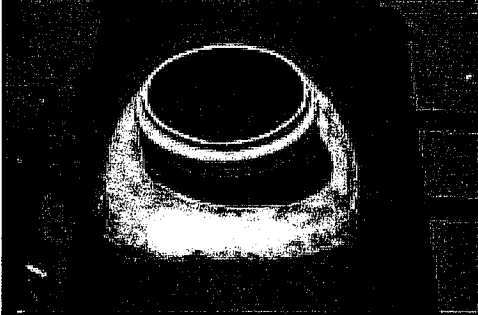
8. Drive adaptor in until depth mark (red horizontal line) is level with top of rubber sleeve.



9. Place stainless steel band around top of rubber sleeve and tighten down. Service connection can now be installed into PVC hub adaptor in the normal manner.



10. Secure the fitting with a setting mud or slurry. Brand name "Stop It" or equivalent.



Inserta Tee Part Numbers

Part Number (SDR35 PVC Sewer)	Allowable Lateral Size
__P357.5RL85LEX	4" only
__P359.5RL85LEX	4", 6"
__P359.5RL85EX	4", 6"
__P3512RL85EX	4", 6", 8"
__P3515RLEX13	4", 6", 8", 10"
__P3518RLEX13	4", 6", 8", 10", 12"
__P3521RLEX13	4", 6", 8", 10", 12", 15"
__P3521RLEX20	4", 6", 8", 10", 12", 15"
__P3524RLEX13	4", 6", 8", 10", 12", 15"
__P3524RLEX20	4", 6", 8", 10", 12", 15"
__P3527RLEX20	4", 6", 8", 10", 12", 15"
__P3530RLEX20	4", 6", 8", 10", 12", 15"

To find the part number insert the allowable lateral size into the blanks preceding the "P" in the part column.

For example:

If your lateral was a 4" SDR 35 Sewer pipe and the mainline was 8" Expanda Pipe the part number would be 4P357.5RL85LEX.

If your lateral was 8" SDR 35 Sewer pipe and the mainline was 12" Expanda Pipe the part number would be 8P3512RL85EX.



SOIL COMPACTION FAX

TEL:213-847-3761

Aug 04 '95

10:38 No.004 P.01

LAR No. ~~95-514-26~~RECD ~~1-11-95~~REPTD ~~7-26-95~~TO ~~Mr. Robert Heria~~~~City Engineer~~

cc: Mr. Clark W. Robins

Mr. Hugh Lee

Mr. Walter Shioji

CITY OF LOS ANGELES
DEPARTMENT OF GENERAL SERVICES
STANDARDS259 DORRIS PLACE
LOS ANGELES, CA 90021
42-212

Post-It® brand fax transmittal memo 7671		# of pages > 3	
To	MARK ROBINSON	From	WALT SHIOJI
Co.	RIBLOC	Co.	CITY OF LA
Dept	% PREUSSAG	Phone #	(213) 847-8428
Fax #	(714) 428-4519	Fax #	

Test of "Expanda-Pipe" PVC Liner System

At the request of the Bureau of Engineering, Structural Engineering Division, chemical resistance and physical properties tests were conducted on "Expanda-Pipe" PVC Liner System. The test specimens were submitted by Mr. Michael Harris of Rancor Inc., P.O.Box 1047, Fidlay, OH45839.

Project Title : "Expanda-Pipe" PVC Liner System

Project No. : BD001158

Manufacturer : RibLoc Inc., Australia

Engineers : Hugh Lee / Walter Shioji

The samples were tested for weight change and tensile strength after exposure to chemical solutions in accordance with the Standard Specifications for Public Works Construction 1994 Edition, Section 210-2.3.3. Hardness, Elongation and ash content were also determined.

Test results sheets are attached.

Ben K. Wong
BEN K. HOVASAPIAN, Director
General Services/Standards

PKR:BW:KSN:VKW



Lab. No.: 95-514-28
Page 2

**Chemical Resistance Test Of
Expanda-Pipe PVC Liner System**

Project Title: Expanda-Pipe PVC Liner System
Project No: BD001168
Engineer: Hugh Lee / Walter Shioji
Manufacturer: RibLoc Inc., Australia
Source: PipeTec, Inc.
Date Received: 1-11-95
Specification: SSPWC Section 210-2.3.3, 1994
Description: Rigid PVC pipelining material with ribs, Cell Class 18454-C, grey color
 1" x 3" coupons

SOLUTION	RESULTS				REQUIREMENTS
	CONDITIONED				
	WEIGHT CHANGE				
	Days Immersion				
	28	56	84	112	
Sulfuric Acid, 20%	-0.024	-0.040	-0.030	-0.029	All Solutions and Periods ±1.5% max
Sodium Hydroxide, 5%	-0.038	-0.043	-0.116	-0.038	
Ammonium Hydroxide, 5%	-0.009	-0.026	-0.017	+0.010	
Nitric Acid, 1%	-0.039	-0.054	-0.036	-0.025	
Ferric Chloride, 1%	-0.030	-0.031	-0.018	-0.015	
Soap, 0.1%	-0.009	-0.022	-0.019	-0.050	
Detergent, 0.1%	-0.053	-0.037	-0.037	-0.109	
BCD, ≈700ppm	-0.044	-0.035	-0.028	-0.024	
Bleach, 1%	+0.008	-0.013	-0.010	+0.013	

Lab No.: 96-614-26
Page 3

Chemical Resistance Test of Expand-Pipe PVC Liner System

Project Title: Expand Pipe Liner System
Project No: BD001158
Engineer: Hugh Lee / Walter Shioji
Manufacturer: RibLoc Inc., Australia
Source: PipeTec, Inc.
Date Received: 1-11-95
Specification: ASTM D1784
Description: Rigid PVC pipelining material, Cell Class 13454-C, grey color with ribs dogbone coupons per ASTM D638 Type I

Physical Properties and 7 Day Immersion in Chemical Solutions	RESULTS				SPECIFICATION REQUIREMENT
	Stable Strength (psi)		Peak Elongation (%)		
	Minimum	Maximum	Minimum	Maximum	
Sulfuric Acid, 20%	7276	7280	12.3	14.8	For Information Only
Sodium Hydroxide, 5%	6933	7097	17.4	24.9	
Ammonium Hydroxide, 5%	6748	7152	10.3	20.9	
Nitric Acid, 1%	7051	7116	14.8	18.9	
Ferric Chloride, 1%	6877	7129	12.9	21.4	
Soap, 0.1%	6904	7169	9.8	15.0	
Detergent, 0.1%	6885	7093	12.7	15.9	
BOD, ≥ 700 ppm	6970	7169	10.9	20.1	
Bleach, 1%	7014	7121	13.1	19.7	
INITIAL PHYSICAL PROPERTIES					
After 7 days of oven conditioning					
Initial Tensile Properties	6904	7599	9.9	25.5	For Information Only
Ash Content, %	10.3				
Minimum Hardness, Durometer D	74				

Note: minimum tensile strength requirement is 7,000 psi per ASTM D1784 Cell Classification

RAMTECH LABORATORIES, INC.

14104 ORANGE AVENUE, PARAMOUNT, CALIFORNIA 90723-2019 • TELEPHONE (562) 633-4824 • FAX (562) 633-4128

Jim Raz
RIB LOC AUSTRALIA PTY, LTD
587 Grand Junction Road
Gepps, Cross
South Australia, 5094
Australia

July 18, 2003

RE: Confirmation of RIB LOC PVC and "Lubricating Sealant: Chemical Resistance Testing

Dear Mr. Raz:

In accordance with your request, Ramtech Laboratories, Inc is submitting this letter to confirm the chemical resistance testing program that took place on in early 2000 here at Ramtech Laboratories, Inc. All testing was witnessed and monitored by the City of Santa Monica.. The testing procedure and materials used are detailed below:

Specification of Materials Used:

Rib Loc PVC Profile
Lubricating Sealant (GE Silicone)

Purpose of test:

To confirm that the composite of PVC spiral liner and the cured silicone sealant is capable of performing under the same conditions required of new sewer pipe construction after exposure to reagents for 112 days as specified in the "GREENBOOK" Section 210-2.3.3

Brief Overview of 112 Day Test Exposure:

<u>CHEMICAL SOLUTION</u>	<u>CONCENTRATION</u>	<u>PIPE SIZE TESTED</u>
Sulphuric Acid (H ₂ SO ₄)	20%	18" diameter
Sodium Hydroxide (NaOH)	5%	8" diameter
Ammonium Hydroxide (NH ₄ OH)	5%	18" diameter

RAMTECH LABORATORIES, INC.

Jim Raz
RIB LOC AUSTRALIA PTY, LTD
Page 2 of 2

July 18, 2003

Brief Overview of 112 Day Test Exposure (Continued):

<u>CHEMICAL SOLUTION</u>	<u>CONCENTRATION</u>	<u>PIPE SIZE TESTED</u>
Nitric Acid (HNO ₃)	1%	8" diameter
Ferric Chloride (FeCl ₃)	1%	10" diameter
Sodium Hypochloride	1%	10" diameter
Soap	0.1%	12" diameter
Detergent (Linear alkyl benzyl sulfonate or LAS)	0.1%	10" diameter
Bacteriological	BOD not less than 700ppm	8" diameter

Comments on Test Results:

The tested pipes were 3 meters in length and were subjected to the "GREENBOOK" air pressure test after the 112 day reagent exposures. The testing proved to be conclusive that the Rib Loc Expanda Pipe System is capable of performing under the same conditions required of new sewer pipe construction, even after exposure to reagents.

Respectfully Submitted:

Ramtech Laboratories, Inc.

Ronald A. Macey
Ronald A. Macey, P.E.
Laboratory Director



Mr. M. Robinson
Rib Loc Australia Pty. Ltd.
587 Grand Junction Rd.
GEPPS CROSS
South Australia 5094



Dear Mark,

RE: Testing of Rib Loc Profiles

Testing of two Rib Loc profiles, coded 126ex and 91-37, has been completed in our laboratories. Tests were carried out according to ASTM D 1784-97 "Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds". Specifically we carried out the following tests as per Section II, Test Methods.

11.3 Tensile Strength and Modulus of Elasticity.

- Test Method ASTM D638 using Type one specimens of 3.2 ± 0.4 mm thickness (profile 91-37) and 2.7 ± 0.2 mm thickness (profile 126ex).

11.5 Impact Strength (Izod),

- Method A of Test Method ASTM D256 with a sample thickness of 3.15 ± 0.05 mm for profile 91-37 and 2.4 ± 0.2 mm thick specimens for profile 126ex were used.

11.6 Deflection Temperature

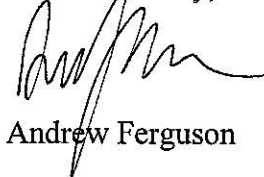
- Test Method ASTM D648 using 127mm long, 12.5mm wide and 3.6mm thick specimens under 1.82Mpa fibre stress.

The results of the testing are summarised below. The results are the average of 5 tests for Tensile Strength, Modulus, 10 for Izod and 2 for Deflection Temperature.

Test	Profile Type	
	126 ex	91-37
Tensile Strength at Break (Mpa)	45.4	50.2
Modulus of Elasticity (Mpa)	3495	3613
Izod Impact Strength (J/m)	85.9	146.5
Heat Distortion Temperature(°C)	73	72

Please do not hesitate to contact me if you have any queries.

Yours sincerely,



Andrew Ferguson



Nu-Line Technologies, LLC Project References – CIPP/SPR

CIPP Project / Description	Owner / Contact	Contract Amount	Date
<u>2014 Wing Ave Flood Control</u> Clean/CCTV & CIPP lining of 159 LF of 18-inch & 24-inch Storm Drain, Flow Diversion.	Flatiron/City of El Cajon 1770 La Costa Meadows Drive San Marcos, Ca 92708 Ruben Claudio (760) 916-9100	\$ 33,030.00	<u>Start</u> 5/15/14 <u>Completion</u> 5/28/2014
<u>2014 Pipeline Rehabilitation Phase W-1</u> CIPP lining of 21,754 LF of 8-inch diameter sanitary sewer. Point Repairs, Manhole Rehabilitation, 425 Top Hats (SLC's) and 425 Lateral Launch Video, 425 4-inch CIPP Lateral Installation.	City of San Diego 525 B Street, Ste. 750 San Diego, CA 92101 Maryam Liaghat (619) 533-5192	\$ 2,465,095.10	<u>Start</u> 6/16/2014 <u>Completion</u> 3/19/2015
<u>2014 Sewer Rehabilitation Project No. 9</u> CIPP lining of 9,166 LF of 8" & 10" diameter sanitary sewer. Clean & CCTV, Bypass Pumping	Los Angeles Dept. of Public Works 900 South Fremont Ave Alhambra, CA 90014 Attn: Jose Pou (626) 458-2191	\$ 232,000.00	<u>Start</u> 9/2/2014 <u>Completion</u> 10/31/2014
<u>2014 Pipeline Rehabilitation Phase X-1</u> CIPP lining of 4,092 LF of 6", 8", 10" & 15" diameter sanitary sewer. Point Repairs, Manhole Rehabilitation, 44 Service Lateral Connections and 44 Lateral Launch Video, 44 CIPP Lateral Installation.	City of San Diego 9485 Aero Drive San Diego, CA 92101 Jericho Gallardo (619) 533-7523	\$ 513,000.00	<u>Start</u> 11/21/2014 <u>Completion</u> 3/16/2015
<u>2014 Sewer Pipeline and Storm Drain Repairs</u> CIPP lining of 3,367 LF of 6", 8" & 18" diameter sanitary sewer & Storm Drain. Point Repairs, Manhole Rehabilitation,	City of Solana Beach 9485 Aero Drive Solana Beach , CA 92075 Taryn Kjolsing (858) 720-2470	\$ 455,414.50	<u>Start</u> 9/22/2014 <u>Completion</u> 11/26/2014
<u>2014 Sewer & Water Group 833</u> CIPP lining of 3,876 LF of 6", 8" and 10" Sanitary Sewer Main Replacement. Point Repairs, Manhole Rehabilitation, Service Lateral Connections, Bypass Pumping.	City of San Diego 525 B Street, MS 908A San Diego, CA 92101 Bijan Shakiba, (619) 533-5191	\$ 513,000.00	<u>Start</u> 12/1/2014 <u>Completion</u> 1/26/2015
<u>2013 Sewer & Water Group 720</u> CIPP lining of 621 LF of 6-inch, Sanitary Sewer Main Replacement. Point Repairs, Manhole Rehabilitation, Service Lateral Connections, Bypass Pumping	City of San Diego 525 B Street, MS 908A San Diego, CA 92101 Bijan Shakiba (619) 533-5191	\$ 21,735.00	<u>Start</u> 11/8/2014 <u>Completion</u> 11/8/2014
<u>2013 Sewer & Water Group 758</u> CIPP lining of 2,612 LF of 8-inch and 10,135 LF sanitary sewer replacement. Point Repairs, Manhole Rehabilitation, 30 (SLC's), CIPP Lateral Installation, Bypass Pumping.	City of San Diego 1200 Third Avenue., Ste. 200 San Diego, CA 92101 Luis Schaar, R.E. (619) 533-4641	\$ 81,518.80	<u>Start</u> 5/29/2014 <u>Completion</u> 12/16/2014





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>2015 Sewer & Water Group 815</u> CIPP lining of 545 LF of 8-inch sanitary sewer. Point Repairs, Manhole Rehabilitation, 5 (SLC's), Bypass Pumping.</p>	<p>City of San Diego 525 B Street, MS 908A San Diego, CA 92101 Bijan Shakiba (619)533-5191</p>	<p style="text-align: center;">\$ 29,975.00</p>	<p style="text-align: center;"><u>Completion</u> 2/17/2015</p>
<p><u>City of San Diego Skylark Canyon Rehabilitation</u> CIPP lining of 1,417 LF of 8-inch sanitary sewer. Bypass Pumping.</p>	<p>Weir Construction Corporation 2255 Barham Drive Escondido, Ca 92029 Brian Weir (760) 743-6776</p>	<p style="text-align: center;">\$ 95,215.00</p>	<p style="text-align: center;"><u>Start</u> 12/24/2014 <u>Completion</u> 1/9/2015</p>
<p><u>Back Bay Drive Storm Drain Rehabilitation</u> CIPP/SPR lining of 1,892 LF of 12-inch to 42-Inch storm Drain. Bypass Pumping/Dewatering.</p>	<p>City of Newport Beach 100 Civic Center Drive Newport Beach, CA 92660 Peter Tauscher (949) 644-3309</p>	<p style="text-align: center;">\$ 297,208.80</p>	<p style="text-align: center;"><u>Start</u> 1/19/2015 <u>Completion</u> 4/8/2015</p>
<p><u>Sewer Capital Improvements Project-Lemon Grove</u> CIPP Lining of 3,480 LF of 6-Inch and 8-Inch sanitary Sewer, manhole installations, cleanout installations, bypass pumping.</p>	<p>City of Lemon Grove 3232 Main Street Lemon Grove, Ca 91945 Scott Adamson (858) 413-2400</p>	<p style="text-align: center;">\$ 189,946.00</p>	<p style="text-align: center;"><u>Start</u> 9/28/2015 <u>Completion</u> 10/15/2015</p>
<p><u>Bataquitos Force Main (B1/B2) Force Main</u> <u>City of Leucadia</u> Rehabilitation of 383 LF of 21-Inch sanitary sewer Force Main, Carlsbad Blvd from Proto Drive</p>	<p>Leucadia Wastewater District 1960 La Costa Ave Carlsbad Ca, 92009 Robin Morshita (760) 753-0155</p>	<p style="text-align: center;">\$ 76,500.00</p>	<p style="text-align: center;"><u>Start</u> 5/5/2015 <u>Completion</u> 3/6/2015</p>
<p><u>Annual Sewer Rehabilitation Program CIP. 15701</u> CIPP Lining of 7,702 LF of 6-Inch, 8-Inch, 21-inch and 36-Inch sanitary Sewer and storm drain, manhole installations, cleanout installations, bypass pumping.</p>	<p>City of San Juan Capistrano 32400 Paseo Adelanto San Juan Capistrano CA, 92675 Mike Marquis (949) 443-6326</p>	<p style="text-align: center;">\$ 1,385,061.00</p>	<p style="text-align: center;"><u>Start</u> 8/17/2015 <u>Completion</u> 12/28/2015</p>
<p><u>Pipeline Rehab F-2 (Laterals)</u> Clean & CCTV of 93,955 LF of sanitary sewer.</p>	<p>City of San Diego 525 B Street, MS 908A San Diego, CA 92101 Ryan Reed (619) 533-5191</p>	<p style="text-align: center;">\$ 101,471.00</p>	<p style="text-align: center;"><u>Start</u> 2/15/2015 <u>Completion</u> 8/25/2015</p>
<p><u>Sewer and AC Water Group 752</u> CIPP Lining of 5,182 LF of 8-Inch sanitary Sewer and bypass pumping. Clean & CCTV, Top Hats</p>	<p>Public Utilities Department 9150 Topaz Way, MOC 1 San Diego, CA 92123 Ed M. Cartas (585) 614-4564</p>	<p style="text-align: center;">\$ 281,411.00</p>	<p style="text-align: center;"><u>Start</u> 7/9/2015 <u>Completion</u> 7/17/2015</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p>Sewer and AC Water Group 1004 CIPP Lining of 948 LF of 8-Inch sanitary Sewer and bypass pumping. Clean & CCTV, 14 Top Hats</p>	<p>City of San Diego 9485 Aero Drive, San Diego, CA 92123 Armin Asadyari (858) 997-7989</p>	<p>\$ 70,159.00</p>	<p><u>Completion</u> 9/15/2015</p>
<p>South Oceanside Waterline Replacement Clean & CCTV, Post Video of 5,887 LF 8-Inch New Installation, Manhole Rehabilitation</p>	<p>City of Oceanside 300 North Coast Highway, Oceanside, CA 92054 Greg Keppler (760) 435-5913</p>	<p>\$ 90,092.75</p>	<p><u>Completion</u> 2015</p>
<p>Gravity Pipeline Rehabilitation Clean & CCTV, Post Video of 1,887 LF 6-Inch, 8-Inch and 12-Inch sanitary sewer. Sectional Lining</p>	<p>Leucadia Wastewater District 1960 La Costa Avenue, Carlsbad, CA 92009 Robin Morishita (760) 753-0155</p>	<p>\$ 137,987.00</p>	<p><u>Start</u> 7/9/2015 <u>Completion</u> 9/16/2015</p>
<p>Pipeline Rehab Z-1 Clean & CCTV, Post Video of 13,500 LF 8-Inch sanitary sewer, SPR/CIPP Lining of 13,500 LF of 8-Inch sanitary sewer and installation of 300 Top Hats</p>	<p>City of San Diego 9485 Aero Drive, San Diego, CA 92123 Dave Engel (619) 549-5451</p>	<p>\$ 507,079.50</p>	<p><u>Start</u> 10/6/2015 <u>Completion</u> 12/11/2015</p>
<p>Los Angeles County Dept of Public Work – Project #11 SPR/CIPP Lining of 13,842 LF of 8-Inch sanitary Sewer and bypass pumping.</p>	<p>LACDPW 900 South Fremont Avenue Alhambra, California 91803 Tim Bazinet (626) 458-4951</p>	<p>\$ 435,233.50</p>	<p><u>Start</u> 1/18/2016 <u>Completion</u> 2/29/2016</p>
<p>Industry Rd Sewer @ Ha-Hana Rd. CIPP Lining of 748 LF of 24-Inch sanitary Sewer and bypass pumping.</p>	<p>Just Construction 3103 Market Street San Diego, CA 92102 (619) 702-4002</p>	<p>\$ 136,127.00</p>	<p><u>Awaiting</u> <u>NTP</u></p>
<p>CULVERT REPAIR AND REPLACEMENT FISCAL YEAR 2014-15 CIPP/SPR Lining of 499LF of 18-Inch to 42-Inch storm drain culvert.</p>	<p>Tri-Group Construction 9580 Black Mountain Rd Ste. L San Diego, CA 92126 Hani Assi (858) 583-1846</p>	<p>\$ 159,239.00</p>	<p><u>Start</u> 10/5/2015 <u>Completion</u> 11/30/2015</p>
<p>Huntington Beach FY 201415 Sewer Lining Project CIPP Lining of 11,189 LF of 8-Inch sanitary Sewer and bypass pumping.</p>	<p>City of Huntington Beach 2000 Main Street, 1st Floor Huntington Beach, CA 92648 Jose Fuentes (714) 536-5431</p>	<p>\$ 250,000.00</p>	<p><u>Start</u> 3/1/2016 <u>Completion</u> 4/14/2016</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>Encinitas 2014-2015 Annual Storm Drain Rehabilitation</u> CIPP Lining of 2,322LF of 12-Inch to 36-Inch storm drain culvert.</p>	<p>City of Encinitas 505 S. Vulcan Encinitas, CA 92024 Kipp Heffner (760) 633-2775</p>	<p>\$ 558,399.00</p>	<p><u>Start</u> 10/5/2015 <u>Completion</u> 3/30/2016</p>
<p><u>Sewer and AC Water Group 840</u> Final main video of 2,098 LF, 8-Inch sewer</p>	<p>City of San Diego 9485 Aero Drive, San Diego, CA 92123 Avram Yu (858) 573-5084</p>	<p>\$ 3,147.00</p>	<p><u>Completion</u> 9/21/2015</p>
<p><u>Sewer Group 798</u> Clean & Video, SPR/CIPP Lining of 11,894LF of 8-Inch sanitary sewer, 164 Service Lateral Connections</p>	<p>City of San Diego 9485 Aero Drive, San Diego, CA 92123 Avram Yu (858) 573-5084</p>	<p>\$ 410,114.30</p>	<p><u>Start</u> 12/15/2015 <u>Completion</u> 2/10/2016</p>
<p><u>2015 Sewer Repair Project - Rossmoor/Los Alamitos</u> Clean & Video, CIPP Lining 2,545 LF of 8-Inch, Point repairs, Top Hats</p>	<p>Vasilj Inc. 15531 Arrow Hwy, Irwindale, CA 91706 John Gavigan (626) 480-1442</p>	<p>\$ 123,124.00</p>	<p><u>Start</u> 3/3/2016 <u>Completion</u> 4/1/2016</p>
<p><u>2015 GRAVITY SEWER REHABILITATION</u> Clean & Video, CIPP Lining 2,237 LF of 6-Inch, 8-Inch and 12-Inch sanitary sewer, 29 Service Lateral Connections, Bypass Pumping</p>	<p>Leucadia Wastewater Division 1960 La Costa Avenue, Carlsbad, CA 92009 Robin Morishita (760) 753-0155</p>	<p>\$ 161,524.50</p>	<p><u>Start</u> 8/26/2015 <u>Completion</u> 12/23/2015</p>
<p><u>CIPP Lining of 15" & 18" CMP Storm Drain</u> Clean & Video, CIPP Lining 360 LF of 15-Inch and 18-Inch storm drains.</p>	<p>City of Buena Park 6650 Beach Blvd, Buena Park, Ca 90622 Francisco Gutierrez (714)562-3687</p>	<p>\$ 51,991.00</p>	<p><u>Start</u> 3/3/2016 <u>Completion</u> 3/4/2016</p>
<p><u>Storm Drain Lining of 21" to 54"</u> Clean & Video, CIPP Lining 2,415 LF of 18-Inch, 21-Inch, 24-Inch, 30-Inch and 36-Inch storm drains, Sectional Repairs, Invert Grouting of storm drains prior to rehabilitation.</p>	<p>City of Chula Vista 1800 Maxwell Road, Chula Vista, CA 91911 Kalani Camacho (619) 921-2922</p>	<p>\$ 433,391.00</p>	<p><u>Start</u> 1/4/2016 <u>Completion</u> 4/21/2016</p>
<p><u>Storm Drain Lining 2014-15; Project No. 52716</u> Clean & Video, CIPP Lining 2,420 LF of 8-Inch, 10-Inch sanitary sewer, 12-Inch and 18-Inch storm drains, Sectional Repairs, Invert Grouting of storm drains prior to rehabilitation.</p>	<p>City of Fullerton PWD Engineering 303 West Commonwealth Avenue, Fullerton, CA 92832 Vince Oseguera (714) 738-6845</p>	<p>\$ 117,973.00</p>	<p><u>Start</u> 2/22/2016 <u>Completion</u> 4/25/2016</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>The Oaks - CIPP Lining of 36-Inch Storm Drain</u> Clean & CCTV 100 LF of 36-Inch storm Drain, Easement access installation of 100 LF of 36-Inch storm Drain, Post Video</p>	<p>Davidson Communities 1302 Camino Del Mar, Del Mar, CA 92014 Tim O'Grady (858) 259-8500</p>	<p style="text-align: center;">\$ 32,000.00</p>	<p style="text-align: center;"><u>Start</u> 4/29/2016 <u>Completion</u> 4/29/2016</p>
<p><u>Eastern Municipal Water District 12-Inch Sanitary Sewer</u> Clean & CCTV, Rehabilitate 413 LF of 12-Inch Sanitary Sewer, Reinstate 5 Lateral Connections, Bypass Pumping</p>	<p>Eastern Municipal Water District 2270 Trumble Road, Perris, CA 92572-8300 Mark Chamberlin (951) 928-3777</p>	<p style="text-align: center;">\$ 22,715.00</p>	<p style="text-align: center;"><u>Start</u> 2/26/2016 <u>Completion</u> 2/26/2016</p>
<p><u>City of Los Angeles – Sewers 5 Program</u> Clean & CCTV, Rehabilitate 7,147 LF of 8-Inch, 10-Inch, 16-Inch Sanitary Sewer, Reinstate 160 Lateral Connections, Bypass Pumping, Post Video</p>	<p>Mathew & Stewart Co Inc. 2841 Gardena Ave, Signal Hill, CA 90755 Bruce Flowers (562) 595-5471</p>	<p style="text-align: center;">\$ 304,603.00</p>	<p style="text-align: center;"><u>Start</u> 6/17/2015 <u>Completion</u> On Call</p>
<p><u>Rancho Palos Verdes Storm Drain</u> Clean & CCTV 134 LF of 18-Inch storm Drain, Easement access installation of 134 LF of 18-Inch storm Drain, Post Video</p>	<p>Grfco Inc Po Box 1747 Brea, CA 92822 Jim Jackson (714) 412-4712</p>	<p style="text-align: center;">\$ 21,942.50</p>	<p style="text-align: center;"><u>Start</u> 12/30/2015 <u>Completion</u> 12/30/2015</p>
<p><u>City of San Diego Group 703A</u> Clean & CCTV 627 LF of 8-Inch sanitary sewer, Easement access installation of 627 LF of 8-Inch sanitary sewer, Post Video</p>	<p>Weir Construction Corporation 2255 Barham Drive, Escondido, Ca 92029 Allan Weir (760) 743-6776</p>	<p style="text-align: center;">\$ 30,347.50</p>	<p style="text-align: center;"><u>Start</u> 3/8/2016 <u>Completion</u> 3/9/2016</p>
<p><u>La Costa Golf Course</u> Clean & CCTV 360 LF of 10-Inch sanitary sewer, Easement access installation of 360 LF of 10-Inch sanitary sewer, Post Video</p>	<p>Leucadia Wastewater Division 1960 La Costa Avenue, Carlsbad, CA 92009 Robin Morishita (760) 753-0155</p>	<p style="text-align: center;">\$ 18,720.00</p>	<p style="text-align: center;"><u>Start</u> 11/20/2015 <u>Completion</u> 11/20/2015</p>
<p><u>Manning Canyon Sewer and Water Replacement</u> Clean & CCTV 15,508 LF of 8-Inch sanitary sewer, Rehabilitate 2,582 LF of 8-Inch sanitary sewer w/SPR, 56 Sewer Lateral Connections, Post CCTV Video of 15,508 LF, Bypass Pumping</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p style="text-align: center;">\$ 212,865.00</p>	<p style="text-align: center;"><u>Start</u> 3/22/2016 <u>Completion</u> 2/28/17</p>
<p><u>SAN DIEGO PIPELINE AC-1</u> Clean & CCTV, Post Video of 40,279 LF 8-Inch sanitary sewer, 889 Lateral Launch Video, SPR/CIPP Lining of 40,279 LF of 6", 8" and 10 -Inch sanitary sewer and installation of 889 Top Hats</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p style="text-align: center;">\$ 1,040,214.00</p>	<p style="text-align: center;"><u>Start</u> 4/4/2016 <u>Completion</u> 10/18/2016</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>SPR Lining of 36-Inch Storm Drain</u> Clean & CCTV 140 LF of 36-Inch Storm Drain under 805 Freeway Southbound Lane, Post Video</p>	<p>SKANSKA, Inc. 5196 Governor Drive, San Diego, California 92122 Keith Jackson (858) 646-0921</p>	<p>\$ 85,089.00</p>	<p><u>Start</u> 5/12/2016 <u>Completion</u> 5/14/2016</p>
<p><u>Sewer Rehabilitation Project No. 13</u> SPR/CIPP lining of 19,943 LF of 8-Inch diameter sanitary sewer, reinstate 459 House connections, Clean & CCTV, Bypass Pumping</p>	<p>Los Angeles Dept. of Public Works 900 South Fremont Ave Alhambra, CA 90014 Joel Zaragoza (626) 458-4973</p>	<p>\$ 476,649.00</p>	<p><u>Start</u> 4/7/2016 <u>Completion</u> 11/8/2016</p>
<p><u>Sewer & Water Group 834</u> Clean & CCTV, Post Video of 8,996 LF 8-Inch sanitary sewer, Lateral Launch Video, SPR Lining of 975 LF of 10", 12" and 14 -Inch sanitary sewer and installation Top Hats</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p>\$ 109,284.50</p>	<p><u>Start</u> 3/21/2016 <u>Completion</u> 3/21/2017</p>
<p><u>LACDPW CRR. 436</u> CIPP lining of 598 LF of 18", 36" and 60-Inch diameter storm drain, Clean & CCTV, Spot Repairs, Frame and Cover Installations</p>	<p>Los Angeles Dept. of Public Works 900 South Fremont Ave Alhambra, CA 90014 Fred Kheradvar (626) 458-4973</p>	<p>\$ 297,203.50</p>	<p><u>Start</u> 5/27/2016 <u>Completion</u> 7/13/2016</p>
<p><u>2016 SEWER MAIN CIPP REHABILITATION</u> Clean & CCTV, Post Video of 3,700 LF 6", 8" and 10-Inch sanitary sewer, Traffic Control, Bypass Pumping.</p>	<p>Yorba Linda Water District 1717 E. Miraloma Avenue, Placentia, CA 92870 Alex Thomas (714) 701-3115</p>	<p>\$ 189,823.00</p>	<p><u>Start</u> 4/14/2016 <u>Completion</u> 7/28/2016</p>
<p><u>SSRP P08 Daly Street & Avenue 26</u> Clean & CCTV, Rehabilitate 5,405 LF of 8-Inch Sanitary Sewer, Reinstale 163 Lateral Connections, Bypass Pumping, Post Video</p>	<p>Vasilj Inc. 15531 Arrow Hwy, Irwindale, CA 91706 John Gavigan (626) 480-1442</p>	<p>\$ 258,160.00</p>	<p><u>Start</u> 12/12/2016 <u>Completion</u> 1/31/2018</p>
<p><u>City of Los Angeles ESRP #SWCO3077 - Avondale</u> Clean & CCTV, Rehabilitate 292 LF of 8-Inch Sanitary Sewer, Reinstale Lateral Connections, Bypass Pumping, Post Video</p>	<p>Vasilj Inc. 15531 Arrow Hwy, Irwindale, CA 91706 John Gavigan (626) 480-1442</p>	<p>\$ 14,600.00</p>	<p><u>Start</u> 6/2/16 <u>Completion</u> 6/2/2016</p>
<p><u>City of Los Angeles ESRP #SW02905 - Avondale</u> Clean & CCTV, Rehabilitate 134 LF of 8-Inch Sanitary Sewer, Reinstale Lateral Connections, Bypass Pumping, Post Video</p>	<p>Williams Pipeline Contractors, PO Box 1120 Somis, CA 93066 John Williams (805) 207-0148</p>	<p>\$ 8,710.00</p>	<p><u>Start</u> 5/17/2016 <u>Completion</u> 5/17/2016</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>SANITARY SEWER MASTER PLAN PHASE 1</u> Clean & CCTV, Post Video of 2,230 LF 8", 10" & 12-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>City of South El Monte 1415 Santa Anita Avenue, South El Monte, CA 91733 Aidan Mousavi (626) 652-3110</p>	<p>\$163,798.00</p>	<p><u>Start</u> 6/7/2016 <u>Completion</u> 10/28/2016</p>
<p><u>2016 GRAVITY PIPELINE REHABILITATION PROJECT</u> Clean & CCTV, CIPP Lining of 1,280 LF 8" & 15-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>Leucadia Wastewater Division 1960 La Costa Avenue, Carlsbad, CA 92009 Robin Morishita (760) 753-0155</p>	<p>\$ 240,000.00</p>	<p><u>Start</u> 7/28/2016 <u>Completion</u> 12/15/2016</p>
<p><u>Caltrans No. 08-OJ8104</u> Clean & CCTV, SPR & CIPP Lining of 1,160 LF of 18", 24", 30", 36" and 42-Inch Storm Drain, Pipe Repairs, Post Video</p>	<p>Dreambuilder 1324 E. Lawson Ln, Placentia, CA 92870 Anu Singh (714) 646-3697</p>	<p>\$ 311,540.00</p>	<p><u>Start</u> 1/9/2017 <u>Completion</u> 3/3/2017</p>
<p><u>HillTop Area Sewer Lining Project</u> Clean & CCTV, CIPP Lining of 12,956 LF 6", 8", 10" & 12-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>City of Redding 777 Cypress Avenue, Redding, CA 96001 Darren Langfield (530) 225-4469</p>	<p>\$ 519,330.00</p>	<p><u>Start</u> 7/5/2016 <u>Completion</u> 9/30/2016</p>
<p><u>Sewer & Water Group 701</u> Clean & CCTV, CIPP Lining of 1,280 LF 8" & 15-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>City of San Diego 1200 Third Avenue., Ste. 200 San Diego, CA 92101 Luis Schaar, R.E. (619) 533-4641</p>	<p>\$ 27,864.75</p>	<p><u>Start</u> 3/5/2018 <u>Completion</u> 5/7/2017</p>
<p><u>Tyrian St and Soledad Ave and AC Water Main</u> Clean & CCTV, CIPP Lining of 6-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>PK Mechanical Systems, Inc. 21335 Bundy Canyon Road Wildomar, CA 92595 David Spindler (951) 245-5537</p>	<p>\$ 13,164.00</p>	<p><u>Start</u> 3/15/2017 <u>Completion</u> 3/17/2017</p>
<p><u>RFB 7402 San Diego San District</u> Clean & CCTV, sectional Lining and Top Hat Installation, 8" VCP sanitary sewer.</p>	<p>County of San Diego 5560 South Overland Avenue, Suite B, San Diego CA 92123 Jaclyn Smith, (858) 505-6367</p>	<p>\$ 5,850.00</p>	<p><u>Start</u> 7/11/2016 <u>Completion</u> 7/12/2016</p>
<p><u>City of LA ESR 69th & Vermont</u> Clean & CCTV, CIPP Lining of 8-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>Vasilj Inc. 15531 Arrow Hwy, Irwindale, CA 91706 John Gavigan (626) 480-1442</p>	<p>\$ 13,777.50</p>	<p><u>Start</u> 5/18/2016 <u>Completion</u> 5/19/2016</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

Fresno E. Home Avenue Sewer Rehab Clean & CCTV, CIPP Lining of 8-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.	City of Fresno 2600 Fresno Street, Room 2156 Fresno CA, 93721 Mike Brown (559) 621-1332	\$ 75,255.00	<u>Start</u> 3/15/2017 <u>Completion</u> 6/5/2017
Pacific Beach Pipeline South Video Inspecting 9,000 LF of Pipelines and Culverts for Acceptance.	TC Construction 10540 Prospect Avenue Santee, CA 92071 Elan Schier (619) 820-7811	\$ 41,207.00	<u>Start</u> 4/3/2017 <u>Completion</u> TBD
6-Inch CIPP Lining at U.C.L.A Clean & CCTV, CIPP Lining of 6-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.	PipeTec PO Box 2337 Irwindale, CA 91706 Mike Ashker (562) 699-3496	\$ 14,425.00	<u>Start</u> 6/17/2016 <u>Completion</u> 6/17/2016
Mission Trails Collection - Santee 1 Video Inspecting 1,001 LF of Pipelines and Culverts for Acceptance.	Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822	\$ 2,862.00	<u>Start</u> TBD <u>Completion</u> TBD
City of El Monte – Sewer Lining Project Clean & CCTV, CIPP Lining of 8-Inch and 15-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.	City of El Monte 11333 Valley Blvd El Monte CA 91732 Richard Ruyle (626) 808-1909	\$ 163,098.00	<u>Start</u> 9/27/2016 <u>Completion</u> 11/23/2016
Ross Valley Sanitation Clean & CCTV, CIPP Lining of 22,202 LF of 6-Inch and 8-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.	Ranger Pipelines 1790 Yosemite Ave. San Francisco, CA 94124 Tom Grover (415) 822-3700	\$ 864,999.50	<u>Start</u> 6/12/2017 <u>Completion</u> 5/1/2018
Via De La Valle bridge in Del Mar, CA Clean & CCTV, CIPP Lining of 10-Inch Ductile Iron Pipe, Traffic Control	PAL General Engineering 10675 Treena Street, Ste. 103 San Diego, CA 92131 Diana Hsu (858) 860-5300	\$ 24,235.50	<u>Start</u> 10/26/2016 <u>Completion</u> 10/26/2016
Pipeline Rehabilitation AM-1 Clean & CCTV, Post Video of 41,127 LF 8-Inch sanitary sewer, 1,127 Lateral Launch Video, SPR/CIPP Lining of 41,127 LF of 8-Inch sanitary sewer and installation of 1,127 Top Hats	Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822	\$ 1,755,384.50	<u>Start</u> 11/15/2016 <u>Completion</u> TBD





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>Fresno Sewer Rehabilitation in Congo and H-Broadway Downtown</u> Clean & CCTV, CIPP Lining of 1,441 LF of 8-Inch and 10-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>Emmitt's Excavation Inc 6207 E. Clinton Ave Fresno CA 93727 David Walsh (559) 347-9188</p>	<p style="text-align: center;">\$ 114,434.50</p>	<p style="text-align: center;"><u>Start</u> April 2017 <u>Completion</u> 4/15/2018</p>
<p><u>Massachusetts Avenue Sewer Improvements - La Mesa</u> Clean & CCTV, CIPP Lining of 937 LF of 6-Inch, 8-Inch and 15-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>S.C. Valley Engineering, Inc. 656 Front St. El Cajon, CA 92020 Kevin Prescott (619) 444-2366</p>	<p style="text-align: center;">\$ 85,709.81</p>	<p style="text-align: center;"><u>Start</u> 12/12/2016 <u>Completion</u> 2/3/2017</p>
<p><u>Sewer Capital Improvements – Lemon Grove</u> Clean & CCTV, CIPP Lining of 112 LF of 6-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>S.C. Valley Engineering, Inc. 656 Front St. El Cajon, CA 92020 Kevin Prescott (619) 444-2366</p>	<p style="text-align: center;">\$ 10,080.00</p>	<p style="text-align: center;"><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>Val Sereno Storm Drain Rehabilitation & Extension</u> Clean & CCTV, CIPP Lining of 143LF of 24-Inch storm drain, clearing and grubbing, Traffic Control, Concrete Headwall, Invert Paving Repairs.</p>	<p>City of Encinitas 505 S. Vulcan Avenue Encinitas, CA 92024 Kipp Hefner (760) 633-2775</p>	<p style="text-align: center;">\$ 49,000.00</p>	<p style="text-align: center;"><u>Start</u> 10/27/2016 <u>Completion</u> 11/7/2016</p>
<p><u>Small Diameter Sewer Rehabilitation - 2017-1</u> Clean & CCTV, CIPP Lining of 143LF of 24-Inch storm drain, clearing and grubbing, Traffic Control, Concrete Headwall, Invert Paving Repairs.</p>	<p>AUI Incorporated 7420 Reading Ave. SE Albuquerque New Mexico 87105 Mike Rocco (505) 242-4848</p>	<p style="text-align: center;">\$ 253,674.00</p>	<p style="text-align: center;"><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>Fresno Sewer Rehab & Replace in N Central Downtown</u> Clean & CCTV, CIPP Lining of 857 LF of 6-Inch sanitary sewer, lateral reinstatement.</p>	<p>Bill Nelson GEC, Inc. 2741 E. Malaga Avenue Fresno, CA 93725 Jeff Nelson (559) 439-1756</p>	<p style="text-align: center;">\$ 83,942.59</p>	<p style="text-align: center;"><u>Start</u> 4/5/2017 <u>Completion</u> 5/31/2017</p>
<p><u>Trenchless Repair Replacement & Rehab Los Alamos</u> Clean & CCTV, SPR Lining of 1,450 LF of 8-Inch sanitary sewer, lateral reinstatement.</p>	<p>AUI Incorporated 7420 Reading Ave. SE Albuquerque New Mexico 87105 Mike Rocco (505) 242-4848</p>	<p style="text-align: center;">\$ 106,515.00</p>	<p style="text-align: center;"><u>Start</u> 12/12/2016 <u>Completion</u> 12/16/2016</p>
<p><u>Rehabilitation of 2 Sewer Lift Stations 24th St & Oak St</u> Clean & CCTV, CIPP Lining of 486 LF of 15-Inch sanitary sewer, lateral reinstatement.</p>	<p>GSE Construction Company, Inc. 6950 Preston Avenue Livermore, CA 94551 Alexia Leon (925) 447-0292</p>	<p style="text-align: center;">\$ 53,415.00</p>	<p style="text-align: center;"><u>Start</u> 4/5/2017 <u>Completion</u> 10/17/2017</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>Yorba Linda Water District 8in DIP</u> Clean & CCTV, CIPP Lining of 208 LF of 8-Inch Ductile Iron sanitary sewer, lateral reinstatement.</p>	<p>Murrieta Development Inc. 42540 Rio Nedo Rd. Temecula, CA 92590 Bill Estrada (909) 721-0362</p>	<p>\$ 12,376.00</p>	<p><u>Start</u> 11/16/2016 <u>Completion</u> 11/16/2016</p>
<p><u>City of Bell - Sewer Modernization Project</u> Clean & CCTV, CIPP Lining of 4,839LF of 8-Inch sanitary sewer, lateral reinstatement.</p>	<p>Tunnelworks Services Inc. 13502-H Whittier Blvd. Ste. 165 Whittier, CA 90605 William Duarte (562) 553-2734</p>	<p>\$ 142,862.75</p>	<p><u>Start</u> 2/14/2017 <u>Completion</u> 4/10/2017</p>
<p><u>I-25 South 18-Inch Sanitary Sewer</u> Clean & CCTV, SPR Lining of 550 LF of 18-Inch sanitary sewer, lateral reinstatement.</p>	<p>AUI Incorporated 7420 Reading Ave. SE Albuquerque New Mexico 87105 Mike Rocco (505) 242-4848</p>	<p>\$ 168,440.00</p>	<p><u>Start</u> 12/15/2016 <u>Completion</u> 3/31/2017</p>
<p><u>Pipeline Rehabilitation AG-1</u> Clean & CCTV, SPR/CIPP Lining of 35,992 LF of 8-Inch sanitary sewer and installation of 797 Top Hats</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p>\$ 1,414,852.50</p>	<p><u>Start</u> 4/3/2017 <u>Completion</u> TBD</p>
<p><u>Bonillo Drive Storm Drain</u> Cleaning and Video Inspection of 24" Storm Drain</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p>\$ 2,169.11</p>	<p><u>Start</u> 2/7/2017 <u>Completion</u> 2/7/2017</p>
<p><u>Lemon Drive 8-Inch Lining</u> Clean & CCTV, CIPP Lining of 10 LF of 10-Inch sanitary sewer.</p>	<p>Yorba Linda Water District 1717 E. Miraloma Avenue, Placentia, CA 92870 Diane Dalton (714) 701-3115</p>	<p>\$ 7,385.00</p>	<p><u>Start</u> 3/10/2017 <u>Completion</u> 3/10/2017</p>
<p><u>Sunset Lane Easement 8-Inch Lining</u> Clean & CCTV, CIPP Lining of 345 LF of 8-Inch sanitary sewer.</p>	<p>Yorba Linda Water District 1717 E. Miraloma Avenue, Placentia, CA 92870 Diane Dalton (714) 701-3115</p>	<p>\$ 17,424.75</p>	<p><u>Start</u> 2/27/2017 <u>Completion</u> 2/27/2017</p>
<p><u>Sierra Madre Rehab Project</u> Clean & CCTV, CIPP Lining of 2,785LF of 8-Inch sanitary sewer.</p>	<p>City of Sierra Madre 232 W. Sierra Madre Blvd Sierra Madre, CA Chris Cimino (626) 335-6615</p>	<p>\$ 150,752.50</p>	<p><u>Start</u> 4/6/2017 <u>Completion</u> 6/23/2017</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<u>City of Pasadena - La Loma</u> Clean & CCTV, CIPP Lining of 140LF of 8-Inch sanitary sewer, Bypass Pumping.	Ramona Inc 302 N 1st Ave Ste 1 Arcadia, CA 91006 Michael Grbavac (626) 355-1350	\$ 12,950.00	<u>Start</u> 3/9/2017 <u>Completion</u> 3/9/2017
<u>North Long Beach Sewer Improvement Project</u> Clean & CCTV, CIPP Lining of 4,229LF of 8-Inch, 10-inch and 12-inch sanitary sewer, Bypass Pumping, Traffic Control, Top Hats, Point Repairs.	City of Long Beach 1800 East Wardlow Road, Long Beach, CA 90807 Valeri Karaknov (562) 570-2419	\$ 529,504.35	<u>Start</u> 10/2/2017 <u>Completion</u> 12/18/2017
<u>2017 CMP Storm Drain Relining and Point Repair</u> Clean & CCTV, CIPP Lining of 912LF of 12-Inch, 15-inch and 18-inch & 21-Inch storm drain, Point Repairs, Traffic Control,	City of Pasadena 100 N. Garfield Ave, Pasadena, CA 91109 Diego Juarez (626) 744-3921	\$ 201,368.10	<u>Start</u> 3/5/2018 <u>Completion</u> TBD
<u>CalTrans 12-0Q0604 Huntington Beach CA</u> Clean & CCTV, CIPP Lining of 1,100LF of 12-Inch, 18-inch and 24-Inch storm drain, Point Repairs, Traffic Control,	Jabra Contracting 1813 Manzanita Lane, Manhattan Beach, CA 90266 Bob Collins (310) 545-5015	\$ 113,650.00	<u>Start</u> 12/4/2017 <u>Completion</u> 11/6/2017
<u>La Mesa 24-Inch Storm Drain</u> CCTV Inspection 24-Inch storm drain	Wayne Pointer 4740 Alta Rica Drive La Mesa, CA 91941 (619) 818-1116	\$ 660.00	<u>Start</u> 3/8/2016 <u>Completion</u> 3/8/2016
<u>Water & Sewer Group 954</u> Clean & CCTV 1,816LF, CIPP Lining of 1,316LF of 8-Inch sanitary sewer, Traffic Control,	Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822	\$ 55,710.00	<u>Start</u> 4/25/2017 <u>Completion</u> 11/3/2018
<u>Imperial Beach – Sewer Pump Station 4 & 6 Rehabilitation</u> Clean & CCTV 128LF, CIPP Lining of 128 LF of 8-Inch sanitary sewer, Bypass Pumping, Traffic Control,	NEWest Construction 9235 Trade Pl. Suite A, San Diego, CA 92126 Corey Jennette (858) 436-4880	\$ 14,164.00	<u>Start</u> 4/7/2017 <u>Completion</u> 4/13/2017
<u>Goleta West Sanitary District Project #16-04</u> Clean & CCTV 5,882 LF, SPR & CIPP Lining of 5,882 LF of 6", 8", 10", 12" 15" & 18-Inch sanitary sewer, Bypass Pumping, Traffic Control, Manhole Rehabilitation at various locations.	Goleta West Sanitary District PO Box 4 Goleta, CA 93116 Mark Nation (805) 968-2617	\$ 566,502.00	<u>Start</u> 7/27/2017 <u>Completion</u> 12/8/2017





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>CalTrans No. 07-3W1104 Place Pipeliner & Repair Culverts</u> Clean & CCTV, CIPP Lining of 1,400 LF of 18-Inch, 24-inch and 39-Inch storm drain in various locations of San Fernando CA</p>	<p>Jabra Contracting 1813 Manzanita Lane, Manhattan Beach, CA 90266 Bob Collins (310) 545-5015</p>	<p style="text-align: center;">\$ 236,767.50</p>	<p style="text-align: center;"><u>Start</u> 7/10/2017 <u>Completion</u> 9/29/2017</p>
<p><u>San Diego Sewer Group 818</u> Clean & CCTV 133LF, CIPP Lining of 133LF of 6-Inch sanitary sewer, Top Hats, Bypass Pumping, Traffic Control,</p>	<p>Dick Miller Jean Grace (760) 471-6842 ext 13</p>	<p style="text-align: center;">\$ 18,569.75</p>	<p style="text-align: center;"><u>Start</u> 6/18/2018 <u>Completion</u> 10/6/2018</p>
<p><u>San Diego - AC Water & Sewer Group 1017</u> Clean & CCTV 350 LF, CIPP Lining of 350LF of 8-Inch sanitary sewer, Top Hats, Bypass Pumping, Traffic Control,</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p style="text-align: center;">\$ 20,650.00</p>	<p style="text-align: center;"><u>Start</u> 10/20/2017 <u>Completion</u> TBD</p>
<p><u>Lake Arrowhead Shelter Cove Agua-Fria</u> Clean & CCTV 3,170 LF, CIPP Lining of 3,170LF of 8-Inch sanitary sewer, Top Hats, Bypass Pumping, Traffic Control,</p>	<p>Lake Arrowhead Community Services District 27307 State Highway 189, Blue Jay, CA Richard Pretzinger (909) 336-7139</p>	<p style="text-align: center;">\$ 325,329.00</p>	<p style="text-align: center;"><u>Start</u> 8/7/2017 <u>Completion</u> 10/31/2017</p>
<p><u>San Diego - AC Water & Sewer Group 955</u> Post Video Inspection 1,796LF various diameters</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p style="text-align: center;">\$ 4,041.00</p>	<p style="text-align: center;"><u>Start</u> 3/13/2018 <u>Completion</u> 10/20/2018</p>
<p><u>La Mesa 8-Inch Cast Iron Pipe</u> Clean & CCTV 8" Cast Iron Pipe x 450ft</p>	<p>PSOMAS 401 B Street, Suite San Diego, CA 92101 Sean Diaz (619) 961-2812</p>	<p style="text-align: center;">\$ 4,000.00</p>	<p style="text-align: center;"><u>Start</u> 6/1/2017 <u>Completion</u> 6/30/2017</p>
<p><u>Leucadia 18-Inch Ductile Iron Pipe Rehabilitation</u> Clean & CCTV, Cured In Place Lining and end seal 18" Ductile Iron Pipe</p>	<p>CCL Contracting Inc 1938 Don Lee Pl Escondido, CA 92029 Rod Chilcote (760) 743-2254</p>	<p style="text-align: center;">\$ 39,232.00</p>	<p style="text-align: center;"><u>Start</u> 7/23/2017 <u>Completion</u> 7/26/2017</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>Sewer Rehabilitation in N Abby and E Hammond</u> Clean & CCTV 1,714 LF, SPR Lining of 1,714 LF of 20-Inch sanitary sewer, Top Hats, Bypass Pumping, Traffic Control,</p>	<p>City of Fresno 2600 Fresno Street, Room 2015, Fresno, CA 93721 Jesus Gonzales (559) 621-1332</p>	<p style="text-align: center;">\$ 702,673.50</p>	<p style="text-align: center;"><u>Start</u> 3/16/2018 <u>Completion</u> 5/24/2018</p>
<p><u>LACDPW - Project No. 15</u> Clean & CCTV 22,132 LF, SPR & CIPP Lining of 22,132 LF of 8", 10"and 12-Inch sanitary sewer, Bypass Pumping, Traffic Control, Point Repairs at various locations.</p>	<p>LACDPW 900 South Fremont Ave Alhambra, CA 90014 Fred Kheradvar (626) 458-4973 Office</p>	<p style="text-align: center;">\$ 664,667.00</p>	<p style="text-align: center;"><u>Start</u> 10/3/2017 <u>Completion</u> 1/16/2018</p>
<p><u>Beale Air Force Base - Repair Sub Basins 1, 2, 3, 9 and MUNS</u> Clean & CCTV 5,638 LF, CIPP Lining of 5,638 LF of 6", 8", 10"and 12" and 21-Inch sanitary sewer, Bypass Pumping, Traffic Control, Point Repairs at various locations.</p>	<p>Allright Construction Inc 1485 S. Industrial Way Kerman, CA 93630 Steve Martinez (559) 284-3236</p>	<p style="text-align: center;">\$ 522,566.00</p>	<p style="text-align: center;"><u>Start</u> 7/31/2018 <u>Completion</u> 9/29/2018</p>
<p><u>2016-2017 Citywide Annual Sewer Rehabilitation</u> Clean & CCTV 17,980 LF, CIPP Lining of 17,980 LF of 6", 8", 10"and 14-Inch sanitary sewer, Top Hats, Bypass Pumping, Traffic Control, Manhole Rehabilitation Point Repairs at various locations.</p>	<p>City of Encinitas 505 S. Vulcan Avenue Encinitas, CA 92024 Kipp Hefner (760) 633-2775</p>	<p style="text-align: center;">\$ 1,351,415.75</p>	<p style="text-align: center;"><u>Start</u> 11/6/2017 <u>Completion</u> 5/18/2019</p>
<p><u>Monrovia Renewal – Northwest Area Infrastructure Improvements Project</u> Clean & CCTV 6,035 LF, CIPP Lining of 6,035LF of 6"and 8-Inch sanitary sewer, Top Hats, Bypass Pumping, Traffic Control, Manhole Rehabilitation Point Repairs at various locations.</p>	<p>Sully-Miller Contracting, Inc. 135 S. State College Blvd, Brea CA 92821 Jesse Flores (714) 578-9600</p>	<p style="text-align: center;">\$ 335,935.00</p>	<p style="text-align: center;"><u>Start</u> 11/15/2017 <u>Completion</u> TBD</p>
<p><u>Sewer System Repair Project- Montclair CA</u> Clean & CCTV 766 LF, CIPP Lining of 766 LF of 8-Inch sanitary sewer, Bypass Pumping, Traffic Control at various locations.</p>	<p>Vasilj Inc. 15531 Arrow Hwy, Irwindale, CA 91706 John Gavigan (626) 480-1442</p>	<p style="text-align: center;">\$ 31,980.50</p>	<p style="text-align: center;"><u>Start</u> 9/18/2017 <u>Completion</u> 10/9/2017</p>
<p><u>Sewer and AC Water Group 764A</u> Clean & CCTV 7,791 LF, CIPP Lining of 617 LF of 8-Inch sanitary sewer, Bypass Pumping, Traffic Control at various locations.</p>	<p>KTA Construction 821 Tavern Rd. Alpine, CA Adam Ogden (619) 562-9464</p>	<p style="text-align: center;">\$ 46,611.00</p>	<p style="text-align: center;"><u>Start</u> 2/13/2018 <u>Completion</u> TBD</p>
<p><u>Techite Sewer Replacement, Diversion Structure- Padre Dam</u> Clean & CCTV 390 LF, CIPP Lining of 390 LF of 6-Inch sanitary sewer, Top Hats, Bypass Pumping, Traffic Control at various locations.</p>	<p>Charles King Company 2841 Gardena Avenue Signal Hill, CA 90755 Scott King (562) 426-2974</p>	<p style="text-align: center;">\$ 36,864.00</p>	<p style="text-align: center;"><u>Start</u> 1/24/2018 <u>Completion</u> 3/31/2018</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>Sewer Rehabilitation Project 2016/2017</u> Clean & CCTV 8,620 LF, CIPP Lining of 8,620 LF of 8” and 10-Inch sanitary sewer, Top Hats, Bypass Pumping, Point Repairs and Traffic Control at various locations.</p>	<p>City of West Hollywood 5 Hutton Centre Drive, Suite 500 Santa Ana, CA 92707 Kieler Smith (949) 330-4172</p>	<p style="text-align: center;">\$ 861,970.00</p>	<p style="text-align: center;"><u>Start</u> 12/11/2017 <u>Completion</u> 9/22/2018</p>
<p><u>2017 CMP Repairs – City of Poway</u> Clean & CCTV 1,031 LF, CIPP Lining of 1,031 LF of 18” and 24-Inch storm drain, Invert Repairs, Point Repairs and Traffic Control at various locations.</p>	<p>City of Poway 13325 Civic Center Drive Poway, CA 92064 Brian Banzuelo (858) 668-4623</p>	<p style="text-align: center;">\$ 318,244.00</p>	<p style="text-align: center;"><u>Start</u> 11/10/2017 <u>Completion</u> 12/27/2017</p>
<p><u>18-inch Storm Drain Rehabilitation</u> Clean & CCTV 1,308 LF, CIPP Lining of 1,280 LF of 18” storm drain, invert grouting and Traffic Control at various locations.</p>	<p>The Gill Company 28069 Diaz Rd, Suite B Temecula, CA 92590 Darren Gill (951)501-5623</p>	<p style="text-align: center;">\$ 108,191.00</p>	<p style="text-align: center;"><u>Start</u> 12/11/2017 <u>Completion</u> 2/1/2018</p>
<p><u>JOC Task P15S004</u> Clean & CCTV 69 LF, CIPP Lining of 69 LF of 24” storm drain, invert grouting and Traffic Control at various locations.</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p style="text-align: center;">\$ 12,915.00</p>	<p style="text-align: center;"><u>Start</u> 4/26/2018 <u>Completion</u> 4/26/2018</p>
<p><u>Caltrans – Contract No. 08-0Q6804</u> Clean & CCTV 520 LF, CIPP Lining of 520 LF of 18” & 24” storm drain, invert grouting and Traffic Control at various locations.</p>	<p>American Pacific Construction 7161 Citrus Valley Ave Eastvale, CA 92880 Ashish Sehgal (559) 577-9999</p>	<p style="text-align: center;">\$ 130,875.00</p>	<p style="text-align: center;"><u>Start</u> 2/1/2018 <u>Completion</u> 4/25/2018</p>
<p><u>Caltrans – Contract No. 08-0Q6904</u> Clean & CCTV 1,810 LF, CIPP Lining of 1,810 LF of 24” and 30” storm drain, invert grouting and Traffic Control at various locations.</p>	<p>United Engineering & Cons., Inc., 336 N. Central Ave. 10A Glendale, CA 91203 Reza Fard (818) 662-8055</p>	<p style="text-align: center;">\$ 381,090.00</p>	<p style="text-align: center;"><u>Start</u> 2/1/2018 <u>Completion</u> 5/23/2018</p>
<p><u>Lake Helix Sewer Rehabilitation</u> Clean & CCTV 344LF LF, CIPP Lining of 344LF of 8” sanitary sewer, invert grouting and Traffic Control at various locations.</p>	<p>United Engineering & Cons., Inc., 336 N. Central Ave. 10A Glendale, CA 91203 Reza Fard (818) 662-8055</p>	<p style="text-align: center;">\$ 381,090.00</p>	<p style="text-align: center;"><u>Start</u> 2/1/2018 <u>Completion</u> 5/23/2018</p>
<p><u>FY2016/17 Gravity Sewer Rehabilitation Project</u> Clean & CCTV, CIPP Lining of 24,064 LF of 6-Inch and 8-Inch sanitary sewer, Traffic Control, Bypass Pumping, Point Repairs.</p>	<p>Ranger Pipelines 1790 Yosemite Ave. San Francisco, CA 94124 Tom Grover (415) 822-3700</p>	<p style="text-align: center;">\$ 1,072,720.00</p>	<p style="text-align: center;"><u>Start</u> 7/24/2018 <u>Completion</u> TBD</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p>Rehabilitate 10-Inch Siphon Clean & CCTV, CIPP Lining of 250 LF of 10-Inch sanitary sewer siphon, Traffic Control, Bypass Pumping.</p>	<p>City of Laguna Beach Water Quality Department 505 Forest Avenue Laguna Beach, CA 92651 Hannah Johnson (949) 464-6615</p>	<p style="text-align: center;">\$ 56,625.00</p>	<p style="text-align: center;"><u>Start</u> 12/1/2017 <u>Completion</u> 12/5/2017</p>
<p>Culvert Repair and Replacement Fiscal Year 2016-17, Oracle Project No. 1020695 Clean & CCTV, CIPP Lining of 721 LF of 18", 24", 30", 42" and 71 x 47-Inch storm drain, Traffic Control and invert repairs.</p>	<p>Tri-Group Construction 9580 Black Mountain Road, Ste L San Diego CA, 92126 Hani Assi (858) 689-0058</p>	<p style="text-align: center;">\$ 262,898.00</p>	<p style="text-align: center;"><u>Start</u> 2/22/2018 <u>Completion</u> 5/30/2018</p>
<p>CIPP Lining of 18" CMP Storm Drain & Void Repair Clean & CCTV, CIPP Lining of 100 LF of 18-Inch storm drain, Traffic Control and invert repairs.</p>	<p>City of Buena Park 6955 Aragon Circle Buena Park, Ca 90622 Frank Moore (714) 562-3708</p>	<p style="text-align: center;">\$ 30,000.00</p>	<p style="text-align: center;"><u>Start</u> 12/18/2018 <u>Completion</u> 12/22/2018</p>
<p>Regal Road Sewer Main Extension Clean & CCTV 133 LF of 8-Inch sanitary sewer and Traffic Control.</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p style="text-align: center;">\$ 1,100.00</p>	<p style="text-align: center;"><u>Start</u> 1/18/2018 <u>Completion</u> 1/18/2018</p>
<p>Sewer & Water Group -701 Clean & CCTV 10,013 LF of 8-Inch sanitary sewer, Rehabilitate 8-inch Sewer, Top Hats and Traffic Control.</p>	<p>Ortiz Corporation 2000 Mc Kinley Avenue National City, CA 91950 Jose Ortiz (619) 434-7925</p>	<p style="text-align: center;">\$ 27,864.00</p>	<p style="text-align: center;"><u>Start</u> 3/5/2018 <u>Completion</u> TBD</p>
<p>Brio & Symphony 12" CIPP Clean & CCTV 336 LF of 12-Inch sanitary sewer, Rehabilitate 12-inch Sewer and Traffic Control.</p>	<p>National Plant Services, Inc. 1461 Harbor Avenue Long Beach, CA 90813 Jeff Garcia (562) 436-7600</p>	<p style="text-align: center;">\$ 26,880.00</p>	<p style="text-align: center;"><u>Start</u> 2/6/2018 <u>Completion</u> 2/6/2018</p>
<p>Contract No. 02-4G2504 Replace and Rehabilitate Culverts, and Construct RSP Clean & CCTV 460 LF of 21" & 24-Inch storm drain, Rehabilitate 21" & 24-inch storm drain with SPR.</p>	<p>R. Brown Construction Company, Inc. P.O. Box 406 Willow Creek, CA 95573 Roger Brown (530) 629-3702</p>	<p style="text-align: center;">\$ 154,060.00</p>	<p style="text-align: center;"><u>Start</u> 7/1/2018 <u>Completion</u> 7/28/2018</p>
<p>Ceres Trunk Rehabilitation Project No. 2017-23 Clean & CCTV 723 LF of 21-Inch sanitary sewer, Rehabilitate 21-inch sanitary sewer with cured in place liner.</p>	<p>Rolfe Construction 3573 Southern Pacific Ave Atwater, CA 95301 Jorge C. Avelar (209) 358-5548</p>	<p style="text-align: center;">\$ 133,241.00</p>	<p style="text-align: center;"><u>Start</u> 3/19/2019 <u>Completion</u> TBD</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>Caltrans 08-0Q6904 Culvert Repair</u> Clean & CCTV 1,810 LF of 24" & 30-Inch storm drain, Rehabilitate 21" & 24-inch storm drain with CIPP, Cement Spray & SPR lining systems.</p>	<p>United Engineering & Construction, Inc., 336 N. Central Ave. 10A Glendale, CA 91203 Reza Fard (818) 662-8055</p>	<p style="text-align: center;">\$ 981,090.00</p>	<p style="text-align: center;"><u>Start</u> 2/21/2018 <u>Completion</u> 6/23/2018</p>
<p><u>FY 2018 Gravity Pipeline CIPP Lining Rehabilitation Project</u> Clean & CCTV 7,410 LF of 8", 12" 14" & 15-Inch sanitary sewer, Point repairs, top hats, manhole rehab.</p>	<p>Leucadia Wastewater Division 1960 La Costa Avenue, Carlsbad, CA 92009 Robin Morishita (760) 753-0155</p>	<p style="text-align: center;">\$ 667,998.00</p>	<p style="text-align: center;"><u>Start</u> 5/21/2018 <u>Completion</u> TBD</p>
<p><u>South Monrovia Renewal South Area Infrastructure Improvements</u> Clean & CCTV 2,850 LF of 6", 8" & 15-Inch sanitary sewer, Point repairs, top hats, sectional lining.</p>	<p>Sequel Contractors, Inc 13546 Imperial Hwy., Santa Fe Springs, CA 90670</p>	<p style="text-align: center;">\$ 215,569.00</p>	<p style="text-align: center;"><u>Start</u> 7/2/2018 <u>Completion</u> TBD</p>
<p><u>Pipeline Rehabilitation AK-1</u> Clean & CCTV, SPR/CIPP Lining of 29,295 LF of 8-Inch sanitary sewer and installation of 497 Top Hats</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p style="text-align: center;">\$ 993,200.00</p>	<p style="text-align: center;"><u>Start</u> 4/25/2018 <u>Completion</u> TBD</p>
<p><u>Cal State San Bernardino Sewer Lining Quote</u> Clean & CCTV, SPR/CIPP Lining of 380 LF of 6-Inch and 10-Inch sanitary sewer.</p>	<p>W.A. Rasic Construction Company, Inc. 4150 Long Beach Blvd. Long Beach, CA 90807 Keith Fouts (562) 928-6111</p>	<p style="text-align: center;">\$ 35,700.00</p>	<p style="text-align: center;"><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>City of San Diego - Water and Sewer Group 966</u> Clean & CCTV 3,462LF, SPR/CIPP Lining of 477 LF of 12-Inch sanitary sewer and installation of 2 Top Hats</p>	<p>El Cajon Grading & Engineering Co. Inc P.O. Box 967 Lakeside, Ca 92040 Wendy Frisch (619) 561-9840</p>	<p style="text-align: center;">\$ 49,355.00</p>	<p style="text-align: center;"><u>Start</u> 9/20/2018 <u>Completion</u> TBD</p>
<p><u>8-Inch Sanitary Sewer Rehabilitation</u> Clean & CCTV 640 LF, CIPP Lining of 640 LF of 8-Inch sanitary sewer and Top Hats</p>	<p>City of Carlsbad 1200 Carlsbad Village Drive Carlsbad, CA 92008 Don Wasco (619) 561-9840</p>	<p style="text-align: center;">\$ 30,665.00</p>	<p style="text-align: center;"><u>Start</u> 6/22/2018 <u>Completion</u> 6/25/2018</p>
<p><u>Lining of IVY Glenn Drive Storm Drain Facilities</u> Clean & CCTV 1,200LF, CIPP Lining of 1,200 LF of 18-Inch storm drain.</p>	<p>City of Laguna Niguel, Public Works Department 30111 Crown Valley Pkwy Laguna Niguel, CA 92677 JC Herrera (949) 362-4337</p>	<p style="text-align: center;">\$ 95,000.00</p>	<p style="text-align: center;"><u>Start</u> 5/2/2018 <u>Completion</u> 6/15/2018</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>Country Club Infiltration Project</u> Clean & CCTV 2,620LF, CIPP Lining of 2,620 LF of 18", 24", 36" 42" & 48-Inch storm drain. Point Repairs Dewatering.</p>	<p>City of Coronado 1825 Strand Way, Coronado, CA 92118 Katherine Odiorne (619) 522-2424</p>	<p>\$ 1,370,000.00</p>	<p><u>Start</u> 5/24/2018 <u>Completion</u> TBD</p>
<p><u>City of San Joaquin - Sewer Collection System Improvements Project</u> Clean & CCTV 17,585 LF of 6', 8", 10", 12" & 16-Inch sanitary sewer, Rehabilitate 17,585 LF various diameters sanitary sewer with cured in place liner.</p>	<p>Rolfe Construction 3573 Southern Pacific Ave Atwater, CA 95301 Jorge C. Avelar (209) 358-5548</p>	<p>\$ 598,972.50</p>	<p><u>Start</u> 8/7/2018 <u>Completion</u> 4/27/2019</p>
<p><u>El Cajon Sewer & Storm Drain Repair & Replacement</u> Clean & CCTV 8,589 LF of 6-inch to 60-Inch sanitary sewer & storm drain, Rehabilitate 8,589 LF various diameters sanitary sewer and storm drain with cured in place liner.</p>	<p>Burtech Pipeline Inc. 102 Second Street, Encinitas, CA 92024 Buddy Aquino (760) 634-2822</p>	<p>\$ 701,604.00</p>	<p><u>Start</u> 6/11/2018 <u>Completion</u> TBD</p>
<p><u>San Rafael Storm Drain (Lindaro Pump Station)</u> Clean & CCTV 250LF, CIPP Lining of 250 LF of 24-Inch storm drain. Point Repairs Dewatering.</p>	<p>Terra Pacific Group 201 N. Civic Drive, Suite 135 Walnut Creek, CA 94596 Pat Barrese (925) 667-7464</p>	<p>\$ 202,750.00</p>	<p><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>Caltrans 12-0Q7504 Culvert Repair</u> Clean & CCTV 1,730 LF of 18", 24" & 30-Inch storm drain, Rehabilitate 18", 24" & 30-inch storm drain with CIPP lining system.</p>	<p>Jabre Contracting Inc., 1813 Manzanita Lane Manhattan Beach, CA 90206 Bob Collins (310) 720-0277</p>	<p>\$ 199,140.00</p>	<p><u>Start</u> 9/17/2018 <u>Completion</u> TBD</p>
<p><u>Lake Helix Sewer Rehabilitation</u> Clean & CCTV 344 LF of 8 cast-iron sanitary sewer, Rehabilitate with CIPP lining system.</p>	<p>City of La Mesa 8130 Allison Avenue La Mesa CA, 91942 Casey Crown (619) 667-1380</p>	<p>\$ 48,422.00</p>	<p><u>Start</u> 7/17/2018 <u>Completion</u> 8/31/2018</p>
<p><u>Sanitary Sewer Rehab and Replacement Prgm Project</u> <u>1</u> Clean & CCTV 10,594 LF of 8", 10" & 12" sanitary sewer, UV Sectionals & Top Hats, Rehabilitate with CIPP lining system.</p>	<p>City of Long Beach 333 W. Ocean Blvd/7th Floor Long Beach, CA 90802 Valeri Karakanov (562) 570-2331</p>	<p>\$ 575,000.00</p>	<p><u>Start</u> 10/9/2018 <u>Completion</u> TBD</p>
<p><u>RFP - Sewer Cured in Place Pipe Repairs 2018</u> Clean & CCTV 3,308 LF of 8" & 10" sanitary sewer, Top Hats, Rehabilitate with CIPP lining system.</p>	<p>Padre Dam Municipal Water District 9300 Fanita Parkway Santee, CA 719003 (619) 258-4635</p>	<p>\$ 200,003.00</p>	<p><u>Start</u> 9/27/2018 <u>Completion</u> TBD</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>Santa Barbara – Anacapa St 8” Emergency</u> Clean & CCTV 290 LF of 8” sanitary sewer. Rehabilitate with SPR lining system.</p>	<p>City of Santa Barbara Public Works 630 Garden Street Santa Barbara, CA 93101 Bradley Rahrer (619) 258-4635</p>	<p>\$ 36,270.00</p>	<p><u>Start</u> 6/19/2018 <u>Completion</u> 6/19/2018</p>
<p><u>CalTrans 07-3W9704 -105 Freeway</u> Clean & CCTV 1,320 LF of 18”, 24”, 30” & 36” CMP storm drain. Rehabilitate with CIPP lining system.</p>	<p>Jabre Contracting Inc., 1813 Manzanita Lane Manhattan Beach, CA 90206 Bob Collins (310) 720-0277</p>	<p>\$ 227,790.00</p>	<p><u>Start</u> 8/7/2018 <u>Completion</u> 11/17/2018</p>
<p><u>2018 Sewer Main Rehabilitation Project</u> Clean & CCTV 14,425 LF of 8” & 10” rehabilitate sanitary sewer with CIPP lining system.</p>	<p>Ojai Valley Sanitary District 1072 Tico Road Ojai , CA 93023 Jon Turner (805) 658-6800</p>	<p>\$ 425,000.00</p>	<p><u>Start</u> 10/8/2018 <u>Completion</u> 4/20/2019</p>
<p><u>CIP 18-100 CIPP Lining of Sanitary Sewer System</u> Clean & CCTV 30,480 LF of 6”, 8”, 10”, 15” & 18” rehabilitate sanitary sewer with CIPP lining system.</p>	<p>City of Laguna Beach 505 Forest Avenue Laguna Beach, CA 92651 Hannah Johnson (949) 464-6615</p>	<p>\$ 1,259,748.00</p>	<p><u>Start</u> 9/6/2018 <u>Completion</u> TBD</p>
<p><u>Summerland Emergency 8” Cast Iron Repair</u> Clean & CCTV 150 LF of 8”, rehabilitate sanitary sewer with SPR lining system.</p>	<p>CUSHMAN CONTRACTING CORP. P.O. Box 147 Goleta, California Blair Cushman (805) 964-8661</p>	<p>\$ 30,025.00</p>	<p><u>Start</u> 8/27/2018 <u>Completion</u> 8/28/2018</p>
<p><u>ESR City of Los Angeles - Bonnie Brae</u> Clean & CCTV 110 LF of 8” sanitary sewer with CIPP lining system.</p>	<p>Pipe Tec 5103 Elton Street Baldwin Park, CA 91706 Tom Vukojevic (626) 222-1998</p>	<p>\$ 19,060.00</p>	<p><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>Palisades Slip Lining Phase 2</u> Clean & CCTV 2,348 LF of 6” sanitary sewer. Rehabilitate with CIPP lining system and install new manhole structures & cleanouts.</p>	<p>Lake Arrowhead Comm. Services PO Box 700 Lake Arrowhead, CA 92352 Scott Schroeder (909) 336-7136</p>	<p>\$ 366,930.00</p>	<p><u>Start</u> 10/30/2018 <u>Completion</u> TBD</p>
<p><u>AC Water & Sewer Group 1018</u> Clean & CCTV 1,000 LF of 8” sanitary sewer. Rehabilitate 1,953 with CIPP lining system and install UV Top Hats.</p>	<p>Orion Construction Corp. Rob Wilson (760) 597-9660</p>	<p>\$ 192,402.50</p>	<p><u>Start</u> 3/21/2019 <u>Completion</u> TBD</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<u>City of Vista - Pilot Project Information</u> Clean & CCTV 329 LF of 8" sanitary sewer. Rehabilitate with SPR lining system.	City of Vista 200 Civic Center Drive Vista CA 92804 Elmer Alex (760) 726-1340	\$ 15,802.00	<u>Start</u> 10/18/18 <u>Completion</u> 10/18/18
<u>Fulton Road Rehab</u> Clean & CCTV 1,592 LF of 8" sanitary sewer. Rehabilitate with CIPP & SPR lining systems.	Burtech Pipeline Inc. 102 Second Street Encinitas CA 92024 Buddy Aquino (760) 726-1340	\$ 200,525.00	<u>Start</u> 6/2/2018 <u>Completion</u> 8/13/18
<u>JOC - Sewer Rehab Phase AT-1</u> Clean & CCTV 39,685 LF of 8" sanitary sewer. Rehabilitate with CIPP & SPR lining systems, install 1,023 UV Top Hats & Post Video.	Burtech Pipeline Inc. 102 Second Street Encinitas CA 92024 Buddy Aquino (760) 726-1340	\$ 1,907,764.00	<u>Start</u> 12/28/2018 <u>Completion</u> TBD
<u>CMP Rehabilitation FY 2017-18 Measure P</u> 20,659 LF of 18" to 54" CMP Storm Drain Repairs. Rehabilitate with CIPP & SPR lining systems.	Spiniello Companies 2650 Pomona Blvd. Pomona, CA 91768 Abby De La Cruz (562) 305-5219	\$ 1,984,764.00	<u>Start</u> 2/14/19 <u>Completion</u> TBD
<u>LACSD Belvedere Trunk Sewer Rehabilitation</u> 10,260 LF of 15", 21" & 24" sanitary sewer. Rehabilitate with CIPP lining systems.	Spiniello Companies 2650 Pomona Blvd. Pomona, CA 91768 Eugenio Mateo (562) 458-7757	\$ 1,248,340.00	<u>Start</u> 1/2/19 <u>Completion</u> 3/19/19
<u>SKF Gilroy 18th Avenue Sewer Project</u> 797 LF of 12", 14" & 18" sanitary sewer. Rehabilitate with SPR lining systems.	Emmitt's Excavation Inc 6207 E. Clinton Ave Fresno CA 93727 David Walsh (559) 347-9188	\$ 155,713.00	<u>Start</u> 12/8/2018 <u>Completion</u> TBD
<u>Santa Monica - FY 17/18 Annual Wastewater Main Improvements</u> Clean & CCTV 2,135 LF of 8" sanitary sewer. Rehabilitate with CIPP lining system, install UV Top Hats.	Mike Prlich & Sons Inc. 5103 Elton St Baldwin Park, CA 91706 Lonny Lavin (626) 813-1700	\$ 156,265.00	<u>Start</u> TBD <u>Completion</u> TBD
<u>Vellicitos Rock Springs Sewer Replacement</u> Clean & CCTV 2,701 LF of 8", 12" & 15" sanitary sewer. Rehabilitate 303 LF with CIPP lining system.	Burtech Pipeline Inc. 102 Second Street Encinitas CA 92024 Buddy Aquino (760) 726-1340	\$ 20,814.00	<u>Start</u> 3/22/2019 <u>Completion</u> TBD





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>JOC - Sewer Rehab Phase AO-1</u> Clean & CCTV 42,800 LF of 8", 10" & 12" sanitary sewer. Rehabilitate with CIPP & SPR lining systems, install 413 UV Top Hats & Post Video.</p>	<p>Burtech Pipeline Inc. 102 Second Street Encinitas CA 92024 Buddy Aquino (760) 726-1340</p>	<p>\$ 1,332,009.00</p>	<p><u>Start</u> 4/25/19 <u>Completion</u> TBD</p>
<p><u>Caltrans – State Minor B, Solicitation No. 10A2041</u> Clean & CCTV 85 LF of 18" & 30" storm drain. Rehabilitate with CIPP lining systems, install 85LF & Post Video.</p>	<p>Jabre Contracting Inc., 1813 Manzanita Lane Manhattan Beach, CA 90206 Bob Collins (310) 720-0277</p>	<p>\$ 62,850.00</p>	<p><u>Start</u> 6/11/19 <u>Completion</u> TBD</p>
<p><u>(SSRP) H31 Beachwood Drive & Scenic Avenue</u> Clean & CCTV 12,419 LF of 6" & 8" sanitary sewer. Rehabilitate with CIPP lining systems, install 12,419 LF, Top Hats & Post Video.</p>	<p>Vasilj Inc. 15531 Arrow Hwy, Irwindale, CA 91706 Joe Vasilj (626) 480-1442</p>	<p>\$ 1,120,089.00</p>	<p><u>Start</u> 9/19/18 <u>Completion</u> TBD</p>
<p><u>La Costa Avenue - Storm Drain Improvements</u> Pre and Post Clean & CCTV of 15" & 18" Storm Drain.</p>	<p>Tri-Group Construction, Inc. 9580 Black Mountain Road, Ste L San Diego CA, 92126 Hani Assi (858) 689-0058</p>	<p>\$ 5,020.00</p>	<p><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>PAL Project – Lateral Launch and Locate</u> Lateral Launch & CCTV of 56 sanitary sewer laterals.</p>	<p>Burtech Plumbing 102 Second Street Suite C Encinitas CA, 92024 Bill Schramm (760) 305-2016</p>	<p>\$ 17,180.00</p>	<p><u>Start</u> 11/15/2018 <u>Completion</u> 5/25/2019</p>
<p><u>City of Lynwood PROJECT No. 4011.67.912</u> Installation of 8-Inch UV sectional patches</p>	<p>Sully-Miller Contracting Co. 135 S. State College Blvd, Ste 400 Brea, CA 92821 Jessie Flores (513) 984-2222</p>	<p>\$ 48,550.00</p>	<p><u>Start</u> 4/1/19 <u>Completion</u> 4/30/19</p>
<p><u>Caltrans #07-4W3004 - 91 Freeway to 110 Freeway</u> Clean & CCTV 85 LF of 18" & 30" storm drain. Rehabilitate with CIPP lining systems, install 85LF & Post Video.</p>	<p>Jabre Contracting Inc., 1813 Manzanita Lane Manhattan Beach, CA 90206 Bob Collins (310) 720-0277</p>	<p>\$ 315,580.00</p>	<p><u>Start</u> 1/28/2019 <u>Completion</u> TBD</p>
<p><u>RFQ - Point Repair by CIPP Sectional and Top Hat</u> Clean & CCTV, installation of CIPP Sectionals and UV Top Hats at various location, Post Video.</p>	<p>San Diego County Gen. Services 5500 Overland Ave, Suite 315 San Diego, CA Wasim Hanna (858) 694-2723</p>	<p>\$ 25,678.00</p>	<p><u>Start</u> 3/15/2019 <u>Completion</u> 5/18/2019</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>AC Water & Sewer Group 1026</u> Post CCTV inspection of 2,569LF of sanitary sewer at various locations.</p>	<p>PK Mechanical Systems, Inc. 21335 Bundy Canyon Road Wildomar, CA 92595 David Spindler (951) 245-5537</p>	<p style="text-align: center;">\$ 8,675.85</p>	<p style="text-align: center;"><u>Start</u> 1/25/2019 <u>Completion</u> TBD</p>
<p><u>Vista V-1 West Vista Sewer Phase 1-L</u> Pre & Post CCTV inspections of 3,954LF of v8", 10" 12" & 15" diameters at various locations.</p>	<p>Orion Construction 2185 La Mirada Drive Vista, CA 92081 Richard Newall (760) 597-9660</p>	<p style="text-align: center;">\$ 18,385.00</p>	<p style="text-align: center;"><u>Start</u> 5/13/2019 <u>Completion</u> TBD</p>
<p><u>Monrovia Renewal North Section Infrastructure Improvement Project</u> Clean & CCTV 12,066LF of 6" & 8" diameter, CIPP rehabilitate 12,831LF of 6" & 8" sanitary sewer, Install 69 SLC's, and 136 UV sectional patches, bypass pumping and 22,470LF of Post CCTV inspection.</p>	<p>Sully-Miller Contracting Co. 135 S. State College Blvd, Ste 400 Brea, CA 92821 Jessie Flores (513) 984-2222</p>	<p style="text-align: center;">\$ 780,216.50</p>	<p style="text-align: center;"><u>Start</u> 2/4/2019 <u>Completion</u> TBD</p>
<p><u>ESR City of Los Angeles - Stone Canyon Road (N. 100 Block)</u> Clean & CCTV, CIPP rehabilitation of 289LF of 10" sanitary sewer, lateral reinstatement and post CCTV.</p>	<p>Spiniello Companies 2650 Pomona Blvd. Pomona, CA 91768 Eugenio Mateo (562) 458-7757</p>	<p style="text-align: center;">\$ 34,494.31</p>	<p style="text-align: center;"><u>Start</u> 2/1/2019 <u>Completion</u> 3/30/2019</p>
<p><u>Sewer & AC Water Group 697A</u> Clean & CCTV 2,200LF of 6" & 8" sanitary sewer, rehabilitate 198LF of 6" & 8" sanitary sewer, SLC's and Post CCTV inspection of 4,089LF of various diameters.</p>	<p>Burtech Pipeline Inc. 102 Second Street Encinitas CA 92024 Buddy Aquino (760) 726-1340</p>	<p style="text-align: center;">\$ 40,272.40</p>	<p style="text-align: center;"><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>Pasadena Storm Drain Repair</u> Clean & CCTV 586LF various diameter storm drain, rehabilitate by CIPP 466LF of 12" & 18" storm drain, post CCTV inspection of 386LF of various diameter storm drain.</p>	<p>GRFCO, Inc. P O Box 1747 Brea, CA 92822 Jim Jackson (800) 375-7272</p>	<p style="text-align: center;">\$ 37,312.00</p>	<p style="text-align: center;"><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>Hallmark Sewer Rehabilitation</u> Clean & CCTV, Bypass Pumping, 4,222LF 6" & 8" CIPP rehabilitation at various locations, lateral reinstatement and Post Video CCTV.</p>	<p>Eddie Axner Construction, Inc 5249A Old Oregon Trail Redding, CA 96002 Trevor Olds (530) 710-3533</p>	<p style="text-align: center;">\$ 240,178.00</p>	<p style="text-align: center;"><u>Start</u> 4/29/2019 <u>Completion</u> TBD</p>
<p><u>Chino ITB - Sewer Re-Lining Project</u> Clean & CCTV 13,452LF of 8" & 10" sanitary sewer, rehabilitate by CIPP 13,452LF of 8" & 10" sanitary sewer, traffic control, bypassing, lateral reinstatement and post CCTV inspection.</p>	<p>City of Chino PO Box 667 Chino, CA 91708 Austin Postvoit (909) 334-3250</p>	<p style="text-align: center;">\$ 567,655.00</p>	<p style="text-align: center;"><u>Start</u> TBD <u>Completion</u> TBD</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p><u>Oceanside Point Repair Program</u> Pre & Post CCTV video inspection of 1,359LF of 6", 8" & 10" sanitary sewer repairs.</p>	<p>Charles King Company 2841 Gardena Ave. Signal Hill, CA 90755 Debi Hawkins (562) 426-2974</p>	<p>\$ 4,756.50</p>	<p><u>Start</u> 3/4/2019 <u>Completion</u> 5/18/2019</p>
<p><u>Cal-Trans 07A4593, 3-Year System Inspection and Repair</u> Clean & CCTV approx. 20,000LF of various diameter storm drain in LA and Ventura counties, approx. 6,500LF of CIPP rehabilitation of various diameters over a 3 year on call project.</p>	<p>Dreambuilder Const. Corp. 1324 E Lawson Ln Placentia Ca 92870 Alex Singh (714) 646-3697</p>	<p>\$ 2,634,600.00</p>	<p><u>Start</u> 3/12/2019 <u>Completion</u> TBD</p>
<p><u>RFP Warner Ranch Siphon 1B</u> Clean & CCTV, CIPP rehabilitate 24-Inch storm drain siphon.</p>	<p>Vista Irrigation District 1391 Engineer Street, Vista, CA 92081 Mark Saltz (760) 597-3112</p>	<p>\$ 71,535.00</p>	<p><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>Sewer Group 786</u> Clean & CCTV and lateral launch inspections of various diameter sanitary sewers.</p>	<p>Ortiz Corporation 2000 Mc Kinley Avenue National City, CA 91950 Jose Ortiz (619) 434-7925</p>	<p>\$ 5,000.00</p>	<p><u>Start</u> 4/4/2019 <u>Completion</u> TBD</p>
<p><u>University 21-inch Repair</u> Installation of 380LF x 21" SPR sanitary sewer rehabilitation.</p>	<p>AUI Incorporated 7420 Reading Ave. SE Albuquerque New Mexico 87105 Mike Rocco (505) 242-4848</p>	<p>\$ 48,250.00</p>	<p><u>Start</u> 4/22/2019 <u>Completion</u> TBD</p>
<p><u>Lemon Grove FY2017-18 Sewer Capital Improvement Project</u> Clean & CCTV, 1,300LF x 8" CIPP rehabilitation, lateral reinstatement, bypass pumping and post video inspection.</p>	<p>Charles King Company 2841 Gardena Ave. Signal Hill, CA 90755 Debi Hawkins (562) 426-2974</p>	<p>\$ 66,800.00</p>	<p><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>Fullerton - Miscellaneous Storm Drain Improvements</u> Clean & CCTV, 426LF of various diameter CIPP storm drain rehabilitation, traffic control, grouting repairs and post video inspection.</p>	<p>City of Fullerton 303 West Commonwealth Ave Fullerton, CA 92832 (714) 738-6886</p>	<p>\$ 164,360.00</p>	<p><u>Start</u> TBD <u>Completion</u> TBD</p>
<p><u>El Centro Emergency Sewer Repairs at Villa Ave</u> Clean & CCTV, 380LF x 27" CIPP rehabilitation, infiltration grouting, bypass operations, traffic control and post video inspection.</p>	<p>City of El Centro 1275 W. Main Street El Centro, CA 92243 Javier Luna, P.E. (760) 337-5182</p>	<p>\$ 260,225.00</p>	<p><u>Start</u> TBD <u>Completion</u> TBD</p>





Nu-Line Technologies, LLC Project References – CIPP/SPR

<p>LACDPW Culvert Repair and Lining Project, Phase 1 Clean & CCTV, 1,029LF x various diameter storm drain CIPP rehabilitation , traffic control and post CCTV inspection.</p>	<p>Los Angeles County Public Works 900 South Fremont Street Alhambra, CA 91803 Joel Zaragoza (626) 458-4951</p>	<p style="text-align: center;">\$ 248,358.00</p>	<p style="text-align: center;"><u>Start</u> TBD <u>Completion</u> TBD</p>
<p>Buena Park 24-Inch CMP Repair Clean & CCTV, 100LF x 24” CIPP storm drain rehabilitation, traffic control and post CCTV inspection.</p>	<p>City of Buena Park 6955 Aragon Circle Buena Park, Ca 90622 Frank Moore (714) 562-3708</p>	<p style="text-align: center;">\$ 44,050.00</p>	<p style="text-align: center;"><u>Start</u> TBD <u>Completion</u> TBD</p>
<p>City of LA - Albion Riverside Park Project - W.O.# EW40060F Clean & CCTV, 380LF x 10” CIPP rehabilitation, clean and video, lateral reinstatement, post video</p>	<p>Sully-Miller Contracting Co. 135 S. State College Blvd, Ste 400 Brea, CA 92821 Mauricio Arreola (714) 449-2277</p>	<p style="text-align: center;">\$ 33,201.00</p>	<p style="text-align: center;"><u>Start</u> TBD <u>Completion</u> TBD</p>
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Nu-Line Technologies, LLC Project References – CIPP/SPR

Experience by Diameter

Size	2014	2015	2016	2017	2018	2019 WIP*	2020	Total
6"	1,668	4,543	8,249	8,654	36,158	41,617	0	100,889
8"	38,410	44,062	133,915	119,261	99,197	107,426	0	542,271
10"	516	773	4,878	1,250	9,294	14,101	0	30,812
12"	0	1,779	2,607	4,389	2,758	5,425	0	16,958
14"	0	102	448	0	641	221	0	1,412
15"	330	1,222	768	3,368	718	6,943	0	13,349
16"	0	285	0	0	0	1,594	0	1,879
18"	327	962	938	3,425	3,857	7,231	0	16,740
20"	0	0	0	0	1,720	0	0	1,720
21"	0	5,478	309	506	775	3,239	0	10,307
24"	95	952	1,141	2,053	4,038	8,249	0	16,528
27"	0	0	0	0	288	2,317	0	628
30"	0	656	779	701	1,003	822	0	5,456
33"	0	144	0	0	44	0	0	188
36"	0	40	882	40	1,448	594	0	3,004
39"	0	0	0	190	0	0	0	190
42"	0	61	0	180	1,166	0	0	1,407
48"	0	0	0	0	574	0	0	574
54"	0	0	0	0	214	0	0	214
60"	0	0	542	0	483	0	0	1,025
Total	41,346	61,059	155,456	144,017	164,376	199,297	0	765,551





Education

- Azusa High School, Azusa, CA

Training

- Confined Space training Boom certification
- Forklift certification
- CPR training
- Alcohol and Drug training.

Jorge Beltran

Superintendent

Professional Experience

Mr. Beltran has over twenty years' experience in the construction, trenchless technology and pipeline rehabilitation industry with a Career progression from a Laborer to Foreman up to a Superintendent. His expertise with the large diameter CIPP and Rib Loc sewer/storm drain lining include extensive knowledge in sewer bypass operations.

Nu-Line Technologies Operations Manager

- Leads scheduling, managing and organization of Nu-Line Technologies, LLC field activities.
- Provides technical and project approach guidance to Nu-Line Technologies field personnel.
- Communicates with owner's field representatives, site engineers, inspectors and subcontractor supervisors on project-related matters.
- Assist GM and Estimator with Project Estimates for bids
- Analyze and solve all field-related problems (Equipment, Installation, Personnel, Etc.).
- Develop and implement sewer bypass systems. Train field employees with proper use.
- Identifies, initiates and controls project revisions and field changes.
- Reviews project costs and assists in developing project budgets.

RePipe-California Superintendent

- Responsible for management of crews for the installation of Both CIPP and RibLoc Pipe Rehabilitation Systems.
- Reports to the Operations and Project Managers with regard to Daily construction progress and activities.
- Schedules and manages weekly construction work and man-hours, and reports daily
- Construction hours and progress from lining Foremen and Cutters, to Operations and Accounting.
- Oversee daily bypass and traffic control (set-up, operation, tear-down)
- Provides field technical support, problem solving and Troubleshooting.
- Interaction and contact with City Engineers and Inspectors.
- Works in conjunction with Project Estimator on job walks prior To project bid.

**Preussag Pipe Rehabilitation, Inc.
Superintendent**

Management of crews for the installation of the RibLoc Pipe Rehabilitation System.

- Reported construction progress and activities.
- Managed weekly schedules.
- Provides field technical support, problem solving and Troubleshooting.
- Worked directly with project managers

**G.B. Cooke Pipeline Rehabilitation
Installation Supervisor**

- Responsibility for the supervision and scheduling of crews.
- Schedule projects, complete daily reports, complete employee time sheets, run projects and complete yearly employee evaluations.

**Insituform, Southwest
Installation Supervisor**

- Responsibility for the supervision and scheduling of crews.
- Schedule projects, complete daily reports, complete employee time sheets, run projects and complete yearly employee evaluations.
- Began employment as a Laborer and was promoted to a Supervisor.



Education

- Lynwood High School, Lynwood, CA

Training

- Confined Space training Boom certification
- Forklift certification
- CPR training
- Alcohol and Drug training.

Cesar Magana

Foreman

Professional Experience

Mr. Magana has over six years' experience in the construction, trenchless technology and pipeline rehabilitation industry, with a Career progression from a Laborer to Foreman. His expertise is with CIPP sewer/storm drain lining and includes extensive knowledge in sewer bypass operations.

Nu-Line Technologies Foreman

- Leads scheduling, managing, and organization of Nu-Line Technologies CIPP installation field activities.
- Provides technical and project approach guidance to Nu-Line Technologies field personnel.
- Communicates with owner's field representatives, site engineers, inspectors and subcontractor supervisors on project-related matters.
- Assists GM and Estimator with Project Estimates for bids.
- Analyzes and solves all field-related problems (Equipment, Installation, Personnel, Etc.).
- Develops and implements sewer bypass systems.
- Identifies, initiates, and controls project revisions and field changes.
- Reviews project costs and assists in developing project budgets.

RePipe-California Laborer/Driver

- Responsible for the installation of CIPP Pipe Rehabilitation Systems.
- Oversaw daily bypass and traffic control (set-up, operation, and tear-down).

Kenny Construction Foreman

- Management of crews for the installation of the CIPP Pipe Rehabilitation System.
- Reported construction progress and activities.
- Managed weekly schedules.
- Provide field technical support, problem solving, and troubleshooting.
- Worked directly with project managers

RePipe-California Laborer/Driver

- Responsible for the installation of CIPP Pipe Rehabilitation Systems.
- Oversaw daily bypass and traffic control (set-up, operation, and tear-down).



Education

- Covina High School

Training

- Confined Space Training
- CCTV, Lateral Cutting and Chemical Grouting

Fernando Uribe

*CCTV/Cutter Operator
West Coast Region*

Professional Experience

With Over ten years' experience in the construction and pipeline rehabilitation industry, Mr. Uribe has progressed from a Technician, Supervisor and Superintendent in the Rib Loc, Cured-In-Place, and Fold & Form pipelining methods. Additionally he has successfully trained CCTV and Cutter operators for Burtech Pipeline.

Nu-Line Technologies, LLC

Cutter/CCTV Operator

Oversee Cutting and CCTV Crew
Operation and maintenance of Cues equipment
Development and training of new employees.
Continuing education and research for development of efficiencies for lateral cutting.
Investigation, development and training of new technologies.

Repipe-California

Cutter/CCTV Operator

CCTV, Cutting and Lateral Grouting
Operation and maintenance of Cues equipment
Development and training of new employees.
Continuing education and research for development of efficiencies for lateral cutting.
Investigation, development and training of new technologies.

Preussag Pipe Rehabilitation, Inc.

Cutter/CCTV Operator

Operation and maintenance of Cues equipment.
Coordination of the Training for new technicians.
Research and development for efficiency of lateral cutting.



Education

- Serrano High School – Phelan, CA

Training

- Confined Space training Boom certification
- Forklift certification
- CPR training
- Alcohol and Drug training.

Joe Zilius

Foreman

Professional Experience

Mr. Zilius has over fifteen years' experience in the construction, trenchless technology and pipeline rehabilitation industry with a Career progression from a Laborer to Foreman. His expertise is with both CIPP and Spiral Wound Lining systems in sewer/storm drain lining include extensive knowledge in sewer bypass operations.

Nu-Line Technologies Foreman

- Responsible for management of crews for the installation of both CIPP and RibLoc Pipe Rehabilitation Systems
- Provides technical and project approach guidance to Nu-Line Technologies field personnel.
- Communicates with owner's field representatives, site engineers, inspectors and subcontractor supervisors on project-related matters.
- Assist GM and Estimator with Project Estimates for bids
- Analyze and solve all field-related problems (Equipment, Installation, Personnel, Etc.).
- Develop and implement sewer bypass systems. Identifies, initiates and controls project revisions and field changes.
- Reviews project costs and assists in developing project budgets.

Arizona Pipeline Laborer

- Responsible for management of crews for the installation of dig and replace pipeline systems.
- Oversee daily bypass and traffic control (set-up, operation, and tear-down)
- Provides field technical support, problem solving and troubleshooting.



Education

- Rio Hondo Community College
- Arroyo High School, El Monte, CA

Training

- Small Crane Truck Certificate
- Commercial Class A Drivers License,
- Forklift certification.

Certifications

- 1995 Employee of the Year –Insituform Southwest.

Frank Durazo

*Operations Manager
West Coast Region*

Professional Experience

Mr. Durazo has over twenty years' experience in the trenchless technology industry with experience in Cured-In-Place and Rib Loc pipelining processes including CIPP Wetout. Using his expertise he has progressed from a supervisor to Warehouse Foreman and was promoted to the position of Project Manager.

Nu-Line Technologies Operations Manager

- Leads scheduling, managing and organization of Burtech Pipeline field activities.
- Provides technical and project approach guidance to Nu-Line Technologies field personnel.
- Communicates with owner's field representatives, site engineers, inspectors and subcontractor supervisors on project-related matters.
- Assist GM and Estimator with Project Estimates for bids
- Analyze and solve all field-related problems (Equipment, Installation, Personnel, Etc.).
- Develop and implement sewer bypass systems. Train field employees with proper use.
- Identifies, initiates and controls project revisions and field changes.
- Reviews project costs and assists in developing project budgets.

Repipe-California, Inc., Ontario, CA Operations Manager

- Leads scheduling, managing and organization of Repipe-CA field activities.
- Provides technical and project approach guidance to Repipe-CA field personnel.
- Communicates with owner's field representatives, site engineers, inspectors and subcontractor supervisors on project-related matters.
- Assist GM and Estimator with Project Estimates for bids
- Analyze and solve all field-related problems (Equipment, Installation, Personnel, Etc.).
- Develop and implement sewer bypass systems. Train field employees with proper use.
- Identifies, initiates and controls project revisions and field changes.
- Reviews project costs and assists in developing project budgets.

Repipe-California, Inc. Ontario, CA Project Manager/Project Scheduler

- Responsible for scheduling and ordering of all lining materials, wet-out and delivery.
- Manage multiple CIPP and Rib Loc projects simultaneously from \$100k to \$2.5M.
- Review of job costs to ensure profitable projects.
- Prepare submittals, schedules, cost estimates, and interact with clients and contractors
- Assist GM and Estimator with Project Estimates for bids

**Repipe-California, Inc, Santa Ana, CA
Warehouse Foreman/Project Scheduler**

- Responsible for scheduling and ordering of all lining materials, wet-out and delivery.
- Maintain and repair of all Repipe-CA construction equipment and vehicles, management of all inventory and job-related materials, ordering of equipment materials and supplies, assistance to field as required on-site with Rib Loc, or CIPP installations, and establishment and maintenance of warehouse operations.
- Identify and negotiate with new suppliers
- Performs as the acting Safety Director and assures that OSHA safety compliance is adhered to in the field, corporate office and within the warehouse environment.

**Preussag Pipe Rehabilitation
Warehouse Foreman**

- Responsible for the maintenance and repair of all PPR construction equipment and vehicles, management of all inventory and job-related materials, ordering of equipment materials and supplies, assistance to field as required on-site with RibLoc, or CIPP installations, and establishment and maintenance of warehouse operations.
- Responsible for resourcing equipment and material vendors.
- Mechanical assistance to jobsite and field personnel.
- Oversee Driver Vehicle Inspection Reports and Driver Daily Logs for DOT Bit Inspections and coordinates quarterly maintenance for corporate fleet in preparation of DOT bit inspections.
- Performs as the acting Safety Director and assures that OSHA safety compliance is adhered to in the field, corporate office and within the warehouse environment.

**National Liner-West, Gardena, CA
Installation Supervisor**

- Supervision of the impregnation and installation for Cured-In-Place trenchless lining system for the Western Region of the United States.
- Installation Supervisor for 10 crewmembers for the U-Liner Fold and Form Lining System.
- Additional responsibilities included daily reporting to inspectors from various cities and counties, purchasing and ordering of equipment and materials and scheduling of equipment and personnel for projects.

**Cooke Pipeline Rehabilitation
Installation Supervisor**

- Supervision for the impregnation and installation procedures for Cured-In-Place trenchless pipeliners and the Ultra-Liner Fold and Form System pipelining system.
- Acted as Purchasing Agent for equipment and materials for the jobsites and was responsible for bypass planning and traffic control setup.

**Insituform, Southwest
Installation Supervisor**

- Responsible for the impregnation procedure for the trenchless Cured-In-Place Lining System.
- Responsible for job scheduling; personnel and equipment, purchasing and ordering of materials and field sample testing and reporting.

Senior Welder

- Responsible for welding and fabrication of equipment for the snack food industry.
- Additional responsibilities included blueprint design, research and development for prototypes.

Line Totals (Unit Price * Quantity)

Item Num	Section	Item Code	Description	Reference	Unit of Measure	Quantity	Burtech Pipeline Inc- Unit Price	Burtech Pipeline Inc. - Line Total
1	Main Bid	524126	Bonds (Payment and Performance)	1-7.2.1	LS	1	\$28,000.00	\$28,000.00
2	Main Bid	237110	Sewage Bypass and Pumping Plan (Diversion Plan)	3-12.5.4	LS	1	\$1,000.00	\$1,000.00
3	Main Bid	237110	Mobilization	7-3.4.1	LS	1	\$20,000.00	\$20,000.00
4	Main Bid		Field Orders (EOC Type II)	7-3.9	AL	1	\$200,000.00	\$200,000.00
5	Main Bid	237310	Pavement Restoration Adjacent to Trench	302-5.2.1	SF	756	\$1.00	\$756.00
6	Main Bid	237310	Additional Curb and Gutter Removal and Replacement	303-5.9	LF	50	\$1.00	\$50.00
7	Main Bid	237310	Additional Sidewalk Removal and Replacement	303-5.9	SF	11778	\$1.00	\$11,778.00
8	Main Bid	237310	Curb Ramp (Type B) with Detectable Warning Tiles	303-5.10.2	EA	1	\$4,000.00	\$4,000.00
9	Main Bid	237310	Concrete Pavement	302-6.8	CY	42	\$1.00	\$42.00
10	Main Bid	237110	Additional Bedding	306-15.1	CY	3	\$1.00	\$3.00
11	Main Bid	237110	Sewer Main (8 Inch)	306-15.1	LF	8	\$1.00	\$8.00

12	Main Bid	237310	Temporary Resurfacing	306-15.9	TON	8	\$300.00	\$2,400.00
13	Main Bid	237110	Imported Trench Backfill	306-15.11	TON	52	\$1.00	\$52.00
14	Main Bid	237110	Manholes (4 ft x 3 ft)	306-16.6	EA	6	\$7,500.00	\$45,000.00
15	Main Bid	237110	Replace Manhole in Place (4 ft x 3 ft)	306-16.6	EA	9	\$11,000.00	\$99,000.00
16	Main Bid	237110	Sewer Lateral and Cleanout (4 Inch, Less Than 7 ft Deep)	306-17.2	EA	10	\$3,500.00	\$35,000.00
17	Main Bid	237110	Sewer Lateral and Cleanout (4 Inch, 7 ft or Greater in Depth)	306-17.2	EA	10	\$2,500.00	\$25,000.00
18	Main Bid	237110	Sewer Main Cleanout	306-17.2	EA	26	\$4,500.00	\$117,000.00
19	Main Bid	237110	Cleaning and Video Inspection of Existing Pipelines and Culverts (Sewer Mains)	306-18.7	LF	33313	\$1.00	\$33,313.00
20	Main Bid	237110	Cleaning and Video Inspection of Existing Laterals	306-18.7	LF	673	\$30.00	\$20,190.00
21	Main Bid	237110	Video Inspection of Pipelines and Culverts for Acceptance (Sewer Mains)	306-18.7	LF	33313	\$0.50	\$16,656.50

22	Main Bid	237110	Video Inspection of Pipelines and Culverts for Acceptance (Sewer Laterals)	306-18.7	EA	673	\$10.00	\$6,730.00
23	Main Bid	237110	Point Repair for Existing Sewer Main (8 Inch)	500-4.7	EA	13	\$3,000.00	\$39,000.00
24	Main Bid	237110	Additional Point Repair for Existing Sewer Main (8 Inch)	500-4.7	LF	50	\$1.00	\$50.00
25	Main Bid	237110	Rehabilitate Sewer Main (8 Inch)	500-12	LF	33313	\$21.00	\$699,573.00
26	Main Bid	237110	Service Lateral Connection	501-9	EA	672	\$768.00	\$516,096.00
27	Main Bid	237110	Service Lateral Connection (6 Inch)	501-9	EA	1	\$1,000.00	\$1,000.00
28	Main Bid	237110	Rehabilitate Existing Manhole with Cured-In-Place Manhole Liner	502-5.6.1	VF	268	\$1,073.00	\$287,564.00
29	Main Bid	237110	Repair and Rehabilitate Existing Manhole with Cured-In-Place Manhole Liner	502-5.6.1	VF	90	\$1,073.00	\$96,570.00
30	Main Bid	237110	Service Lateral Rehabilitation with Cleanout Up to 7 ft in Depth	503-6	EA	370	\$1,700.00	\$629,000.00

31	Main Bid	237110	Service Lateral Rehabilitation with Cleanout Greater than 7 ft in Depth	503-6	EA	302	\$1,200.00	\$362,400.00
32	Main Bid	237110	Service Lateral Rehabilitation with Cleanout Greater than 7 ft in Depth (6 Inch)	503-6	EA	1	\$3,000.00	\$3,000.00
33	Main Bid	541330	Traffic Control and Working Drawings	601-7	LS	1	\$10,000.00	\$10,000.00
34	Main Bid	541330	WPCP Development	1001-4.2	LS	1	\$600.00	\$600.00
35	Main Bid	541330	WPCP Implementation	1001-4.2	LS	1	\$1,000.00	\$1,000.00
							Subtotal	\$3,311,831.50
							Total	\$3,311,831.50